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United States – Measures Affecting Trade in Large Civil Aircraft (Second Complaint)

(AB-2011-3/DS353)

OTHER APPELLANT SUBMISSION OF THE UNITED STATES

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SERVICE LIST

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TABLE OF REPORTS AND OTHER DOCUMENTS

Short Form	Full Citation
Panel Report	Panel Report, *United States – Measures Affecting Trade in Large Civil Aircraft (Second Complaint)*, WT/DS353/R, circulated on 31 March 2011
Australia – Apples (AB)	Appellate Body Report, *Australia – Measures Affecting the Importation of Apples from New Zealand*, WT/DS367/AB/R, adopted 17 December 2010
Brazil – Aircraft (Panel)	Panel Report, *Brazil – Export Financing Programme for Aircraft*, WT/DS46/R, adopted 20 August 1999, as modified by the Appellate Body Report, WT/DS46/AB/R
Canada – Aircraft (AB)	Appellate Body Report, *Canada – Measures Affecting the Export of Civilian Aircraft*, WT/DS70/AB/R, adopted 20 August 1999
Canada – Wheat (AB)	Appellate Body Report, *Canada – Measures Relating to Exports of Wheat and Treatment of Imported Grain*, WT/DS276/AB/R, adopted 27 September 2004
Chile – Price Band System (AB)	Appellate Body Report, *Chile – Price Band System and Safeguard Measures Relating to Certain Agricultural Products*, WT/DS207/AB/R, adopted 23 October 2002
Chile – Price Band System (Article 21.5)(AB)	Appellate Body Report, *Chile – Price Band System and Safeguard Measures Relating to Certain Agricultural Products – Recourse to Article 21.5 of the DSU by Argentina*, WT/DS207/AB/RW, adopted 22 May 2007
EC – Chicken Cuts (AB)	Appellate Body Report, *European Communities – Customs Classification of Frozen Boneless Chicken Cuts*, WT/DS269/AB/R, WT/DS286/AB/R, adopted 27 September 2005
EC – Hormones (AB)	Appellate Body Report, *European Communities – Measures Concerning Meat and Meat Products (Hormones)*, WT/DS26/AB/R, WT/DS48/AB/R, adopted 13 February 1998
EC – Large Civil Aircraft	Panel Report, *European Communities And Certain Member States – Measures Affecting Trade in Large Civil Aircraft*, WT/DS316/R, circulated 30 June 2010
Korea – Commercial Vessels	Panel Report, Korea – Measures Affecting Trade in Commercial Vessels, WT/DS273/R, adopted 11 April 2005

Korea – Dairy (AB)	Appellate Body Report, *Korea – Definitive Safeguard Measure on Imports of Certain Dairy Products*, WT/DS98/AB/R, adopted 12 January 2000
Indonesia – Autos	Panel Report, *Indonesia – Certain Measures Affecting the Automobile Industry*, WT/DS54/R, WT/DS55/R, WT/DS59/R, WT/DS64/R and Corr.1 and 2, adopted 23 July 1998
Mexico – Corn Syrup (Article 21.5 – US) (AB)	Appellate Body Report, *Mexico – Anti-dumping Investigation of High Fructose Corn Syrup (HFCS) from the United States – Recourse to Article 21.5 of the DSU by the United States*, WT/DS132/AB/RW, adopted 24 February 2000
Norway – Toll Collection Equipment	GATT Panel Report – *Panel on Norwegian Procurement of Toll Collection Equipment for the City of Trondheim*, adopted 13 May 1992, BISD, 40S/319
Shorter Oxford English Dictionary	*Shorter Oxford English Dictionary*, 6th Ed. (2007)
US – Antidumping and Countervailing Duties (China) (AB)	Appellate Body Report, *United States – Definitive Anti-dumping and Countervailing Duties on Certain Products from China*, WT/DS379/AB/R, adopted on 25 March 2011
US – Carbon Steel (AB)	Appellate Body Report, *United States – Countervailing Duties on Certain Corrosion-Resistant Carbon Steel Flat Products from Germany*, WT/DS213/AB/R and Corr.1, adopted 19 December 2002.
US – Continued Zeroing (AB)	Appellate Body Report, *United States – Continued Existence and Application of Zeroing Methodology*, WT/DS350/AB/R, adopted 19 February 2009
US – Countervailing Duty Measures on Certain EC Products (AB)	Appellate Body Report, *United States – Countervailing Measures Concerning Certain Products From The European Communities*, WT/DS212/AB/R, adopted 8 January 2003
US – FSC (AB)	Appellate Body Report, *United States – Tax Treatment for "Foreign Sales Corporations"*, WT/DS108/AB/R, adopted 20 March 2000
US – FSC (Article 21.5 – EC)(AB)	Appellate Body Report, *United States – Tax Treatment for "Foreign Sales Corporations" – Recourse to Article 21.5 of the DSU by the European Communities*, WT/DS108/AB/RW, adopted 29 January 2002

US – Lead and Bismuth II (AB)	Appellate Body Report, *United States – Imposition of Countervailing Duties on Certain Hot-Rolled Lead and Bismuth Carbon Steel Products Originating in the United Kingdom*, WT/DS138/AB/R, adopted 7 June 2000
US – Hot-Rolled Steel from Japan (AB)	Appellate Body Report, *United States – Anti-Dumping Measures on Certain Hot-Rolled Steel Products from Japan*, WT/DS184/AB/R, adopted 23 August 2001
US – Sonar Mapping	GATT Panel Report, *United States – Procurement of a Sonar Mapping System*, GPR.DS1/R, 23 April 1992, unadopted
US – Upland Cotton (AB)	Appellate Body Report, *United States — Subsidies on Upland Cotton*, WT/DS267/AB/R, adopted 21 March 2005
US – Upland Cotton (21.5) (AB)	Appellate Body Report, *United States — Subsidies on Upland Cotton – Recourse to Article 21.5 of the DSU by* Brazil, WT/DS267/AB/RW, adopted 20 June 2008
US – Upland Cotton (Panel)	Panel Report, *United States – Subsidies on Upland Cotton*, WT/DS267/R, Corr.1, and Add.1 to Add.3, adopted 21 March 2005, as modified by the Appellate Body Report, WT/DS267/AB/R
US – Wheat Gluten (AB)	Report of the Appellate Body, *United States – Definitive Safeguard Measures on Imports of Wheat Gluten From the European Communities*, WT/DS166/AB/R, adopted 19 January 2001

TABLE OF ABBREVIATIONS

ACT Program	NASA Advanced Composite Technology Program
AST Program	NASA Advanced Subsonic Technology Program
DUS&T Program	DoD Dual Use Science and Technology Program
EU FWS	First Written Submission by the European Communities, *United States – Measures Affecting Trade in Large Civil Aircraft (Second Complaint)* (DS353) (11 July 2007)
EC FCOS	First Confidential Oral Statement of the European Communities, *United States – Measures Affecting Trade in Large Civil Aircraft (Second Complaint)* (DS353) (26 September 2007)
EC RPQ	Response of the European Communities to the Panel's Questions Includes: Response of the European Communities to the First Set of Questions from the Panel to the Parties (12 May 2007) and; Response of the European Communities to the Second Set of Questions from the Panel to the Parties (14 April 2008) and; Response of the European Communities to the Third Set of Questions from the Panel to the Parties (31 July 2009) and
EC SWS	Second Written Submission by the European Communities, *United States – Measures Affecting Trade in Large Civil Aircraft (Second Complaint)* (DS353) (19 November 2007)
HPCC	High Performance Computing and Communication Program
HSR Program	NASA High Speed Research Program
ManTech Program	DoD Manufacturing Technology Program
QAT Program	NASA Quiet Aircraft Technology Program
R&T Base Program	NASA Research and Technology Base Program
US Comment on EC RPQ	Comments of the United States on the Response of the European

XXX	Communities to the Questions from the Panel Includes: Comments of the United States on the Response of the European Communities to the First Set of Questions from the Panel to the Parties (5 December 2007) and; Comments of the United States on the Response of the European Communities to the Second Set of Questions from the Panel to the Parties (5 May 2008) and; Comments of the United States on the Response of the European Communities to the Third Set of Questions from the Panel to the Parties (21 August 2009)
US FWS	First Written Submission by the United States, *United States – Measures Affecting Trade in Large Civil Aircraft (Second Complaint)* (DS353) (13 July 2007)
US SWS	Second Written Submission by the United States, *United States – Measures Affecting Trade in Large Civil Aircraft (Second Complaint)* (DS353) (9 February 2007)
VSP	NASA Vehicle Systems Program

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I. INTRODUCTION AND EXECUTIVE SUMMARY

1. On many issues in this dispute, the Panel based its legal findings on a proper understanding of the *Agreement on Subsidies and Countervailing Measures* ("SCM Agreement"), and conducted an objective assessment of the facts of the case. The U.S. appeal does not concern itself with those findings. Rather, it focuses on the limited number of places in the Panel's analysis where it stumbled. Its errors cumulatively resulted in erroneous recommendations under Article 7.8 of the SCM Agreement that the United States withdraw or remove the adverse effects of $2.7 billion in spending under government research programs and reduction in state and local business taxes.[1] Therefore, the United States respectfully requests the Appellate Body to reverse the legal findings and conclusions that lead to those recommendations.

2. The most significant error, accounting for the large majority of the value of the measures and programs covered by the Panel's recommendations, lay in finding that research that The Boeing Company ("Boeing") conducted for the U.S. Government was, for purposes of the SCM Agreement, a subsidy to Boeing. The Panel got the first step of its analysis right, in finding that purchases of services, such as research services, by the government is not a financial contribution under Article 1.1(a)(1) of the SCM Agreement and, therefore, cannot be a subsidy. However, the Panel found incorrectly that the research services the National Aeronautics and Space Administration ("NASA") paid Boeing to perform were not really purchases of services because the results of the research were "principally for the benefit and use of Boeing," rather than the government and unrelated third parties. The Panel erred in reaching this conclusion without taking account of extensive evidence indicating that the NASA research did benefit the government by generating knowledge that NASA distributed to the general public, studying ways to improve the safety of air transportation and lower its environmental impact, and providing information that regulatory agencies use to perform their work.

3. The Panel applied the same legal test, albeit with less erroneous results, to the allegations of the European Union ("EU") regarding military research that Boeing conducted for the U.S. Department of Defense ("DoD"). The Panel found benefit and use for the government in that "the purpose of these programmes was to conduct R&D aimed at designing more advanced weapons or other defense systems or to reduce the cost of such systems."[2] The Panel found that procurement contracts calling for Boeing to conduct research were a purchase of services. However, the Panel found that agreements calling for DoD and Boeing to share the cost of a research project were not purchases of services and, in fact, conferred a benefit on Boeing because no commercial entity would enter into such an arrangement. It erred in reaching this conclusion. The evidence shows a significant military use for research under those agreements, and limitations on applying DoD-funded research in the civil sector, signifying that the research is principally for the benefit and use of the government, making the agreements a purchase under the Panel's legal test. In any event, the sharing of the costs and results of research under the

[1] Although the Panel included FSC/ETI in its analysis of adverse effects, it did not issue a recommendation with respect to that subsidy, which the United States withdrew shortly after the commencement of proceedings before the Panel.

[2] Panel Report, para. 7.1147.

DoD-Boeing agreements means there is no benefit within the meaning of Article 1.1(b) of the SCM Agreement.

4. The Panel made different errors in evaluating the reduction by the state of Washington in its business and occupancy ("B&O") tax. It attempted to simplify the analysis by finding a "general rule" among the 36 rate categories in the state's complex variable rate system and treating the rate applicable to aerospace manufacturing as an "exception". In doing so, it disregarded the Appellate Body's admonition that "panels should seek to compare the fiscal treatment of legitimately comparable income"[3] and that the "basis of comparison . . . must be the tax rules applied by the Member in question."[4] The Panel erred because, examining the system for legitimately comparable income reveals that, in both nominal and effective terms, the reduced tax rate for aerospace manufacturing remains higher than average. There is accordingly no support for the Panel's finding that, under the B&O tax rate applicable to Boeing, "government revenue that is otherwise due is foregone" for purposes of Article 1.1(a)(1)(ii) of the SCM Agreement. In addition, the fact that 60 percent of the manufacturing revenue in Washington is covered by a special B&O tax rate signals that the Panel also erred in finding the tax treatment accorded to Boeing to be specific for purposes of Article 2.1(a) of the SCM Agreement.

5. In evaluating whether the tax treatment associated with industrial revenue bonds ("IRBs") issued by the City of Wichita afforded Boeing "disproportionately large amounts of subsidy" for purposes of Article 2.1(c), the Panel erred by comparing Boeing's share of disbursements under the program with its share of total manufacturing employment in the city. The Panel provides no reason to believe that the share of employment would indicate the point at which use of this particular subsidy would be non-specific, and there is none. Moreover, in applying the analysis, the Panel failed to comply with Article 2.1(c)'s instruction that "account shall be taken of the extent of diversification of economic activities within the jurisdiction of the granting authority."

6. As with its analysis of the claims of subsidization, the Panel adopted the correct analytical framework for its evaluation of whether the subsidies it found to exist caused adverse effects, but failed to apply the framework correctly to the facts. In line with the EU's arguments, the Panel separately considered theories that the aeronautics R&D programs had "technology effects" on Boeing's ability to launch the technologically innovative 787 in 2004 and that all of the challenged measures and programs had "price effects" by allowing Boeing to charge lower prices.

7. In looking at the "technology effects," the Panel perceived a relationship between some of the areas of research under NASA and DoD aeronautics R&D programs and the technologies used on the 787 that, in the Panel's view, was a sufficient causal link for purposes of Articles 5(c) and 6.3(b)-(c) of the SCM Agreement. However, it failed to consider its other findings

[3] Appellate Body Report, *US – FSC (Article 21.5 – EC) (AB)*, para 91.

[4] Panel Report, para. 7.116 (*citing US – FSC (AB)*, para. 90).

indicating that much of the NASA and DoD research had little to do with the technologies that the Panel considered most important for the 787, and that all of NASA's work stopped at a low level of technological maturity, requiring substantial input from a variety of sources before Boeing could develop a commercially applicable technology. In addition, much of the technology used on the 787 came from suppliers, rather than Boeing itself, and was accordingly available independent of the company's work with NASA. With all of these other ways of getting to the technology chosen for the 787, there was no genuine and substantial relationship of cause and effect between the NASA and DoD R&D programs and Boeing's ability to launch a technologically innovative 787 in 2004.

8. The Panel correctly recognized that a counterfactual analysis of technology effects was appropriate in this dispute. It also correctly observed that the research under individual NASA and DoD R&D programs had different levels of relation to the 787. However, it failed to factor this information into its evaluation of whether, absent those programs, Boeing would have been able to launch a technologically innovative 787 in 2004. In fact, the Panel's own findings about the nature and operation of the programs point in the opposite direction – that Boeing had the commercial impetus and the resources to launch the 787 as it did.

9. In evaluating the EU price effects theory, the Panel correctly found that the subsidies allegedly increasing non-operating cash flow did not have adverse effects, and that the magnitude of the subsidies allegedly affecting marginal unit costs of the 787 was too small to have adverse effects. However, the Panel took short-cuts in analyzing tax subsidies with regard to 100-200 seat and 300-400 seat aircraft, which led it to conclude erroneously that they caused serious prejudice to Airbus.

10. In fact, the Panel's brief analysis dispenses with consideration of the magnitude of the subsidies or correlation between the subsidies and market developments. Its analysis of other causal factors and its counterfactual evaluation of price suppression and impedance of EU exports into third country markets are perfunctory. In place of a robust application of these established tests, the Panel attempted to rely on its finding that FSC/ETI was a prohibited subsidy to create a presumption that it caused "trade distortive effects." Rather than make specific findings as to which sales campaigns resulted in lost sales to Airbus, or the country markets in which displacement or impedance of exports occurred, the Panel made blanket findings based on abstract theories of causation, without considering the facts of the transactions that formed the basis for the EU arguments.

II. NASA RESEARCH PROGRAMS

11. With respect to the NASA research programs, the United States does not disagree with the legal framework laid out by the Panel, or with the majority of the factual findings. However, the Panel erred by failing to apply its legal framework to the facts in dispute, and as a result, its findings fail to establish that the NASA aeronautics research R&D programs conferred a financial contribution on Boeing for purposes of Article 1.1(a)(1)(i) and (iii) of the SCM Agreement. It acted inconsistently with Article 11 of the DSU when it disregarded evidence indicating that research conducted by NASA was for the benefit and use of the U.S. government and third parties unrelated to Boeing, rather than of Boeing. Finally, the Panel erred in its calculation of the amount of any benefit by including funding that was not part of the financial contribution the EU alleged to exist. Therefore, it failed to meet the requirements of Article 1.1(b) of the SCM Agreement with regard to the magnitude of the benefit.

12. The EU asserted before the Panel that contracts under which NASA retained Boeing to conduct research specified by the U.S. government was, in fact, a grant to the company. [5]In the view of the United States, these were purchases of services, a type of transaction that is not a financial contribution for purposes of the SCM Agreement. The Panel concluded that because Article 1.1(a)(1)(iii) of the SCM Agreement defines a financial contribution as occurring when "a government provides goods or services other than general infrastructure, or purchases goods," purchases of services are not a financial contribution.[6] The Panel was careful to note that the exclusion is not merely a matter of the label attached to a transaction, but applies only when the transaction is properly characterized as a purchase of services.[7] The Panel found further that

> whether or not NASA's R&D contracts with Boeing are properly characterized as a 'purchase of services' depends on *the nature of the work* that Boeing was required to perform under the contracts, and more specifically, *whether the R&D that Boeing was required to conduct was principally for its own benefit and use, or whether it was principally for the benefit and use of the U.S. Government (or unrelated third parties)*."[8]

13. As section II.A.1 explains, the United States considers that the Panel defined "purchase" properly for purposes of Article 1.1(a)(1) of the SCM Agreement. However, the Panel erred by failing to apply correctly the test it devised to the facts of this dispute. Specifically, an inquiry into whether research was principally for the benefit and use of Boeing or of the U.S. government and unrelated third parties requires an evaluation and ultimately a comparison of the benefit and use that each side takes from the research. Without such a consideration of what both parties to the research transaction received, it is impossible to reach a reasoned conclusion

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[5] EU FWS, para. 457.

[6] Panel Report, paras. 7.955 and 7.969-7.970

[7] Panel Report, para. 7.970.

[8] Panel Report, para. 7.978 (emphasis in original).

whether the benefit and use of the research is *principally* for one side or the other. Nevertheless, when analyzing this question in its report, the Panel discussed only the benefit and use of NASA research to Boeing, without addressing the benefit and use to the government or third parties unrelated to Boeing. This – literally – one-sided approach failed to follow the legal test that the Panel correctly found to be necessary and, accordingly, failed to establish a financial contribution for purposes of Article 1.1(a)(1), the treaty text that the Panel sought to apply.

14. The Panel's evaluation of the use and benefit of research conducted by Boeing for NASA was also inconsistent with Article 11 of the DSU. The Appellate Body has found that "{t}he deliberate disregard of, or refusal to consider, the evidence submitted to a panel is incompatible with a panel's duty to make an objective assessment of the facts" under Article 11.[9] In this dispute, the United States presented extensive evidence of the utility to the government of research performed by Boeing for NASA. In particular:

- Pursuant to its mandate under U.S. law to provide for "the widest practicable and appropriate dissemination" of the results of its research,[10] NASA maintains a publicly accessible database of thousands of scientific studies of aeronautics. The programs challenged by the EU generated studies that were widely available to the scientific community and general public, and widely cited in subsequent scientific work.

- NASA and its contractors performed research into improving the safety and security of air transportation, making air traffic control more efficient, and lessening the environmental impact of aircraft in terms of atmospheric and noise pollution.

- NASA research helped regulators to understand how to set standards for the industry.

Although the Panel Report recognized the contribution NASA aeronautics research made to government objectives at some points, its analysis of the "benefit and use" excludes any reference to what the government and unrelated third parties received. Therefore, the Panel failed to make the objective assessment called for by Article 11 by disregarding evidence submitted to it. This omission is especially significant because the evidence showing the broad dissemination of NASA research and the governmental use of many of the results is directly at odds with the Panel's depiction of an agency devoted to bestowing a competitive advantage on domestic producers and withholding knowledge to achieve that goal.

15. Finally, the Panel erred when it based the amount of the benefit to Boeing of a set of transactions that included transactions outside the scope of the financial contribution challenged by the EU. Article 1.1(b) of the SCM Agreement is clear the "benefit" for purposes of a subsidy

[9] *EC – Hormones (AB)*, para. 133.

[10] Space Act, § 203(a).

is the benefit conferred by a transaction that has been found to be a financial contribution. In this dispute, the EU limited its allegations regarding financial contributions to NASA payments, facilities, equipment, and employees for research related to the production and developments of large civil aircraft *by Boeing*. The EU explicitly excluded research on engines, air traffic management, hypersonic flight, and space travel. However, when the Panel sought to estimate the amount of subsidies covered by the EU claims, it used a figure that included contracts for research excluded by the EU. In so doing, it failed to establish the magnitude of the benefit to Boeing in the manner required under Article 1.1(b).

A. The Panel erred by failing to consider the services Boeing supplied to the government as part of its evaluation whether NASA payments for those services were purchases.

16. The Panel was correct in finding that purchases of services are not a financial contribution, and that a true purchase of research services exists when the government pays a private entity to conduct research that is principally for the benefit and use of the government or unrelated third parties.[11] However, the Panel failed to apply its "principally for the benefit and use" test correctly to the facts of the dispute. Specifically, the Panel addressed only general purpose statements in program materials, public statements, and a few contract indicating that Boeing's NASA-funded research had usefulness to Boeing, and drew a conclusion as to the nature of the transactions on that basis alone. The Panel never addressed the evidence that the U.S. government used that research to carry out its stated missions of building and disseminating foundational aeronautics knowledge on an open basis; establishing long-range studies regarding the benefits, opportunities and problems involved in the utilization of aeronautics activities for peaceful and scientific purposes; and improving the safety and functioning of all aircraft.[12] This flaw invalidated the Panel's application of the law to the facts because it is impossible to conclude that services are "principally for the benefit and use" of one party to a transaction without considering the benefit and use to the other party and comparing the two.

1. The Panel correctly concluded that identifying whether a transaction is a purchase of research services is a comparative inquiry into whether the research was principally for the benefit and use of the recipient rather than for the benefit and use of the government (or unrelated third parties).

17. The Panel's legal conclusion that a purchase of services is not a financial contribution for purposes of Article 1.1(a)(1) led directly to a second legal question – how to determine whether a given transaction is properly characterized as a governmental purchase of services. The Panel found, on the basis of the meanings of the terms used in the SCM Agreement and the reasoning of panel reports under the *General Agreement on Tariffs and Trade 1947* ("GATT 1947"), that the answer hinges on whether the object of the transaction was "principally for the benefit and use" of the private entity or of the government (or unrelated third parties). Moreover, the Panel

[11] Panel Report, para. 7.978 (emphasis omitted).

[12] Space Act, § 102(d)(1), (2), and (4) (Exhibit EC-268).

recognized (again correctly) that, in the context of the NASA measures challenged by the EU, this inquiry involved "the question of whether NASA has any demonstrable use for the R&D performed under the eight aeronautics programmes at issue."[13] The United States agrees with these conclusions. A consideration of the Panel's reasoning provides further guidance on the proper application of this test.

18. The Panel listed four considerations as supporting its "principally for the benefit and use" test. First, the Panel noted that the characterization of the NASA-Boeing transactions depended on the terms of the transactions, particularly the core term – the work that Boeing agreed to perform in exchange for receiving payments from NASA.[14] Although the Panel did not expand on the reasons for this conclusion, a focus on the terms of the transaction is inherent in the definition of a "financial contribution" under Article 1.1(a)(1) as a closed list of types of transactions. The only way to determine whether a government action falls within that list, and if so, where it falls, is to look at the terms under which the government took the action and inquire whether they match one of the items. The most important terms (in the Panel's words, "core terms") would obviously receive the greatest weight in this analysis.

19. Second, the Panel found that the ordinary meaning of the word "service" indicates that "the work performed be for the benefit and use of the entity funding the R&D (or unrelated third parties)."[15] Although the United States agrees with the Panel's conclusion on this point, the underlying rationale is unsound. The word "services" in Article 1.1(a)(1) has as its context an entire agreement – the GATS – as well as references in several other agreements, which makes it difficult to understand why the Panel sought to draw an overarching conclusion of this nature from the dictionary definition.[16] Moreover, the definitions highlighted by the Panel appear to have limited relevance to this situation. They come from the 21st out of 31 variant meanings of "service":

> **21 a** An act of helping or benefiting another; an instance of beneficial, useful, or friendly action. . . . **b** The action of serving, helping, or benefiting another;

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[13] Panel Report, para. 7.986.

[14] Panel Report, para. 7.978.

[15] Panel Report, para. 7.978.

[16] As the Appellate Body has noted:

> The Appellate Body has observed that dictionaries are a "useful starting point" for the analysis of "ordinary meaning" of a treaty term, but they are not necessarily dispositive. The ordinary meaning of a treaty term must be ascertained according to the particular circumstances of each case. Importantly, the ordinary meaning of a treaty term must be seen in the light of the intention of the parties "as expressed in the words used by them against the light of the surrounding circumstances."

EC – Chicken Cuts (AB), para. 175, *citing*, *US – Softwood Lumber IV*, para. 59.

> behaviour conducive to the welfare or advantage of another. Chiefly in *do*, *render service*. . . . **c** *collect. pl.* Friendly or professional assistance.[17]

These definitions all tend toward the meaning of "service" in the sense of a helpful or philanthropic activity, rather than in a commercial or economic sense.[18] In fact, the dictionary cited by the Panel contains an entry specifically designated as applying in an economic sense:

> **27** . . . **d** *Econ.*, in *pl*. The sector of the economy that supplies the needs of the consumer but produces no tangible goods, as banking or tourism.

This definition comports far better with the context provided by the GATS, especially in light of the reference to particular services sectors and the distinction from "tangible goods." The reference to the "needs of the consumer" also meshes well with the Panel's "principally for the benefit and use of the government" test, as the government would be the "consumer" of any research services supplied in a purchase of services.

20. In its third consideration, the Panel observed that its analysis is "broadly consistent with the arguments of the parties and third parties in this case."[19] This is correct. Throughout the proceeding the United States urged the Panel to focus on the "substance of the transactions."[20] In particular, the United States emphasized that, in each instance "NASA states what it wants, pays only for that task, and receives the service and intellectual property for which it paid, demonstrating quite clearly that NASA is making a purchase."[21] Information about what NASA obtained through these contracts is, of course, integral to any inquiry into whether the transaction was "principally for the benefit and use of the U.S. Government (or unrelated third parties)."

21. The Panel's fourth consideration was that "focusing on whether the work performed was principally for the benefit and use of the government (or unrelated third parties) is consistent with prior GATT 1947 panel reports examining the question of whether a transaction was properly characterized as government procurement."[22] The United States agrees. Each of the reports referenced by the Panel focused on what the responding government obtained in return for its payments. In *US – Sonar Mapping*, the GATT 1947 panel found a procurement of goods

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[17] New Shorter Oxford English Dictionary, p. 2789, *cited in* Panel Report, para. 7.978.

[18] The usage examples of the 21st definition support this conclusion:

> **a** LD MACAULAY Whether the murder . . would really be a service to the . . cause. **b** *Guardian* The Howard Association is doing good service by its persistent watchfulness in . . the treatment of crime. **c** F. WELDON We're going to be dependent on your good services.

New Shorter Oxford English Dictionary, p. 2789 (ellipses in original).

[19] Panel Report, para. 7.978.

[20] US RPQ 17, para. 36; US SWS, para. 8; US Comments on EC RPQ16, para. 67; US Comments on EC RPQ 19, para. 73; US RPQ 191, para. 229.

[21] US FWS, para. 216; *see also* US SWS, para. 62; US FNCOS, para. 63; US SNCOS, para. 45.

[22] Panel Report, para. 7.978.

based in part on the fact that "the NSF would also enjoy the benefits of the system's purchase – Antarctic research and the preparation of seabed maps – which were clearly for government purposes, and the Government can thus be regarded as the ultimate beneficiary of the system."[23] Similarly, in evaluating whether a contract was a purchase of R&D services or of a good, the GATT 1947 panel in *Norway – Toll Collection Equipment* found that "{w}hat was relevant at this point in the Agreement, as at others, was what the procuring entity was procuring, not the nature of the work that would have to be undertaken by the supplier to supply the goods and/or services being procured."[24] Thus, the nature of the work and its relation to a legitimate government function were critical factors.

22. The Panel also correctly emphasized that the inquiry "should review all of the evidence regarding the terms and surrounding context of NASA's aeronautics R&D contracts with Boeing."[25] It noted the Appellate Body's guidance that a panel should consider the evidence in its totality.[26]

23. These observations provide guidance as to how to apply the "principally for the benefit and use" test. Most importantly, the test necessitates comparative analysis. Reaching a conclusion as to whether the government has paid for services "principally" for the use and benefit of the recipient, as opposed to the use and benefit to the government (or unrelated third parties) requires a comparison of how each party to the transaction could actually use or benefit from the research. Otherwise, a panel would have no way of knowing whether the significance of the benefit and use to one side of a transaction negated a conclusion that the services were "principally" for the benefit and use of the other side. As the Panel recognized, this comparison must reflect the totality of the evidence. The only point in which the Panel erred, its reliance on an inapposite definition for the term "service," did not affect the overall conclusion as to the proper test to identify genuine purchases of services. Nonetheless, to avoid future confusion, the United States respectfully requests the Appellate Body to clarify the Panel's reasoning to use the more appropriate understanding of the term "service" as explained in this section.

2. NASA's programs and the contracts before the Panel had the objective of expanding foundational aeronautics knowledge for the broader scientific community in the United States and other countries, and not just for Boeing.

24. Before elaborating further on the Panel's legal error, it is useful to review briefly some of the undisputed facts about NASA. Its statutory mission includes:

- The expansion of human knowledge of the Earth and of phenomena in the atmosphere and space;

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[23] *US – Sonar Mapping*, para. 4.10.

[24] *Norway – Toll Collection Equipment*, para. 4.8

[25] Panel Report, para. 7.979.

[26] Panel Report, para. 7.81, note 247

- The improvement of the usefulness, performance, speed, safety, and efficiency of aeronautical and space vehicles; and

- The establishment of long-range studies of the potential benefits to be gained from, the opportunities for, and the problems involved in the utilization of aeronautical and space activities for peaceful and scientific purposes.[27]

To this end, NASA maintains an open library of aerospace research containing hundreds of thousands of scientific reports that are available to the public instantly via the Internet, or by mail for a small fee.[28] Much of this information comes from studies and reports generated by NASA's own researchers and by the contractors, including Boeing, that conduct research for NASA. Documents from NASA's library are broadly available, and broadly used. Universities outside the United States maintain links to NASA's server.[29] Scholarly articles written by NASA scientists are widely cited in academic literature.[30] The reports and publications that Boeing submitted to NASA are also available from the agency's server and are widely cited in academic literature, including in Europe.[31] Airbus engineers themselves have stated that NASA research has a "general and academic value" in their work.[32]

25. A significant portion of NASA's aeronautics research went to objectives of undeniable government use – research that improves the air traffic control system, limits harmful emissions and aircraft noise, and prevents airplane accidents. NASA works with the U.S. Federal Aviation Administration to advance safety,[33] and improvements to the air traffic control system obviously help all users of the air transportation system, regardless of whose planes they fly. And, as

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[27] Space Act, section 102(d).

[28] NASA Technical Reports Server (Exhibit US-1193); http://ntrs.nasa.gov/search.jsp; http://www.sti.nasa.gov/cprice.pdf, NASA Center for AeroSpace Information (CASI) (Exhibit US-88).

[29] There are links to the NASA technical reports servers on the websites of, for example, Cranfield University in the United Kingdom, http://aerade.cranfield.ac.uk/aerodef_index.html and http://aerade.cranfield.ac.uk/aerodef_browsen.html (Exhibit US-89); the University of Wuerzburg (Germany) http://www.mineralogie.uni-wuerzburg.de/links/literature/abstracts.html (Exhibit US-90) and the University British Columbia (Canada) http://toby.library.ubc.ca/resources/infopage.cfm?id=869 (Exhibit US-91).

[30] *E.g., List of publications based on work performed in the Integrated Wing Design (IWD) Project* (Exhibit US-1140(revised)). This list covers only publications that resulted from one subpart of the Advanced Subsonic Technology Program, which in turn represented less than 7 percent of the NASA funding challenged by the EU. *NASA/DOD/DOC Aeronautics R&D Subsidies to Boeing LCA Division*, p. 2 (Exhibit EC-25).

[31] Reports and articles published by Boeing/McDonnell personnel pursuant to aeronautics research contracts (Exhibit US-1253).

[32] Statement by Patrick Gavin, Tim Sommer, Burkhard Domke, and Dominik Wacht, para. 72 (Exhibit EC-1175).

[33] *E.g. 9th Joint FAA/DoD/NASA Conference on Aging Aircraft – Registered Attendees as of March 7, 2006, 8am* (Exhibit US-1188). It is worth noting that representatives of Airbus and Boeing both participated in this conference.

Boeing does not itself provide air transportation services, research in these areas does not benefit Boeing.

26. The Panel appears to have neglected these aspects of NASA's research and mission and instead focused narrowly on two of NASA's other statutory objectives:

- the preservation of the role of the United States as a leader in aeronautical and space science and technology and in the application thereof to the conduct of peaceful activities within and outside the atmosphere; and

- the preservation of the United States preeminent position in aeronautics and space through research and technology development related to associated manufacturing processes.[34]

27. Over the course of the 1989-2006 period covered by the EU claims, NASA operated several different aeronautics research programs. The agency based its research goals on input from the broad range of academics, industry figures, and civil society on the NASA Advisory Council.[35] It then sought bids for projects to meet these goals, usually by issuing requests for proposals or "NASA Research Announcements" open to industry, universities, or other research entities.[36] Bidding was typically competitive, with the project awarded to the company that provided the best combination of cost and value.[37] NASA would then enter into a funding instrument with the winning bidders, which included a broad range of private companies and universities,[38] requiring them to conduct specified research activities and submit reports on their

[34] Panel Report, para. 7.982, *quoting* Space Act, section 102(d)(5) and (9).

[35] *Charter of the NASA Advisory Council*, PURPOSE AND DUTIES, para. 1 (Exhibit US-144); *NASA Advisory Council* (Exhibit US-66); *Council Members* (Exhibit US-67); *Membership of the NASA Advisory Council, 1997-2007* (Exhibit US-143). Although Boeing employees did sit on the council from time to time, representatives of other companies, other institutions, and civil society far outnumbered them.

[36] *E.g.*, Solicitation 1-116-9200.0316 (Aircraft and Spacecraft Guidance and Control Technology) (Exhibit US-431); NRA2-35931(LMV) (Research in Computational Aeroscience Applications Implemented on Advanced Parallel Computing Systems) (Exhibit US-432).

[37] US-402, p. 1/37, box 13; US-410, p. 1/46, box 13; US-412, p. 1/75, box 13; US-472 (BCI), p. 2/43, box 13; US-474 (BCI), p. 2/43, box 13; US-475(BCI), p. 1/1, box 13; US-477(BCI), p. 1/46, box 13; US-529(HSBI) , p. 1/43, box 13; US-533 (HSBI), p. 1/65, box 13; US-535 (HSBI), p. 1/67, box 13; US-538(HSBI), p. 1/43, box 13; US-541(HSBI), p. 1/42, box 13; US-544(HSBI), p. 1/40, box 13; US-548(HSBI), p. 1/43, box 13; US-553(HSBI), p. 1/56, box 13; US-558(HSBI), p. 1/53, box 13; US-567(HSBI), p. 1/34, box 13; US-569(HSBI), p. 1/38, box 13; US-572(HSBI), p. 1/58, box 13; US-577(HSBI), p. 2/309, box 13; US-579(HSBI), p. 1/80, box 13; US-582(HSBI), p. 1/47, box 13; US-585(HSBI), p. 2/65, box 13; and EC-347, p. 1/199, box 13. Only three NASA contracts indicate an award without competition: NAS1-97040 (Exhibit US-421, p. 1/28, box 13); NAS4-00041 (Exhibit US-440, p. 1/89, box 13); and NAS4-02103 (initially numbered as 4-01044) (Exhibit US-441, p. 1/56, box 22). The first page of each contract contains a box labeled "authority for other than full and open competition." If NASA does not provide for full and open competition for a contract, it must enter the statutory provision authorizing an exception to the competition requirement. The absence of such a citation indicates that the contract resulted from use of competitive procedures.

[38] *E.g.*, NASA Spending Under VSP and QAT Programs (Exhibit US-1255); US RPQ159, para. 148.

progress and results to NASA.[39] A contract might also allow the contractor to use NASA facilities or equipment in performing the activities specified in the statement of work.[40] *All of the contracts* required regular reports to NASA, with a view to making the results available to the public.[41] NASA scientists also conducted their own research, with the expectation that they would publish their results.

28. The EU challenged NASA expenditures under eight programs:

(1) High Speed Research Program ("HSR")

(2) Advanced Subsonic Technology Program ("AST")

(3) Aviation Safety Program/Aviation Safety & Security Program ("Aviation Safety")

(4) Quiet Aircraft Technology Program ("QAT")

(5) High Performance Computing and Communications Program ("HPCC")

(6) Research and Technology Base Program ("R&T Base")

(7) Advanced Composites Technology Program ("ACT")[42]

(8) Vehicle Systems Program ("VSP")

In its first written submission, the EU asserted that NASA's payments to Boeing under these programs were "in reality grants,"[43] but later modified its position to assert that they were unspecified "transfers of funds" covered by Article 1.1(a)(1)(i).[44] The United States advocated

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[39] *E.g.*, NASA Contract NAS1-99070, pp. 2-5 and 39-41 (Exhibit US-477); NASA Contract NAS1-00086, pp. 3 and 33-36.

[40] *E.g.*, NASA Contract NAS1-20546, p. 19 (Exhibit US-412); Contraction NAS1-20546, Modification 19, pp. 42-43/83 (Exhibit US-561(HSBI)); Contract NAS1-20546, Modification 22 (Exhibit US-1335); Modification 36, p. 76/83 (Exhibit US-561(HSBI)).

[41] *E.g.*, NASA Contract NAS1-20268, p. 12 (Although a limited number of topics covered under this contract are covered by a Limited Exclusive Rights Distribution clause, the contract provides that "NASA will require executive summaries conveying accomplishment of this contract which can be published with unrestricted availability."); *ibid.* p. 52 (providing that "{i}f the NASA Langley Research Center considers the report of such quality or interest that it warrants wide distribution, it will be recommended to NASA Headquarters for publication.") (Exhibit US-402, pp. 12 & 36/37).

[42] The EU for purposes of its claims defined the Advanced Composites Technology Program as covering the NASA program of that name, an earlier program called the Aircraft Energy Efficiency ("ACEE") Program, and certain projects within the AST Program. Although this is not how NASA defined the ACT Program, the United States did not object to the EU's categorization of ACT funding for purposes of the dispute.

[43] EU FWS, para. 457.

[44] EC FNCOS, para. 67.

treating the NASA-Boeing transactions as purchases of services, a category not covered by Article 1.1(a)(1) and, therefore, not a financial contribution for purposes of the SCM Agreement.[45] The Panel agreed with the U.S. legal arguments that purchases of services are not financial contributions. However, it mistakenly accepted the EU's position that NASA's transactions with Boeing were not purchases of services, but instead a "transfer of funds" under Article 1.1(a)(1)(i). It is this finding that the United States appeals.

3. The Panel applied its "principally for the benefit and use" test incorrectly to the facts by considering only what Boeing took from the research it conducted for NASA, and disregarding the benefit and use of that research to the government.

29. The Panel failed to conduct the comparative analysis necessary to reach a conclusion as to whether research under NASA contracts was "principally for the benefit and use" of Boeing because it fully considered only the Boeing side of the equation. The Panel's failure to consider the nature and extent of the benefit and use to the government or unrelated third parties is indicative of its failure to consider the evidence completely. The Panel's discussion of the purpose of NASA research programs – by far the longest section of its reasoning – does not mention how those programs sought to advance government objectives of creating and disseminating knowledge, improving air transportation safety, protecting the environment, and making air traffic management more efficient. The silence on these topics shows that the Panel did not conduct the comparison of the benefit and use of NASA research to the government and unrelated third parties, as opposed to Boeing, that would be necessary for a conclusion as to whether the benefit and use of the research was "principally" to one party or the other. Therefore, the Panel had no legal basis for concluding that Boeing enjoyed the principal benefit and use of research under NASA contracts. As that conclusion formed the basis for the Panel's finding that the NASA-Boeing transactions were not purchases of services for purposes of Article 1.1(a)(1) of the SCM Agreement, that finding is itself invalid.

30. The Panel's inquiry addressed five types of evidence in evaluating whether NASA contracts under the eight programs challenged by the EU were purchases of services: (1) NASA's statutory basis for performing research,[46] (2) the types of instruments NASA used,[47] (3) statements as to the purpose of the research programs,[48] (4) the division of intellectual property under NASA contracts,[49] and (5) whether the transactions "involve the typical elements of a purchase of services.[50] It frequently highlighted quotations that in the Panel's view suggested that the research conducted by Boeing for NASA was for the benefit and use of Boeing. It

[45] Panel Report, para. 7.950.

[46] Panel Report, para. 7.982-7.983.

[47] Panel Report, para. 7.984.

[48] Panel Report, paras. 7.985-7.1023.

[49] Panel Report, paras. 7.1024-7.1025.

[50] Panel Report, para. 7.1026.

generally did not take note of facts indicating that the government benefited from or used the research. Moreover, even when the Panel noted such facts, it did not point out that they indicated some benefit to the government.

31. This omission is particularly striking because a subsequent section of the report states that:

> the Panel accepts that NASA publicly disseminated the reports that summarized the results of the research conducted under the eight programmes at issue, and that this represents a situation in which Boeing has given up something of value in exchange for the funds and access to facilities, equipment, and employees that it receives.[51]

Section II.B describes some of the extensive evidence demonstrating the benefit and use that NASA and the broader U.S. government took from the research conducted by Boeing, and explains why the Panel's disregard for that evidence was inconsistent with Article 11 of the DSU. For purposes of this section, the key point is that without examining the benefit and use of NASA research to the government, the Panel cannot have conducted the comparative analysis necessary to conclude that the benefit and use were principally for Boeing. As this was the critical legal consideration in the Panel's analysis of whether NASA research payments were a financial contribution, this error is fatal to the Panel's finding in that regard.

32. The first step in the Panel's analysis, addressing NASA's statutory authority, reproduces the "objectives" of the agency's aeronautical and space activities as set out in the Space Act.[52] The Panel's focus (as indicated by its own added italicization) is highly selective. For example, the Panel pays little attention to the provisions regarding "{t}he expansion of human knowledge of the Earth and of phenomena in the atmosphere and space" or "{t}he establishment of long-range studies of . . . of aeronautical . . . activities for peaceful and scientific purposes," which are among the statutory objectives advanced by the research that NASA paid Boeing to perform. The Panel, while noting that the act requires NASA to "provide for the widest practicable and *appropriate* dissemination of information concerning its activities and the results thereof" does not consider the implications of these provisions in assessing the benefits of the research contracts to NASA.[53]

33. The second step in the Panel's analysis addresses the type of instruments used in the Boeing-NASA transactions. It notes that almost all of the transactions went forward under procurement contracts.[54] These contracts contain a scope of research defined by NASA and required the delivery of end products including briefings, reports, and intellectual property

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[51] Panel Report, para. 7.1100.

[52] Panel Report, para. 7.982.

[53] Panel Report, para. 7.983 (emphasis added by the Panel).

[54] Panel Report, para. 7.984.

rights.[55] These features of the contracts establish that Boeing's research had benefit or use for the agency, but the Panel nevertheless concluded that the use of procurement contracts as opposed to assistance instruments "does not shed very much light on the nature of the transaction."[56]

34. The Panel prefaced the third step in its analysis by stating that "{w}e turn now to the question of whether NASA has any demonstrable use for the R&D performed under the eight aeronautics programmes at issue."[57] Again, the United States agrees that such a step was required. However, instead of engaging in that analysis, the Panel devotes the following 38 paragraphs to reviewing the evidence regarding the benefit and use to Boeing *without any mention of the use of the research to the government.* The Panel quotes at length from statements made by NASA officials, appearing in NASA publications, or included in NASA contracts with Boeing and italicizes language that, in its view, suggests some advantage to U.S. industry. Nowhere does the Panel refer to – let alone analyze – the extensive evidence indicating that the government obtained some benefit or use from Boeing's research.[58] In and of itself, the fact that Boeing received some benefit in terms of experience and knowledge from participation in a contract, as almost all performing parties to a contract do, is not dispositive. What is critical, as the Panel itself recognized, is determining who principally benefited. Provided there was evidence to show that NASA and third parties benefited, the Panel was under an obligation to review the evidence and engage in comparative analysis. As section II.B shows, such evidence existed and was before the Panel. Thus, the absence of a discussion of the use and benefit to the government signals a conspicuous failure to conduct the comparative analysis that the Panel itself found to be necessary.

35. The fourth step in the analysis addresses the contractual provisions for allocation of intellectual property rights. Here, the Panel makes generic statements about the clauses appearing in some of the contracts and highlights a portion of a statement by a former NASA Administrator indicating that foreign dissemination occurs after domestic dissemination. The Panel notes that the government also received intellectual property rights under this contract, but never addresses whether those rights represent a benefit or are of use to the government.[59] Thus, the Panel never engaged in a comparative analysis of the benefit and use of the resulting data to the parties on either side of the transaction. In contrast, the panel in *Norway – Toll Collecting Equipment* faced a similar situation, and found that the sharing of intellectual property rights

[55] *E.g.*, NASA Contract NAS1-20341, p. 8 ("{t}he contractor shall make oral presentation(s) as specified in task assignments"); p. 13 (standard patent and data rights clauses apply); Exhibit A, p. 33 ("{e}ach task assignment may require the Contractor to submit a final report, either formal or informal, which documents and summarizes the results.") (Exhibit US-588(HSBI), pp. 8, 13, and 36/43).

[56] Panel Report, para. 7.984.

[57] Panel Report, para. 7.985.

[58] Panel Report, paras. 7.985-7.1023.

[59] Panel Report, paras. 7.1024-7.1025.

between the government and its contractor did not prevent the conclusion that a contract was for the research services:

> The Panel however did not wish to make a finding that such a disposition of the ownership of proprietary rights should be considered decisive, given that in the Trondheim procurement the procuring entity had reserved the right to use for its own purposes, free of charge, the knowledge developed under the contract. What was important for Article V:16(e) was whether the procuring entity was purchasing the results of research and/or original development, not whether it retained exclusive rights over such results.[60]

Thus, the Panel failed to compare the use and benefit to the government with the use and benefit to Boeing. It also failed to address a finding, from a Panel report it had identified as relevant to the analysis, that an allocation of intellectual property rights like that under the NASA-Boeing contracts indicated the existence of a purchase of research services.

36. The fifth step in the Panel's analysis addresses whether the NASA-Boeing transactions "involve the typical elements of a purchase of services."[61] The Panel erred by focusing on one such element – whether the contracts provided for a "fee." Under U.S. government procurement law, the "fee" is the item in a cost-reimbursement contract that, among other things, allows the supplier to recognize a profit after it has paid for all of the inputs used to fulfill the contract. The Panel correctly observes that some of the R&D procurement contracts between NASA and Boeing provided no fee,[62] but makes only a passing reference to the majority of contracts that contained fee clauses. Moreover, while the Panel notes statements that NASA used no-fee contracts when it believed that Boeing would benefit from the research, it neglects to consider whether this combination, which suggests an exchange in which Boeing forewent a fee in exchange for the adoption of some research goals that benefited the company, was characteristic of a commercial exchange. The Panel never addressed *other* typical elements of a purchase, such as the existence of a value-for-value exchange.

37. Thus, the Panel did not, in any part of its analysis of whether NASA R&D payments were a financial contribution, address the evidence of the utility of the research conducted by Boeing for the government and unrelated third parties. However, such an analysis was essential under the Panel's own test because it is impossible to evaluate whether something is principally for the benefit and use of one of two parties without evaluating the benefit to both. Thus, the issue here is not a question of the Panel's discretion in how to weigh the United States' arguments or that the Panel failed to consider some of the United States' points, but rather that the Panel did not consider at all evidence essential to resolution of the claim. Accordingly, the Panel's one-sided analysis is an egregious error because it demonstrates a failure to take the legal steps necessary to

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[60] *Norway – Toll Collection Equipment*, para. 4.13.

[61] Panel Report, para. 7.1026.

[62] Panel Report, para. 7.1026.

address the issue before it: whether NASA expenditures under the eight programs challenged by the EU were purchases of services. Therefore, its conclusions under Article 1.1(a)(1) of the SCM Agreement are unsustainable. The United States respectfully requests that the Appellate Body reverse the finding that NASA payments to Boeing for research services were a transfer of funds under Article 1.1(a)(1)(i).

4. The Panel's finding that access to facilities, equipment, and employees under NASA research contracts was a financial contribution fails along with its finding regarding the contracts themselves.

38. The Panel provides no explanation for its finding that "access to NASA facilities, equipment and employees provided to Boeing through the R&D contracts and agreements at issue constituted a provision of goods and services within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement."[63] Indeed, up to that point, all of the discussion addressed payments under the programs, and not the access to facilities, equipment, and employees. As a result, the Panel's legal finding would appear to lack the findings of fact and basic rationale required under Article 12.7 of the DSU, and should be reversed on that basis alone. If the Panel intended the immediately preceding conclusion that the procurement contracts themselves were a financial contribution to serve as the justification for the finding on facilities, equipment, and employees, then a reversal of the finding on the contracts would necessitate reversal of the derivative finding on facilities, equipment, and employees as well.

39. In fact, recognizing the contracts were purchases of services establishes that any access NASA provided to its facilities, equipment, and employees were incidental to that purchase, and not a separate provision of goods and services to Boeing. When NASA has resources relevant to completion of services for its benefit, it can save money by allowing contractors to use them. In other words, the access to these agency resources is itself principally for the benefit and use of the government because the contractor uses them to perform its work for government.[64] There are several reasons why the government may allow contractors use of its resources on these terms. In some cases, the item is not otherwise available, while in others, the provision is a matter of government convenience. For example, under a modification to Contract NAS1-20342, NASA agreed to let contractor employees use NASA office space during performance of the contract, including the use of office furniture, first aid treatment while on NASA property,

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[63] Panel Report, para. 7.1027. Although the United States agreed that facilities, equipment, and employees provided under Space Act Agreements, a type of instrument used only by NASA, constituted provisions of services for purposes of Article 1.1(a)(1)(iii) of the SCM Agreement, that is not the case for access to services under procurement contracts.

[64] One such example was stitching machinery supplied to Boeing under NASA contract NAS1-20546, section G.4 (Exhibit EC-324), which was supplied to study the questions posed under that contract, and was not suitable for commercial production. US FWS, para. 231, note 333. Boeing is not using the "stitching" technology studied in the ACAS program on the 787. In fact, when the U.S. Government abandoned the machines in place after the contract (because moving them would cost more than they were worth) Boeing sold them for scrap. Statement of Michael Bair, para. 55 (Exhibit US-7).

use of the NASA cafeteria, and assistance in moving large equipment.[65] Since U.S. government contracts provide for reimbursement of costs, if NASA did not allow access to relevant facilities, the contractor would have to pay for equivalent goods or services in the marketplace. The contractor would then bill the government, increasing the monetary cost of obtaining the service. In this context, the expense of facilities, equipment, and employees is simply part of what the agency pays to acquire the service.

40. Therefore, the Panel erred in finding a financial contribution within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement. For this reason as well, the United States respectfully requests the Appellate Body to reverse this finding.

B. The Panel failed to conduct the "objective assessment" called for under Article 11 of the DSU by disregarding evidence that the research conducted by Boeing was principally for the benefit and use of the government or unrelated third parties.

41. The Appellate Body has found that a panel must consider the evidence in its totality, and fails to conduct the "objective assessment of the facts of the case" called for under Article 11 of the DSU when it disregards evidence.[66] The Panel committed exactly such a failure here. The Panel found – correctly – that the relevant question was whether NASA had any demonstrable use for the R&D performed under the eight aeronautics programs at issue. But in answering that question, the Panel quoted extensively from documents that addressed *Boeing*'s alleged use without citing or considering any of the extensive evidence submitted by the United States showing the usefulness of that research to the government and third parties unrelated to Boeing. The Panel's complete disregard of the evidence addressing one side of the issue before it was inconsistent with Article 11 of the DSU.

42. The Appellate Body has recognized that under Article 11:

> The duty to make an objective assessment of the facts is, among other things, an obligation to consider the evidence presented to a panel and to make factual findings on the basis of that evidence. The deliberate disregard of, or refusal to consider, the evidence submitted to a panel is incompatible with a panel's duty to make an objective assessment of the facts.[67]

The Appellate Body has repeatedly reaffirmed this principle.[68] It has emphasized, however, that the threshold for an Article 11 violation is high:

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[65] Exhibit US-560, p. 41-42/235.

[66] *EC – Hormones (AB)*, para. 133.

[67] *EC – Hormones (AB)*, para. 133.

[68] *US – Wheat Gluten (AB)*, para. 174; *US – Continued Zeroing (AB)*, para. 331; *Australia – Apples (AB)*, para. 269.

> as the "trier of facts", a panel enjoys a margin of discretion in the assessment of the facts, including the treatment of evidence. In *EC – Hormones*, the Appellate Body found that "it is generally within the discretion of the {p}anel to decide which evidence it chooses to utilize in making findings", and that a "{p}anel cannot realistically refer to all statements made by the experts advising it and should be allowed a substantial margin of discretion as to which statements are useful to refer to explicitly".[69]

Although the Appellate Body in this quotation specifically addressed statements by experts, the same considerations would apply to any evidence before a panel.

43. In the analysis of whether NASA's research contracts with Boeing were for the benefit and use of the U.S. government or unrelated third parties, the Panel reproduced at length the evidence that could be viewed as suggesting that NASA research was for the benefit and use of Boeing, while ignoring all but a few pieces of evidence demonstrating the benefit and use to the U.S. government and unrelated third parties. Even that limited evidence that was referenced received perfunctory treatment. This is especially true of the Panel's one-sided discussion of the purpose of the NASA research programs, which contains only materials supporting the EU's assertions. The discussion cites none of the extensive evidence showing that the results of NASA research helped the U.S. government's efforts to make air transport safer, air traffic control more efficient, and pollution less severe. It equally ignored the evidence showing that NASA used the research to advance the government goal of advancing mankind's knowledge by creating a base of foundational knowledge, which scientists around the world, including Airbus employees, can use. Thus, the United States is not criticizing the Panel's choice of one among several pieces of evidence to illustrate its point, or arguing that the Panel failed to address a particular piece of evidence. The U.S. appeal under Article 11 is grounded in the Panel's systematic failure to consider evidence necessary to conduct a reasoned analysis of the legal question before it.

44. In *Australia –Apples*, the Appellate Body concluded that it should address a claim that a panel disregarded evidence, in that case in the form of statements from a series of experts, in the following way:

> [W]e review the individual statements Australia alleges that the Panel disregarded. We then consider the context in which each such statement was made, as well as the importance that Australia attached to these statements in the proceedings before the Panel. We next consider whether the Panel in fact failed to reproduce and discuss a certain statement in the Report, whether that statement was clearly pertinent and significant to the Panel's reasoning, and, if so, whether the reasoning reveals that the Panel nonetheless took that statement into consideration. Finally, after reviewing the Panel's treatment of the individual statements, we consider whether in its overall treatment of expert testimony the

[69] *Australia – Apples (AB)*, para. 271.

> Panel failed to make an objective assessment of the facts under Article 11 of the DSU.[70]

Application of this analysis to the current situation shows that in the overall treatment of the evidence regarding the benefit and use of Boeing's research for NASA, the Panel failed to make an objective assessment of the facts as required under Article 11.

1. The Panel failed to consider evidence regarding both NASA's objectives and the benefit and use to the government of research under the programs.

45. The Panel began with NASA's authorizing statute, the Space Act. The Panel emphasized the legislation's stated objectives of "preservation of the role of the United States as a leader in aeronautical and space science and technology" and the "preservation of the United States preeminent position in aeronautics and space through research and technology development related to associated manufacturing."[71] However, it left unremarked other objectives such as "the expansion of human knowledge of the Earth and of phenomena in the atmosphere and space." The Panel also quoted the statutory instruction to "provide for the widest practicable and *appropriate* dissemination of information concerning its activities and the results thereof."[72] The United States notes that NASA contractors do at times use proprietary equipment or information developed with their private funds in the course of NASA-sponsored research. It would certainly not be "appropriate" for NASA to disseminate such information to the broader market and, in fact, it does not do so. Its reasons are much for the same reasons as WTO panels choose to protect business confidential information – just as private entities would not be willing to allow a Member to share confidential business information with a panel absent some confidence that it would be kept confidential, so too no private company would participate in NASA's projects if the agency did not keep the company's proprietary information confidential. These objectives of expanding and disseminating knowledge are critical to understanding the use and benefit the U.S. government and the broader community take from research conducted by agency employees and contractors.

46. Another objective to which the Panel gave inadequate consideration is "{t}he improvement of the usefulness, performance, speed, safety, and efficiency of aeronautical and space vehicles." This is another area in which NASA's work, including research undertaken by Boeing, is for the use and benefit of the government – by helping it make air travel safer and air traffic management more efficient, and discover ways to reduce the environmental impact of air travel.

47. The Panel did not refer to any of these objectives when it inquired "whether NASA has any demonstrable use for the R&D performed under the eight aeronautics programs at issue."[73]

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[70] *Australia – Apples*, para. 278.

[71] Panel Report, para. 7.982.

[72] Panel Report, para. 7.983.

[73] Panel Report, para. 7.895.

However, NASA's statements over the course of the period covered by the EU claims demonstrate that building knowledge, disseminating information, improving aircraft safety and the air traffic management system, and protecting the environment were ways in which the U.S. government sought to use and benefit from NASA research, and in fact did.

48. NASA Administrator Dan Goldin, in 2001 testimony to Congress, explained NASA's goals as follows:

> Let's take a quick look at our vision. NASA and the FAA have a long-standing partnership to develop and transition advanced air traffic management technologies. As part of this partnership, NASA is developing 16 cutting-edge sensor and decision support technologies to increase capacity and overcome weather-related delays by 50 percent in the next seven to eight years.
>
> . . . Today, about 80 percent of passenger traffic is handled by a little more than one percent of the nation's airports. Plus, aerospace {sic} is underutilized. We must increase the capacity of our nation's airports, fully link all our airports into a more distributed system and decrease the impact of bad weather. As a first step, NASA will pioneer high fidelity modeling and simulation of the airspace system. It will provide in-depth understanding of how to implement new technologies and will support trace studies for new airspace system architectures and be a tool for this committee to help make decisions on future funding.
>
> NASA will ultimately provide the basis for an R&D in transition strategy. NASA will maintain its commitment to our investment for the public good in the near term. Our programs in aviation safety, quiet aircraft technology and ultra-efficient engine technology will provide key technology advancements.[74]

Accordingly, NASA's research on these issues are clearly not for the principal benefit and use of Boeing; rather, the research is for the U.S. government's efforts to develop technologies that advance its goals including air traffic management, improving safety, and environmental protection. NASA did not see these advances as specific to Boeing. In his testimony, Administrator Goldin described as a "payoff of NASA technology" that "sensors were developed using NASA's Boeing 737 flying technology, the sensors successfully demonstrated the ability to detect wind shears and give the crew adequate warning. . . . There are now 4,000 aircraft worldwide using this technology."[75] He described how "{i}f every aircraft operating into O'Hare Airport was equipped with the technology we have already developed, the boundary of the objectionable noise would be reduced . . . and 400,000 fewer people would be subjected to this noise level."[76] As these statements make clear, the intended beneficiaries of the research in

[74] 2001 Senate Aeronautics Hearing, p. 8 (Apr. 24, 2001) (Exhibit EC-292).

[75] 2001 Senate Aeronautics Hearing, p. 9 (Apr. 24, 2001) (Exhibit EC-292).

[76] 2001 Senate Aeronautics Hearing, p. 9 (Apr. 24, 2001) (Exhibit EC-292).

question were third-party scientists, the flying public and people living near airports. Moreover, in both cases, NASA could meet its stated objectives only if airlines installed the technology on all their aircraft, whether produced by Boeing or Airbus.

49. These goals reflect NASA's long-term priorities. In 1998, Administrator Goldin testified that:

> To *understand better the potential environment effects* {of high speed flight}, we are working in close coordination with NASA's Office of Mission to Planet Earth, the international scientific community, the FAA, the Environmental Protection Agency, the United Nations Environment Program, and the International Civil Aviation Organization. These studies will eventually *lead to environmental certification requirements for future high speed transports*.[77]

50. NASA Associate Administrator Wesley Harris testified in 1994 to the benefits of the HSR Program to the government:

> We have greatly improved our confidence that an environmentally friendly HSCT can be built by industry. Most importantly, our atmospheric modeling work continues to predict very small effects – almost no impact on stratospheric ozone – for HSCTs with low-emissions combustors. . . . {O}ur robust research effort to minimize emissions is quite promising. . . . Another environmental issue is noise. . . . To date we have achieved up to 18 decibel noise suppression through advanced mixer-ejector nozzles alone. . . . In FY 1995, using the atmospheric assessment status that exists at the end of Phase I, we will work with our FAA colleagues to establish a framework for an international HSCT emissions standard.[78]

With regard to the AST Program, Associate Administrator Harris noted that:

> Our terminal area productivity element, which is closely coordinated with FAA, should safely increase single runway operations by 10% and multi-runway operations by 15%. Some of our aging aircraft work is coming to fruition, and we expect to see commercially available non-destructive evaluation systems by 1997; we are continuing our work in airframe residual strength prediction with FAA to better understand the limits of today's aging subsonic fleet.[79]

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[77] Prepared Statement of Daniel S. Goldin (Exhibit EC-1365) (emphasis added).

[78] Statement of Wesley L. Harris before the House Subcommittee on Technology, Environment and Aviation, pp. 4-5 (Feb. 10, 1994) (Exhibit EC-359).

[79] Statement of Wesley L. Harris before the House Subcommittee on Technology, Environment and Aviation, p. 6 (Feb. 10, 1994) (Exhibit EC-359).

The Associate Administrator testified that the HPCC Program "is focused on accelerating high performance computing technologies *to meet our national engineering and science needs,* and accelerating the implementation of the National Information Infrastructure."[80] On the R&T Base Program, he stated:

> Our critical technologies work, with significant university involvement, emphasizes fundamental understanding of physical phenomena, development of computational methods to analyze and predict those phenomena, and appropriate experimental validation. Many of these efforts lead to design and analysis tools with application in the focused research areas.[81]

As these quotations show, NASA intended its research programs to develop data that the U.S. government and third parties could use to further NASA missions regarding the advancement of general knowledge, improve safety, and lessen the negative effect of aviation on pollution and noise levels. The programs also yielded tangible results – air travel has become safer, and aircraft quieter.

51. Associate Administrator Victor Lebacqz testified in 2005 that:

> *Protecting air travelers and the public* is the focus of the Aviation Safety and Security Program (AvSSP) which develops technologies for both the National Aviation System and aircraft that are aimed at preventing both *intentional and unintentional events that could cause damage, harm, and loss of life*; and minimizing the consequences when these types of events occur.[82]

52. Other statements from NASA publications demonstrate the same relationship between research done under the programs and the advancement of NASA's objectives. The HSR Program budget estimates – the document generated each year to explain NASA's funding requests – reported for 1991-93 that "{t}he high speed research program is *addressing . . . barrier environmental issues* {such as concerns about atmospheric impact, airport noise, and sonic boom} and *developing the basis for evaluating technology advances that can provide the necessary environmental compatibility*."[83] The 1998 HSR Program Plan, which laid out the goals of that program's Phase II, explained that:

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[80] Statement of Wesley L. Harris, NASA Associate Administrator for Aeronautics, House Subcommittee on Technology, Environment, and Aviation. February 10, 1994, p. 7 (Exhibit EC-359) (emphasis added); *see also* NASA HPCC Budget Estimates, FY 1997, p. SAT 4-16.

[81] Statement of Wesley L. Harris before the House Subcommittee on Technology, Environment and Aviation, p. 8 (Feb. 10, 1994) (Exhibit EC-359).

[82] Statement of Dr. J. Victor Lebacqz, NASA Associate Administrator for Aeronautics Research, House Subcommittee on Space and Aeronautics, March 16, 2005, p. 5 (Exhibit EC-289) (emphases added).

[83] NASA HSR Budget Estimates, FY 1991, p. RD 12-35; FY 1992, p. RD 12-22; and FY 1993, p. RD 12-23, (Exhibit EC-343) (emphasis added).

> The possibility that HSCT engine emissions might cause depletion of stratospheric ozone has been specifically addressed in Phase I {of HSR} through development of improved atmospheric models and their application in assessing the effects of a large fleet of aircraft under realistic operating scenarios. These activities involved direct participation of internationally renowned scientists and regulatory officials to provide as strong a technical basis as possible for establishing suitable standards.[84]

These statements show that NASA recognized that supersonic civil aircraft could increase pollution, and that one objective of the HSR Program was to develop tools to evaluate potential harm and develop standards to minimize it.[85]

53. The 1992 Budget Estimates for the AST Program list one objective as:

> to accelerate the development of nondestructive technology to ensure the safe operation of aging transport aircraft in the National Airspace System and to provide the technology base for confident application and certification of Fly-by-light/Power-by-wire control systems to civil transport aircraft.[86]

Safe operation of aging aircraft is obviously a concern of users regardless of whether they use Boeing or Airbus aircraft. It is important to note that, at this stage, Airbus used a fly-by-wire system and Boeing did not. Thus, research to aid in certification of these systems would have proven of more immediate benefit to Airbus.

54. The HPCC Fact Sheet reported that the program would:

> Further gains in U.S. productivity and industrial competitiveness – especially in the aeronautics industry; Extend U.S. technology *leadership in high performance computing and communications*; Provide *wide dissemination and application of HPCC technologies; and Facilitate the use and technologies of National Information Infrastructure (NII) – especially within the American K-12 educational systems*."[87]

Thus, this program sought generally to expand U.S. capabilities in high-performance computing – an industry in which Boeing is not a producer or services supplier – and improve U.S. educational infrastructure. Again, it is difficult to see this work as principally for the benefit and use of Boeing.

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[84] NASA High Speed Research Program Plan, April 1998, p. 4 ("NASA HSR Program Plan") (Exhibit EC-1208) (emphasis added).

[85] The technology developed under the HSR Program did not come into use because Boeing abandoned its efforts to launch a supersonic transport.

[86] NASA AST Budget Estimates, FY 1992, p. RD 12-25 (Exhibit EC-357) (emphasis added).

[87] HPCC Fact Sheet (exhibit EC-372) (emphasis added).

55. The Program Plan for the Aviation Safety Program began by noting that NASA had undertaken an immense outreach to identify research to advance its safety objectives:

> To aggressively address {air safety} issues, President Clinton announced in February 1997 a *national goal to reduce the fatal accident rate for aviation* by 80 percent within 10 years. . . . NASA immediately responded with a major *program planning effort to define the appropriate research to be conducted by the Agency*. . . . The planning effort lasted from February 1997 to April 1997, and *involved over 100 industry, government, and academic organizations*.[88]

This effort produced the following mission objectives:

> The AvSP will provide research and technology products needed to help the Federal Aviation Administration (FAA) and the aerospace industry achieve the President's challenge to improve aviation safety in the coming decade and then move even further to a far-reaching challenge . . . to reduce the aircraft accident rate by a factor of 5 in 10 years and by a factor of 10 within 25 years.
>
> The NASA approach to contributing to the national goal is to develop and demonstrate technologies and strategies to improve aviation safety by reducing both aircraft accident and fatality rates. . . . Program planning will give high priority to strategies that address factors determined to be the largest contributors to accident and fatality rates as well as those that address multiple classes of factors.[89]

Safety from accidents was not the only objective. The 2004 Aviation Safety Budget Estimates explained that "AvSSP will also be developing concepts and technologies which *reduces the vulnerability of aircraft and the {National Aviation System} to criminal and terrorist attacks* while dramatically improving the efficiency of security."[90] All of these goals aim at system-wide improvements for *air travel generally*. Since Boeing builds, rather than operates, aircraft, the results of any research will benefit unrelated entities, rather than Boeing large civil aircraft production specifically.

56. The QAT Program Budget Estimates for 2001 and 2002 reported that:

> The goal of the Quiet Aircraft Technology program is to . . . 'Reduce the perceived noise levels of future aircraft by a factor of two from today's subsonic aircraft within ten years, and by a factor of four within 25 years.' Achievement of

[88] NASA Aviation Safety Program Plan, p. 1 (Aug. 1, 1999) ("NASA Aviation Safety Program Plan") (Exhibit EC-1209) (emphases added).

[89] NASA Aviation Safety Program Plan, 1 August 1999, p. 2 ("NASA Aviation Safety Program Plan") (Exhibit EC-1209) (emphases added).

[90] Aviation Safety Budget Estimates for 2004, p. SAT 15-11 (emphasis added) (Exhibit EC-382, p. 40/61).

> the 25-year goal will fulfill *NASA's vision of a noise constraint-free air transport system with objectionable noise contained within airport boundaries*. Part of this vision is a transportation system with no need for curfews, noise budgets, or noise abatement procedures. Benefits to the public of achieving these goals include increased quality of life, readily available and affordable air travel, and continued U.S. global leadership. . . . NASA is unique in its expertise, facilities, and *inherent government role to lead the technology development necessary to meet national community noise impact reduction requirements*.[91]

The 2003 Aviation Safety Budget Estimates added that:

> The goal of the Quiet Aircraft Technology program is to develop technology that, when implemented, reduce the impact of aircraft noise to benefit airport neighbors, the aviation industry, and travellers. QAT will directly improve the quality of life of our citizens by reducing their exposure to aircraft noise, thereby eliminating constraints on the air transportation system.[92]

Again, NASA frames its goals and the use of its research in terms of achieving its own government objectives to reduce aircraft noise and constraints on the air transport system. This objective would by necessity extend beyond Boeing, and include Airbus and the U.S. passengers and airlines that fly Airbus planes.

57. The 2004 Budget Estimates for the Vehicle Systems Program state:

> The Vehicle Systems (VS) Program is focused on the development of breakthrough technologies for future aircraft and air vehicles. These technologies, if implemented, will reduce NOx emissions to reduce pollution near airports and in the lower atmospheric zone, reduce emissions of the greenhouse gas Co2 and reduce aircraft noise to simultaneously enable air traffic growth and reduce community noise impact.[93]

Additionally, NASA's objectives frequently evolve over time. The 2006 VSP Budget Estimates state that "{t}he Vehicle Systems program is transforming itself to better focus on demonstrations of breakthrough of aeronautics technologies for *protecting the Earth's environment and enabling science missions*."[94]

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[91] NASA QAT Budget Estimates, FY 2001 and FY 2002, p. SAT 4.1-74 (Exhibit EC-384) (emphases added).

[92] NASA Vehicle Systems Budget Estimates, FY 2003, p. SAT 4-24 (Exhibit EC-396, p. 5/43) (emphasis added).

[93] NASA Vehicle Systems Budget Estimates, FY 2004, p. SAE 15-19 (Exhibit EC-396, p. 22/43) (emphasis added).

[94] NASA Vehicle Systems Budget Estimates FY 2006, p. SAE 11-14 (Exhibit EC-396, p. 34/43).

58. The R&T Base Program was NASA's longest running program for foundational aeronautics research. The 1999 Budget Estimates provide a good overview of the objectives of this program:

> Work within the R&T Base lays the foundation for future focused programs to address the long term goals of the {NASA} enterprise's three pillars. This work constitutes a national resource of expertise and facilities that responds quickly to critical issues in safety, security, and the environment.[95]

The R&D Base Program, during the years it was in effect, funded a number of small-scale efforts. Examples from these efforts illustrate the variety of benefits to NASA and the government generally:

> Specific goals of this research include . . . innovative {non-destructive evaluation} technologies to accurately and economically detect fatigue/corrosion damage in aging aircraft.[96]

> {I}n a series of flight evaluations conducted cooperatively with the FAA, the Department of Defense and industry, performance characteristics of both the military precision-code and the civil-code differential global positioning system (DGPS) were investigated.[97]

> Validated aerodynamics technology is developed through theoretical, computational and experimental efforts which are applicable to civil and military aircraft across all speed ranges.[98]

> Aerodynamics research and technology addresses a broad spectrum of fluid flow problems from fundamental fluid physics to applied aerodynamics. These investigations include analytical and experimental efforts across the speed range for application to all classes of civil and military aircraft.[99]

> {I}n the early 1970's, NASA was able to respond to the national fuel crises by rapidly implementing the Aircraft Energy Efficiency program which accelerated the development of technologies resident in the Base.[100]

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[95] NASA R&T Base Budget Estimates, FY 1999, p. SAT 4.1-2 (Exhibit EC-398, p. 110/270).

[96] NASA R&T Base Budget Estimates, FY 1991, p. RD12-15 (Exhibit EC-398, p. 13/270).

[97] NASA R&T Base Budget Estimates, FY 1992, p. RD 12-5 (Exhibit EC-398, p. 27/270).

[98] NASA R&T Base Budget Estimates, FY 1993, p. RD 12-4 (Exhibit EC-398, p. 34/270).

[99] NASA R&T Base Budget Estimates, FY 1994, p. RD 9-5 (Exhibit EC-398, p. 43/270).

[100] NASA R&T Base Budget Estimates, FY 1996, p. SAT4-3 (Exhibit EC-398, p. 67/270).

> The program also provides the capability for NASA to quickly and effectively respond to critical problems identified by other agencies, industry or the public. Examples of these challenges are found in: aging aircraft, aircraft accident investigations, lightning effects on avionics, flight safety and security, wind shear, crew fatigue, structural failure, and aircraft stall/spin.[101]
>
> Under the safety goal, technology was developed to assess critical digital control computers for susceptibility to electromagnetic environments. Technology for an electromagnetic-effects-immune computing platform was demonstrated. Crew Response Evaluation Window technology that permits an evaluator to select and simultaneously view several, previously scattered sources of physiological and behavioral response information in a single, integrated display window was implemented. This eliminated the time required for post-processing of physiological and behavioral response data. To ensure the continued airworthiness of airframes, dependable nondestructive evaluation of aircraft structural bonds was completed. These accomplishments will contribute towards decreasing the aircraft accident rate.[102]
>
> {T}o reduce weather related accidents, systems for communicating and displaying real time weather information to airborne and ground base users will be pursued in collaboration with industry and DoD, FAA and NOAA/NWS. Initial test flights will be conducted.[103]

Thus, the R&T Base Program sought the building of generalized aeronautics knowledge, and had objectives far broader than the Panel depicted in its discussion.

2. The Panel failed to consider objective evidence of the usefulness of the programs to the government and to unrelated third parties.

59. The evidence is not limited to official expressions of the agency's objectives and use by the government. There was also objective evidence of the usefulness of NASA research to the broader scientific community in the United States and across the world. NASA scientists presented their aeronautics research at conferences – many of them attended by Airbus employees – open to the worldwide aerospace community.[104] NASA scientists also publish in scholarly journals. To demonstrate the broad usefulness of this work, even in areas that the EU criticized as solely for the benefit of Boeing, NASA identified all articles its employees

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[101] NASA R&T Base Budget Estimates, FY 1998, p. SAT4.1-3 (Exhibit EC-398, p. 95/270).

[102] NASA R&T Base Budget Estimates, FY 1999, p. SAT 4-14 (Exhibit EC-398, p. 122/270).

[103] NASA R&T Base Budget Estimates, FY 2000, p. SAT 4.1-17 (Exhibit EC-398, p. 145/270).

[104] Examples of such conferences, with wide attendance, are 20th AIAA Applied Aerodynamics Conference (2002), the 8th AIAA/CEAS Aeroacoustics Conference (2002), and the 45th AIAA Structural Dynamics & Materials Conference (2004). The United States submitted the papers delivered as Exhibits US-1187, US-1188, US-1189, and US-1190.

published based on research conducted under the Integrated Wing Design ("IWD") Project, which was part of the AST Program. There were 67 of these.[105] Even though NASA's IWD contracts with Boeing had limited exclusive rights data ("LERD") clauses,[106] that did not stop publication of articles based on the research conducted and otherwise obtained by NASA, which began soon after the project started and continued throughout its course. [107] A literature search reported that scientists cited these articles 369 times in subsequent published work, with 40 of those citations in European publications.[108] This volume of scientific knowledge reflects a small fraction of NASA's aeronautics research during this period.[109] NASA's total generation of aeronautics information, and worldwide use of that knowledge, would be proportionately larger. These facts demonstrate in a concrete way how NASA achieves the Space Act's objective of "the expansion of human knowledge of the Earth and of phenomena in the atmosphere and space" through research on projects where Boeing is a contractor.

60. In addition to publications by government scientists, NASA requires contractors to submit periodic reports on the progress of their work, which are publicly available. Contractor employees also publish articles based on their work. NASA records show that research under the main contracts at issue in this dispute led to 291 publications, which were cited 1036 times by other scientists in their own articles. Of these citations, 250 were in European publications.[110] Interestingly, the largest generator of published articles and subsequent citations was a contract

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[105] *List of publications based on work performed in the Integrated Wing Design ("IWD") project* (Exhibit US-1140 (revised)).

[106] NASA Contract NAS1-20267, p. 11 (Exhibit US-553(HSBI), p. 11/56); NASA Contract NAS1-20268, p. 11 (Exhibit US-402, p. 9/37).

[107] NASA signed the Integrated Wing Design contracts with Boeing and McDonnell Douglas on September 12, 1994, and the first article based on work performed under the IWD Project ("Efficient Contrained Design Using Navier-Stokes Codes") appeared in June 1995. NASA Contract NAS1-20267, p. 1 (Exhibit US-553(HSBI), p. 1/56); NASA Contract NAS1-20268, p. 1 (Exhibit US-402, p. 1/37); *List of publications based on work performed in the Integrated Wing Design ("IWD") project* (Exhibit US-1140 (revised)).

[108] *List of publications based on work performed in the Integrated Wing Design ("IWD") project* (Exhibit US-1140 (revised)). The EU asserted in response to a question from the Panel that the papers listed in this exhibit were not useful. It provided no evidence of its assertions, but stated that "{w}e will elaborate further upon these issues in a detailed report to be submitted with the European Communities' Second Oral Statement." EC RPQ 87, para. 450. The EU never submitted that report, or provided any basis for concluding that papers so widely cited by other scientists were not useful to those services.

[109] NASA did not publish figures separating expenditures on the IWD Project as opposed to other elements of the AST Program. The two IWD contracts represented about 50 percent of NASA's research contracting with Boeing under the AST Program. NASA spent a total of $809.9 million on the AST Program, which was less than 10 percent of the approximately $12 billion NASA spent on all aeronautics research spending from 1989 to 2003. NASA Advanced Subsonic Technology ("AST") Budget Estimates FY 1992-FY 2001 (Exhibit EC-357, pp.3, 6, 11, 23, 34, 47, 61, 75, 86/89); Exhibit EC-25, p. 7 (accurately reflecting total NASA aeronautics R&D funding).

[110] *Reports and articles published by Boeing/McDonnell personnel pursuant to aeronautics research contracts* (Exhibit US-1253(revised)).

under the ACT Program.[111] This evidence demonstrates how private entities' work under NASA research contracts advances the Space Act's objective of "the expansion of human knowledge of the Earth and of phenomena in the atmosphere and space."

3. Conclusion

61. The United States presents these facts and quotations to provide a sample of the evidence before the Panel demonstrating that research under NASA's programs, including research conducted by Boeing under the NASA-Boeing contracts, was for the benefit and use of the U.S. government and unrelated third parties. As the concrete evidence of citations in scholarly work and attendance at public conferences establishes, this class of unrelated third party users of NASA research was large and international – an essential aspect of the agency's work completely absent from the Panel Report. By omitting essentially all of this evidence, and discussing only evidence supporting the EU's theory that the NASA aeronautics R&D programs existed to serve Boeing, the Panel failed under Article 11 to conduct an objective assessment of the facts. The Appellate Body should accordingly reverse the Panel's conclusion that NASA's research contracts with Boeing were a direct transfer of funds covered by Article 1.1(a)(1)(i) of the SCM Agreement.

62. The Panel's discussion of whether the NASA-Boeing contracts were purchases of services was the only basis the Panel advanced for finding that NASA facilities, equipment, and employees made available under the contracts were provisions of goods and services covered by Article 1.1(a)(1)(iii).[112] Therefore, the Appellate Body should also reverse that finding.

63. The United States does not request the Appellate Body to complete the Panel's analysis with regard to either finding. In the view of the United States, the number and complexity of the facts at issue, and the absence of factual findings by the Panel or undisputed facts, prevent completion of the Panel's analysis in this situation.

[111] Contract NAS1-18889 led to 85 contractor publications, which generated 289 citations, including 61 in European publications. *Reports and articles published by Boeing/McDonnell personnel pursuant to aeronautics research contracts* (Exhibit US-1253(revised)). The ACT Program was the primary source for funding for this contract. *Maximum value of Boeing contracts related to EC-challenged R&D* (Exhibit US-1253 (revised)).

[112] Panel Report, para. 7.1027.

C. The Panel erred in finding that the NASA aeronautics R&D programs conferred a benefit on Boeing under Article 1.1(b), and in valuing any benefit.

1. The errors in the Panel's finding that the research under the NASA aeronautics R&D programs was "principally for the benefit and use of Boeing" also invalidate the Panel's finding that payments and access to facilities, equipment, and employees under those programs conferred a benefit.

64. The Panel's finding that research under the NASA R&D contracts was "principally for the benefit and use of Boeing" was the sole justification for the finding that the NASA aeronautics R&D programs – both the payments and the access to agency facilities, equipment, and employees – conferred a benefit. Therefore, if that finding is erroneous, the finding of a benefit is equally erroneous.

65. The Panel reached its conclusion under Article 1.1(b) in three steps:

(1) "{T}he core 'term' upon which the financial contributions are provided" is "that Boeing use the payments and access to facilities, equipment and employees that it receives from NASA for the purpose of conducting aeronautics R&D work that is principally for Boeing's own benefit and use."[113]

(2) "{T}he relevant market benchmark would be the terms of a commercial transaction in which one entity pays another entity to conduct R&D."[114]

(3) "The Panel believes that no commercial entity, i.e. no private entity acting pursuant to commercial considerations, would provide payments (and access to its facilities and personnel) to another commercial entity on the condition that the other entity perform R&D activities principally for the benefit and use of that other entity."[115]

The third, and critical conclusion, has no support other than the Panel's erroneous finding that the research was principally for the benefit and use of Boeing. Therefore, the finding is completely without support, and cannot establish the existence of a benefit for purposes of Article 1.1(b). The United States respectfully requests that the Appellate Body reverse the finding that the financial contributions found by the Panel – the transfer of funds under Article 1.1(a)(1)(i) and the provision of goods and services under Article 1.1(a)(1)(iii) – conferred a benefit on Boeing.

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[113] Panel Report, para. 7.1038.

[114] Panel Report, para. 7.1039.

[115] Panel Report, para. 7.1039.

2. When the Panel estimated the value of any benefit conferred on Boeing by payments under NASA R&D contracts, it erred by including payments under contracts for research that the EU had not challenged.

66. Aside from its error in finding that the eight NASA R&D programs were subsidies, the Panel erred further by basing its valuation of the total benefit conferred by NASA research contracts on a combination of transactions covering not only "LCA-related research" challenged by the EU, but also other transactions that the EU did not challenge. Specifically, the EU directed its claims against the alleged financial contribution of "R&D Subsidies to Boeing."[116] It explicitly excluded from its challenges any research on space, on aircraft engines, on hypersonic (Mach 5 and above) flight, on air traffic management, and other topics unrelated to Boeing's development and production of large civil aircraft.[117] When NASA set out to determine the value of the research contracts covered by the EU claims, it first segregated all expenditures under contracts between Boeing and the four NASA aeronautics research centers, which came to $1.05 billion. In line with the EU claims, it then excluded $280 million in expenditures for research that the EU had not challenged, resulting in a total value of $775 million between 1989 and 2006 for research covered by the EU claims.[118] However, when the Panel calculated the value of NASA research, it stopped with the $1.05 billion figure. It did not deduct NASA's payments to Boeing for research unrelated to the EU claims, or even address the evidence that the $1.05 billion included such research. This omission is in error inconsistent with Article 1.1(b) because it treats transactions that were not part of the financial contribution under Article 1.1(a) as conferring a benefit.

67. Under Article 1 of the SCM Agreement, "a subsidy shall be deemed to exist if . . . (a)(1) there is a financial contribution by a government . . . and (b) a benefit *is thereby* conferred."[119] Thus, a benefit for purposes of Article 1.1(b) can be conferred only by a financial contribution identified under Article 1.1(a). The Appellate Body reached the same conclusion in *Canada – Aircraft* when it elaborated on the meaning of "benefit":

> We also believe that the word "benefit", as used in Article 1.1(b), implies some kind of comparison. This must be so, for there can be no "benefit" to the recipient unless the "financial contribution" makes the recipient "better off" than it would otherwise have been, absent that contribution. In our view, the marketplace provides an appropriate basis for comparison in determining whether a "benefit" has been "conferred", because the trade-distorting potential of a "financial contribution" can be identified by determining whether the recipient has received

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[116] EC FWS, para. 457.

[117] Exhibit EC-25, p. 10, note 2; p. 11, note 2, and p. 19; CRA International, *Response to U.S. Assertions in DS353 Regarding Benefits of DoD RDT&E for Boeing's Large Civil Aircraft Division*, p. 29 (Exhibit EC-1176).

[118] US RPQ 188, para. 223.

[119] Emphasis added.

> a "financial contribution" on terms more favourable than those available to the recipient in the market.[120]

Thus, the evaluation of the "benefit" is limited to what the government conferred through the financial contribution. Conversely, government actions that are *not* part of the relevant financial contribution are *not* part of the benefit. For example, if a government supplied gas and electricity to a manufacturing plant, and a WTO Member demonstrated that the gas was sold for less than adequate remuneration, but raised no complaint with regard to electricity, the benefit would be based on the difference between the market value of the gas and what the purchaser paid the government. The value of the electricity would play no role in the calculation.

68. Before the Panel, the EU described the financial contribution and benefit at issue as "government-supported aeronautics R&D" that "benefited all of Boeing's LCA models":[121]

> NASA, DOD, and DOC have directly transferred almost $12.8 billion to Boeing/MD through FY 2006 for LCA-related R&D in the form of grants and the provision of goods and services. NASA and DOD generally provide funding for LCA-related R&D through what they call "contracts," but what are in reality grants to Boeing/MD for LCA-related R&D expenses. These R&D subsidies provide substantial benefits to Boeing's LCA division.[122]

69. The EU made clear that for each program, the financial contribution was research directed at technologies useful for Boeing's manufacture of civil aircraft:

- **ACT Program:** "NASA directly transferred funds in the form of grants to Boeing's LCA division to support research on composites technologies."[123]
- **HSR Program:** "NASA directly transferred funds in the form of grants to Boeing's LCA division to support research on an HSCT."[124]
- **AST Program:** "NASA directly transferred funds in the form of grants to Boeing's LCA division to support research and development related to subsonic LCA."[125]
- **HPCC Program:** "NASA directly transferred funds in the form of grants to Boeing's LCA division to support research relevant to LCA production."[126]

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[120] *Canada – Aircraft (AB)*, para. 157.

[121] EC FWS, para. 458.

[122] EC FWS, para. 457 (citations omitted).

[123] EC FWS, para. 524.

[124] EC FWS, para. 548 ("HSCT" is the abbreviation for "high-speed civil transport").

[125] EC FWS, para. 572.

- **Aviation Safety Program:** "NASA directly transfers funds in the form of grants to Boeing's LCA division to support research related to aircraft safety technologies."[127]

- **QAT Program:** "NASA directly transfers funds in the form of grants to Boeing's LCA division to support research on aircraft noise reduction."[128]

- **VSP:** "NASA directly transfers funds in the form of grants to Boeing's LCA division to support LCA-related research."[129]

- **R&T Base Program:** NASA directly transferred funds in the form of grants to Boeing's LCA division to reduce the time it takes Boeing to design new LCA and LCA components."[130]

The EU consistently described the research subject to its challenge as that which resulted in technology used to improve Boeing's large civil aircraft or the manufacturing process used to produce them.[131]

70. In line with this view of the financial contribution, the EU explicitly reduced its valuation of the alleged benefit from "LCA-related" research to account for activities that did not lead to technology related to large civil aircraft. For example, Boeing does not make engines, and the EU excluded research into propulsion.[132] Even at the height of enthusiasm for a *super*sonic civil aircraft, no one envisaged civil aircraft flying at *hyper*sonic speeds (Mach 5 and beyond) the EU excluded research on hypersonic flight from its estimate of the value of "LCA-related" research under the R&T Base Program.[133] Air traffic management – the activity of making sure that multiple aircraft flying in the same airspace do not collide with each other – is a ground-based activity of directing planes onto safe flight paths. The EU excluded research on air traffic

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[126] EC FWS, para. 588.

[127] EC FWS, para. 603.

[128] EC FWS, para. 618.

[129] EC FWS, para. 631.

[130] EC FWS, para. 650.

[131] EC FWS, paras. 504-519 (ACT), 532-545 (HSR), 557-570 (AST), 58-587 (HPCC), 596-602 (Aviation Safety), 611-616 (QAT), 626-629 (VSP), and 639-657 (R&T Base).

[132] EC FWS, para. 77; e.g., Exhibit EC-25, p. 10, note 2; p. 11, note 2; p. 16, note 2, p. 17, note 2; and p. 19.

[133] Exhibit EC-1176, p. 29 ("High temperature airframe structures would generally be more important in high supersonic, or hypersonic aircraft, for instance. The funding in this case was therefore excluded from the CRA analysis."); *e.g.*, Exhibit EC-25, p. 19. Although the EU recognized in principle that research into hypersonic flight has nothing to do with large civil aircraft, it did a notably erratic job in actually excluding such research from its estimates. *E.g., Examples of hypersonic research under R&T Base Program components that the EC included in its estimate*, pp. 5-6 (Exhibit US-1272).

management from its estimate of "LCA-related" research under the AST "Program."[134] Further, the EU made no move to challenge research related to space travel or NASA's procurement of goods from Boeing.

71. Accordingly, when NASA estimated the maximum value of the research contracts challenged by the EU – that is, the $1.05 billion total covering all contracts between Boeing and the four NASA aeronautics research centers – it identified contracts for space, procurement of goods, wind turbines and aeroprops, air traffic management, hypersonic flight, VTOL/STOL ("vertical takeoff and landing/short takeoff and landing), and aircraft support (maintenance and upkeep of NASA's aircraft). It then deducted the value of these contracts from the $1.05 billion total covering all contracts between Boeing and the four NASA aeronautics research centers.[135] Where the United States and the EU disagreed about the relationship of particular research topics (such as helicopter flight) to large civil aircraft, the United States did not make a deduction.[136] Where NASA considered that a contract covered some excluded research and some non-excluded research, it again did not deduct the value of that contract.[137]

72. The Panel recognized that the EU's claims did not involve all NASA research:

> It is common ground between the parties that most of NASA's budget is related to *space* activities, and it is also common ground between the parties that most of NASA's contracts with Boeing are unrelated to aeronautics. The scope of the European Communities claim is limited to *aeronautics*-related R&D.[138]

In its description of the financial contribution, the Panel referred repeatedly to statements to the effect that NASA aeronautics research "benefits *U.S. aircraft producers*," "support{s} *U.S. businesses* that produce large commercial aircraft," or "*put{s} the commercial transport manufacturers* in a position to expand the application of composites."[139] The United States emphasizes that it disagrees with the Panel's focus on these statements, and the conclusions drawn from them. It cites them here because they underscore that the financial contribution at issue was NASA contracts for research that potentially related to the development and production of large civil aircraft.

73. However, when the Panel calculated the value of NASA research, it stopped with the $1.05 billion figure for all contracts between Boeing and the four aeronautics research centers. It

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[134] Exhibit EC-25, p. 11, note 2.

[135] US RPQ 188, para. 220.

[136] US RPQ 188, para. 220, note 236.

[137] For example, Contract NAS1-20341 covered subsonic aircraft, hypersonic flight, and spacecraft guidance and control. Contract NAS1-20341, pp. 3-5 (Exhibit US-558(HSBI), pp. 4-6). Because NASA records did not divide expenditures among these topics, NASA did not deduct any portion of the value of the contract.

[138] Panel Report, para. 7.942.

[139] Panel Report, paras. 7.994, 7.7.995, and 7.999.

did not consider whether this figure included contracts that were excluded from the financial contribution defined by the EU that the Panel had found to exist. It did not deduct NASA's payments to Boeing for research unrelated to the EU claims, or even address the evidence that the company conducted such research. This omission is in error.

74. The existence of such contracts was not a theoretical matter, or a subjective conclusion of NASA employees. The record before the Panel contained several examples of contracts that the United States excluded because they fell into one of the categories outside of the EU claims. The largest was Contract NAS3-27330, which involved planning and design of a state-of-the-art National Wind Tunnel Complex ("NWTC") that NASA hoped to build in the mid-1990s.[140] The contract's revised statement of work states that:

> This effort focuses on the required planning studies (Phase 1) and initiation of preliminary design activities (Phase 2A) associated with the development of the NWTC. In order to accomplish this effort, the NASA Wind Tunnel Program Office (WTPO) will enter into a contract with The Boeing Company, who in turn will establish an Industry Team to direct and carry out the tasks defined by this Statement of Work.[141]

The project sought to identify the steps needed to design and purchase an enormous stationary testing facility that would meet the requirements of a variety of government and private sector users.[142] It did not involve research and development of aeronautics technology, aircraft, or aircraft production processes. The majority of potential users of the NWTC were outside the large civil aircraft industry, thereby precluding any conclusion that this work was principally for the benefit and use of Boeing.[143] Thus, NASA's expenditure of over $46 million on this effort did not entail spending on research and development covered by the EU arguments involving "LCA-related" research.

75. Contract NAS4-00041 was a service contract for "Engineering and Technical Support for the DFRC Research Aircraft and Operational Aircraft."[144] "DFRC" is the Dryden Flight Research Center, which maintains a small number of aircraft that it uses to perform experiments for NASA research projects. NASA paid Boeing $6.6 million for a number of tasks related to these aircraft, including:

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[140] NWTC Final Report, NASA Doc. No. CR-198491, p. 1 (June 7, 1996) (Exhibit US-1337).

[141] Contract NAS 3-27330, Modification 12 (Exhibit US-587, p. 9/42).

[142] NWTC Final Report, NASA Doc. No. CR-198491, pp. 2-3 (June 7, 1996) (Exhibit US-1337).

[143] The NWTC Government/Industry Team consisted of Boeing, Department of Defense, GE Aircraft Engines, Lockheed Martin, McDonnell Douglas, NASA, Northrop Grumman, and United Technologies Pratt & Whitney. NWTC Final Report, NASA Doc. No. CR-198491, p. 4 (Exhibit US-1337).

[144] Contract NAS4-00041, p. B-1 (Exhibit US-440, p. 3/89).

- Engineering and technical support for testing of the Intelligent Flight Control System on NASA's F-15 test aircraft.[145]

- Engineering and technical support for the Generation II Intelligent Flight Control System on NASA's F-15 test aircraft. [146]

- Quotes, repairs, and maintenance of unique aircraft parts for the NASA F-15 aircraft.[147]

- Engineering and technical support for the verification and validation and to conduct the final hardware-in-the-loop testing of the IFCS software.[148]

The fact that Boeing was being paid separately for engineering and technical support indicates that this work did not involve original Boeing research, but rather provided support for research by other contractors or NASA staff. The Panel found that these activities were not a financial contribution to Boeing.[149] Similarly, services to maintain NASA aircraft did nothing to subsidize Boeing.

76. The EU, in its final set of comments submitted to the Panel, attempted to show that Contract NAS 3-27330 involved research for large civil aircraft.[150] Its specious arguments were specious.[151] However, regardless of the disagreement between the parties as to the significance of the transaction, the Panel failed as a legal matter even to consider whether the $1.05 billion figure included contracts that were not part of the financial contribution it had found to exist. The Panel estimated the value of facilities, equipment, and employees allegedly provided to Boeing based on the ratio of payments under contracts in the financial contribution alleged by the EU to total NASA payments to all contractors.[152] Therefore, any error in calculating the total

[145] Contract NAS4-00041, Modification 48, p. 2.

[146] Contract NAS4-00041, Modification 48, p. 2.

[147] Contract NAS4-00041, Modification 48, p. 3.

[148] Contract NAS4-00041, Modification 48, p. 3.

[149] Panel Report, paras. 7.1105-7.1109.

[150] EC RPQ 337, paras. 71-75.

[151] The EU based its assertion on the fact that the wind tunnel complex, when completed, was intended to provide state-of-the-art testing facilities for civil and military aircraft. EU Comment on US RPQ 337, paras. 71-72. Had that occurred, it might (depending on the conditions of use) have resulted in provision of facilities for less than adequate remuneration under the EU's claims, but NASA never built the facility. Thus, the contract remains an effort that Boeing undertook to supply a service – facility design – that does not fall within the financial contribution challenged by the EU. It would benefit NASA as the owner of the facility and the broader aerospace community, of which Boeing is only a part, as users. Thus, it cannot be said to be principally for the benefit and use of Boeing. In particular, the EU relied extensively on its Exhibit EC-1439, submitted with the comments on the third set of panel questions. The United States never had an opportunity to address this evidence. EC Comment on US RPQ 337, paras. 74-75, notes 120, 121, 122, and 123.

[152] Panel Report, para. 7.1099.

value of the payments under contracts would affect the estimated value of facilities, equipment, and employees.

77. Therefore, the Panel erred by failing to examine whether its valuation of the benefit included funding that was not part of the financial contribution alleged by the EU or found to exist by the Panel. If the Appellate Body finds that the NASA R&D Programs conferred a subsidy, the United States respectfully requests it modify the panel's finding as to the value of the benefit from the aeronautics R&D programs to remove payments that are not part of the financial contribution challenged by the EU, and to adjust the associated value of facilities, equipment, and employees accordingly.

III. DOD R&D COOPERATIVE AGREEMENTS, TECHNOLOGY INVESTMENT AGREEMENTS, AND OTHER TRANSACTION AGREEMENTS

78. The EU challenged a set of budget lines ("program element" or "PE" numbers) under which DoD paid Boeing to perform research activities under procurement contracts, cooperative agreements, technology investment agreements ("TIAs"), and Other Transaction agreements ("OTAs"). The Panel applied its "principally for the benefit and use" test to all of these transactions to evaluate whether they constituted purchases of services within the meaning of Article 1.1(a)(1) of the SCM Agreement. It correctly found that "{t}he evidence relating to DOD aeronautics R&D . . . leads to the conclusion that the work that Boeing performed under its aeronautics R&D contracts with DOD was principally for the benefit and use of DOD."[153] However, the Panel reached the opposite conclusion with respect to the cooperative agreements, TIAs, and OTAs (collectively "R&D agreements")[154] because it perceived "significant, substantive differences"[155] between those instruments and procurement contracts. It accordingly found that payments under the R&D agreements were "direct transfers of funds" covered by Article 1.1(a)(1)(i).[156] Those differences are real, but they do not support the Panel's conclusion that activities under the R&D agreements were principally for the benefit and use of Boeing. Rather, the Panel misapplied its legal test in evaluating these differences and other facts relevant to the R&D agreements. It erred further in concluding that the DoD's funding of these research efforts conferred a benefit on Boeing.

79. Finally, the Panel also acted inconsistently with Article 11 of the DSU in its statement that it "does not consider it credible that less than 1 per cent of the $45 billion in aeronautics R&D funding that DOD provided to Boeing over the period 1991-2005 has any potential relevance to LCA." The Panel cites no evidence in support of this conclusion.[157]

A. The Panel failed to consider critical factors in its evaluation of whether DoD R&D agreements were financial contributions, and misapplied its legal test to the factors it did consider.

80. The Panel erred both by failing to consider facts relevant to the applicable legal test for whether DoD's R&D agreements with Boeing were purchases of services and by misapplying its "principally for the benefit and use" test to the evidence it did consider. With respect to the first

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[153] Panel Report, para. 7.1171.

[154] The Panel referred to these agreements collectively as "assistance instruments." *E.g.*, Panel Report, para. 7.1171. However, the cooperative agreements, TIAs, and OTAs are only some of the instruments that fall into this category under U.S. law. As we understand the Panel's findings to apply only to the agreements before it, and as the U.S. analysis applies only to those agreements, the United States will refer to the agreements covered by the Panel's analysis as "R&D agreements" (a term the Panel used in some statements) or "cooperative agreements, TIAs, and OTAs."

[155] Panel Report, para. 7.1169.

[156] Panel Report, para. 7.1171.

[157] Panel Report, para. 7.1205.

error, the Panel correctly recognized that the nature of the research conducted under the agreements was "central" to the question of whether the research was principally for the benefit and use of the government. However, it never evaluated how the agreements themselves described that research. In addition, although the Panel's test required a comparison between the benefit and use that the government, as opposed to Boeing, took from research funded under R&D agreements, the Panel did not incorporate into its analysis the full range of factors affecting the utility of the research to each side. The obvious and significant military usefulness of the research was one such factor. Another was the fact, recognized by the Panel, that the U.S. International Trade in Arms Regulations ("ITAR") "restrict Boeing's ability to use certain R&D performed for DOD towards civil aircraft."[158] These omissions reveal that the Panel did not correctly apply its "principally for the benefit and use" test to R&D agreements.

81. The Panel's second error relates to the application of the legal test to the five factors that it did consider: (1) the legislation authorizing the 23 PE numbers challenged by the EU; (2) the types of instruments between Boeing and DoD: (3) whether DoD had any "demonstrable use" for the R&D performed under the programs; (4) the allocation of intellectual property rights; and (5) whether R&D agreements had "the typical elements of a 'purchase of services'."[159] In examining U.S. legislation that authorized spending through the PE numbers and indicated how to decide which instrument to use, the Panel overemphasized characterizations of R&D agreements as a form of "assistance" rather than "acquisition."[160] In reviewing the "demonstrable use" of research to the government, the Panel's failure to address what Boeing actually did under the agreements prevented it from properly comparing the benefit and use of the research to the government and to Boeing. In looking at the allocation of intellectual property rights, the Panel apparently saw nothing that deviated from what would happen in a purchase of services, but did not explain how it balanced that consideration against others. And finally, the Panel limited its analysis of the "typical elements of a purchase of services" to one element – explicit allowance for a profit – and neglected to consider other elements of R&D agreements that would be "typical" of a purchase of services. The Panel's errors in considering these factors meant that it failed to establish the existence of financial contributions under Article 1.1(a)(1)(i) and (iii).

82. The Panel failed (1) to apply the legal test it set out to examine the totality of the evidence, and in particular any evidence that "shed{s} light on the question of the nature of the R&D activities required of Boeing under the contracts and agreements;" and (2) in light of that evidence to examine "whether the R&D that Boeing was required to conduct was principally for its own benefit and use, or whether it was principally for the benefit and use of the U.S. Government (or unrelated third parties)."[161]

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[158] Panel Report, para. 7.1160.

[159] Panel Report, para. 7.1138.

[160] Panel Report, para. 7.1144-7.1145.

[161] Panel Report, paras. 7.1137-7.1138.

1. The Panel erred in failing to consider the nature of the research performed under R&D agreements as reflected in the descriptions of the work in the individual agreements.

83. The Panel identified the "nature of the work that Boeing was required to perform" under the agreements as "central to understanding the core *term* of the transaction," which would indicate whether DoD had purchased services from Boeing.[162] The United States agrees. The record before the Panel contained extensive evidence as to the nature of the research required under cooperative agreements, TIAs, and OTAs. Even so, the Panel concluded that the R&D agreements were not purchases of services without considering the specific statements in those agreements that detail the work done, and in fact demonstrate that the work was for the benefit and use of DoD. By failing to address its "central" criterion in evaluating whether a transaction was a purchase of services, the Panel's analysis cannot sustain a finding that a financial contribution under Article 1.1(a)(1)(i) and (iii) existed.

84. The Panel did attempt to address the question whether DoD had "any discernible use for the R&D performed under the 23 programs at issue."[163] But it looked exclusively at overall descriptions of the activities funded through each PE number, and not at the R&D agreements themselves. The conclusion it reached – that "the R&D performed is of some benefit and use of DOD"[164] – is correct, as even the EU concedes.[165] But the program descriptions do not address what the Panel identified as the "central" question – "the nature of the work that Boeing was required to perform *under the contracts*."[166] The descriptions of the work performed under the agreements reveal that not only did the research have "some" utility to DoD, it has military applications that clearly constitute a significant benefit and use to the government. The PE numbers are of limited usefulness in identifying what DoD paid Boeing to do because many contractors draw funds under each PE number, and DoD's records, for the most part, do not indicate which contractor performed particular activities authorized through a PE number, or disaggregate spending on a contractor-by-contractor basis. Nor do records show how much of each PE number was disbursed under cooperative agreements, TIAs, and OTAs as opposed to procurement contracts.

85. Under DoD R&D agreements, the "statement of work" indicates what research the private party commits to perform. For each cooperative agreement, TIA, and OTA, the United States provided either the statement of work or, where that statement contained ITAR-controlled information, a non-ITAR summary.

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[162] Panel Report, para. 7.1137.

[163] Panel Report, para. 7.1147.

[164] Panel Report, para. 7.1148.

[165] EC FWS, para. 665 ("{a} significant portion of DOD's RDT&E Program focuses on military R&D.").

[166] Panel Report, para. 7.1137 (emphasis added).

86. The parties submitted five cooperative agreements that were funded through one or more of the 23 program elements challenged by the EU. They required the following research projects:

- **Cooperative Agreement F33615-97-2-3220 (Composite Repair Aircraft Structures):** (1) Evaluate existing *{U.S. Air Force} composite repair processes*; (2) develop, verify and apply analytical techniques to predict fatigue and other damage; (3) identify gaps in existing analysis/design methodologies; and (4) integrate and validate computer codes to aid detection.[167]

- **Cooperative Agreement F33615-97-2-3400 (Next Generation Transparency):** "Air Force Operating Commands cite deficiencies related to aircraft windshield and canopy (transparency) subsystems in their Mission Area Plans (MAPs). Technology needs cited as deficiencies in MAPs include reliability, range, supportability, signature, and vision. Current technology limits affordability, weight, removal time, precise shape, and optics. . . . The purpose of the {Next Generation Transparency} Program is to demonstrate and validate the ability of injection molded frameless transparency technology to be incorporated in an affordable, integrated design that meets *the future mission requirements for an advanced strike aircraft*."[168]

- **Cooperative Agreement F33615-98-2-5113 (Structural Repair of Aging Aircraft):** "The objectives of this program are to (1) demonstrate the production readiness of a nondestructive evaluation system targeted primarily at reducing Programmed Depot Maintenance inspection cycle times for corrosion and crack detection and (2) establish greater confidence in bonded repairs to promote widespread usage of the technology. Program deliverables include (1) a portable scanning system for detection of cracks, corrosion and bondline flaws . . . and (4) an implementation plan *targeted at B-52, KC-135 and E-3 application{s}*."[169]

- **Cooperative Agreement F33615-01-2-3103/3101[170] (Automatic Air Collision Avoidance System (AutoACAS) Phase II Program):** Develop and simulate/demonstrate air collision avoidance algorithms *tailored for unmanned aerial vehicles (UAV) and high performance military aircraft, specifically the F-*

[167] Exhibit US-611(HSBI); non-ITAR summary of statement of work in *Services Boeing was required to provide under DoD cooperative agreements and OTAs*, p. 6 (Exhibit US-1207) (emphasis added). This agreement received funding through program elements 0602201F and 0603211F. Exhibit US-1267.

[168] Exhibit EC-406, p. 18/20 (emphasis added). This agreement received funding through program elements 0602201F, 0603211F, 0603205F, and 0708011F. Exhibit US-1267.

[169] Exhibit US-636(HSBI), p. 20/24 (emphasis added). This agreement received funding through program element07008011F. Exhibit US-636(HSBI), p. 9/24.

[170] This contract was originally labeled F33615-01-2-3103, but was subsequently changed to F33615-01-2-3101.

16. Simulate UAV collision avoidance in an automated aerial refueling environment.[171]

- **Cooperative Agreement F33615-01-2-3110 (Adaptive Flow Control Vehicle Integrated Technology for Breakthrough Aerodynamic Performance):** Develop and test active flow control techniques to provide high lift aerodynamic performance and enable "super short take off and landing" (SSTOL) capability *for advanced military transports* in a wind tunnel.[172]

The descriptions of the research – and in most cases even the titles alone – indicate the use and benefit to the U.S. Government gets out of the research programs.

87. The parties submitted six TIAs that were funded through one or more of the 23 program elements challenged by the EU. They required the following research projects:

- **TIA F33615-00-2-3002 (Non-Oxidizing Refractory Composite Tanks and Structures):** "The benefits of this program would be applicable to current and planned vehicle development efforts of both the military and commercial communities. Systems such as the *Space Operations Vehicle, Space Maneuver Vehicle, and the VentureStar Reusable Launch Vehicle* would all benefit greatly from the potential for reduced system weight made possible by advancements in cryogenic tank technology. In the long term, the development of this technology would result in lower development, production, and operating costs for these and other hypersonic or transatmospheric vehicles. It would also reduce maintenance requirements and shorten vehicle turn-around time."[173]

- **TIA 33615-03-2-1403 (Dual Use Science and Technology Program for Precision Image Registration):** (1) define interface required between equipment and aircraft; (2) obtain and test images for use in developing and testing image registration; (3) develop image registration software and associated algorithms; (4) develop and deliver an image registration unit; (5) modify aircraft to incorporate unit; (6) provide ongoing support to imaging testing, including

[171] Exhibit US-638(HSBI); non-ITAR summary of statement of work in *Services Boeing was required to provide under DoD cooperative agreements and OTAs*, p. 10 (Exhibit US-1207) (emphasis added). This agreement received funding through program element 0603245. Exhibit US-638(HSBI), p. 9/57.

[172] Exhibit US-601(HSBI); non-ITAR summary of statement of work in *Services Boeing was required to provide under DoD cooperative agreements and OTAs*, p. 1 (Exhibit US-1207) (emphasis added). This agreement received funding through program elements 0602201F, 0602203F, 0603211F, and 0603205F. Exhibit US-1267.

[173] Exhibit US-604(HSBI), p. 18/37 (emphasis added). This agreement received funding through program elements 0602201F and 0602805F. Exhibit US-1267.

algorithm and equipment support; and (7) plan, prepare and present program reviews at 3-month intervals.[174]

- **TIA 33615-03-2-3300 (Structural Health Monitoring (SHM)/Assessment for Bonded Repairs:** (1) Select aircraft application and structural health monitoring technologies; (2) develop monitoring system requirements; (3) develop repair system design and architecture; (4) develop math models to simulate structural characteristics with damage in order to test monitoring technologies; and (5) develop user prototype interface.[175]

- **TIA 33615-03-2-3304 (Structural Health Monitoring and Assessment Techniques for Current and Future Aerospace Vehicles):** Develop structural health monitoring and assessment systems for aircraft structures in order to gain improved understanding of vehicle health required *for military missions*, and to reduce structural weight and improve vehicle performance.[176]

- **TIA 33615-03-5201 (Advanced Ceramic Composites for Turbine Engines):** (1) Select application hardware candidates and perform analysis on critical features; (2) improve existing materials and manufacturing techniques to enable to affordable application of hardware candidates to skin-stiffened *{U.S. Air Force} applications*; (3) determine the effect of foreign object impact on structural integrity of CMC material and develop methods to improve; and (4) design and fabricate models for testing.[177]

- **TIA 33615-03-2-5202 (Advanced Ceramic Thermal Protection Materials):** (1) Define requirements for system; (2) create material requests and select test candidates for development; (3) create material requests for fabric, resin, and foam, and create test plan for material evaluations; (4) demonstrate re-waterproofing processes and perform vendor surveys to determine potential rapidly cured resins; (5) fabricate test articles and support flight test; (6) schedule and conduct hypervelocity impact test; (7) assess and select health assessment

[174] Exhibit US-613(HSBI); non-ITAR summary of statement of work in *Services Boeing was required to provide under DoD cooperative agreements and OTAs*, p. 8 (Exhibit US-1207). This agreement received funding through program elements 0602204F and 0602805F. Exhibit US-1267.

[175] Exhibit US-608(HSBI); non-ITAR summary of statement of work in *Services Boeing was required to provide under DoD cooperative agreements and OTAs*, p. 3 (Exhibit US-1207). This agreement received funding through program elements 0602201F and 0602805F. Exhibit US-1267.

[176] Exhibit US-608(HSBI); non-ITAR summary of statement of work in *Services Boeing was required to provide under DoD cooperative agreements and OTAs*, p. 3 (Exhibit US-1207) (emphasis added). This agreement received funding through program elements 0602201F and 0602805F. Exhibit US-1267.

[177] Exhibit US-609(HSBI); non-ITAR summary of statement of work in *Services Boeing was required to provide under DoD cooperative agreements and OTAs*, p. 4 (Exhibit US-1207) (emphasis added). This agreement received funding through program elements 0602201F and 0602805F. Exhibit US-1267.

> techniques and develop sensing techniques and post-flight inspection methods; (8) design full scale components for proof of concept testing; and (9) perform management oversight of all tasks.[178]

All of these agreements were funded in part through the DUS&T Program. For all but the first of these TIAs, the ITAR prohibited any description of the precise military application of the technology. However, the non-ITAR summaries – and in most cases even the titles alone – indicate the use and benefit to the U.S. Government obtains from the research programs. Structural health monitoring is important for spotting structural damage before it impairs performance, an obvious advantage for operators of military aircraft. Tanks used in missiles and improved materials for turbine engines are similarly useful to the military. Precision image registration has obvious military and intelligence applications.

88. The parties submitted two OTAs that were funded through one or more of the 23 program elements challenged by the EU. They required the following research projects

- **Contracts F33615-98-3-5103 and F33615-98-3-5104 (Composite Affordability Initiative, Phase II, Pervasive Technology):** These two programs had the same "vision statement," which provided that "{t}he approach is to develop the technologies required to design revolutionary composite aircraft from a systems perspective. The CAI will instigate a paradigm shift within industry in how composite aircraft are designed and manufactured, resulting in reduced composite structural costs and *dramatically increasing the amount of composites on military systems by meeting cost as well as performance requirements*. This initiative builds off of past efforts from the Air Force, Navy and Industry (CRAD & IRAD). The participating organizations will bring to the program data which may not have been previously available to industry or government. . . . The tools developed under the pervasive effort will be used to analyze the predicted performance of the structure and costs associated with manufacture. *The initial migration opportunity is the Joint Strike Fighter. Additional opportunities will be identified as the initiative proceeds. These may include ships, large aircraft, and UAVs.*"[179]

89. The legal error is clear. The Panel found correctly that the research required under an instrument was "central to understanding" whether the research was for the benefit and use of the government or the contractor. Yet the Panel did not consider the most compelling evidence: the cooperative agreements, TIAs, and OTAs, which contain the most precise and, therefore, most

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[178] Exhibit US-610(HSBI); non-ITAR summary of statement of work in *Services Boeing was required to provide under DoD cooperative agreements and OTAs*, p. 5 (Exhibit US-1207). This agreement received funding through program element 0602805F. Exhibit US-1267.

[179] Exhibit EC-517, p. 27-28/36 (emphasis added) (Exhibit EC-518, p. 28-29/37). These transactions received funding through program elements 0602102F, 0603211F, and 0708011F. Exhibit US-1267. It is worth noting that Lockheed Martin and Northrup Grumman also participated in this program.

significant indication of the nature of the research. That evidence demonstrates precisely the military benefit and use that DoD intended to secure by funding the research under the R&D agreements. This glaring omission confirms that the Panel did not apply the legal test it found to be appropriate. Therefore, its findings are insufficient to establish the existence of a financial contribution under Article 1.1(a)(1)(i) or (iii) of the SCM Agreement.

2. The Panel failed to consider how the finding that the ITAR restrict Boeing's ability to use DoD-funded technologies on civil aircraft would affect the benefit and use that the company could take from research under R&D agreements funded through the 23 PE numbers covered by the EU challenge.

90. The Panel erred when it failed to factor the recognized effect of the U.S. International Trade in Arms Regulations ("ITAR") into its analysis of whether research under DoD-Boeing R&D agreements was principally for the benefit of Boeing or of the government. As the United States notes in section II.A.1, the evaluation of whether government-funded research principally benefits the government or the private entity conducting the research is a comparative exercise, weighing the benefit and use each side takes from the research. The Panel found that the ITAR "restrict Boeing's ability to use certain R&D performed under DOD contracts and agreements toward LCA."[180] Thus, DoD-funded research would have less utility to Boeing than would appear in isolation because ITAR restrictions limit the company's ability to use the results of any research to their full extent. The Panel's analysis of whether research under DoD R&D agreements was principally for the benefit and use of the government makes no allowance for this effect, demonstrating that the Panel failed to conduct the comparison necessary under its legal test.

91. As the United States explained in section II.A.1, the Panel's "principally for the benefit and use" test necessitates a comparison between the benefit and use to the private party in a transaction, on the one hand, and the benefit and use to the government (and unrelated third parties) on the other hand. Otherwise, a panel would have no way of knowing whether the significance of the benefit and use to one side negated a conclusion that the services were "principally" for the benefit and use of the other side. The Panel itself noted the Appellate Body's guidance that a panel should consider the evidence in its totality.[181] In this context, that would include all evidence as to the extent to which parties could use or benefit from any research.

92. The United States argued that the ITAR prevent the use of DoD-funded technologies on large civil aircraft. The Panel rejected the idea that the ITAR "make it effectively impossible for Boeing to utilize any of the R&D performed under DOD R&D contracts and agreements toward LCA."[182] However, it "accepted" that:

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[180] Panel Report, para. 7.1160.

[181] Panel Report, para. 7.81, note 247

[182] Panel Report, para. 7.1160.

- "the ITAR restrict Boeing's ability to use certain R&D performed for DOD towards its civil aircraft"; and

- "Boeing complies with ITAR in general and took steps to ensure that the 787 will be 'ITAR free.'"[183]

The Panel stopped its evaluation with these observations, and did not consider how the fact that the ITAR "restricted" the ability to use DoD-funded technology for large civil aircraft would affect its analysis of whether research under R&D agreements was principally for the benefit and use of Boeing.

93. The ITAR are a set of U.S. regulations designed to prevent the acquisition of U.S. military technology by hostile forces. To administer these rules, the U.S. State Department maintains a "Munitions List" of "defense articles" subject to control. The ITAR apply to all items on the Munitions List, regardless of the intended end use (military or commercial) of the item on the U.S. market.[184] The key determining factor is whether the item meets the definition of a defense article, which can include both physical equipment and the technology to produce that equipment. The regulations contain no *de minimis* exclusions or exceptions to the controls, so, with very few exceptions, any item that is a defense article is controlled even when incorporated into a much larger item. This is true even when the larger product into which it is incorporated is clearly commercial.

94. An item subject to the ITAR cannot be exported without a license or applicable exemption. Exemptions are carefully tailored, and none have proven appropriate for large civil aircraft. [185] Licenses are only granted on a transaction-specific basis, based on a detailed review of the evidence,[186] meaning that every export requires a separate license. And, most significantly for a product such as large civil aircraft, the terms of each ITAR license mean that the exported item can only be used within the country designated in the license.[187] These restrictions make it

[183] Panel Report, para. 7.1160.

[184] 22 C.F.R. § 120.3 (noting that "the intended use of the article or service after its export. . . is not relevant in determining whether the article or service is subject to the controls of this subchapter.") (Exhibit US-42).

[185] 22 C.F.R. § 123.1 (Exhibit US-48). In limited instances, license exemptions may be available for sales made by the U.S. Government under the foreign military sales program, exports by or for a U.S. agency, certain shipments to Canada, and various eligible hardware (if under $500 value and used to support previously authorized exports). 22 C.F.R. § 126.6(c), 126.4, 126.5 (Exhibit US-49), and 123.16 (Exhibit US-63). None of these exemptions are appropriate for large civil aircraft sales.

[186] Guidelines for Completion of a Form DSP-5, U.S. Department of State, Directorate of Defense Trade Controls, pp. 1-2 (Exhibit US-52). Among other things, the applicant must submit purchase orders, signed letters of intent, technical data information, letters of explanation, signed end use and end user confirmation statements from each anticipated recipient of the exported articles, as well as specific freight and shipping information for each item exported.

[187] 22 C.F.R. § 123.9 (Exhibit US-53) requires that the country f or which a license is granted be the country of ultimate end-use of the item. This provision also requires exporters to ascertain specific end-users and

effectively impossible to use controlled technologies on large civil aircraft because, by their nature, the aircraft can potentially fly anywhere, including to countries proscribed by U.S. law, regulation, and policy from receiving access to U.S. defense articles and technical data. Penalties for violating the rules are strict. In fact, in 2005 the Department of State fined Boeing $15 million after an ITAR-controlled technology was mistakenly included in civil aircraft exported without authorization because of a lack of clarity regarding the item's export control status.[188]

95. As evidence submitted by the United States shows, the restrictions attached to an ITAR license make an ITAR-controlled large civil aircraft commercially useless for Boeing.[189] (Even the EU recognizes that the ITAR make it impractical to include controlled technology on large civil aircraft.[190]) As a result, Boeing seeks to ensure that its large civil aircraft do not include any defense articles, even if those items have demonstrated commercial applications that would qualify them for an exception to controls. Because of the requirement to license ITAR-controlled items even when incorporated into larger systems, it is necessary to ensure that none of the thousands of components (including subcomponents) of the large civil aircraft are defense articles. And, as good faith efforts to comply with the ITAR are not a defense against liability, wherever there is a question as to the military provenance of a component, caution dictates that Boeing or its supplier seek a formal ruling from ITAR enforcement authorities. Boeing therefore has a rigorous and comprehensive set of internal procedures that provide for the identification and segregation of all defense articles and services, and exclusion of those items from all commercial aircraft. In particular, Boeing undertook a rigorous process to ensure that the 787 contained no ITAR-controlled equipment and did not use ITAR-controlled technologies.[191]

96. These facts illustrate the level of legal restriction that the ITAR place on civil use of DoD-funded research, and the extent of the further restrictions Boeing places on itself to ensure compliance with the rules. If, as the Panel found, the ITAR "restrict Boeing's ability to use certain R&D," then that R&D, regardless of whether it appears from its description to have utility for large civil aircraft, is less useful than would otherwise appear because of ITAR limitations. And if, as the Panel also found, Boeing complies with ITAR and took steps to make the 787 ITAR-free, that means that any equipment based on DoD-funded research is less likely to find a use on Boeing aircraft than would otherwise appear to be the case.

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end-uses prior to submitting their license requests to the State Department, and requires that they certify, among other things, that "{the} commodities are authorized by the U.S. Government for export only to {country of ultimate destination} for use by {end-user}. They may not be transferred, transshipped on a non-continuous voyage, or otherwise disposed of in any other country, either in their original form or after being incorporated into other end-items, without the prior written approval of the U.S. Department of State."

[188] Statement of Michael Bair, para. 30 (Exhibit US-7)

[189] Statement of Michael Bair, para. 7 (Exhibit US-7).

[190] EC FNCOS, para. 61.

[191] US FWS, para. 173.

97. The Panel, however, made no reference to these considerations in its overall conclusion as to the use and benefit of research under DoD contracts and agreements. It appears to have viewed the ITAR as relevant only to the extent that it "made it effectively impossible for Boeing to utilize any of the R&D performed under DOD R&D contracts and agreements toward LCA."[192] By failing to consider the restrictions that the ITAR imposed on Boeing's ability to use DoD research – restrictions that the Panel itself found to exist – , the Panel neglected an important aspect of the balance between the civil and military use of the research in question.

98. A consideration of the findings regarding ITAR in context of the Panel's other findings and undisputed facts on the record demonstrates the significance of the error:

- The Panel found that "the purpose of these programmes was to conduct R&D aimed at designing more advanced weapons or other defense systems or to reduce the cost of such systems."[193]

- Most of the agreements require DoD and Boeing each to contribute 50 percent of the cost of conducting the research.[194]

- The EU itself considered, without making any allowance for restrictions imposed by the ITAR, that 44 percent of the payments to Boeing under the 23 PE numbers was for research directed to military objectives, rather than large civil aircraft.[195]

These considerations demonstrate that the restrictions ITAR created for Boeing's use of DoD-funded research on civil aircraft would likely affect the conclusion as to whether research under R&D agreements was "principally" for the use and benefit of DoD.

99. The Panel's failure to apply its findings regarding ITAR to its weighing of the civil and military utility of DoD research meant that it did not conduct the comparison needed for its "principally for the benefit and use" test. Therefore, its findings fail to establish that the R&D agreements were a financial contribution. The United States respectfully requests that the Appellate Body reverse the Panel's findings under Article 1.1(a)(1)(i) and (iii).

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[192] Panel Report, para. 7.1160.

[193] Panel Report, para. 7.1147.

[194] Section III.B. below discusses this issue in greater detail.

[195] Exhibit EC-25, p. 20. The United States derived this number by dividing the amount the EU proposed to allocate to Boeing large civil aircraft into the total amount that it allocated to Boeing. While the United States does not believe these figures are accurate, they reflect the EU position as to how much of the DoD research challenged by the EU was related to large civil aircraft.

3. The Panel's evaluation of the factors it did consider was inconsistent with Article 1.1(a)(1) because it did not support the conclusion that the R&D agreements were direct transfers of funds instead of purchases of services.

100. The Panel erred in its evaluation of the five factors it did consider because two of them indicated that the principal benefit and use of the research was to DoD, and the remaining two did not support the conclusions that the Panel drew from them. The five considerations in the Panel's analysis were: (1) the legislation authorizing the 23 PE numbers challenged by the EU; (2) the types of instruments entered into between DoD and Boeing; (3) whether DoD had any "demonstrable use" for the R&D performed under the programs; (4) the allocation of intellectual property rights under R&D agreements; and (5) whether R&D agreements had "the typical elements of a 'purchase of services'."[196]

101. Two of the factors (the third and fourth) indicate that research under all of the DoD instruments, contracts and R&D agreements alike, were for the benefit of the government. The Panel itself found that a consideration of the objectives of the 23 PE numbers "confirm" that the research they funded "is of some benefit and use to the government."[197] The Panel also noted that the private partner receives greater limited data rights under an R&D agreement than a procurement contract, but that the private partner also makes its own contribution to the research work defined by DoD. This exchange of value for value – paying more and getting more data rights – indicates bargaining between the government and the private party that is characteristic of a commercial transaction. The other factors do nothing to reverse this indication. The Panel appears to have concluded that the description in certain U.S. measures of R&D agreements as a form of "assistance" is synonymous with calling them "subsidization," but that is simply a label under domestic law to describe different ways that DoD may pay private entities to conduct research of interest to the armed forces. The Panel also examined whether R&D agreements had the "typical elements of a purchase of services." But as it only looked at one "element" – profit – its analysis is too limited to support any conclusion. Therefore, the five factors that the Panel listed do not support its finding that DoD's R&D agreements with Boeing were a direct transfer of funds and provision of goods and services rather than purchases of services.

a. The Panel's analysis of U.S. legislation erroneously relied on the characterization of cooperative agreements, TIAs, and OTAs as "assistance" for Boeing.

102. The Panel explicitly "agree{d}" that "'the manner in which a WTO Member classifies a transaction cannot, in itself, be determinative for the purpose of applying any provision of the WTO covered agreements,'"[198] Even so, it engaged in a lengthy discussion of the regulatory and statutory distinctions between procurement contracts and R&D agreements. The Panel does not

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[196] Panel Report, para. 7.1138.

[197] Panel Report, para. 7.1148.

[198] Panel Report, para. 7.1169, *quoting US – Softwood Lumber IV (AB)*, para. 65.

state whether it relied on this discussion in reaching its conclusion or, if it did, how it weighed the characterization of R&D agreements as "assistance" in its analysis.[199] Regardless, to the extent that the Panel based its finding on this evidence, it erred. While U.S. law may place cooperative agreements, TIAs, and OTAs in the category of "assistance," that does not signify that they require Boeing to perform research that is "principally for the benefit and use" of the company. It simply indicates that DoD uses a different set of rules to ensure that it gets what it pays for under R&D agreements.

103. Specifically, the Panel cites several instances in which DoD regulations or individual instruments refer to cooperative agreements, TIAs, or OTAs as providing "assistance" and contrasts that characterization to the characterization of a procurement contract as relating to the acquisition of goods and services for "the benefit of the government."[200] The distinction drawn under U.S. law does not, however, create a distinction for purposes of Article 1.1(a)(1) of the SCM Agreement. As the Panel itself noted, under 10 U.S.C. § 2358, the Secretary of Defense is only authorized to expend funds for research – whether a procurement contract, cooperative agreement, TIA, or OTA – if the topic is "*necessary* to the responsibilities of such Secretary's department in the field of research and development" *and* the project "relate{s} to weapons systems and other military needs" or is "of potential interest to the Department of Defense."[201] Thus, even if U.S. law describes the method of securing the conduct of research as "assistance," the law is just as clear that the research must relate to weapons systems or other military needs, or have potential interest to DoD. That is, they must be of benefit or use to the U.S. government. In short, the formal distinction drawn in U.S. law between acquisition instruments and assistance instruments does not signify a distinction between purchases and direct transfers of funds for purposes of Article 1.1(a)(1).

104. The Panel also notes that some of the cooperative agreements, TIAs, and OTAs submitted by the EU contained clauses stating their purpose as "to support and stimulate the recipient to provide reasonable efforts in advanced research and technology development and not for the acquisition of property and services for the direct benefit or use of the government."[202] The Panel, however, fails to acknowledge that these agreements sought to "assist" the recipient in completing some research project that the Panel itself found "was aimed at designing more advanced weapons or other defence systems or to reduce the cost of such systems."[203] Thus, even if research under an R&D agreement does not have a "direct benefit" for purposes of U.S.

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[199] The Panel made a number of statements about the operation of procurement contracts and R&D agreements. Panel Report, paras. 7.1140-7.1152. It then concludes that, "based on the foregoing" that "DoD 'assistance instruments' are not properly characterized as 'purchases of services'." Panel Report, para. 7.1153.

[200] Panel Report, paras. 7.1142-7.1145.

[201] 10 U.S.C. §2358(a), *quoted in* Panel Report, para. 7.1140.

[202] Panel Report, para. 7.1145, *quoting* Cooperative Agreement F33615-95-2-5019 (Exhibit EC-512) and Cooperative Agreement F33615-96-2-5051 (Exhibit EC-513).

[203] As noted in section II.A.1 of this submission, the description of research funded through cooperative agreements submitted to the Panel demonstrates an obvious benefit and use to the government.

law, the examples discussed in section III.A.1 show that the research has benefit and use of some description to the government.

105. In a similar, overly formalistic vein, the Panel noted that the cooperative agreements, TIAs, and OTAs submitted by the EU were administered by a "Grants Officer" through the Grants Administration Office" and described Boeing or McDonnell Douglas as the "recipient."[204] These observations do not appear to have swayed the Panel, as it stated explicitly that "we do not accept that these DOD payments to Boeing constitute outright 'grants'."[205] To the extent the Panel did give them any weight, it erred. The evidence shows that "Grants Officer" and "Grants Administration Office" are merely titles, and do not reflect anything about the substance of the transactions or nature of the research projects that they manage. In fact, 32 CFR §22.205(b) explicitly authorized Grants Officers to award procurement contracts when a research project calls for a profit.[206] Thus, the title of the officer, and by extension of the office for which he or she works, provides no indication as to whether or not the transaction is substantively a purchase of services. Accordingly, if the Panel based its finding on the notion that cooperative agreements, TIAs, and OTAs were direct transfers of funds on references to "assistance," the "Grants Officer," and "the Grants Administration Office," then the Panel is incorrect.

106. In sum, the formal regulatory categorization of research contracts and R&D agreements under U.S. law does not support a legal conclusion that the research subject to this dispute was principally for the use and benefit of Boeing. Therefore, to the extent that the Panel found that this evidence supported the conclusion that the transactions in question were direct transfers of funds rather than purchases of services, it erred.

b. The Panel's evaluation of the "demonstrable use" to DoD of research under R&D agreements indicated that the research was of benefit and use to the government, indicating that they were purchases of services.

107. The Panel's own findings pursuant to its "demonstrable use" analysis support a further finding that DoD was the principal beneficiary or user of the research performed by Boeing under the R&D Agreements. In particular, the Panel found that "{g}enerally, the purpose of these programmes was to conduct R&D aimed at designing more advanced weapons or other defense systems or to reduce the cost of such systems."[207] As discussed in more detail in section III.A.1, the evidence that the Panel mistakenly did not consider with respect to the individual agreements themselves further support this finding. Therefore, this consideration does not support the Panel's conclusion that research funded by DoD through R&D agreements was principally for the benefit and use of Boeing.

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[204] Panel Report, para. 7.1146.

[205] Panel Report, para. 7.1171, note 2757.

[206] 32 CFR § 22.205(b) (Exhibit US-22).

[207] Panel Report, para. 7.1147.

c. The grant of greater data rights to Boeing under R&D agreements than under procurement contracts reflects its contribution to the research effort, an exchange that indicates a purchase of services.

108. The Panel noted that a cooperative agreement, TIA, or OTA gives the private party greater data rights than does a procurement contract. However, it added that "{t}his appears to derive from the fact that under assistance instruments, the 'recipient' is required to contribute its own funds to the R&D on a cost-shared basis."[208] Thus, this aspect of an R&D agreement does not involve the government paying a private party and getting nothing in return. Rather, the assignment of data rights is part of what the private party gets in exchange for contributing to a research project of interest to both of the parties. And, even under an R&D right, the government gets government use rights, which give it all the rights it needs. This interchange of funds for potentially valuable rights in intellectual property is one indicator that these transactions were, in fact, purchases of services. The Panel appears to have reached the same conclusion, although it is unclear how it factored that conclusion into its overall analysis of R&D agreements.

d. By addressing only the issue of profitability, the Panel conducted too narrow an analysis of the "typical elements of a purchase" and failed to recognize that there are conditions in which a commercial transaction will not provide for a cash profit.

109. The Panel's inquiry into whether the DoD-Boeing transactions had the "typical elements of a purchase" has some validity as a way of evaluating whether they fell within the ordinary meaning of a purchase of services. But the Panel took too narrow a view, considering only whether transactions allowed for a profit to the seller. The Panel failed to consider other typical elements of a purchase of services, such as the exchange of value for value. And, although the Panel correctly recognized that the profit incentive in a DoD procurement contract is evidence of a purchase of services, it missed the possibility that other terms of agreement might serve a similar function in a commercial transaction. Simply put, the Panel failed to grasp that while cash profit indicates a commercial transaction, it is not a necessary prerequisite. Therefore, the Panel's analysis of the typical elements of a purchase cannot support its finding that the DoD R&D agreements provided financial contributions under Article 1.1(a)(1)(i) and (iii) of the SCM Agreement.

110. Under the rules of interpretation of customary international law, as reflected in Article 31 of the Vienna Convention on the Law of Treaties, the terms of a treaty "are to be given their ordinary meaning in their context and in the light of the treaty's object and purpose." The Panel's examination of the "typical elements of a purchase of services" could provide an approach to discerning the ordinary meaning of "purchase" as it appears in (and is omitted from) Article 1.1(a)(1) of the SCM Agreement. However, the Panel did not actually conduct the analysis it set out. Rather than identify typical elements and address each of them, it halted after

[208] Panel Report, para. 7.1149.

considering the profit "element." It did not consider whether a purchase of service might have other elements, or look further at the transactions at issue to understand the significance of the presence or absence of a cash profit. It is noteworthy that the dictionary defines "purchase" as the "acquisition by payment of money, or some other valuable equivalent; the action or act of buying."[209] Thus, the defining "element" of a purchase of services is the exchange of a service for "money *or some other valuable equivalent*." The Panel never considered this aspect of the transactions at issue.[210]

111. Even with the one element it did consider, the Panel failed to conduct a systematic inquiry. The United States does not dispute that a cash profit could be one important part of the money or other value that a commercial purchaser gives to another commercial entity in exchange for the supply of a service. However, it is not the only incentive imaginable. The Panel's failure to identify and address the other elements of the transaction meant that it never considered whether those elements might have motivated a commercial seller to participate in the cooperative agreements, TIAs, and OTAs. For example, a seller of services might participate in a research transaction if, instead of a profit, the purchaser contributed resources toward an objective that the seller shared. In such a combined effort, neither of the two commercial parties would expect a profit because the other's contribution to a common goal provides sufficient incentive by itself. But the transaction is no less a purchase of services from the perspective of either entity.

112. The United States demonstrated before the Panel that this is precisely what happened in the cooperative agreements, TIAs, and OTAs at issue in the EU's claims. Each Party made a contribution and each took away valuable knowledge and intellectual property rights. This added ability to leverage the other party's contribution provided the incentive for each to enter into the transaction. For example, the cost sharing clause in most of the agreements states that "{t}he parties estimate that the research and development work under this agreement can only be accomplished with the recipient aggregate resource contribution of {$X}," lists each party's contributions in an annex, and specifies that "{f}ailure of either party to provide its respective total contribution may result in a unilateral amendment to the agreement by the grants officer to reflect a proportional reduction in funding for the other party."[211] The agreements further

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[209] *New Shorter Oxford English Dictionary*, p. 2418, *quoted in* US FWS, para. 44. *See also Black's Law Dictionary (8th 3d.)*, p. 20. (purchase: "the act or instance of buying"; purchaser: "one who obtains property for money or other valuable consideration, a buyer.").

[210] The Panel did note some of the features of the DoD R&D agreements, including the intellectual property rights, DoD oversight, and requirement that the private party provide technical reports. However, it dismissed them on the grounds that "Department of Commerce (DOC) cooperative agreements – which the United States acknowledges are 'grants' – have similar if not identical features." Panel Report, para. 7.1156. However, it never considered these elements of the DoD transactions in the context of their other elements, most particularly the recognized use and benefit that DoD took from the transactions, which was not the case with DOC and its cooperative agreements under ATP.

[211] *E.g.*, Cooperative Agreement F336115-97-2-3220, p. 7 (Exhibit EC-515); Cooperative Agreement F33615-98-2-5113, p. 11 (Exhibit US-636(HSBI)); Cooperative Agreement F33615-01-2-3110, p. 10 (Exhibit US-

spelled out the information and intellectual property rights that each took away from the research. These statements demonstrate that each party's contribution was critical to the other party's participation, and that both sought to take value out of their joint effort.

113. To view the question through the lens of the Panel's "principally for the benefit and use" test, in many ways, the government gets *more* for *less* under an R&D agreement. Under a procurement contract, the government gets the research activities conducted by the private party in exchange for paying the cost of conducting those activities plus any fee. Under an R&D agreement, the government gets the same activities in exchange for paying their cost *without any fee*. It also gets the benefit of the activities funded through the private party's contribution. DoD does give up something in return – it cedes data rights for non-government purposes (which DoD does not need) and some of the control over how the private party conducts the work. However, this exchange does not shift the balance of benefit and use so that it rests principally with the private party. In fact, a consideration of all of the terms of the R&D agreements makes it hard to see how the arrangement is inconsistent with what a commercial entity would do.

114. Thus, the Panel's analysis of the typical elements of a purchase of services erred because it failed to address all of the elements that would indicate whether transactions fell within the ordinary meaning of a purchase of services. In particular, it placed undue emphasis on the presence of a profit, and correspondingly neglected to consider whether other terms might also provide the element of an incentive for a commercial entity to supply research services.

e. Conclusion

115. The Panel never explained how it weighed the five factors it considered against each other. However, it is clear that two of the factors – the demonstrable use to DoD of research under the R&D agreements and the distribution of data rights – indicate that the transactions were purchases of services. The Panel may have considered U.S. legislation relevant to two of the factors as supporting its conclusion, but it does not, as the classification of the cooperative agreements, TIAs, and OTAs as "assistance" under U.S. law provides no guidance as to whether they are purchases for purposes of Article 1.1(a)(1 of the SCM Agreement. And the Panel's consideration of the typical elements of a purchase of services was too narrow to draw any conclusions. An examination of all of the relevant terms of the transactions demonstrates that the R&D agreements did have the elements of a purchase of services. Therefore, the Panel's conclusion, based on those factors, that DoD's R&D agreements with Boeing were a direct transfer of funds rather than a purchase of services was wrong. The United States respectfully requests that the Appellate Body reverse the Panel's conclusion under Article 1.1(a)(1)(i) and (iii).

600(HSBI), p. 45/53); TIA F33615-00-2-3002, p. 10 (Exhibit US-604(HSBI)); TIA F33615-03-2-3300, p. 7 (Exhibit US-607(HSBI)); OTA F33615-98-3-5103, p. 16 (Exhibit EC-517).

B. The Panel's finding that cooperative agreements, TIAs, and OTAs conferred a benefit on Boeing was erroneous because it failed to consider the payments and other contributions that Boeing made to R&D of benefit to DoD.

116. In addition to its erroneous finding that R&D agreements were financial contribution, the Panel failed to address the question posed by Article 1.1(b) of the SCM Agreement – whether the financial contribution made by DoD under the those agreements were on terms more favorable than the market would provide. Instead, the Panel based its analysis of the benefit on a transaction that never occurred – DoD "provid{ing} payments (and access to its facilities and personnel) . . . on the condition that {Boeing} perform R&D activities principally for the benefit of {Boeing}" without "some form of royalties or repayment."[212] In fact, as the Panel itself found, "under assistance instruments, the 'recipient' is required to contribute its own funds to the R&D on a cost-shared basis."[213] The cooperative agreements, TIAs, and OTAs submitted to the Panel generally required such a contribution from Boeing. Thus, the exchange on which the Panel based its finding of benefit – payment for research principally for the benefit and use of Boeing without some form of royalty or repayment – is not what the R&D agreements did. This error resulted in a finding irrelevant to the situation at hand that, therefore, did not establish the existence of a benefit under Article 1.1(b) of the SCM Agreement.

117. The Appellate Body found in *Canada – Aircraft* that the requirement under Article 1.1(b) that a subsidy confer a benefit

> implies some kind of comparison. This must be so, for there can be no "benefit" to the recipient unless the "financial contribution" makes the recipient "better off" than it would otherwise have been, absent that contribution. In our view, the marketplace provides an appropriate basis for comparison in determining whether a "benefit" has been "conferred", because the trade-distorting potential of a "financial contribution" can be identified by determining whether the recipient has received a "financial contribution" on terms more favourable than those available to the recipient in the market.

This passage highlights that the comparison between the government financial contribution and the market focuses on the "terms" offered by the government. Thus, if the appreciation of the terms of the financial contribution is incorrect, the comparison with the market will also be incorrect, and any conclusion as to the existence of a benefit will be invalid.

118. The Panel implicitly recognized this point in emphasizing that it would base the benefit analysis on the "core 'term' upon which the financial contributions are provided"[214] and in

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[212] Panel Report, para. 7.1184.

[213] Panel Report, para. 7.1149.

[214] Panel Report, para. 7.1183.

finding that modifying the terms it outlined could lead to a different conclusion.[215] However, when it came to applying this analysis to the facts of this dispute, the Panel improperly failed to consider all of the relevant terms of cooperative agreements, TIAs, and OTAs. That is, it did not consider that the terms of the agreements required Boeing to perform research of benefit and use to DoD and to contribute company resources to the R&D project, and then ask whether a commercial entity would have provided funds on that basis.

119. The Panel recognized that DoD gained at least some benefit and use from research under R&D agreements. In other words, it had a military interest in having the work performed. The Panel also found that "under assistance instruments, the 'recipient' generally contributes its own funds to the R&D on a cost-shared basis."[216] The particular cooperative agreements, TIAs, and OTAs submitted to the Panel generally required such a contribution from Boeing. For example, Cooperative Agreement F33615-97-2-3220 called for the expenditure of $1,428,692 on research into composite repair of aircraft structures, with DoD and contractor McDonnell Douglas each paying half, $714,346.[217] The contract clause entitled "cost sharing" provides that:

> The parties estimate that the research and development work under this agreement can only be accomplished with the recipient aggregate resource contribution of $714,346.00 throughout the term of this agreement. The recipient agrees to provide these resources as shown in the attached Cost Sharing Summary and Schedule. Failure of either party to provide its respective total contribution may result in a unilateral amendment to the agreement by the grants officer to reflect a proportional reduction in funding for the other party.[218]

The TIAs submitted to the Panel all had cost sharing.[219] The provision on the private party's contribution generally called for the government and the private party to split costs evenly, although some R&D agreements called for the government to pay more than half.[220]

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[215] Panel Report, para. 7.1184 ("At a minimum, it is to be expected that some form of royalties or repayment would be required in the event that financial contributions were provided on such terms.").

[216] Panel Report, para. 7.1149.

[217] Cooperative Agreement F33615-2-97-3220, p. 1 (Exhibit EC-515).

[218] Cooperative Agreement F33615-2-97-3220, p. 7 (Exhibit EC-515, p. 7/12). Other cooperative agreements with cost sharing had the same clause. Cooperative Agreement 33615-98-2-5113, p. 1 (Exhibit US-636(HSBI)); Cooperative Agreement 33615-01-2-3110, p. 1 (Exhibit US-600(HSBI), p. 36/53); and Cooperative Agreement F33615-01-2-5206, p. 1 (Exhibit US-605(HSBI)).

[219] TIA F33615-00-2-3002, pp. 1 & 10 (Exhibit US-604(HSBI), pp. 1 & 10/37); TIA F33615-03-2-1403, p. 8 (Exhibit US-613(HSBI), p. 18/39); TIA F33615-03-2-3300, p. 7 (Exhibit US-607(HSBI), p. 7/19); TIA F33615-03-2-3304, p. 7 (Exhibit US-608(HSBI), p. 7/21); TIA F33615-03-2-5202, p. 8 (Exhibit US-610(HSBI), p. 8/45).

[220] *E.g.*, Cooperative Agreements 33615-01-2-5206 (Exhibit US-605(HSBI)); 33615-01-2-3101 (Exhibit US-638(HSBI)); F33615-97-2-3400 (Exhibit EC-406). The share of contributions for the first two agreements is HSBI. For the Cooperative Agreement F33615-97-2-3400, there was no contribution from Boeing.

120. When the Panel applied the Article 1.1(b) benefit analysis to these facts, it first described what it characterized as the "core 'terms'" of the DoD cooperative agreements – "that Boeing use the payments and access to facilities it received from DOD for the purpose of conducting aeronautics R&D work that is principally for Boeing's own benefit and use."[221] The Panel noted that the United States and the EU agreed that the proper benchmark for the comparison with the market was "the terms of a commercial transaction in which one entity pays another to conduct R&D."[222] The Panel then found that "no commercial entity, i.e. no private entity acting pursuant to commercial considerations would provide payments" on those terms without receiving "some form of royalties or repayment."[223] It concluded that, in light of this finding, "it was not necessary for the European Union to present benchmark evidence on the terms and conditions of specific market-based R&D financing in order to establish, at least on a prima facie basis, that these DOD transactions conferred a benefit upon Boeing."[224]

121. The United States does not disagree with the unstated assumption of the Panel's finding, namely, that if a Panel finds that a financial contribution is economically irrational, it may, absent evidence to the contrary, conclude that the transaction confers a benefit. However, in this situation, the transaction the Panel found to be economically irrational (funding of research principally for the benefit or use of the supplier without some form of royalties or repayment) is not the financial transaction that actually occurred. Critically, in addition to government payments to Boeing, the company contributed its own resources *to research that was of interest to the government.* Thus, the Panel's statement of "the question" is incorrect. It is *not*:

> whether, in a "commercial transaction, one entity would pay another entity to conduct R&D on these same terms, i.e. on the term that the entity receiving the financial contributions conduct R&D that is principally for the benefit and use of the entity receiving the payment.[225]

Instead, if the Panel were to uphold the Panel's finding as to DoD R&D agreements being a financial contribution, the proper "question" would be:

> whether, in a "commercial transaction, one entity would pay another entity to conduct R&D on these same terms, i.e. on the term that *both entities contribute to the effort by one of them to* ~~the entity receiving the financial contributions~~ conduct R&D that is *for the benefit and use of both entities, albeit* principally for the benefit and use of the entity receiving the payment.

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[221] Panel Report, para. 7.1183. As section II.A explains, this conclusion by the Panel was inconsistent with Article 1.1(a)(1). For purposes of this section, the United States assumes, *arguendo*, that the Panel's finding was not incorrect.

[222] Panel Report, para. 7.1184, *quoting* EC RQ 21, para. 76; U.S. RPQ 136, para. 85.

[223] Panel Report, para. 7.1184.

[224] Panel Report, para. 7.1184.

[225] Panel Report, para. 7.1184.

The Panel's failure to ask – or answer – the correct question means that its analysis did not conduct the comparison of a financial contribution against a market analog that Article 1.1(b) of the SCM Agreement requires.[226] Therefore, the United States respectfully requests that the Appellate Body reverse the Panel's finding that the financial contributions it found to exist – payments and access to facilities under R&D agreements – confers a benefit for purposes of Article 1.1(b) of the SCM Agreement.

122. The United States notes that, when framed properly, the question posed by the Panel does not allow a conclusion in the abstract as to whether the transaction is economically rational. Instead, the answer would depend on the aggregate terms of the transactions – whether the actual exchange made by the parties was one that would have occurred on the market. The United States considers that this was the case with the cooperative agreements, TIAs, and OTAs between DoD and Boeing. The United States submitted evidence demonstrating that such transactions did occur.[227] However, the United States is not asking the Appellate Body to complete the Panel's analysis on this point. The Appellate Body lacks sufficient factual findings by the Panel or undisputed facts on the record to complete the analysis.

C. The Panel's statement regarding the portion of DoD-funded research that had potential relevance to large civil aircraft is inconsistent with Article 11 of the DSU.

123. The Panel, after reviewing the various estimates of the value of research that DoD paid Boeing to conduct into dual-use technologies, rejected both the U.S. and EU estimates for a variety of reasons. It identified concerns with the methodology used by the United States and the lack of a "maximum amount" analysis, such as the United States provided with regard to NASA R&D expenditures. After these explanations, the Panel added "{i}n addition, the Panel does not consider it credible that less than 1 per cent of the $45 billion in aeronautics R&D funding that DOD provided to Boeing over the period 1991-2005 had any potential relevance to LCA."[228] The Panel cited no evidence for this final comment. Therefore, in making it, the Panel failed to conduct an objective assessment under Article 11 of the DSU.

124. As discussed above, Article 11 of the DSU instructs a panel to "make an objective assessment of the matter before it, including an objective assessment of the facts of the case and the applicability of and conformity with the relevant covered agreements . . . ." The Appellate Body has explained that:

> Article 11 requires panels to take account of the evidence put before them and forbids them to wilfully disregard or distort such evidence. Nor may panels make

[226] The United States notes that the Panel did not differentiate between procurement contracts and cooperative agreement signed by NASA. However, as the NASA R&D agreements are extremely small in value relative to procurement contracts (less than 1 percent), the United States is not appealing this issue.

[227] *E.g.*, Contract A (Exhibit US-1208); Contract B (Exhibit US-1209); Contract C (Exhibit US-1210); Contract D (Exhibit US-1211); Contract E (Exhibit US-1342); and Contract F (Exhibit US-1343).

[228] Panel Report, para. 7.1205.

> affirmative findings that lack a basis in the evidence contained in the panel record. Provided that panels' actions remain within these parameters, however, we have said that "it is generally within the discretion of the Panel to decide which evidence it chooses to utilize in making findings", and, on appeal, we "will not interfere lightly with a panel's exercise of its discretion".[229]

125. The Panel cited no evidence in support of its comment about the amount of DoD R&D of "potential relevance to LCA." In fact, that comment is inconsistent with the Panel's ultimate finding that "any attempt by the Panel to go further and arrive at our own estimate of the amount of the subsidy to Boeing's LCA division would be speculative."[230] In addition, when the Panel noted differences as to whether the meaning of "dual use" was subject to "a relatively broad understanding" or a "narrower conception," it emphasized that "{w}e are not taking a position on this definitional issue."[231] With the Panel disavowing any definition of "dual use" R&D and finding the entire valuation exercise "speculative," any finding as to the value of R&D of "potential relevance to LCA" clearly lacks an evidentiary basis. Therefore, the Appellate Body should find this comment to be inconsistent with Article 11 of the DSU. The United States respectfully requests that the Appellate Body reverse the Panel's finding.

[229] *US – German Steel (AB)*, para. 142 (footnotes omitted), *citing US – Lead and Bismuth II (AB)*, para. 51; *EC – Hormones (AB)*, para. 133 and 135; *US – Wheat Gluten (AB)*, paras. 151 and 161-162.

[230] Panel Report, para. 7.1209.

[231] Panel Report, para. 7.205, note 2796.

IV. WASHINGTON STATE B&O TAX REDUCTION

126. The United States seeks review of the Panel's findings related to the Washington State Business and Occupation ("B&O") tax reductions, which the Panel found constituted a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement.[232] The Panel erred in its interpretation and application of the standard to be applied under Article 1.1(a)(1)(ii) of the SCM Agreement when determining whether a "financial contribution" has been made in a situation where it is alleged that "government revenue that is otherwise due is forgone or not collected." The Panel also erred in its analysis of specificity under Article 2.1(a) of the SCM Agreement. Accordingly, the United States respectfully requests that the Appellate Body reverse the Panel's findings with respect to both "revenue foregone" and specificity.

A. The Panel erred in its interpretation and application of the standard to apply under Article 1.1(a)(1)(ii) of the SCM Agreement

127. In analyzing whether the Washington State B&O tax reductions constituted "revenue foregone" within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement, the Panel erred by engaging in an analysis that ignored the complexity of the Washington State tax system. Specifically, the Panel applied a simple "but for" test in a situation that did not lend itself to such an analysis. Indeed, the Panel faced precisely the type of "complex" situation about which the Appellate Body warned in *US – FSC* that "it will usually be very difficult to isolate a 'general' rule of taxation and 'exceptions' to that 'general' rule. Instead, we believe that panels should seek to compare the fiscal treatment of legitimately comparable income. . . ."[233]

128. The Panel failed to heed the Appellate Body's admonition. As a consequence, the Panel reviewed the B&O tax reductions challenged by the EU in isolation, rather than in light of the overall application of the Washington State B&O tax system of which the reductions were merely a part. The Panel failed to recognize that the Washington State B&O tax system contained numerous rates applied to various activities, effectively providing for a tax system based on a wide range of individual rates, rather than a simple "general rule" and one or more individual "exceptions" and, as such, failed to "compare the financial treatment of legitimately comparable income."

129. Because the Panel failed to apply the correct legal standard in its analysis of Washington State's complex B&O tax system, the Appellate Body should reverse the Panel's finding that the Washington State B&O tax reductions constituted a "financial contribution."

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[232] *See* Panel Report, paras. 7.133 and 7.205.

[233] *US – FSC (Article 21.5 – EC) (AB)*, para 91.

1. The Panel erred in its interpretation of the standard to apply under Article 1.1(a)(1)(ii) of the SCM Agreement

130. Despite beginning its evaluation by referencing prior Appellate Body reports that discussed the "revenue foregone" standard of Article 1.1(a)(1)(ii) of the SCM Agreement, including the Appellate Body's warnings about the risks inherent in a simple "but for" test, the Panel departed from the standard set forth in the text of the SCM Agreement and engaged in an overly simplistic analysis that failed to take into account the complexity of the Washington B&O tax system.

131. As the Panel noted, the Appellate Body explained in *US – FSC* that:

> 132. {I}n determining if revenue "otherwise due" has been foregone, a comparison must be made between the revenue actually raised and the revenue that would have been raised "otherwise". The panel and the Appellate Body agreed that the basis of comparison in determining what would otherwise have been due "must be the tax rules applied by the Member in question".[234]

133. The Panel further noted that, in the corresponding compliance proceedings:

> 134. {T}he Appellate Body clarified that there may be situations where it is possible to apply a "but for" test, namely where the measure at issue is an "exception" to a "general" rule of taxation. However, a panel is not always required to identify the "general" rule of taxation. In many situations, it may be difficult to do so.[235]

135. The Appellate Body has explained that:

> 136. Panels should seek to compare the fiscal treatment of legitimately comparable income to determine whether the contested measure involves the foregoing of revenue which is "otherwise due", in relation to the income in question …
>
> 137. {T}he normative benchmark for determining whether revenue foregone is otherwise due must allow a comparison of the fiscal treatment of comparable income, in the hands of taxpayers in similar situations.[236]

138. Yet the Panel then incorrectly paraphrased and interpreted the Appellate Body's guidance:

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[234] Panel Report, para. 7.116 (*citing US – FSC (AB)*, para. 90).

[235] Panel Report, para. 7.119 (*citing US – FSC (Article 21.5 – EC) (AB)*, para. 91).

[236] Panel Report, para. 7.119 (*quoting US – FSC (Article 21.5 – EC) (AB)*, paras 91 and 98).

> {T}he Appellate Body's analysis suggests that where it is possible to identify a general rule of taxation applied by the Member in question, a "but for" test can be applied. In other situations, the challenged taxation measure should be compared to the treatment applied to comparable income, for taxpayers in comparable circumstances in the jurisdiction in issue.[237]

139. The Panel appears to have misunderstood the Appellate Body's analysis and consequently arrived at a mistaken interpretation of the standard to be applied under Article 1.1(a)(1)(ii) of the SCM Agreement. Contrary to the Panel's understanding, the requirement to compare "the challenged taxation measure {with} . . . the treatment applied to comparable income, for taxpayers in comparable circumstances . . ." is not limited to "other situations" where a "but for" test cannot be applied. Rather, that is the standard to be applied in all cases, and a "but for" test is simply one methodology that may be useful for applying that standard in certain, limited situations.

140. As the Appellate Body explained in *US – FSC (Article 21.5 – EC)*:

> Given the variety and complexity of domestic tax systems, it will usually be very difficult to isolate a "general" rule of taxation and "exceptions" to that "general" rule. *Instead*, we believe that *panels should seek to compare the fiscal treatment of legitimately comparable income to determine whether the contested measure involves the foregoing of revenue which is "otherwise due", in relation to the income in question*.
>
> In addition, *it is important to ensure that the examination under Article 1.1(a)(1)(ii) involves a comparison of the fiscal treatment of the relevant income for taxpayers in comparable situations*. For instance, if the measure at issue is concerned with the taxation of foreign-source income in the hands of a domestic corporation, it might not be appropriate to compare the measure with the fiscal treatment of such income in the hands of a foreign corporation.[238]

141. As is evident in the passage quoted above, the Appellate Body rejected the proposition that the "but for" test, or the "general rule" and "exception" analysis, reflects the correct standard under Article 1.1(a)(1)(ii) of the SCM Agreement. "Instead," the Appellate Body explained, the challenged taxation measure should always be compared to the treatment applied to comparable income, for taxpayers in comparable circumstances in the jurisdiction in issue.[239]

142. While it may be possible in some situations to apply a "but for" test to perform the comparison required by Article 1.1(a)(1)(ii) of the SCM Agreement, the Appellate Body noted

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[237] Panel Report, para. 7.120.

[238] *US – FSC (Article 21.5 – EC) (AB)*, paras. 91 and 92 (*citations omitted) (emphasis added)*.

[239] *US – FSC (Article 21.5 – EC) (AB)*, para. 91.

that "usually" it will be difficult to do so. The general rule requires a comparison of the tax treatment of legitimately comparable income. The Panel erroneously elevated the "but for" test to the status of general rule and treated the comparison of legitimately comparable income as an exception to that rule, only to be applied if no "but for" situation can be established.

143. Accordingly, the United States respectfully requests that the Appellate Body reverse the Panel's erroneous legal conclusion with respect to the standard to be applied under Article 1.1(a)(1)(ii) of the SCM Agreement.

2. The Panel erred in its application of the standard under Article 1.1(a)(1)(ii) of the SCM Agreement

144. After failing to interpret correctly the standard applicable under Article 1.1(a)(1)(ii) of the SCM Agreement, the Panel compounded its error by applying the wrong standard to the evidence before it. This led the Panel to conclude incorrectly that the Washington State B&O tax reductions constituted government revenue foregone that was otherwise due, and thus a financial contribution within the meaning of Article 1.1(a)(1) of the SCM Agreement.

145. The United States will begin with a brief overview of the Washington State tax system and then discuss certain specific errors of law that the Panel made.

a. Overview of the Washington state B&O tax system

146. Alone among U.S. states, the State of Washington relies on a B&O tax for purposes of business taxation.[240] This tax has a long history in the State of Washington, dating back to the Revenue Act of 1935, when it was first established.[241] The B&O tax applies to categories of business activities, rather than categories of income or categories of taxpayers, and the tax rate varies depending on the type of business activity. In other words, business taxpayers (whether for-profit, non-profit, or another type of organization[242]) are taxed on the basis of the activities in which they engage. As a result, a taxpayer may face more than one B&O tax rate because different activities in which a taxpayer may engage may be taxed at different rates.

147. In its early years, the B&O tax rate was 0.25 percent for all business activities except services (which were taxed at 0.50 percent). Over time, State legislators created a number of specialized tax rates for various categories of business activities. Currently, there are four broad activity classifications and tax rates ((1) manufacturing (0.484 percent); (2) wholesaling (0.484 percent); (3) retailing (0.471 percent); and (4) services (1.5 percent)[243]) and a host of individual

[240] Washington's Tax System presented by the Department of Revenue, p. 8 (Exhibit US-175).

[241] In response to escalating demands for public services, the Legislature also enacted a retail sales and use tax.

[242] RCW 82.04.030 (Exhibit US-177).

[243] Washington State Department of Revenue Business & Occupation Tax, p. 1-2 (Exhibit US-178). The only business activities not subject to the B&O tax are agricultural production and the rental of real estate.

classifications and rates for various business activities. The current tax rates[244] for 36 categories of business activities identified in the tax code are as follows:

1. child care (0.484 percent)
2. commissions of insurance agents and brokers (0.484 percent)
3. disposal of low-level radioactive waste (3.3 percent)
4. environmental clean-up (0.471 percent)
5. extracting (0.484 percent)
6. extracting and processing for hire (0.484 percent)
7. freight brokers (0.275 percent)
8. government contracting (0.484 percent)
9. income derived from royalties (0.484 percent)
10. international investment management services (0.275 percent)
11. licensed boarding homes (0.275 percent)
12. manufacturing (0.484 percent)
13. manufacturing biodiesel/alcohol fuel (0.138 percent)
14. manufacturing fresh fruit, vegetables, and dairy products (exempt)
15. manufacturing of semiconductor materials (0.275 percent)
16. manufacturing or selling commercial aircraft and components (0.2904 percent[245])
17. manufacturing wheat into flour and raw seafood (0.138 percent)
18. printing and publishing (0.484 percent)
19. processing meat (at wholesale) (0.138 percent)
20. processing soybeans, canola, and dry peas (0.138 percent)
21. public or non-profit hospitals (1.5 percent)
22. public road construction (0.484 percent)
23. radio and television broadcasting (0.484 percent)
24. radioactive waste clean-up for the U.S. government (0.471 percent)
25. repair of aircraft (0.275 percent)
26. retailing (0.471 percent)
27. retailing of interstate transportation equipment (0.484 percent)
28. services (1.5 percent)
29. stevedoring (0.275 percent)
30. tour operators (0.275 percent)
31. travel agents (0.275 percent)
32. treatment of chemical dependencies (0.484 percent)
33. warehousing (0.484 percent)
34. warehousing or reselling of prescription drugs (0.138 percent)
35. wholesaling (0.484 percent)
36. all other activities (1.5 percent)

[244] Business and Occupation Tax, RCW 82.04, p. 1 (Exhibit US-179).

[245] This rate was 0.4325 percent prior to July 1, 2007, and will remain at 0.2904 percent until July 1, 2024.

148. Washington State applies these different nominal B&O tax rates to different activities in an effort to minimize the negative effects of the tax on various types of businesses. In applying the B&O tax rate, the State takes into account the fact that certain business activities are subject to higher effective tax rates than other activities because the nominal B&O tax rate "pyramids." With pyramiding, goods and services that are inputs into higher stages of production are effectively taxed multiple times as they move through the production chain,[246] and each business in this chain must pay the B&O tax on its gross income. Pyramiding results in a successively greater effective tax rate for each business in the chain because the gross value of the product at each stage includes taxes paid on intermediate products, so the tax accumulates, or pyramids, as it moves through the production chain.[247]

149. The pyramiding of the Washington B&O tax creates effective tax rates that vary substantially across economic sectors and business activities. The B&O tax pyramids an average of 2.5 times, but the rate varies considerably across industries. In the services sector, the average rate of pyramiding is 1.5 times. For some manufacturing activities, the rate of pyramiding is over five or six times.[248] Because aerospace manufacturing often involves multiples steps, its average rate of pyramiding – 5.3[249] – is much higher than other sectors, and so is its effective tax rate. The effective tax rate for aerospace manufacturing prior to the second stage of the B&O tax reduction was 2.63 percent – the third highest in the State – compared to an average of only 1.53 percent for all other businesses in the State of Washington.[250] With the second stage of the B&O tax reduction,[251] the *effective* tax rate for aerospace manufacturing fell from 2.53 percent to 1.578 percent.[252]

b. Legal errors committed by the Panel

150. Despite recognizing that there are "36 possible activity classifications" under the Washington State B&O tax system,[253] the Panel concluded that it was "<u>not difficult</u> to identify a

[246] Washington State Tax Structure Study 2002, Volume 1, p. 110 (Exhibit US-180).

[247] Washington State Tax Structure Study 2002, Volume 1, p. 36 (Exhibit US-180).

[248] Washington State Tax Structure Study 2002, Volume 1, p. 24 (Exhibit US-180).

[249] Washington State Tax Structure Study 2002, Volume 1, p. 112, Table 9-7 (Exhibit US-180).

[250] Washington State Tax Structure Study 2002, Volume 2, p. 41 (Exhibit US-183). Economic Analysis of the European Community's Assertion Regarding Pass-Through Taxes in the Washington State Aerospace Market, pp. 13, 18 (Exhibit US-185).

[251] This second stage of the B&O tax reduction decreased the tax on aerospace manufacturing from .04235 percent to .02904 percent and came into effect on July 1, 2007. HB 2294 § 3(13)(Exhibit EC-54); RCW 82.04.260(1) (Exhibit US-181).

[252] The new effective tax rate for aerospace manufacturing is calculated by first taking the old effective tax rate and reducing it by 40 percent. This calculation is: (2.63 x .4 = 1.052). The amount of the reduction is then subtracted from the old effective tax rate to obtain the new effective tax rate. This calculation is: (2.63-1.052 = 1.578).

[253] Panel Report, para. 7.129.

general rule of taxation and exceptions to it . . . ."[254] This conclusion is surprising, in light of the complexity of the Washington State B&O tax system. The Panel's error appears to have stemmed from its application of the incorrect legal standard and its failure to follow other Appellate Body guidance related to the proper analysis to be performed under Article 1.1(a)(1)(ii) of the SCM Agreement.

i. By looking at aerospace manufacturing and selling in isolation, the Panel failed to take account of the fiscal treatment of legitimately comparable income.

151. As discussed above, the Panel first erred in seeking to apply a "but for" test as the standard for an analysis under Article 1.1(a)(1)(ii) of the SCM Agreement. The Panel further erred by identifying as the "normative benchmark" for such a test not the Washington State B&O tax system as a whole, but a subset of that tax system, *i.e.*, the tax rates applied to "manufacturing," "retailing," and "wholesaling."[255]

152. The Appellate Body has explained that "{t}here must . . . be some defined, normative benchmark against which a comparison can be made between the revenue actually raised and the revenue that would have been raised 'otherwise'."[256] The Appellate Body has clarified that this "normative benchmark" for determining whether "revenue foregone" is "otherwise due" is the Member's own tax rules, *i.e.*, "the comparison under Article 1.1(a)(1)(ii) of the *SCM Agreement* must necessarily be between the rules of taxation contained in the contested measure and other rules of taxation of the Member in question."[257] The Appellate Body has further clarified that it is the "prevailing domestic standard"[258] reflected in a Member's tax laws that provides the reference point for determining whether "revenue foregone" is "otherwise due" under the SCM Agreement, and also for identifying the fiscal treatment of the relevant income for taxpayers in comparable situations.[259]

153. Following the Appellate Body's guidance, the Panel should have looked to the Washington State B&O tax system as a whole, *i.e.*, the "rules of taxation," as the normative benchmark. The tax rates applied to all 36 categories of business activities that are individually identified in the tax code, taken together, reflect "the fiscal treatment of . . . relevant income for taxpayers in comparable situations."[260] The Panel erred in looking at the tax rates applied to "manufacturing," "retailing," and "wholesaling" in isolation from the tax rates applied to other

[254] Panel Report, para. 7.133 (emphasis added).

[255] Panel Report, para. 7.133.

[256] *US – FSC (AB)*, para. 90; *US – FSC (Article 21.5 – EC) (AB)*, para. 89.

[257] *US – FSC (Article 21.5 – EC) (AB)*, para. 89.

[258] *US – FSC (AB)*, para. 90.

[259] *US – FSC (21.5) (AB)*, para. 91.

[260] *US – FSC (Article 21.5 – EC) (AB)*, para. 92; *see also id.*, para. 98.

activities. These tax rates do not, on their own, reflect the "prevailing domestic standard" of the Washington State B&O tax system. Rather, the Washington State B&O tax system is a multi-rate tax system that applies numerous tax rates to numerous individually identified categories of activities, and the tax rate applied to aerospace manufacturing and selling is within the range of tax rates applied to other activities. That is, some activities are taxed at a higher rate while others are taxed at a lower rate.

154. Additionally, the Appellate Body has explained that "there must be a rational basis for comparing the fiscal treatment of the income subject to the contested measure and the fiscal treatment of certain other income."[261] The Appellate Body stressed that "it is important to ensure that the examination under Article 1.1(a)(1)(ii) involves a comparison of the fiscal treatment of the relevant income for taxpayers in comparable situations."[262]

155. There is no "rational basis" for the Panel to have disregarded the fiscal treatment of the other activities that are also individually identified in the Washington State tax code. The Panel explained its decision to look at aerospace manufacturing and selling in isolation by referring to "terminology used in HB2294 . . . {and} various other documents produced by the State of Washington that use similar language."[263] In particular, the Panel noted that those documents use words such as "{u}pon every person . . . except," "taxes . . . reduced in the case of the preferential business and occupation tax rate," "preferential tax rate," and "exemption."[264] These terms do nothing more than describe the arithmetic mechanism by which the legislation assigns the rates to particular activities. They do not identify whether income generated by some activities is "legitimately comparable" to income generated by others, or whether one rate "foregoes" revenue that would otherwise be due. Thus, the terminology highlighted by the Panel is irrelevant to the analysis the Appellate Body had found necessary under Article 1.1(a)(1)(ii) of the SCM Agreement. The Panel's avowedly facial analysis of the Washington State tax code[265] accordingly provides no justification for its failure to take into account the fiscal treatment of other relevant income for taxpayers in comparable situations.

156. It follows from the Appellate Body's guidance that when looking at a tax system as complex as the Washington State B&O tax system, the simple comparison of an ostensible "general rule" and "exception" made by the Panel is legally insufficient. The Appellate Body has recognized that it may be difficult to identify the relevant "normative benchmark" because Members' tax systems are often "varied and complex."[266] The Appellate Body's instruction in these circumstances is to conduct a substantive analysis – to identify "legitimately comparable

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[261] *US – FSC (Article 21.5 – EC) (AB)*, para. 90.

[262] *US – FSC (Article 21.5 – EC) (AB)*, para. 92; *see also id.*, para. 98.

[263] Panel Report, para 7.128.

[264] Panel Report, paras 7.122 – 132.

[265] Panel Report, para. 7.123.

[266] *US – FSC (Article 21.5 – EC) (AB)*, para. 90.

income" and evaluate whether the treatment of that income indicates that the application of the challenged measure foregoes revenue that is otherwise due.[267] However, rather than address the complexity of the B&O tax in this way, the Panel tried to create simplicity by reducing the analysis to two classes of income – aerospace manufacturing and manufacturing not covered by a sector-specific rate – without regard to any other classes of income. This isolated consideration of a few lines from the tax code is contrary to the Appellate Body's instruction to consider the tax rules applied through the contested measure with the "other rules of taxation of the Member in Question" and the fiscal treatment of legitimately comparable income.[268] The Panel, having misinterpreted the legal standard, misconstrued its task and misidentified the normative benchmark, which led it to make a flawed comparison and ultimately an incorrect conclusion.

ii. The Panel failed to take account of the effective fiscal treatment of other taxpayers in comparable situations.

157. The Panel's error is confirmed when the *effective* fiscal treatment of other taxpayers in comparable situations is taken into account, as it should have been by the Panel, in particular in light of the pyramiding inherent in the Washington State B&O tax system. As explained above, the B&O tax reduction brought the effective tax rate for aerospace manufacturing in line with the average effective tax rate for other businesses in the State of Washington. With the second stage of the B&O tax reduction, the effective tax rate for aerospace manufacturing was reduced from 2.53 percent to 1.578 percent.[269] The effective tax rate for aerospace manufacturing now more closely approximates, but still exceeds, the average effective tax rate for other Washington businesses of 1.53 percent.[270] Thus, the new tax rate is *not a favorable rate* for aerospace manufacturing. Rather, it makes the effective tax rate for this sector *less unequal* when compared to the effective tax rate applied to other business activities in the State. Indeed, even with the B&O tax reduction, the new effective tax rate for aerospace manufacturing remains slightly higher than the average effective tax rate for all other businesses in Washington. In light of this, it is clear that the tax rate applied to aerospace manufacturing and wholesaling cannot be considered revenue foregone that is otherwise due.

158. The Panel failed to meaningfully address the evidence before it relating to effective tax rates, stating only that:

> The United States advances its arguments regarding the average effective B&O tax rate merely as support for its conclusion that revenue otherwise due has not been foregone. We have concluded to the contrary and any consideration of the average effective B&O tax rate does not alter our decision. The United States itself concedes that the average effective B&O tax rate is not a normative

[267] *US – FSC (21.5) (AB)*, paras. 91-92.

[268] *US – FSC (21.5) (AB)*, para. 89.

[269] Section IV.A.2.a discusses the derivation of these figures.

[270] Section IV.A.2.a discusses the derivation of these figures.

> benchmark by which to contrast the fiscal treatment afforded to legitimately comparable income. Therefore, whether or not the B&O tax reduction for aircraft manufacturing draws the effective tax rate paid by such manufacturers closer to the average effective tax rate is not relevant to the analysis required by the Appellate Body report in *US – FSC*.[271]

159. The Panel's discussion reflects its flawed understanding of the legal standard to be applied under Article 1.1(a)(1)(ii) of the SCM Agreement. The Panel seems to suggest that, because the United States recognizes that "the average effective B&O tax rate is not a normative benchmark," the evidence related to the average effective tax rate "{t}herefore . . . is not relevant . . . ."[272] The Panel's conclusion is a *non sequitur*. The fact that the average effective B&O tax rate is not a normative benchmark in no way makes evidence of the effective rate irrelevant to a comprehensive comparison of legitimately comparable income, which the Panel was required to make. The Panel again seeks to oversimplify its task, looking for a readily identifiable benchmark that may be plugged into a "but for" test. As the Appellate Body has explained, the analysis required is more complex than that.

160. Contrary to the Panel's conclusion, evidence of the average effective rate of taxation is highly relevant – both factually and legally – to the determination of whether a financial contribution was provided as a result of lowering the nominal tax rate for aerospace manufacturing and selling. As explained above, while the effective tax rate applied to aerospace manufacturing and selling is now lower than it was before, it remains higher than the average effective rate of taxation, and is without question at a level similar to that applied to legitimately comparable income. The Panel's failure to take this into account in its analysis undermines its finding that the tax rate applied to aerospace manufacturing and selling constitutes a "financial contribution."

161. As explained above, the Panel elevated the "but for" test to the status of the general rule under Article 1.1(a)(1)(ii) of the SCM Agreement, despite the Appellate Body's warning against doing so. In addition, in applying a "but for" test to the evidence before it, the Panel effectively cut short its examination and failed to perform a proper analysis. As a general matter, the Panel failed to "compare the fiscal treatment of legitimately comparable income to determine whether the contested measure involves the foregoing of revenue which is 'otherwise due,' in relation to the income in question,"[273] and accordingly failed to apply the "revenue foregone" analysis that the Appellate Body set out.

162. Accordingly, the United States respectfully requests that the Appellate Body reverse the Panel's finding that the reductions in the B&O tax rates under HB 2294constitute the foregoing

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[271] Panel Report, para. 7.137.

[272] Panel Report, para. 7.137.

[273] *US – FSC (Article 21.5 – EC) (AB)*, paras. 91 and 92 (*citations omitted) (emphasis added)*.

of revenue otherwise due and, as a result, are a financial contribution under Article 1.1(a)(1)(ii) of the SCM Agreement.[274]

B. The Panel erred in its specificity analysis under Article 2.1(a) of the SCM Agreement

163. The Panel found that the B&O tax reduction granted to the aerospace industry under HB 2294 is a subsidy that is *de jure* specific within the meaning of Article 2.1(a) of the SCM Agreement.[275] This conclusion is inconsistent with Article 2.1(a) because the Panel failed to consider the entirety of the subsidy it found to exist.

164. Article 2.1(a) of the SCM Agreement provides that:

> Where the granting authority, or the legislation pursuant to which the granting authority operates, explicitly limits access to a subsidy to certain enterprises, such subsidy shall be specific.

165. The Appellate Body recently explained that:

> The word "explicitly" qualifies the phrase "limits access to a subsidy to certain enterprises". In its adverbial form, the term "explicitly" signifies "{d}istinctly expressing all that is meant; leaving nothing merely implied or suggested; unambiguous; clear". Moreover, "express" is a synonym for "explicit". We therefore consider that a subsidy is specific under Article 2.1(a) if the limitation on access to the subsidy to certain enterprises is express, unambiguous, or clear from the content of the relevant instrument, and not merely "implied" or "suggested".[276]

166. The Panel understood the term "explicit" similarly, reasoning that:

> {A} finding of specificity under Article 2.1(a) requires establishment of the existence of a limitation, on the face of the legislation or in other statements or means by which the granting authority expresses its will, that expressly and unambiguously restricts the availability of a subsidy to "certain enterprises" and as a result does not make the subsidy "sufficiently broadly available throughout an economy".[277]

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[274] Panel Report, para. 7.133.

[275] Panel Report, para. 7.205.

[276] *US – Anti-Dumping and Countervailing Duties (China) (AB)*, para. 372.

[277] Panel Report, para. 7.192.

167. The United States does not object to the Panel's understanding of the legal test to be applied in an analysis under Article 2.1(a) of the SCM Agreement. However, the Panel's application of the legal standard to the facts before it was flawed.

168. Article 2.1 of the SCM Agreement requires an evaluation "to determine whether a subsidy, *as defined in paragraph 1 of Article 1*, is specific" (emphasis added). Therefore, any specificity analysis of a subsidy must address the specificity of the subsidy that has been found to exist, not some other subsidy, and not merely a part of the subsidy found to exist. The Panel effectively recognized that when it rejected the EU assertion that the specificity analysis must be limited to the amending legislation through which the subsidy is created.[278]

169. Nonetheless, in this dispute, the Panel found that a subsidy existed within the meaning of Article 1.1(a)(1)(ii) and Article 1.1(b). In particular, with respect to the issue of the "financial contribution," the Panel concluded that:

> The standard rate for manufacturing and wholesaling activities is 0.484 per cent and for retailing activities is 0.471 per cent. Were it not for the "preferential rate" introduced by HB 2294, aircraft manufacturers would be subject to the rates of 0.484 per cent for manufacturing and wholesaling and 0.471 per cent for retail sales. For these reasons, the Panel finds that the reductions in the B&O tax rates constitute the foregoing of revenue otherwise due and, as a result, are a financial contribution under Article 1.1(a)(1)(ii) of the SCM Agreement.[279]

170. With respect to "benefit," the Panel determined that:

> In our view, the relevant tax break is essentially a gift from the government, or a waiver of obligations due, and it is clear that the market does not give such gifts.
>
> For these reasons, the Panel finds that for those tax measures that it has found to constitute a financial contribution, a benefit is conferred.[280]

171. Accordingly, having identified a "standard rate" of taxation and having found that the application of a tax rate lower than the standard rate constitutes a subsidy, Article 2.1(a) of the SCM Agreement required an assessment of whether and how Washington state tax law "explicitly limits" access to such a subsidy to "certain enterprises" under Washington State law. The Panel failed to make such an assessment.

172. Instead, the Panel analyzed whether the "*B&O tax reduction* for aircraft manufacturing,"[281] which it had found "constitutes a subsidy,"[282] was specific. In so doing, the

[278] Panel Report, para. 7.198.

[279] Panel Report, para. 7.133.

[280] Panel Report, paras. 7.170-171.

[281] Panel Report, para. 7.199 (italics in original).

Panel prejudged the outcome of its analysis because it did precisely what it found it should not do – assess specificity at the level of the amending legislation that created the alleged subsidy. It is unsurprising that the Panel would find that a tax reduction limited in its application to aircraft manufacturing is specific to the aircraft manufacturing industry. But the exceptions or differentiated rules that the Panel found to exist are not limited to the aircraft manufacturing industry. As the Panel itself noted:

> {T}here is a general B&O tax rate for manufacturing activities. However, there are certain *exceptions* {plural} to this rate. In particular, *aside from aircraft manufacturers, the following manufacturing activities are subject to a differential rate of taxation*:
>
> (a) Manufacturing wheat into flour, barley into pearl barley, soybeans into soybean oil, canola into canola oil or sunflower seeds into sunflower oil, raw seafood, biodiesel/alcohol fuel, processing or splitting dried peas and processing perishable meat products (0.138 per cent);
>
> (b) Manufacturing semi-conductor materials and nuclear fuel assemblies (0.275 per cent);
>
> (c) Manufacturing aluminium and solar energy systems (0.2904 per cent);
>
> (d) Manufacturing associated with fresh fruit, vegetables and dairy products (exempt);
>
> (e) Manufacturing of timber and timber products (0.4235 per cent until 30 June 2007 and 0.2904 per cent until 30 June 2024).
>
> Similarly, we recall our conclusion that there is a general tax rate of 0.484 per cent for wholesaling activities and 0.471 per cent for retailing. These general rates are also subject to certain *exceptions* {plural}. *Aside from wholesaling and retailing of commercial aircraft, a differential taxation rate applies to*:
>
> (a) Wholesaling and reselling prescription drugs, wholesaling of perishable meat products (0.138 per cent);
>
> (b) Wholesaling of solar energy systems and of aluminium, where manufactured by the seller (0.2904 per cent);
>
> (c) Wholesaling or retailing of nuclear fuel assemblies, where manufactured by the seller (0.275 per cent);
>
> (d) Retailing of interstate transport equipment (0.484 per cent);

[282] Panel Report, para. 7.199.

(e) Wholesaling of dairy products, fresh fruit and vegetables, where manufactured by the seller and where the purchaser transports the goods out of the state (exempt).[283]

173. The Panel suggested that "{t}his information gives credence to the United States' argument that the aerospace industry is not alone in receiving an exception to the general rates of taxation for manufacturing, retailing and wholesaling activities," but the Panel expressed the view that "it is not clear why any preferential B&O taxation rates afforded to other industries should not be considered separate specific subsidies to the industries concerned."[284]

174. In this regard, the Panel noted that differential rates have been introduced "at various times"[285] and posited that, "{i}f the differential B&O tax rates were truly implemented as part of a common subsidy programme, it would be reasonable to expect some links between the individual tax reductions, for example, in the timing of their introduction, in their purpose or in their levels."[286] The Panel pointed out that the United States had not provided to it "any evidence to suggest that the reductions to separate industries are part of a wider, generally available and explicit programme of tax reductions" and noted that certain evidence "reveals that the differential tax rates were introduced at a range of different times and for a variety of different purposes."[287]

175. However, the Panel fails to explain how such evidence is relevant to a specificity analysis under Article 2.1(a) of the SCM Agreement. To the contrary, it is not relevant. The Panel's own description of the different tax rates identifies them all uniformly as "exceptions" to the "general rates" for manufacturing, wholesaling, and retailing.[288] That is, they are all part of the same subsidy. The fact that the tax rates applied to other activities differ from that applied to aerospace manufacturing and selling, and the fact that they differ among one another would, at most, be relevant to the measurement of the benefit conferred to any particular recipient of the financial contribution. That question is separate from that of whether specificity exists.

176. Additionally, nothing in Article 2.1(a) of the SCM Agreement indicates that the "purpose" of a subsidy is relevant to the specificity analysis. *De jure* specificity is determined by evaluating whether "access" to a subsidy is "explicitly limit{ed}" to "certain enterprises." This must be discerned, as the Panel itself explained, by evaluating "the face of the legislation or

[283] Panel Report, paras. 7.202-203 (emphasis added); *ibid.*, para. 7.200..

[284] Panel Report, para. 7.204.

[285] Panel Report, para. 7.204.

[286] Panel Report, para. 7.205.

[287] Panel Report, para. 7.205.

[288] Panel Report, paras. 7.204-205.

. . . other statements or means by which the granting authority expresses its will . . . ."[289] The "purpose" of the subsidy or the "purpose" of limiting the subsidy is of no moment.

177. Nor is the fact that different taxation rates were created or modified at different times relevant to the specificity analysis under Article 2.1(a) of the SCM Agreement. The Washington State tax code, as it existed at the time of the Panel's specificity analysis, is the relevant subject of the Panel's evaluation for the purpose of determining whether the subsidy that the Panel found to exist is specific.

178. The relevant question that the Panel should have addressed is: was access to the subsidy that it found to exist, *i.e.*, the application of a preferential taxation rate lower than the general rate, explicitly limited to "certain enterprises." The Panel stated that the "differential rates" under the Washington State tax code were all "explicitly limited."[290] However, the Panel failed to analyze whether, taking all of the differential rates together, access to the subsidy was limited to "certain enterprises" or whether access was "sufficiently broadly available throughout an economy"[291] so as to indicate that the subsidy was not specific. Because the Panel did not even attempt to ascertain whether access to the subsidy was limited to "certain enterprises," its finding with respect to specificity is without foundation.

179. Accordingly, the United States respectfully requests that the Appellate Body reverse the Panel's finding that "the B&O tax reduction granted to the aerospace industry under HB 2294 is a subsidy that is specific within the meaning of Article 2.1(a) of the SCM Agreement."[292] Additionally, the United States submits that the Panel made insufficient factual findings and there are insufficient undisputed facts to permit the Appellate Body to complete the specificity analysis.

[289] Panel Report, para. 7.192.

[290] Panel Report, para. 7.204.

[291] Panel Report, para. 7.192.

[292] Panel Report, para. 7.205.

V. CITY OF WICHITA INDUSTRIAL REVENUE BONDS

180. The United States seeks review of two elements of the Panel's findings that Kansas industrial revenue bonds ("IRDs") challenged by the EU (Wichita IRB's) constituted specific subsidies to Boeing. First, the Panel erred in finding that, as future measures, Wichita IRBs issued after the date of the EU's panel request were within the Panel's terms of reference. Second, the Panel also erred in finding that Wichita IRBs were *de facto* specific within the meaning of Article 2.1(c) of the SCM Agreement on the basis that disproportionately large amounts of the subsidy were provided to Boeing and Spirit.

181. The United States also appeals the Panel's finding that tax benefits associated with the City of Wichita's IRB program were *de facto* specific. In this respect, the EU argued, and the Panel found, that benefits provided through City of Wichita IRBs were *de facto* specific because Boeing and Spirit had received a disproportionately large amount of the subsidy.[293] In particular, this was based on the EU's argument, and the Panel's finding that Boeing and Spirit received 69 percent of the subsidy granted by the City of Wichita, but accounted for only 32 percent of manufacturing jobs in the relevant geographic area. According to the Panel, this single numerical ratio was sufficient for a finding of *de facto* specificity because it would mean that a "significant disparity" existed between the proportion of the subsidy amount received by Boeing and Spirit, and their relative economic significance.

182. The United States appeals the Panel's finding to this effect on two grounds. First, the Panel's approach is at odds with Article 2.1(c) because it used the wrong baseline for its proportionality analysis. Second, the Panel also erred by failing to take into account the lack of diversification of the City of Wichita economy despite evidence submitted by the United States, the lack of any rebuttal evidence by the EU, and the specific requirement in the third sentence of Article 2.1(c) that account "shall be taken of the extent of diversification of economic activities within the jurisdiction of the granting authority".

A. The Panel used the wrong baseline for its analysis.

183. Panels have found that the relevant question for purposes of an analysis of "specificity" under Article 2 of the SCM Agreement, is whether a subsidy is "sufficiently broadly available throughout an economy as not to benefit a particular limited group of producers of certain products."[294] The Panel's approach, by contrast, would result in findings of disproportionality and *de facto* specificity, even where a subsidy is "sufficiently broadly available" and no *de jure* or *de facto* limits on "access" to the subsidy exist.[295] This is a direct result of the Panel's decision to use Boeing's (and Spirit's) company-specific employment levels relative to total

[293] Panel Report, para. 7.770.

[294] See, e.g., *US – Upland Cotton (AB)*, para 7.1142; *EC – Large Civil Aircraft*, para 7.919.

[295] Indeed, and somewhat remarkably, the Panel acknowledges this itself in its discussion of why it believes the EU's proposed standard is "problematic". See, Panel Report, para. 7.762.

manufacturing employment within the jurisdiction of the granting authority as the baseline for its disproportionality analysis.[296]

184. As the Panel itself recognized earlier in its report, the Wichita IRBs were issued to assist companies in raising revenue to fund the purchase, construction or improvement of various types of industrial and commercial property.[297] As such, only those companies that fund, construct or improve industrial and/or commercial property during the relevant time period actually had access to the IRB program.[298] Thus, there is no reason to assume, as the EU and the Panel did, that there is necessarily a logical and "proportionate" relationship between the number of employees of a particular company or group of companies as compared to all employment in the Wichita manufacturing sector, and the amount of IRB tax benefits received. It would have made much more sense to look, for example, at *qualifying* investments during the relevant period of time – *i.e.*, only those companies that actually made investments in industrial or commercial property – or some other factor that bears an actual relationship to the number of companies that qualify for IRB funding. The Panel's standard also takes no account of the fact that some industries may employ disproportionate numbers of people for a range of perfectly justifiable reasons. Nor does it account for the fact that many government programs that are "broadly" or even "generally" available are not, in fact, used by a number of companies that stands in direct proportion to the level of overall employment that they represent.

185. The Panel's approach, moreover, does not account for situations in which not every industry or company may be eligible or, for that matter, interested in participating in the government subsidy program. Often, for example, participation in a subsidy program requires at least a certain amount of administrative effort, or there may be other requirements that not every company meets – for example, the fact that one must purchase, construct or improve industrial or commercial property in order to qualify for IRBs. The Panel specifically recognizes that conditions for the grant of IRBs are subject to negotiation between the intended recipient and the issuing authority.[299] Participation may also require actual knowledge of the program and the benefits it may have. Many subsidy programs suffer a lack of broad participation even if they are not specific in any way. For example, smaller and mid-sized companies may not be sufficiently aware of the program, or the administrative effort may be too great for them.[300]

186. As each of these examples confirms, the Panel's approach, by focusing on a single numerical ratio, and using the total level of manufacturing *employment* within the jurisdiction of the granting authority as its baseline, does not provide a valid benchmark for what a subsidy like

[296] Panel Report, paras 7.768-7.769. See also Panel Report, para 7.759.

[297] See, *e.g.*, Panel Report, para 7.651.

[298] See, e.g., Panel Report, para. 7.658; 7.651 through 7.657.

[299] Panel Report, para. 7.654.

[300] It is noteworthy in this respect that the Panel did not find and the EU did not argue that the IRBs were *de jure* specific, and that the Panel specifically rejected the EU's argument that the City of Wichita exercised its discretion in a way that made the IRB benefits specific to Boeing. Panel Report, para 7.743, 774 ff.

the IRBs would be proportional *to*. It results in a finding of *de facto* specificity whenever discrepancies exist between a company's relative level of employment within an economy as a whole, and the amount of subsidy it receives. And it does so even if the subsidy, by any other measure, is broadly and proportionately available within the economy of the granting authority and there are no *de jure* or *de facto* limitations on access.

187. Through its criticism of the EU's approach, the Panel in essence acknowledged that its interpretative approach created incongruous results. This should have been a sign to the Panel that its own approach was flawed too. Instead of rejecting that approach, however, or looking for a different and more valid numerical ratio, it sought to overcome the problem it identified by adding the word "significant" to the "disproportionate" factor of Article 2.1(c).[301] In doing so, the Panel obviously acted beyond its authority, as Article 3.2 of the DSU specifically prohibits panels from adding to or diminishing the rights of WTO Members. Moreover, as the above examples show, even limiting the test to "significant" disproportionality does not necessarily solve the problem. For example, if only 50 percent of companies in a given economy make new investments in commercial or industrial property in any given period, it would be logical that they receive somewhere around 100 percent of IRBs. The fact that they only employ 25 percent of employees does not change that in any relevant way.

188. The Panel could have avoided the problem if it had followed the approach proposed by the United States. In particular, the United States advocated using the group of recipients of the alleged subsidy as the baseline for the disproportionality analysis.[302] That approach, as the Panel itself acknowledged, is more logical from a mathematical point of view.[303] It also would help factor in the proportion of companies that actually (or potentially) qualify for IRB benefits, as opposed to determining specificity based on a broader baseline factor that would bear no relation to the proportion at which recipients would be expected to use the subsidy.

189. The Panel noted that it did not find particular support for the approach advocated by the United States in the text of Article 2.1(c) of the SCM Agreement and ultimately rejected it because it considered that it was, in its view, "difficult to reconcile . . . with the purpose of Article 2 of the SCM Agreement . . . which is to determine whether a subsidy is sufficiently broadly available throughout an economy …".[304] Another recent panel, however, came to the opposite conclusion. In *EC – Large Civil Aircraft*, the panel found that while there is nothing in Article 2.1(c) that suggests "that a disproportionality analysis *must* involve comparing the amount of a subsidy granted under a given subsidy programme with the entire amount of subsidies granted under the same subsidy programme",

[301] Panel Report, para. 7.768.

[302] See, e.g., Panel Report, para 7.764; US Comment to EC Response to PQ51, paras 161 *ff*.

[303] Id.

[304] Panel Report, para 7.765 (emphasis added).

> the language of Article 2.1(c), when interpreted in its proper context and in the light of its object and purpose, suggests that where the subsidy at issue has been granted pursuant to a subsidy programme, that programme should normally be used for the purpose of identifying the "baseline" or "reference data" needed to perform a disproportionality analysis.[305]

Indeed, it was the EU itself that advocated this approach before the *EC – Large Civil Aircraft* panel.

190. The same approach, logically, and consistent with the ordinary meaning of Article 2.1(c) in context, should have been followed here. Had the Panel done so, it would not have found *de facto* specificity because there is no information on the record to suggest that Boeing's and Spirit's share of the Wichita IRB benefits was disproportionate to their respective shares of the overall group of actual or potential recipients of such IRBs, namely, companies that actually invested in industrial or commercial property during the relevant period. Rather, as the Panel specifically confirmed, Wichita IRBs are generally available to companies that make investments in industrial or commercial property, and there is no evidence that the City of Wichita used its authority in such a way as to favor Boeing, Spirit or any other enterprise. Therefore, the Panel erred in finding *de facto* specificity by reason of disproportionality.

B. The Panel erred by failing to take into account the extent of diversification in the City of Wichita

191. The Panel erred in its application of Article 2.1(c) of the SCM Agreement for a second reason as well. The EU's arguments and the Panel's analysis focused entirely and exclusively on a determination of "disproportionality" – *i.e.*, one of four factors listed in the *second* sentence of Article 2.1(c). The United States pointed out that, in addition to such a determination of "disproportionality", the *third* sentence of Article 2.1(c) provides that "account *shall* be taken of the extent of diversification of economic activities within the jurisdiction of the granting authority," and that the EU claims ignored this requirement. The United States provided evidence to support its argument that the City of Wichita economy is undiversified; that the "core industry of Wichita has focused on aircraft production" and that Wichita – a city with a population of just over 300,000 – is sometimes known as the "Air Capital of the World".[306] The EU never even tried to rebut this evidence, let alone submit its own evidence.[307]

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[305] *EC – Large Civil Aircraft*, paras 7.965 and 7.964, respectively.

[306] See, e.g., Panel Report, para. 7.752 and the evidence cited there.

[307] The EU simply repeated its core "disproportionality" argument that the proportion of the subsidy received by Boeing and Spirit was disproportionate to their share of total employment in the Wichita economy. But that ratio, as we discussed above, is irrelevant and not meaningful. Moreover, and in any event, it would mean that the same numeric ratio that was the basis for the Panel's finding of disproportionality would also be the basis for its finding of diversification.

192. The Panel specifically referred to the United States' argument in this respect.[308] Moreover, the Panel found that "{t}he SCM Agreement recognizes that a subsidy may be widely distributed and yet appear specific, due to limited diversification in the relevant economy. This is the case with the IRBs distributed in Wichita because the core industry in Wichita is aircraft production."[309] Despite the fact that the EU never submitted any rebuttal evidence, however, and notwithstanding the requirement in Article 2.1(c) that the extent of diversification of an economy "shall be taken {into account}", the Panel rejected the U.S. argument and found that "{t}he United States has not provided a convincing rebuttal. . . ."[310]

193. The Panel, in other words, simply ignored that, following the U.S. argument and the evidence it submitted, and in light of the instruction in Article 2.1(c) that account "*shall* be taken of the extent of diversification …", it was for the EU to demonstrate and for the Panel to find, that in addition to the appearance of "disproportionality", the subsidy was *in fact* specific, even when taking into account the lack of diversification of the Wichita economy and the evidence submitted by the United States to that effect.

C. Conclusion

194. The Panel erred in finding that Wichita IRBs were *de facto* specific on the basis that disproportionately large amounts of the subsidy were provided to Boeing and Spirit. In particular, the Panel's approach does not conform with Article 2.1 of the SCM Agreement, or the guidance provided by adopted panel and Appellate Body reports. The Panel's approach, in fact, would result in a situation where subsidies that are broadly available within a granting authority's economy would nonetheless be considered "specific".

195. The United States respectfully requests the Appellate Body to reverse the Panel's findings and find that the EU has failed to establish that alleged City of Wichita IRBs were properly within the Panel's terms of reference and were specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement.

[308] See, e.g., Panel Report, para 7.730.

[309] Id.

[310] Panel Report, para 7.769. We note that there is of course no requirement in the SCM Agreement that evidence is submitted in the form of "statistics" only.

VI. THE PANEL ERRED IN FINDING THAT THE AERONAUTICS R&D SUBSIDIES AND THE TAX SUBSIDIES CAUSED ADVERSE EFFECTS

196. With adverse effects, as in most other areas of its report, the Panel correctly laid out the analytical framework, relied on the appropriate authorities to guide its analysis, and set out the proper legal tests. However, after identifying the legal requirements, the Panel took a number of impermissible short-cuts in applying the law. As a result, its findings fail to establish any inconsistency with Articles 5(c) and 6.3(b)-(c) of the SCM Agreement.

197. The preceding sections have demonstrated that the Panel erred in finding that the NASA aeronautics R&D program, the DoD R&D agreements, and the Washington State B&O tax reduction were subsidies. For purposes of the discussion of the errors in the Panel's analysis of adverse effects, the United States assumes, *arguendo*, that these programs were subsidies.

198. The Panel structured its analysis around the two main theories advanced by the EU as to how alleged subsidies could cause adverse effects to EU interests. The first theory asserted that government research programs had "technology effects" on Boeing because they gave company the "knowledge, experience, and confidence" it needed to launch the 787 as the most technologically sophisticated aircraft in its size range in 2004.[311] This theory resulted in effects exclusively to 200-300 seat aircraft. The aeronautics R&D subsides are the only subsidies relevant to this discussion, because they are the only ones that the EU alleged to have had technology effects.

199. The second theory asserted that the alleged subsidies had "price effects" on Boeing, allowing it to charge lower prices for aircraft in the 100-200, 200-300, and 300-400 seat ranges.[312] The EU contended that all of the alleged subsidies had these effects, but divided them into two groups based on how they operated. It argued that one group of programs increased Boeing's non-operating cash flow, allowing it to boost research spending and charge lower prices for aircraft. The second group of programs, composed primarily of measures reducing tax rates applicable to Boeing's revenue, supposedly allowed the company to realize greater revenue on individual sales, giving it greater flexibility to lower prices. The EU referred to these as "marginal unit cost subsidies." At this stage, they consist exclusively of FSC/ETI and the B&O tax rate reductions by Washington state and the City of Everett, the United States refers to them in this submission as the "tax subsidies."

200. The Panel followed the EU's lead in analyzing the "technology effects" and "price effects" theories separately. The Panel also recognized that because the EU argued that the subsidies allegedly affecting non-operating cash flow and marginal unit costs operated differently, it needed to consider them separately.

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[311] EC FWS, para. 1335.

[312] EC FWS, para. 1340.

201. In framing its analysis this way, the Panel followed the dictates of Articles 5(c) and 6.3 of the SCM Agreement. However, when it moved on to apply this framework to the facts, it took a number of short-cuts that undermined its conclusions.

202. In evaluating the technology effects theory, the Panel perceived a relationship between some of the technologies studied under NASA and DoD aeronautics R&D programs and the technology Boeing chose for the 787, and concluded that this created a causal link between the subsidies and Boeing's ability to launch the 787 in 2004. The Panel neglected to consider that its findings about the nature and operation of the subsidies indicated that any link to the 787 was far too weak to create the genuine and substantial relationship of cause and effect necessary for a finding that they caused serious prejudice. Much of the NASA research addressed topics like supersonic flight that had nothing to do with the subsonic 787. NASA programs focused on laboratory work that stopped far short of operational technology, so that even when NASA researched technologies with a relationship to those used on the 787, it required a major investment of time and resources by Boeing to develop something with commercial utility. In addition, much of the technology used on the 787 came from Boeing's suppliers, and had nothing to do with the aeronautics R&D subsidies challenged by the EU. These are the reasons why, as the Panel recognized, the magnitude of the R&D subsidies "may not appear significant when compared to Boeing's . . . R&D expenditures over 1989-2006."[313] The Panel's short-cut of focusing on the relationship between the aeronautics R&D programs and certain technologies, without considering all of the factors affecting Boeing's ability to develop the 787 when it did, prevented the Panel from recognizing that the relationship was not one of causation for purposes of Articles 5 and 6.3 of the SCM Agreement.

203. The Panel took another short-cut in its counterfactual analysis of how the technology effects of the aeronautics R&D subsidies affected Airbus' prices and sales. The Panel relied on a subset of evidence about three of the eight NASA programs, and extrapolated its conclusions to the other programs. However, the Panel's own findings establish that the individual programs worked differently, and affected Boeing in different ways. The Panel's focus on a subset of programs ignored those differences. Thus, the facts and the Panel's own findings do not support its conclusion that in the absence of the aeronautics R&D subsidies, Boeing would have launched a technologically innovative 200-300 seat aircraft "significantly later than 2004" or it would have launched an aircraft in 2004 that "did not offer the degree of technological innovation of the 787."[314] In fact, the Panel's findings point in the opposite direction – that Boeing had the commercial impetus and the resources to launch an aircraft with the 787's level of technological innovation in 2004 without the aeronautics R&D subsidies.

204. The Panel also omitted important steps in evaluating whether the effects of the subsidies on Boeing's ability to launch the 787 and the prices for that aircraft resulted in serious prejudice to Airbus. It treated each finding that the 787 won a sales campaign because of subsidies as a

[313] Panel Report, para. 7.1760.

[314] Panel Report, para. 7.1775.

lost sale of both the A330 and the Original A350, even though Airbus could only lose one sale one time. It failed to address other factors causing customers to choose Boeing, which would have demonstrated that the lost sale to Airbus was not an effect of the subsidies. Its price suppression analysis relied on theoretical effects of subsidies without considering that data showed that the expected theoretical effects were not occurring in the market, or that data did not exist to evaluate the validity of the theory.

205. In evaluating the EU price effects theory, the Panel correctly found that the subsidies allegedly increasing non-operating cash flow did not have adverse effects, and that the magnitude of the subsidies allegedly affecting marginal unit costs of the 787 was too small to have adverse effects. However, the Panel took short-cuts in analyzing tax subsidies with regard to 100-200 seat and 300-400 seat aircraft, which led it to conclude erroneously that they caused serious prejudice to Airbus.

206. In fact, the Panel's brief analysis consists almost entirely of short-cuts. It dispenses with consideration of the magnitude of the subsidies or correlation between the subsidies and market developments. Its analysis of other causal factors and its counterfactual evaluation of price suppression and impedance of EU exports into third country markets is perfunctory. In place of a robust application of these established tests, the Panel attempted to rely on its finding that FSC/ETI was a prohibited subsidy to create a presumption that it caused "trade distortive effects." Rather than make specific findings as to which sales campaigns resulted in lost sales to Airbus, or the country markets in which displacement or impedance of exports occurred, the Panel made blanket findings based on abstract theories of causation, without considering the facts of the transactions that formed the basis for the EU arguments.

207. Thus, in spite of correctly appreciating the legal framework for performing its analysis, the Panel erred consistently in its findings that the aeronautics research subsidies and the tax subsidies caused adverse effects. The United States respectfully requests the Appellate Body to reverse those findings.

A. A panel's finding of adverse effects under Articles 5(c) and 6.3(b)-(c) of the SCM Agreement requires a "genuine and substantial relationship of cause and effect" between the subsidies and displacement or impedance, lost sales, price suppression, or one of the other phenomena of serious prejudice

208. The guidance from adopted panel and Appellate Body reports is relevant to an evaluation of the errors in both the Panel's technology effects and price effects theories. In *US – Upland Cotton (21.5)*, the Appellate Body confirmed that a panel must "determine that price suppression is the effect of the subsidy and that there is a 'genuine and substantial relationship of cause and effect'."[315] It explained that:

[315] *US – Upland Cotton (21.5) (AB)*, para. 374.

> We note that Article 6.3(c) does not use the word "cause" but, rather, provides that serious prejudice may arise where "the effect of the subsidy is . . . significant price suppression". The Appellate Body stated in the original proceedings that the text of Article 6.3(c) nevertheless requires the establishment of a causal link between the subsidy and the significant price suppression. We agree that Article 6.3(c) requires the establishment of a causal link, but we observe that, while the term "cause" focuses on the factors that may trigger a certain event, the term "effect of" focuses on the results of that event. The effect – price suppression – must result from a chain of causation that is linked to the impugned subsidy.[316]

These same considerations apply equally to the analysis of whether "the effect of the subsidy" is one of the other market phenomena listed in Article 6.3(a)-(d).

209. The Appellate Body also found that panels have a "certain degree of discretion in selecting an appropriate methodology for determining whether the 'effect' of a subsidy is significant price suppression."[317] If found in *US – Upland Cotton* that the causation analysis required of authorities acting under the SCM Agreement, the Safeguards Agreement, and the Anti-Dumping Agreement "must not be automatically transposed into Part III of the SCM Agreement" but "may suggest ways of assessing whether the effect of a subsidy is significant price suppression rather than it being the effect of other factors."[318] The Appellate Body endorsed a "but for" methodology as appropriate for examining serious prejudice that is "counterfactual" in nature, such as price suppression and impedance of exports. In *US – Upland Cotton (21.5)*, this analysis meant that the panel had to "determine whether the world price of upland cotton would have been higher in the absence of the subsidies (that is, *but for*, the subsidies)."[319] This requires a panel to examine the effects of the subsidy revealed by a comparison of the chosen counterfactual(s) to the actual situation. Such an examination, like all other aspects of the panel's assessment, must be grounded in a sufficient evidentiary basis.[320]

210. In *US – Upland Cotton (21.5)*, the Appellate Body also clarified that any "but for" methodology must take account of "non-attribution" factors:

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[316] *US – Upland Cotton (21.5) (AB)*, para. 372 (underlining added).

[317] *US – Upland Cotton (AB)*, para. 436 (footnotes omitted).

[318] *US – Upland Cotton (AB)*, para. 438 (underlining added, footnotes omitted).

[319] *US – Upland Cotton (21.5) (AB)*, para. 370.

[320] *E.g.*, *US – Upland Cotton (21.5) (AB)*, para. 357 ("Like other categories of evidence, a panel should reach conclusions with respect to the probative value it accords to economic simulations or models presented to it. This kind of assessment falls within the panel's authority as the initial trier of facts in a serious prejudice case."); and *Korea – Dairy (AB)*, para. 137 ("{U}nder Article 11 of the DSU, a panel is charged with the mandate to determine the facts of the case and to arrive at factual findings. In carrying out this mandate, a panel has the duty to examine and consider all the evidence before it . . . and to evaluate the relevance and probative force of each piece thereof".); *EC – Hormones (AB)*, paras 132-133.

> The Panel does not clearly articulate the standard implicated in its "but for" approach. Brazil submits that the Panel's "but for" standard "effectively *isolated* the effects of {United States} subsidies from the effects of other factors". New Zealand asserts that the Panel's finding – that without the United States subsidies the price of upland cotton would be higher – "stands independent of any other global factors that might also be suppressing world market prices". This may somewhat oversimplify the position. A subsidy may be necessary, but not sufficient, to bring about price suppression. Understood in this way, the "but for" test may be too undemanding. By contrast, the "but for" test would be too rigorous if it required the subsidy to be the only cause of the price suppression. Instead, *the "but for" test should determine that price suppression is the effect of the subsidy and that there is a "genuine and substantial relationship of cause and effect.*"[321]

The Appellate Body also confirmed the importance of taking account of effects of identified factors other than the subsidies, to ensure that "the effects of other factors on prices did not dilute the 'genuine and substantial' link between the subsidies and the price suppression."[322] Again, this logic applies equally in the analysis of the other market phenomena listed in Article 6.3(a)-(d).

211. The Panel took note of many of these requirements. In line with the suggestion of both the United States and the EU, it resolved to "adopt a counterfactual approach to determining whether the 'effects' of the subsidies at issue in this dispute are displacement or impedance, significant lost sales or significant price suppression."[323] The Panel also recognized the importance of non-attribution, stating that:

> in conducting our analysis of whether the subsidies affected Boeing's pricing and product offerings, we will also analyze the effects of other factors that are alleged to have affected that behaviour. Similarly, in analyzing the effects of the subsidies on Airbus' prices and sales, we will consider the effect of factors other than Boeing's pricing and product offerings on Airbus' prices and sales in each of the three product markets.[324]

212. The Appellate Body's review of whether a Panel has properly analyzed the causation question in a serious prejudice claim is an issue of law under Article 6.3 of the *SCM Agreement*. The Appellate Body in *US – Upland Cotton (21.5)* contrasted such a legal review under Article 6.3 of the *SCM Agreement* with a review of a panel's objective assessment of the facts of the case under Article 11 of the DSU*:*

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[321] *US – Upland Cotton (21.5) (AB)*, para. 374 (emphasis in original, underlining added).

[322] *US – Upland Cotton (AB)*, paras. 437-438.

[323] Panel Report, para. 7.1659.

[324] Panel Report, para. 7.1660.

> To the extent that the United States' arguments concern the Panel's appreciation and weighing of the evidence, we note from the outset that the Appellate Body will not interfere lightly with the Panel's discretion "as the trier of facts". At the same time, the Appellate Body has previously pointed out that the "consistency or inconsistency of a given fact or set of facts with the requirements of a given treaty provision is . . . a legal characterization issue". Whether the Panel properly interpreted the requirements of Article 6.3(c) of the *SCM Agreement* and properly applied that interpretation to the facts in this case is a legal question. This question is different from whether the Panel made "an objective assessment of the matter before it, including an objective assessment of the facts of the case", in accordance with Article 11 of the DSU.[325]

B. The Panel erred in finding that the aeronautics R&D subsidies caused adverse effects under Articles 5(c) and 6.3 of the SCM Agreement.

213. The Panel conducted its examination of the effects of the NASA and DoD payments, facilities, equipment, and employees that it found to be subsidies (collectively the "aeronautics R&D subsidies") in two stages. It began with "an analysis of the effects of the subsidies on *Boeing's* pricing and product offerings, followed by an analysis of the effects of the subsidies, through their effects on Boeing's pricing and product offerings, on *Airbus*' prices and sales."[326] The two stages of the examination present different legal issues, so the United States lays out separate appeals with regard to each.

214. The first stage of the Panel's analysis, which looked at the effect of subsidies on Boeing's product offerings, gives rise to two separate and independent grounds for appeal. Either ground for appeal is sufficient by itself to require reversal of the Panel's finding that the aeronautics R&D subsidies caused adverse effects to the interests of the EU. Section VI.B.1 presents the first of these, demonstrating that the Panel erred in finding that the aeronautics R&D subsidies caused adverse effects under Articles 5(c) and 6.3 of the SCM Agreement because they "contributed in a genuine and substantial way to Boeing's development of technologies for the 787."[327] The Panel's subsidiary findings regarding the nature and magnitude of the aeronautics R&D subsidies, and the existence of other factors contributing to Boeing's technological capabilities at the time of the 787 launch, indicate that the link perceived by the Panel is not a genuine and substantial relationship of cause and effect between the subsidies and Boeing's ability to launch the 787 in 2004. The United States also identifies one subsidiary finding that does not comport with the objective assessment called for under Article 11 of the DSU and asks the Appellate Body to reverse that findings. Correcting that error is not necessary for reversal of the Panel's finding under Articles 5(c) and 6.3(b)-(c) that the aeronautics R&D subsidies caused

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[325] *US – Upland Cotton (21.5) (AB)*, para. 383. *See* also *Chile – Price Band System (AB)*, para. 224; *EC – Hormones (AB)*, para. 132; *US – Upland Cotton (AB)*, para. 663; *US – Upland Cotton (21.5) (AB)*, paras 383-385.

[326] Panel Report, para. 7.1660 (emphasis in original).

[327] Panel Report, para. 7.1773.

serious prejudice. However, a correction would reinforce the conclusion that that there was no general and substantial relationship of cause and effect between subsidies and the technologies used on the 787.

215. Section VI.B.2 presents the second ground for appealing the first stage of the Panel's reasoning, demonstrating the insufficiency of the Panel's counterfactual analysis. The Panel erred in its application of Article 6.3(c) of the SCM Agreement by failing to incorporate all of its relevant findings into the counterfactual analysis of whether, absent the subsidies, Boeing would have launched the 787 at the same level of technological innovation in 2004. In fact, the Panel's own findings are at odds with its conclusion that absent the subsidies, Boeing would either have launched a less capable aircraft in 2004 or waited longer to develop a similarly advanced aircraft.[328] Those findings show that Boeing had the commercial incentive, access to technology, and resources needed to launch an aircraft with the level of technological innovation of the 787 in 2004 even if it had not received any of the aeronautics R&D subsidies.

216. The second stage of the Panel's analysis examined how the subsidies affected Airbus' prices and sales via the effect on Boeing's product offerings. That is, assuming *arguendo* the existence of a genuine and substantial link between the subsidies and Boeing's ability to reach the level of technological innovation present in the 787, the United States appeals distinct errors in the Panel's findings that the effect of the subsidies was significant lost sales, displacement and impedance, and price suppression with regard to the A330 or Original A350. The Panel made a variety of legal errors under Articles 5 and 6.3(b)-(c) of the SCM Agreement, as well as Article 11 of the DSU. These are also independent appeals, and a finding in favor of the United States on one ground for appeal would require reversal of the Panel's finding that the aeronautics R&D subsidies caused serious prejudice to the EU.

1. The first stage of the Panel's analysis erred in finding the existence of a genuine and substantial relationship of cause and effect between U.S. aeronautics R&D subsidies and the technologies used on the 787.

217. The Panel's own findings regarding the nature and magnitude of the aeronautics R&D subsidies show that any link between the NASA and DoD research and Boeing's ability to launch a technologically innovative aircraft like the 787 in 2004 is so attenuated that it does not rise to the level of a genuine and substantial relationship of cause and effect. The Panel's findings show that much of the research funded by NASA focused on topics, such as safety or supersonic flight, with little bearing on Boeing's ability to launch the 787 in 2004. To the extent NASA funded research on the topics that the Panel considered of greatest relevance to the 787, particularly in the area of composites, the projects involved concepts at a low level of technological maturity. A substantial amount of other self-funded work by Boeing and its

[328] Panel Report, para. 7.1775. It is unclear how this finding jibes with the Panel's finding that the market situation at the end of the 1990s "likely meant that Boeing needed to develop an LCA to replace the 767 in the 200-300 seat wide-body product market, and that it would have done so *in the early- to mid-2000s*." Panel Report, para. 7.1774 (emphasis added).

commercial partners was necessary to develop technologies in those areas to the point where they were ready for inclusion on the 787 in 2004.[329] Where government-funded research aimed at areas the Panel considered germane to the 787, Boeing and its suppliers were doing parallel work that led in the same direction, indicating that Boeing could have developed the particular technologies regardless of the NASA-funded research. And finally, the Panel's observation that the R&D subsidies "may not appear significant when compared to Boeing's . . . R&D expenditures over 1989-2006"[330] highlights that the company's self-funded activities were much more extensive than any NASA- or DoD-funded research. In short, the facts found by the Panel do not establish the existence of a genuine and substantial relationship of cause and effect between the aeronautics R&D subsidies and the alleged adverse effects to Airbus and, therefore, do not establish an inconsistency with Articles 5 and 6.3 of the SCM Agreement.

218. The United States agrees with the Panel's analysis of the legal requirements under Article 6.3 of the SCM Agreement – that its subparagraphs "require the establishment of a causal link between the subsidies in question and the particular form of serious prejudice."[331] As discussed above, the SCM Agreement does not permit a finding of causation based on just any relationship between a subsidy and a market phenomenon. Rather, it requires evidence of a causal link that is even stronger than "necessary", one that is sufficiently strong and sizeable to be considered "substantial".[332]

219. The Panel drew the causal link in the following terms. Although it recognized the technologies used on the 787 were actually different than those developed under NASA and DoD Programs, it reasoned that "technologies that may, at any given moment, be portrayed as discrete and unrelated, are in fact more appropriately regarded as being part of a single process of iterative learning and advancement in pursuit of a common technological goal."[333] On that basis, the Panel found that "the aeronautics R&D subsidies contributed in a genuine and substantial way to Boeing's development of technologies for the 787 and . . . conferred a competitive advantage on Boeing."[334] It made a number of findings in this regard:

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[329] In light of the amount of time it takes to develop NASA research into a commercially viable technology, which section VI.B.1.b discusses in greater detail, much of the research covered by the EU claims could not have been ready for use of the 787.

[330] Panel Report, para. 7.1760.

[331] Panel Report, para. 7.1656, *citing US –Upland Cotton (Panel)*, para. 7.1341; *US – Upland Cotton (21.5) (AB)*, para. 372.

[332] *E.g.*, *Shorter Oxford English Dictionary*, 6th Ed. (2007), Vol. 2, p. 3088.

[333] Panel Report, para. 7.1750.

[334] Panel Report, para. 7.1773.

- The weight of evidence "link{s} NASA R&D programs to competitive advantages for the U.S. aeronautics industry" and DoD's ManTech and DUS&T "contribute to providing Boeing with competitive advantages;"[335]

- "{T}he definition of the scope and programme of research was arrived at in collaboration with industry;"[336]

- "NASA R&D subsidies the subject of our analysis are precisely focused on those areas which, from a commercial perspective, are considered to be the most crucial to the LCA industry;"[337]

- NASA R&D subsidies "complement Boeing's internal product development efforts,"[338] and give Boeing "a significant advantage from performing the R&D work itself, in collaboration with NASA, as well as from conducting research under the R&D subsidies in tandem with its own related R&D efforts;"[339] and

- NASA R&D subsidies "reduc{e} Boeing's R&D risk"[340] and result in the "acceleration of the overall technology development process for an airframe manufacturer like Boeing and would therefore facilitate an earlier product launch than would otherwise have been possible."[341]

The Panel summed up by stating that "we would characterize the NASA R&D subsidies as strategically-focused R&D programmes with a significant and pervasive commercial dimension, undertaken in collaboration with U.S. industry to provide competitive advantages to U.S. industry by funding research into high risk, high pay-off research of the sort that individual companies are unlikely to fund on their own."[342] It further noted that DoD's ManTech and DUS&T programs "are focused on pursuing 'dual use' technologies through collaborative efforts with U.S. industry."[343]

220. However, the Panel made a number of other findings that show that the links it attempts to forge between NASA and DoD research and the availability of technologies at the time of the 787's launch in 2004 do not amount to a genuine and substantial relationship of cause and effect:

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[335] Panel Report, para. 7.1740.

[336] Panel Report, para. 7.1745.

[337] Panel Report, para. 7.1742.

[338] Panel Report, para. 7.1746.

[339] Panel Report, para. 7.1771.

[340] Panel Report, para. 7.1747.

[341] Panel Report, para. 7.1748.

[342] Panel Report, para. 7.1764.

[343] Panel Report, para. 7.1764.

- Much of the research in areas of anticipated competitive advantage in the 1990s bore little relation to Boeing's strategy for the 2000s, which began with the 787.[344]

- NASA research invariably stopped at a level far removed from technology ready for commercial application on the 787, and Boeing and its suppliers had to perform on their own the extensive work necessary to mature technologies to commercial readiness.[345]

- The amount of the subsidies "may not appear significant when compared to Boeing's consolidated revenues or R&D expenditures over 1989-2006."[346]

In light of all of these factors, the amount of the subsidies in question, which the Panel already considered "may not appear significant" when considered in isolation, is even less significant. That amount was clearly too small to create a genuine and substantial relationship of cause and effect to the launch of the technologically advanced 787 in 2004.

221. To be clear, the United States does not agree with the picture of NASA's work that the Panel draws. However, the Panel's errors do not, except as indicated below, rise to the level of a failure to make an objective assessment under Article 11 of the DSU. The point of this section is that, having made these findings, the Panel had to take account of them in its analysis of causation, and do so in an internally consistent way. Its failure to do so meant that its findings were in error.

a. Much of the NASA research at issue in this dispute was not in the causal pathway of the technologies the Panel considered most relevant to the 787, and was not aimed at making Boeing more competitive.

222. The Panel correctly recognized that NASA research in particular areas of aeronautics science would have different degrees of relevance to Boeing's ability to launch the 787 in 2004. It erred, however, in examining in detail only three programs that, in its view, "appear from the evidence to be the most commercially and technologically significant,"[347] and then extrapolating their effects to the other NASA and DoD programs. Proceeding in this fashion exaggerated the effect of the other NASA and DoD programs. The Panel itself recognized these as being less relevant, and its other findings indicate that they in fact bore little relation to the technologies that made it possible for Boeing to launch the technologically advanced 787 in 2004.

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[344] Section II.B.1.a below discusses this issue in more detail.

[345] Section II.B.1.b below discusses this issue in more detail.

[346] Panel Report, para. 7.1760.

[347] Panel Report, para. 7.1702.

223. The Panel recognized that, in theory, any two given technologies, such as one used on the 787 and one studied under the aeronautics R&D programs, may be related to varying degrees, or even completely unrelated. They may be the same, which the Panel found is not the case with the technologies studied under the aeronautics R&D programs at issue in this dispute and the technologies incorporated on the 787. Two different technologies may also be at different points on the same development path, in which case they may be close enough to have a causal relationship or they may be so far separated by intervening work as to have no causal relationship.[348] Technologies may be so different as to have little or no causal relationship to each other, which the EU conceded was the case with the technologies included on the 787 and NASA's research into engines or space travel. Much of the research challenged by the EU fell into the category of little or no relationship.

224. In the Panel's view, a causal pathway exists between the aeronautics R&D programs and the launch of the technologically advanced 787 in 2004 because NASA collaborated with Boeing to define goals that are "most crucial to the LCA industry"[349] and to develop technologies that were not ready for commercialization, but which Boeing could then mature for inclusion on the 787.[350] The Panel found that at the outset this process involved studying a variety of potential technologies to identify the most promising, and that the failure of some efforts was part of the process contributing to the ultimate technology, even if the end result differed from earlier work.[351] It focused on work on composites and composites technologies studied under the ACT, AST, and R&T Base Programs as being "the most commercially and technologically significant programmes."[352] Yet the Panel drew a broad conclusion about the nature and magnitude of the entirety of Boeing's participation in the aeronautics R&D programs based on its view about this subset of the research that the Panel itself saw as on the high end of significance to the 787. In fact, the Panel's findings establish that most of the NASA programs did not relate to the identified areas of commercial advantage for the 787, or were not directed at a competitive advantage for industry in the first place.

225. For example, the only objectives that the Panel quoted with regard to the Aviation Safety Program were "(i) foundational science and discipline-centric research; (ii) multidisciplinary, coupled effects, and component-based research; (iii) sub-system or multidisciplinary integration;

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[348] Panel Report, para. 7.1758 ("it is reasonable to assume that at some point in time, the contribution of the NASA-funded research will diminish in relation to other, more recent revolutionary technological developments that are attributable to other factors, and that it will no longer be possible to characterize the NASA research conducted in the 1990s as having contributed in a genuine and substantial way to new technologies applied to future Boeing LCA.").

[349] Panel Report, para. 7.1742.

[350] Panel Report, paras. 7.1751-7.1752.

[351] Panel Report, paras. 7.1748 and 7.1753. The United States notes that, in addition to any collaborations on goal-setting with the large civil aircraft industry, the evidence shows that NASA consulted with a wide variety of other parts of the scientific community, airlines, consumers, and other elements of civil society. US FWS, paras. 191 and 339.

[352] Panel Report, para. 7.1702.

and (iv) system level design."[353] The program aimed at saving lives – it did not note any intent to confer a "competitive advantage" or otherwise develop technologies for Boeing's exclusive or predominant use. Examples of Boeing activities funded under the Aviation Safety Program were research to create an aviation weather system to advance U.S. aviation safety,[354] and to develop a database that would enable synthetic vision systems that would allow aircraft to land in low-visibility conditions.[355] The "products" of this work would be safety procedures or databases available to all purchasers, and usable on all aircraft.

226. The HSR program, which accounted for nearly 40 percent of the $1.05 billion in NASA contracts with Boeing that the Panel found to be subsidies,[356] sought "to enable development of a high-speed (i.e. supersonic) civil transport ('HSCT')" because "future high-speed aircraft could be economically competitive with long-haul subsonic aircraft."[357] The Panel found that particular research goals included addressing the environmental problems caused by atmospheric effects and community noise, in particular due to sonic booms.[358] These are obviously different technological objectives than the Panel (or the EU) identified as critical for the 787. Moreover, while the Panel clearly considered this program aimed at achieving a competitive advantage,[359] the Panel also noted that Boeing subsequently abandoned the idea of launching a supersonic civil aircraft.[360] Thus, research related to supersonic flight under the HSR Program was not on the causal pathway that, according to the Panel, led to the technologies selected for the subsonic 787.

227. The Panel did find that "even unsuccessful research generates important knowledge and experience that is applied to subsequent technology developments."[361] However, it also recognized that research into different areas had different degrees of commercial and technological significance for the technology used on the 787.[362] Given the Panel's findings

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[353] Panel Report, para. 7.1737.

[354] Memorandum for File, Subject: Prenegotiation Position Memorandum (PPM) for Cooperative Agreement with Boeing Company for the "Aviation Weather Information System (AWIN)" Implementation Team Proposal, p. 5 (Exhibit US-588(HSBI), p. 8/11).

[355] Cooperative Agreement NCC-1-343, p. 5 (Exhibit US-597(HSBI)).

[356] *Maximum value of Boeing contracts related to EC-challenged R&D* (Exhibit US-1305). The proportion would be even larger if the Appellate Body were to exclude research unrelated to large civil aircraft, as the United States requests in section II.C.2.

[357] Panel Report, para. 7.1728, *quoting* NASA HSR Budget Estimates, FY 1991 – FY 2001, FY 1991, RD 12-35 (Exhibit EC-343).

[358] Panel Report, para. 7.1728.

[359] Panel Report, paras. 7.1005-7.1008.

[360] Panel Report, para. 7.1730, *quoting* NASA HSR Budget Estimates, FY 1991 – FY 2001, FY 2000, SAT 4.1-29 (Exhibit EC-343) ("the cost of development has led the major aircraft manufacturer to the conclusion that the introduction of an HSCT cannot reasonably occur prior to the year 2020. For these reasons, industry has reduced their commitment to this area and has scaled back their investments.").

[361] Panel Report, para. 7.1748.

[362] Panel Report, para. 7.1702.

about the HSR Program, it is clear that the NASA research under that program was not the type of unsuccessful research that provided lessons on technology development in the areas the Panel found most relevant to the 787. Similarly, the EU conceded that the Advanced Subsonic Technology Program had advanced air traffic management elements that "do not relate to LCA or aeronautics."[363]

228. Thus, the Panel's findings indicate little or no relationship between the HSR Program supersonic research or the Aviation Safety Program safety research and the technology used on the 787. The presence of this research in the larger category of aeronautics R&D subsidies analyzed by the Panel would call into question whether the remaining research related to the 787 was sufficient to cause serious prejudice of the type the Panel found to exist.

b. Even when NASA research was on the causal pathway toward technologies incorporated on the 787, the Panel found that the research stopped at a level far lower than what Boeing required to apply a technology in a commercial context.

229. The Panel recognized that it takes a significant amount of time and effort to mature a technology from initial concept to commercial application. The Panel found that, in this situation, even the subsidized research that was in the same areas as the technologies used on the 787 stopped at a stage remote from the point at which they were ready for inclusion of a commercial aircraft. Any work to develop a commercially applicable technology would require work outside the laboratory from a variety of different disciplines and sources. This developmental process would attenuate any link between the results of NASA research and the technologies used on the 787, which the Panel found were not identical. As the Panel observed:

> Boeing's technology developments are clearly the product of a variety of factors. Indeed, it is reasonable to assume that at some point in time, the contribution of the NASA-funded research will diminish in relation to other, more recent or revolutionary technological developments that are attributable to other factors, and that it will no longer be possible to characterize the NASA research conducted in the 1990s as having contributed in a genuine and substantial way to new technologies applied to future Boeing LCA.[364]

Moreover, NASA's policies regarding dissemination of research results would mean that all of the scientific information would become public.

230. The Panel illustrated the distance between different levels of technology maturation by reference to the NASA Technology Readiness Levels ("TRLs"), a scale that traces the progress of research from "Basic scientific/engineering principles observed and reported" (TRL 1) to

[363] Exhibit EC-25, p. 11, note 2.

[364] Panel Report, para. 7.1758.

"operational use of actual system tested, and benefits proven" (TRL 9).[365] It found that "NASA's research efforts focus on the development of higher risk technologies up to TRL 6 (prototype demonstration)."[366] Any further work needed to mature technologies investigated under NASA R&D programs to "operational use" (TRL 9) would accordingly have to be performed by Boeing or some other entity.[367]

231. The evidence cited by the Panel indicated that for airframe technologies, it takes 16.9 years to move from TRL 1 to TRL 9, 11.3 years of which are devoted to moving from TRL 6 to TRL 9.[368] Thus, work performed independent of NASA after the agency stopped its research accounts for two thirds of the time necessary to develop an airframe technology to operational usefulness. In other words, the bulk of the work needed to prepare a technology for commercial application on the 787 would, by necessity, proceed by means other the aeronautics R&D subsidies. The Panel's figures actually *understate* the likely time commitment. Evidence from Boeing engineers, which the EU did not dispute and the Panel did not criticize, shows that many of the R&D subsidies at issue relate to programs that did not go beyond TRL 3.[369] The High Speed Research Program, which represents nearly 40 percent of the total NASA program expenditures at issue, originally aimed to fund research only up to TRL 5, but was cancelled before the work reached that stage.[370]

232. The United States notes that the figures it cited above on the length of time needed to progress from TRL 6 to TRL 9 were from the evidence *cited* by the Panel in paragraph 7.1748. The Panel however, did not use these figures, apparently because it misunderstood the table it was citing. The relevant columns of that table, which appeared in a report prepared by a private research institute, provided:

Years to TRL 9 from TRL:	Airframe Technologies (2)	
	Average	St Dev
1	16.5	4.2

[365] Deborah J. Peisen et al., *Case Studies: Time Required to Mature Aeronautic Technologies to Operational Readiness*, p. 2 (SAIC and GRA, Inc., Nov 199) (Exhibit EC-795) ("Peisen Case Study").

[366] Panel Report, para. 7.1748.

[367] Affidavit of Branko Sarh, para. 15 (Exhibit US-1254) (Basic technologies that Boeing developed and commercialized for the 787 were broadly known in the aerospace industry, including the development in Europe of a one-piece composite fuselage and process for filament-winding composite materials. The novel contribution that distinguished the 787 from prior technologies was later work done by Boeing to advance these generally available technologies to commercial applicability on a large civil aircraft.).

[368] Peisen Case Study, p. 11 (Exhibit EC-795). The Panel appears to have mis-read the table, as it states that "the average time from TRL 1 to TRL 6 was 11.3 years." Panel Report, para. 7.1748. Below in this section, the United States explains that the Panel made an error, and asks the Appellate Body to modify the Panel Report to correct that error. Regardless of this error, the evidence shows that moving an aeronautics technology from the stage at which NASA stops to commercial viability takes a significant amount of time and resources.

[369] Bair Affidavit, para. 35 (Exhibit US-7).

[370] Bair Affidavit, para 35 and n. 1 (Exhibit US-7).

2	15.5	3.5
3	14.8	3.2
4	14.0	2.8
5	12.0	4.2
6	11.3	3.9
7	10.0	4.2
8	2.5	2.1
9	0	0

Peisen Case Study, p. 11 (Exhibit EC-795) (emphasis added)

The heading on the left-most column indicates that the row with "6" in the left column reports the number of "Years to TRL 9 from TRL 6," and shows that figure as being 11.3 years. The total time from TRL 1 to TRL 9 is 16.5 years, which means that it takes, on average, 5.2 years to move from TRL 1 to TRL 6. Another table in the report cited by the Panel sets out the number of years for each level of TRL advancement for airframe technology indicates that moving from TRL 6 to TRL 7 takes 1.3 years, from TRL 7 to TRL 8 takes 7.5 years, and from TRL 8 to TRL 9 takes 2.5 years, confirming that it takes 11.3 years to advance technology from TRL 6 to TRL 9.[371]

233. However, the Panel stated that "the average time from TRL 1 to TRL 6 was 11.3 years (with a standard deviation of 3.9), while the average time from TRL 1 to TRL 9 was 16.5 years (with a standard deviation of 4.2)."[372] The Panel plainly misunderstood the table, which showed that the correct average time to move from TRL 1 to TRL 6 was 5.2 years.

234. Therefore, had the Panel correctly appreciated the table, its finding in paragraph 7.1748 would have read as follows:

> A 1999 NASA study of the average time taken for technologies to mature from initial concept to marketable product based on NASA's defined TRLs found that, with respect to the airframe technologies selected as part of the study, the average time from TRL 1 to TRL 6 was ~~11.3~~ 5.2 years (with a standard deviation of 3.9), while the average time from TRL 1 to TRL 9 was 16.5 years (with a standard deviation of 4.2). While we do not mean to suggest that it would have taken Boeing as much as ~~11~~ five years longer to develop the 787 in the absence of the aeronautics R&D subsidies, there is clearly evidence that the development of higher risk technologies up to TRL 6 results in an acceleration of the overall technology development process for an airframe manufacturer like Boeing and would therefore facilitate an earlier product launch than would otherwise have been possible.

[371] Peisen Case Study, p. 15, table 3.5-1. The United States notes that, given this information, NASA research conducted in 1994 or later cannot have resulted in technology used to launch the 787 in 2004. This estimate is conservative, as many of the projects challenged by the EU did not advance as far as TRL 6.

[372] Panel Report, para. 7.1748.

235. These findings by the Panel demonstrate that even if a NASA technology is in the causal pathway toward a technology ready for operational use, such as inclusion on the 787, it is far removed from that commercially applicable technology, and requires substantial additional private development work to get there.

c. Boeing devoted a substantial amount of its own research toward developing the technologies used on the 787.

236. The Panel found that Boeing conducted a substantial amount of research on its own to develop and launch the 787. As noted earlier, NASA aeronautics research stops at TRL 6 or lower, while the major time commitment in the development process comes in the subsequent stages of turning technological concepts into commercial applications. The EU itself observed that [

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All of this activity was conducted by Boeing itself, based on its own work, work of its suppliers, or knowledge developed from other non-NASA sources. Moreover, the Panel also found that Boeing conducted its own internal research in parallel with any NASA-funded research, indicating that even at the earlier stages of development, the company conducted work independent of NASA.[374] Again, all of this additional work and intervening developments would attenuate any link between the NASA-funded research and the technologies chosen for the 787.

237. Boeing and its suppliers self-funded the entirety of the later stages of work, which took more time and was more resource-intensive than earlier stage work. Boeing also self-funded some of the research at those earlier stages. The role of NASA-funded research was, by any measure, small in relation. Therefore, it had a correspondingly small role in Boeing's ability to launch a technologically innovative 787 in 2004.

d. Boeing suppliers were responsible for a substantial amount of the technology needed for the 787, and Boeing's own experience was largely responsible for its ability to integrate those technologies into a finished product.

238. The Panel did not dispute that many of the technologies used on the 787 were commercially available or otherwise sourced from Boeing's suppliers.[375] However, it "agreed"

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[373] EC SWS, para. 835.

[374] Panel Report, para. 7.1746 (while Boeing worked on a fuselage under the ATCAS element of the ACT program, "Boeing internally funded efforts" were in progress on other fuselage sections and material and process standards).

[375] Panel Report, paras. 7.1757 ("It is also clear that during the 1990s, Boeing suppliers on the 787, such as Kawasaki Heavy Industries and Fuji Heavy Industries were developing expertise in the use of composites in primary aircraft structures contemporaneously with Boeing's development efforts.") and 7.1772.

with the EU that "the ability to define and manage the complex interaction of design processes, organization and tools so as to enable the robust development and manufacturing of an aircraft . . . is a challenge that Boeing can meet thanks in large part to NASA and DOD funding and support."[376] The United States explains below why this finding does not represent an objective assessment under Article 11 of the DSU. But, assuming *arguendo* that the finding was correct, other Panel findings nonetheless establish that Boeing developed a large part of its ability to integrate technologies on large civil aircraft programs from other real development program experience designing and assembling large civil aircraft, such as the 737 and 777, and not from NASA or DoD research projects. For example, the Panel "acknowledge{d} that Boeing had also derived valuable knowledge and experience from lessons learned over the course of the 777 and 737NG production programmes."[377] As a practical matter, Boeing's Japanese suppliers did substantial work on the 777 fuselage, centre wing and wing body fairings.[378] The Panel noted that Vought, another long-time Boeing supplier, had been producing composite fuselage pieces for military aircraft beginning well before the NASA and DoD programs at issue in this dispute.[379] The Panel also noted that Spirit Aerosystems, Inc., another important supplier for the 787, was a former division that Boeing sold to new owners. As Boeing has been integrating technology from these sources into its aircraft for decades, it was obviously not NASA or DoD programs at issue in this dispute that taught Boeing how to integrate technology from these suppliers, and others who worked on the 737 and 777, when it decided to manufacture the 787.

239. This is just some of the evidence that Boeing learned on its own how to effectively integrate technologies from outside sources with Boeing technologies to produce a finished aircraft. Thus, even if the Panel were correct that Boeing had NASA and DoD to "thank{} . . . in large part" for its technology integration abilities in civil aeronautics, the Panel's findings establish that the company's home-grown capabilities were also responsible for a large part, and probably the major part, of Boeing's ability to accommodate the technology stream coming from suppliers. Their contribution to Boeing's knowledge base further attenuates any link between the aeronautics R&D subsidies and the technology used on the 787.

240. However, the Panel was wrong, and failed to make an objective assessment under Article 11 of the DSU, in finding that Boeing's ability to use other companies' commercially available technologies on the 787 was due to "the knowledge and experience that Boeing obtained pursuant to the aeronautics R&D subsidies as an integrator of the various technologies."[380] There is no meaningful support in evidence for this finding and, in fact, the evidence shows otherwise. Coordinating the efforts of scientists (even from different companies) working on a single research project differs so greatly in nature and magnitude from the skills needed to

[376] Panel Report, para. 7.1772.

[377] Panel Report, para. 1757.

[378] Panel Report, para. 7.1757, note 3685.

[379] Panel Report, Appendix VII.F.1, para. 8.

[380] Panel Report, para. 7.1772.

integrate multiple technologies into a process for manufacturing hundreds of working aircraft that the two bear no meaningful relationship to each other.

241. As noted above, the Panel itself recognized that "prior to performing the research under the aeronautics R&D contracts at issue in this dispute, Boeing had already developed expertise in the application of composites in secondary structures, as well as in primary structures such as the 777 empennage."[381] The composites work on secondary structures dates back to the 1960s,[382] and work on the 777 began in the late 1980s and continued into the early 1990s. These obviously involved integrating the work, and knowledge, of multiple suppliers independent of the NASA and DoD research programs challenged by the EU.

242. More importantly, the integration of a variety of supplier technologies on a commercial aircraft program differs in terms of both quality and scale from the work Boeing did on the NASA and DoD contracts at issue in this dispute. To illustrate the difference in scale, the largest aeronautics project that Boeing performed for NASA was the main contract for the HSR Program, which envisaged $440 million in expenditures for a consortium of companies to perform research and for Boeing to coordinate efforts among other companies.[383] This figure represents a minor portion of what it costs a large civil aircraft producer to develop a new aircraft. In fact, because NASA cut short the HSR project, it only spent $307 million, meaning that the scale was actually smaller than planned. NASA's payments for Boeing's work under other projects were even smaller: $26 million for the main ATCAS contract and $74.4 million for the AST Program contract on composite wing structures.[384]

243. Furthermore, the nature of "integration" activity on a NASA research project is also qualitatively different from what is required to manufacture an aircraft. For example, the main HSR contract statement of work began by noting "{t}he Contractor shall perform tasks only as assigned by the Contracting Officer," highlighting that NASA was in charge of the overall effort, rather than Boeing. The "technology integration" work area called for Boeing to "manage the technology integration processes that require significant multidisciplinary involvement through "coordinating and communicating amongst appropriate disciplines, scheduling, identifying priorities, allocating resources, and ensuring that the system requirements are satisfied."[385] The contract also called for Boeing to "assess" the environmental impact of supersonic flight, study the effects of technology on aircraft configuration definition, assessment, and trade studies, and

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[381] Panel Report, para. 7.1757.

[382] Panel Report, Appendix VII.F.1, para. 7.

[383] Contract NAS1-20220, p. 1 (Exhibit EC-347)..

[384] *Maximum value of Boeing contracts related to EC-challenged R&D* (Exhibit US-1305). The main AST contract was NAS1-20546 (Exhibit US-412) (Technology Verification of Composite Primary Wing Structures for Commercial Transport Aircraft (ACTC)). The main ATCAS contract was NAS1-18889 (Exhibit EC-329) (Research and Development in Advanced Technology Composite Aircraft Structures).

[385] Contract NAS1-20220, p.5 (Exhibit EC-347).

track the progress of technology improvements.[386] The contract foresees research at a very low level of maturity – identifying promising technologies, building models, and conducting simulations.[387]

244. This evidence points to three critical ways that "integration" on a NASA research project differs from the "integration" that Boeing or Airbus performs in producing a large civil aircraft:

> **Maturity of the technology.** NASA-funded aeronautics R&D projects do not advance beyond the laboratory, so any integration requires little more than assigning and scheduling teams of scientists so that their work progresses in a mutually reinforcing way. There is no need to deal with the real-world problems of applying those technologies in a factory setting.[388]
>
> **Complexity of the system.** For the most part, the research at issue did not involve making usable physical parts and components.[389] Where the research called for a physical test article, it was at most a component – a wing box, fuselage section, or wing.[390] Thus, NASA research did not touch the critical competency of actually fitting the components together into a completed aircraft.
>
> **Scale of production.** In those rare cases when NASA projects called for making a physical component, it was at most one or two articles over a period of months or years for laboratory test purposes.[391] Thus, NASA research never touched the critical competency of manufacturing and assembling a finished aircraft in a factory setting producing tens of aircraft each year.

Where NASA research projects involve, at most, assembly of individual technology components, manufacturing a large civil aircraft requires the integration and assembly of thousands of components from hundreds of suppliers, multiplying the complexity and challenge of the task to an order of magnitude well beyond anything that a producer could learn or experience on a NASA project. The problems Airbus experienced in bringing the A380 to market demonstrate the complexity of integration for a commercial aircraft development program. Airbus plants in Hamburg and Toulouse each produced different fuselage components, but when it came time to assemble them together, Airbus discovered that different electrical wiring configurations for the internal systems did not match.[392] Programs such as ATCAS, which only involved assembly of

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[386] Contract NAS1-20220, p.5 (Exhibit EC-347).

[387] Contract NAS1-20220, pp. 6-10 (Exhibit EC-347).

[388] Section VI.B.1.b discusses this point in greater detail.

[389] *E.g.* Contract NAS1-20220 (Exhibit EC-347).

[390] *E.g.*, Contract NAS1-20267 (Exhibit US-553(HSBI)); Contract NAS1-20268 (Exhibit US-402); Contract NAS1-20546 (Exhibit US-412).

[391] *E.g.*, Contract NAS1-20267 (Exhibit US-553(HSBI)); Contract NAS1-20268 (Exhibit US-402).

[392] US FWS, para. 925-926.

a single fuselage section without any integration of other aircraft systems, or the more typical NASA programs that involved much smaller components, would do nothing to prepare a producer for that kind of complexity.

245. The main HSR contract highlights another key difference between even the largest NASA project and Boeing's development of a large civil aircraft – who is in charge. Even when Boeing is the prime contractor on a research project, NASA is in charge.[393] The agency gives instructions, and has the final say on what gets done and how it gets done. On a large civil aircraft development project, Boeing plays that role.

246. Thus, the Panel's finding is completely at odds with the evidence. The only explanation it gives is to state:

> We agree with the following submission by the European Communities:
>
> "The critical question in developing and building LCA is not how to get the different technologies and design and manufacturing tools. The critical question is how to use them. Which tools out of many available tools should be used, in which way, by whom, and at which step of the design and build process? The ability to define and manage the complex interaction of design processes, organization and tools so as to enable the robust development and manufacturing of an aircraft at minimum time and cost is one of the core competencies of an aircraft manufacturer. This is the true challenge LCA integration poses to both Airbus and Boeing, and it is a challenge that Boeing can meet thanks in large part to NASA and DOD funding and support."[3701]
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> [3701] European Communities' confidential oral statement at the first meeting of the Panel, para. 14.

247. The Panel simply accepts the EU's assertion that NASA provides relevant learning and experience to perform the task of integrating technologies supplied by third parties into a complete commercial aircraft. The passage quoted by the Panel cites no evidence. The two paragraphs of the EU submission that follow the one cited by the Panel point to statements that Boeing was the "integrator" or "mastermind" of the various supplied technologies and components of the 787.[394] But these paragraphs provide no further support for the proposition that the aeronautics R&D subsidies provided the "integration" experience that the Panel considers to reduce the importance of the fact that many of the technologies applied to the 787 are commercially available from third party suppliers.[395]

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[393] Contract NAS1-20220, pp. 5, 7, and 8 ("the Contractor shall perform tasks only as assigned by the Contracting Officer.")

[394] *E.g.*, EC FCOS, paras. 15 and 16.

[395] Panel Report, para. 7.1772.

248. Therefore, the Panel's finding that Boeing can meet the "challenge" of integrating technologies from a wide variety of suppliers "thanks in large part to NASA and DOD financing and support" is an "affirmative finding{} that lack{s} a basis in the evidence contained in the panel record." The United States asks the Appellate Body to reverse that finding. As reversal of the Panel's finding would leave no support for the proposition that NASA and DoD aeronautics R&D subsidies had any responsibility for Boeing's ability to use and integrate technologies provided by suppliers, there would be no causal link between those subsidies and Boeing's use of third-party technologies and components for its 2004 launch of the 787.

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249. Even absent the appeal under Article 11 of the DSU, the Panel's findings as they currently stand show that a large part of Boeing's ability to integrate the work of multiple producers came from Boeing's commercial experience and not its work on NASA or DoD research projects. This is especially true of integration of technologies for a finished aircraft – something that NASA research projects did not touch. Overturning the Panel's finding that the aeronautics R&D programs were partially responsible for Boeing's integration capabilities would further drive home the point that suppliers provided an abundant source of technology and parts independent of NASA and DoD. Either way, the availability of supplier technologies demonstrates that there is no genuine and substantial relationship of cause and effect between the NASA and DoD subsidies as a whole and Boeing's ability to launch the 787 as it did in 2004.

e. NASA's public dissemination requirement lessens the value of the aeronautics R&D subsidies to Boeing.

250. The Panel found that the NASA R&D measures are not "properly characterized as outright 'grants'," and that "NASA publicly disseminated the reports that summarized the results of the research conducted under the eight programmes at issue, and that this represents a situation in which Boeing has given up something of value in exchange for the funds and access to facilities, equipment and employees that it receives."[396] The evidence discussed in section II.B.2 shows that dissemination is often quite prompt. The Panel also found that "there are restrictions on the dissemination of certain aspects of NASA-funded research results, and that public dissemination does not occur immediately."[397] However, the critical implication of this finding is that LERD clauses only restrict dissemination of "certain aspects" of research results for a "limited" time. (In addition, LERD clauses were only used in a limited number of NASA contracts.) The Panel declined to attach a number to how much of the NASA funding did not confer a benefit, or had less competitive value, as a result of dissemination because the United States did not propose a way to make an adjustment, and the analysis under Part III of the SCM Agreement creates "no obligation to 'quantify precisely the amount of the subsidy.'"[398] However, the point remains that the Panel found that some portion of the $2.6 billion in funding

[396] Panel Report, para. 7.1100.

[397] Panel Report, para. 7.1771.

[398] Panel Report, para. 7.1101.

had less value, in both a competitive and monetary sense, because of NASA's dissemination policies.

f. In relation to the immense R&D expenditures by Boeing and its suppliers expenditures, the magnitude of the aeronautics R&D subsidies is too small to create a genuine and substantial relationship of cause and effect with the technologies used on the 787.

251. The $2.6 billion in aeronautics R&D subsidies found by the Panel, spread over the 18 years from 1989 to 2006, is small compared to Boeing's own research and development spending. When a full aircraft development program like the 787 is under way, Boeing's research and development costs run to more than $2 billion *per year*, as opposed to the average of $153 million per year of aeronautics R&D subsidies found by the Panel.[399] But the magnitude of the aeronautics R&D subsidies is even less significant than a simple numerical comparison would suggest because much of the total $2.6 billion in NASA spending involved activities with little or no relation to the 787. As noted above, a significant portion of that money went to research directed toward public safety objectives or the environmental and performance problems of supersonic flight, which had little relevance to the key problem posed by the 787 – affordable manufacture of a civil aircraft made primarily of composites. That spending would have a correspondingly smaller (or non-existent) relationship to the 787 than money spent on research directed toward producing and developing that aircraft. Moreover, as noted above, the $2.6 billion[400] figure contains payments that the Panel found were not part of the benefit to

[399] *E.g.*, The Boeing Company Annual Report, p 26 (2006) (Exhibit US-126) ($2,390 million in R&D for Boeing Commercial Aircraft in 2006). Even in 2000, the slowest year covered by the information before the Panel, Boeing's research and development spending ran at $574 million. Statement of Michael Bair, para. 42 (Exhibit US-7).

[400] The Panel refers to this figure as being "at least $2.6 billion," reflecting the total value it calculated for payments, facilities, equipment, and employees provided by NASA. Panel Report, para. 7.1760. Any value attributed to the DoD R&D payments found to be subsidies would not increase this figure by a meaningful amount. The Panel found that "the European Communities has not advanced sufficient argument or evidence regarding the effects of assistance instruments funded through RTD&E programs other than in relation to the ManTech and DUS&T Programs." Panel Report, para. 7.1701. Thus, the only subsidies included in the Panel's analysis were payments for cooperative agreements, TIAs, and OTAs under PE numbers for those programs. DoD budget documents show the following amounts for total spending under these programs: $44.0 million for DUS&T, $462.0 million from the Air Force for ManTech, and $265.9 million from the Navy for ManTech, a total of $772 million. Exhibit EC-7, Appendix B. The evidence does not indicate how much of this funding went to Boeing. In putting forward its allegation of the amount of DoD research that was subsidy to Boeing, the EU first allocated DoD spending to Boeing in proportion to its share of U.S. aerospace industry sales each year, and then allocated a portion of that to large civil aircraft based on the ratio of large civil aircraft sales to total sales by the company. The United States considers this methodology unsound, but it would allow an estimate of that amount of subsidy that the EU *alleged* Boeing received through DUS&T and ManTech, and through that a rough appreciation of the magnitude of the DoD research spending the Panel found to be a subsidy. Attachment 1 to this submission contains these calculations, and shows that the amount of the EU subsidy allegation represented by DUS&T and ManTech was $112 million. The amount related to the Panel's subsidy finding is less, because the effects of two procurement contracts funded under the ManTech Program "have not been taken into account in the Panel's assessment of the effects of assistance instruments funded through the ManTech Program." Panel Report, para. 7.1701, note 3586.

Boeing, because they represented valuable information supplied by Boeing that NASA disseminated to the public.

252. It is also significant that the total expense for bringing an aircraft to the point of commercial manufacturer is higher than the R&D outlay of the large civil aircraft producer because many of the technologies come from suppliers who spend their own funds developing components and systems.[401] Since the $2.6 billion total is less significant than it appears, and the total cost of developing a large civil aircraft greater, any link between the research and Boeing's ability to develop and launch the technologically innovative 787 in 2004 is that much more attenuated.

253. The Panel found that the $2.6 billion in aeronautics R&D subsidies, spread over 18 years, "may not appear significant when compared to Boeing's consolidated revenues or R&D expenditures over 1989-2006."[402] That observation was correct, and the Panel should have stopped there. However, it went on to state that "because the nature of this kind of subsidy is that it is intended to multiply the benefit from a given expenditure, the Panel considers it unlikely that the effects of such expenditure (to the extent that it was successfully deployed) would be reducible to its face amount."[403] However, the potential value of the outcome of research expenditures does not overcome their relative insignificance compared to other sources of learning, experience, and technology.

254. In the first place, the observation about the R&D funds multiplying their own benefit is irrelevant because the Panel found that Boeing's in-house R&D budget was funding Boeing employees' research into the same areas as NASA at the same time as NASA. Thus, any "multiplying" of the benefit would apply also to Boeing's own expenditures, and would not affect a comparison of the relative magnitude of the two figures. Whatever the accuracy of the Panel's observation that it is "unlikely" that the effect of research spending "would be reducible to its face amount," it does not prevent a comparison of research spending amounts. Whether the funds come from NASA or from Boeing, they pay for researchers' salaries, materials, equipment, and facilities. The relative amounts spent on these costs are likely to correlate with the outcomes, especially in light of the Panel's finding that NASA set its research goals in collaboration with Boeing.

255. The Panel's caveat that aeronautics R&D subsidization would have a heightened effect "to the extent that it was successfully deployed" is also important. Research from the HSR

These were contracts F33615-91-C-5716 and F33615-93-C-4302, under which DoD paid Boeing $9.7 million and $6 million, respectively. USRPQ 321, para. 22; *Revised Contract List* (Exhibit US-41(revised)).

[401] On the 787, Boeing also maintained a cost-sharing program, under which suppliers paid some of Boeing's cost of development – $205 million in 2004, and more than $452 million in 2005. The Boeing Company, 2004 Annual Report, p. 38 (Exhibit EC-168); The Boeing Company, 2006 Annual Report, p. 28. These figures are more than the average value of the aeronautics R&D subsidies.

[402] Panel Report, para. 7.1760.

[403] Panel Report, para. 7.1760.

project – almost 40 percent of the $1.05 billion in total NASA payments under aeronautics research contracts with Boeing – was not "successfully deployed" because the company never built a supersonic transport. And in cases like safety research, a "successful" deployment would help all aircraft, regardless of which producer made them, and would not result in any advantage for the 787. The same would hold true for the results of research that NASA disseminated to the public in a timely manner.

256. Thus, the Panel's findings indicate that a comparison of research spending by NASA and Boeing is possible and that the $2.6 billion in NASA and DoD aeronautics R&D subsidies found by the Panel is not as significant as the Panel deemed it to be. In light of these findings, the magnitude of the subsidies is not significant, and does not indicate a genuine and substantial relationship of cause and effect between the subsidies and the technology used on the 787.

g. Conclusion

257. The Panel made many findings over the course of its examination of the effects of the aeronautics R&D subsidies on Boeing. However, when inquiring whether these created a causal link between the subsidies and the technologies, the Panel neglected to examine the implications of all of its findings. When considered together, the Panel's findings indicate that:

- even the NASA research most directly on the development pathway toward the 787 is far removed from the ultimate technologies;
- much of the work that NASA funded would have even less of a relationship, as it was not even directed toward what the Panel identified as the critical 787 technologies;
- NASA funding was only one of many sources available to Boeing for technology development and was completely unavailable for later stages of the research;
- non-subsidy sources were responsible for most of the technology eventually used to make the 787 and Boeing's ability to apply that technology on the 787; and
- the magnitude of the subsidies was small in relationship to the cost of developing the 787.

Thus, the findings by the Panel, when considered in their totality, do not establish a genuine and substantial relationship of cause and effect and, therefore, do meet the requirement under Articles 5 and 6.3 of the SCM Agreement that subsidies cause adverse effects before they can be considered actionable. The United States respectfully requests the Appellate Body to reverse the Panel's finding that the aeronautics R&D subsidies caused adverse effects to the interests of the EU.

2. The Panel's counterfactual analysis was insufficient to demonstrate that but for the aeronautics R&D subsidies, Boeing would not have been able to launch the 787 in 2004.

258. The Panel's counterfactual analysis posed the correct question – whether Boeing would have launched the 787 when it did and as it did in the absence of the aeronautics R&D subsidies. However, the examination of this question was cursory, and did not take account of the Panel's own findings regarding the nature of the subsidy, Boeing's research priorities, the company's actual research activities, and available resources. In light of these findings, there was no basis for the Panel to conclude that in the absence of the subsidies, Boeing would have launched the 787 later, or in 2004, but without the technological advancements that it included. Therefore, the Panel's counterfactual analysis was insufficient to establish that the subsidies caused adverse effects for purposes of Articles 5 and 6.3 of the SCM Agreement. In fact, the Panel's own findings establish that if Boeing had not received the aeronautics R&D subsidies, it would have launched the 787 when it did, and with the same level of technological innovation.

259. The Appellate Body has found that a counterfactual analysis is implied by the provision under Article 6.3(c) that serious prejudice exists when significant price suppression is the effect of subsidies. It explained that

> The identification of price suppression, therefore, presupposes a comparison of an observable factual situation (prices) with a counterfactual situation (what prices would have been) where one has to determine whether, in the absence of the subsidies (or some other controlling phenomenon), prices would have increased or would have increased more than they actually did. Price depression, by contrast, can be directly observed, in that falling prices are observable. The determination of whether such falling prices are the effect of the subsidies will require consideration of what prices would have been absent the subsidies. Thus, counterfactual analysis is an inescapable part of analyzing the effect of a subsidy under Article 6.3(c) of the SCM Agreement.[404]

The Panel adopted the view of both parties in this dispute that for the other Article 6.3 market phenomena at issue in this dispute – significant lost sales and displacement and impedance – is not required, but is appropriate in this situation.[405] It stated that

> we conduct this counterfactual analysis first by examining the effects of the subsidies on Boeing's LCA commercial behaviour (i.e. Boeing's prices and product offerings) and secondly by examining the effects of the subsidies, through

[404] *US – Upland Cotton (21.5) (AB)*, para. 351.

[405] Panel Report, para. 7.1657.

> their effects on Boeing's commercial behaviour, on Airbus' prices and sales in the specific product markets.[406]

In line with the Appellate Body's reasoning in *US – Upland Cotton (21.5)*, the proper inquiry for examining the first stage of the EU's technology effects arguments was what Boeing's ability to launch the 787 in 2004 "would have been absent the subsidies."

260. The counterfactual portion of the first stage of the Panel's analysis is quite short – two paragraphs long – and consists of two findings:

- "Boeing needed to develop an LCA to replace the 767 in the 200-300 seat wide-body product market, and . . . it would have done so in the early- to mid-2000s;"[407] and

- "What is clear to us is that, absent the aeronautics R&D subsidies, Boeing would not have been able to launch an aircraft incorporating all of the technologies that are incorporated on the 787 in 2004, with promised deliveries commencing in 2008."[408]

The Panel does not explain why it finds this conclusion "clear." although it appears to have relied on its finding that "the aeronautics R&D subsidies contributed in a genuine and substantial way to Boeing's development of technologies for the 787 and . . . conferred a competitive advantage on Boeing,"[409]

261. A proper counterfactual causation analysis, in accordance with the Appellate Body's reasoning in *US – Upland Cotton (21.5)*, would examine more rigorously whether Boeing would have been able to launch the 787 with the level of technological innovation it had in 2004 absent the subsidies. It would look at all of the Panel's findings in the context of the conditions of competition. If that evidence indicated that Boeing would have been able to launch an aircraft with the 787's level of technological innovation in 2004 for delivery in 2008 in the absence of the subsidies, the conclusion would be that any causal link that appeared to exist was not genuine and substantial.

262. Several Panel findings demonstrate that Boeing's commercial behavior related to the launch of the 787 would not have changed in the absence of the aeronautics R&D subsidies.

263. *First*, the Panel found that "{t}he essence of the intense competition between Boeing and Airbus is to design and build better airplanes;"[410] and stressed "the importance of competition

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[406] Panel Report, para. 7.1659.

[407] Panel Report, para. 7.1774.

[408] Panel Report, para. 7.1775.

[409] Panel Report, para. 7.1773.

[410] Panel Report, para. 7.1765.

through technological development."[411] In short, large civil aircraft manufacturers have strong commercial incentives to spend the resources needed to gain a technical advantage over competitors.

264. *Second*, the Panel found that under the aeronautics R&D programs, "the definition of the scope and programme of research was arrived at in collaboration with industry,"[412] and that as a result, aeronautics R&D programmes focused on creating a competitive advantage for Boeing.[413] The Panel emphasized that the government-funded work was "precisely focused on those areas which, from a commercial perspective, are considered to be the most crucial to the LCA industry in the sense that they carry the greatest prospect of creating significant competitive advantage"[414] – reduction of manufacturing costs and reduction in the time it takes to move a technology from concept to market.[415] Thus, in the Panel's view, Boeing knew what research needed to be done, knew that it would result in a competitive advantage, and could formulate a plan for the deployment of resources to meet those objectives. The competitive advantage it expected would provide a compelling motive to do just that.

265. *Third*, the Panel found that the aeronautics R&D subsidies took two forms. A large proportion of the subsidy was a direct transfer that paid Boeing scientists to perform work laid out in the contracts with NASA and DoD. Other portions involved making NASA facilities or equipment available for Boeing's use in performing the research, or in the case of NASA, for agency employees to do their own work. In short, NASA funded and conducted its research the same way that Boeing did – by paying scientists to conduct the research, and obtaining the use of the facilities and equipment needed for them to perform the work.

266. *Fourth*, the Panel found that private parties can obtain access to NASA goods and services through reimbursable Space Act Agreements. The Panel found that under these instruments, "NASA requires full reimbursement, defined as "full cost recovery" for the goods, services or facilities provided."[416] The Panel noted that the EU "does not challenge the supply of goods and services under Space Act Agreements to the extent that Boeing pays cash in exchange for those goods and services."[417] Thus, a private party may engage the NASA facilities, equipment, and employees whose provision the EU challenged by paying the agency the cost of their use.

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[411] Panel Report, para. 7.1768.

[412] Panel Report, para. 7.1745.

[413] Panel Report, para. 7.1740.

[414] Panel Report, para. 7.1742.

[415] Panel Report, paras. 7.1743-7.1744.

[416] Panel Report, para. 7.1082, note 2624.

[417] Panel Report, para. 7.1082, note 2624.

267. *Fifth*, the Panel found that Boeing was self-funding research on the same topics as NASA and at the same time. For example, while Boeing researched one fuselage segment under the NASA-funded ATCAS program, it used internal funds to research other fuselage segments, material and process standards, and structural allowables.[418]

268. *Sixth*, the Panel found that Boeing had sufficient funds to achieve the same learning and experience provided by the government's aeronautics R&D expenditures at issue,[419] and that the "at least $2.6 billion" in aeronautics R&D subsidies "may not appear significant when compared to Boeing's consolidated revenues or R&D expenditures over 1989-2006."[420]

269. These findings point to a straightforward counterfactual conclusion. Boeing is constantly in competition with Airbus to sell more aircraft, and one of the important factors in sales success is the technological capability of its aircraft. In the early 1990s, Boeing had a keen commercial interest in technologies that would reduce the cost of producing and operating its aircraft. It was researching such technologies, including at an early stage of technological maturity, as part of its internal research efforts and spending significant amounts of money to do so.

270. As the Panel itself found, Boeing knew it needed to find a more modern aircraft to compete with the A330, and would have sought to do so in any event in the early- to mid-2000s.[421] And the Panel considered that Boeing knew what research it needed, and could identifying lines of inquiry with sufficient specificity that NASA and Boeing could draft contractual statements of work to guide the research effort over the course of the 1989-2006 period. The monetary element of the subsidy programs would obviously be easy to replace with Boeing's own money. The company also had the option of paying NASA to supply any physical or personnel resources uniquely available to the agency, again at the sole expense of paying NASA for the expenses the agency incurred. And, as the Panel found, the expense was relatively small compared to Boeing's ongoing research efforts and available resources. With a low marginal cost for the additional research and, in the Panel's view, a well-understood payoff in the form of much-needed new technologies, the logical conclusion is that in the absence of subsidies, Boeing would have funded this "critical" research itself, either using Boeing's own resources or by obtaining them from NASA under a reimbursable Space Act Agreement. Thus, a proper counterfactual establishes that the aeronautics R&D subsidies are not a genuine and substantial cause of adverse effects and, therefore, are not inconsistent with the SCM Agreement.

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[418] Panel Report, para. 7.1746.

[419] Panel Report, paras. 7.1759 and 7.1830-7.1831.

[420] Panel Report, para. 7.1760.

[421] Panel Report, para. 7.1774 ("{W}e are satisfied from the evidence that Boeing's assessment in the late 1990s that route fragmentation would lead to a larger number of lower-volume routes, best served by a mid-sized, extended range aircraft (a commercial assessment unrelated to the subsidies), along with the age of the 767, likely meant that Boeing needed to develop an LCA to replace the 767 in the 200 – 300 seat wide-body product market, and that it would have done so in the early- to mid- 2000s.") and note 3704 ("One could presumably also argue that Boeing would not have launched a new aircraft in this product market and would have continued to offer the 767, however, even the European Communities does not argue this.").

271. As noted above, the Panel reached the opposite conclusion – that "absent the aeronautics R&D subsidies, Boeing would not have been able to launch an aircraft incorporating all of the technologies that are incorporated on the 787 in 2004, with promised deliveries commencing in 2008."[422] It provides no explanation reconciling this conclusion with its other findings. Moreover, the Panel's response to the counterfactual analysis presented by the United States – that Boeing had sufficient available funds to achieve the same level of learning and experience provided by the aeronautics R&D subsidies – does not detract from the clear implication of its prior findings that in the absence of the subsidies at issue in this appeal, Boeing would have launched the 787 in 2004, when it observably did.

272. First, the Panel rejects the idea that Boeing would have performed the same research in the absence of subsidies on the grounds that there are "large disincentives for private sector investment in long term, high risk aeronautical R&D (stemming from the inability of individual firms to fully capture the benefits from the research efforts)."[423] However, this explanation is contradicted by the Panel's finding, that the aeronautics R&D research has a greater effect than its dollar value would indicate "because it is intended to multiply the benefit from a given expenditure. . . ."[424] Spending with a multiplier effect is exactly the sort of "investment" that private sector firms seek out. Moreover, if a firm were unable "to fully capture the benefits from the research efforts," they could not be said to "multiply the benefit" from a given expenditure."

273. The fallacy in the Panel's reasoning on these points is that it treats "aeronautics R&D subsidies" as an undifferentiated body of research. However, elsewhere it recognizes important differences as to the purposes and nature of the research projects. The Panel singles out research on composites and composite technologies under the ACT, Advanced Subsonic Technology, and R&T Base Programs as "the most commercially and technologically significant programmes" to Boeing's development of knowledge in these areas.[425] At the other extreme its description of the Aviation Safety Program does not even identify a "competitive advantage"[426] It is this latter extreme that NASA had in mind when it described one of the factors underlying "the dominant role of NASA in aeronautical research" as "the large disincentives for private sector investment in long-term, high-risk aeronautical R&T stemming from the inability of individual companies to fully capture the benefits from these research efforts."[427] It is a different group of projects,

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[422] Panel Report, para. 7.1775.

[423] Panel Report, para. 7.1759.

[424] Panel Report, para. 7.1760.

[425] Panel Report, para 7.1702.

[426] Panel Report, para. 7.1737.

[427] NASA R&T Base Budget Estimates, FY 1997, p. SAT 4-5 (Exhibit EC-398, p. 82/270); NASA R&T Base Budget Estimates, FY 1999, p. SAT 4.1-3 (Exhibit EC-398, p. 111/270). It is important to note that the Panel took these descriptions from the budget estimates for the R&T Base Program, which itself encompassed a broad range of research objectives:

> A significant portion of the research and concept development in the R&T Base is performed through partnerships and cooperative agreements with the aerospace industry and other

namely those intended to confer a competitive advantage on domestic industry, that, in the Panel's words, "is intended to multiply the benefit from a given expenditure"[428]

274. When reconciled in this way, the Panel's statements about "disincentives for private sector investment" and expenditures that "multiply the benefit" reinforce the conclusion that the absence of the subsidies would not have changed Boeing's offering of an aircraft with the 787 technologies. The technologies "intended to multiply the benefit from a given expenditure" are precisely those that a commercial actor would fund and, according to the Panel's findings, Boeing could do so at a relatively low marginal increase in research expenses. Any projects with "disincentives for private sector investment" are "general aeronautics research" or "research of incidental importance to the development of a product" where in the Panel's view "it may be reasonable to doubt whether the subsidies have made an integral and enduring contribution to the development of a project."[429]

275. Second, the Panel objected to the U.S. counterfactual analysis on the ground that:

> The United States' invitation to compare the amounts of the aeronautics R&D subsidies with Boeing's payments to shareholders may be taken also to imply that the ultimate effect of the aeronautics R&D subsidies was merely to increase payments to Boeing's shareholders. The Panel does not accept the proposition that the effect of the aeronautics R&D subsidies was essentially to benefit Boeing's shareholders by replacing funds that Boeing would otherwise have spent on R&D.[430]

However, the United States did not "invite" this comparison. Rather, in the cited passage, it "invited" a comparison to net income and cash flow from operations over the period, and demonstrated that these amounts were sufficient to support Boeing's commercial behavior absent the subsidies. It is worth noting that the United States showed that this would be the case *even if* Boeing had made all $16 billion in shareholder payments that it made over the period.[431] The

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> government agencies to facilitate rapid technology transfer. Also, the R&T Base supports the vast majority of the Enterprise's peer-reviewed fundamental research with academia and industry.

NASA R&T Base Budget Estimates, FY 1999, p. SAT 4.1-3 (Exhibit EC-398, p. 111/270). The first sentence describes the type of programs that concerned the Panel. The second covers the type of "general aeronautics research or . . . research of incidental importance to the development of a product" where, if there were subsidies, the Panel considered "it may be reasonable to doubt whether the subsidies could be considered to have made an integral and enduring contribution to the development of a product." Panel Report, para. 7.1742. NASA's comments about the "inability of individual companies to fully capture the benefits from these research efforts" speaks to these foundational efforts. Obviously, when a company conducts research directed to one of its products and does not disseminate the results, it fully captures any benefit.

[428] Panel Report, para. 7.1760.

[429] Panel Report, para. 7.1742.

[430] Panel Report, para. 7.1760.

[431] US Comment on EC RPQ 78, para. 270.

simple point relies on Boeing's available financial resources during the period. The Panel does not dispute this point. In fact, it explicitly found that it "is not persuaded that the European Communities has demonstrated that Boeing inherently lacked the financial means to price and develop its LCA in the manner in which it did."[432] Thus, the "implication" that the Panel drew from the comparison has no bearing on an analysis of the relevant counterfactual question.

276. A more important error is that the "proposition" that the Panel "does not accept" – that "the effect of the aeronautics R&D subsidies was essentially to benefit Boeing's shareholders" – is a necessary implication of the counterfactual analysis. If a Panel is to inquire into the situation in the absence of subsidies, there is always going to be some entity that has less money than it did in the scenario with subsidies. One way of characterizing the provision of any subsidy is that the "effect of the subsidies" is simply "to increase payments" to whomever wound up with less money in the counterfactual scenario. If that characterization prevents a conclusion that, in the absence of subsidies the relevant competitive situation would have remained basically the same, counterfactual analysis becomes meaningless because it is *always* possible to say that the receipt of subsidies made *someone* better off than would otherwise have been the case. And, if that someone is a juridical person, then the ultimate effect would be enrichment of the juridical person's shareholders. Thus, the Panel's reasoning should not prevent the conclusion that in the absence of subsidies, Boeing would have developed and launched the 787 when and as it did.

277. In fact, the Panel's reasoning is inconsistent with Part III of the SCM Agreement, which presupposes that subsidies may confer a benefit and not have adverse effects. Thus, the observation that the effect of a subsidy would be to benefit shareholders does not prevent the conclusion that it has no adverse effects.[433]

278. Thus, the Panel failed to conduct its counterfactual analysis correctly. It failed to take account of factors indicating that in the absence of subsidies, Boeing would have followed the course it followed with the receipt of subsidies, investigating in the same areas, at the same pace, and aiming for the same goal – a technologically advanced aircraft commercially competitive with the A330. The limited reasons it put forward for rejecting this conclusion are inadequate, and inconsistent with the Panel's own findings. Therefore, the Panel's counterfactual analysis fails to establish a causal link between the subsidies and adverse effects to the interests of the EU. Moreover, the Panel's criticisms of the U.S. counterfactual analysis are unfounded, and do not call into question the conclusion that in the absence of the subsidies, Boeing would have developed the 787 when it did, and how it did. The United States respectfully requests that the Appellate Body reverse the Panel's finding that "absent the aeronautics R&D subsidies, Boeing would not have been able to launch an aircraft incorporating all of the technologies that are

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[432] Panel Report, para. 7.1759.

[433] The United States notes that the Panel's conclusion appears to assume that there is a distinction between a firm and its shareholders, and that the Appellate Body has found in the context of countervailing duty measures that Panel's and administering authorities may not simply assume either that a company and its shareholders are the same, or that they are different. *US – Countervailing Duty Measures on Certain EC Products (AB)*, para. 118.

incorporated on the 787 in 2004, with promised deliveries commencing in 2008"[434] and the dependent findings that those subsidies caused adverse effects to the interests of the EU.

3. The Panel incorrectly analyzed the effects of the aeronautics R&D subsidies on prices and sales of the A330 and Original A350.

279. The Panel made a number of mistakes in the second stage of its analysis, the examination of the effects of the aeronautics R&D subsidies, through their effects on Boeing's pricing and product offerings, on Airbus' prices and sales. It made a series of findings relating the market phenomena of lost sales, displacement, impedance, and price suppression to the aeronautics R&D subsidies without a firm basis in the law. The Panel double counted lost sales when it treated each sale won by the 787 in competition against the Original A350 as two lost sales – one for the Original A350 and a second lost sale for the A330 – even though no customer intended to buy both airplanes, and Airbus could only lose each sale once. It then compounded the error by treating each set of lost sales findings as the basis for one finding of displacement and impedance for the Original A350 and another for the A330. The Panel assumed the existence of price suppression for the A330 based on abstract economic reasoning, without considering that the facts did not support the theoretical conclusion.

280. The findings that the subsidies caused lost sales of the Original A350 to Ethiopia Airlines, Icelandair, and Kenya Airways failed to take account of non-subsidy factors that would have prevented Airbus from winning those sales in any event. This error then undermined the finding, based on the lost sales, of displacement or impedance of the A350 in Ethiopia, Iceland, and Kenya.

a. The Panel erred in finding lost sales with respect to the A330 and making the resulting findings of displacement and impedance.

A complete version of each of the following paragraphs, including HSBI, appears in Appendix I

281. The Panel erred in finding that Airbus "lost" sales of the A330 *and* Original A350 in sales campaigns where the customer chose the 787 over the Original A350. The Qantas, Ethiopia Airlines, Icelandair, and Kenya Airways campaigns – the only lost sales of 200-300 seat aircraft that the Panel found – each involved a single transaction, for one model of aircraft. In none of these transactions did the customer consider buying both an Original A350 *and* an A330. Thus, to the extent that any of these transactions resulted in a lost sale of the A350, it cannot also be a lost sale of the A330. Airbus cannot lose the same sale twice. Therefore, the lost sales findings regarding the A330 do not meet the requirements of Article 6.3(c). The findings of displacement and impedance of the A330 in Australia, Ethiopia, Iceland, and Kenya are similarly inconsistent under Article 6.3(b), as the Panel based them exclusively on its invalid lost sales findings.

[434] Panel Report, para. 7.1775.

282. Section VI.B.3.b below explains that the Boeing orders from Ethiopia Airlines, Icelandair, and Kenya Airways campaigns did not represent lost sales of either the A330 or Original A350 for purposes of Article 6.3(c). The point of this section is that if the Appellate Body upholds the Panel's findings that they were lost sales, they can only have been lost sales of the Original A350, and cannot have been lost sales of the A330.

283. The Panel found that the A330 "suffered significant lost sales" in the Qantas, Ethiopian Airlines, Icelandair, and Kenya Airways campaigns, because, absent the subsidies, "Airbus would have made additional sales of the A330 and Original A350" to those airlines.[435] This finding does not satisfy the requirements of Article 6.3(c). In each of the lost sales found by the Panel, Airbus either did not bid any aircraft (*e.g.*, [ ]),[436] removed the A330 from consideration in favor of the Original A350,[437] or offered only the Original A350 against the 787.[438] None of these campaigns involved a potential order for the Original A350 *and* the A330.

284. Even assuming *arguendo* that the 787 was unavailable at the time of the campaign or lacked the technological features that swayed the customers – the two counterfactual scenarios that the Panel found "most likely"[439] – Airbus could only have expected to obtain additional sales of the Original A350. It could not expect additional sales of the A330 as well. In its discussion of the Qantas sale, the Panel appears to recognize this point, finding that

> there is sufficient evidence to support its conclusion that, but for the effects of certain aeronautics R&D subsidies, Airbus would have made *additional sales of the Original A350*, and to that extent, would not have suffered significant lost sales within the meaning of Article 6.3(c) of the SCM Agreement.[440]

Accordingly, the Panel's finding under Articles 5 and 6.3(c) of the SCM Agreement that the effect of the aeronautics R&D subsidies was lost sales of the A330 to Qantas, Ethiopia Airlines, Icelandair, and Kenya Airways is incorrect.[441]

285. This error in the lost sales analysis also negates the finding of impedance in the third country markets of Australia, Ethiopia, Iceland, and Kenya, which the Panel based entirely on the existence of lost sales. Its discussion of displacement and impedance sets out a table

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[435] Panel Report, para. 7.1794.

[436] EC FWS, Annex D, para. 42.

[437] EC FWS, Annex D, para. 22.

[438] EC FWS, Annex D, paras. 49, 60.

[439] Panel Report, para. 7.1775.

[440] Panel Report, para. 7.1788 (emphasis added).

[441] The Panel acknowledged that there may be variations in the evidence and findings related to individual Airbus LCA models within the same market segment, as it found price suppression for A330 and Original A350, but not for the A350XWB-800, in the 200-300 seat market. Panel Report, para. 7.1793.

showing the number of sales of Airbus aircraft as opposed to Boeing 787 for the four countries, and then states that:

> the Panel considers that the sales that Airbus has lost due to the effects of the aeronautics R&D subsidies also constitute evidence {of} a threat of serious prejudice. The Panel is therefore satisfied that, but for the effects of certain aeronautics R&D subsidies, Airbus would have obtained additional orders for its A330 or Original A350 LCA from customers in third country markets Australia, Ethiopia, Kenya and Iceland in 2005 and 2006, and the European Communities would not have suffered the threat of displacement or impedance of exports from third country markets within the meaning of Article 6.3(b) of the SCM Agreement.[442]

Thus, without a finding of lost sales of the A330 at Qantas, Ethiopia Airlines, Icelandair, or Kenya Airways, there is no support for the Panel's conclusion that there was displacement or impedance of the A330 in Australia, Ethiopia, Iceland, or Kenya. The United States asks the Appellate Body to reverse these findings by the Panel under Articles 5 and 6.3(b) of the SCM Agreement.

b. The Panel's findings under Articles 5 and 6.3(b)-(c) of the SCM Agreement that the aeronautics R&D subsidies caused lost sales for the Original A350 and A330 at Ethiopian Airlines, Icelandair, and Kenya Airways, and the consequent findings of impedance in Ethiopia, Iceland, and Kenya, were incorrect.

A complete version of each of the following paragraphs, including HSBI, appears in Appendix I

286. In concluding that the Ethiopian Airlines, Icelandair, and Kenya Airways campaigns resulted in lost sales for the Original A350 and A330, the Panel failed to take into account customer-specific situations showing that Boeing's victory in the campaign was not the effect of the aeronautics R&D subsidies. The Panel actually recognized that such factors could be critical when it rejected allegations of lost sales in other campaigns because factors other than subsidies explained the customer's choice. These include "Boeing's relationship with the airline (Continental Airlines, All Nippon Airways, Japan Airlines)" and Airbus' "failure to submit a formal offer within the time limit specified by the airline (Royal Air Maroc)."[443] The Panel neglected to consider similar factors for the campaigns at Ethiopian Airlines, Icelandair, and Kenya Airways, rendering its lost sales findings under Article 6.3(c) of the SCM Agreement erroneous. This error also makes the findings of displacement or impedance in Ethiopia, Iceland, and Kenya under Article 6.3(b) incorrect, as the Panel based them exclusively on the invalid lost sales findings.

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[442] Panel Report, para. 7.1791.

[443] Panel Report, para. 7.1786 n.3725.

287. The Panel recognized that its analysis needed to address all factors potentially causing the customer to choose Boeing over Airbus to ensure that it correctly attributed lost sales to the effect of the subsidies. The Panel declined to find lost sales where "it appears that factors other than the performance characteristics of the 787 over the A330 or Original A350, and the 2008 delivery date for the 787 played a significant part in the Boeing sale."[444] Having found that Boeing's relationship with an airline or Airbus' failure to submit a timely bid could sever the causal link between the subsidies and a lost sale, the Panel should have concluded that similar factors prevented a lost sale finding for the Ethiopian Airlines, Icelandair, and Kenya Airways campaigns.

288. The Panel correctly found that Boeing's customer relationship precluded lost sales findings at Continental Airlines, All Nippon Airways, and Japan Airlines.[445] At the time of the campaigns, the fleets of these three airlines were, with some minor exceptions, composed entirely of Boeing large civil aircraft, and all three airlines operated the Boeing 767, which the 787 was designed to replace.[446] Substantially the same situation existed for Ethiopian Airlines, Icelandair, and Kenya Airways. They had all-Boeing fleets, with Ethiopian Airlines and Kenya Airways seeking a replacement for the 767, and Icelandair looking to replace its 757s.[447] Thus, the answer to the counterfactual question of whether, absent the subsidies, these longtime Boeing customers and operators of mid-sized Boeing large civil aircraft would have ordered the A330 or Original A350 from Airbus must surely be "no." At Ethiopian, Boeing was [ ].[448] Icelandair, by the EU's own admission, [ ][449] And Kenya Airways chose the 787 [ ][450]

289. A similar inconsistency exists between the Panel's lost sales finding at Icelandair, where [ ][451] and the Panel's finding of no causal link for the Royal Air Maroc, by virtue of Airbus' "failure to submit a formal offer within the time limit specified by the airline (Royal Air Maroc)."[452] [ ] is as compelling a reason to find no causal link as a late bid.

290. To expand upon the flaw in the Panel's analysis of the Icelandair campaign, Article 6.3(c) provides that serious prejudice may arise where "the effect of the subsidy is . . . lost sales in the

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[444] Panel Report, para. 7.1786.

[445] Panel Report, para. 7.1786 n.3725.

[446] US FWS, Campaign Annex, para.10 n.2.

[447] US FWS, Campaign Annex, para.10 n.2.

[448] US FWS, Campaign Annex, para. 59-60.

[449] EC FWS, Annex D, para. 42.

[450] US FWS, Campaign Annex, para. 67.

[451] EC FWS, Annex D, para. 42.

[452] Panel Report, para. 7.1786 n.3725.

same market." The relevant meaning of "lost" appears to be to "fail to obtain (something one might have had)" or "{b}e deprived of (something) in a contest or game . . . be defeated in (a game, a battle, a lawsuit)."[453] Thus, for a sale to be "lost" by a Member, there must have been some competition in which the Member's producer "might have had" the sale. If the Member's producer did not attempt to get the sale or did not make an offer that responded to the customer's requirements, it cannot have expected to gain the sale and, therefore, cannot be understood to have "lost" it.[454]

291. The fact that Boeing secured an order does not necessarily mean, as the Panel appeared to presume, that Airbus *lost* the order. In this respect, the concept of a lost sale is similar to the concept of impedance for which the panel in *EC – Large Civil Aircraft* correctly explained that:

> {T}he notion of "impedance" involves understanding ...whether sales which would otherwise have taken place were impeded. ... Thus, in order to conclude that imports of the United States' LCA were impeded over the relevant reference period, we would, inter alia, have to be satisfied that those sales would have actually taken place.[455]

292. Just as with a finding of impedance, a finding of lost sales requires evidence demonstrating that, if Boeing had not secured the order, Airbus would have actually secured it. No such evidence exists for the Icelandair sale, where an all-Boeing customer ordered a Boeing aircraft and Airbus [ ].

293. These factors, which the Panel did not address in its reasoning, sever any causal link between the aeronautics R&D subsidies and the decision by Ethiopia Airlines, Icelandair, and Kenya Airways to order the 787 instead of the Original A350 or A330. Therefore, the Panel's conclusion that these lost sales were the effect of the subsidy for purposes of Article 6.3(c) is erroneous.

294. As section VI.B.3.a explains, these findings of lost sales were the sole basis for the Panel's conclusion that there was displacement or impedance in Ethiopia, Iceland, and Kenya. Therefore, there is no support for the Panel's conclusion that there was displacement or impedance of the A330 in Australia, Ethiopia, Iceland, or Kenya. The United States asks the Appellate Body to reverse these findings by the Panel, as they fail to establish any inconsistency with Articles 5 and 6.3(b) of the SCM Agreement.

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[453] Oxford English Dictionary, p. 1632 (Exhibit US-14); *see also* US FWS, para. 892.

[454] US FWS, paras. 892-893.

[455] *EC – Large Civil Aircraft*, para. 7.1739. The United States notes that the panel's legal finding in this regard has not been appealed.

c. The Panel erred in finding displacement of Airbus 200-300 seat LCA in Ethiopia, Kenya, and Iceland by failing to establish that relevant "markets" existed in those countries within the meaning of Article 6.3(b) of the SCM Agreement.

295. The Panel improperly found a threat of displacement or impedance under Article 6.3(b) of the SCM Agreement in Ethiopia, Kenya, and Iceland.[456] For each of these countries, the Panel's threat of displacement or impedance finding was based on a single sales campaign resulting in the only orders for aircraft in the "200-300 seat product market" during the 2004-2006 reference period, and the only projected deliveries in future periods.[457] The Panel erroneously declined to assess whether these countries constituted "third country markets" within the meaning of Article 6.3(b).[458] In addition, its threat of displacement/impedance finding for these countries contradicted its legal finding elsewhere that treating a single sales campaign as a "market" nullifies the meaning of that term. [459]

296. Article 6.3(b) provides that serious prejudice may arise where "the effect of the subsidy is to displace or impede the exports of a like product of another Member from a third country market."[460] The principle of effectiveness in the interpretation of treaties requires a panel is to give meaning to all of the terms in Article 6.3(b), including the term "market." The Panel erred in finding otherwise:

> The Panel recalls that Article 6.3(a) and Article 6.3(b) expressly direct us to conduct our examination of displacement and impedance on the basis of national markets; either the market of the subsidizing Member for purposes of Article 6.3(a), or third country markets for purposes of Article 6.3(b). In so doing, *the Panel is not required to consider whether the European Communities has established the existence of such country markets*. Rather, the question for the Panel is whether, based on evidence of sales occurring in those countries, the Panel is satisfied that there has been displacement and impedance of imports or exports within the meaning of Article 6.3(a) and 6.3(b), respectively in any of the three LCA product markets in the particular country market.[461]

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[456] Panel Report, paras. 7.1791, 7.1794.

[457] *Compare* Panel Report, para. 7.1790 (showing ten projected deliveries of Boeing aircraft in Ethiopia over the 2008-2012 period; nine projected deliveries of Boeing aircraft in Kenya over the 2010-2012 period; and four projected deliveries of Boeing aircraft over the 2010-2012 period), *with* EC FWS, Annex D, paras. 42, 49, and 60); *see also* Airclaims CASE Database (Exhibit EC-3) (showing no orders in Ethiopia, Kenya, or Iceland for any 200-300 seat aircraft during the 2004-2006 period aside from those arising out of the three sales campaigns at issue).

[458] Panel Report, para. 7.1674.

[459] Panel Report, para. 7.1675.

[460] SCM Agreement, Art. 6.3(b).

[461] Panel Report, para. 7.1674 (emphasis added).

Here, the Panel reads "market" out of Article 6.3(b). If the drafters had intended such an interpretation, Article 6.3(b) would describe displacement or impedance "from a third country" and omit any reference to "a third country *market*." Because it does not, meaning must be given to the term "market." Accordingly, a finding of displacement/impedance (or threat thereof) under Article 6.3(b) is improper if it rests on an interpretation and application of that provision that reduces "market" to a nullity. The Panel did just that when it found a threat of displacement in Ethiopia, Kenya, and Iceland based solely on single sales campaigns in each country. Therefore, the United States respectfully requests the Appellate Body to reverse the Panel's findings of displacement or impedance in those countries.

d. The Panel erroneously found that the effect of the aeronautics R&D subsidies was significant price suppression in the worldwide market for 200-300 seat large civil aircraft.

297. The Panel concluded that the effects of the aeronautics R&D subsidies to the 787 are "significant price suppression . . . with respect to the 200-300 seat wide-body LCA product market."[462] The Panel reached this conclusion by finding that, *but for* the effects of those subsidies, "prices of the A330 and the Original A350 would have been significantly higher,"[463] although it rejected the European Union's arguments that prices for the A350XWB-800, which the European Union also placed within the 200-300 seat LCA "product market," were suppressed.[464] Therefore, the Panel failed to establish significant price suppression for Airbus' 200-300 seat aircraft within the meaning of Article 6.3(c) of the SCM Agreement.

A330

298. The Panel failed to satisfy the requirements for a finding of significant price suppression with respect to the A330 because it did not conduct a valid counterfactual assessment of A330 prices in the absence of the aeronautics R&D subsidies and relied on a coincidence of trends analysis that did not examine closely enough the evolution of the trends.

299. The Appellate Body has observed that a price suppression claim inherently requires a counterfactual analysis of what prices for the complaining Member's product would be in the absence of the subsidies.[465] The Panel never conducted a meaningful counterfactual analysis of A330 prices. Rather, it relied on a perceived coincidence between the 2004 launch of the 787 and a decline in A330 prices.[466] In fact, the pricing trend data (reproduced below) show that A330 prices [ ] in 2004 as compared to 2003, when Boeing had not yet

[462] Panel Report, para. 8.3(a)(i).

[463] Panel Report, para. 7.1794.

[464] Panel Report, para. 7.1793.

[465] *US – Upland Cotton (21.5) (AB)*, paras. 354, 370.

[466] Panel Report, paras. 7.1782-7.1785.

introduced the 787 to the market. Thus, the presence of the 787 in the market does not necessarily [ ] A330 prices.

Orders for 200-300 Seat LCA vs. Price Per Seat of A330 Family LCA in Constant Dollars, 2000-2006[467] (reproduced from Panel Report, para. 7.1782)

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300. In addition, the Panel drew the wrong conclusion from worldwide market share data for 200-300 seat aircraft.[468] The United States reproduces the Panel's market share table below.

Market share in the 200-300 seat wide-body LCA market (based on order data) in 2000-2006 (reproduced from Panel Report, para. 7.1783[469])

Year	Airbus A330 and A350	Airbus Market share	Boeing 767 and 787	Boeing market share
2000	95	**91%**	9	**9%**
2001	52	**57%**	40	**43%**
2002	24	**75%**	8	**25%**
2003	49	**82%**	11	**18%**
2004	51	**46%**	59	**54%**
2005	129	**34%**	251	**66%**
2006	117	**40%**	173	**60%**

[467] European Communities' response to question 306, para. 784, Figure 3. Pricing information in this figure is based on Airbus proprietary data. Order information is based on Airclaims CASE database, data query as of 19 January 2007 (Exhibit EC-3).

[468] Panel Report, paras. 7.1783-7.1785.

[469] Compiled from data in Airclaims CASE Database, Data Query as of 19 January 2004 – 2006 (Exhibit EC-1287) and Airclaims CASE Database, Data Query as of 19 January 2007 (Exhibit EC-3).

301. Referring to these data (and to a market share graph submitted by the European Union), the Panel stated:

> The above market share figures show the rather dramatic erosion of Airbus' market share in the 2004 to 2006 period, compared with the 2000 – 2003 period. This erosion of the dominance of the A330 in this product market coincides with the introduction of the 787 in 2004. The evidence concerning the pricing trends for the A330, combined with the market share data, are consistent with what we would expect to occur from the introduction of a technologically-superior aircraft, offering operating cost advantages over older-technology aircraft, for around the same price. Clearly, one would expect that prices of the A330 would fall, and that it would lose market share, even in the face of significantly increased demand in that product market.[470]

302. The arithmetic conclusions the Panel drew by comparing 2000-2003 trends with 2004-2006 trends are correct, but the Panel erred in failing to look more rigorously at the evolution of these trends. These revealed that no discernible correlation exists between the 787's market presence and A330 prices:

- The A330's share of the market for 200-300 seat aircraft in 2004 declined by *36 percentage points* from 2003 as the 787 attained a significant market presence upon its introduction. Yet, A330 order prices [ ].[471]

- Airbus' market share declined to a far lesser extent in 2005 from 2004, yet A330 prices [ ]. The difference about 2005 that explains these developments is that Airbus marketed the Original A350 [ ].[472]

- Airbus' market share in 2006 increased by six percentage points from 2005, yet A330 prices [ ]. Considering that the 787's market share had decreased, to within six percentage points of its 2004 level, what could explain these developments? Airbus was offering [ ] the A350.[473]

303. Because the Panel relied on a temporal coincidence between market share levels and A330 prices that contradicts its inferences, the Panel's A330 price suppression finding is in error.

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[470] Panel Report, para. 7.1785.

[471] Panel Report, paras. 7.1782-7.1783.

[472] Christian Scherer, Commercial Aspects of the Aircraft Business From the Perspective of a Manufacturer (March 2007) (Exhibit EC-11 (BCI)), paras. 101-104.

[473] Christian Scherer, Commercial Aspects of the Aircraft Business From the Perspective of a Manufacturer (March 2007) (Exhibit EC-11 (BCI)), para. 106.

Original A350

304. The Panel's finding of significant suppression of prices for the Original A350 fails because, with no pricing data of any kind and anecdotal evidence covering barely 30 percent of sales, the evidence is insufficient to support any conclusion about overall pricing levels. The absence of these critical pieces of information reflects, in the first instance, the failure of the EU to meet its burden of proof as complaining party to establish a *prima facie* case. It also means that the Panel failed to establish that the prices for the Original A350 in the world market were lower than they would have been in the absence of subsidies and, therefore, its factual findings were not sufficient to satisfy the requirements for a finding of significant price suppression under Article 6.3(c).

305. The Appellate Body has described how a Member must formulate assertions of price suppression, which also indicates the minimum requirements for a Panel to find that the effect of a subsidy is significant price suppression:

> we observe that Article 6.3(c) of the *SCM Agreement* addresses the situation where "the effect of the subsidy is ... significant price suppression ... in the same *market*". (emphasis added) As the Panel suggested, and the parties agree, *it is up to the complaining Member to identify the market in which it alleges that the effect of a subsidy is significant price suppression and to demonstrate that the subsidy has that effect within the meaning of Article 6.3(c).*[474]

These observations, like the text of Article 6.3(c) itself, signify that price suppression is a phenomenon arising not in individual sales or a particular geographic area, but in a "market".

306. In explaining how to demonstrate price suppression, the Appellate Body stated that "{a}n assessment of 'general price trends' is clearly relevant to significant price suppression (although, as the Panel itself recognized, price trends alone are not conclusive)."[475] The panel in *Korea – Commercial Vessels* provided further guidance on how to conduct this assessment:

> {G}iven that the relevant text is that "the effect of the subsidy is {...} signficiant price suppression {or} price depression", the basic analytical question would be how to demonstrate such a causal relationship between the subsidy or subsidies in question, on the one hand, and movements in the prices of the product of concern to the complaining Member in the relevant market, on the other hand. In our view, this means that *a main focus of the analysis would be levels and trends in the price for the product in question, as a whole, in the relevant market (i.e., "the same market"), as a whole*, and the various reasons behind them. In terms of the present dispute, this implies that we are not required to base our assessment of the EC's claim of price suppression/price depression on a product-by-product

[474] *US – Upland Cotton (AB)*, para. 400.

[475] *US – Upland Cotton (AB)*, para. 417.

> comparison of price levels and trends for identified subsidized Korean products and corresponding like products of EC shipyards.[476]

307. After rejecting the European Union's arguments that the relevant market could be a single country or a single sales campaign as well as global, the Panel identified the worldwide market for 200-300 seat aircraft as the "same market" in which it would analyze whether the effect of the subsidies was significant suppression of prices for the Original A350 and for the other Airbus aircraft in that "product market" (the A330 and A350XWB-800).[477] The United States does not appeal this aspect of the Panel's reasoning. However, once the Panel selected that market as the frame of reference, Article 6.3(c) required an assessment of whether prices of Airbus 200-300 seat aircraft *in that worldwide market*, were significantly suppressed.

308. The Panel itself recognized that some amount of pricing data was necessary to reach a conclusion with respect to the individual Airbus models in the worldwide market for 200-300 seat aircraft when it rejected the European Union's price suppression arguments with respect to the A350XWB-800:

> There is no evidence before the Panel as to price trends for the A350XWB-800, nor has the European Communities presented evidence concerning the actual pricing of the A350XWB in the context of specific LCA sales campaigns.[478]

309. As noted above, it was the EU that bore the burden to present evidence in support of its assertions. With respect to data on prices for the Original A350, Airbus was the only available source for that information. But, despite the centrality of price trend data to the Panel's evaluation, the EU did not provide any for the Original A350.[479] An evaluation of price suppression without prices is a *non sequitur*, and any conclusions reached are, for that reason alone, fail to establish an inconsistency with Article 6.3(c).

310. The Panel attempted to plug the hole left by the EU by referring to anecdotal evidence on "certain sales." But the "sales" in question are three campaigns that provide an insufficient basis from which to draw conclusions about prices in "the same market" have been suppressed to a "significant" degree. The data provided by the European Union show 102 orders for the Original A350 in the world market over the 2004-2006 period, yet the three Original A350 sales campaigns cited by the European Union resulted in only 31 orders, or 30.4 percent of the total

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[476] *Korea – Commercial Vessels*, para. 7.557 (emphasis added), *quoted in* US FWS, para. 876.

[477] Panel Report, para. 7.1674 ("Therefore, the Panel will assess the European Communities' arguments concerning the existence of significant price suppression and significant lost sales on the basis that each of the LCA product markets have a worldwide geographical scope."); *see also* EC FWS, para. 1186 ("The evidence demonstrates that the geographic scope of each LCA product market is worldwide.").

[478] Panel Report, para. 7.1793.

[479] US Comment on EC RPQ 381, para. 337 ("The United States is unable to comment on price trend data for the Original A350 – which is a defunct program – or for the A350 XWB because the EC never provided any.")

orders for that aircraft in "the same market."[480] Thus, there is simply no way of knowing what happened with Original A350 pricing in the majority of sales for that aircraft. From such a limited basis, it is impossible to infer that Original A350 prices were suppressed, or that the degree of any price suppression is "significant" within the meaning of Article 6.3(c) of the SCM Agreement.[481]

311. Thus, the only remaining basis for the Panel's finding of significant price suppression is its statement that "the combination of the superior technology and lower operating costs of the 787 clearly affected the comparative value of Airbus' A330 and A350, leaving Airbus no other option but to reduce the prices of its aircraft in order to compete."[482] But this statement by itself simply lays out an expectation based on economic reasoning. Absent evidence as to actual prices or price trends for the Original A350 in the world market, the Panel had no way to test whether the actual evolution of prices conformed to the theory. That is not enough to justify the finding, necessary to establish an inconsistency with Article 6.3(c), that "the effect of the subsidy *is* . . . significant price suppression . . . in the same market."

All Airbus 200-300 seat aircraft

312. The problems with the Panel's price suppression finding concerning the Original A350 underscore a larger point for the "market" at issue. In assessing whether the effect of the aeronautics R&D subsidies to the 787 was significant price suppression in the same market within the meaning of Article 6.3(c) of the SCM Agreement, the Panel's task was to determine whether significant price suppression existed for "*the product in question, as a whole*, in the relevant market, as a whole."[483] As the panel in *Korea – Commercial Vessels* observed, Article 6.3(c) does not require a panel to assess price suppression by examining each model comprising the complaining Member's product, but it does require that the ultimate conclusion relate to the complaining Member's product "as a whole."[484]

313. Here, the Panel chose to examine price suppression on a model-by-model basis, but the product in question, consists of all three of the 200-300 seat Airbus models identified by the

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[480] *Compare* EC FWS, Annex D, paras. 84-112, *with* Airclaims CASE Database (Exhibit EC-3).

[481] The European Union never quantified the degree to which it alleged the technology effects of the aeronautics R&D subsidies suppressed prices for the Original A350, for the three sales campaigns advanced as instances of price suppression or otherwise. For those three campaigns, the only quantification of price suppression the European Union provided was based on its magnitude and price effects calculations, which the Panel rejected. *Compare* EC FWS, Annex D, paras. 116-118, and EC SWS, HSBI Appendix, para. 61, *with* Panel Report, paras. 7.1826-7.1828, 7.1831, 7.1832, Appendix VII.F.2.

[482] Panel Report, para. 7.1792.

[483] *Korea – Commercial Vessels*, para. 7.557 (emphasis added).

[484] *Korea – Commercial Vessels*, para. 7.557; *see also EC – Large Civil Aircraft*, para. 1855 ("We note that sales of the Boeing 777 represented only a small proportion of Boeing's overall LCA sales over the reference period. Thus, the data in the pricing charts demonstrate that Boeing experienced significant price depression with respect to the vast majority of its sales of LCA.").

European Union: the A330, the Original A350, and the A350XWB-800. Accordingly, a finding in favor of the EU on this point would be valid only if the effect of the subsidy is significant price suppression prices generally for Airbus 200-300 seat aircraft. That is not the case. The Panel rejected the European Union's assertion of significant suppression of A350XWB-800 prices,[485] and as discussed above, it clearly had an insufficient basis from which to find significant suppression of prices for the Original A350. That leaves a finding of price suppression exclusively with respect to one of the three Airbus aircraft that make up the product as a whole: the A330. Even if the Appellate Body disagrees with the U.S. appeal concerning the Panel's price suppression finding as to the A330, the 195 orders for the A330 account for 65.7 percent of all Airbus 200-300 seat aircraft sales during the 2004-2006 period, leaving a large portion of the product unrepresented.[486] Therefore, a price suppression finding specific to the A330 cannot be considered as a sufficient basis for the Panel's conclusion that the effects of the R&D subsidies to the 787 are "significant price suppression . . . with respect to the 200-300 seat wide-body LCA product market."[487]

e. Conclusion

314. Therefore, the United States respectfully requests the Appellate Body to:

- reverse the Panel's finding that an effect of the aeronautics R&D subsidies is significant lost sales within the meaning of Article 6.3(c) of the A330 at Qantas, Ethiopian Airlines, Icelandair, and Kenya Airways;
- reverse the Panel's finding that an effect of the aeronautics R&D subsidies is displacement or impedance within the meaning of Article 6.3(b) of the A330 from the markets of Australia, Ethiopia, Iceland, and Kenya;
- reverse the Panel's finding that an effect of the aeronautics R&D subsidies is significant lost sales within the meaning of Article 6.3(c) of the Original A350 at Ethiopian Airlines, Icelandair, and Kenya Airways;
- reverse the Panel's finding that an effect of the aeronautics R&D subsidies is displacement or impedance within the meaning of Article 6.3(b) of the Original A350 from the markets of Ethiopia, Iceland, and Kenya;
- reverse the Panel's finding that an effect of the aeronautics R&D subsidies is significant price suppression with regard to the A330 in the world market; and

[485] Panel Report, para. 7.1793.

[486] Panel Report, para. 7.1783 (providing a table showing 297 total orders for the A330 and A350 during the 2004-2006 period); Airclaims CASE Database, data query as of 19 January 2007 (Exhibit EC-3) (showing 102 orders for the Original A350 during the 2004 -2006 period).

[487] Panel Report, para. 8.3(a)(i).

- reverse the Panel's finding that an effect of the aeronautics R&D subsidies is significant price suppression with regard to the Original A350 in the world market; and

- reverse the Panel's conclusion that an effect of the aeronautics R&D subsidies is significant price suppression with regard to Airbus 200-300 seat large civil aircraft

C. The Panel did not satisfy the requirements of Articles 5 and 6.3 of the SCM Agreement for establishing that the tax subsidies caused adverse effects.

315. The Panel took a number of impermissible shortcuts in its analysis of the tax subsidies allegedly conferred on Boeing, which resulted in an analysis that did not establish a genuine and substantial relationship of cause and effect between the subsidies and the adverse effects alleged by the EU. The Appellate Body has identified the assessment of the magnitude of the subsidies, correlation of trends, and the evaluation of other causal factors as important to a proper analysis of causation under Articles 5 and 6.3 of the SCM Agreement, but the Panel's treatment of each was cursory. The Appellate Body has also found that claims of price suppression and impedance are inherently counterfactual, but the Panel's counterfactual analysis was perfunctory and failed to take account of the evidence showing how Boeing would have acted in the absence of the subsidies.

316. In place of performing these established analyses for evaluating causation, the Panel relied on a presumption that subsidies prohibited under Part II of the SCM Agreement also cause adverse effects for purposes of Part III. In fact, the SCM Agreement differentiates between these two concepts. It prohibits export subsidies without regard to the size of their actual effects, but requires evidence of adverse effects (and their significance) for actionable subsidies. This and other important differences preclude the simple transfer of findings from one Part to the other, as the Panel did.

317. The Panel also erred by issuing generic findings of displacement or impedance "from third country markets" and "significant lost sales," without stating which country markets or which sales. Merely replicating the operative words of an article of the SCM Agreement does not establish an inconsistency with that article because it does not identify what the inconsistency is. The Panel's failure to meet this most basic requirement for making a finding means that its finding is not only inconsistent with Articles 5 and 6.3(b), and (c), but also that the Panel violated its obligation under Article 12.7 of the DSU to "set out . . . the basic rationale behind any findings and recommendations that it makes."

318. Finally, the Panel erred by failing to address the facts of the individual transactions on which the EU based its assertions as to lost sales and displacement and impedance of EU exports from third country markets. Anecdotal information and data on the campaigns formed the foundation of the EU arguments on these grounds with regard to 100-200 and 300-400 seat aircraft. The Panel's generalized conclusions meant that it never addressed the facts of the

transactions in a way that would support a finding that one or more sales was a "significant lost sale" or displaced or impeded EU exports to a particular market.

1. The Panel gave only cursory consideration to critical elements of the evaluation of whether there was a causal link between the tax subsidies and the adverse effects alleged by the EU.

319. Although the Appellate Body has highlighted several considerations as important or critical for panels evaluating claims under Article 5(c) and 6.3, the Panel largely dispensed with those considerations when it evaluated the tax subsidies – FSC/ETI, the Washington state B&O tax reduction, and the City of Everett B&O tax reduction. Its counterfactual analysis did not address whether Boeing's prices would have been higher in the absence of the subsidies, even though that assertion was central to the EU's causation theory. The Panel did not assess the magnitude of the subsidies, even though both parties submitted data showing that it was extremely small by any measure. The Panel also disregarded evidence showing a lack of correlation between changes in the value of the subsidies against changes in Boeing's prices and profitability. Finally, the Panel simply dismissed the effects of factors other than subsidies that were affecting the prices and sales of both producers of large civil aircraft. This omission prevented it from following the Appellate Body's instruction "to ensure that the effects of other factors on prices are not improperly attributed to the challenged subsidies."[488] These many errors and omissions mean that the Panel failed to establish any inconsistency with Articles 5(c) and 6.3(b)-(c).

320. The EU asserted that the following causal chain linked tax subsidies to the alleged adverse effects for 100-200 seat aircraft:

- the subsidies "lower the share of revenue that Boeing needs to use toward paying taxes, as well as purchasing component parts, with respect to individual 737NG LCA."[489]
- "In other words, each of these subsidy dollars has the effect of reducing the price of a Boeing 737NG LCA by exactly $1."[490]
- Boeing offered "exceptional discounts" to customers that "would not be possible without the use of the available subsidy benefits."[491]

[488] *US – Upland Cotton (AB)*, para. 437.

[489] EC FWS, para. 1478.

[490] EC FWS, para. 1490.

[491] EC FWS, para;. 1499.

- Price suppression resulted because, "in order to maintain single-aisle market-share, Airbus was forced by Boeing's subsidy-fuelled lower prices to cut its own prices for its A320 LCA."[492]

- Lost sales resulted because, "{e}ach of these sales campaigns involved situations where the customer considered Airbus' A320 family LCA to be capable of meeting its technical requirements, but where the customer ultimately decided to purchase Boeing's 737NG family LCA purely because of very low prices offered by Boeing."[493]

- "The {lost sales} campaigns . . . help demonstrate that the US subsidies cause displacement and impedance of exports of A320 family LCA from various third country markets."[494]

The EU asserted a similar causal chain for 300-400 seat aircraft.[495] However, the analytical steps prescribed by the Appellate Body, which the Panel either did not perform or performed incorrectly, demonstrate that there is no validity to the causal chain outlined by the EU.

a. The Panel's counterfactual analysis fails to address whether Boeing's prices would have been higher in the absence of the tax subsidies.

321. As the Appellate Body has found, "counterfactual analysis is an inescapable part of analyzing the effect of a subsidy under Article 6.3(c) of the *SCM Agreement*."[496] The panel in *EC – Large Civil Aircraft* found that "displacement relates to a situation where sales volume has declined, while impedance relates to a situation where sales which otherwise would have occurred were impeded."[497] The description of impedance occurring for "sales which *otherwise* would have appeared" indicates that impedance, too, is an essentially counterfactual question. A counterfactual analysis of the effect of subsidies on prices evaluates whether the subsidized producer's prices "would have been higher in the absence of the subsidies (that is, *but for*, the subsidies)."[498] The Panel failed to conduct this analysis. Rather, it concluded summarily that,

> We have no doubt that the availability of the FSC/ETI subsidies, in combination with the B&O tax subsidies, enabled Boeing to lower its prices beyond the level that would otherwise have been economically justifiable, and that in some cases,

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[492] EC FWS, para. 1500.

[493] EC FWS, para. 1517.

[494] EC FWS, para. 1539.

[495] EC FWS, paras. 1572, 1588, 1596, 1612, and 1628-2629.

[496] *US – Upland Cotton (21.5) (AB)*, para. 351.

[497] *EC – Large Civil Aircraft*, para. 7.1739, *quoting Indonesia – Autos*, para.14.218.

[498] *US – Upland Cotton (21*.5) *(AB)*, para. 370.

> this led to it securing sales that it would not otherwise have made, while in other cases, it led to Airbus being able to secure the sale only at a reduced price.[499]

This brief explanation is no substitute for a counterfactual analysis. The Panel failed to establish that, absent the tax subsidies, Boeing's prices would have been at a higher, "commercially justifiable" level. Under a proper counterfactual analysis, the Panel's other findings and the undisputed facts on the record lead to the conclusion that, *but for* the tax subsidies, Boeing's 737 and 777 prices would not have been any different.

108. The United States presented the Panel with evidence that "{t}he pricing and product development decisions that shaped Boeing's participation in the large civil aircraft market between 2004 and 2006 were profit-maximizing and led to a sharp "bottom line" improvement in Boeing's business by 2006."[500] The European Union did not contest this point. Rather, it argued that Boeing would not have had the resources to act on its commercial incentives without subsidies:

> Boeing's 2004 decision to change in its pricing policy, and lower its prices, *may well have been taken for commercially justifiable reasons*. This conclusion does not, however, impact the validity of the European Communities' adverse effects claim, since the US subsidies determined the level to which Boeing was able to lower its prices.
>
> Indeed, the evidence demonstrates that Boeing could lower its prices to the level it did solely because of the availability of the US subsidies.[501]

109. Thus, the parties' argumentation and evidence narrowed the counterfactual question before the Panel to whether, *but for* the subsidies, Boeing would have had the resources to act in an economically rational manner.[502] On this point, the Panel agreed with the United States:

- "we are not persuaded that the European Communities has demonstrated that Boeing inherently lacked the financial means to price and develop its LCA in the manner in which it did."[503]

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[499] Panel Report, para. 7.1818.

[500] US Comments on EC RPQ 370, para. 222 (citing EC RPQ 378, para. 411-413)

[501] EC RPQ 85, paras. 386-387 (emphasis added).

[502] US Comments on EC RPQ 78, para. 272 ("the EC recognizes that 'Boeing's 2004 decision to change in {sic} its pricing policy, and lower its prices, may well have been taken for commercially viable reasons.' The EC's conclusion on this key point means that the EC's causation case is wholly predicated on the assertion that, without the alleged subsidies, Boeing *could not* have acted in an economically sensible manner. The data show Boeing could and, therefore, disprove the EC's claim that the alleged subsidies 'caused' or 'enabled' Boeing's pricing or product development decisions.") (quoting EC RPQ 78, para. 386).

[503] Panel Report, para. 7.1759;

- "once the amount of the subsidies received by Boeing between 1989 and 2006 is reduced from $19.1 billion to our own estimate of the total amount of the subsidies {*i.e.*, 'at least $5.3 billion', including FSC/ETI and the B&O tax measures, per Panel Report at para. 7.1433}, the argument that Boeing's LCA division would not have been 'economically viable' in the absence of the subsidies unless it altered its prices or product development behaviour becomes untenable, whichever basis for assessing economic viability is used."[504]

Having rejected the European Union's argument that, *but for* the subsidies, Boeing would have been forced, as a matter of economic necessity, to raise its prices, the Panel erred under Articles 5 and 6.3 by finding that the tax subsidies caused Boeing to lower its prices beyond a "commercially justifiable" level.

322. Thus, the Panel's reasoning is not sufficient to establish for purposes of Article 6.3(c) that the effect of the subsidies was "significant price suppression." In addition, the causal chain by which the EU attempted to link the subsidies to lost sales and displacement or impedance relied on the assertion that the tax subsidies caused Boeing to lower its prices. The failure of the Panel's price suppression finding severs that link, which means that the Panel also failed to establish that the effect of the subsidies was significant lost sales or to displace or impede EU exports into third country markets for purposes of Article 6.3(b) and (c).

b. The Panel failed to conduct a proper analysis of the magnitude of the tax subsidies.

323. The Appellate Body has found that "in assessing whether 'the effect of the subsidy is . . . significant price suppression', and ultimately serious prejudice, a panel will need to consider the effects of the subsidy on prices. The magnitude of the subsidy is an important factor in this analysis."[505] In fact, when the Panel found that B&O tax adjustments, by themselves, were too small to cause serious prejudice,[506] it implicitly recognized that magnitude could be the *decisive* factor. However, the Panel conducted no such analysis for the FSC/ETI measure.

324. The Panel's omission is not for want of evidence. Both parties put forward calculations showing that the amount of the FSC/ETI benefit was consistently less – and often far less – than 1 percent of the value of Boeing's annual sales from 2001 to 2006, whether measured in terms of

[504] Panel Report, para. 7.1831 ("Even if the Panel were to accept the adjustments to the operating profit figures for Boeing's LCA division proposed by the European Communities, and even if the Panel were to consider it appropriate to analyze the effects of the aeronautics R&D subsidies on Boeing's behaviour as being equivalent to the effects on Boeing of the receipt of an equivalent amount of unrestricted cash (which we do not), once the amount of the subsidies received by Boeing between 1989 and 2006 is reduced from $19.1 billion to our own estimate of the total amount of the subsidies, the argument that Boeing's LCA division would not have been "economically viable" in the absence of the subsidies unless it altered its prices or product development behaviour becomes untenable, whichever basis for assessing economic viability is used.").

[505] *US – Upland Cotton(AB)*, para. 461.

[506] Panel Report, para. 7.1824.

orders or deliveries.[507] The Panel simply dismissed this evidence on the grounds that "{w}e do not consider that either measure is particularly informative or illustrative of the capacity for the FSC/ETI subsidies to have affected Boeing's prices, and by extension, Airbus' prices and sales."[508] The Panel's first error in this passage is that it forgot the burden of proof. If the evidence of the magnitude of a subsidy is not "informative or illustrative," the complaining party has failed to meet its burden of proof on an "important factor" for establishing causation. It does not signify, as the Panel apparently believed, that factor becomes irrelevant.

325. The Panel also erred in disregarding the Appellate Body's instructions that "a panel should have regard to the magnitude of the challenged subsidy and its relationship to prices of the product in the relevant market," and that "{a} precise, definitive quantification of the subsidy is not required."[509] The Panel routinely, and properly, quoted these findings to justify subsidy value calculations that did not rise to the level of scientific precision. However, in analyzing causation for the tax subsidies, it failed to realize that the reverse of this principle also applies – that even if it is difficult to attach a precise value to a subsidy, a Panel should still assess its general magnitude.

326. In the case of FSC/ETI, there is no question that the subsidies were extremely small by any measure. Both parties' data show that FSC/ETI subsidies were consistently less than 1 percent of Boeing's annual delivery values over the 2004-2006 period.[510] Even assuming *arguendo* that the FSC/ETI subsidies have a dollar-for-dollar effect on Boeing's and Airbus' aircraft prices, which the Panel did not find, no causal link exists. In terms of the lost sales claims, and the displacement and impedance claims on which they are based, the European Union's own evidence shows that a counterfactual increase in Boeing's prices by less than one percent would not have changed the outcome of campaigns won by the 737 and 777.[511] As to significant price suppression, the European Union never asserted or attempted to demonstrate that suppression of Airbus' aircraft prices by less than one percent ad valorem would constitute significant price suppression, even when the Panel asked it to discuss the relevance of a relatively small degree of price suppression.[512]

327. The Panel's (unexplained) concern that the particular ratios advanced by the parties did not properly convey the significance of the FSC/ETI measure does not excuse it from addressing the small magnitude of the tax subsidies in its analysis. Because those subsidies were simply too small during the 2004-2006 period to have had the effect of causing Boeing to win significant sales and market share from Airbus or to suppress Airbus' prices to a significant degree, no

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[507] Panel Report, paras. 7.1814-7.1815.

[508] Panel Report, para. 7.1816.

[509] *US – Upland Cotton (AB)*, para. 467.

[510] Panel Report, para. 7.1815.

[511] EC FWS, Annex E, para. 62; EC FWS, Annex F, para. 37.

[512] EC RPQ 94, para. 503.

causal link exists. Even a subsidy viewed by the Panel as specifically designed to affect trade will not "have trade distortive effects"[513] rising to serious prejudice under Article 6.3 of the SCM Agreement if, in fact, it is provided in amounts too small to have the alleged effects.[514]

328. Therefore, the Panel's conclusions regarding the magnitude of the subsidy were not sufficient to establish for purposes of Article 6.3(b)-(c) of the SCM Agreement that the effect of the subsidies was significant price suppression, lost sales, or displacement and impedance in a third country market.

c. The Panel failed to address the absence of any correlation between the amount of the tax subsidies and the lost sales, price suppression, and changes in market share.

329. The Appellate Body has found that:

> {O}ne would normally expect a discernible correlation between significantly suppressed prices and the challenged subsidies if the effect of these subsidies is significant price suppression. Accordingly, this is an important factor in any analysis of whether the effect of a subsidy is significant price suppression within the meaning of Article 6.3(c).[515]

The same reasoning would apply in evaluating whether the effect of the subsidies is significant lost sales or displacement and impedance.

330. The Panel considered that the tax subsidies are tied to particular sales, and have an effect on those sales.[516] Therefore, allegations of serious prejudice should find confirmation in a discernible correlation between the level of subsidies and the evolution of the prices and sales for large civil aircraft. Yet, no such correlation exists. To the contrary, as the United States demonstrated to the Panel, Boeing's price levels and market share moved in directions opposite from what would be expected if they were influenced by the tax measures. That is, during the 2001-2003 period, when FSC/ETI levels were relatively higher, Boeing lost significant market share and its 737 prices were [ ] than during the 2004-2006 period. During 2004-2006, when FSC/ETI levels were lower, Boeing's profits surged, market share improved and 737 prices were [ ]. These facts are important indications that no meaningful relationship exists between the tax subsidies and Boeing's prices for and sales of large civil aircraft, yet the Panel never made any findings on this issue.

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[513] *Cf.* Panel Report, para. 7.1810.

[514] To conclude otherwise would lead to the untenable result that a one dollar export subsidy, which would be prohibited under Part II, would be viewed as indicating displacement in certain third country markets, significant lost sales, and significant price suppression.

[515] *US – Upland Cotton (AB)*, para. 451.

[516] Panel Report, para. 7.1806.

d. The Panel failed to perform an adequate non-attribution analysis.

331. As the Appellate Body has observed, in an analysis under Article 6.3(c), "it is necessary to ensure that the effects of other factors on prices are not improperly attributed to the challenged subsidies."[517] However, the Panel disregarded this instruction, and made findings on other factors without engaging in any meaningful analysis of their effects on the prices and sales of either Boeing or Airbus. This omission renders the Panel's analysis incomplete and in error.

332. The United States demonstrated that several factors other than the alleged subsidies explain why Airbus A320 and A340 sales and prices were not higher than they were:[518]

- Airbus undercut prices for both 100-200 and 300-400 seat aircraft, which increased its market share dramatically but set customer expectations for low prices in subsequent campaigns;[519]
- Boeing's [

  ].[520]
- Prices for Airbus' gas-guzzling, four-engine A340 [
  ].[521]

333. Evidence on the specific sales campaigns demonstrates the real-world effect of these other factors. On the A340's fuel disadvantage versus the 777, for instance, Singapore Airline's CEO stated that, "{t}he A340 now is in a position where it's disadvantaged by high oil prices . . . . Four engines take more fuel than two."[522] Market developments are similarly inconsistent with the view that the tax subsidies were causing adverse effects to Airbus. The European company's share of deliveries of 100-200 seat aircraft increased by 11 percentage points at Boeing's expense over the 2000-2006 period.[523] During this time, Airbus succeeded in switching several all-Boeing low-cost carriers to the A320 series. In particular, it secured a major 120-aircraft order from easyJet with a price differential described by the airline's founder as "so substantial we would have been in breach of our fiduciary duty; it would have been an

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[517] *US – Upland Cotton (AB)*, para. 437.

[518] *E.g.*, US Comment on EC RPQ 370, para. 207; US Comment on EC RPQ 88, paras. 339-343; US Comment on EC RPQ 287, paras. 527-533; US FWS, paras. 1064-1080, and 1138-1155.

[519] US SWS, HSBI Appendix, paras. 44-60, and 62.

[520] US Comment on EC RPQ 305, para. 616; US SWS, HSBI Appendix, paras. 6, 40-59, and 62.

[521] US SWS, HSBI Appendix, para. 64.

[522] US SWS, HSBI Appendix, para. 63 (quoting Exhibit US-1172).

[523] US FWS, para. 1095.

offence to buy Boeing."[524] Boeing [ ] at levels that the European Union concedes are at a "significant price premium" above the A340, only to lose significant market share as Airbus offered the A340 at prices so low they routinely offset the 777s value advantage.[525]

334. Certain non-subsidy factors were specific to individual sales campaigns. In its analysis of serious prejudice relating to the 787, the Panel acknowledged that the facts of a given sales campaign may preclude a finding that subsidies caused Airbus to lose the sale. For example, the Panel found that the R&D subsidies did not cause the Original A350 to lose to the 787 at Air Canada because that sale was "bundled" with a sale of 777s. [526] Yet, in the Air New Zealand campaign that the Panel found to be a lost sale to the A340, Boeing also made a bundled sale of 777s and 787s.[527] The Panel does not explain these inconsistent findings.

335. In fact, the Panel does not mention *any* non-subsidy factors in its analysis, other than to dismiss U.S. arguments and evidence with a single sentence:

> The United States' explanations of factors that it considers explain the prices and performance of Airbus LCA relative to Boeing LCA in the 100-200 seat single aisle, and 300 – 400 seat wide-body product markets in the 2004-2006 period similarly do not reverse or attenuate the pervasive and consistent pricing advantage that Boeing had in LCA campaigns in the 2001-2003 period due to the availability of the FSC/ETI subsidies.[528]

This single sentence simply restates the test enunciated by the Appellate Body. It does nothing to "ensure that the effects of other factors on prices are not improperly attributed to the challenged subsidies."[529]

336. In sum, the Panel failed "to ensure that the effects of other factors on prices are not improperly attributed to the challenged subsidies." [530]

e. Conclusion

337. The Panel's failure to conduct these critical analyses means that it failed to establish a genuine and substantial relationship of cause and effect between the tax subsidies and their

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[524] US FWS, Campaign Annex, para. 96 (quoting Exhibit US-339).

[525] US SWS, HSBI Appendix, para. 60.

[526] Panel Report, para. 7.1786 n. 3725.

[527] US SWS, HSBI Appendix, paras. 147-155.

[528] Panel Report, para. 7.1819.

[529] *US – Upland Cotton (AB)*, para. 437.

[530] *Cf. US – Upland Cotton (AB)*, para. 437.

alleged adverse effects. Therefore, the United States respectfully requests the Appellate Body to reverse the Panel's findings under Articles 5(c) and 6(b)-(c) of the SCM Agreement.

2. The Panel relied on an impermissible presumption that subsidies "prohibited" under Part II of the SCM Agreement cause serious prejudice for purposes of Part III

338. In its analysis of the tax subsidies, the Panel repeatedly cited its finding that FSC/ETI was a prohibited export subsidy under Part II of the SCM Agreement as the justification for finding that the group of tax subsidies – FSC/ETI and the state and municipal B&O tax reductions – caused serious prejudice for purposes of Part III.[531] However, the SCM Agreement does not permit this short cut. Part II provides for a distinct legal claim, using different criteria than Part III to define WTO-inconsistent behavior, and providing a different, and more strict, remedy. Thus, a panel cannot simply presume, as this Panel did, that a finding that a subsidy is prohibited under Part II also signifies that the subsidy causes serious prejudice under Part III. The Panel's reliance on this presumption means that its findings do not satisfy the requirements of Articles 5(c) and 6.3(b)-(c) of the SCM Agreement to establish that the tax subsidies caused adverse effects.

339. The Panel sees a finding under Part II as providing an analytical short-cut under Part III, allowing it to make conclusions as to the effect of a prohibited subsidy independent of its nature, magnitude, or other characteristics:

> {W}e recall that the FSC/ETI subsidies have been the subject of previous WTO dispute settlement and in that context, have been found to be prohibited export subsidies within the meaning of Article 3.1(a) of the SCM Agreement.[532]
>
> In our view, *precisely because the FSC/ETI subsidies are contingent on Boeing making export sales*, *we are entitled to determine*, absent reliable evidence to the contrary, that by their very nature, *they will have trade distortive effects*.[533]

Although the Panel does not use the word "presumption" or "presume," the mechanism it describes is indistinguishable from a presumption – if a panel finds export subsidization it may find *without any other evidence or reasoning* that the subsidy distorts trade. It is a rebuttable presumption because a panel may decline to make the finding if "reliable evidence" indicates it is not warranted. But regardless of the terminology, the relationship that the Panel posits between findings under Parts II and III is contrary to the terms of the SCM Agreement.

340. There are similarities between Parts II and III of the SCM Agreement – in particular, they both rely on the definition of a subsidy under Article 1. However, there are many important

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[531] Panel Report, paras. 7.1808-7.1810, and 7.1817.

[532] Panel Report, para. 7.1808.

[533] Panel Report, para. 7.1810 (emphasis added).

differences. Unlike Part III, Part II applies without a finding of specificity. Part II also requires no finding as to the effect of the subsidy – if it has one of the contingencies listed in Article 3.1, it is prohibited. Part II also has no significance requirement – if a subsidy meets the criteria in Article 3.1, it is prohibited even if it has little or no effect on the exports or domestic sales of another Member. And finally, Part II places an absolute prohibition on certain subsidies, whereas Part III allows a Member to maintain a subsidy if it can remove any adverse effects.

341. These differences reveal one flaw in the Panel's reasoning. Part II does not require a showing as to the effects of a prohibited subsidy, trade distortive or otherwise. Indeed, it prohibits export-contingent subsidies and import-substitution subsidies *even if they have no such effects*. Thus, a finding under Part II does not "entitle" a Panel to assume trade distortive effects in other parts of the Agreement.

342. An examination of the context provided by the rest of the SCM Agreement reveals further flaws in the Panel's reasoning. There are, in fact, many linkages among the parts of the SCM Agreement. Article 2.3 specifies that subsidies prohibited under Part II are "deemed to be specific." Article 5, footnote 11, provides that injury to the domestic industry of another Member as defined in Part V is one form of adverse effects. Article 8 created a temporary exception to Parts III and V. These provisions show that when negotiators meant to transpose legal standards from one Part to another, they created specific cross-references. The absence from Part III of such a cross-reference to Part II, indicates that findings under Part II do not create presumptions for purposes of Part III.

343. In fact, the text of Part III shows that no such linkage exists. Article 6.1 of the SCM Agreement provides that "serious prejudice in the sense of paragraph (c) of Article 5 shall be deemed to exist" in specified circumstances. *Subsidies prohibited under Part II of the SCM Agreement are not covered*. The Panel's assertion that it was "entitled to determine, absent reliable evidence to the contrary" that the FSC/ETI program caused serious prejudice and that, when aggregated with the FSC/ETI subsidies, the Washington State/City of Everett B&O subsidies did so as well, is not only impermissible under the text of the SCM Agreement, but is also at odds with that agreement's structure and purpose.

344. Part V of the SCM Agreement provides further confirmation that the Panel is wrong. Although Article 15 sets out detailed conditions under which an investigating authority may find that subsidized imports cause material injury, it does not contain any language "entitling" a determination that a prohibited subsidy "will have trade distortive effects."

345. The structure of Article 6 of the SCM Agreement further demonstrates the inappropriateness of the Panel's conclusion that it is "entitled to determine" that prohibited subsidies "will have trade distortive effects." Article 6 defines serious prejudice in factual terms, based in each instance on "the effect of the subsidy." This analysis necessarily includes a number of inherently factual issues: how subsidies affected the recipient's behavior, whether the magnitude of the subsidy is sufficient to cause the alleged effects, whether price or volume trends are consistent with the existence of displacement, impedance, price suppression, or price

depression. The Panel's analytical short-cut side-steps these issues and, therefore, does not provide the type of robust serious prejudice analysis the Appellate Body has found to be necessary.[534]

346. The Panel sought to find support for its short-cut in the Appellate Body's report in *Canada – Aircraft* and the panel report in *Brazil – Aircraft* reports.[535] From the outset, these reports are of limited relevance to the question at hand – applicability of findings under Part II to the analysis under Part III – because neither dispute involved actionable subsidy claims under Articles 5 and 6.3 of the SCM Agreement.

347. Moreover, the Appellate Body's guidance in these reports does not support the Panel's conclusions. In the passage from *Canada – Aircraft* quoted by the Panel, the Appellate Body addressed whether panels considering claims under Part II of the SCM Agreement have the authority to draw inferences:

> There is no logical reason why the Members of the WTO would, in conceiving and concluding the *SCM Agreement*, have granted panels the authority to draw inferences in cases involving actionable subsidies that *may* be illegal *if* they have certain trade effects, but not in cases that involve prohibited export subsidies <u>for which the adverse effects are presumed</u>.[536]

The emphasis indicated in the underlined text is the Panel's, and shows that it put particular weight on the view that the adverse effects of prohibited subsidies "are presumed." However, there is no indication that the Appellate Body meant in that sentence to refer to "adverse effects for purposes of Article 5 of the SCM Agreement." In fact, the passage suggests that the Appellate Body meant the opposite, as it refers to the "effects" covered by Part III as "certain trade effects." Moreover, when the Appellate Body referred to actionable subsidies, it emphasized the contingency of the standard – they "*may* be illegal *if* they have certain trade

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[534] *US – Upland Cotton (AB)*, paras. 434 ("An assessment of 'general price trends' is clearly relevant to significant price suppression (although, as the Panel itself recognized, price trends alone are not conclusive). The two other factors – the nature of the subsidies and the relative magnitude of the United States' production and exports of upland cotton – are also relevant for this assessment."); 437 ("{W}e agree with the Panel that it is necessary to ensure that the effects of other factors on prices are not improperly attributed to the challenged subsidies."); 451 ("{O}ne would normally expect a discernible correlation between significantly suppressed prices and the challenged subsidies if the effect of these subsidies is significant price suppression. Accordingly, this is an important factor in any analysis of whether the effect of a subsidy is significant price suppression within the meaning of Article 6.3(c)."); 458 ("{W}e underline the responsibility of panels in gathering and analyzing relevant factual data and information in assessing claims under Article 6.3(c) in order to arrive at reasoned conclusions."); 461 ("{I}n assessing whether "the effect of the subsidy is . . . significant price suppression", and ultimately serious prejudice, a panel will need to consider the effects of the subsidy on prices. The magnitude of the subsidy is an important factor in this analysis."); *US – Upland Cotton (21.5) (AB)*, para. 351 ("{C}ounterfactual analysis is an inescapable part of analyzing the effect of a subsidy under Article 6.3(c) of the *SCM Agreement*.")

[535] Panel Report, paras. 7.1808-7.1809.

[536] *Canada – Aircraft (AB)*, para. 202, *quoted in* Panel Report, para. 7.1808 (italics in original; underlining shows emphasis added by the Panel).

effects." Thus, it is clear that the statement does not envisage *ipso facto* treatment as actionable of subsidies without an investigation of their trade effects, which is what the Panel did.

348. In any event, deciding whether adverse effects for purposes of Part III are "presumed" for prohibited export subsidies was completely unnecessary to resolving the question before the Appellate Body in *Canada – Aircraft*. If the Panel were correct in understanding the Appellate Body as having made a finding in this regard, it would be *obiter dictum*. Thus, the reference to "adverse effects" is best understood as generally describing the situation under Part II – that there is no need to show the effects of a prohibited subsidy – and not as creating a presumptive status in Part III for findings under Part II.

349. Similarly, no support for the Panel's presumption exists in the *Brazil – Aircraft* panel report. In that dispute, the panel concluded that Brazil could not justify a prohibited export subsidy by claiming that it was meant to offset the competitive effect of a subsidy provided to a producer in another country.[537] That panel described prohibited subsidies as "specifically designed to affect trade."[538] However, a measure designed to affect trade will not necessarily "have trade distortive effects." If it did, the intent of the granting authority would be dispositive of the question of whether a subsidy was actionable, countervailable, or otherwise. Rather, the SCM Agreement focuses on the actual effects of the subsidy, in the form of injury to the domestic industry of a Member, nullification or impairment of benefits under the GATT 1994, or serious prejudice.

350. The practice of aggregate analysis of subsidies also exposes a peril of the Panel's approach. A critical issue before the Panel was whether the FSC/ETI and B&O measures collectively were of sufficient magnitude to cause the serious prejudice alleged by the European Union. The Panel found that the B&O subsidies, by themselves, were of insufficient magnitude to cause serious prejudice to EU exports of 200-300 seat large civil aircraft.[539] However, as outlined above in Section VI.C.1.b, the Panel disregarded evidence from both the United States and the European Union that FSC/ETI benefits were relatively insignificant in comparison to Boeing's delivery and order values because "{w}e do not consider that either measure is particularly informative or illustrative of the capacity for FSC/ETI subsidies to have affected Boeing's prices, and by extension, Airbus' prices and sales."[540] Rather than explain why this magnitude data was irrelevant, the Panel, in its next sentence, retreated to FSC/ETI's status as an export subsidy: "It is important to bear in mind that the FSC/ETI subsidies are export subsidies

[537] *Brazil – Aircraft (Panel)*, paras. 7.25-7.27.

[538] *Brazil – Aircraft (Panel)*, paras. 7.26.

[539] Panel Report, para. 7.1824 ("there is insufficient evidence before us that would enable us to conclude that these subsidies are of a magnitude that would enable them, on their own, to have such an effect on Boeing's prices of the 787 as would lead to a finding that their effects in the 200- 300 seat wide-body market were significant price suppression, significant lost sales or displacement or impedance of European Communities imports into the United States or exports to third countries.").

[540] Panel Report, para. 7.1816.

that are designed to increase Boeing's competitiveness through its pricing of LCA for export."[541] Thus, the Panel's presumption as to the "trade distortive effects" of prohibited subsidies was outcome-determinative in the finding that the state of Washington and City of Everett B&O tax reductions caused serious prejudice to EU 100-200 and 300-400 aircraft.

351. In fact, without the Panel's presumption of "trade distortive effects," its entire finding that the tax subsidies caused adverse effects falls apart. Absent that presumption, the only other support the Panel provides for its finding is:

- "{A}s a matter of economics, subsidies that are tied to sales have an impact on those sales. . . . {P}roduct-specific subsidies can have a significant impact on prices and output." (paragraph 7.1806)

- "Both the FSC/ETI and B&O tax subsidies increase the profitability of LCA sales in a way that enables Boeing to price its LCA at a level that would not otherwise be commercially justified." (paragraph 7.1807)

- "The European Communities has provided evidence concerning a sales campaign in 1996 in which an Airbus negotiator states that, owing to Boeing's lower pricing due to its receipt of FSC subsidies, his team was asked by the customer to reduce its price by a further $4 million per aircraft." (paragraph 7.1817)

- "The U.S. Trade Representative described the general purpose of the FSC/ETI provision as being to enhance the international competitiveness of U.S. companies." (paragraph 7.1817)

- Boeing Vice President of Tax James H. Zrust "made clear that while repealing Boeing's ETI benefits without a 'suitable replacement' would have an adverse impact on the 'international competitiveness' of all U.S. exports, it would be 'especially devastating to the U.S. aerospace industry." (paragraph 7.1817)

352. These statements are simply inadequate to support a finding of serious prejudice for purposes of Articles 5 and 6.3(b) and (c). The finding that subsidies tied to sales will have an impact on those sales is accurate, but meaningless in this context, as it indicates nothing about whether the impacts take the form of displacement, impedance, price suppression, or lost sales, or whether any impact has the requisite level of significance. The observations that subsidies can have a significant impact or "enable" certain behavior are also insufficient, as neither establishes that Boeing actually engaged in the behavior that subsidies would make *possible*. The information regarding the campaign in 1995 is simply irrelevant. Both parties agreed that conditions of competition evolve in the market for large civil aircraft. Therefore, how a subsidy operates in 1996 provides no indication as to the effect it would have during the period covered by the EU allegations of serious prejudice. And, finally, the views that FSC/ETI made Boeing

[541] Panel Report, para. 7.1817.

more competitive fail to indicate whether that competitiveness resulted in any of the forms of serious prejudice provided under Article 6.3. Therefore, these findings individually and collectively are not enough to establish that the effect of the tax subsidies was one of the forms of serious prejudice alleged by the EU.

353. Finally, the Appellate Body should note that the findings regarding FSC/ETI are the sole reason for making a finding against the tax subsidies as a group – the Panel found that the state and municipal B&O tax reductions were not sufficient by themselves to cause adverse effects.[542] Thus, the inclusion of FSC/ETI, a subsidy that the United States withdrew, and Boeing stopped using, in 2006 is outcome-determinative for the much less significant B&O tax measures.

354. Because the Panel's assessment is so dependent on its improper reference to FSC's status as an export subsidy, the Panel's finding with regard to the tax subsidies does not establish that they caused adverse effects to EU 100-200 and 300-400 seat large civil aircraft.

3. The Panel's failure to identify third country markets in which the tax subsidies caused displacement and impedance and campaigns in which the tax subsidies caused significant lost sales is inconsistent with Articles 6.3(b) and (c) of the SCM Agreement and Article 12.7 of the DSU.

355. In contrast with both its own findings on aeronautics R&D subsidies and with the reports of other panels, the Panel did not name either the third countries in which it found displacement or impedance or the transactions that it found to be significant lost sales. These omissions create a number of inconsistencies with WTO rules. The different subparagraphs of Article 6.3 of the SCM Agreement are structured so that serious prejudice, and adverse effects for purposes of Article 5 of that Agreement, happen only under specified conditions. If a panel does not find that each of those conditions exists, it has not established that serious prejudice exists. Thus, when the Panel in this dispute ended its analysis by stating that "the effects of the subsidies" were "significant lost sales" and "displacement and impedance of exports from third country markets" without any further detail, it did not make the findings sufficient to establish that serious prejudice existed for purposes of Articles 6.3(b) and (c). Moreover, the high degree of vagueness in these findings means that the Panel has failed to satisfy its obligation under Article 12.7 to include in its report "the basic rationale behind any findings and recommendations that it makes."

356. Serious prejudice occurs for purposes of Article 6.3(b) when "the effect of the subsidy is to displace or impede the exports of a like product of another Member from a third country market." A finding of serious prejudice accordingly requires a positive finding as each of the operative elements – a subsidy, a like product, a Member exporting that product, and a third country market. The absence of any one of those criteria means that there is no serious prejudice under Article 6.3(b). Moreover, a panel does not satisfy this standard merely by repeating its words in whole or in part. To make a finding consistent with Article 6.3(b), a panel must specify

[542] Panel Report, para. 7.1824.

what facts exist to meet each of the elements. The statement that displacement or impedance exists with regard to "a market" further underscores that it requires a market-by-market conclusion, and not a generalized finding with regard to multiple markets.

357. Thus, when the panel in *EC – Large Civil Aircraft* addressed claims under Article 6.3(b), it identified the subsidies (launch aid, etc.), the like product (large civil aircraft), the exporting Member (the EU), and the countries in which displacement occurred (Australia, China, India, Brazil, Chinese Taipei, Korea, Mexico, and Singapore).[543]

358. Following this understanding, when the EU presented the arguments related to its claims of price suppression under Article 6.3(b) for 100-200 seat aircraft and 300-400 seat aircraft, it identified the subsidies, the like product, the exporting Member, and the third country markets – Singapore, Indonesia, and Japan for 100-200 seat aircraft, and Singapore, New Zealand, and Hong Kong for 300-400 seat aircraft.[544] The United States rebutted the EU's assertions with reference to those same markets, showing that the quantities involved were too small to reach any conclusions about displacement or impedance, and that circumstances of each individual transaction prevented a conclusion that any lost sale was "the effect of the subsidy."[545]

359. The Panel addressed none of this. The report simply makes a series of conclusions about causation, and then states that "{i}t is thus inescapable to also arrive at the conclusion that in law the effects of the subsidies on Airbus' prices and sales constitute . . . displacement and impedance of exports from third country markets, within the meaning of Article 6.3(b) . . . ."[546] The Panel references the third-country markets by name only in its section summarizing the EU argument,[547] and nowhere indicates which of them are encompassed in its generalized finding. This silence means that the Panel's finding failed to meet the minimum substantive requirements under Article 6.3(b) for finding that the effect of subsidies is to displace or impede exports of a like product in a third country.

360. The same reasoning applies to the identification of significant lost sales under Article 6.3(c). Serious prejudice occurs under that Article when "the effect of the subsidy is . . . significant lost sales in the same market." A finding of serious prejudice accordingly requires a positive finding as each of the operative elements – significance, lost sales, and a market in which they occur. The absence of any one of those criteria means that there is no serious prejudice by reason of lost sales. Moreover, a panel does not satisfy this standard merely by repeating its words in whole or in part. To make a finding consistent with Article 6.3(c), a panel must specify what facts exist to meet each of the elements. The use of the word "sales"

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[543] *EC – Large Civil Aircraft*, paras. 7.1790 and 7.1791.

[544] *Airbus and Boeing LCA Deliveries and Projected Deliveries in the Challenged Markets* (Exhibit EC-1174).

[545] US FWS, paras. 1093 and 1167-1168.

[546] Panel Report, para. 7.1822.

[547] Panel Report, para. 7.1622.

highlights that the relevant facts are the particular transactions, rather than the mass of the like product sold in a particular market. The contrast with Articles 6.3(a) and (b) and 15.2 of the SCM Agreement is instructive on this point. Each of them makes clear that the analysis applies to the subsidized product in aggregate by using collective terms – "imports" in Article 6.3(a), "exports" in Article 6.3(b), and "volume of subsidized imports" in Article 15.2. Thus, the "lost sales" under Article 6.3(c) are not generalized levels of market share or volume, but individual transactions.

361. The practice of the *EC – Large Civil Aircraft* panel, and of this Panel when it considered 200-300 seat aircraft demonstrates that they see the lost sales analysis the same way. The *EC – Large Civil Aircraft* panel examined each of the transactions alleged by the United States to be a lost sale.[548] It then found that "it is clear that Boeing lost sales to Airbus involving purchases by easyJet (120 A320s), Air Berlin (60 A320s), Czech Airlines (6 A319s, 6 A320s), Air Asia (60 A320s), Iberia (5 A340s), South African Airways (12 A340s, 11 A319s, 15 A320s), Thai Airways International (8 A340s), Singapore Airlines (A380s), Emirates Airlines (A380s), and Qantas (A380s)."[549]

362. However, when it came to analyzing sales of 100-200 seat and 300-400 seat aircraft, the Panel did not indicate what particular sales it concluded had been lost. Instead, it stated simply "{i}t is thus inescapable to also arrive at the conclusion that in law the effects of the subsidies on Airbus' prices and sales constitute significant lost sales and significant price suppression, within the meaning of Article 6.3(c) of the SCM Agreement . . . ."[550] The Panel's own analysis neither provides the names of the campaigns or refers to other materials that do. The summary of EU arguments (200 paragraphs earlier) does report allegations of lost sales of its 100-200 seat A320 at Ryanair, Japan Airlines, Singapore Airline Leasing Enterprise, Lion Air, and DBA;[551] and allegations of lost sales of its 300-400 seat A340 at Singapore Airlines, Air New Zealand, and Cathay Pacific.[552] Thus, the Panel's vague finding the there were "significant lost sales" offers no hint as to which transactions it considered to be lost sales. This silence means that the Panel's finding failed to meet the minimum substantive requirements under Article 6.3(b) for finding that the effect of subsidies is significant lost sales.

363. Finally, the Panel not only failed to meet the substantive requirements for findings under Article 6.3(b) and (c), it also failed to meet the procedural requirement under Article 12.7 of the DSU that its report "set out the findings of fact, the applicability of relevant provisions and the basic rationale behind any findings and recommendations that it makes." The Appellate Body has explained that

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[548] *EC – Large Civil Aircraft*, paras. 7.1803-7.1832.

[549] *EC – Large Civil Aircraft*, para. 7.1845. Sales quantities appear in paras. 7.1803, 7.1807, 7.1810, 7.1814, 7.1818. 7.1822, and 7.1825.

[550] Panel Report, para. 7.1822.

[551] Panel Report, para. 7.1622, *citing* EC FWS, Annex E.

[552] Panel Report, para. 7.1622, *citing* EC FWS, Annex F.

> this provision "establishes a minimum standard for the reasoning that panels must provide in support of their findings and recommendations", namely, that the explanations and reasons provided must suffice "to disclose the essential, or fundamental, justification for those findings and recommendations."[553]

The Panel Report is inconsistent with this obligation because, in omitting the identity of the third country markets and lost sales, it fails to indicate the "applicability of relevant provisions." In addition, as the ultimate conclusion is the most "basic" part of any "rationale," the Panel's omission of countries and specific sales is also inconsistent with the obligation to set out the basic rationale. Therefore, the Panel violated Article 12.7 of the DSU.

4. The Panel erred in applying Article 6.3(b)'s displacement and impedance standards to the EU's claims of displacement or impedance in Singapore (737/A320), Indonesia (737/A320), New Zealand (777/A340), and Hong Kong (777/A340).

364. In addition to the Panel's failure to identify third country markets in which it found that displacement and impedance occurred, it also erred by omitting critical steps in its analysis. A necessary component of any displacement or impedance analysis under Article 6.3(b) is an assessment of the data concerning the relationship between exports of the subsidized product and the like product in the third country market at issue.[554] The record in this dispute included data on market share and delivery volumes in each of the third country markets identified by the European Union. The Panel, however, never referred to that data, and consequently neglected to conduct the analysis needed to show that a displacement or impedance phenomenon existed. Thus, the Panel's findings of displacement and impedance did not meet the requirements of Articles 5(c) and 6.3(b) of the SCM Agreement.

365. The Panel's various short-cuts in reaching its ultimate conclusion make it impossible to discern in which of the markets it found displacement and impedance. However, to the extent it made such a finding with regard to countries in which Airbus had zero or 100 percent of deliveries, a finding of one or both of displacement and impedance would be inconsistent with Article 6.3(b). These countries are:

- ***737/A320 – Singapore***. With zero Boeing deliveries from 2004-2006, there was no basis for the Panel to find displacement or impedance. Airbus retained a 100% market share throughout the reference period. In any counterfactual analysis, Airbus' market share would be unchanged.

- ***737/A320 – Indonesia***. With zero Boeing deliveries from 2004-2006, there was no basis for the Panel to find displacement or impedance. Airbus started the

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[553] *Chile – Price Bands (Art. 21.5) (AB)*, para. 243, *quoting Mexico – Corn Syrup (Article 21.5 – US) (AB)*, para. 106.

[554] *See Indonesia – Autos*, para. 14.215.

period with zero deliveries 2004-2005 and then achieved a 100% market share in 2006, with 2 deliveries. In any counterfactual analysis, Airbus' market share would be unchanged.

- ***777/A340 – New Zealand***. With zero Airbus deliveries from 2004-2006, there was no basis for the Panel to find displacement.

- ***777/A340 – Hong Kong***. With zero Airbus deliveries from 2004-2006, there was no basis for the Panel to find displacement.

5. The Panel erred in finding displacement of Airbus 100-200 and 300-400 seat LCA in certain third countries by failing to establish that relevant "markets" existed in those countries within the meaning of Article 6.3(b) of the SCM Agreement.

366. As explained in Section VI.B.3.c, the Panel erroneously declined to assess whether any country subject to the European Union's displacement/impedance claims constituted "third country markets" within the meaning of Article 6.3(b) of the SCM Agreement.[555] A finding of displacement/impedance under Article 6.3(b) is improper if it rests on an interpretation and application of that provision that reduces "market" to a nullity, or otherwise fails to establish that displacement or impedance occurred in a "third country market." The Panel made no findings that any of the countries in which the EU alleged displacement or impedance of 100-200 or 300-400 seat aircraft was a "market." Therefore, to the extent that the Panel's generalized findings of displacement and impedance in third country markets cover Indonesia, Japan, or Singapore for 100-200 seat aircraft or Hong Kong, New Zealand, or Singapore for the 300-400, it erred. Therefore, the United States respectfully requests the Appellate Body to reverse any findings it considers the Panel to have made with regard to displacement or impedance of these products in the indicated markets.

6. The Panel's finding of significant suppression of A320 and A340 prices is inconsistent with Article 6.3(c) of the SCM Agreement.

367. The Panel found significant suppression of prices for Airbus' A320 and A340 without undertaking the requisite analysis of prices for those aircraft and Boeing's 737 and 777. The Appellate Body has observed that, under Article 6.3(c), "{a}n assessment of 'general price trends' is clearly relevant to significant price suppression (although, as the Panel itself recognized, price trends alone are not conclusive)."[556]

368. With respect to both the 737/A320 and 777/A340 market segments, the Panel never (a) referred to the pricing trend data in the record for the relevant aircraft, (b) examined other relevant factors affecting pricing, such as Airbus price undercutting and high production levels or

[555] Panel Report, para. 7.1674.

[556] *US – Upland Cotton (AB)*, para. 417.

the role of surging fuel costs to evaluate whether the pricing data was consistent with a price suppression phenomenon, or (c) assessed the degree of price suppression to determine whether it is "significant" within the meaning of Article 6.3(c). Thus, the Panel's finding is inadequate as a matter of law under Article 6.3(c).

369. In addition, while a price suppression analysis typically requires a counterfactual analysis, there are situations, such as in the 777/A340 market segment, where the price trends are plainly inconsistent with a price suppression phenomenon. During the 2004-2006 period, rising fuel costs and other operational problems caused [ ].[557] Given these facts, the Panel had no rational basis for finding that the tax measures suppressed A340 prices to a significant degree.

VII. CONCLUSION

370. For the reasons set out above, the United States asks that the Appellate Body reverse or modify the findings and conclusions addressed in this Appellant Submission.

[557] US FWS, paras. 1146-1147; US SWS, HSBI Appendix, para. 60.

Attachment 1

	DUS&T	Air Force ManTech	Navy ManTech	Total	Boeing share of aerospace sales	Amount allocated to Boeing	Allocation ratio to BCA	Amount allocated to BCA
1991		41,389	6,500	47,889	21%	10,127	62.9%	6,370
1992				-	21%	-	64.6%	-
1993			59,700	59,700	21%	12,455	63.2%	7,872
1994				-	22%	-	56.6%	-
1995			45,349	45,349	23%	10,226	53.2%	5,440
1996		57,040	24,385	81,425	21%	17,254	56.2%	9,697
1997		42,345	33,627	75,972	25%	19,066	59.4%	11,325
1998		38,464	24,087	62,551	26%	16,457	64.3%	10,582
1999	6,525	44,632	23,833	74,990	25%	18,655	66.0%	12,312
2000	8,056	41,807	20,000	69,863	27%	19,095	60.0%	11,457
2001	5,139	44,468	17,950	67,557	30%	20,522	59.6%	12,231
2002	5,588	38,137	10,500	54,225	29%	15,806	51.9%	8,203
2003	8,060	34,135		42,195	30%	12,864	43.3%	5,570
2004	7,663	25,511		33,174	31%	10,393	39.6%	4,115
2005	3,005	35,647		38,652	30%	11,606	41.0%	4,758
2006		18,467		18,467	30%	5,603	41.0%	2,297
sum	44,036	462,042	265,931	772,009		200,128		112,230
Source	EC-7, App. B	EC-7, App. B	EC-7, App. B		EC-7, App. C			