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JUSTIFYING THE ARIANESPACE MONOPOLY: THE ROLE OF CONSOLIDATION, SUBSIDIES, AND PREFERENCES IN THE EVOLVING GLOBAL LAUNCH INDUSTRY

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There are several trends developing in the space launch industry. There is increasing European consolidation of industry in the launch sector and, at the same time, there is an increasing number of launch providers globally. Furthermore, the European Community is going through unprecedented Institutional changes that are brining with them a fundamentally new approach to the Community role in space activities. Where Arianespace has traditionally depended to a limited extent on State assistance, the current overcapacity in the market has caused it to become increasingly dependent on assistance from ESA, Member States, and the EC. While there is no question that subsidies are normal in the global launch sector, there is a question as to whether focusing assistance on one company could be challenged under the competition provisions of the EC Treaty. An examination of the official EC policy regarding the position of Arianespace in the European marketplace thus allows one better insight into the future of space activities, as well as insight into how competition law could, and potentially should, influence the structure of the space launch industry in years to come.*

I. INTRODUCTION

The structure of the global launch industry is changing. Once State governments were the sole entities capable of putting objects into orbit. Today there is an increasingly diverse group of private entities that can accomplish this feat. The way in which these private entities compete with each other is also changing. We see two interlinked but diametrically opposed trends developing in the space launch industry. The first trend is toward consolidation, and involves primarily the traditionally powerful players in the market. The second trend is toward diversity, and involves the newer, primarily smaller players in the market. The interplay of these two trends presents a unique challenge for regulatory agencies responsible for ensuring fair play and competition, as they must seek to balance government interests in assuring access to space with business interests in ensuring a level playing field. This challenge is further compounded for the European Community (EC) in that EC regulators must take into account potentially conflicting national interests while competing in a global business, and while dealing with a quickly evolving institutional structure[1].

The EC Treaty makes it clear that achieving an integrated common market among the member states is one of the European Community's primary reasons for being, and in most cases the focus on ensuring pure competition is sufficient to achieve this goal. However, the institutions of the EC have found that in some situations the goal of promoting "throughout the Community a harmonious, balanced and sustainable development of economic activities" is best achieved through the centralization of industry.

Rather than attempting to force competition between national launch providers or private launch providers, the EC has reacted to the pressures of the launch market by seeking to consolidate European resources. Specifically, EC Institutions have authorized the creation of a virtual monopoly that has authority over the production and marketing elements of space launch services in Europe, and serves almost half the world market.[2] Further, the EC continues to authorize subsidies to this "monopoly" and has consistently encouraged the member states to give it preference in awarding contracts.

The beneficiary of this enviable position is Arianespace S.A., a limited private company under French law. This paper uses the example of Arianespace in order to flush out some of the arguments for and against continuing centralization in the launch industry in the context of an evolving EC competition policy.

Beyond it's unique place with regard to competition policy, Arianespace is also a particularly good subject for this analysis for functional reasons. First, it is a globally dominant player in a multi-billion dollar industry that will only grow in importance in the mid to long-term, and it is the dominant launch provider in Europe. Thousands of jobs in the EC would be affected by a shift in policy regarding Arianespace.[3] It is thus important to have a firm grasp on the legal and political motivations driving decision makers in the EC.

The examination will begin in section II with a look at the unique dynamics driving the global space launch industry and how these dynamics shape policy choices. Section III will focus on Arianespace itself, by looking at how EC institutions have reacted to its development, some of the limitations that have been imposed to prevent abuse of its position, and how the EC policies regarding Arianespace can be found to be consistent with the competition provisions of the EC Treaty. Finally, section IV will examine some arguments for and against maintaining an arguably anti-competitive stance, taking into account probable near term developments in the space launch industry.

II. CHARACTERISTICS OF THE GLOBAL SPACE LAUNCH INDUSTRY

In order to fully understand the circumstances surrounding the formation of EC policy with regard to Arianespace it is necessary to examine the unique combination of circumstances surrounding the launch market. First, the launch market is truly global, with a growing number of players representing both developing and developed nations. Second, the demand for launches is no longer exclusively tied to governments, although, as will be seen, they still influence the markets in very direct ways. The third major factor driving the launch market is the current decline in the global telecom market and the ensuing consolidation of the major players in both the satellite and launch industries. This has magnified the importance of the final major characteristic of the launch market, the ubiquitous reliance of launch providers on government subsidies and preferences.

A. Global Market

There is no shortage of commercial launch suppliers.[4] Three major private players dominate the global commercial launch market and several more entities are attempting to break in.[5] It is uncontested that the market for commercial launch services is worldwide as competition for launch services occurs on a worldwide scale, with customers able to choose between launchers operated by institutional entities or private companies.[6] This can be contrasted with the market for government launch services, which is thought to operate on a national level due to government preferences for domestic providers.[7]

B. Changing Demand

The nature of the demand for space services also plays a large role in the development of the market and in shaping the EC policy towards Arianespace. From the beginning of the space race in 1957, until the Challenger accident in 1986, the primary demand for launches was from governments that hoped to gain political capital domestically and hegemony internationally. However, with the rise of satellite communications and remote viewing, businesses began to make up more of the market for launch services, and have grown to become the largest portion of the demand.[8] This trend is expected to continue but may be significantly altered depending on whether, and how, NASA goes about implementing the recent U.S. government Vision for Space Exploration. Additionally, the development of alternate uses for space, such as space tourism and academic research, and ultimately energy production and the mining of platinum group metals, will feed the shift towards the privatization of space activity. The influx of new launch providers, such as SpaceX and Kistler Aerospace, may also create additional pressures to cut costs, and prices. In the mean time, Arianespace will have to contend with a shrinking commercial market without the safety net of major government contracts.

It is also important to remember that even with the primary shift in demand the basic incentives for having autonomous access to space remain. Nations have not and will not forget that access to space implies access to the ultimate high ground. With the growing dependence on satellite communications for business and personal use, continued access to those satellites becomes necessary to maintain both economic security and public safety. The Commission has recognized these factors and others in deciding that the EC must have autonomous launch capacities.[9]

C. Consolidation of the Technology Sector

The volatile nature of the global economy has deeply impacted the market for space launch services. The trend toward mergers in the satellite industry and the bursting of the telecommunications bubble have driven down demand for commercial launch services to levels far below what was expected in the late nineties, when the promise of global wireless networks fueled optimism in the market.[10] There are usually about 30 satellites launched in a year, however, in 2001 there were only 16 commercial launches, while this number rose to 24 in 2002.[11] Demand is expected to pick up, but only slightly, and nowhere near enough to make up for the current overcapacity.[12] The next few years will be critical to deciding how the market restructures itself to meet changing conditions.[13]

D. Ubiquity of Subsidies

The lack of demand in the market along with the increasing consolidation of the remaining suppliers has turbocharged the importance of government assistance in achieving competitiveness.[14] The reality is that the space launch industry has never existed separately from government subsidies. The low volume of sales, huge cost of maintaining launch facilities, and the enormous cost of developing a launch vehicle combine to ensure that government assistance is required, in some fashion, to allow competitiveness in the market. This means that for the short term at least, fair competition in the launch industry should be measured not by the absence of support structures, but by the even application of support structures.[15]

Arianespace has access to a large variety of government-sponsored advantages.[16] Direct subsidies are given by the ESA to aid in the development and evolution of the Ariane rocket family.[17] In addition to ESA subsidies, Arianespace also receives funds from the EC Institutions directly. For the purposes of this inquiry, the most directly relevant subsidy is

134 million Euros over 2001-2003 "so as to place Ariane-5 on a competitive footing, and to consolidate its reliability." [18]

Arianespace also receives preferences in government contracting situations that have been approved at the highest levels of government. In 1995 the Council adopted a Resolution encouraging Member States to give preference to Ariane launchers in awarding contracts.[19] However, even with this official preference only ten percent of Arianespace launches are for government purposes.[20] Arianespace does receive some assistance with the costs of maintaining launch facilities, however, the proportion of the facility's cost that is covered by this assistance is substantially less than is covered by the government in the United States.[21] Arianespace also benefits from the multinational and partially public nature of the business in that it allows for some cost shifting and permits Arianespace to offer customers attractive financing and insurance deals.[22] In particular the Council has authorized use of the relevant financial guarantee mechanisms available under the EIB (European Investment Bank) and the European Investment Fund.[23]

By contrast, the U.S. has adopted a structure where there are few direct subsidies to launch providers.[24] The major sources of U.S. support for its domestic launch providers come in the form of guaranteed exclusive access to government contracts and reduced costs for launch facilities. The U.S. government also contributes in the form of government R&D. Additionally, export rules must be considered when looking at the competitiveness of U.S. launchers.[25] Finally, the U.S. offers an indemnification scheme that cuts the cost of insuring launches and protects launchers against liability in case of launch failure.

Russia, China, Japan, and India all follow the same pattern of government subsidized launch programs. However, determining the levels of subsidies is difficult since there are few hard currency inputs upon which to judge the actual cost of producing rockets in either Russia or China.[26] China denies subsidizing its program, however, most analysts are skeptical of this claim and the fact that China has consistently underbid both the U.S. and Arianespace indicates that it has some government assistance.[27] Both Japan and India are still in the process of developing safe and reliable rockets.[28] In both cases the programs are funded by the respective government space agency. Given the nature of the launch market and the head start of the US and EC, it will be virtually impossible for either to enter the market without substantial government assistance and extremely difficult even with that assistance.[29]

III. EC REACTIONS TO ARIANESPACE

A. Barriers Against Potential Abuse of Arianespace's Position

Arianespace is not quite the hulking behemoth some analysts have made it out to be. The very government connections that allow it access to subsidies and preferences also serve to make it subject to many special obligations and limitations on its authority. As opposed to the relatively free hand given U.S. launch providers, the role of Arianespace within the space launch process has been carefully limited.

The launch process is formally divided into a development phase, and a subsequent production and launch phase. The development phase of the Ariane rocket is handled by the ESA rather than Arianespace, and so is governed by the "*juste retour*" principle found in the ESA Convention.[30] This requires that the Member States be awarded the fruits of the space program in proportion to their contributions.[31] Of utmost importance to the competition analysis is the fact that the development phase usually includes the selection of suppliers. This means that although Arianespace is responsible for the

actual production, their hands are tied with regard to whom they will contract out the work.[32] While this certainly reduces the ability of Arianespace to privilege suppliers from certain States, it also means that the most capable and cheapest supplier may not be chosen. This tension has been recognized by the ESA and by EC Institutions, and has resulted in special rules for particular projects and emerging technology projects that give more leeway in awarding contracts based on merit.[33] Of course, this leeway raises the risk of industrial concentrations in the common market that could be to the detriment of particular Member States and which would raise the risk of a State aid challenge.

Additionally, the Council has passed a Resolution recognizing that all Member States should have access to participation guaranteed through a process of free competitive bidding for ESA contracts.[34] Although free bidding sometimes is prioritized below proven expertise and financial contributions by a Member State, the fact that it is recognized as a principle guiding the selection process does create some limit on the discretion of the ESA to award contracts exclusively to companies from a particular state.

Furthermore, the ESA has made it clear that all ESA launches will take place from the facility in French Guyana for the foreseeable future.[35] So even though Arianespace controls the launch phase, their selection of a site is made for them. Thus the only phase over which Arianespace has total control is the marketing phase.

The multinational nature of Arianespace also tends to function as a buffer against some of the monopolistic tendencies that would normally plague a company of its size. Arianespace is a limited private company under French law,[36] and is owned by 53 shareholders, including the ESA and other Member State space agencies, along with private corporations from 12 European countries.[37] The fact that many different interests are actively represented tends to ensure that the decisions are made in such a way that the benefits of Arianespace are felt throughout the EC.

B. Institutional Opinions

The Commission, Council, and Parliament have all explicitly approved the current policy promoting the competitiveness of Arianespace through Member State preferences. The Commission clearly stated on multiple occasions that Europe needs an autonomous space launch capacity,[38] and that given the conditions of the global market the best way to accomplish this goal is through a partially public entity which can utilize all of Europe's resources in a centrally orchestrated fashion.[39] The Commission has also encouraged the consolidation of space services industries by being lenient in evaluating whether proposed aerospace mergers would impede effective competition.[40]

The Council has tacitly approved of the status of Arianespace by consistently approving direct subsidies of the launch industry and by authorizing Member States to give preference to the Ariane rocket.[41] In so doing the Council has indicated that it is trying to protect autonomous European access to space by ensuring that European launch services operate "under conditions comparable to those of other spacefaring nations."[42]

The European Parliament has recently adopted a Resolution giving its opinion on the Commission's action plan for implementing the European space policy that unequivocally states its support for a consolidated space industry in Europe.[43] The resolution does indirectly address the potential for dominance of industry in a few states by calling attention to the need to fine tune the application of the *juste retour* principle, but it concludes by indicating that "unnecessary duplication of structures" should be avoided.[44]

It is necessary to note that the approval of neither the Counsel nor the Commission is

unconditional. Both agencies still view competition as the means to achieve economic efficiency and believe that the inclusion of small to medium sized enterprises is useful to spur innovation.[45] Also, both recognize that the current public support is necessary only because of the status of the global market and the Commission has stated that the increasing involvement of the public sector in space activities may change the nature of the global market.[46]

C. EC Treaty Law Application

Even though it is clear that the Counsel and the Commission both actively advocate the current centralization of the European launch industry and state subsidization of Arianespace it is still necessary to ensure that this state of affairs is justifiable under the EC Treaty competition provisions. Otherwise it would be possible for a Member State or institution to bring an action for failure to act against the Counsel for approving Member State preferences and approving subsidies or against the Commission for allowing the abuse of dominant position or failure to enjoin the Member State preferences as illegal state aid.[47]

Before any of the competition articles can be applicable, the entity involved must be an undertaking. The case law of the Court of Justice states that deciding whether a particular activity is an undertaking is essentially a question of determining whether an economic activity is involved; the organizational form is less important.[48] Thus, the fact that Arianespace is registered as a limited private corporation is not conclusive in showing that Arianespace is an undertaking. The more relevant question is whether it carries out economic activities.

The Court of Justice has consistently held "that any activity consisting in offering goods and services on a given market is an economic activity."[49] Arianespace does offer services on the global market, and so seems to qualify as an undertaking. However, in its most recent White Paper on space policy, the Commission was quite clear that it considers space systems to be "dual-use."[50] The Commission has also indicated that it considers autonomous European access to space to be an enabling factor for the development of a knowledge-based economy throughout the growing Union. Arianespace might thus be considered an undertaking entrusted with the operation of services of general economic interest under Article 86 of the EC Treaty. This would allow the Commission to more easily justify granting exemptions for State aid and measures that would discourage competition in launch services between Member States.

Articles 86 provides that as to undertakings entrusted with services of general interest, the competition provisions of the Treaty will only apply "in so far as the application of such rules does not obstruct the performance, in law or in fact, of the particular tasks assigned to them." The Treaty does add as a caveat that "[t]he development of trade must not be affected to such an extent as would be contrary to the interests of the Community." However, the structure of control imposed by the ESA convention and the Arianespace formation agreement ensures that both EC and national interests are represented in such a way as to make it unlikely the Commission or the COJ would decide that the activity of Arianespace was contrary to the interests of the Community.

1. Article 82: Abuse of Dominant Position

The Court of Justice in Hoffman-La Roche v. Commission defined "dominant position" to mean "a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of the consumers."[51] While market share is often used as a factor in determining this, it is not conclusive.[52] In order to judge dominance

it is also necessary to define the market. As has been discussed, the geographical market for launch services is global in scope. Arianespace would thus have to have and abuse a dominant position in the global market in order to violate Article 82.

Arianespace is not in a position where it can act independently of the competition. While its competitors can rely on government contracts until demand increases to meet the existing overcapacity, Arianespace must rely primarily on commercial contracts. While it could be argued that ESA subsidies could be used to ensure its position in the market, there is no evidence that the Council would approve enough subsidies to give Arianespace the luxury of setting its own terms. Even if this possibility did exist, the fact that U.S. launchers are similarly situated means that Arianespace would only be placed on even footing, it would not be dominant.

2. Articles 87-89: Illegal State Aid

Article 87 of the EC Treaty prohibits any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favoring certain firms or the production of certain goods. The aid in question can take a variety of forms; such as state grants or provision by the state of goods and services on preferential terms. State aid is presumed to be incompatible with the common market. However, the EC Treaty provides several exceptions that can justify the awarding of preferences[53]. It seems apparent from the discussion in section III that Arianespace receives preferential treatment that should be considered economic advantages within the meaning of Article 87 (1). The Court of First Instance has confirmed that even financial advantages granted by public authorities to an undertaking providing a service of general interest constitute economic advantages.[54] Thus, even if Arianespace is not treated as a purely private undertaking, its operations are still subject to State Aid review.

It is still not clear how the Commission would classify the preferential treatment awarded to Arianespace.[55] However, since State aid includes aid given through State resources and since ESA funds come from the States party to the ESA Convention, there is a strong argument that ESA subsidies are indirect State aid that should be subject to the same rules as direct State aid. If not, then States would be able to distort trade by forming mini-trade blocks through intergovernmental agreements, such as the ESA Convention, that would allow them to give what would otherwise be illegal aid.

The question then is whether the subsidies, cost structure advantages, financing advantages, and government preferences awarded to Arianespace fit within exceptions to the baseline presumption. The state aid here does not fall within any of the categories given in Article 87(2) that do not require Commission approval, so the Commission will have to approve the aid even if there is an applicable exception. However, this should not be a problem here given the Commission's commitment to autonomous European access to space.[56]

In Justifying state aid for Arianespace it is most likely that the Commission would use Article 87(3)(b), on the grounds that autonomous access to space is necessary to allow development of the information society, protect the security of the Community, and serve as a means of expanding Europe's influence around the world.[57] However, the Commission could also use Article 87(3)(c) on the grounds that the aid is necessary to protect the space launch industry in the face of current competition pressures.[58] Finally, the Commission could use the catchall exception of Article 87(3)(e).[59] The only thing they would need in that case would be the political support of the Council. Since both institutions have made it clear they support the current state of

affairs and believe it to be in the best interest of the EU, there is virtually no chance of Arianespace being threatened by a challenge under the state aid provisions of Article 87.

IV. IS ARIANESPACE A FUNCTIONAL MODEL FOR THE FUTURE?

"As long as there is no level playing field where there is a common, free market place... there is no fair competition possible, as many 'natural' factors distort fair competition. ... 'Fair' competition internationally cannot be based on the 'true' cost of providing the product, as 'true' costs differ, due to circumstances outside the control of the producer of the product."[60] These comments were made in reference to competition in international aviation, but they apply just as well to competition in launch services. While the idea of encouraging competition in the market through centralization and state aid seems intuitively contradictory, this is exactly the approach European regulators, and regulators around the world, are taking in the launch market.

The Arianespace example shows that it is possible to justify such a model under the competition provisions of the EC Treaty; however, the EC Treaty provisions are only a minor part of the story as it plays out in practice. In practice, what drives the enforcement of competition law in regards to Arianespace is the set of circumstances surrounding the space launch market in particular, and the EC economy in general. Independent access to space is seen as an integral component of the larger goal of promoting a robust information economy in Europe, which is seen as critical to maintaining European competitiveness in a wide variety of fields.

Arianespace shows that it is possible to justify regional monopolies in the launch market; however, it still remains to be seen whether this is the most functional way to achieve the development of space. The contradiction inherent in achieving competition through regional monopolization implies the disadvantage to the approach. While the U.S. and the EU are spending time and money focused on their government sponsored programs, many smaller companies are ignored and even stymied through a lack of funding and regulations responsive to the capabilities of new space industries. The focus on achieving "competitiveness" in a heavily distorted market has promoted the production efficiency of ELVs, but at the same time has created an industry that is less adaptable to changing circumstances in the market, such as the potential for new designs and new demands. Once a design is chosen and the production facilities are geared to this design, it is difficult to adopt drastic changes and so more efficient designs may be passed over because they are less efficient taking into account costs for adopting new facilities. Furthermore, as long as institutions continue to prop up markets with cost based contracts awarded based on preferences for domestic launchers and/or existing technologies, there is less incentive to innovate or lower costs. Looking to governments to take up the slack by purchasing launches and giving assistance may allow businesses to survive for as long as there is political will to support them, however, it is hardly a satisfactory solution for long-term stability of a private industry.

The question facing the launch industry is whether the EC institutions will manage to be responsive enough to meet the rapidly changing technological capacity and circumstances of the global economy. Arianespace was the first commercial space transportation company and has been a major player in the commercial launch market ever since.[61] It is not surprising that EC leaders would put their money on the proven investment, but they also need to be acutely aware of the promise shown by the companies referred to as small to medium enterprises (SMEs). Companies such as

SpaceX and Scaled Composites show that smaller businesses may be able to offer launch alternatives at a cost far below that of the current market leaders. EC leaders need to ensure that they do not stop at merely subsidizing space launches. Without encouraging fundamental innovations in launch technology, the EU will be condemning both small and large space service providers to even more of an uphill battle in the long term. However, as long as institutional will is behind supporting European launch autonomy at all costs, at least the EC should stay "competitive".

[1] Under the proposed European Constitution, space is expected to become a shared competence between Member States and the Union. *See*, Space: a new European frontier for an expanding Union An action plan for implementing the European Space policy, White Paper from the Commission to the European Council, COM(03) 673, final at 23 [hereinafter Space Action Plan 2003]. The ESA and the EC also recently signed a Framework Agreement allowing for cooperation aimed at independent European access to space, and designed to ensure that space is integrated into the overall development strategies of the EC. Council Decision 12858/03 of 7 October 2003 on the Signing of the Framework Agreement Between the European Community and the European Space Agency, OC RECH 152 589, at 5-6 [hereinafter ESA-EC Framework Agreement].

[2] *See* Commission Decision of 21.03.2000 declaring a concentration to be compatible with the common market (Case No COMP/M.1636 – MMS/DASA/ASTRIUM) according to Council Regulation (EEC) No 4064/89 at 120 [hereinafter Astrium Decision].

[3] The European space sector currently employs about 30,000 people, spread out over 2000 companies. *See* European Space Policy, Green Paper:, COM(2003)17 final, Jan. 21, 2003, at 11.

[4] Commercial launches here are used to mean any launch opportunity considered available in principle to competitors in the international launch services market or any launch licensed by the FAA Office of Commercial Space Transportation.

[5] Traditionally, Arianespace has been the dominant player in the commercial market. From the early eighties until the last two years, it has consistently held onto control over about thirty to fifty percent of all commercial space launches. *See* Jon C. Garcia, *Heaven or Hell: The Future of the United States Launch Services Industry*, 7 HARV. J.L. & TECH. 333, 335-337 (1994). This continued in 2001 with Arianespace securing thirteen satellite launch contracts out of a total market of twenty-five. *See* Emmanuel Angleys, *Arianespace in Trouble as Satellite Demand Falters*, AGENCE FRANCE-PRESSE, May 9, 2002, at 2002 WL 2403594. In 2002, Arianespace launched two more rockets than in 2001, but its share of the total commercial launches slipped to 42%. In 2003, Arianespace's market share slipped even further, capturing only 24% of the commercial market. It should be noted that while the share of launches was significantly less than in past years, Arianespace still captures 43% of the total commercial revenues. See USDOT, Commercial Transportation: 4th Quarter 2004 Quarterly Launch Report, at 6, *available at* http://ast.faa.gov/files/pdf/FourthQuarterFinal.pdf [hereinafter 4th Quarter Launch Report]. However, this can be largely attributed to the transition from the Ariane 4 to the Ariane 5, and the accompanying launch difficulties experienced with the Ariane 5. With the addition of the Vega small launcher and the capacity for Soyuz launches from Kourou, it is highly likely that Arianespace will recapture a significant margin of its former business. Arianespace's main competition currently is International Launch Services. ILS deals mainly with government launches but has also managed to retain over thirty percent of the commercial mid to heavy launch market. *See id.*; Commission Decision of 29.09.2000 declaring a concentration to be compatible with the common market (Case No COMP/M.1879 - BOEING/HUGHES) according to Council Regulation (EEC) No 4064/89, Celex No 300M1897, at 75 [hereinafter Boeing Decision].The next largest player has historically been Boeing, but a confluence of events has caused them to phase out their commercial division in order to focus on government launches. The multinational venture, Sea Launch, has captured an increasing share of the market in recent years, and provided 18% of commercial launches in 2003. *See* USDOT, Commercial Space Transportation: 2003 Year in Review, at 6, available at http://ast.faa.gov /files/pdf/YIR03.pdf.

[6] *See* Astrium Decision, *supra* note 2, at 124.

[7] *See* Boeing Decision, *supra* note 5, at 56.

[8] *See* James L. Reed, *The Commercial Space Launch Market and Bilateral Trade Agreements in Space Launch Services*, 13 AM. U. INT'L L. REV. 157, 173, 176-179 (describing how the dependence on government support hides investment and support costs, thereby obscuring the competitiveness of the market)..

[9] *See* Europe and Space: Turning a New Chapter, Communication From the Commission to the Council and the European Parliament, COM(00)0597 final at 1. *See generally* European Parliament Question No 92-3356 by Carlos Robles Piquer, 1993 OJ (C 162) 17.

[10] *See* Christian Lardner, *Europe's Launcher Industry in Turmoil*, INTERAVIA, Oct. 1, 2001, at 2001 WL

15483175; Kevin Done & John Mason, *Heavy Load Weighs on Ariane 5 Launch*, FINANCIAL TIMES, Feb. 27, 2002, at 2002 WL 13655541.

[11] *See See* Futron Launch Report: 2002 Year End Summary, at http://www.futron.com/pdf/FutronLR2002-EOY.pdf.

[12] See Philip McAlister, Current and Future Launch Market, Presentation to AIAA/ICAS International Air and Space Symposium, July 15, 2003, *at* http://www.futron.com/pdf/AIAAICASDaytonPresentation.pdf.

[13] *See* Angleys, *supra* note 5. 4th Quarter Launch Report, supra note 5, at 3-6.

[14] *See* H. PETER VAN FENEMA, THE INTERNATIONAL TRADE IN LAUNCH SERVICES 28-33 (1999) (providing a comprehensive analysis of the global launch industry as of 1999); Jean-Francois Augereau, *Arianespace Launches Cost-Cutting Plan to Stay in the Running*, WORLD NEWS CONNECTION, June 22, 2001, at 2001 WL 24214552.

[15] *See* James L. Reed, *The Commercial Space Launch Market and Bilateral Trade Agreements in Space Launch Services*, 13 AM. U. INT'L L. REV. 157, 175.

[16] According to ESA, "[i]n 2002, European public expenditure in the space sector is €6 billion (slightly down from 2001), 90% of which is attributed to civil programmes." To put this in perspective, "[f]or 2002, US public expenditure in the space sector is €31.8 billion (5% up from 2001) and is essentially equally shared between civil and military expenditure." Green Paper, *supra* note 11, at 15.

[17] *See* Garcia, *supra* note 5, at 353. The most recent subsidies are by far the largest, as the ESA in February of this year awarded 960 million Euros to develop and build Ariane launchers, and 223 million Euros to add on Soyuz launch capabilities at Kourou. *See Europe earmarks 1.2 bln dollars for launchers*, AGENCE FRANCE-PRESSE, Feb. 5, 2004, available at http://www.spacedaily.com/2004/040205092730.cqtd06ek.html.

[18] *See* The Brussels Council at Ministerial Level, ESA Bulletin 98 (June 1999), http://esapub.esrin.esa.it/bulletin/bullet98/COUNCIL.pdf

[19] *See* Resolution concerning Decisions on Agency Programmes and Finances, ESA Bulletin 84 (1995), http://esapub.esrin.esa. it/bulletin/bullet84/resol84.htm

[20] *See Arianespace Calls for More State Support*, AGENCE FRANCE-PRESSE, Nov. 9, 2001, at 2001 WL 25058884.

[21] *See* Augereau, *supra* note 14 (noting that Arianespace has to cover fifty percent of the launch facility costs while private launchers in the U.S. only have to cover five percent of the cost, a difference that adds up to a ten million dollar disparity between the competitors).

[22] *See* Garcia, *supra* note 5, at 353. Arianespace required liability insurance of 400 million French francs, or $63 million as of 1995, with full indemnification above that level and did not require launch property insurance. The U.S. on the other hand currently requires insurance up to $500 million for single launches, with full indemnification above that level. *See* U.S. Department of Transportation Office of Commercial Space Transportation, Financial Responsibility for Reentry Vehicle Operations, OCST-RD-RES09-95 (1995).

[23] *See* The European Union and Space: Fostering Applications, Markets and Industrial Competitiveness, Opinion of the Economic and Social Committee on the 'Communication from the Commission to the Council and the Parliament:, 1998 O.J. (C 95) 6 [hereinafter Opinion on Space Competitiveness].

[24] This, along with the fact that Arianespace is partially publicly owned, makes U.S. launch providers quick to point to EC subsidies as unfair trading practices. However, U.S. courts have found that subsidies for Arianespace did not amount to unfair trading practices under U.S. law, since the U.S. government supported the shuttle program in much the same fashion. *See* Reed, *supra* note 15, at 169.

[25] While laws such as the Export Administration Act and the Arms Export Control Act do not directly subsidize U.S. launchers, they do provide an obstacle to launching many payloads in countries such as China and Russia. Of course, while U.S. export regimes function to give the U.S. a competitive advantage vis-à-vis most other launching states, they actually function to assist Arianespace by making it in the interest of Russia and China to launch from Kourou. *See* VAN FENEMA, *supra* note 14, at 353-55.

[26] *See generally* Garcia, *supra* note 5, at 357-358.

[27] *See id.* (citing one example where the Chinese bid was about one third less than either the U.S. or Arianespace bids).

[28] *See* Marco Antonio Cceres, *Expendables Face Tough Market*, AVIATION WEEK & SPACE TECH., Jan. 15, 2001, at 2001 WL 7148064.

[29] *See* VAN FENEMA, *supra* note 14, at 28-33; *See generally* Cceres, *supra* note 28 (describing the barriers to new entries in the launch market).

[30] See CONVENTION FOR THE ESTABLISHMENT OF A EUROPEAN SPACE AGENCY art. VII, Annex V [hereinafter ESA Convention].

[31] *See generally* Astrium Decision *supra* note 2, at 121 (discussing the juste retour principle). *Juste Retour* may prevent dominance by one or a few States, but it also guarantees that the fruits of the Arianespace endeavor will not be equally spread throughout the EC. In addition, it functions as a barrier against the entry of new launch providers. This barrier is reinforced by the official requirement that ESA and Member States

"endeavour to make the best use of their existing facilities and available services as a first priority." ESA Convention, *supra* note 30, at art. VI(2). However, as the focus of EC Institutions is on facilitating a coordinated European launch capacity in competition with global competitors, the risk of particular states being excluded from the market will likely be viewed as less pressing than the risk of losing the billions in revenue associated with space industry. It remains to be seen whether Member States will take a different view. It also remains to be seen whether the growing role of the EC in ESA affairs will lead to changes in procurement policies. Under the ESA-EC Framework Agreement, the EC is specifically not bound by the *juste retour* principle contained in the ESA Convention, and will have a role in managing joint projects. *See* ESA-EC Framework Agreement, *supra* note 1, at art. 5.

[32] See Declaration by Certain European Government Relating to the Ariane Launcher Production Phase, ESA Council doc. ESA/C (80) 8, entered into force April 14,1980, for English/French texts without Annexes *see* 6 ANNALS AIR & SPACE L. 727-37 (1981).

[33] *See* See CONVENTION FOR THE ESTABLISHMENT OF A EUROPEAN SPACE AGENCY Annex V, art. IV(7).

[34] *See* Resolution on the European Space Agency's Industrial Policy, ESA BULLETIN 89, Feb. 1997, *available at* http://esapub.esrin .esa.it/bulletin/bullet89/resol89.htm [hereinafter ESA Industrial Policy]

[35] *See* C. Dujarric, *Possible Future European Launchers-A Process of Convergence*, ESA BULLETIN 97, Feb. 1999, at http://esapub.esrin.esa.it/bulletin/bullet97/dujarric.pdf.

[36] *See* Astrium Decision, *supra* note 2, at 120.

[37] *See* Boeing Decision, *supra* note 5, at 77.

[38] *See* Europe and Space *supra* note 9; EPQ No 92-3356 by Carlos Robles Piquer, 1993 OJ (C162) 17.

[39] *See* Space Action Plan 2003, *supra* note 3, at 32

[40] In the Boeing Decision the Commission permitted a concentration partially on the grounds that the critical nature of the launch industry made it likely that if either Arianespace or Lockheed-Martin became "less competitive the governments concerned would take steps to restore those industries' competitiveness." Boeing Decision, *supra* note 42; *See generally*, Astrium Decision, *supra* note 8.

[41] *See supra* note 9

[42] *Id.*. For a thorough history of the Councils resolutions regarding competition in the launch arena see VAN FENEMA, *supra* note 33, at 276-80.

[43] European Parliament resolution of 29 January 2004 on the action plan for implementing the European space policy, at G.

[44] Id. at 5.

[45] *See* Space Action Plan 2003, *supra* note 1, at 33; Europe and Space, *supra* note 9; ESA Industrial Policy, *supra* note 34, at 3.

[46] *See generally*, Space Action Plan 2003, *supra* note 1; Europe and Space *supra* note 10; ESA Industrial Policy, *supra* note 34, at 3.

[47] While this seems to be a theoretical exercise, it is entirely possible that a Member State with little involvement in space activities could take issue with its funds being used to subsidize the industry of another Member State. Additionally, it is entirely possible that some other European business might try to enter the launch market. It would be imperative for any competing launch provider to force a challenge of the many forms of preference and aid given to Arianespace.[47] As the number of states in the EC increases and as smaller players enter the launch market, this will become a more real threat. *See generally* Opinion on Space Competitiveness, *supra* note 23, at 2.6 (noting that the opinion of Member States is a vital question in regards to EC policy on space and competitiveness).

[48] ORDER OF THE COURT (First Chamber) 28 January 2004 (1), Netherlands v Commission Case C-164/02, Celex No. 602O0164.

[49] Commission Report to the Laeken European Council, Services of General Interest, COM (01) 598 final at 11; See also, Judgement of the Court of Justice in joint cases C-180-184/98 *Pavel Pavlov and Others v Stichting Pensioenfonds Medische Specialisten* [2000] ECR I-6451.

[50] *See* Space Action Plan 2003, *supra* note 1, at 26.

[51] GEORGE A. BERMANN, ROGER J. GOEBEL, ET. AL., CASES AND MATERIALS ON EUROPEAN COMMUNITY LAW 803 (1993).

[52] *See id.* at 804.

[53] TREATY ESTABLISHING THE EUROPEAN COMMUNITY, Nov. 10, 1997, O.J. (C340) 3 (1997) art. 87(3) [hereinafter EC TREATY].

[54] CFI, Judgement of 27 February 1997, *Fédération Française des Sociétés d'Assurances (FFSA) and Others v. Commission*, Case T-106/95, [1997] ECR II-229; confirmed in ECJ, Order of 25 March 1998, Case C-174/97 P, [1998] ECR I-1303.

[55] *See* Eighth Survey on State Aid in the European Union, COM(00)205, at Annex I.

[56] *See* Space Action Plan 2003, supra note 1.

[57] *Id.*

[58] *See id.* at 9.

[59] *See* EC TREATY, *supra* note 53, at art. 87(3).

[60] Henri Wassenbergh, *The Regulation of State-Aid in International Air Transport*, 3 AIR & SPACE L.158, 165 (1997).

[61] *See* Boeing Decision, *supra* note 5, at 75,77.