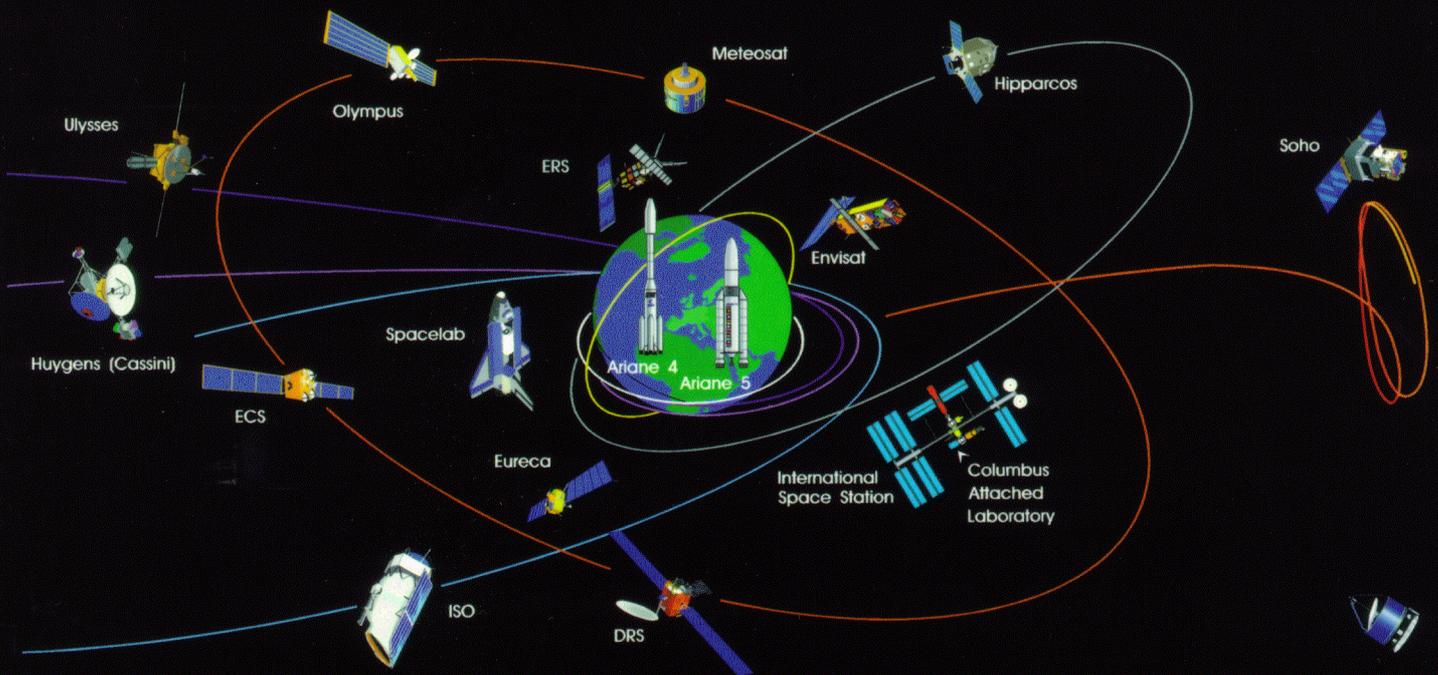
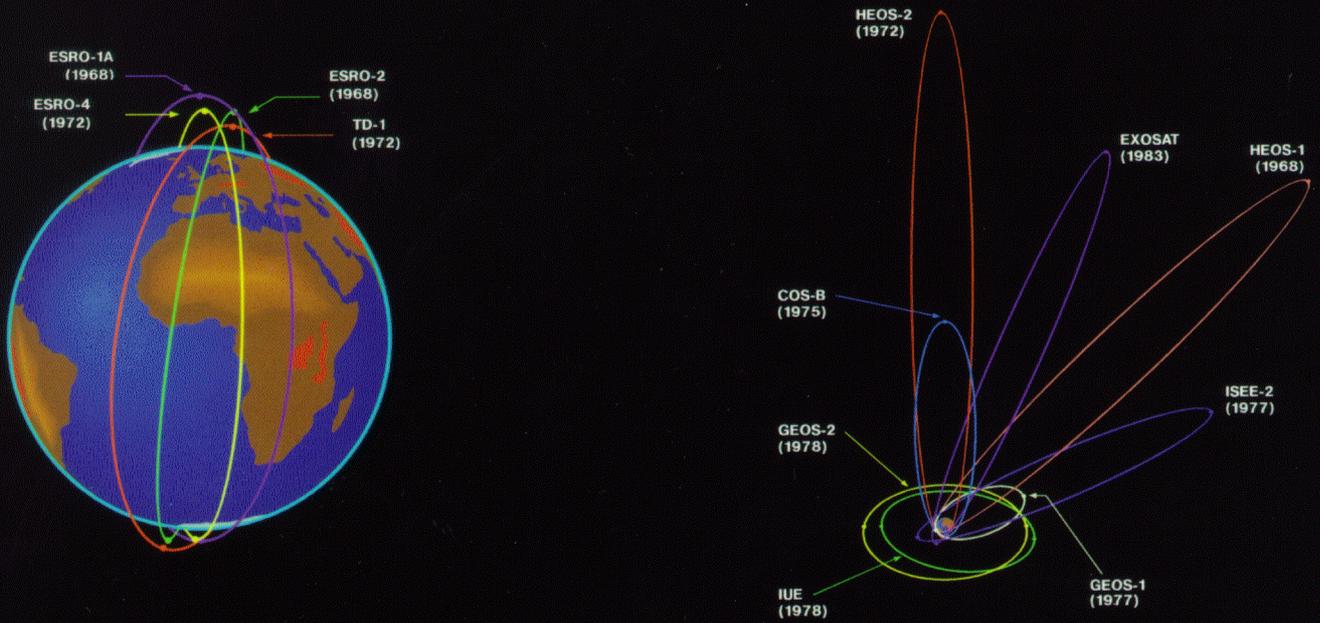


The Availability of American Launchers and Europe's Decision 'To Go It Alone'



**The Availability of American Launchers
and
Europe's Decision 'To Go It Alone'**

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The ESA History Study Reports are preliminary reports of studies carried out within the framework of an ESA Contract. As such, they will form the basis of a comprehensive study of European space activities covering the period 1959 – 1987. The authors would welcome comments and criticism, which should be sent to them at the appropriate address below.

The opinions and comments expressed and the conclusions reached are those of the authors, and do not necessarily reflect the views or policy of the Agency.

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The Availability of American Launchers and Europe's Decision "To Go It Alone"¹

by Lorenza Sebesta

It has been widely recognized by scholars that American strict policy on the availability of launchers for European telecommunication satellites influenced European decision "to go it alone" in the field of expendable launchers². This decision was officially endorsed by Europe in July 1973 and led to the construction of Ariane which nowadays, after more than a decade of technical reliability and good management, has secured for itself the majority of commercial launches on a global scale.

What is still unclear are the reasons of the American position on launcher technology and facilities and how they evolved in time: from the first restrictive directive, the National Security Action Memorandum (NSAM 338) on "Policy concerning US assistance in the development of foreign communications satellite capabilities" of September 1965 to the more flexible and uncertain position conceived in the second part of the decade, until the final return to the more restrictive formula of 1971-1972, publicly announced by Nixon in October 1972.

This parabola was shaped by many different factors:

1. the rising concern about the "technological gap" between Europe and the US;
2. the technological breakthroughs in the field of telecommunications satellites and launchers, their organizational consequences and the commercial concerns behind these developments;

¹I would like to thank John Krige, Head of the ESA Project and Director of CRHST, La Villette, Paris, and John Logsdon, Director of the Space Policy Institute, George Washington University, for the insightful discussions on the topics discussed in this article; Richard Barnes, International Space Consultant, Washington and André Lebeau, Professor at CNAM, Paris for their invaluable criticism and comments. The form and expression of this disputed story are entirely my own responsibility. A more extensive analysis of the period under examination will be found in a book-length history and analysis of US-European space relations that the author is currently writing with John Logsdon. I would also like to acknowledge the extremely valuable assistance of the NASA's History and Security Offices in facilitating the timely declassification of documents essential to the analysis of this paper.

²"(...)the fact that there was resistance in providing that assistance reinforced the position of those in Europe (particularly in France) who were arguing for developing an independent European space capability"; J. Logsdon, "International involvement in the US space station programme", Space Policy, February 1985, p.18. "The effect of this policy on Europe" writes Peter Creola referring to President Nixon's policy statement on the availability of American launchers dated October 9 1972 "was decisive". P. Creola, "European-US space cooperation at the crossroads", Space Policy, May 1990, p.99. "In a sense, it is fair to conclude that Ariane owes the US a debt of gratitude"; A. Russo, "Launching Europe into space: the origin of the Ariane rocket" Paper prepared for the International Astronautical Federation Annual Meeting, 1995. This point of view has been recently expressed in a much more vigorous way by André Lebeau (now President of CNES), "Il ne semble pas exagéré de dire que si les Etats-Unis avaient vendu sans conditions particulières les deux lanceurs de Symphonie, la décision d'engager le programme Ariane n'aurait jamais pu être obtenue. Une intransigeance maladroite, fondée sans doute sur l'idée que l'Europe serait de toutes façons incapable de ressusciter son programme de lanceurs, vint à point pour fournir un appui décisif aux promoteurs de L3S"; A. Lebeau La naissance d'Ariane, E. Chadeau (ed.), L'ambition technologique: naissance d'Ariane (Paris: Editions Rive Droite) 1995, p.85.

3. the increasing importance of ballistic missiles as a central feature of Atlantic alliance military strategy and American policy of non-proliferation in nuclear warheads and delivery vehicles;
4. a thorough European space policy reassessment;
5. a worsening of US-European relationships in concurrence with the international economic crises of the beginning of the seventies.

This paper will analyze the tremendous changes that took place at these five levels and how NASA tried to cope with them.

1. The "technological gap"

The growing interest in technology as a key to economic growth emerged as a consensual knowledge in the late fifties, beginning sixties on both sides of the Atlantic Ocean. As tariff barriers between the US and Europe started to be lowered under the action of the Kennedy Round negotiators, non-tariff factors began to be perceived as prominent among those leading not only to economic growth but to successful international competition.

In Europe, this body of knowledge was mainly channelled into and institutionalized by the Organization for Economic Cooperation and Development (OECD)³. Its main assumption was that the expansion of labour force and capitals, and their relative prices, do not explain, alone, some historical series of economic growth. A "residual factor" is needed to account for a remarkable percentage of economic growth. This residual factor became progressively to be identified in knowledge, science and technology.

As pointed out by a then well-known study sponsored by the OECD and published in 1965, the bulk of the world financial and human resources in the field of research and technology was controlled by the US and the Soviet Union⁴. In particular, a "technological gap" divided the US from its western allies. The higher US percentage of R and D devoted by the state (mostly by its military branches) to the "technology intensive" sectors seemed to have a direct influence not only in US economic growth, but in the better position of US firms on the international market (with the exception of chemicals, which resists to any generalization) and in the growing American investments in Western Europe since the end of the fifties.

Europeans faced a dilemma. By allowing American investments into their countries, they were consigning their industry to a subsidiary role or at least the technological sectors of it. This would be reflected in resulting technological dependence, uncertainty over the availability of supplies and, finally, the jeopardy of the national freedom of decision-making in industrial policy. On the other hand, if Europeans refused to let American capital enter and adopted restrictive measures, they risked ending up as double losers, denying themselves the capital funds they needed to create employment as well as the manufactured products⁵.

A drive towards high technological space applications was seen as a possible tactic to solve the technological gap; other pivotal sectors were considered to be electronics, computers and atomic

³J.-J. Salomon, Science et Politique (Paris: Seuil) 1970, pp. 51-54.

⁴C. Freeman and A. Young, The Research and Development Effort. Western Europe, North America and the Soviet Union. An Experimental International Comparison of Research Expenditures and Manpower in 1962 (Paris: OECD) 1965, p. 70.

⁵A. Grosser, The Western Alliance. European-American Relations since 1945 (London: Macmillan) 1980 (ed. orig. in French, 1978), pp. 217-131.

energy⁶.

Some American intellectuals shared the belief that technology represented a new revolution in modern industrial societies. "Power" wrote Galbraith in his notorious The New Industrial State "has, in fact, passed to what anyone in search of novelty might be justified in calling a new factor of production. This is the association of men of diverse technological knowledge, experience or other talent which modern industrial technology and planning require(...)It is on the effectiveness of this organization, as most business doctrine now implicitly agrees, that the success of the modern business enterprise now depends"⁷.

European interpretations on the origins of the technological gap, however, were seldom accepted by American officials. Among them, there was a widespread inclination to underplay the role of the government-supported expenses for R and D military purposes which had a primary, even if indirect, impact, according to the European interpretation, in having created the technological gap⁸.

American experts tended to emphasize instead the importance of the structural advantage of US firms (markets, labor, credit policy) and of the managerial qualities of American businessmen. The focus of the analysis was "the sociology of European industry which has not yet awakened to the managerial revolution that has been going on in the US -treating the entire sequence of events from research to marketing as a system which can be optimized for purposes achieving maximum returns on investment in a competitive situation"⁹.

Yet, the US recognized that the technological gap should be treated as "a problem with serious political overtones", as Secretary of State Dean Rusk reminded the NASA Administrator James Webb in August 1966, because it was perceived as such by the Europeans¹⁰.

The origins of America's new trend in space cooperation vis-à-vis Europe has much to do with the willingness to reduce the political impact of the technological gap and, in the long term, its economic effects. The prospect of a continuation of such a marked difference was economically disturbing for both partners. As had happened in the period of the "dollar gap" of the 40s, it was soon realized, even if seldom explicitly said, that it was in America's interest to have a wealthy Europe as a viable partner in order to increase the prospects for national economic growth.

Helping the Europeans to fill the gap in the space sector did not appear so much an act of

⁶ J.-J. Servan-Schreiber, Le défi américaine (Paris: Denoel) 1967, pp. 119-125; see also National Archives Washington (NAW), RG 359, Letter David Beckler, Assistant to the Director, to Philip Hemily, Science Adviser, US Mission to the OECD, 3 June 1966.

⁷J.K. Galbraith, The New Industrial State (Boston: Houghton Mifflin) 1967, pp. 58-59.

⁸Within the copious production on the technological gap, see the insightful H.R. Nau, "A Political Interpretation of the Technological Gap Dispute", Orbis, vol. XV, Summer 1971, n.2, pp. 507-527. Following his interpretation, "(...) what Americans regarded as simple technical adjustments involving the improvement of Europe's management and market capabilities, Europeans sensed as profound political issues going to the heart of the European unification process and the transformation of postwar Atlantic relationships", *ibidem*, p. 521.

⁹NAW, RG 359, box 574, Letter David Beckler, Assistant to the director, to Philip Hemily, Science Adviser, US Mission to the OECD, 3 June 1966.

¹⁰NASA Historical Office, RG 255, 70-A-3458, box 7, Letter Rusk to Webb, 29 August 1966. On the need to reduce the political impact of technological gap, see also NASA Historical Office, RG 255, 69-A-5089, box 5, Interim Report of the Work of the Space Council's ad hoc Committee on Expanded International Cooperation, enclosure 1, Statement concerning political objectives for expanded cooperation in space activities, presented for the chairman at the working group meeting on October 20, 1966.

generosity, as of far-sightedness; in the long run, it appeared to be a necessity for expanding American growth, as pointed out by the State Department in 1966. "The first step" it was stated in an internal statement on political objectives for expanding cooperation in space "is to recognize that more than one kind of gap is being generated by our space effort". These were "First, and more obvious, is the increasing gap in technology". "Second, and as yet not fully appreciated, there is a gap in awareness and understanding new opportunities and responsibilities evolving in the space age". Yet the reactions of countries that could not grasp the meaning of these changes would be very important "if the international adjustment to these changes is to be responsive to our own interests"¹¹.

If the United States wanted to extend the markets for the new prospective space applications field, first of all telecommunications, they needed partners ready to grasp the importance of the new challenges coming from space developments, they needed wealthy users and buyers around the world.

This farsighted political vision held by the Department of State, however, would come under heavy attack in the late Sixties, when more and more American economic sectors began to face European competition.

European fears related to the technological gap, as we have seen, concentrated on some sectors which were intimately related with the space field, such as electronics, satellite communications, computers and aircraft¹². Space being "a classic example of a high technology sector"¹³, it seemed to offer a good opportunity to solve what was perceived by some as a relevant problem both in European economic growth and in US-European relationships.

Let's analyse some of its features:

- a. space has R and D intensive requirements for propulsion, guidance, satellites, ground based communications networks, manned and unmanned exploration; this implies high research and development costs compared with labour costs;
- b. it has substantial entry barriers, especially in the case of launchers, involving high initial fixed costs, the testing of prototypes and the associated infrastructures;
- c. it has long learning curves, estimated at least one decade for launchers, so that the first entrants can keep a major advantage compared with late comers;
- d. it is characterized by high technological and market uncertainties, coupled with rapid obsolescence;
- e. emphasis is placed on non-price technical competition, mostly based on reliability and quality control more than on plain cost/effectiveness calculations.

Generally speaking, therefore, space is a sector in which it is very difficult to make calculations on the economics returns, it does not offer rapid pay-offs and it needs large markets in order to repay for the high investments involved.

For all these reasons, governments interested in the development of the space sector, played a central role in its management, at least in the beginning. They did not only favour space research, but functioned as major clients of space industries, mainly through the military system. Consequently, through procurement, investments and public policies (regulations, incentives, fiscal policies), the state

¹¹ NASA Historical Office, RG 255, 69-A-5089, box 5, Statement concerning political objectives for expanded cooperation in space activities, by the State Department, presented at the Working Group meeting on 20 October 1966.

¹²NAW, RG 359, Letter David Beckler, Assistant to the director, to Philip Hemily, Science Adviser, US Mission to the OECD, 3 June 1966.

¹³ K. Hartley, Aerospace: the Political Economy of an Industry, in H.W. de Jong (ed.), The Structure of European Industry (Dordrecht/Boston/London: Kluwer Academic Publishers) 1988 (II revised edition), p. 340; see also K. Hayward, International Collaboration in Civil Aerospace (London: Frances Pinter) 1986, pp.4-5 and J. Müller, European Collaboration in Advanced Technology (Amsterdam:Elsevier) 1990, pp. 8-11.

was able to influence the development and direction of technical progress. Governments, most of the time through their specialized agencies such as PTT, were key actors in providing the expansion of markets for new applications related to space, such as telecommunications satellites.

All those series of managerial integrating and rationalization processes of planning and production techniques which had been inaugurated during the war in such institutions as the Radiation Laboratory of MIT had been adopted by the laboratories and firms working for NASA within the Apollo project, the new Mecca for systems engineering approaches. Space became the privileged field for experimenting with the adaptation of these techniques to a civilian context¹⁴.

Space science, along with some other disciplines such as meteorology, oceanography and civilian nuclear research, had a well-established record of internationalism. It could count on an existing solid tradition of international coordination and personal linkages among scientists. Bilateral agreements had been established between Western European countries and the US in this field since the foundation of NASA and had been working very well.

In the space sector, the technological gap and the need to catch up with the US, thus, served two political purposes: a. to convince Europeans to turn from science to technologically relevant and commercially viable endeavours and to participate in significant technologically advanced projects, such as Concorde, Airbus and telecommunications satellites and, finally, commercial launchers; b. to induce the Americans to choose high-technology areas, among others space, as the right place in which to allay European apprehensions.

This was not only publicly suggested by authors such as French journalist Jacques Servan-Schreiber - his book Le défi américaine became a best seller in the US when translated into English¹⁵ - it was also endorsed by European organizations in space¹⁶.

¹⁴For the origins of the term, see S. Schweber, Theoretical Physics and the Restructuring of the Physical Sciences: 1925-1975, in G. Gemelli (ed.), Big Culture. Intellectual Cooperation in Large-Scale Cultural and Technical Systems. An Historical Approach (Bologna:Clueb) 1994, pp. 143-144. For the adaptation of the systems engineering approach to the post-Apollo programme, see J. Logsdon, The Decision to Go to the Moon: Project Apollo and the National Interest (Cambridge: the MIT Press) 1970.

¹⁵J.-J. Servan-Schreiber, Le défi américaine, cit., pp. 119-125.

¹⁶As an example of such a policy, see the following excerpt from an economic study by CETS (1967) which opposed any procurement from outside as far as satellite systems were concerned: "(...)expenditure by Europe in other countries on space tends to increase the 'technology gap'. Production at home, on the contrary, creates "(...)a host of indirect benefits otherwise known as 'spin-off' or 'fall-out', in the form of capabilities transferred into other areas of technology". These benefits are felt in all industries "in the form of new materials, design principles, processes and techniques as well as specialized equipment and machinery"; CETS:SCL/TPS/217E, Economic Potential for Europe of Application Satellite, 30 May 1967, cit. in J. Müller, "Historical background and start of the TELECOM Programme", Space Communications, 8(1991), p. 111.

2. INTELSAT and NSAM 338

The International Telecommunication Satellite Organization (which came to be known as INTELSAT in 1965) was set up in August 1964 as a single commercial global satellite system regulating voice, telegraphy and high speed data, facsimile and television services¹⁷. INTELSAT's first successful operational communication satellite in geostationary orbit was Early Bird, which confirmed in 1965 the promising commercial potentialities of satellites in this area.

Under the provisional agreements, the American Communications Satellite Corporation (COMSAT), a semi-private joint-stock company with the participation of American industry, was the executive body of INTELSAT and, as manager, proposed and implemented projects. Investment shares (quotas) within INTELSAT were determined by projections of long-distance traffic likely to be carried out by satellites and COMSAT received an initial 61% against a 30% of European countries. Because the voting system was based on investment shares, COMSAT established a de facto veto power which it maintained notwithstanding the subsequent decrease of its quota as new countries joined the venture¹⁸. The privileged role of COMSAT in INTELSAT "assured efficiency and speed" in setting up a global satellite telecommunication system and its resources "proved critical to attracting interest on the part of developing countries in joining the enterprise"¹⁹; yet, it also helped to foster US hegemony in the field, rooted in an almost total monopoly of the industrial sector. In fact, the early entrance on the market of American firms such as Bell Laboratories, RCA and Hughes and their possibility to rely on system studies performed by NASA granted them the possibility to compare favorably in the system of international competitive bidding whereby work was assigned to various INTELSAT members. One of the big controversial issues within INTELSAT had been COMSAT's willingness to give priority to in-house R and D over international contracts in order to give primary consideration to the corporation's need to increase its managerial competence and to discharge its task with the maximum possible efficiency. It was only under pressure from the other members, that the percentage of contract expenditures had progressively risen from 13% in 1968 to 50% by 1972²⁰. By that time, however, with 52% US capital invested, INTELSAT spent 92% of its money in the American market, as pointed out by former Director General of ESRO Hermann Bondi in his Goddard Dinner's address of 1971 and confirmed by later studies²¹.

These institutional features, framed in the context of rising recriminations against the

¹⁷ The text of the Agreements establishing interim arrangements for a global commercial communications satellite system is in Department of State, press release n. 364, July 28, 1964, reproduced in House of Representatives, Hearings before a Subcommittee of the Committee on Government operations, 88th Congress, Second Session (Washington DC: US GPO) 1964, pp. 775-786.

¹⁸R. Colino, The INTELSAT System: An Overview, in J. Alper and J. Pelton (eds), The INTELSAT Global Satellite System (New York: The American Institute of Aeronautics and Astronautics) 1984, p. 62. See also M. Snow, The International Telecommunications Satellite Organization (INTELSAT) (Bade-Baden: Nomos Verlagsgesellschaft) 1987, pp. 43-48.

¹⁹R. Colino, art. cit., p. 62.

²⁰S. Levy, "INTELSAT: Technology, politics and the transformation of a regime", International Organization, vol 29, n.2, Summer 1975, pp. 661-664.

²¹NASA History Office, RG 255, 74-734, box 15, Address by Professor Hermann Bondi, former Director General of ESRO, on International Cooperation in Space, Goddard Dinner at Symposium AAS, 18 March 1971. On this point, see also M.E. Kinsley, Outer Space and Inner Sanctums: Government, Business, and Satellite Communication (New York: John Wiley and Sons) 1976.

"technology gap", led to European accusations of America's desire to dominate the field.

The White House realized the degree of European dissatisfaction with the virtual US monopoly in the commercial satellites field and the danger that, through direct assistance of US firms, foreign satellite communications activity "could tend to proliferate development of competitive systems", thereby violating the spirit of INTELSAT²².

After lengthy negotiations with State, Defense, Commerce, NASA, and Jim D. O'Connell, a draft was produced in August and approved by the President of the US as National Security Action Memorandum (NSAM 338), "Policy concerning US assistance in the development of foreign communications satellite capabilities", in September 1965²³.

Its aim was "to guide government agencies in the dissemination of satellite technology and in the provision of assistance which is consistent with the overall policies". Three principles of special interest were then defined within these policies:

"The United States should refrain (emphasis in the original) from providing direct assistance to other countries which would significantly promote, stimulate or encourage proliferation of communications satellite systems".

"The United States should not (emphasis in the original) consider requests for launch services or other assistance in the development of communications satellites or other assistance in the development of communications satellites for commercial purposes except for use in connection with the single global system established under the 1964 Agreements".

The US were ready, on the other hand, to provide satellite services to allies for their "vital security needs" -as would be done in some years through Skynet with the UK in order to assure her military communication linkages with Australia and the Far East²⁴.

All transactions involving technological assistance on satellites or launchers technology "should be conditioned upon express (written) assurances" by the foreign nation(s) that the technology and assistance obtained would be used only within framework of INTELSAT and arrangements to which the US was participant and should not be transmitted to third countries prior to US authorization.

This was indeed a very tight political directive which didn't leave much room for flexibility in future international negotiations.

²² L.B.Johnson Library (LBJ), Austin, WHCF (Confidential Files) box 96, Letter J.D. O'Connell to Jack Valenti, Special Assistant to the President, 7 May 1965.

²³ NASA History Office, RG 255, 69-A-5089, box 5, , 25 August 1965, with cover note by J.D.O'Connell, 17 September 1965 approved as NSAM 338 on 13 September 1965, (also in LJB, WHCF (confidential files), TR 105, box 96); see also National Security Archives, Washington DC, Policy concerning US assistance in the development of foreign communications satellite capabilities, with cover letter by McGeorge Bundy, 15 September 1965.

²⁴ A bilateral US-UK agreement along these lines was signed in 1967, whereby the UK would build an all-British satellite for military communications with Australia and the Far East within the framework of a collaborative Skynet military space communications system; J. Krige and A. Russo, Europe in space, 1960-1973 (ESA:Noordwijk) 1994, p.62.

3. Military concerns: nuclear sharing problems in NATO and US-USSR non-proliferation policy

Reliance on nuclear weapons had been used since the signature of the Atlantic Alliance in 1949 to avert any serious friction over the two main objectives of the alliance: social stability and military security. Even after the loss of American nuclear monopoly at the end of the same year, problems related to burden-sharing were postponed by accentuating the deterrent power of American nuclear arsenal (as opposed to its value as a battlefield weapon²⁵).

However, it generated a fundamental concern among Europeans: what did military cooperation mean if it was the US who took the ultimate political decision on the use of nuclear arms, even when these were to be used to defend their allies' territories, with the prospect of huge loss of human life?

This concern was reinforced by the launch of the Soviet Sputnik in October 1957: the fact that American territory would be from now on open to a Soviet aggression through the use of intercontinental ballistic missiles (ICBM) weakened the deterrent value of the American nuclear arsenal. Would the US be willing to risk an attack over their own territory for the sake of Europe? Massive retaliation, which had been adopted as NATO strategy just few months before the launch of Sputnik, and which called for an indiscriminate use of nuclear arms against any kind of enemy attack (be it nuclear or conventional) in order to reinforce the deterrent value of such weapons seemed already to have been overtaken by events²⁶.

Sputnik made explicit a process which had been going on since some years in the secrecy of defence research and development organizations, in the United States as in the Soviet Union: the shift of attention from the quality and quantity of nuclear weapons to the delivery systems. For people around the world, Sputnik epitomized the double nature of launchers: the same vehicle which had put a scientific satellite in orbit could become, with some technical modifications and if associated with nuclear warheads, the focus of a new and revolutionary weapon system. For governments, military launchers became the new power symbols of the sixties.

The US were caught in an inescapable dilemma: antagonizing the allies on the topic of nuclear sharing was dangerous, because it opened the way to the development of independent nuclear forces, but to deprive the military and the President of the United States as Supreme chief of the Armed Forces of the right to have the last say on the use of nuclear weapons seemed to be constitutionally illegitimate. Nor was it acceptable to promote the proliferation of nuclear armament (intended as made up of nuclear warheads and delivery systems) beyond the nuclear club.

In response to French "formal requests to the US for an IRBM [intermediate range ballistic missile] program", the National Security Council approved two weeks after Sputnik a document which directed the Administration "to discourage production of nuclear weapons by a fourth country" and to "persuade France not to undertake independent production of such weapons"²⁷.

Within the context of the so called flexible response, announced to NATO partners in May

²⁵T.H.Etzold, The End of the Beginning...NATO's Adoption of Nuclear Strategy, in O. Riste (ed.), Western Security: The Formative Years (New York: Columbia University Press) 1985, p. 291. CONTR

²⁶NATO, Texts of Final Communiqués 1949-1974 (Bruxelles: NATO Information Service, no date), 2-3 May 1957, p. 105.

²⁷NSC 5721/1, US Policy on France, 19 October 1957, in FRUS, 1955-57, vol. XXVII, Western Europe and Canada (Washington DC: GPO) 1992, p. 189 and p. 192. For the US-French rift on nuclear issues, see McG. Bundy, Danger and Survival. Choices about the bomb in the first fifty years (New York: Random House) 1988, pp. 472-487; more generally, see P.Winand, Eisenhower, Kennedy, and the United States of Europe (Basingstoke:Macmillan) 1993.

1962, the shift toward a more cautious and measured use of nuclear weapons was accompanied by the stress on the need to centralize both planning and the use of the nuclear arsenal²⁸.

This strategy, quite clearly, could have backfired if independent nuclear forces came into existence. That is why, when publicly presenting it in June 1962 the Secretary of Defense McNamara stressed how and why "In short, then, limited nuclear capabilities, operated independently, are dangerous, expensive, prone to obsolescence, and lacking in credibility as a deterrent"²⁹.

Though the name of de Gaulle was not there, nobody could doubt that the force de frappe and its strategy tout azimut was the subject of McNamara's considerations. Studies on the delivery vehicles and nuclear warheads had been accelerated by de Gaulle after he came back to power in June 1958. By 1961, the French Minister of Defense Pierre Messmer had decided to adopt solid propelled intermediate range ballistic missiles as part of the French force de frappe; the first French atomic bomb (tested in 1960) was a further prove of this determination³⁰.

At the same time, American efforts to devise a hybrid formula which could appease European requests for nuclear technology, US constitutional rules and Atlantic partnership - the Multi Lateral Force (MLF) - was confronted with a slow albeit inexorable failure between 1962 and 1965³¹.

²⁸In particular, nuclear weapons had to be targeted against military forces and logistic installations of the enemy, thereby leaving margin for political bargain before an all-out counter-city attack.

²⁹Here is the whole preceding paragraph: "In particular, relatively weak national nuclear forces with enemy cities as their targets are not likely to be sufficient to perform even the function of deterrence. If they are small, and perhaps vulnerable on the ground or in the air, or inaccurate, a major antagonist can take a variety of measures to counter them. Indeed, if a major antagonist came to believe there was a substantial likelihood of its being used independently, this force would be inviting a preemptive first strike against it. In the event of war, the use of such a force against the cities of a major nuclear power would be tantamount to suicide, whereas its employment against significant military targets would have a negligible affect on the outcome of conflict. Meanwhile the creation of a single additional national nuclear force encourages the proliferation of nuclear power with all of its attendant dangers". Address by McNamara at the University of Michigan, 16 June 1962, Department of State Bulletin, 9 July 1962, pp. 67-68.

³⁰For the force de frappe and the organizational changes it implied see R. Rhenter, Implications de la politique de défense dans les domaines de l'industrie aéronautique et de l'espace in Institut Charles de Gaulle, De Gaulle en son siècle, tome IV, La sécurité et l'indépendance de la France (Paris: La Documentation Française-Plon) 1992, pp. 160-163. For an updated review of French nuclear policy, M.Vaisse (ed.), La France et l'atome (Bruxelles:Bruylant) 1994. Not surprisingly, a French mission headed by general Lavaud in March 1962, looking, inter alia, for enriched uranium, ended up with disappointing results. See J.F.Kennedy Library, Boston, box 71, Memorandum of Conversation with general Lavaud, Mr. Nitze, General Wehle, Mr. Kuss, Colonel Cocke and Lt-Colonel Hoffman, 13 March 1962, cit. in Frank Costigliola, Kennedy, de Gaulle et le défi de la consultation entre alliés, in Institut Charles de Gaulle, De Gaulle en son siècle, tome IV, La sécurité et l'indépendance de la France (Paris: La Documentation Française-Plon) 1992, p. 260. On the Lavaud mission see also P.Winand, op. cit., pp. 231-232.

³¹In the best accredited version -among the many that were formulated between 1962 and 1965- the Multilateral Force (MLF) was intended to be a coordinated multi-national deterrent nuclear force based on a fleet of submarines carrying Polaris missiles. Crews of a minimum of three nationalities would be hosted by the ships; decision-making would be shared, but not the ultimate responsibility for the use of the warheads, in US hands. See G. Ball, The discipline of power (Boston-Toronto: Little, Brown and Company) 1968, especially the chapter on "The Unfinished Business of Nuclear Management".

When the US announced in December 1962 their willingness to offer assistance (Polaris missiles) only to forces that were integrated under an American commander, France accused them of hegemonic attitudes. "In politics as in strategy" de Gaulle said in a much publicized discourse in January 1963 "it is as in economics, monopoly quite naturally appears to him who holds it as the best possible system"³².

By the mid sixties, nuclear issues were at the core of the NATO difficulties that Americans and European were trying to cope with in different ways. France's unwillingness to comply with the Atlantic strategy and its stated wish to build up its own nuclear arsenal were much resented by the US. They were interpreted as a sign of refusal of American nuclear and economic patronage over Europe.

As a matter of fact, de Gaulle's attacks against the dollar gold standard launched in February 1965 (by which France decided to present its dollars for conversion in gold) were coupled, one year later, with the withdrawal from NATO and, in 1967, with the first nuclear ballistic missile tests.

US policy had maybe retarded French achievements, but not altered de Gaulle's antagonistic attitudes and his willingness to build France's own *force de frappe*. On the contrary, antagonizing attitudes were welcomed by the French as a way to legitimize their independent political course³³.

The significance of French behaviour acquired a much more disturbing twist in the context of the new global non-proliferation policy inaugurated by the US during the sixties.

After the Cuban missile crises of October 1962, the USSR and the US were encouraged to ease down the international tension that had reached its climax during that long week. Many factors pushed them to do so, among which: 1. increasing difficulties in controlling the technological diffusion of nuclear arms; consciousness of the potential destabilizing effects of proliferation; preoccupations with the rising costs of nuclear technology; fear of weakening their hegemony in the reciprocal spheres of influence due to nuclear proliferation among allies (this was not valid for the USSR).

The two superpowers agreed on and formalized common codes of conduct in different realms related to the nuclear field. The creation of regimes was considered less costly, less dangerous and equally productive (in terms of keeping the balance of power) than competition.

Within this context, both powers agreed on attempting to limit the test and production of nuclear devices in order to prevent their proliferation. The Treaty Banning Nuclear Weapons Tests in Atmosphere, in Outer Space and Under Water (better known as the Test-Ban Treaty) and the hot-line agreements were signed in 1963, while the non-proliferation treaty (NPT) was endorsed in 1968, after protracted negotiations.

These international developments were paralleled, internally, by the adoption of a National Security Action Memorandum on the limitation of proliferation of strategic delivery technology (NSAM 294). The ban on technology which might make a "significant" contribution to strategic

³² "Excerpts from remarks by de Gaulle, news conference, 14 January 1963, New York Times, 15 January 1963, p.2. See also McGeorge Bundy, op. cit., pp. 492-492.

³³ For French withdrawal from NATO and the US position, see Draft aide-memoire, no author, 26 April 1966, LBJ Library, NSAM, box 8. This was but the most resounding act of an articulated strategy of differentiation and independence from the major ally, see P. Milza and S. Bernstein, Histoire du XXe siècle. 1945-1973, le monde entre guerre et paix, tome 2 (Paris: Hatier, 1993), pp. 241-242. For de Gaulle's position vis-à-vis the US in the technological context, see W. McDougall, "Space-age Europe: Gaullism, Euro-gaullism and the American Dilemma", Technology and Culture, n. 2, April 1985, pp. 181-183.

delivery purposes included nuclear devices (bombs) and means of transportation (launchers)³⁴. The enforcement of this policy, which left much room for discretionality, which the word "significant" was a clear demonstration of, was entrusted to the Munitions Control of the State Department, which was the classic responsible authority for the control of technological information to be sold abroad, in connection with the Defense Department and the other agencies concerned.

In this context, France's autonomous course was interpreted not only as a refusal of the American patronage over Europe, but, more dangerously, as an attempt to disrupt the whole architecture of American non-proliferation policy³⁵.

4. The changing policy of Europe in space

After Sputnik, and in parallel with the process that led, in 1958, to the creation of NASA, European scientists began to solicit the setting up a collaborative organization in the space field. The **European Space Research Organization (ESRO)** convention was eventually signed in 1962 (and entered into force two years later). ESRO was born out of many interests: a willingness to conduct scientifically ambitious experiments that national resources would not have permitted, a longing to benefit from the wave of Europeanism that followed the signature of the Treaties of Rome, the desire on the part of some scientists to become independent of national military authorities. The relevance of space technology for future economic development was disputable at the time, notwithstanding the initial propagandistic effort of some aerospace firms, which would be later organized through Eurospace; moreover, the direction of national industrial policies was perceived as a strictly governmental prerogative. Science, thus, had been prioritized as the undisputed focus of European cooperation and references to technological and industrial concerns were glossed over in the text of the agreement³⁶.

In parallel with these contacts, political negotiations began in 1960 aimed at building a European satellite launcher; these led to the signature, in the same year, of the **European Launcher Development Organization (ELDO)** convention, ratified in 1964. ELDO was born out of British willingness to Europeanize and convert to a civilian use a military missile already in the development phase, the Blue Streak. The question of the missions of this launcher had been always on the background of an organization which had been concentrated, first of all, on acquiring (or maintaining in the case of the UK) a technical expertise in a high technology area at a bearable price.

In 1963, Europeans decided to gather in a common ministerial conference with both foreign ministry officials and representatives of telecommunication administrations, **CETS** (the French initials for **European Telecommunications Satellite Committee**) to try to increase their bargaining power in INTELSAT negotiations. The setting-up of this loose institutional framework was not sufficient, however, to reinforce their weak position vis-à-vis COMSAT, the private American corporation promoted and supported by US government. European interest in the space field in general and in commercial satellites in particular was still lukewarm.

³⁴Good indirect information on the content of the directive are to be found in LBJ, James Webb, box 2, Letter Webb (Administrator NASA) to McNamara (Secretary of Defense), 28 April 1966.

³⁵Cit. in F. Costigliola, France and the US: the Cold Alliance since the World War II (New York: Twayne's International History Series) 1992, p. 134.

³⁶J. Krige and A. Russo, Europe in space, 1960-1973 (ESA:Noordwijk) 1994. If not otherwise stated, all information related to ESRO and ELDO are drawn from this book.

The total space budget of Europe in the mid sixties was but a fraction of the amount of money devoted by the USA to the field (see appendix A³⁷). Though France had acquired the palm of the "third" in space at the beginning of 1965, with the successful launch of Diamant, the first satellite launcher built in Europe, it should be recognized that Diamant had a limited payload capacity³⁸. A total domination in the field of operational satellites (telecommunication, television, meteorology, navigation) was forecast for the seventies, when US governmental credits would come to fruition.

The need for a shift in emphasis from scientific to technological-commercial endeavours was by no means straightforward: ESRO was a promising scientific enterprise, with limited costs, which could rely on the support of the US, which had so long provided launchers for national or European scientific satellites, free or at low costs.

Why should European countries abandon this track in order to get on a more costly, not clearly profitable adventure and what would be the privileged field of operation in application satellites?

In the field of launchers, EUROPA I, the first European civilian launcher envisaged by ELDO, was not suited to launch application satellites into geostationary orbit. With the set up of INTELSAT and the American successes in communication satellites the question arose if the European launcher should be built as first conceived, i.e. with upper stages of only medium performance, and considered as an essential industrial and managerial apprenticeship for a future more powerful launcher; whether it should be abandoned for a model with higher performance; or whether it was worthwhile at all for Europe to have an autonomous launching capacity³⁹.

The British Labour government (1964-1970) was the most skeptical among Europeans; as early as 1966, the UK made it clear that, as far as launchers were concerned, it favoured the reliance on the US. EUROPA I was predicted by the British "obsolescent and uncompetitive in cost and performance with launchers produced by the US" by the end of the decade⁴⁰.

This nearly brought about a disruption of ELDO in 1966 (and again in 1968) and was the basis of endless quarrels up to the seventies. British Minister of Technology Anthony Wedgwood-Benn, was "very much alarmed at the thought that because a thing is European, and because a thing is international, this somehow excuses us from applying economic criteria"⁴¹.

The UK was eventually persuaded to stay in ELDO and a first upgrading of the European launcher was accepted by ELDO in July 1966; this was **ELDO-PAS**, later renamed EUROPA II,

³⁷J.Müller, European Collaboration in Advanced Technology, cit. pp. 379-381

³⁸LBJ Library, NS Files, 1963-69, box 37, CIA Special Report. The race for third in space, 23 July 1965.

³⁹For an insightful (positive) view on ELDO launcher development, see NASA History Office RG 255, 69-A-5089, box 7, A.V.Cleaver, "The Future of ELDO -an Industrial Point of View", paper presented at the 6th European Symposium on Space Technology, Brighton, 23 May 1966. Cleaver, then the chief engineer and manager, Rocket department, Rolls-Royce Limited, had been involved in the building of the Blue Streak since its original military version.

⁴⁰Cit. in J.Krige, A.Russo, op. cit., pp.74-75.

⁴¹Historical Archives, European University Institute (HAEUI), Florence, CSE/CM (November 68), cited in J. Krige, "Britain and European Space Policy in the 1960s and early 1970s", in Science and Technology Policy, vol.5, n.2, 1992, p.15. European cost estimations at that time made clear that ELDO launchers were expected to be twice as expensive as their American counterparts; CSE/CM (November 1968)15, Add.1, Cost Estimates of the experimental satellite CETS-C, 11 December 1968, cit. in Müller, art.cit., p.115.

which would add a perigee-apogee motor system -a solid-propellant unit developed within the DIAMANT programme would be used as a perigee motor-, that would make it possible to put a satellite of 170 kg (compared to the 140 kg of a Thor-Delta) into geosynchronous orbit ⁴².

In parallel, with an active support by the French delegation, it was decided to displace ELDO's site for operational launchings from Woomera (Australia) to the equatorial site of **Kourou in French Guiana**, where CNES had under construction a base for the French national programme⁴³.

However, no firm decision could be taken on the opportunity to build a European telecommunication satellite providing public telecommunication services and television distribution until December 1971: industrial problems, conservatism of users (who actually did not commit themselves in 1971 to using the envisaged system, but just agreed to be involved in the design), unclear international legal frame for the operations (INTELSAT provisions were renegotiated from 1969 to 1971) and over the availability of launchers contributed in making this prospect gloomy⁴⁴.

On the other hand, some Europeans were aware of the fact that the rules in INTELSAT were but juridical translations of the existing distribution of power (investments, technical capabilities, national policies) within the area of satellites and, consequently, thought that in order to get to the renegotiation with a good bargaining position, they should build up credible industrial and technical competence and political presence in the field⁴⁵.

This was one of the elements behind the Franco-German programme for Symphonie, which led to the fusion of the two national experimental telecommunication satellites (Saros 2 and Olympia) within a single device, whose launch was originally forecast for 1970⁴⁶. Symphonie, in the minds of its founding fathers, would put German and French industries in a favoured position if and when Europe could get around to building a common satellite, would constitute an asset during the INTELSAT renegotiations to be held in 1969, would be a technological novelty and would test, as it did, American willingness to launch European commercial satellites ⁴⁷.

⁴²J.-P. Causse, Les lanceurs européens avant Ariane, in E.Chadeau (ed.), op. cit., p.24.

⁴³J.Krige and A.Russo, op. cit., pp. 74-76.

⁴⁴A.Russo, ESRO's Telecommunications Programme and the OTS Project (1870-74), Report ESA HSR-13 (Noordwijk: ESA) 1994.

⁴⁵"Particularly in the early post war years" writes Ruggie ", but well into the 1950s and even 1960s, American technological hegemony defined an order of relations within which others had to find their place. The United States was the major stimulus in launching international programs, and its technological superiority set the agenda and defined the parameters of debate more often than not". J. G. Ruggie, "International responses to technology: Concepts and trends", International Organization, vol. 29, n.2, Summer 1975, p. 566.

⁴⁶ The aim of the project was publicly announced by the German Federal Minister of Research Stoltenberg and by French Scientific Research Minister Maurice Schuman in April 1967; soon after the agreement was signed. Archives Nationales, Paris, Fontainebleau, côte 81/244, article 188, liasse 517, Communiqué de presse, Symphonie, 28 April 1967; ibidem, côte 82/254, article 25, liasse 80, Confidential note on the revision of French space policy on European launchers, no date (post 1966), no author (CNES or Minister of Foreign Affairs).

⁴⁷NAW, RG 359, box 658Memorandum N.G.Golovin (OST) to Hornig on trip to Europe, meeting with Bignier, 25 October 1967. Also in a draft of the 1966 Presidential annual report on activities and accomplishments under the COMSAT act of 1966, LBJ Library, WHCF (CF), TR 105, box 96, Memorandum White House to the President, 8 February 1967.

More generally, an ESC ad hoc group on programmes pointed out in 1967 that the choice on whether or not to build a heavy launcher should be made "bearing in mind the need for Europe to retain its political, technological and cultural autonomy, not on the basis of purely economical considerations"⁴⁸. A more comprehensive Advisory Committee's report written in the same year, the Causse Report, stated that "(...) Europe should attempt to achieve independent capabilities of its own in such areas as application and scientific satellites, placing it in a position to share early benefits of space exploration, to become eventually a desirable, respected and essential partner of other space powers in order to share full benefits of space flight activities in the decades ahead".

Developing a wide range of space potentialities was both a prerequisite to any "fair partnership" in the design, production and management of space devices with the US, and a backbone for European political, economic and cultural autonomy vis-à-vis the Americans. A case in point was, again, represented by the launchers. The capacity to broadcast radio and television programs to specific areas being considered one important expression of power projection abroad, it could not be left to the major space powers to be in a position to exercise control over these opportunities through the monopoly of their launching services. A yet more powerful launcher was therefore envisaged as a primary long-term objective for Europe⁴⁹.

⁴⁸HAEUI, CSE/CM (July 67)6, 30 June 1967, Report by the chairman of the ad hoc Working Group on programs (30 May 1967), Bignier Report.

⁴⁹HAEUI, CSE/CCP(67)5, December 1967, Report of the Advisory Committee on Programs, Causse Report.

5. Setting the rationale for an increased US-European cooperation

The upgrading of American cooperation in space was part of a major effort to capitalize on American space expenditures which reached their historical peak in the mid sixties. In 1965, talking with NASA Administrator James Webb, President Johnson expressed the view that US space "should have more visibility abroad and should yield more return to our foreign policy objectives"⁵⁰.

The following years were spent in achieving this aim. The mainstream road was a mediatization of the Apollo programme, whose rationale had its roots in the cold war US-USSR confrontational climate; as a secondary path, but not less relevant in the long term, discussions begun on the opportunity to upgrade space cooperation with the Europeans.

The increasing interest "in the use of space cooperation as a means toward achieving political objectives abroad" put NASA in a very delicate situation. Namely, the danger was that "cooperative projects to this end may not always reinforce NASA's programmatic needs. In such instances it should be up to the State Department and the White House to justify the projects, since NASA cannot itself justify a relaxation of its posture and programmatic needs"⁵¹.

US-European cooperation in space had been developed since the late fifties on the "conservative" lines set up by Arnold Frutkin, the director of NASA international affairs since September 1959: the US had been offering mainly space for European scientific experiments on board their satellites, or launching services for European scientific payloads. Common enterprises should be "purely scientific" and reciprocal responsibilities clearly set out, on a project-by-project basis, with no financial exchange. This cooperation was considered by partners involved highly beneficial and the occasions for animosity were few⁵². Why should this fruitful kind of cooperation be abandoned?

In order to exit from this impasse the Administration chose a two fold approach. At the end of 1965, NASA proposed that European partners collaborate on an ambitious scientific experience, which stood within the limits of the political directives set up by NSAM and represented an upgrading of the existing cooperative rationale; soon after, a global reappraisal on US-European space cooperation was activated at high political level in order to make a qualitative jump in this field.

As far as the first tactic is concerned, in 1965 Webb offered Europeans the opportunity to cooperate within an ambitious scientific project, the Advanced Cooperation Project (ACP). The aim of the offer was to give the Europeans the opportunity to take responsibility for the developments of a technologically advanced spacecraft, a solar or Jupiter probe: The US would provide the launch, the tracking and the collection of data, granting the delivery of appropriate export clearances for technology licenses eventually required from European to American firms⁵³.

⁵⁰NASA History Office, RG 255, 70-A-2573, box 17, Memorandum Webb to William Moyers, Special Assistant to the President, 17 September 1965.

⁵¹NASA History Office, RG 255, 69-A-5089, box 5, Meeting of the Working Group on Expanded International Cooperation in Space Activities, Summary Notes, 22 September 1966.

⁵²A. Frutkin, International cooperation in space (Englewood Cliffs: Prentice-Hall) 1965; H. Newell, Beyond the Atmosphere. The Early Years of Space Science (Washington: NASA) 1980; J. Logsdon, "US-European Cooperation in Space Science: A 25-Year Perspective", Science, 6 January 1984, vol. 223, p.12; H. Massey and M.O. Robins, History of British Space Policy (Cambridge: Cambridge University Press) 1986; L. Sebesta, "US-European cooperation in space during the sixties", ESA HSR-14 (Noordwijk: ESA) 1994.

⁵³In the view of Newell, responsible of space science programs in NASA, the construction of such a spacecraft would advance the technology frontier in many fields: sources of energy, special materials for construction, electronics, structures, power sources and their use in difficult conditions,

However, as explained by a French official to the American Ambassador in France, Charles Bohlen, it appeared but "a bone to nibble on", in the sense that it would play at best a minor role in coming European decisions on boosters and application satellites⁵⁴. Ironically, as pointed out by some criticisms raised in Europe, ACP tended to be perceived not as a help to foster space development, but as a way to "divert" Europe "from the essential economic benefits to be derived from space through the exploration of communications satellites"⁵⁵.

ACP proposal met with varied reactions in European scientific community; nonetheless, by the Summer 1966, ESRO had officially declined it.

In line with the Presidential wish to make political use of space cooperation, ACP was eventually transformed into a bilateral FRG-USA venture, Helios⁵⁶. In the context of waning French support for NATO and repeated German requests for liberalizing the restrictive allied policy on nuclear weapons, American proposal was a goodwill diplomatic move to support the technological development of the country. In this broader context, it was "politically important to cooperate as closely as possible with Germany". Secretary of State Dean Rusk explicitly stated to James Webb how "it would particularly helpful if the President and Chancellor Erhard could announce significant and tangible progress in joint cooperation programs between our countries during the Chancellor's visit next month". "While we would not wish to minimize the importance of advanced multilateral space projects with Europe" he added later on "we do wish to increase the vigor and scope of space cooperation with Germany", a country whose role had become pivotal "to strengthen and revitalize NATO", especially after French withdrawal from it⁵⁷. Germany was "the most faithful ally" of US Europe⁵⁸, interested in acquiring, through space productions, that broad range of technologies it had been forbidden to get hold of through military production since the end of the war.

American interest was reciprocated by the Federal Republic of Germany. Since the beginning of the sixties, occupation costs and support costs paid by the FRG since the end of WW II for American forces stationed in their country were substituted by offset agreements whereby the German government would purchase military goods and services in an amount which would offset the local costs of American troops. Confronting the economic recession of the mid-sixties, the German long-

propulsion, environmental control, guidance, measurement techniques and instrumentation, automation and computers. Last but not least it would require new and better management techniques and the use of operational analysis. Newell Papers, Suitland, box 58, folder 411, ESRO meeting with NASA Delegation, Summary of discussions (drafted by ESRO), 22 February 1966. At the same time, Webb had personal discussions with the German Minister of Science Stoltenberg and the principal British science advisor, Sir Solly Zuckerman, to support ACP; NASA History Office, RG 255, 69-A-5089, box 8, Frutkin Memorandum to Webb, 26 May 1966.

⁵⁴NASA History Office, RG 255, 69-A-5089, box 5, Telegram from Bohlen to Department of State, 8 March 1966.

⁵⁵Report for the Assembly of the Western European Union, by Hans Joachim von Merkatz, member of the FRG Bundestag, acting in his capacity as a member of the Assembly. The Western European Union was a consultative forum composed of Britain and the six EEC members, cited on "Europe accuses US on space plans", The New York Times, 9 June 1966.

⁵⁶NASA History Office, RG 255, 70-A-3458, box 7, Letter Hocker to Webb, 3 August 1966.

⁵⁷NASA History Office, RG 255, 70-A-3458, box 7, folder 1, Letter Dean Rusk to James Webb, 29 August 1966; see also NAW, RG 359, box 755, Memorandum Daniel Margolis to Hornig, 13 December 1968.

⁵⁸Cit. in F. Costigliola, France and the US: the Cold Alliance since the World War II, cit. p. 148.

term goal was to substitute at least part of the expenses in military items it had to purchase in the US with procurement of high-tech equipment and licences in order to establish a tradition of technical cooperation and a reestablishment of German national technical capabilities. The State Department, apparently, reluctantly accepted the German proposal, provided that expenditures in technology represented but a small percentage of the whole military procurement under discussion⁵⁹. Moreover, on the verge of the economic recession of the mid-sixties, Ludwig Erhard was in need of external political legitimation in order to plan for the future reversal of German policy vis-à-vis Eastern Europe -a policy that would be pursued with success by his successor; he was forced to resign in 1966.

In the meanwhile, space cooperation was given a high level political imprinting with the decision, in March 1966, to establish a special ad hoc committee of the National Aeronautics and Space Council (NASC), under the chairmanship of Deputy Under Secretary of State Alexis Johnson, to advise the President on this topic⁶⁰.

The uncertain evolution of European space policy represented a challenge for the Committee. ELDO disruption was feared because it seemed to open the prospect for a national proliferation of civilian and military launchers. From the point of view of US non-proliferation policy ELDO was seen with favour because "In such a framework rocket programs tend to be more open, serve peaceful uses and are subject to international control and absorb manpower and financial resources that might otherwise be diverted to purely national programs. National rocket programs tend to concentrate on military significant solid or storable fuelled systems, are less open, and less responsive to international controls. Any break up of ELDO might lead to strengthening national programs tending in the latter direction"⁶¹.

Both the Committee and Frutkin thought that "The breakdown of ELDO would only stimulate undesirable booster development on national basis elsewhere"⁶².

In parallel, the chairman of the group, Vice President Humphrey, and the Secretary of Defense McNamara shared the view that any increased emphasis on the peaceful uses of space technology would go hand in hand with a decrease in European programs of independent military applications. The aim of US policy, according to McNamara, should be that "of stimulating foreign involvement in space technology as a means of diverting energies from the development of nuclear systems"⁶³.

In the case of France, it seemed likely that encouragement to proceed with upper stage hydrogen-oxygen (cryogenic) systems "might divert money and people from a nuclear delivery

⁵⁹NAW, RG 359, box 755, Memorandum Daniel Margolis to Hornig, 13 December 1968. See H. Zimmerman, "'...they got to put something in the family pot':The Burden-Sharing Problem in German-American Relations, 1960-1967", unpublished paper, European University Institute, Florence, 1995.

⁶⁰NASC was created in 1958 to advise the President on all aspect of space policy; it rarely performed this function during the sixties.

⁶¹ NASA History Office, RG 255, 69-A-5089, box 5, Committee on Expanded International Cooperation in Space Activities, "Cooperation involving launchers and launching technology", meeting n.1, 17 May 1966.

⁶²Ibidem and RG 255, 69-A-5089, box 7 Memorandum Frutkin to Webb, Visit of Sir Solly Zuckerman, 5 May 1966.

⁶³NAW, RG 359, box 566, Memorandum by the Vice President (Humphrey) to Donald Hornig, 6 April 1966; LBJ Library, James Webb, box 2, Letter Webb to McNamara, 28 April 1966.

program rather than contribute to that which is already under way using quite different technology"⁶⁴. As we have seen, the French force de frappe had been based from the beginning, on solid fuelled propulsion system; thereby information on cryogenic propulsion was thought to be of no use for military purposes ⁶⁵.

If ELDO's disruption was perceived as a potential danger from the perspective of US non-proliferation policy, the convergence of ESRO, ELDO and CETS was seen as a negative development from the point of view of commercial competition -because it could prelude the creation of a competitive global space power.

As expressed by Frutkin in May 1966, "The greatest danger now is that the crises in space affairs in Europe will lead to a total redirection of European space effort in competition with the United States. If ELDO, ESRO and CETS (...) were to become aligned (as is now being proposed) for the central purpose of establishing communications satellite capability, this would become seriously disruptive of INTELSAT. It seems very important" Frutkin continued "in view of this possibility and in view of the difficult 1969 INTELSAT renegotiation that everything be done to give the Europeans as little cause of concern as necessary regarding US motivation. Certainly, no dog-in-manger attitude ought to be continued"⁶⁶.

This was echoed by NASA's administrator Webb's opinion, that "neither communication spacecraft development [the obvious reference was Symphonie], ELDO launch vehicle launch development, nor the Guiana range can any longer be delayed by US export restrictions. By the completion of the range in 1969-70, the European nations could, if they wish, be in a position to place in synchronous orbit an operable comsat spacecraft"⁶⁷.

If it was impossible to stop foreigners to build up their regional systems, it would still be fruitful to keep them strictly integrated, and controlled, through INTELSAT ⁶⁸.

Charles Bohlen, the highly esteemed American Ambassador in Paris, was convinced that, owing to new developments in European space policy, the government would "have more to gain in

⁶⁴LBJ Library, James Webb, box 2 Letter Webb to Robert McNamara (Secretary of Defense), 28 April 1966.

⁶⁵M. Debré, Gouverner. Mémoires, 1958-1962 (Paris: Albin Michel) 1988, p.375. See also J. Chevallier and P. Usunier, "La mise en oeuvre scientifique et technique", Actes du colloque De Gaulle et la dissuasion nucléaire (1958-1969), Salines Royales d'Arc-et-Senans, septembre 1984, p.12. It is important to remember that studies on cryogenic propulsion had been developed under the control and with the financial support of the Armed Forces. At that very moment, 1966, the French military were showing a strong willingness to stop their investment for such propellant, for which they could not see any short-term application. As a matter of fact, financing from the military began to decline and the firms involved in such production, mainly SEPR, lived under a "programme de survie" from 1966 to 1968, maintained thanks to the personal influence of Prime Minister Pompidou. Intervention by Pierre Sufflet, Directeur des Engins du Ministère des Armées, in E. Chadeau (ed.), op. cit., pp. 173-174.

⁶⁶NASA History Office, RG 255, 69-A-5089, box 8, Memorandum Frutkin to Webb, 11 May 1966.

⁶⁷NASA History Office, RG 255, 70-A-3458, box 7, Letter Webb to James O'Connell, Special Assistant to the President for Telecommunications, 3 October 1966.

⁶⁸NASA History Office, RG 255, 69-A-5089, box 5, Summary Minutes of Working Group of International Cooperation Subcommittee of the NASC, 19 May 1966.

the role of a helpful partner vis-à-vis France and Europe than as a stern competitor"⁶⁹.

6. Liberalizing American policy vis-à-vis launchers technology and services

American policy was caught on the horns of a dilemma. The US were "virtually at the limits of proposals for cooperation which [could] be made with any hope of success (emphasis in the text), unless the US should relax restrictions in the two areas of prime interest, vehicle technology and experimentation with comsat"⁷⁰. These were the areas regulated by NSAM 294 and NSAM 338, which begun to be perceived by NASA Administrator as "political irritant to European countries". Such an "obstructionism on the part of the US" was, without any doubt, "exacerbating existing political strains" already at work, especially on the US-French side⁷¹.

A revision of NSAM 338 could constitute a major improvement in US-European strained relationships in general, could improve the USA's negotiating position in future INTELSAT discussions, due to open in 1969, and could have the added advantage of discouraging Europeans from adopting their new, costly, and potentially competitive independent action⁷².

The underlying idea was to liberalize American national policy on launching communication satellites, which had been set in NSAM 338 in very strict terms, leaving it to the new INTELSAT's rules and bodies to pursue the development of competitive international telecommunication satellites through a web of legal rules⁷³.

This idea was embodied in a first Presidential directive endorsed in July 1966 under the name of NSAM 354, "US cooperation with the European Launcher Organization (ELDO)"⁷⁴.

The document called for a positive support of ELDO and assistance to be given subject to the compliance of members to some preliminary conditions. Launcher vehicles, components and technology sold by the US should not be used:

1. for improving communication satellite capability other than a. to permit participation in the US National Defense Communication Satellite System; b. in accordance with the INTELSAT agreements regulating (civilian) telecommunication satellite policy;

⁶⁹NASA History Office, RG 255, 69-A-5089, box 5, Airgram Bohlen, American Embassy Paris, to Department of State, 23 November 1966.

⁷⁰NASA History Office, RG 255, 69-A-5089, box 5, International Projects in Prospect, sent by NASA to the Department of State on 19 May 1966, enclosed to the Agenda for the Second Meeting of the Working Group to be held on 9 June 1966, 3 June 1966.

⁷¹NASA History Office, RG 255, 70-A-3458, box 7, Letter Webb to O'Connell, Special Assistant to the President for Telecommunications, 3 October 1966.

⁷²NASA History Office, RG 255, 70-A-3458, box 7, Memorandum on Communications satellite technology, no author, no date, received by NASA; ibidem, 69-A-5089, Memorandum Frutkin to Shapley, 16 June 1966.

⁷³NASA History Office, RG 255, 69-A-5089, box 5, Summary Minutes of Working Group of International Cooperation Subcommittee of the NASC, 19 May 1966.

⁷⁴NASA History Office, RG 255, 70-A-3458, box 7, f.1, Memorandum Frutkin to Webb on Space Council, Task group on assistance to ELDO, Supplementary notes on possible US assistance to ELDO, 14 June 1966; ibidem, 69-A-5089, box 5, Third Meeting of the Working Group (to be held on 7 July 1966), 29 June 1966; ibidem, Fourth Meeting of the Working Group (to be held on 9 August 1966), 4 August 1966.

2. for improving nuclear missile delivery capabilities;
3. for transmittal to third countries⁷⁵.

In August of the same year, Europeans were offered American support in the development of a European launch vehicle capability through ELDO. In accordance with the dictates of NSAM 354, the US offered:

1. to permit the procurement of flight hardware in the US, including such items as a miniature integrating gyro (MIG) strapped-down "guidance" (auto-pilot) package used on the Scout vehicles.
2. to assist in the long-range development of follow-up ELDO projects using high-energy cryogenic upper stages (e.g. ELDO B) through a. technical information and contacts; b. making ELDO personnel aware of the major problems linked to systems design, integration and program management of a high-energy upper stage such as Centaur; c. joint use of a high-energy upper stage developed in Europe
3. to supplement ELDO launch capabilities either by the sale of configuration of Scout, Thor, Atlas vehicles (already approved in 1961), or by the sale of launch services for scientific and applications satellite projects⁷⁶.

Formal discussions began in September 1966 and were focused, at ELDO's request, on general aspects of managements techniques (in establishing adequate task definition, in proceeding to contractor selection, in handling technical contracts) and on certain specific technical problems relating to injection into geostationary orbit by means of a perigee-apogee propulsive stage, this last information being intimately related to the development of the European ELDO-PAS programme, directed towards the injection into orbit of a geostationary test satellite early in 1970⁷⁷.

The first visit by an ELDO team to NASA HQ and the Goddard Space Flight Center was organized in May 1967 and various technical problems related to ELDO-PAS were approached⁷⁸. The visit was defined by the leading European delegate, Colonel Mellors as "a great success" in terms of both the "really useful information" given to the visitors and "the willingness with which it was

⁷⁵NASA History Office, RG 255, 70-A-3458, box 7, Memorandum Frutkin to Webb, Space Council Task Group on assistance to ELDO, 16 June 1966; NAW, RG 273, NSAM 354, US Cooperation with the European Launcher Development Organization (ELDO), 29 July, 1966.

⁷⁶Information taken from HAEUI, Annex to ELDO/CM(July 68)WP/2, Possibilities and Problems of future US-European cooperation in the space field, Remarks by Trevanion H.E. Nesbitt, Deputy Director, Office of Space and Environmental Science Affairs, Department of State, at the Meeting of EUROSPACE, Munich, Germany, 21 June 1968. Atlas, already phased out as a US military vehicle, had a minimum of security difficulties (it used an old system of radio guidance, for example) and compared favorably against Blue Streak as a potential first stage for the European launcher; NASA History Office, RG 255, 70-A-3458, box 7, f.1, Memorandum Frutkin to Webb on Space Council, Task group on assistance to ELDO, Supplementary notes on possible US assistance to ELDO, 14 June 1966.

⁷⁷NASA History Office, RG 255, 69-A-5089, box 7, Interim Response by ELDO to US Offer of Technical Assistance, by Clotaire Wood, NASA European Representative, 5 December 1966; *ibidem*, 70-A-3485, box 8, Letter W.H. Stephens, Secretariat ELDO, to C. Wood, NASA Representative, US Embassy, 23 January 1967.

⁷⁸ELDO team was composed by W.J. Mellors, Asst. technical director PAS Project (ELDO), T.W. Wood, Head PAS Vehicle Section (ELDO), J.C. Poggi, Chief Engineer PAS Project (SEREB) and Lauroua, Head PAS Vehicle Coordinated Department (SEREB): NASA History Office, RG 255, 70-A-3485, box 8, Memorandum for the Record, ELDO, by Richard Barnes, 10 February 1967; *ibidem*, Letter Stephens to Frutkin, with Annex on Questions on Injection of Spin Stabilized Satellites into Geostationary Orbits, 24 March 1967; *ibidem*, Letter Mellors to Gilbert Ousley, Technology Directorate, Goddard Space Flight Center, 22 May 1967.

imparted"⁷⁹.

On the other hand, ELDO's requests for technical advice on high-energy upper-stage studies were evaded, in "soft terms". By the beginning of 1968 "it was generally resolved that cooperative development of high-energy upper stages with ELDO should not be pursued"⁸⁰.

The original idea of helping ELDO and civilian launcher technology as a way of diverting funds away from military development faded away in the face of French progress in the development of strategic missile capabilities -which experienced a decisive breakthrough in 1967- and of rising US commercial interest in satellites.

In July 1967, the revision of NSAM 338, recommended by the Special Assistant to the President for Telecommunications and Director of Telecommunications Management, Jim O'Connell, received Presidential endorsement⁸¹. Substantial differences from the old document were not easily detected. However, the change in perspective was evident from the start.

Whereas the original text opened by declaring that "it is the policy of the United States to support development of a single global commercial communication satellite system to provide common carrier and public service communications", the opening policy declaration of the revised version read: "The United States is committed to the encouragement of international cooperation in the exploration and use of outer space".

The "policy" section of the text was preceded by a new introductory paragraph on the "purpose" of the document, which would be "to provide policy guidance for various elements of the United States Government in dealing with requests from foreign nations or foreign business entities for the transfer of or other assistance in the field of space technology applicable to communication satellite systems".

Rules for the transfer of technology were slightly liberalized in the sense that, to the comprehensive formulation contained in the old text (see paragraph 2) a more flexible expression was substituted: "(...)within the limits fixed by national security considerations and other pertinent regulations, the United States may decline to make available space technology to other nations when a. such technology is critical to the development of a communication satellite capability and b. it has been determined that this technology will be used in a manner inconsistent with the concept of and commitments to the continuing development of a single global commercial communications satellite system as embodied in the 1964 agreement".

The restraints on the transfer of technology, however, were extensive: they dealt with every aspect of technology "critical to the development of a communications satellite capability in terms of time, quality, or costs: complete satellites or launch vehicles or components thereof; detailed engineering drawings pertaining to complete satellites or launch vehicles or components thereof; production techniques and equipment, and manufacturing or fabrication processes pertaining to complete satellites or launch vehicles or components thereof; launch services"⁸².

⁷⁹Ibidem.

⁸⁰NASA History Office, RG 255, 72-A-3153, box 6, ELDO-NASA relations, 1967, major events, attached to memorandum Lloyd Jones to Morris, 7 March 1968.

⁸¹National Security Archives, Washington DC, NSAM 338 revised, Policy concerning US assistance in the development of foreign communications satellite capabilities, 12 July 1967.

⁸²Foreign use of the national defense communication satellite system continued to be contemplated along the lines of the old text. A bilateral US-UK agreement along these lines was signed in 1967, whereby the UK would build an all-British satellite for military communications with Australia and the Far East within the framework of a collaborative Skynet military space communications system; see J.Krige, A.Russo, op. cit., p.62.

The main new assumption of the document was the inevitability of the development of new regional communication systems. "There is no reason" suggested E.C. Welsh of the National Aeronautics and Space Council "to pretend that such regional systems will not develop, so why not make the most of it to encourage them to become associated with the international system. If we do not, I would expect that the international system will be the one which breaks up and fails"⁸³. If it was impossible to stop foreigners building up their regional systems, it would still be fruitful to keep them strictly integrated, and controlled, through INTELSAT⁸⁴. More specifically, as stated in a NASA paper on foreign dissemination of technology, "The health of INTELSAT is assured in part by the feeling of the major INTELSAT partners that they are indeed partners and not puppets in an organization dominated by the US. An important factor in the 1964 agreement is the provision of a method by which advanced members of INTELSAT can secure the communications satellite technology enabling them to compete with the US for INTELSAT contracts. Should too stringent imposition of US export controls lead these nations to the conclusion that the US did not intend to allow them to compete, their reaction might well be to work together toward a competing system or to jointly defeat the forthcoming 1969 negotiations for a more permanent global system"⁸⁵.

American willingness to liberalize their policy with regard to European telecommunication satellites was put to the test in 1968, when the directors of the Franco-German program for the construction of an experimental telecommunication programme, Symphonie, asked NASA if they could provide launch vehicles and service for two Symphonie satellites they were developing. After consulting with the Department of State, NASA replied in October 1968 "that we (NASA) would launch the two Symphonie satellites on a reimbursable basis if we could arrive at a mutual understanding of the experimental character of the project". Frutkin remembers having stressed the necessity for Europe to guarantee that Symphonie would never be used against INTELSAT⁸⁶. In

⁸³NASA History Office, RG 255, 69-A-5089, box 5, Memorandum for the File, by E.C. Welsh on Questions regarding Communications Satellite Policy, 25 November 1966.

⁸⁴NASA History Office, RG 255, 69-A-5089, box 5, Summary Minutes of Working Group of International Cooperation Subcommittee of the NASC, 19 May 1966.

⁸⁵NASA History Office, RG 255, 69-A-5089, box 5, NASA memorandum on "Control of Foreign Dissemination of Technology", 25 April 1966. Article ten of the Special Agreement annexed to the Agreement Establishing the Interim Agreement provided for free access to all inventions, technical data and information arising from work performed for INTELSAT; these should be used only within the INTELSAT system for design, development, manufacture or use of equipments. See S. Levy, "INTELSAT: Technology, politics and the transformation of a regime", cit., pp.655-680.

⁸⁶The citation comes from a retrospective summary of US policy on launcher availability included in a letter sent from Paine to Senator Clinton Anderson; T. Paine Papers, Library of Congress, Manuscript Division (LCMD), Washington, box 26, Paine to Clinton Anderson, September 9, 1970. For Frutkin's testimony, see Interview with J.Logsdon and L.Sebesta, Washington DC, 8 November 1993. The existence of this letter, which was not found in NASA archives, is confirmed by a letter from Maurice Lévy (Scientific counsellor in French Embassy in Washington from 1968 to 1970) to Michel Bignier (Director International Affairs of CNES), dated 13 November 1968 -"As far as Symphonie is concerned, Frutkin gave me copy of the letter sent to General Aubinière and Mayer (the two responsible for Symphonie). We spoke about what could happen next. Frutkin thinks that there won't be problem for national satellites, but regional operation systems should be a concern for INTELSAT. It means that INTELSAT should take position on these systems". Archives Nationales, Paris, Fontainebleau, côte 77/606, art 19, Letter Lévy to Bignier, 13 November 1968. Maurice Lévy confirmed orally these circumstances; Interview with L.Sebesta,

view of the ambiguous wording of the revised NSAM 338, Frutkin's cautious attitude was well understandable in its effort to respect the spirit of the directive.

This reply was interpreted, however, by Symphonie directors as an American refusal to launch European telecommunication satellites, should they proceed from the experimental phase to the operational one⁸⁷.

On the other hand, NASA understood the necessity to prevent any antagonizing process whereby the Europeans could be brought to build up an autonomous commercial satellite system. As expressed by Thomas Paine, European willingness to build its own launcher was due to the fear that the US could block any expansion of future European telecommunication satellites by simply not providing the launching facilities⁸⁸. If Europe could abandon its "trouble-plagued and obsolescent vehicle programme", Paine suggested to the newly elected President Nixon in the Summer of 1969, and reorient itself toward the purchasing of US launchings, "European funds would be freed for more constructive cooperative purposes", which would turn out to be the Post-Apollo programme and the new reusable Space Transportation System (the shuttle)⁸⁹.

7. The Post-Apollo programme and the permanent INTELSAT agreements

Nixon became President on January 1969. INTELSAT renegotiations opened in the Spring of that year: in July Apollo 11 deposited the first men on the moon. In October of the same year, NASA's new administrator, Thomas Paine, offered Europeans the possibility to participate in the development and use of an ambitious space transportation and exploration system, the post-Apollo programme, whose main technical features (later revised) were a space station module, a reusable transportation system, a tug to transfer payload from the shuttle orbit into geosynchronous orbit) and a nuclear propulsion stage (NERVA) to be used for interplanetary travels to Mars.

During post-Apollo negotiations, European willingness to participate to the new space venture and the question of US launchers availability would be linked until September 1971.

As explained by the European negotiators at the first US-European meeting to discuss Paine's offer, held in September 1970 "Owing to its limited means, Europe would be unable to finance at one and the same time the development of launchers for these programmes [defined early on as being essential European programmes, particularly in application satellites] and a significant participation in post-Apollo programme developments". That is why European cooperation in any such programme had to be supplemented with American willingness to grant launchers "on a commercial basis and without political conditions". "(...) on the assumption of substantial European participation in the post-Apollo programme" [emphasis in the original] the Americans replied, they were prepared to provide Europe, on a reimbursable basis and before the commissioning of the new Space Transportation System, "with launch service for any peaceful purpose consistent with existing international agreements"⁹⁰.

Paris, 8 December 1994.

⁸⁷Interview Lorenza Sebesta with Robert Aubinière, 12 December 1991, Paris.

⁸⁸HAEUI, CSE/HF(69)32, Report on the Secretary General's activities resulting from instructions given to him by Senior Officials on 28/29 July 1969, 10 September 1969.

⁸⁹LCMD, Thomas Paine Papers, box 23, Letter Paine to the President, August 22, 1969.

⁹⁰HAEUI, CSE/CS (70) 23, Statement by Mr. van Eesbeek relating to the Washington Talks (16-17 September 1970) between the ESC delegation and ESC authorities, 8 October 1970.

As for the meaning of "substantial", it was made clear that the Europeans would be required to contribute to at least 10% of the overall development costs of the Space Transportation System. These costs were forecast as being \$10.000 million over ten years; for Europe, this would mean \$1 billion spread over the same period. Broadly speaking, Lefèvre said, this would correspond to the effort Europe was supposed to make in order to continue the development of the European launcher (some disagreement seemed to exist on this point, because in Ortoli's view, the cost of European participation in the Post-Apollo programme would be twice that of the development of the European launcher)⁹¹.

At the request of the European representatives, the American delegates specified that "any peaceful purpose" would "include commercial purposes which could, as such, compete with American interests" ("This possibility was made quite clear by the European Delegation before the American stated their position")⁹².

Post-Apollo negotiations, as already hinted, took place during the negotiations on INTELSAT (1969-1971), where the Europeans were striving to obtain a more equitable partnership within the system. Europeans did indeed obtain some good results in the bargaining process⁹³.

Among the issues under discussion, there was the possibility to set up regional satellites outside the INTELSAT jurisdiction. Whereas the US initially argued against this right, the final draft (opened for signature in May 1971) opened the way for the establishment of separate space segment facilities to meet international public telecommunications services requirements of the various members. In every case, members should ensure the technical compatibility with INTELSAT space segment and avoid significant economic harm to the global system. However, INTELSAT was not permitted, as originally asked by the US, to enforce sanctions against violators, nor were its recommendations considered binding; this was all the more relevant because, in the new text, COMSAT, the American signatory, was deprived of the veto power it had according to the Interim agreement⁹⁴.

However, these American concessions were balanced by a shift in the interpretation of the voting system formula contained in the same article. In order to reach an agreement on the proposed draft, article XIV's wording was originally formulated in ambiguous terms -art. XIV, par d. "(...)the Assembly of Parties, taking into account the advice of the Board of Governors, shall express, in the form of recommendations, its findings regarding the considerations set out in this paragraph(...)" (see appendix B). Because of this, Europeans asked for specification as to the majority needed to have an international satellite approved -a prerequisite for it to be launched by the US.

In a letter sent by Johnson to Lefèvre on 2 October 1970, the US appeared prepared to launch an European satellite "in those cases where no negative finding is made by the appropriate INTELSAT organ, regardless of the position taken by the US in the vote"⁹⁵ - this somehow baroque definition was understood to mean that a two third vote against the proposed satellite would be required to defeat it: if, on the contrary, less than two thirds of the 77 INTELSAT members were opposed, the US would be prepared to launch it. Europe would need only over one third of votes to achieve INTELSAT permission to launch its satellite.

⁹¹HAEUI, CSE/CM (November 70) PV/1, 4 November 1970, Annex 1, Declaration by Theodore Lefèvre.

⁹²HAEUI, CSE/CS (70) 23, Statement by Mr. van Eesbeek relating to the Washington Talks, cit.

⁹³S. Levy, "INTELSAT: Technology, politics and the transformation of a regime", International Organization, cit. pp. 655-680.

⁹⁴Ibidem, pp.670-671.

⁹⁵HAEUI, CSE/Comité ad hoc (71)9, 22 April 1971, Letter from Johnson to Lefèvre, October 2, 1970, p.5.

As a matter of fact, on February 1971 Johnson's offer was substantially limited. Instead of requiring a two-third vote of the assembly to defeat an eventual proposed regional satellite, a two-thirds affirmative vote was requested to support the feasibility for such a proposal⁹⁶. According to Low, Acting Administrator of NASA after the departure of Paine in September 1970, this reversal, if not accompanied by a specific advanced commitment by the US to support in INTELSAT the principal regional European communication satellite proposal, would "effectively kill the chances for post-Apollo participation by Europe"⁹⁷.

This change of position was linked to pressures exerted by COMSAT and American aerospace industries, which had received the bulk of INTELSAT contracts⁹⁸. Generally speaking, the origin of this change cannot be understood except in the context of the settlement of the new Office of Telecommunication Policy (OTP) in September 1970. OTP had been directed since its inception by Clay T. Whitehead, a young and resolute system analyst coming from MIT, and directly attached to the President of the US⁹⁹. Its aim was to define American policy vis-a-vis satellite communications for overseas civilian operations, focusing on the support of national aerospace industries against what were perceived as attempts by NASA and the State Department to endanger US monopoly in telecommunication satellites on the base of uncertain political returns.

On January 7, 1971 in a much publicized "Statement of Government Policy on Satellite Telecommunications for International Civil Aviation Operations", OTP called for an "international utilization" (as opposed to international development and utilization as had been proposed by NASA) of a pre-operational system for international civil aviation operations¹⁰⁰. The suggestion was made with reference to a specialized aeronautical communication satellite, AEROSAT, but its rationale, it seemed, was valid for any commercial satellite.

On February 1971, one month after the release of OTP policy statement, Whitehead also heavily criticized the contents of US-European negotiations on the post-Apollo programme, whose sole effects would be, in his opinion, to give away "space launchers, space operations and related

⁹⁶HAEUI, CSE/Comité ad hoc (71)10, Letter Johnson to Lefèvre, 5 February 1971. For COMSAT's pressures; NASA History Office, RG 255, 74-734, box 17, 1971, Memorandum to the file (telecon. between Dr. Low and Under Secretary Alexis Johnson), 13 January 1971; *ibidem*, 74-734, box 14, Memorandum to the file (Lefèvre meeting preparation -Johnson/Charyk discussions), Frutkin, 25 January 1971.

⁹⁷NASA History Office, RG 255, 74-734, box 17, 1971, Memorandum to the file (telecon. between Dr. Low and Under Secretary Alexis Johnson), 13 January 1971.

⁹⁸RG 255, 74-734, box 14, Memorandum to the file by Frutkin on Lefèvre meeting preparation, Johnson-Charyk discussions, 25 January 1971. I am indebted to Andrew Butrica for passing me this reference; see also M. Freudenheim, "Satellite splits US, Europeans", San Francisco Sunday Examiner and Chronicle, March 7, 1971, cit. in B. Valentine, "Europe and the post-Apollo experience", Research Policy, 1, 1971/72, p.117.

⁹⁹M. Kinsley, Outer Space and Inner Sanctums (New York:Wiley and Sons) 1976, pp. 211-212.

¹⁰⁰ The policy was established "with participation by interested agencies in the Executive Branch" George F. Mansur, Deputy Director, OTP, chaired the study group and coordinated the OTP policy formulation. R. Nixon Projet, NAW, WHCF, Subject Files, UT1, box 14, Executive Office of the President, Press Release, Nixon Administration announces policy on aeronautical satellite communications, January 7, 1971. This statement was supplemented by another one issued on 19 March 1971 "The National Program on Satellite Telecommunications for International Civil Aviation Operations" (attached to letter Nilson to Hammarström, 2 April 1971, HAEUI, folder 50771) which followed the same lines.

know how at 10 cents on the dollar" (a reference to the American proposal that Europe share 10% of the development costs)¹⁰¹. It has to be stressed, however, that Whitehead was himself skeptical about the acceptability of the new American position on launchers, which he labelled as a "blatant US veto"; he suggested selling launch vehicles to the Europeans to launch from their own soil for whatever peaceful purpose they desire. But this proposition "would be unacceptable to COMSAT and Senator Pastore", the influential leader of its political lobby in the Congress¹⁰².

Europeans reacted strongly to the new restrictive American interpretation that, according to Lefèvre, was "confirmed neither by the joint preparatory work nor by the wording used in the text" (of INTELSAT) and asked for further specification of US position on the lines anticipated by Low¹⁰³. It was not until September 1971, after the opening to signature of the new INTELSAT Treaty, that Lefèvre received the clarifications he had been asking since March¹⁰⁴.

First of all, the availability of American launchers would not be "conditioned on European participation in post-Apollo programme". As for the conditions upon which the US would offer its launching services for satellites intended to provide international public telecommunication services, included European regional satellites, the US stuck on their "restrictive" interpretation of Article XIV (whereby the governing body would have to make "a favorable recommendation")- the proponents of a regional satellite would then bear the burden of persuading two-thirds of the Assembly that the proposal would not cause significant economic harm and be technically compatible with INTELSAT. Moreover, the INTELSAT recommendation seemed to be considered binding by the US, contrary to the general interpretation of the article¹⁰⁵.

As far as the acceptability of European space segment facilities for international public telecommunication services separated from those of INTELSAT, the preliminary and provisional system outlined by the Director general of ESRO (H. Bondi) at the European Conference in Venice in September 1970 - devoted to voice, record, data and television services (i.e. public telecommunications) within the CEPT countries and to television only to countries of the European Broadcasting Area as defined by ITU -this extended from Iceland to the North African coast, and from Portugal to Lebanon and Israel- was analyzed by representatives of FCC, OTP and the State Department Bureau of Economic Affairs. The above-mentioned system "would appear to cause measurable, but not significant, economic harm to INTELSAT. Thus, if this specific proposal were submitted for US consideration, they would support it in INTELSAT. If voices, record, data and television were provided to both CEPTS and North Africa, Lebanon and Israel, though, significant economic harm to INTELSAT was forecast and the system would have been "clearly unacceptable"

¹⁰¹Nixon Project, WHCF, Subject Files, box 2, Memorandum Whitehead to Flanigan, 6 February 1971.

¹⁰²Fletcher Papers, University of Utah, Memorandum Low to Administrator, on Kissinger Meeting, 12 August 1971, held at the Institute of Space Policy, George Washington University, Washington DC.

¹⁰³HAEUI, CSE/Comité ad hoc (71)12, Letter Lefèvre to Johnson, 3 March 1971.

¹⁰⁴On this and other aspects related to the American decision-making process during the negotiations, see L. Sebesta, "The politics of technological cooperation in space: US-European negotiations on the post-Apollo programme", History and Technology, 1994, vol. 11, pp. 317-341.

¹⁰⁵The text of the agreement, with annexes, done at Washington August 20, 1971, entered into force February 12, 1973 and operating agreement, with annex (done and entered into force at the same dates) is in Space Law and Related Documents. International Space Law Documents. US Space Law Documents, 101st Congress, 2nd Session, S. Print 101-98, June 1990, pp. 211-318.

to the US ¹⁰⁶.

Johnson's September letter was discussed by the representatives of the Committee of Alternates of the ESC; the new decoupling between launcher availability and post-Apollo was warmly received. Europeans should now get rid of the conditional form in which the Americans proposed to support the European satellite project and provide the US with additional information ¹⁰⁷.

On 20th December 1971, ESRO Council adopted a resolution on the reform of the organization (the so called first package deal), which called, inter alia, for:

- a. the US/European Joint Aeronautical Satellite Program, Aerosat (even though the work on the Aerosat payload pre-development had started in European industry, the failure of the US to approve the Memorandum of understanding concerning the Aerosat programme had delayed the start of a full-scale development of the spacecraft).
- b. the Meteorological Satellite Programme
- c. the Communication Satellite Programme extended to the European Broadcasting Area as defined by the ITU ¹⁰⁸.

ESRO resolution also contained a statement on the policy to be followed by Europe concerning launch services. The resolution reaffirmed that European launchers would be given priority, on condition that their cost did not exceed 125% of relevant non-European ones; should, however, such American launchers be denied, the price would be based on the cost of production, or even supplemented by the cost of specific development, if required.

In consideration of all that, Lefèvre requested from Johnson a further clearer statement on the availability of American launchers for the adopted European telecommunication satellite system ¹⁰⁹. In particular, an account of the operational system, mission, geographical coverage, frequency bands, technical configuration of the European telecommunication satellite system was transmitted and Johnson was requested to state, on the basis of this document, "whether, considering the concept of

¹⁰⁶HAEUI, CSE/Comité ad hoc (71)18, 8 November 1971, Annex I, text of the letter from Under-Secretary of State Johnson to Minister Lefèvre, dated 1st September 1971. The letter, which America requested to be confidential, was passed to the Belgian press (Le Soir, September 30, 1971) and then given widespread publicity. See also NASA History Office, RG 255, 74-734, box 16, Department of State Telegram, on European participation in the post-Apollo programme, Visit of Minister Lefèvre, 24 February 1971; *ibidem*, 74-734, box 16, Second Discussion with Representatives of the European Space Conference concerning European Participation in the post-Apollo programme, no author, 8 February 1971.

¹⁰⁷ HAEUI, CSE/CS(71)PV/27th October 1971, Minutes of the Joint Meeting of the Committee of Alternates and the ad hoc Committee of Officials, 22 September 1971.

¹⁰⁸HAEUI, CSE/CM (Dec.72)5, Report by the Secretary General of the European Space Conference on the Status of European Space Programmes, 7 December 1972. See also A. Russo, The Early Development of the Telecommunications Satellite Programme in ESRO (1965-1971), Report ESA HSR-9 (Noordwijk: ESA) 1993.

¹⁰⁹HAEUI, CSE/CS (72)1, 4 January 1972, Annex, Letter Lefèvre to Johnson, 23 December 1971. The whole exchange of correspondence between Lefèvre and Johnson until this date is in CSE/Comité ad hoc (71) 22, 22 December 1971. On the European Communication Satellites Programme, see A. Russo, The Early Development of the Telecommunications Satellite Programme in ESRO (1965-1971), cit.

the system as now decided in its final form" he could confirm that his government would be willing to support the project when it would be officially submitted to INTELSAT by the participating countries, as specified in his letter of September 1971. In his reply (June 1972), Johnson made reference to three difficulties related to the proposed European Communication Satellites Programme: the economic impact (in terms of higher charges to users) and the technical incompatibility (the orbital position of the satellite should be moved by 10 degrees eastwards to avoid coverage of the US east coast) and, most important of all, the definition of the European region.

Johnson clarified once and for all that the US would not support the programme within INTELSAT if an expanded coverage with respect to the European geographical area was expected. Actually Europeans, in tune with the ITU definition, gave to the "European Broadcasting Area" a much larger scope than the purely geographical one. It was bounded "on the West by the Western boundary of Region 1, on the East by the meridian 40° East of Greenwich and on the South by the parallel 30° North [thus, including the ex-French colonies in North Africa], so as to include the western part of the USSR and the territories bordering the Mediterranean, with the exception of the parts of Arabia and Saudi Arabia included in this sector. In addition, Iraq (was) included in the European Broadcasting Area"¹¹⁰.

On October 1972 Nixon officialized American position on the availability of launchers in the following terms:

"United States launch assistance will be available to interested countries and international organizations for those satellite projects which are for peaceful purposes and are consistent with obligations under relevant international agreements and arrangements". With respect to satellites providing international public telecommunications services: "1. The US will provide appropriate launch assistance for those satellite systems on which Intelsat makes a favorable recommendation in accordance with article XIV of its definitive arrangements" "2.If launch assistance is requested in the absence of a favorable recommendation by INTELSAT, the United States will provide launch assistance for those systems which the United States had supported within INTELSAT so long as the country or international entity requesting the assistance considers in good faith that it has met its relative obligations under Article XIV of the definitive arrangement" "3. In those cases where requests for launch assistance are maintained in the absence of a favorable Intelsat recommendation and the United States had not supported the proposed system, the United States will reach a decision on such a request after taking into account the degree to which the proposed system would be modified in the light of the factors which were the basis for the lack of support within INTELSAT"¹¹¹.

This declaration gave rise to dissimilar interpretations in Europe and in the US. Europeans saw it as sanctioning the de facto binding character of any INTELSAT recommendation¹¹².

After the failure of the launch of EUROPA II in November 1971 and its abandonment in April 1973 (according to the contract with ELDO of 1970 EUROPA II was to have launched Symphonie) the directors of Symphonie decided to explore the possibility of having the two satellites launched by Soviet or American launchers. INTERCOSMOS didn't object to the launch, but stated that it would be technically feasible only in 1976 (too late for Europeans). On the other hand, the US were able to promise a first launch by 1975 through a Thor-Delta 2914. After protracted negotiations, whose exact content remains an object of dispute, an agreement was reached in June 1974. It confirmed the experimental character of Symphonie, but it also included the possibility to transform

¹¹⁰ITU definition is cited in HAEUI, ESRO/PB-TEL(72)5, Availability of launchers for the European Communication Satellites Programme, 22 September 1972.

¹¹¹ "United States policy governing the provision of launch assistance", October 9, 1972 (Washington: Office of the White House Press Secretary).

¹¹² For the European view, see, among others, P. Creola, "European-US space cooperation at the crossroads", Space Policy, May 1990, p.99.

it into an operational one. In this last case, "(...) the Government of the Federal Republic of Germany and the Government of the French Republic (...) confirm their intention of fulfilling the obligation contained in the INTELSAT Agreement, especially its article XIV, and of accepting the recommendations of INTELSAT insofar as they apply to the Symphonie program. (...) understand that, in the absence of favourable recommendations from INTELSAT, the assurances given by the President of the United States in his statement of October 9, 1972, shall, with appropriate modifications, apply to the decision to use this means of communication for international public telecommunication services" ¹¹³.

According to French sources, the agreement was unwillingly accepted by Symphonie Directors¹¹⁴. As in the case of Nixon declaration, to which the agreement referred, French officials perceived the text of this agreement as a de facto American veto to a future operational use of Symphonie. An interpretation which was not acknowledged by American officials.

Between Fletcher's letter and the decision of the Directors of Symphonie, the Ministerial meeting of the European Space Conference adopted the so-called second package deal, approving three main programmes: Ariane was one of them¹¹⁵.

¹¹³ Launching of French-German Symphonie Communications Satellites, Agreement effected by exchange of notes, signed in Washington June 21 and 24, 1974, entered in force June 24, 1974, in United States Treaties and Other International Agreements, vol. 25, Part 3, 1974 (Washington DC: U.S. Government Printing Office) 1975. I'm indebted to Richard Barnes for reminding me of the publication of this exchange of notes by the US Government in their TIAS series.

¹¹⁴ Archives Nationales, Paris, Fontainebleau, côte 81/244 art. 188, liasse 517, Note pour le Conseil d'Administration du CNES par le Secrétaire exécutif français de Symphonie, Situation des possibilités de lancement du satellite Symphonie, 17 septembre 1973; *ibidem*, CNES, Secrétariat exécutif Symphonie, Rapport de présentation, 25 Octobre 1973; *ibidem*, art. 187, liasse 515, DGRST, Note sur le programme Symphonie, 18 juin 1974. The two Symphonie satellites were placed in orbit on December 1974 and August 1975, C. Carlier, M. Gilli, Les trente premières années du CNES. L'Agence française de l'espace, 1962-1992 (Paris: La Documentation française) 1994, pp.227-230.

¹¹⁵J.Krige, A.Russo. *op. cit.*, pp.11-112.

8. Conclusions

Between 1965 and 1973, NASA had to conform to ambiguous political directives going in the direction of liberalizing launching services and international technology flow and opposite pressures from the rising American telecommunication community. NASA's task was to mould these opposed influences into a coherent policy vis-à-vis specific requests advanced by the Europeans on the availability of American launchers for telecommunication satellites.

An originally extremely restrictive national policy on commercial satellites, aimed to establish and guarantee for the future an American hegemony in the field, and on the availability of launchers was gradually liberalized in 1966-67.

Technological sharing in the field was seen as:

1. a possible way to defuse European criticism towards the so-called technological gap (by the Department of State);
2. a convenient diversion of funds from military rockets to civilian launchers in order to pursue a global policy of non-proliferation -this idea, originally supported by the Secretary of Defense and by NASA, was abandoned as soon as it was clear that France had acquired an autonomous military launching capability.

Furthermore, NASA considered the liberalization of US launcher availability very important as a means of preventing Europe from 'going it alone' in this field and, eventually, setting up an independent satellite system outside INTELSAT.

However, the change of administration, the increased economic relevance of telecommunication by satellites and the rising concerns about technological sharing, coupled with the signature of the definite INTELSAT agreement, shifted the balance towards the anti-European constituency within the American administration. Some features of the new INTELSAT agreement were especially disturbing for many: the limitation of COMSAT quotas to less than 40%, the possibility to set up regional systems and the non-binding nature of INTELSAT recommendations on compatibility.

The well-rooted industrially supported inclination to keep the monopoly in the field of commercial satellites (guaranteeing the monopoly of launcher technology seemed to be one of the more effective ways to do that, at least in the short term) was reinforced by the creation in September 1970 of the new Office of Telecommunication Policy and its policy of support to the national aerospace sector.

In response to repeated European requests concerning the availability of launchers for future European regional telecommunication satellite systems, the ambiguous wording of the INTELSAT agreement was progressively clarified in terms unfavorable to the Europeans. A substantially restrictive interpretation of article XIV of the treaty was expressed, due primarily to COMSAT pressures. The enlarged European notion of "regional" was not accepted and the binding character of INTELSAT judgment practically imposed by stating the necessity for European telecommunication satellites to be accepted by INTELSAT in order to be launched by the US.

With the agreement on the new INTELSAT text and the Presidential endorsement in January 1972 of the Shuttle program, US interest in European support in Post-Apollo and in INTELSAT waned and, therefore, positions in support of an extension of US-European cooperation further weakened.

On the other hand, the Shuttle seemed to guarantee, in the long run, an extraordinary qualitative jump in launching systems and their cost/effectiveness; the new space transportation system would make any European expendable launcher "obsolescent". Thus, indirectly, the Presidential decision reduced US interest in preventing Europeans from 'going it alone' as it reduced, in parallel, US interest in the post-Apollo programme, which was reduced by June 1972 to Spacelab.

Equally important, there seemed to occur a real shift in US policy vis-à-vis Europe: whereas Kennedy and Johnson administrations had tried to appease Europeans, looking for their political

support in the US-USSR confrontation, Nixon's priority shifted towards setting up détente with the USSR (and disentangling the US from Vietnam). A major economic crisis - a disastrous balance-of-payments deficit (accompanied by a severe reduction of gold reserves and the first US trade deficit since 1894) was registered in the Summer 1971. The decision to stop selling foreign banks gold in exchange for dollars and to refrain from defending the dollar's fixed gold exchange rates (the Bretton Woods system), plus the 10% tax imposed on the value of all imports, were troubling economic and political signals to European allies. As is frequently the case, economic crises fed isolationism, especially against a combative European Economic Community, due to be enlarged by the ratification of the access of the UK, Denmark and Ireland in January 1973. The EEC was coming to be seen as a strong competitor for foreign markets and its industries were beginning to erode the privileged position American industries had gained since the war¹¹⁶.

Not surprisingly, efforts to liberalize American policy on technological sharing and availability of launchers came full circle. They failed in front of prevailing internal economic interests, the changing priorities in US foreign policy and developments in Europe, in both military and space fields.

On the European side, the unwillingness of the US administration to give the Europeans an unconditional assurance of future availability of launchers for operational telecommunication satellites was but one of the factors that led to the European decision to endorse the French-sponsored project to build the L-IHIS launcher.

This decision has to be mainly analyzed within the context of a strained US-French relationship (a legacy of De-Gaulle-Johnson controversies which would endure well in the seventies) and a very confused situation in the European space field.

Institutional uncertainty on the future of European space organization was acute from 1966 to 1971, financial commitments weak compared to the American ones, industrial experience in satellite technology limited, international legislation not yet defined, attitudes of users (CEPT and EBU) conservative due to the uncertain commercial returns and costs of the new system and anticipated technical problems in terms of reliability¹¹⁷.

It was not until December 1971 that ESRO Council endorsed the start of a telecommunication programme consisting of a first phase (for the development and launching of an experimental satellite, OTS) and a further operational phase¹¹⁸.

Furthermore, not all the Europeans objected to the arrangement of a qualified availability proposed by the US. The UK, for sure, always criticized the autonomous solution and preferred the less expensive reliance on a US satellite; Italy did not seem to be interested in projects that would not guarantee an appropriate industrial return to its industries, such as the new European launcher; the Federal Republic of Germany, after the failure of EUROPA II launch in November 1971 and after the definition of the post-Apollo project in June 1972, was eager to assume the greatest financial burden and the prime contractorship for Spacelab while withdrawing its original support for an

¹¹⁶F. Costigliola, *op. cit.*, pp. 167-172. See also P. Melandri, Une incertaine alliance. Les Etats-Unis et l'Europe, 1973-1983 (Paris: Publications de la Sorbonne) 1988, pp. 45-77 and the insightful account written by the American Ambassador to the European Communities, Robert Schaetzle, The Unhinged Alliance. America and the European Community (New York: Harper) 1975, pp. 42-53. For the rising competition from foreign industries, see S. Krasner, "US commercial and monetary policy: unravelling the paradox of external strength and internal weakness", International Organization, Fall 1977, n.4, pp. 635-671.

¹¹⁷J. Müller, "Historical background and start of the TELECOM Programme", Space Communications, 8(1991) pp. 105-140.

¹¹⁸A. Russo, ESRO's telecommunications programme and the OTS project (1970-74), *cit.*, pp. 5-7

independent European launcher. France and Belgium were the only countries that never deflected from their support to the idea.

Even within France, however, not everybody was in favour of the autonomous launcher. The important thing is that those who did support it (first of all Pompidou who replaced de Gaulle in 1969) created a strong constituency and, during this process, made (also) good use of American policy on launchers to improve their position. Of an equal importance is the fact that the technicians who first conceived L-IIS did not look for a technological breakthrough (politically and economically difficult to support under the historical circumstances), but for a technically easy and reliable object, based partly on the knowledge that France had acquired during the development of Diamant, partly on the experience acquired during the preparation for the EUROPA III programme and partly on national research performed in France and in the Federal Republic of Germany on cryogenic propulsion¹¹⁹. Because, as part of the deal, France guaranteed to cover the cost overrun, the technological "austerity" was a prerequisite to minimize the risk of financial aleas for France. To build a launcher on a national basis, however, would not be financially possible nor strategically convenient. Europeanization was a necessity because financial burden needed to be shared and future users secured¹²⁰.

In the end, all the reluctant European partners were eventually induced to participate in the second package deal. Europe's decision to build L-IIS (later renamed Ariane) had many roots and motives, among which US unwillingness to guarantee availability of launchers for operational commercial satellites, but it was by no means assured till the very end: the hectic horse-trading that took place in July 1973 testifies to the difficulty of such a process until the very last moment and magnifies the central role of international bargaining in it. In this context, if West Germany and the UK had not had their pet projects (Spacelab for Germany and Marots for Great Britain) to protect and for which to get support from the others, Ariane would probably have had a more traumatic birth if it had been born at all.

¹¹⁹See the illuminating contribution of A. Lebeau, "La naissance d'Ariane" in E.Chadeau (ed.) op. cit., pp. 75-91 and the ensuing debate among eye-witnesses of the time, pp. 95-108.

¹²⁰Archives Nationales, Paris, côte 81/401, art.70, liasse 179, CNES Rapport group sectorial 6, Programmes d'études et développement des lanceurs, 30 juin 1970.

Annexes

1. Article XIV, INTELSAT agreement, done in Washington August 20, 1971, entered into force February 12, 1973.
2. Letter A.Johnson to T.Lefèvre, February 5, 1971.
3. Letter T.Lefèvre to A.Johnson, March 3, 1971.
4. Letter A.Johnson to T.Lefèvre, September 1, 1971.
5. United States policy governing the provision of launch assistance, October 9, 1972.
6. Launching of French-German Symphonie Communications Satellites, Agreement effected by exchange of notes, signed in Washington June 21 and 24, 1974, entered in force June 24, 1974.



ARTICLE XIV

(Rights and Obligations of Members)

(a) The Parties and Signatories shall exercise their rights and meet their obligations under this Agreement in a manner fully consistent with and in furtherance of the principles stated in the Preamble and other provisions of this Agreement.

(b) All Parties and all Signatories shall be allowed to attend and participate in all conferences and meetings, in which they are entitled to be represented in accordance with any provisions of this Agreement or the Operating Agreement, as well as in any other meeting called by or held under the auspices of INTELSAT, in accordance with the arrangements made by INTELSAT for such meetings regardless of where they may take place. The executive organ shall ensure that arrangements with the host Party or Signatory for each such conference or meeting shall include a provision for the admission to the host country and sojourn for the duration of such conference or meeting, of representatives of all Parties and all Signatories entitled to attend.

(c) To the extent that any Party or Signatory or person within the jurisdiction of a Party intends to establish, acquire or utilize space segment facilities separate from the INTELSAT space segment facilities to meet its domestic public telecommunications services requirements, such Party or Signatory, prior to the establishment, acquisition or utilization of such facilities, shall consult the Board of Governors, which shall express, in the form of recommendations, its findings regarding the technical compatibility of such facilities and their operation with the use of the radio frequency spectrum and orbital space by the existing or planned INTELSAT space segment.

(d) To the extent that any Party or Signatory or person within the jurisdiction of a Party intends individually or jointly to establish, acquire or utilize space segment facilities separate from the INTELSAT space segment facilities to meet its international public telecommunications services requirements, such Party or Signatory, prior to the establishment, acquisition or utilization of such facilities, shall furnish all relevant information to and shall consult with the Assembly of Parties, through the Board of Governors, to ensure technical compatibility of such facilities and their operation with the use of the radio frequency spectrum and orbital space by the existing or planned INTELSAT space segment and to avoid significant economic harm to the global system of INTELSAT. Upon such consultation, the Assembly of Parties, taking into account the advice of the Board of Governors, shall express, in the form of recommendations, its findings regarding the considerations set out in this paragraph, and further regarding the assurance that the provision or utilization of such facilities shall not prejudice the establishment of direct telecommunication links through the INTELSAT space segment among all the participants.

(e) To the extent that any Party or Signatory or person within the jurisdiction of a party intends to establish, acquire or utilize space segment facilities separate from the INTELSAT space segment facilities to meet its specialized telecommunications services requirements, domestic or international, such Party or Signatory, prior to the establishment, acquisition or utilization of such facilities, shall furnish all relevant information to the Assembly of Parties, through the Board of Governors.

The Assembly of Parties, taking into account the advice of the Board of Governors, shall express, in the form of recommendations, its findings regarding the technical compatibility of such facilities and their operation with the use of the radio frequency spectrum and orbital space by the existing or planned INTELSAT space segment.

(f) Recommendations by the Assembly of Parties or the Board of Governors pursuant to this Article shall be made within a period of six months from the date of commencing the procedures provided for in the foregoing paragraphs. An extraordinary meeting of the Assembly of Parties may be convened for this purpose.

(g) This Agreement shall not apply to the establishment, acquisition or utilization of space segment facilities separate from the INTELSAT space segment facilities solely for national security purposes.

Source: *Space Law and Related Documents. International Space Law Documents, US Space Law Documents*, 101st Congress, 2nd Session, S. Print 101-98 (Washington DC: US Government Printing Office, 1990).

CSE/Comité ad hoc(71)10

Neuilly, 20 April 1971

Original : English

Letter from Mr. A. Johnson, Under-Secretary of State
to Minister Théo Lefèvre

February 5, 1971

Dear Minister Lefevre,

I was pleased to receive your letter of January 21, 1971, outlining several questions which you and your colleagues wish to discuss in connection with the proposed cooperation in the post-Apollo program. I look forward to discussing these questions with you, and I would propose that we meet here at the State Department beginning at 10:30 a.m. on February 11. I am confident that with the cooperative spirit which prevailed at our meeting last September, we will succeed in arriving at an understanding.

In order to be able to be responsive from the U.S. side on the six points raised in your letter, I would hope at the start of our discussion to obtain elucidation from your delegation on several matters. Among these are: (A) we are uncertain just which "international procedures" you had in mind in drafting the first point dealing with the purchase of U.S. launchers for use outside the United States, and (B) we would appreciate knowing whether your second point concerning access to American manufacturing licenses is limited to launch vehicle technology, or whether a broader range of space technology may be involved.

In addition, you will recall that an important part of our discussions last September centered on the availability of U.S. launchers both before and after the development of the new space transportation system. Our formal position on this point is summarized in paragraphs 1-6 and 11-15 of my letter to you of October 2, 1970, where we affirm our willingness to assure launch services, on a reimbursable basis, "for any peaceful purpose consistent with relevant international agreements." As applied to the launch of telecommunication satellites within the meaning of Article XIV of the definitive arrangements for INTELSAT, we offered an assurance of launch services for those who participate substantially in the post-Apollo program "in those cases where no negative finding is made by the appropriate INTELSAT organ, regardless of the position taken by the U.S. in the vote". This assurance remains unchanged.

However, since our meeting in September I have found that the generally accepted interpretation of the application of Article XIV is somewhat different from that which we discussed. It is now my understanding that the interpretation which was implicit in the INTELSAT negotiations, and is supported by the U.S., is that the failure of a positive recommendation to achieve a two-thirds vote automatically constitutes a negative finding.

In this situation, it seems to me that, from your point of view, more important than a theoretical discussion of this issue would be an indication from the United States as to the position it would take on the practical questions of European telecommunications satellite proposals, separate from INTELSAT, which may become subject to consideration under Article XIV. Therefore, in our discussions I propose to suggest that we arrange for the European Space Conference to describe to the United States the international public telecommunications satellite systems for which the ESC may wish to obtain U.S. launching services in the period prior to the coming on line of the new space transportation system. The U.S. would then undertake to determine, with reasonable dispatch, the position it would take in the INTELSAT Assembly were such specific proposals to be put forward.

I am looking forward to meeting you and your colleagues on February 11, and I trust you will find the thoughts and suggestions summarized above helpful in establishing a basis for discussion of some of the topics which we will wish to consider.

Sincerely,

U. Alexis Johnson
Under Secretary of State

Neuilly, 22nd April 1971

Letter from Minister Th. Lefèvre
to Mr. A. Johnson, Under Secretary of State

Brussels, 3rd March 1971

Sir,

During our talks in Washington on 11 and 12 February 1971, we agreed that you would send me a written statement of your views on the various questions dealt with in the course of our discussions about possible European participation in the post-Apollo programme.

To facilitate your task I feel it may be useful to recall, first of all, the principles underlying the European attitude towards such participation and then the main points raised during these talks and on which it seems more particularly important to have further precisions or the confirmation of our respective views.

A. - The United States Government's invitation to the countries of Europe to participate - preferably as an organisation forming the European counterpart to NASA - was received with interest by most of the governments of the member countries of the European Space Conference.

1. They saw in this offer a suitable opportunity to join in an enterprise that would renew and promote space technology. We also know that your Government recognises the support that our participation could give to the programme.

In these circumstances, and apart from the mutual benefit that would accrue on both sides of the Atlantic, European participation in the post-Apollo programme could not reinforce the links of cooperation that already exist, in other areas, between the governments of the European countries and the Government of the United States.

2. You are also aware that it is the desire of the European countries to develop, as you know, application satellites - particularly in the field of telecommunications - having recognised how important such satellites are for cooperation within Europe. Since action in this field will necessarily be within the framework of a long-term programme, Europe must be certain that it will have at its disposal the necessary launchers.

3. Lastly, European participation in the post-Apollo programme can only be envisaged within the financial resources of which our countries dispose for their global space activities, and must take into account the political and economic requirements of a united European community.

B. - It is in the light of these principles that the governments of the member countries of the ESC will have to take their decision regarding joint European participation in the post-Apollo programme. It appeared, however, to the European delegation that your Government's position could not satisfy entirely our preoccupations and that there was even a marked divergence on some essential points.

To avoid any misunderstanding, I should be particularly grateful if you would let me know the attitude of your Government with regard to the various points listed in the questionnaire, and supplementary verbal note, that I handed to you on 10 February 1971.

I indicate below certain points - included in the questionnaire - on which, in the light of our discussions, more detailed statements or clarifications are needed.

I - Technical Choice

1. I understand you to consider it would be a viable proposition if the European participation in the post-Apollo programme were to comprise the following two points:

- a) Development of some major element (e.g. the tug) that covers a wide range of advanced techniques, is capable of being made the subject of European prime-contracting and would later on normally be manufactured in Europe;
- b) Development and manufacture of a number of elements selected from other parts of the post-Apollo system that would be of particular technological interest to European industry, notably in the fields of aerodynamics.

2. On the assumption that European participation would take the form indicated above, the European countries would like to receive an assurance that:

- a) Firstly, the element developed in Europe - both the initial version and its later developments - will indeed have permanent tasks to perform in the post-Apollo transportation system;
- b) Secondly, there will be no parallel development of the same element on the American side.

II - Management and financial arrangements

1. I understood that Europe would be associated with the management of all parts of the programme, that decisions that have a direct bearing on the financial burdens assumed by Europe would be taken jointly, and that Europe would have the right of decision inherent in its status of prime contractor for the major element for development of which it would be responsible.

2. From the financial viewpoint, we seem to be agreed upon the principle of non-exchange of funds. There remains to be defined the way in which the European financial commitment would be kept within acceptable limits.

3. On the assumption that European participation would bear both on a major element and on a number of less important elements spread through other parts of the system, it would be necessary to accept also the principle of reciprocal sub-contracting.

It is my understanding that this was approved by you. Our experts will therefore have to work out the detailed financing and management arrangements in such a way as to allocate precisely the technical responsibilities, and to keep Europe's financial commitments under its own control and within acceptable overall financial limits.

III - Access to information

As a partner, Europe wishes to be in a position to make a general assessment of the merits of the post-Apollo system of the expected results of its own efforts and of the way in which it will be able to share in the management and use of the system.

I understood that in order to meet these wishes, the United States is prepared to provide Europe with broader general information on the overall system than that made available to the general public.

I also understood that this general information does not comprise data immediately needed for fabrication and that, as regards such data, the American position is to make available to Europe only such detailed information as is necessary for the work to be performed then.

This therefore precludes the principle of each partner having access, on a fair payment basis, to all the information resulting from the programme as a whole, which principle seems to us being more consistent with the spirit of a joint venture.

If this is indeed the case we think that provision should be made for the same conditions of access to information in respect of programme elements developed under the European prime contract.

IV - Availability of launchers

1. I understood that the United States maintaining its early position, was not able to commit itself to make conventional launchers available to Europe without other than commercial conditions, this position covering both launchers purchased by Europe for launching from American territory or elsewhere and also the construction of launchers in Europe under American licence.

I noted, however, that the United States would be prepared - during the period preceding the entry into force of the INTELSAT Agreements - to resort to a "pre-interim" procedure under which it would be able, in the short term, to make a firm launch commitment limited to those European projects that are currently identified and defined - including a possible operational system of European communication satellites.

I also understood that, from the moment of entry into force of the agreement instituting the definitive INTELSAT system, the United States would interpret Article XIV of the existing draft agreement as meaning that a European project coming within the scope of this article would have to receive a positive recommendation from the Assembly by a two-thirds majority.

I also understood that, when the post-Apollo system becomes operational, the conditions set at the present time will continue to be applied to all launchings carried out from United States territory, but that the United States recognises European freedom to use the system from European ranges.

2. I wish to confirm so far as may be necessary that Europe does not intend to go back on its international commitments. But you should understand our concern to guarantee ourselves against the inevitable and unforeseeable contingencies involved in the procedure of Article XIV. Such guarantee is needed to establish and implement our projects in the framework of our medium and long term programmes.

The attitude you have adopted means whenever we need American help in launching a satellite we shall have to comply with the condition that the launching must be favourably viewed by INTELSAT or, failing this, must be agreed by the US Government after examination on a case-by-case basis.

The new interpretation you have given to Article XIV of the draft INTELSAT agreement - an interpretation which, to the best of my knowledge is confirmed neither by the joint preparatory work nor by the wording used in the texts - makes this condition considerably more stringent.

The fact that in the event of an adverse recommendation by INTELSAT - addressed to the Member States who are the authors of a regional project and to be assessed by them under their own international responsibility - you introduce furthermore a clause which gives you a final decision power, obviously creates an additional factor of uncertainty. This is all the more serious in that subsequent amendments to the text of this agreement - even imposed against the will of the European countries - might some day introduce even stricter rules of incompatibility.

The procedure that you have suggested for the pre-interim period would make it possible to provide us, in the short term, with the certainty we seek - but only in respect of those projects that are at present identified and defined. This certainty will not exist in the event of our present projects undergoing modifications, nor in the case of new projects being envisaged after the entry into force of the definitive INTELSAT agreements. In both these cases, not only might objections be raised that went beyond the framework of our international obligations such as we understand them and have subscribed to them, but procedural delays might occur that would imperil the major preparatory investments implied by space application programmes.

Under the post-Apollo system itself, the solution which you propose would only give us freedom to use American equipment for launchings from our own ranges. This would impose an excessive financial burden on us.

3. To sum up, we are obliged to note that, although the present state of the discussions offers some prospect of our launching our immediate projects within the framework of our collaboration in the post-Apollo programme, it does not enable us to embark on any medium or long-term programming of our space activities.

C. - As I stated at the end of our talks, the governments of the Member countries of the ESC will have to take a decision during the next few weeks on the question of European collective participation in the post-Apollo programme. It is in the interest of both parties that this decision should not be further postponed. You yourself want this point to be settled quickly, we, for our part, cannot put off any longer our decisions on a European space programme.

I hope very sincerely that your reply will be of such a nature as to allay the anxieties and doubts to which the outcome of our recent discussions gave rise within the European delegation.

Allow me in conclusion to thank you, on my own behalf and that of all my colleagues of the European delegation for the warmth of your welcome and for the complete frankness with which you stated your position to us.

Yours very truly,
Th. LEFEVRE

EUROPEAN SPACE CONFERENCE
AD HOC COMMITTEE OF OFFICIALS

CSE/Comité ad hoc(71)18

Neuilly, 8th November 1971

Annexes : 3

Note from the Secretariat

Letter from Under-Secretary of State A. Johnson

Please find enclosed :

in Annex I : the text of the letter from Under-Secretary
of State A. Johnson to Minister Th. Lefèvre,
dated 1st September 1971;

in Annex II : the text of the amplifying comments issued
by the Department of State;

in Annex III : the text of the Press Statement published
in Washington on 1st November 1971.

Letter from Mr. A. Johnson, Under-Secretary of State
to Minister Théo Lefèvre

Under Secretary of State
for Political Affairs
Washington

September 1, 1971

Dear Minister Lefèvre:

This letter is in response to yours of March 3, 1971, concerning possible European participation in Post-Apollo space programs. It sets out our current views on the matters of consequence which were involved in our discussions this past February and in September, 1970. It overtakes my letter to you of October 2, 1970.

I regret that it has not been possible to respond to you earlier. We felt that our mutual interests would be served best if we took sufficient time to review our position carefully in the light of your letter and of events since our discussions in February. As I stated during those discussions, our ultimate views on most of these matters remain contingent on choices yet to be made in Europe as to the measure and character of European participation and on further development of our own plans for Post-Apollo programs.

Since we have understood that the matter of greatest concern to the European Space Conference is the availability of launchers for European satellite projects we have reviewed our position so as to meet the concerns expressed in your letter and during our earlier discussions. Our new position in this regard described in the numbered paragraphs below, is not conditioned on European participation in Post-Apollo programs. I believe it should provide a basis for confidence in Europe in the availability of U.S. launch assistance. Specifically:

(1) We recognize the concern of the European Space Conference with regard to the availability of launch assistance for European payloads. In this respect, U.S. launch assistance will be available for those satellite projects which are for peaceful purposes and are consistent with obligations under relevant international agreements and arrangements, subject only to the following:

(a) With respect to satellites intended to provide international public telecommunications services, when the definitive arrangements for Intelsat come into force the U.S. will provide appropriate launch assistance for those satellite systems on which Intelsat makes a favorable recommendation in accordance with Article XIV of its definitive arrangements. If launch assistance is requested in the absence of a favorable recommendation by Intelsat, we expect that we would provide launch assistance for those systems which we had supported within

Intelsat so long as the country or international entity requesting the assistance considers in good faith that it has met its relevant obligations under Article XIV of the definitive arrangements. In those cases where requests for launch assistance are maintained in the absence of a favorable Intelsat recommendation and the U.S. had not supported the proposed system, the United States would reach a decision on such a request after taking into account the degree to which the proposed system would be modified in the light of the factors which were the basis for the lack of support within Intelsat.

(b) With respect to future operational satellite applications which do not have broad international acceptance, we would hope to be able to work with you in seeking such acceptance, and would favorably consider requests for launch assistance when broad international acceptance has been obtained.

(2) Such launch assistance would be available consistent with United States laws either from United States launch sites (through the acquisition of United States launch services on a cooperative or reimbursable basis) or from foreign launch sites (by purchase of an appropriate United States launch vehicle). It would not be conditioned on participation in Post-Apollo programs. In the case of launchings from foreign sites, the United States would require assurance that the launch vehicles would not be made available to third parties without prior agreement of the United States.

(3) With respect to European proposals for satellites intended to provide international public telecommunications services, we are prepared to consult with the European Space Conference in advance so as to advise the Conference whether we would support such proposals within Intelsat. In this connection we have undertaken a preliminary analysis of the acceptability of European space segment facilities for international public-telecommunication services separate from those of Intelsat, in terms of the conditions established by Article XIV, and find that the example of a possible operational system of European communication satellites, which was presented during our discussions in February, would appear to cause measurable, but not significant, economic harm to Intelsat. Thus, if this specific proposal were submitted for our consideration, we would expect to support it in Intelsat.

(4) With respect to the financial conditions for reimbursable launch services from U.S. launch sites, European users would be charged on the same basis as comparable non-U.S. Government domestic users.

(5) With respect to the priority and scheduling for launching European payloads at U.S. launch sites, we would deal with these launchings on the same basis as our own. Each launching would be treated in terms of its own requirements and as an individual case. When we know when a payload will become available and what its launch window requirements will be, we would schedule it for that time. We expect that conflicts would rarely arise if at all. If there should be a conflict, we would consult with all interested parties in order to arrive at

an equitable solution. On the basis of our experience in scheduling launchings, we would not expect any loss of time because of such a conflict to be significant.

The United States is considering the timing and manner of public release of this position. Accordingly, it is requested that there be no public disclosure of this position without prior agreement with us.

With regard to Post-Apollo cooperation, as you know, the United States has not yet taken final decisions with respect to its Post-Apollo space programs, nor can we predict with assurance when such decisions will be taken.

With respect to the more detailed questions on Post-Apollo collaboration posed in your letter of March 3, 1971 and in our earlier discussions in September 1970 and February 1971, our views remain broadly as we put them to you in my letter of October 2, 1970 and in our meetings of last September and February. We would much prefer to continue the consideration of such questions in the context of specific possibilities for collaboration rather than in the abstract.

The relationship we are seeking with Europe with respect to Post-Apollo space programs would, we believe, be well served if we can jointly consider the possibilities for collaboration in the context of a broader examination of the content and purposes of the space programs of the late 1970s and 1980s.

Accordingly, we suggest broadening your earlier suggestion for a joint expert group to conduct technical discussions. The purpose of these discussions will include the definition of possible cooperative relationships between Europe and the U.S. in a program of development of the space transportation system, but would be broadened to include an exchange of views regarding the content of space activities in which Europe might wish to participate in the Post-Apollo era. The technical questions relevant to such participation, including the remaining questions raised in your letter of March 3 would be examined as well. The joint group would carry on its activities with no commitment on either side. The U.S. representation would be led by Charles W. Mathews, Deputy Associate Administrator, Office of Manned Space Flight, NASA.

This group could most usefully commence its work after the end of September when the results of NASA's current technical studies of space transportation systems become available.

I trust, Mr. Minister, that this summary of our present views is a helpful response to the matters raised in your letter of March 3. I am pleased to confirm our continuing interest in cooperating with interested European nations in the further exploration and use of space.

Sincerely,

U. Alexis Johnson

Amplifying Comments to Under Secretary Johnson's
Letter to Minister Lefevre of September 1, 1971

In response to inquiries from Europe, the United States has provided amplification and clarification of several specific points in Under Secretary Johnson's letter of September 1, 1971. A summary of these comments follows.

The letter was intended to provide a positive basis of confidence in the availability of U.S. launch assistance and reflects a major effort to accommodate known European views and concerns. This assistance is available independent of any decisions Europe may make on development of its own launch capability.

The use of the phrases "we expect that we would provide launch assistance" and "we would expect to support" in the section of the letter dealing with regional telecommunications satellites (subparagraphs 1(a) and 2) simply recognizes the fact that the U.S. cannot be in the posture of dismissing a priori the views of our INTELSAT partners. These words were not designed to provide a loophole in the offer of launch assistance. Denial of launch assistance, should that be our intention, would be more directly accomplished by denying our support in INTELSAT to the satellite proposal itself.

The reservation in subparagraph 1(b) of the letter concerning "future operational satellite applications which do not have broad international acceptance" is simply a recognition of the fact that we are dealing with a very rapidly developing technology, and that we must necessarily anticipate that applications may emerge, some in areas not yet foreseen, where the international implications of the proposed satellite services are not yet well understood and are not governed by specific international agreements or arrangements. In the absence of such understanding and arrangements, such new applications could create international tensions. For example, on the basis of views already expressed by some European countries and others, it appears that direct TV broadcasting via satellite across international borders might in some circumstances fall in this category.

Subparagraph 1(b) would clearly not cover scientific research satellites or such satellite applications as meteorological satellites, navigation satellites, satellites to provide international public telecommunication services or specialized aeronautical and maritime telecommunication services, and satellites to provide direct TV broadcasting services on the basis of agreed regional arrangements. It is intended to apply only to operational satellite systems which would provide an established, continuing service, not to satellites flown solely for purposes of research and development.

We expect that broad international acceptance of earth

resource surveying by satellite will have been achieved well before such satellites are flown on an operational basis. This use of satellites is still in the experimental stage and, therefore, not subject to the reservation of subparagraph 1(b). Since we are at this early stage in developing this application, we feel that we must consider proposals for launching operational satellites for this purpose as falling within subparagraph 1(b) at the present time.

The references in subparagraph 2 to "U.S. laws" is intended to recognize treaty obligations, such as the Outer Space Treaty, and extant U.S. legislation such as that affecting exports. Since the INTELSAT agreement is not a treaty, it constitutes an international undertaking of the U.S. which is consistent with existing U.S. law but does not create new U.S. law.

CSE/Comité ad hoc(71)18

Annex III

Press Statement; Nov. 1, 1971

Washington, D.C.

The United States has recently informed the European Space Conference that U.S. launch assistance will be available on a purchase basis for those satellite projects which are for peaceful purposes and are consistent with obligations under relevant international agreements and arrangements.

This position, was conveyed to Minister Théo Lefèvre, Chairman of the European Space Conference in a letter from Under Secretary of State for Political Affairs, U. Alexis Johnson. It encompasses launch assistance for satellites for such peaceful purposes as scientific research, meteorology, navigation, telecommunications and specialized aeronautical and maritime services.

In light of the INTELSAT agreement the U.S. position sets forth the conditions under which launch assistance would be available to Europe for satellites intended to provide international public telecommunications services separate from those provided by INTELSAT.

We have also informed the European Space Conference of our agreement to enter into early exploratory technical discussions seeking to define possible European participation in key post-Apollo space programs. The launch position we have now set forth to the European Space Conference does not, however, depend on the nature or extent of any joint efforts on such future space programs.



FOR IMMEDIATE RELEASE

OCTOBER 9, 1972

Office of the White House Press Secretary

THE WHITE HOUSE

The President today announced a policy whereby the United States will provide launch assistance to other countries and international organizations for satellite projects which are for peaceful purposes and are consistent with obligations under relevant international arrangements. Launches will be provided on a non-discriminatory, reimbursable basis.

The President's decision extends to other countries the assurances given to the member states of the European Space Conference in September 1971. These assurances recognize the legitimate interests of European countries in being able to place satellites into space under non-discriminatory conditions. This action was in keeping with the President's recognition of the desirability of mutually beneficial cooperation in space and the importance of such cooperation as a new dimension in the further development of the Atlantic partnership.

Addressing the United Nations General Assembly nearly three years ago, the President noted particularly that "of all of man's great enterprises, none lends itself more logically or more compellingly to international cooperation than the venture into space."

In establishing today a global launch assurance policy, the President affirms the need for a dependable capability which would make it possible for nations to have access under equal conditions to the advantages which accrue through space applications. This global launch assurance policy further manifests United States faith that, in the language of the 1967 Outer Space Treaty, "... the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries... and shall be the province of all mankind."

Office of the White House Press Secretary

THE WHITE HOUSE

FACT SHEET

UNITED STATES POLICY GOVERNING THE PROVISION
OF LAUNCH ASSISTANCE

I. United States launch assistance will be available to interested countries and international organizations for those satellite projects which are for peaceful purposes and are consistent with obligations under relevant international agreements and arrangements, subject only to the following:

- A. With respect to satellites intended to provide international public telecommunications services:
1. The United States will provide appropriate launch assistance for those satellite systems on which Intelsat makes a favorable recommendation in accordance with Article XIV of its definitive arrangements.
 2. If launch assistance is requested in the absence of a favorable recommendation by Intelsat, the United States will provide launch assistance for those systems which the United States had supported within Intelsat so long as the country or international entity requesting the assistance considers in good faith that it has met its relevant obligations under Article XIV of the definitive arrangements.
 3. In those cases where requests for launch assistance are maintained in the absence of a favorable Intelsat recommendation and the United States had not supported the proposed system, the United States will reach a decision on such a request after taking into account the degree to which the proposed system would be modified in the light of the factors which were the basis for the lack of support within Intelsat.
- B. With respect to future operational satellite applications which do not have broad international acceptance, the United States will favorably consider requests for launch assistance when broad international acceptance has been obtained.

II. Such launch assistance will be available, consistent with U.S. laws, either from U.S. launch sites (through the acquisition of U.S. launch services on a cooperative or reimbursable basis) or from foreign launch sites (by purchase of an appropriate U.S. launch vehicle). In the case of launchings from foreign sites the United States will require assurance that the launch vehicles will not be made available to third parties without prior agreement of the United States.

III. With respect to the financial conditions for reimbursable launch services from U.S. launch sites, foreign users will be charged on the same basis as comparable non-U.S. Government domestic users.

IV. With respect to the priority and scheduling for launching foreign payloads at U.S. launch sites, such launchings will be dealt with on the same basis as U.S. launchings. Each launching will be treated in terms of its own requirements and as an individual case. When it becomes known when a payload will become available and what its launch window requirements will be, the launching will be scheduled for that time. Should a conflict arise, the United States will consult with all interested parties in order to arrive at an equitable solution.



MULTILATERAL

Launching of French-German Symphonic Communications Satellites

*Agreement effected by exchanges of notes
Signed at Washington June 21 and 24, 1974;
Entered into force June 21, 1974.*

Translation

EMBASSY OF FRANCE
IN THE UNITED STATES
THE AMBASSADOR

JUNE 21, 1974

MR. SECRETARY:

I have the honor to refer to the services to be furnished by the National Aeronautics and Space Administration (NASA) in connection with the launching of Symphonic satellites pursuant to the contract to be signed between NASA on the one hand and the Centre National d'Etudes Spatiales (CNES) and the Gesellschaft Für Weltraumforschung (GfW) on the other hand.

The French Government and the Government of the Federal Republic of Germany recall that the Symphonic program is essentially an experimental program in the field of telecommunications. However, if the satellites operate satisfactorily, it is possible that the Government of the French Republic or the Government of the Federal Republic of Germany will wish to use them for international public or specialized telecommunications service. For this event the Government of the French Republic and the Government of the Federal Republic of Germany (with reference to the procedure envisaged in Article XVJ (4) of the contract) confirm their intention of fulfilling the obligations contained in the Intelsat Agreement, especially its Article XIV (d), [] and of accepting the recommendations of Intelsat insofar as they apply to the Symphonic program.

Moreover, in such case, the Government of the French Republic and the Government of the Federal Republic of Germany would consult with the Government of the United States with a view to coordinating their positions within the Intelsat bodies.

However, the Government of the French Republic and the Government of the Federal Republic of Germany understand that, in the absence of favorable recommendations from Intelsat, the assurances given by the President of the United States in his statement of October 9, 1972 shall, with appropriate modifications, apply to the decision to use this means of communication for international public telecommunications services.

I should be grateful if you would inform me of the agreement of your Government to the above. I propose that this letter and your reply thereto shall constitute an agreement between the Government of the United States on the one hand and the Government of the French Republic and the Government of the Federal Republic of Germany on the other hand.

I avail myself of this opportunity to renew to you, Mr. Secretary, the assurances of my very high consideration.

J KOSCIUSKO MORIZET
Jacques Kosciusko-Morizet

His Excellency
HENRY KISSINGER,
Secretary of State,
Washington, D.C.

The Secretary of State to the French Ambassador

JUNE 24, 1974

EXCELLENCY:

I have the honor to acknowledge receipt of your note of June 21, 1974, on the subject of the services to be furnished by NASA for the launching of the French-German Symphonic Satellites, and the corresponding note from the Government of the Federal Republic of Germany.

The Government of the United States of America is agreeable to the provisions of those notes and confirms that your note and that of the Federal Republic of Germany, and this note in reply, constitute an agreement on this matter between the Government of the United States of America on one hand and the Governments of the French Republic and of the Federal Republic of Germany on the other.

Accept, Excellency, the renewed assurances of my highest considerations.

For the Secretary of State:

HERMAN POLLACK

His Excellency

JACQUES KOSCIUSKO-MORIZET,
Ambassador of France.

Translation

EMBASSY OF THE
FEDERAL REPUBLIC OF GERMANY
WASHINGTON, D.C.

JUNE 21, 1974

EXCELLENCY:

I have the honor to refer to the services to be furnished by the National Aeronautics and Space Administration (NASA) in connection with the launching of Symphonic satellites pursuant to the contract to be signed between the Centre National d'Etudes Spatiales (CNES) and the Gesellschaft Für Weltraumforschung (GfW) on the one hand and NASA on the other hand.

The Government of the Federal Republic of Germany and the French Government wish to note that the Symphonic program is essentially an experimental program in the field of telecommunications. However, if the satellites operate satisfactorily, it is possible that the Government of the Federal Republic of Germany or the Government of the French Republic will wish to use them for international public or specialized telecommunications service. For this event the Government of the Federal Republic of Germany and the Government of the French Republic (with reference to the procedure envisaged in Article XVI (4) of the contract) confirm their intention of fulfilling the obligations contained in the Intelsat Agreement, especially its Article XIV (d), and of accepting the recommendations of Intelsat insofar as they apply to the Symphonic program.

Moreover, in such case, the Government of the Federal Republic of Germany and the Government of the French Republic would consult with the Government of the United States with a view to coordinating their positions within the Intelsat bodies.

However, the Government of the Federal Republic of Germany and the Government of the French Republic understand that, in the absence of favorable recommendations from Intelsat, the assurances given by the President of the United States in his statement of October 9, 1972, shall, with appropriate modifications, apply to the decision to use this means of communication for international public telecommunications services.

I should be grateful if you would inform me of the agreement of your Government to the above. I propose that this letter and your reply thereto shall constitute an agreement between the Government of the Federal Republic of Germany and the Government of the French Republic on the one hand and the Government of the United States on the other hand.

Accept, Mr. Secretary, the assurances of my highest consideration.

HANS H. NOEBEL

Hans H. Noebel
Minister

His Excellency

HENRY KISSINGER,
*Secretary of State of the
United States of America,*

The Secretary of State to the German Ambassador

JUNE 24, 1974

EXCELLENCY:

I have the honor to acknowledge receipt of your note of June 21, 1974, on the subject of the services to be furnished by NASA for the launching of the French-German Symphonic Satellites, and the corresponding note from the Government of the French Republic.

The Government of the United States of America is agreeable to the provisions of those notes and confirms that your note and that of the French Republic, and this note in reply, constitute an agreement on this matter between the Government of the United States of America on one hand and the Governments of the Federal Republic of Germany and of the French Republic on the other.

Accept, Excellency, the renewed assurances of my highest consideration.

For the Secretary of State:

HERMAN POLLACK

His Excellency

BERNDT VON STADEN,
*Ambassador of the
Federal Republic of Germany.*

European Space Agency
Agence spatiale européenne

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