



# Assembly of Western European Union

DOCUMENT 1454

2nd May 1995

**FORTIETH ORDINARY SESSION**

**(Third Part)**

## Towards a European space-based observation system

**REPORT**

submitted on behalf of the Technological and Aerospace Committee  
by Mr. Lenzer and Mr. Valleix, Co-rapporteurs



*Towards a European space-based observation system*

---

**REPORT** <sup>1</sup>

*submitted on behalf of the  
Technological and Aerospace Committee* <sup>2</sup>  
*by Mr. Lenzer and Mr. Valleix, Co-rapporteurs*

---

TABLE OF CONTENTS

DRAFT RECOMMENDATION

on a European space-based observation system

EXPLANATORY MEMORANDUM

submitted by Mr. Lenzer and Mr. Valleix, Co-rapporteurs

- I. Introduction
- II. The strategic dimension
- III. The technological and industrial dimension
- IV. Achievement, costs, timetable and operation of the system
- V. Conclusions

APPENDICES

- I. Potential European earth observation system
- II. System architecture
- III. Basis for cost calculation in rough order of magnitude (Mecu)
- IV. Programme cost profile

---

1. Adopted unanimously by the committee.

2. *Members of the committee:* Mr. *López Henares* (Chairman); Mr. *Lenzer* (Vice-Chairman); MM. *Arata*, *Atkinson*, *Biefnot*, *Blaauw*, Mrs. *Blunck*, MM. *Coviello*, *Curto*, *Feldmann*, Mrs. *Gelderblom-Lankhout*, Mrs. *Guirado*, MM. *Jeambrun*, *Le Grand*, *Litherland* (Alternate: *Sir Dudley Smith*), *Lorenzi*, *Magginas*, *Marshall* (Alternate: *Alexander*), *Mitolo*, *Palacios*, *Poças Santos*, *Probst* (Alternate: *Kriedner*), *Roger*, *Sarens*, *Sofoulis*, *Theis*, *Sir Donald Thompson*, Mr. *Valleix*.

*Associate member:* Mrs. *Jørgensen*.

N.B. *The names of those taking part in the vote are printed in italics.*

*Draft Recommendation*

*on a European space-based observation system*

The Assembly,

- (i) Taking account of the fundamental importance of space in a global strategic concept of security in Europe;
- (ii) Stressing that space-based observation means are an essential and indispensable part of the European security and defence policy;
- (iii) Believing therefore that Europe must equip itself as soon as possible with a space-based observation system that is both autonomous and interdependent;
- (iv) Believing that Europe has the necessary technological and industrial capability to establish such a system;
- (v) Considering that the military use of space-based means is a global operation, the various parts of which cannot remain separated;
- (vi) Renewing its congratulations to the industrial consortium for its feasibility studies of the main system and the study management team for assessing these studies;
- (vii) Congratulating also the space research institutes of the various member countries of WEU on their outstanding contribution to these studies;
- (viii) Taking account, nevertheless, of the difficulties that will inevitably be encountered in creating this system, connected mainly with the cost, implementation and use;
- (ix) Taking into consideration the various options available in deciding to create this system, which may be summarised as follows:
  - (a) an independent WEU system;
  - (b) a system based on work already carried out (Helios I);
  - (c) the continuation, pure and simple, of the present work of the Satellite Centre in image acquisition and interpretation;
- (x) Considering that the first of these solutions is technologically achievable but very costly, and that the third in no way meets Europe's need to have independent space-based information means, which are essential for its security and defence and, in consequence, for the exercise of its sovereignty;
- (xi) Considering that the second solution seems to be the most pragmatic and easiest to implement, since it will draw on efforts already made and experience gained from co-operation which has proved viable and fruitful (Helios I) and is, additionally, the least costly;
- (xii) Welcoming the prospects for a significant participation in the Helios II programme by Germany, Italy and Spain, alongside France;
- (xiii) Conscious nevertheless of the many difficulties linked to participation in the financing and industrial production of the system and its use which must be resolved in order to develop, produce and exploit the system;
- (xiv) Recognising, moreover, that discussions should be started with the United States and possibly other countries on the possibility of co-operation in early warning and antimissile defence systems;
- (xv) Taking account, finally, of the overriding need for the Torrejón Satellite Centre to be given permanent status,

## RECOMMENDS THAT THE COUNCIL

1. Immediately take the measures necessary to make the Torrejón Satellite Centre permanent and make provision for the budgetary means necessary for making use of the most satisfactory satellite images;
2. Seek agreement with the countries deciding to participate in the Helios and Osiris programmes for facilitating implementation of these programmes and associating other member countries, integrating them progressively into WEU's activities and, to this end, requesting participant countries to open up these programmes to their WEU partners;
3. Task the Space Group with studying the integration of these programmes into WEU's activities and invite the intelligence section of the Planning Cell, as soon as it is set up, to give its opinion on problems connected with the use of the system;
4. Conduct the necessary studies on a European early warning and antimissile defence system and foster co-operation with the United States and, as necessary, with other partners pursuing aims similar to those of WEU in these areas.

## *Explanatory Memorandum*

*(submitted by Mr. Lenzer and Mr. Valleix, Co-rapporteurs)*

### *I. Introduction*

1. Assembly Documents 1304 (1992), 1393 (1993), 1436 (1994) and 1437 (1994) studied in depth an aspect that is clearly fundamental to the future common European security policy and hence to a European defence policy: the creation of a European space-based observation system.
2. These documents surveyed the activities of the WEU Council in space matters, analysed the consequences of the evolution of the international situation on setting up a European space-based observation system, its strategic importance, the different tasks such a system would have to accomplish, the challenges which had to be met and Europe's technological and industrial capability for undertaking a project of this dimension; they also analysed current and future military space programmes and studied the activities of national space research institutes, the possibility of co-operation between the latter (Document 1434) and the different possibilities for space co-operation in Europe and the expediency of participation from outside Europe in this area.
3. Finally, the Technological and Aerospace Committee organised colloquies on these same subjects over recent years which brought together the players essential for implementing such projects, in order to enable them to present their respective positions and different interests, needs and difficulties, and to discuss them.
4. A single conviction has been the inspiration for all these initiatives: namely that such a project required a rigorous and in-depth study of the strategic, technical, industrial and financial problems that it raised and that once these problems had been examined and resolved a firm and tenacious political will was necessary in order finally to achieve the system.
5. The colloquy organised recently by our committee (on 24th and 25th March 1995) in San Agustin, Gran Canaria, under the same title as the present report, represented a synthesis of work carried out to date in order to be able to present a range of information, considerations and conclusions to the WEU Council that might help the WEU defence ministers to take the best decision on the creation of a European space-based observation system – a decision which is to be taken in the coming months.
6. The present report also seeks to make a realistic and pragmatic summary of the speeches

and debates at San Agustin, avoiding, insofar as possible, any further mention of data given in previous reports. Moreover, your Rapporteurs will draw the conclusions and formulate recommendations in the best interests of Europe so that the future European security and defence policy will have the instrument essential to achieve its objectives: a European space-based observation system.

### *II. The strategic dimension*

7. If the fall of the Soviet empire put an end to certain risks and threats hovering over Europe's existence, it nevertheless gave rise to a whole range of factors of instability that might have considerable repercussions on our security: widespread political and economic crises, ethnic and border conflicts due to nationalist extremism, massive immigration with unpredictable repercussions, extreme deterioration of the environment, the emergence of powerful mafias frequently linked to trafficking in drugs and/or armaments and nuclear materials creating a real risk of armaments proliferation, particularly of ballistic missile systems etc. Besides and at times precisely because of these problems we are faced with numerous regional conflicts and risk factors with direct and far-reaching repercussions on Europe's security, such as for example the conflict raging in former Yugoslavia, the aftermath of the war between Iraq and Kuwait, the Middle East situation still far from a final and satisfactory solution, the Kurdish problem and the civil war that is rife in many regions of Africa (Rwanda, Burundi, Somalia, Sudan...).
8. Of particular concern to Europe is the situation on the southern flank of the Mediterranean where religious fundamentalism could have dire consequences for the future of certain countries and their peoples. The evolution of this situation is of major importance to Europe which it would be suicidal to underestimate. In this connection one might recall the lessons drawn from the colloquy organised by our Committee in Rome in 1993, on an anti-missile defence for Europe.
9. The foregoing considerations lead us to think that a European space-based observation system (the need for which is proving to be most urgent) capable of providing real time information gathered from all over the world, is an essential element in guaranteeing Europe's security and a

basic tool for developing a European defence policy; it would permit verification of treaties on disarmament, control over armaments proliferation, conflict prevention and monitoring and protection of the environment.

10. It has already been said (Document 1435) that space-based observation should merely be one stage in a comprehensive system that would also include early warning and anti-missile defence. This will be taken up later in regard to the possibilities for co-operation outside Europe in the development of such systems.

11. The United States and Russia already have space-based observation means, which are an essential aspect of the exercise of their sovereignty. It seems that it is now time for Europe too to obtain means of its own, enabling it to assert its sovereignty and independently to strengthen its presence on the international scene and play an active part in world security and the defence of the values it deems to be essential.

12. The experience of the war between Iraq and Kuwait and the conflict being waged in former Yugoslavia have recently served to highlight both the value of information obtained from space-based observation and the virtual monopoly of the United States in this area and consequently Europe's inability to act on the basis of its own sources of information. In short, Europe must acquire independent information means enabling it to play its full part alongside its allies with all the facts at its disposal.

13. The press communiqué released by the Assembly on 11th November 1994, at a time when rumours were circulating to the effect that the United States was about to stop implementing the United Nations embargo on the supply of arms to Bosnia-Herzegovina, accurately summarises certain arguments developed earlier. This states:

“ Commenting on reports that the United States authorities were likely to cease applying the United Nations embargo on arms supplies to Bosnia-Herzegovina, the President of the Western European Union Assembly, Sir Dudley Smith, M.P., today expressed the hope that the WEU Council of Ministers, scheduled to meet in Noordwijk (the Netherlands) on Monday 14th November, would act urgently to counter the various potential problems posed.

The United States dominates the NATO command structure in the Adriatic area and the withdrawal of United States ships and aircraft would make a mockery of the embargo operations. WEU must be ready to fill the breach and respond to the challenge”, said Sir Dudley.

This example also proves just how much Europe needs to be autonomous where intelligence gathering, satellite reconnaissance and logistic support are concerned.”

Subsequent events have merely confirmed the above fears.

14. In short, it emerges clearly that, on the one hand Europe's rôle in terms of world security can be neither understood nor guaranteed if it does not have the necessary space-based means to accomplish its task, and, furthermore, if its dependence on foreign means, even those of our allies, continues, such dependence can only prevent Europe from playing its part in the management of world peace and security and will consequently lead to a loss of the political weight that it should rightly have in the international scene.

15. Recently, at a conference held at the Royal Institute for International Affairs (9th February 1995) on “ Western European Union: myth and reality”, the WEU Secretary-General, Mr. Cutileiro stated:

“ All of the above is being attempted and if I have not misjudged the attitude of governments of WEU member states, we are on track and will make progress. But even if everything goes well, WEU will still need an armaments policy and a space policy if it is to become a strong enough European pillar of the alliance and a strong enough instrument of defence of the European Union. In conventional defence, Europe's two glaring shortcomings are the lack of transport systems and the lack of satellite intelligence. To correct these deficiencies, political will has not always been there: money has seldom been there. Attitudes are changing, efforts are being made but it is a long haul.”

16. Your Rapporteurs are convinced that giving WEU space-based means is part of the reality that our organisation has to deal with from now on; the latter must be persuaded that the need for such an observation system must lead us to overcome the major difficulties involved in creating it. These difficulties need to be faced in a practical and realistic way, but also, and this is essential, with a firm and resolute political will.

### *III. The technological and industrial dimension*

17. The colloquy held recently in San Agustin served inter alia to confirm what we already knew: Europe has the technological and industrial resources to meet the challenge of building an independent space-based observation system. If a problem exists at all in this area it is that of excess

industrial capacity, as the General Rapporteur, Mr. Rabault (Director of Missiles and Space, DGA (national procurement directorate), France, noted in his conclusions to the colloquy.

18. Indeed, Documents 1393, 1434 and 1436, mentioned previously, examine at great length Europe's technological and industrial capability to achieve a space-based observation system.

19. This capability is by no means theoretical, it is very real. It has been acquired and strengthened through the various national space programmes and, more particularly, the programmes of the European Space Agency (ESA).

20. Industry's ability to meet the challenge of space is matched by its long experience of co-operation, not only in the framework of ESA programmes but also other programmes, the most appropriate example of which is Helios I, the French, Italian and Spanish joint programme which laid the foundations for military space programmes.

21. France has a leading position among the space industries of Europe and the experiences of Germany, Italy and the United Kingdom are in some areas complementary to it. Spain, the Netherlands and Belgium also have proven space industries which are perfectly capable of contributing to the European space programme. This programme is a prime factor for European political integration and plays a part in strengthening and promoting European industry. Moreover this space-based system will have spin-off in the civilian sector in the form of experiments and capabilities that can find application there.

#### ***IV. Achievement, costs, timetable and operation of the system***

22. Once it is admitted that Europe has a strategic need for an independent space-based observation system, built by Europeans using European technology and since, moreover – as noted previously – such an enterprise would be a factor of political integration, consolidation and industrial expansion, a stage is reached where several questions need to be answered: what will be the costs of the operation, which partners are to be involved and what will be the time-scale?

23. One of the main reasons for co-operating in developing such a system is obviously to share costs. At present it would be difficult for a single country to bear the financial burden alone.

24. As was observed correctly at the San Agustin colloquy, space systems are no more expensive than other defence systems. We need only consider spending in recent years by our respective countries on fighter aircraft to be convinced of this fact. Moreover, space-based systems serve a

whole range of countries, for which they provide cover, in this case, those belonging to WEU: these are ultimately, therefore, multinational defence systems.

25. The tables appended to the present report illustrate certain considerations raised in this chapter. Your Rapporteurs are unfortunately not in a position to provide more detailed information owing to the confidential nature of the studies undertaken on the feasibility of the system.

26. It would be logical to assume that all WEU members would participate financially in the system, as all would benefit from it. It would be desirable for the criteria that currently apply to member countries' contributions to the WEU budget to be taken as a basis, but, however this may be, flexibility should be the guiding principle so that all member countries are able to participate. The wish to take part in the programme should not be used as a reference, nor should the programme be delayed because a member is not participating. Technological and industrial participation in achieving the system is another matter. It would then be appropriate, as far as possible, for industrial profits to be shared in proportion to the technological and industrial capabilities of each country but such sharing must not lead to the technological level being lowered or to perceptible financial increases.

27. Shared use of the system is a major difficulty but one that is not insoluble. It is in fact a matter of harmonising the various national information needs – obviously a very sensitive area.

28. The experience gained with Helios I will be taken into account and in any event specific determination of standards to be adopted will be an additional means of European integration and undeniably a stimulus to the development of a European security and defence policy.

29. The WEU Planning Cell and its intelligence section will be able to make their opinions known through relevant studies and assessments.

30. The projected timetable for the system should be adhered to as closely as possible. Any delay in decisions and hence in implementation will only increase the difficulties and discrepancies between budget forecasts and actual costs. It is clear that many questions arising out of the foregoing chapter cannot yet be answered specifically and that a joint effort is required to reach solutions that are satisfactory all round. The means of attaining such solutions exist provided we are convinced that the system is necessary for Europe's security and defence and from that conviction proceeds the determination to achieve it, followed by the corresponding political decision.



## V. Conclusions

31. In the second part of the fortieth annual report of the Council to the Assembly covering the activities of the second half of 1994, in the section on the work of the Space Group, mention is made of a series of proposals which are to be submitted to the ministers at the meeting of the Council to be held in May 1995.

32. The report states that the Satellite Centre will be able to continue its activities until the end of 1995 without funding in addition to that originally granted for the experimental phase; also that by the beginning of 1995, the Centre's output will already be sufficient to evaluate its operational capabilities.

33. It is to be hoped that the Council will reach a decision rapidly on the Centre becoming permanent, making it possible for it to develop its work under normal conditions, without the difficulties of temporary status. As to the subject-matter of the present report, the annual report notes that the Space Group has been tasked to prepare a proposal accompanied by a draft memorandum of understanding between present WEU member states (i.e. the nine) for a decision by the Council of Ministers in May 1995.

34. Moreover, the Space Group has created two working groups: an Organising Working Group (programme management and organisational aspects) and a Technical Working Group with the task of elaborating "the system requirements and the choice of system options, taking account of the final report by the Study Management Team".

35. These working groups might recommend that the Space Group carry out further studies if they consider it necessary.

36. There is every reason to think that no decision will be reached in May, first, because there is a wish to know beforehand the result of the negotiations between France and Germany on the latter's participation in Helios II and to be informed of the possibility of general agreement between the two countries on optical and radar space observation programmes; second, because other countries have not yet clearly identified their needs in relation to the system and last, because one country, without entirely closing the door on the creation of a system of observation by satellite, is opening it so little as virtually to prevent its establishment.

37. The three options available in connection with the European space-based observation system are as follows:

- (i) an independent WEU system;
- (ii) a system which would take advantage of existing efforts (mainly Helios);

(iii) continuation of the activities of the Satellite Centre as pursued to date, in other words image acquisition and processing.

38. The first of these options, and the most ambitious, at present seems the least realistic, mainly on account of cost; financial aspects are in fact the prime consideration put forward by all countries when it comes to deciding whether to go ahead with a satellite system.

39. The third option would continue to leave Europe without the independent information capability it needs for its security and defence and hence its sovereignty. This option would provide no satisfactory answer to the various arguments we have put forward so far to demonstrate Europe's need for an independent space-based observation capability.

40. These various considerations have led your Rapporteurs to conclude that the second option seems the most realistic, the most easily achievable and hence the most desirable.

41. Indeed, the Helios I programme would offer substantial experience of pooling operational requirements. In a few months the system will be operational and will begin to supply images to the Torrejón Satellite Centre under agreements reached between WEU and the three countries that have participated in developing and producing the system: France, Italy and Spain. The practical details of this agreement of principle are now being studied and the results will also constitute valuable experience which will be useful if the decision finally adopted by the ministers allows advantage to be taken of work already completed or in progress.

42. The Helios II programme will combine infra-red and optical technology: Osiris, another French programme, covers radar satellites capable of twenty-four hour, all-weather operations. France has invited Germany to take part in these projects in conditions which are the subject of present and future discussions and negotiations. Italy and Spain, for their part, have let it be known that a commitment by Germany to these programmes might lead them to reconsider their present position, namely their refusal to participate in Helios II, mainly for financial reasons.

43. Estimates for options (i) (WEU's own system) and (ii) (use of programmes in the process of completion or development) as illustrated in Table V appended to the present report show lower costs for option (ii). Agreement between France and Germany (whose radar satellite technology is very advanced) would be a decisive factor in obtaining backing for the proposal of your Rapporteurs.

44. There are many questions that a decision of the kind we are proposing here might raise in terms of financial participation, system users (WEU or WEU and individual countries?), industrial involvement (which should combine efficiency and national industrial interests while taking account of the fact that fair return has a more political than industrial dimension and is a very effective means of achieving European integration) and the most desirable course to be followed (an international executive agency, a WEU space agency?) etc.

45. Apart from the problems outlined above, a major hurdle has to be overcome: the Helios system is not a development that can be publicly unveiled. The difficulties raised by its integration into WEU structures will be greater than those encountered over the supply of Helios images to the Torrejón Satellite Centre: while an image is a finished product, a system is a far more complex whole which needs to be brought out into the open so that it can be sold to third parties.

46. Your Rapporteurs have no intention of supplying answers to all the problems raised; these answers should proceed from rigorous analysis and negotiations in the framework of the WEU Council. In our view, the aim of this report should, first and foremost, be to promote the establishment of a space-based observation system and then to ensure that a decision is taken in favour of the option we feel is most in conformity with the interests of Europe and the most realistic from a technological and financial point of view. We also hope that the chosen solution will obtain the necessary consensus and allow participation by all WEU member countries.

47. Europe must acquire an independent space-based observation system, but clearly, at the same time, it must establish close co-operation in this area with the United States and Russia, for we feel it is necessary for the various systems to be complementary and, in short, as the General Rapporteur of the San Agustín colloquy, Mr. Rabault (Director of Missiles and Space, DGA) put it, to marry autonomy and interdependence.

48. Moreover, our Assembly has on other occasions spoken out strongly in favour of intensive co-operation with our American allies on early warning and anti-missile defence systems. Collaboration with our transatlantic allies, and possibly with Russia, should, in our opinion, therefore be undertaken under the conditions referred to earlier.

49. On 6th February 1995, at the meeting between the Presidential Committee of our Assembly and the Secretary-General of WEU, Mr. Cutileiro, answering a question put to him by

the Chairman of the Technological and Aerospace Committee, Mr. López Henares, stressed that the establishment of a European space-based observation capability was still a very long way off.

50. The French Prime Minister, Mr. Balladur, addressing the Assembly on 30th November 1994, stated for his part:

“ This is an operational, technological and industrial project which will emancipate Europe in some measure in the matter of space reconnaissance. I say emancipate deliberately. I discussed the subject yesterday evening and as late as this morning with Chancellor Kohl at the Franco-German summit just held in Bonn. I have every hope that here too the determination of our two countries will enable Europe to take a further step towards equipping itself with the operational resources that it lacks. ”

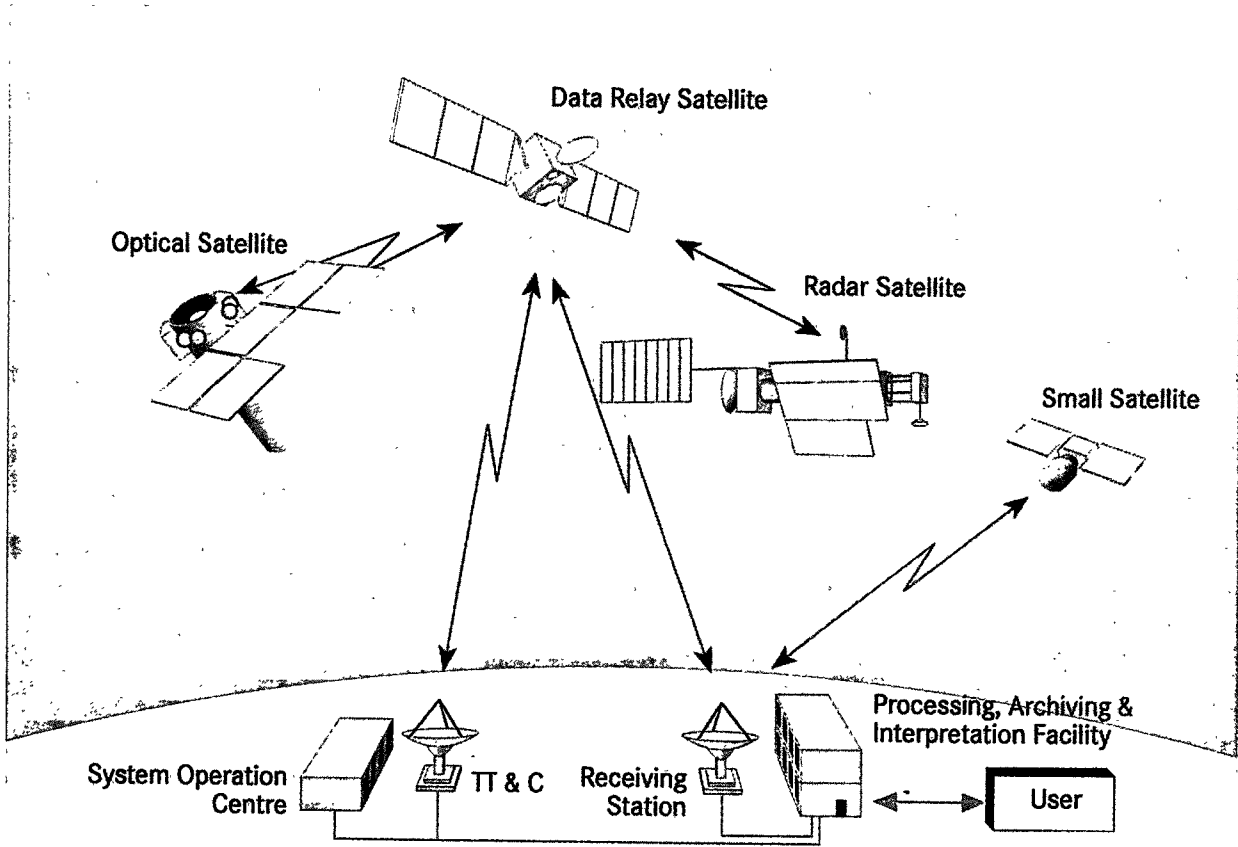
51. Finally one might recall the remarks of the German Minister for Foreign Affairs, Mr. Kinkel, at the Koenigswinter conference which periodically brings together senior German and United Kingdom officials. At the conference held last March, Mr. Kinkel, recalling the particular interest the Franco-German partnership holds for his country, for historical reasons, invited the United Kingdom, together with France and Germany, to build a Europe close to its citizens, competitive and ready for action. Referring to the CFSP, Mr. Kinkel felt that majority decisions should not be taboo in the areas that relate to it.

52. In conclusion, your Rapporteurs would first state their wish to see all WEU member countries participate in establishing a European space-based observation system based on the option they consider most appropriate and to which they have just referred. Second, they wish to emphasise that it does not seem reasonable to perpetuate the present situation where the rhythm of the decision-making process is imposed by those who wish to progress the most slowly or who want purely and simply to call a halt. Third, in the absence of a joint decision, it would be necessary initially to foresee launching a project involving the four countries that envisage co-operating in Helios, followed by participation by all member countries in the next generation of the system, around 2005. Meanwhile, the meeting point for all concerned would be the Torrejón Satellite Centre.

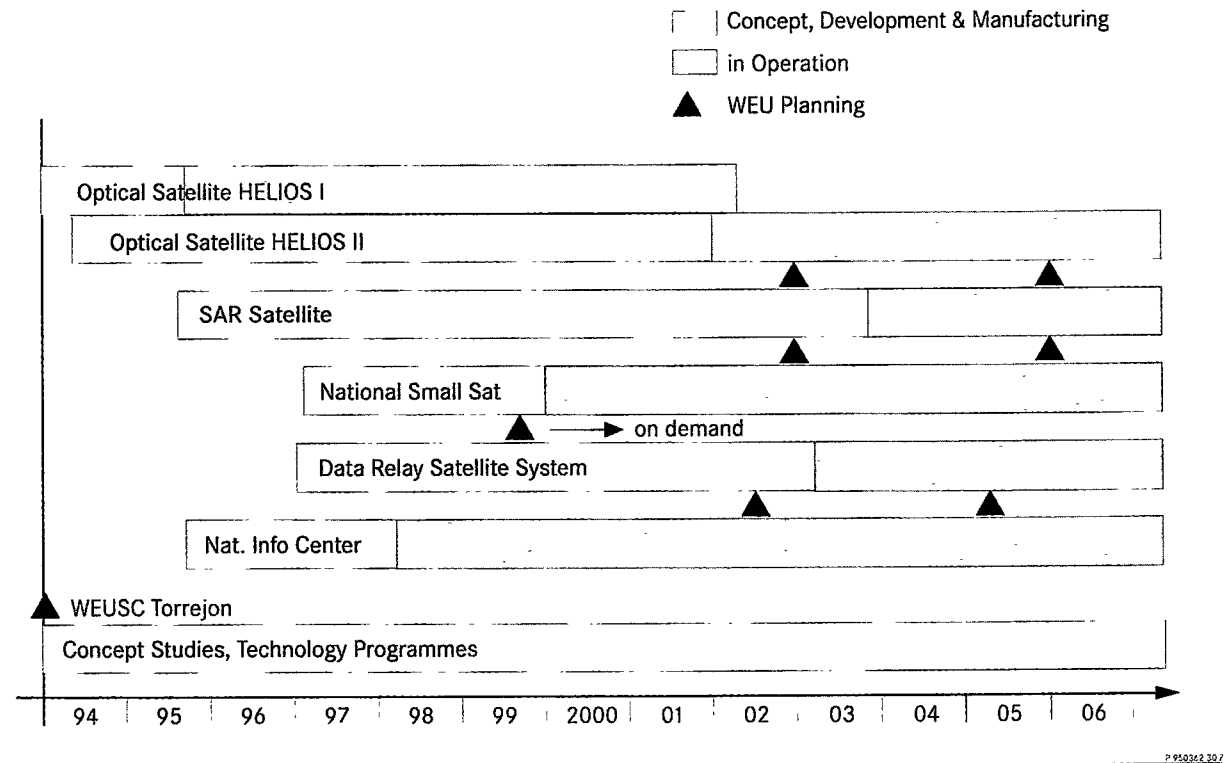
53. Political will has already been shown by the creation of the Satellite Centre, but this work has to be completed. All that is still lacking is the political will that must be expressed without further delay, since all other difficulties can be resolved, as we feel we have shown in our various reports on this subject.

APPENDIX I

*Potential European earth observation system*



## APPENDIX II

*System architecture*

Elements	Capabilities	Performance
<b>1 Optical Satellite</b> <input type="checkbox"/> Panchromatic – Close look – Survey mode <input type="checkbox"/> Ancillary options – IR/TIR – Stereo	<input type="checkbox"/> Global reference information <input type="checkbox"/> Crisis indicators (change detection) <input type="checkbox"/> Mapping for out of region/out of area interventions <input type="checkbox"/> Signatures, terrain profiles	Spatial resolution < 1 m close look mode < 10 m survey mode < 2 m height resolution (stereo)
<b>2 SAR Satellite</b> <input type="checkbox"/> S-/X-band – Close look – Survey mode	All-weather capability, day & night, additional (SAR-) signatures	< 3 m close look < 10 m survey mode
<b>3 DRS/SATCOM</b>	DRS for real-time capability combination with MILSATCOM to be clarified	Data transmission > 500 Mb/sec
<b>4 Ground station(s)</b>	Operation of satellites, mission-planning and near real-time processing and interpretation	Access time (data availability) < 2.5 hrs
<b>5 Supplementary Small Satellites</b>	Complementary element in times of crisis and/or for specific tasks	Spatial resolution ≤ 3 m

## APPENDIX III

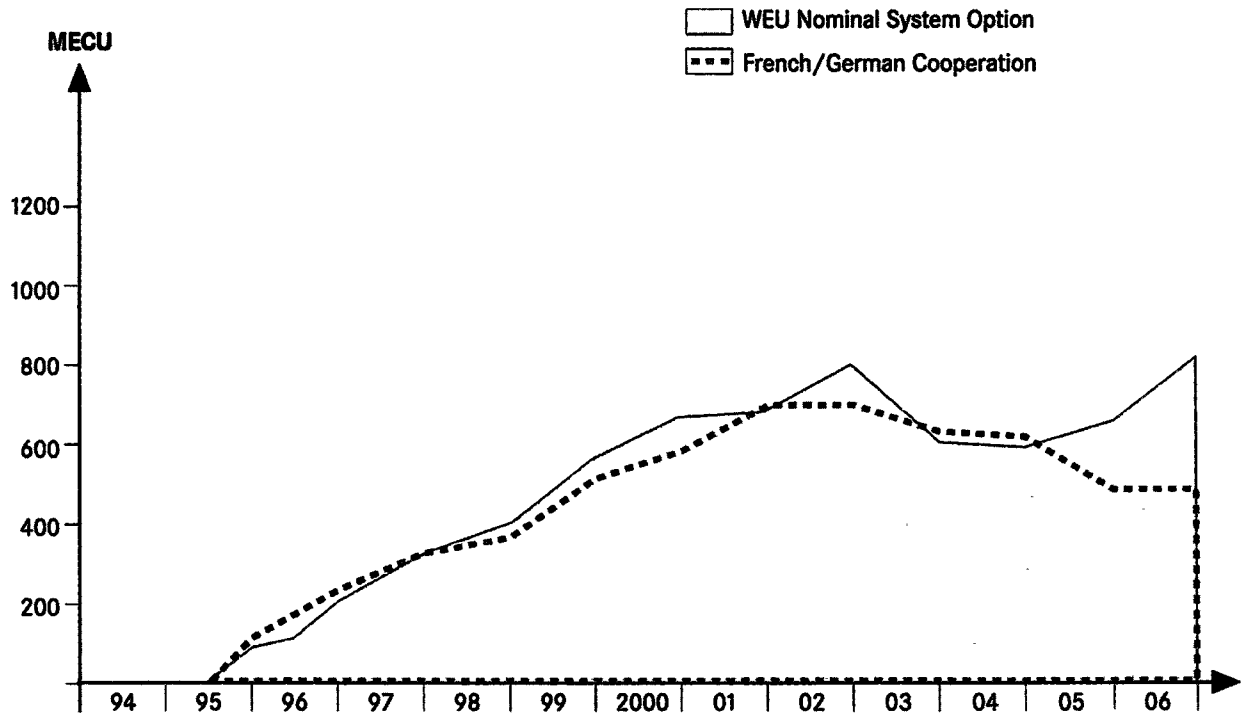
*Basis for cost calculation in rough order of magnitude  
(MECU)***WEU system proposal**

2 optical satellites in orbit  
2 SAR satellites in orbit  
2 DRS in orbit  
Small satellites on demand  
TT & C  
1 system operation centre  
1 mission control centre  
1 central PAIF


**French/German co-operation**

2 optical satellites in orbit  
2 SAR satellites in orbit  
1 DRS in orbit  
– none foreseen  
TT & C  
2 system operation centres  
1 mission control centres  
National PAIF (not included in the cost figure)

## APPENDIX IV

*Programme cost profile**Economic conditions 1993*

---

IMPRIMERIE  ALENÇONNAISE  
Rue Édouard-Belin 2<sup>e</sup> trimestre 1995  
N° d'ordre 35687

---

PRINTED IN FRANCE



