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The Euclid programme and cooperation between European defence electronics industries

REPORT

submitted on behalf of the Technological and Aerospace Committee
by Mr López Henares, Chairman and Rapporteur

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between European defence electronics industries*

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1. Adopted unanimously by the committee.

2. *Members of the committee:* Mr López Henares (Chairman); MM Lenzer, *Marshall* (Vice-Chairmen); Mrs Aguiar, MM Arata (Alternate: *Serra*), Mr Atkinson (Alternate: *Sir Dudley Smith*), Mrs Blunck, Mr Cherribi, *Sir John Cope*, MM Coviello, Curto, Mrs Durrieu, Mr Feldmann, Mrs Gelderblom-Lankhout, *Mrs Guirado*, MM Jeambrun, *Le Grand*, Litherland (Alternate: *Alexander*), MM *Lorenzi*, *Luis*, Magginas, Nania, Nothomb (Alternate: *Weyts*), MM. Palacios, Probst, Sofoulis, *Staes*, Theis, *Valleix*. Associate members. Mrs *Joergensen*, MM *Demiralp*, Kilic (Alternate: *Yurur*).

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

Draft Recommendation

*on the Euclid programme and cooperation between
European defence electronics industries*

The Assembly,

- (i) Considering that the new political and military realities facing its member countries oblige them to undertake a thorough restructuring of their armed forces, which implies a considerable reduction in their strength;
- (ii) Noting that this situation requires the rapid development of increasingly sophisticated arms systems for armies that are constantly becoming smaller;
- (iii) Noting that the result is a preponderance of quality over quantity, which implies above all else the enhancement of new technologies;
- (iv) Considering that such enhancement requires a greater effort to be made in cooperation ventures and in research and development;
- (v) Noting that the main area of application of the new technologies is that of defence electronics;
- (vi) Considering that its member countries must make the best possible use of their resources and capabilities through cooperation and unreserved support, whether in the public or private sector, for research and development activities;
- (vii) Taking into account also the fact that the defence industries of the European countries generally depend on their respective governments as regards both purchases and rules on exports;
- (viii) Noting in addition that the domestic markets open to those industries are small and that public funding for research is inadequate, while the situation prevailing in the United States defence industry is quite the reverse;
- (ix) Giving due consideration to the existence of the Euclid programme, the only European military cooperation programme in the field of research and development;
- (x) Recalling that the objectives of Euclid are to optimise the use of European resources allocated to research and development and facilitate cooperation on equipment procurement programmes;
- (xi) Welcoming the creation of the Euclid Research Cell whose objective is to improve the programme's output, in particular by promoting the activities of the CEPA Steering Committees, speeding up the process for the approval of contracts and setting up a centralised legal service for the award of such contracts;
- (xii) Deeming therefore that the Euclid programme and Research Cell constitute an appropriate framework for activities but that it is clearly necessary to exploit to the full the possibilities they offer and resolve the problems besetting them;
- (xiii) Aware that in order to achieve that objective, the member states will above all else have to demonstrate unflinching political resolve;
- (xiv) Anticipating a reply from the Council to Recommendation 584, with particular reference to Panel II and in general with regard to the Euclid programme,

RECOMMENDS THAT THE COUNCIL

1. Apply to the Euclid programme an overall strategy for the medium and long term that is based on technological forecasts while taking account of military operational requirements and those new technologies that are most promising from the commercial viewpoint;
2. Request the governments to draw up budget forecasts for the Euclid programme in multi-annual slices and, in any event, at least one year in advance;
3. Ensure that the governments increase their financial contributions to the Euclid programme both in absolute terms and as a percentage of their participation compared with that of industry;
4. Endeavour to reactivate the RTPs that are at present dormant;

5. Study ways of introducing a measure of flexibility in the rules on industrial property rights so as to relax the requirements imposed on firms taking part in the programme;
6. Set up a register of European industrial establishments working in the defence sector which, by providing an inventory of technologies, products and systems, would lead to the creation of efficient consortia;
7. Seek ways of associating civil and military research projects with common technological objectives;
8. Take the steps necessary to ensure that the Euclid programme pays more attention to information systems for commanding and using information technologies;
9. Increase publicity activities and transparency in information circulated, and promote better links between the CEPAs.

Explanatory Memorandum

(submitted by Mr López Henares, Chairman and Rapporteur)

I. Introduction

1. In order to meet today's new political and military challenges in what is an unstable economic situation, armies in western Europe are engaged in the task of restructuring and reducing their military forces. The restructuring process also affects armaments systems, particularly in the light of the lessons learnt during the Gulf war. These changes are occurring in parallel with reductions in defence budgets, which are very extensive in some cases and even draconian in others.

2. A whole series of factors is therefore involved, many of which are interconnected with some even stemming from others. They include détente, disarmament, defence budget reductions, etc. and the overall impact on the defence industry is a very serious one.

3. All these factors have led to the development of increasingly sophisticated arms systems given that the armies using them are constantly shrinking in size. In fact, quantity is being replaced by quality or, in other words, the objective being sought is mainly that of enhancing new technologies, which presupposes more work at the research and development stage.

4. All the experts agree that in view of the lessons learnt during the Gulf war, as mentioned above, the fields of application of such technologies should mainly be limited to antimissile defence, space-based surveillance, high-precision guided weapons, the identification of mobile targets and the command systems for the conduct of campaigns and intelligence operations in real time¹; all these technologies are the preserve of the defence electronics industry.

5. Therefore, at a time when the defence industries in general are going through a difficult period, there is a glimpse of a promising future for defence electronics, particularly in western European countries, provided they can make the proper use of the resources and capacities available, mainly through cooperation and by providing strong and determined support for research and development in both the public and private sectors.

6. In addition, your Rapporteur wishes to point out that the report by Mrs Guirado and Lord

Dundee on "WEAG: the course to be followed" (Document 1483), adopted by the Technological and Aerospace Committee on 6 November 1995, has already made a detailed study of WEAG Panel II and the Euclid programme and of the problems and characteristics of the defence industry in Europe. Among other things, it discussed various aspects of European armaments cooperation. For that reason, the present report will endeavour not to discuss these issues further, in so far as that is possible, and in any event will refer those readers wishing to have an overall view of the question to the aforementioned document.

II. The Euclid programme

7. WEAG (Western European Armaments Group) Panel II has as its main objective to strengthen Europe's position in the field of defence research and technology. One of the panel's activities is management of the Euclid programme (European cooperation for the long term in defence).

8. The Euclid programme was launched in 1990 (the memorandum of understanding was signed on 16 November 1990) and is Europe's sole military cooperation programme in research and technology.

9. Euclid aims both to optimise the resources Europe devotes to research and technology studies and facilitate cooperation in equipment procurement programmes. It is intended to strengthen European industrial, technological and scientific cooperation in the defence field. To this end, the programme identifies a range of CEPAs (Common European Priority Areas) and within them organises RTPs (Research and Technology Projects), based on future equipment needs. Although Euclid's results can be described as promising, they still leave much to be desired.

10. According to Assembly Document 1483 ("WEAG: the course to be followed" submitted by Mrs Guirado and Lord Dundee) there are at present thirteen CEPAs in which action is being taken, 49 approved RTPs and 29 signed contracts, worth 210 million ecus² in total. In 1990, defence

1. General Sánchez-Mendez: operational and technical problems raised by new threats. Defence electronics at the dawn of the 21st century. Published by the Fundación Universidad-Empresa. Military electronics forum Madrid 1995.

2. According to the EDIG document "Summary report on the debriefing meeting held with Panel II in Brussels on 13 February 1996", the number of RTPs has gone up to 57 but the average value of an RTP has fallen from 5 to 4 million ecus. See Appendix I.

ministers fixed an annual programme target of 120 million ecus but stagnancy has set in at a figure of half that amount. In November 1994 it was decided to create a Euclid Research Cell within WEAG. The Cell liaises at operational level with Panel II and the RTMC (Research and Technology Management Committee), implements measures adopted by both, gives administrative support to the CEPA Steering Committees and to RTP management groups, in addition to providing assistance to other programmes and subgroups and maintaining working relations with the WEAG Armaments Secretariat and through it with Panel III³.

11. The objectives of the Euclid Research Cell are to:

- improve the effectiveness of the Euclid programme;
- coordinate and promote CEPA Steering Committee activities;
- speed up the process for awarding contracts;
- provide a centralised legal service for the award of contracts (planned for the second phase due to begin in 1996).

12. Further measures, proposed by Panel II, are also planned to solve the problems Euclid has encountered. According to Victor Marçais⁴, such measures include:

- "the decision in principle to give the Research Cell greater autonomy, after a probationary period, by granting it the status of subsidiary organ of WEU planned for the European Armaments Agency and making it responsible for placing Euclid contracts and following them up;
- the recommendation to take account, in the Euclid research programme, of topics developed in other cooperation frameworks that exist between WEAG countries;
- the approval of the EUROFINDER procedure allowing unsolicited proposals to be taken into account in the programme, emanating from industrial consortia submitting technological cooperation bids; also, the decision to hold a first EUROFINDER seminar as from September 1995".

13. In fact, throughout the Euclid programme and as its shortcomings have come to light, there have been constant efforts to improve its working.

3. Panel III's remit covers general joint policy guidelines in defence economics and armaments cooperation procedures.
4. Article in the periodic newsletter issued by the National Euclid coordinator, No. 6, DGA, 6 March 1995.

14. For instance, at the October 1993 meeting of National Armaments Directors, the Chairman of Panel II gave a detailed report on the Euclid programme and described a series of measures designed to make it more effective. The conclusions of the meeting can be summarised as follows:

- measures were proposed to reduce the length of time between a project's approval and signature of the relevant contract;
- participants stressed their concern about the fact that the Euclid programme was not progressing despite the National Armaments Directors' proposal in 1992 to increase the number of RTPs. In fact, out of the 38 RTPs approved by Panel II in October 1993, 37 of them had already been approved a year earlier in October 1992;
- at the time, the annual cost of the approved projects came to half (60 million ecus) the amount set aside by defence ministers for the programme's initial phase (120 million ecus);
- in order to give the Euclid programme new impetus, it was proposed to hold a colloquy in the second half of 1994, during which the programme's first results would be presented.

15. The National Armaments Directors decided to support the arrangements designed to reduce the period between a project's approval and signature of the contract for it to a maximum of one year. Under one of the arrangements, each ministry is to smooth the procedures leading to the signature of contracts, and holds special funds for the Euclid programme. Furthermore, the NADs stressed that the chairmen and members of the CEPAs should draw up proposals for new projects.

16. "The future of the defence-related industries"⁵ sets out criteria and conclusions similar to those described above. It considers that the programme started up more slowly than had been planned, mainly because of the time it took some countries to draw the consequences of the framework agreement signed in 1990 and because of the lack of joint permanent structures that could have been used for the programme's management and logistics requirements. According to the study, those structures could take the form of the European Armaments Agency for which provision is made in the Declaration by the WEU member countries, annexed to the Treaty on European Union. To begin with, the Agency could concentrate on "reducing the time required for the notification of Euclid contracts" and "improving the procedure for identifying new themes for Euclid

5. Commissariat Général du Plan, La Documentation française, Paris 1995.

cooperation". The same study suggests that at a later stage the Agency could take on the task of "giving thought to a rapprochement between various national defence research programmes and drawing up a draft for a joint technology programme".

17. As regards the armaments industries, which were associated with the Euclid programme from the outset, the report referred to earlier stresses that they should play a part in the programme's development, that their suggestions should be taken into account, and above all that the number of participants in a given venture should be limited (bi- or trilateral cooperation projects are considered more effective), that it should be borne in mind that defence firms do not have sufficient resources to fund a substantial part of their research activities on their own, and that progress in European defence cooperation will to a large extent depend on relations developed between firms.

III. The European defence industries' views on the Euclid programme

18. Over the last few years (1993, 1994 and 1995), EDIG (the European Defence Industries Group) has submitted a series of recommendations with a view to improving the Euclid programme. In its latest proposal, dated July 1995, EDIG considered that the creation of the Research Cell would have a positive impact on the Euclid programme, the first sign being an increased output which would make it more attractive to the industry from the technical viewpoint. But EDIG believes that certain obstacles to participation by the industry cannot be surmounted until the second phase, mainly by reducing the time it takes to place contracts, thus enabling firms to reduce the cost of their proposals.

19. EDIG takes the view that the Euclid programme poses a number of problems for firms that hamper their involvement. The main problem areas are the delays involved, the lack of a global strategy, the rules on industrial property laid down in the memorandum of understanding, and the industry's financial participation.

20. It usually takes about 14 months to complete the procedure that starts with the first examination by a CEPA Steering Committee of a subject that might result in an RTP, continues with the signature of the implementing arrangement (IA) and ends with the signature of the contract⁶. According to EDIG, this period is too long as firms lose interest

because of doubts about the merits of such an investment for a project that gradually loses its topicality.

21. In some cases, a country participating in an RTP drops out once the procedure is under way, causing additional delays for the other countries. Sometimes, such a decision to drop out even causes the RTP to be abandoned. The EDIG study considers that in many cases the problem is not due to the number of new RTPs, since many of them are on the shelf owing to a lack of funding, but rather to "the lack of preparation by the governments of the decisions to allocate funding to RTPs in which they are interested. Decisions are taken RTP by RTP, without any appearance of a global policy".

22. This absence of a global policy is precisely one of the weaknesses of the Euclid programme. Not only are the budget resources allocated by governments to the programme insufficient, but worse still governments do not adopt funding programmes that cover a number of years as they do in the case of national programmes. Thus, the industry tends to regard Euclid as a programme for activities that are limited and that are separate from each other instead of forming part of a general strategy "deduced from a long-term technico-operational approach". The lack of a real financial commitment on the part of governments prompts the industry to have reservations about entering into commitments itself.

23. Another problem brought to light by EDIG concerns the rules on industrial property rights laid down in the memorandum of understanding. The excessive demands made on participant firms can lead to information they are required to produce being used against their interests even to the point of disrupting competition.

24. The industry's financial participation is close to 50%. According to EDIG, governments justify such a high contribution rate by the fact that this is the level applied in the Community's research programmes and the Eureka programme. This argument does not convince European defence firms, whose logical and justified response to government is that "they simply forget that this industry is concerned with a commercial activity which can later provide a financial return on its investment in research. The European defence industry is dependent on governments for its activity and cannot expect any return without long-term programmes. Moreover, the European industry's major competitor, the American industry, is fully subsidised by government for research and development activities".

25. EDIG has put forward a series of recommendations which it says will improve the Euclid programme and make it more attractive to the industry.

6. On the working of the Euclid programme, see Assembly Document 1483: "WEAG: the course to be followed" submitted by Mrs Guirado and Lord Dundee, co-Rapporteurs.

26. In the first place, all governments need to increase their financial involvement substantially. In actual fact, government funding accounts for less than half of the budget planned at the start of the programme and this amount represents 27% of the entire research and development budget for European defence (60 million ecus out of a total of 2 200 million ecus in 1994). These figures alone suffice to cast doubt on the resolve of WEAG member governments to maintain a European defence industrial base through the Euclid programme.

27. Secondly, EDIG recommends that governments should plan funding for the Euclid programme at least one year in advance and, if possible, in multi-annual slices. Such a measure would save time and help the industry to prepare for the future more effectively.

28. Thirdly, EDIG recommends drawing up a global strategy for the Euclid programme "based on a medium-term and long-term technology forecast combining a top-down approach by determining future priority military operational requirements and a bottom-up approach taking into account the most promising new technologies, including those pulled by commercial use".

29. Such a strategy, as the authors of the study point out, would establish a common framework proving the existence of a genuine European political will and would also provide the industry with the basis it needs to carry out the necessary grouping and restructuring operations and to tackle the problems these will entail in terms of the mutual dependence of the governments concerned.

30. Finally, the EDIG study recommends that the industrial property right rules in the memorandum of understanding should be amended so as to relax the requirements imposed on participant firms, in particular given that their financial contribution rate is increasingly moving up to 50%.

31. EDIG considers that if all these recommendations were taken into consideration, it would prove that Europeans are genuinely anxious to maintain a defence industrial and technological base.

32. The consultations your Rapporteur held with various national associations in the defence electronics industry on the subject of the Euclid programme and the measures that should be taken to make it more effective show that there is unanimous agreement as to the solutions that are needed to overcome the existing problems.

33. In the first place, there is general agreement that setting up a European Armaments Agency would be beneficial for management of the Euclid programme. The main advantage of such an initiative would be access to a centralised coordination system and the creation of a central funding

agency making for simplified financial and contract conditions.

34. However, some doubts persist: for instance, would it not be the case that such an agency would involve very heavy administrative and management costs? Some national associations are also uncertain that a centralised management agency would make it easier to reach agreement on work programmes, the constitution of consortia, the preparation of proposals and the final choice of projects.

35. The various national associations take the view that the best way in which the Euclid Research Cell can achieve its objective, i.e. better cooperation between European defence electronics industries, lies in efficient publicity campaigns, transparency in the distribution of information, and clear links between the CEPAs. A register of European defence firms including the names of contact persons would be a good way of identifying the technologies, products and systems sought by individual firms. All these measures would help to form truly operational consortia.

36. Besides this, European firms consider that use should be made of civilian projects for cooperation on defence research projects and that relations should be established on a case-by-case basis. In their opinion, there are not enough initiatives in this area hence the need for the Research Cell to keep up its contacts with DG XII and DG XIII in the European Commission.

37. There is significant benefit to be had from combining civil and military research programmes with common or similar technological objectives. A single central funding agency for Euclid would encourage such a move.

38. The question of what institutional changes would help improve the working of the Euclid programme from the viewpoint of the armaments industry met with suggestions that were just as clear and concise:

- the application of joint funding procedures and contract conditions would considerably improve the situation;
- the existence of a single source of funding would put an end to the delay caused by the need to coordinate funding in the various member countries;
- there is a need for universal access to documentation. At present Euclid documents are not subject to any rules whereas they should have a logo, title, date and number of issue.

39. The firms approve of the CEPA system even though they consider that delays and red tape give rise to serious problems during the initial stages of a new CEPA.

40. It is clear that if firms are to engage in research activity with a partner, they must be able to reckon with a return on their investment and on gaining some advantage in terms of the cost and time involved. A synergy of interests as regards technologies and possible partners is an all-important commercial factor for firms committing themselves to a cooperation venture in a framework such as that of Euclid.

41. Furthermore, the existing structure involves projects in substantial additional cost, the result being that only those firms with considerable resources can envisage participating.

42. Some firms consider that Euclid does not pay enough attention to information systems for commanding and using information technologies⁷.

43. The other problem that some firms emphasised stems from the fact that the procedure followed by Euclid seems to be geared to an increase in the number of defence firms in Europe. But this runs counter to a natural move across the continent to streamline the industry and create cross-border alliances in an effort to increase the competitiveness of the European defence industry on the world market.

44. Finally, as far as financial contributions are concerned, all the firms – whether individually or as members of national associations – agree on a range of comments. The financial contribution a firm makes to a cooperation project must be recognised as an investment and, as in any decision to invest, the likely benefit to be had is an important factor. In the case of the civil sector and programmes funded by the European Union, the proportion of industrial investments reaching 50% is generally acceptable. These firms can exploit the results they achieve on an open market and their success mainly depends on their efforts and areas of expertise.

45. But in the defence sector, the benefits that accrue to a firm depend in the majority of cases on government decisions relating to purchases or export restrictions. Such benefits fall off once an industrial investment has been made. A combination of these various factors increases the commercial risk and makes it extremely difficult for the industry to take effective investment decisions.

IV. The situation of the European defence electronics industry

46. The problems affecting the European defence electronics industry today are practically identical to those confronting the rest of the

⁷ Appendix II contains a list of research projects for which contracts have already been placed. The list mainly concerns the electronics industry and gives the names of the firms participating in each project. It was drawn up in September 1995 and was supplied by EDIG.

defence industry in Europe and have already been studied in Assembly Document 1483⁸. They can be summarised as follows: the existence of a European defence industry is indispensable if Europe is to equip itself with autonomous structures enabling it to ensure its security and defence. The European defence industry is in a state of over-capacity mainly because each country is inclined to maintain its own capabilities or even create them in sectors in which they are virtually non-existent. In addition, there is no European domestic market to speak of even though this is a necessary condition for the survival of an industry competing on the world market, in particular against the United States.

47. This explains why the defence industry in general and the defence electronics industry in particular needs to be restructured and streamlined on the basis of the procedures that are beginning to be applied in Europe. The example of the United States, where this sea change is advancing by leaps and bounds, should prompt European governments and firms to follow suit because once the process is complete in the United States, American firms will have widened still further the huge gap that separates them from their European counterparts.

48. As regards the long-term competitiveness of the European defence electronics industry vis-à-vis that of the United States, some of the most important points are worth stressing: costs are influenced primarily by national series production that is too limited and by the application of the fair return rule in cooperative activities; they are also affected by the inadequate size of firms and over the years ahead they will have to absorb the impact of the modernisation or obsolescence of the range of technologies and products on the market. Lastly, the absence of new programmes also has an influence.

49. Given that the current trend is not so much towards the construction of new aircraft and missile systems, etc. but rather towards the modernisation of their electronic components with a view to making them more efficient, some fundamental aspects of the changes that are under way need to be taken into account: technological renovation occurs every seven years in the defence electronics industry; there is increasing technical homogeneity and mono-technology components are giving way to multi-technology modules with multiple applications.

50. In the field of research and development, data supplied by the SPER⁹ shows that in France, the United Kingdom and the United States about

⁸ Report by Mrs Guirado and Lord Dundee on "WEAG: the course to be followed".

⁹ Syndicat des industries de matériel professionnel électronique et radio-électrique. Production and R&D work in the professional electronics industry: France, Germany, United Kingdom, United States. Analysis of the main sections of the ADL report, 1990.

two-thirds of military research and development funding is allocated to industry, with the remaining third going to public establishments. State funding for research and development work in the military electronics sector amounts to 40% in France, 49% in the United Kingdom, 67% in Germany and 90% in the United States. Conversely, the share of self-financing by industry stands at 37% in France, 23% in Germany and 10% in the United States.

51. It is clear that the defence electronics sector relies to a greater extent than other sectors of the defence industry on the ability to innovate, hence the crucial importance of research and development. Cooperation in Europe is essential from the economic viewpoint but it is just as indispensable from the industrial viewpoint as well.

52. The document entitled "How can the European Union armaments industry be competitive in the face of international competition?"¹⁰ puts forward ideas and conclusions that are extremely interesting in the context of the present report.

53. In the section concerned with defence electronics equipment, the authors suggest, in support of what your Rapporteur has already stressed, that despite the reductions in European defence budgets over the last five years and notwithstanding the further cuts that are predictable, "the tendency to seek as big a reduction as possible in the number of human lives lost (zero deaths) means that the maximum number of arms systems must be automated". This automation will be achieved through accelerated "electronisation", particularly as regards "battlefield robots, auto-pilot planes, guided and/or intelligent weapons, and observation from space".

54. With regard to the defence electronics market, the study concedes that the United States enjoys a predominant position owing to the following: the size of its domestic market, very generous public funding, links with further education establishments and permanent public support for exports.

55. As for improving the defence electronics industry's competitiveness, the first criterion that deserves attention is its overall achievement, particularly in terms of technological progress, with cost taking second place. This priority implies that there must be sustained research and development activity. The authors of the study also consider that it is important to think in terms of "upstream planning for modular and versatile equipment so that it can be adapted to requirements that are frequently very varied".

56. With regard to international competition, especially from the United States, it is considered fundamental "that essential components should

be accessible in all circumstances". This raises the question of technological independence, at least on a European plane.

V. Conclusions

57. Europe is faced with a situation in which the trend is not so much one of increasing the quantity but rather of improving the quality of armaments. This can be achieved by modernising electronic components so as to make them more efficient. From this point of view, the prospects for the European defence electronics industry are fairly promising, provided it can make the most of them.

58. The Euclid programme constitutes an appropriate framework of activity on condition that its possibilities are exploited to the maximum and that the problems it has encountered so far are solved. First, while it is true that when they launched the programme the governments' idea was to make the best possible use of European resources devoted to research and development activities, facilitate cooperation in equipment procurement programmes and strengthen industrial, scientific and technological cooperation in European defence sectors, they must now give effect to that political will by providing proper support for Euclid in order to solve the problems the programme has encountered and make it as effective as possible. There is no doubt that the creation of the Research Cell is an important step forward in this respect and that the transition to the Cell's second phase will confirm and consolidate this progress which, while it is of course necessary, is probably still insufficient.

59. The delays currently affecting the programme entail extra cost that is not negligible given that the workforce remains idle pending completion of the process. It should be possible to solve this problem during the second phase of the Research Cell.

60. The absence of a global strategy is another problem that has to be overcome and which will require the setting-up of a multi-year planning system for funding. The governments' lack of financial commitment clearly does nothing to motivate firms to participate and can be interpreted as an absence of genuine political will.

61. The reduced size of one part of the industry combined with insufficient resources, preventing the industry from funding a major proportion of research and development work on its own, should prompt the governments to increase their involvement, particularly in view of the defence industry's situation as described above.

62. It should also be stressed that the problem of the increase in the number of RTPs is perhaps

10. Centre des hautes études de l'armement, 31st session 1994/95, May 1995.

not insoluble and that rather than looking for new RTPs, it would be better to think in terms of reactivating those currently dormant.

63. A greater measure of flexibility in the rules on industrial property rights, as currently laid down in the memorandum of understanding, is also necessary. Furthermore, it would be desirable to take up some of the proposals put forward by various national associations in the defence electronics industry, particularly those advocating more publicity about the Euclid programme, transparency in the distribution of information, and clear links between the CEPAs.

64. Setting up a register of European industrial establishments working in the defence sector is an idea that has already been proposed by our Committee ¹¹ and its adoption would promote the creation of effective consortia after identifying appropriate technologies, products and systems together with relevant firms working in those areas.

65. In addition, it would be sensible to associate military and civil programmes with common technological objectives. This could be organised

by a central funding agency under the auspices of Euclid, whose task would be to find civil projects that could be of interest to the military sector.

66. Finally, as has been suggested in other Committee reports, thought should be given to the concept of fair return and it should be recognised that, as applied at present, it does nothing to resolve problems and indeed merely aggravates them in many cases. Replacing this concept by that of economic return is beginning to be a priority on which agreement will soon have to be reached.

67. In any event, it would be unfair not to attribute credit to the work done under the Euclid programme, which has, among other things, given rise to a network of relations between European firms. It would also be unfair not to mention the excellent work done by the team working on the programme. Firm political will and determination of the part of government will help build on this success in the field of research and development, where the future of the European defence industry in general and the defence electronics industry in particular is at stake, not to mention that of Europe's security and defence.

11. Document 1419: "The European armaments agency – reply to the 39th annual report of the Council", submitted by Mr Borderas.

APPENDIX I

EUCLID programme status

	7.2.1996	22.9.1995	25.5.1995
RTPs completed	8	2	2
RTPs under contract	24	28	28
RTP contracts in preparation.....	11	9	6
RTPs in implementation stage.....	14	16	13
TOTAL approved RTPs	57	55	49

APPENDIX II

*List of firms involved in RTPs,
mainly in the electronics sector***CEPA 1** *Modern radar technology***RTP 1.1** *Mission-related aspects*

Lead nation:	GE
Contract placement:	19.4.1994
Winning consortium:	FR: Thomson-CSF GE: DASA IT: Alenia NL: Signaal SP: Ceselsa UK: GEC Ferranti
Duration:	18 months
Estimated end of work:	November 1995

CEPA 2 *Microelectronics***RTP 2.2** *Interconnection – Assembly*

Lead nation:	FR
Contract placement:	21.9.1992
Winning consortium:	BE: Alcatel Bell SDT FR: Matra Défense (Lead) GE: BGT UK: GEC Marconi
Duration:	9 months
Estimated end of work:	Completed

RTP 2.3 *Military qualification*

Lead nation:	GE
Contract placement:	3.9.1993
Winning consortium:	FR: Thomson-CSF GE: TEMIC (DASA) + IMS IT: Italtel UK: GPS Plessey + Rood Technology + Test and Assembly + Walmsley Microelectronics
Duration:	2 years
Estimated end of work:	September 1995

RTP 2.8 *Very high speed analog to digital converters*

Lead nation:	FR
Contract placement:	23.9.1994
Winning consortium:	FR: Thomson-CSF TCS + SCTF UK: Phoenix VLSI
Duration:	24 months
Estimated end of work:	September 1998

RTP 2.9 *User programmable CIS*

Lead nation:
 Contract placement: 22.12.1992
 Winning consortium: FR: CETIA
 PO: EID + IST
 Duration: Phase 1 – 12 months +
 phase 2 – 12 months
 Estimated end of work: Phase 1 completed
 Phase 2 September 1995

RTP 2.13 *Interconnection and packaging for MMICs (Microwave millimetric integrated circuits)*

Lead nation: FR
 Contract placement: 7.4.1995
 Winning consortium: FR: Dassault Electronique
 TU: Aselsan
 UK: GEC Marconi
 Duration: 12 months
 Estimated end of work: April 1996

RTP 2.20 *Future military requirements for advanced A/D converters*

Lead nation: UK
 Contract placement: 6.2.1995
 Winning consortium: FR: Thomson-CSF RCM +
 Dassault Electronique
 UK: GEC Marconi
 Duration: 6 months

CEPA 4 *Modular avionics***RTP 4.1** *Modular avionics harmonisation study*

Lead nation: GE
 Contract placement: 2.2.1994
 Winning consortium: FR: Aérospatiale + Dassault Aviation +
 Dassault Electronique +
 Eurocopter-FR + SAGEM +
 Sextant + Thomson-CSF
 GE: DASA (Lead) + Alcatel/SEL +
 Dornier + ESG + Litef +
 VDO
 IT: Alenia + Elmer + Italtel
 + Marconi
 NL: Fokker + NLR
 SP: CASA + Ceselsa + Inisel
 UK: British Aerospace +
 GEC-Marconi Avionics +
 GEC Plessey + Smiths Industries
 Duration: 24 months
 Estimated end of work: September 1996

- CEPA 6** *Advanced information processing*
- RTP 6.1** *Advanced workstation for command and control*
- Lead nation: UK
Contract placement: 24.9.93
Winning consortium: DE: TERMA
 FR: Matra, Steria
 IT: Datamat, Marconi
 NL: BSO
 NO: NFT
 SP: Inisel
 UK: Logica Cambridge Ltd
 (Lead)
- Duration: 5 years
Estimated end of work: September 1998
- RTP 6.2** *High speed pattern recognition*
- Lead nation: FR
Contract placement: 31.12.92
Winning consortium: BE: BATS
 DE: TERMA
 FR: SAT (Lead), Dassault
 Electronique, CEA/LETI
 GE: Atlas Elektronik
 IT: Galileo
 NL: Cap Gemini
 SP: Sener
 TU: Marmara Research Centre
 UK: Logica
- Duration: 3 years
Estimated end of work: March 1996
- RTP 6.3** *Knowledge engineering*
- Lead nation: NL
Contract placement: 5.2.93
Winning consortium: FR: CISI Ingénierie
 NL: Volmac Nederland BV
 (Lead), Bolesian BV
 UK: GEC Marconi Ltd.
- Duration: 3 years
Estimated end of work: January 1997
- RTP 6.4** *Combinatorial Algorithms for military applications*
- Lead nation: FR
Contract placement: 22.12.93
Winning consortium: FR: Onera-cert (Lead)
 NL: Dept. of Economics and
 Business Administration,
 Dept. of Mathematics and
 Computing Sciences, Dept. of
 Technical Mathematics and
 Informatics, Institute for
 Perception
 UK: Centre of Neural Networks,
 London School of Information
 Systems
- Duration: 18 months
Estimated end of work: September 1995

RTP 6.5 *Crew Assistant*

Lead nation: NL
 Contract placement: 12.7.94
 Winning consortium: GE: DASA
 IT: Alenia
 NL: NLR (Lead)
 TU: Bogazici
 Duration: 1 year
 Estimated end of work: May 1995

CEPA 8 *Optroelectronic devices***RTP 8.1** *Affordable Lightweight IR Sensors*

Lead nation: UK
 Contract placement: 1.6.93
 Winning consortium: DE: Nea Lindberg
 FR: Thomson TTD
 GE: Carl Zeiss
 IT: Alenia
 NL: Signaal-UFSA (with FEL-TNO)
 PO: EID
 SP: ENOSA
 UK: Pilkington Optronics (Lead)
 Duration: 5 years
 Estimated end of work: December 1998

RTP 8.2 *Intelligent Sensors (New Technology and Design Concepts for IRST)*

Lead nation: IT
 Contract placement: 7.2.95
 Winning consortium: FR: Sofradir, SAT, CEA-LETI
 IT: Galileo (Lead)
 NL: TNO-FEL
 PO: INETI
 UK: Thorn-Emi Elctr., CRL
 Duration: 5 years
 Estimated end of work: April 2000

RTP 8.3 *Solid State Laser Sources*

Lead nation: FR
 Contract placement: 4.9.92
 Winning consortium: FR: Thomson-TTD (Lead) + BM
 Industries
 NO: Simrad Optronics +
 Norwegian Defence Research Establishment
 UK: Pilkington Optronics
 Duration: 4 years
 Estimated end of work: September 1996

CEPA 9 *Satellite surveillance technology***RTP 9.1** *Technology concepts and harmonisation*

Lead nation: FR
 Contract placement: 23.6.93
 Winning consortium: BE: Alcatel ETCA
 FR: Onera, CNES
 GE: DLR
 IT: Alenia Spazio
 NL: NLR
 NO: NDRE
 PO: Ineti
 SP: INTA

Duration: 3 years
 Estimated end of work: June 1996

RTP 9.2 *High resolution optical sensor technology*

Lead nation: FR
 Contract placement: 15.12.94
 Winning consortium: BE: Spacebel
 FR: Onera

Duration: 2 years
 Estimated end of work: December 1996

RTP 9.4 *Real time processing and data handling technology*

Lead nation: NO
 Contract placement: 27.7.93
 Winning consortium: BE: Thomson CSF Electronics
 GE: Dornier
 IT: Alenia
 NO: Informasjonkontroll

Duration: 4 years
 Estimated end of work: August 1997

RTP 9.5 *Ground segment technology*

Lead nation: NO
 Contract placement: 29.7.94
 Winning consortium: GE: Dornier
 IT: Alenia
 NO: Informasjonkontroll
 PO: EID

Duration: 3 years and 9 months
 Estimated end of work: April 1998

