



**Etude EPMES**  
**Contractual incentives to innovation**

Executive summary

Louis Berreur  
Bernard Bellot  
Stanislas Noesperger

December 2<sup>nd</sup>, 2002

## **Executive summary**

### ***Introduction***

- ❑ The Délégation Générale pour l'Armement (DGA) wishes to foster external initiatives to develop innovation in industrial defence programmes. In order to insure a better efficiency of military R&D, DGA is looking for a higher involvement of its industrial and research partners.
- ❑ Nodal Consultants' recommendations on contractual incentives to innovation are mainly based on :
  - An analysis of the existing and envisaged contractual procedures and clauses to stimulate innovation in military and civilian R&D; this analysis has been carried out in collaboration with Professor Raynard of the Montpellier Law School.
  - The assessment of needs and requirements of DGA R&D partners through a direct approach of French and European institutions, industrial companies and research organisations.

### ***General and institutional background***

- ❑ This study has shown that current strategies of French institutions are not favourable to innovation, for the following reasons:
  - DGA culture and image correspond more to a "procurement agency" than an innovation partner.
  - The stability of DGA R&D budgets in low levels compared to the 1980s, at least until recently.
  - Apparently very limited degrees of freedom left by the Code des Marchés Publics (French public procurement rules and procedures), with invitation to tender and contract procedures considered as very restrictive to innovation.
- ❑ This situation is improving, with the recent signature of cooperation agreements between DGA and several French government offices, in particular with MENRT (French ministry in charge of research), MINEFI (ministry of industry) and Anvar (National agency for innovation).
- ❑ The evolution of the European context, although slow, is becoming more favourable to innovation. One can for example point out:
  - The harmonisation of military equipment procurement procedures carried out by Occar.
  - Co-operation of DGA with its European counterparts, on industrial property in particular
  - Similar innovation incentive approaches as DGA's, in particular in the UK and Germany.

### ***Attitude of DGA operational partners***

- ❑ Large industrial groups do not invest heavily in "disrupting" technologies for which the return on investment is considered too remote.
- ❑ In basic and advanced research DGA "Plans d'études amont" (PEA) seem to provide a small incentive to truly innovate because of their lack of flexibility, in particular regarding the management of research consortia. Industrial firms also point out that DGA does not inform sufficiently its partners on these programmes.
- ❑ Large industrial firms, mostly with a European dimension, regret the current limited participation of DGA in bilateral European R&D defence programmes. DGA calls for tenders are often too restrictive and tend to impose technological solutions. Finally, DGA R&D project monitoring procedure is judged too heavy, restricting innovation.
- ❑ SMEs are increasingly marginalized in innovation-oriented defence programmes. This is due in particular to the decrease of DGA direct contractors. The development of "systemic" approaches and decreasing DGA's procurement resources tend to make large groups the only prime contractors for DGA. This does not favour SMEs, since it does not exist actual incentives for these groups to subcontract their R&D to SMEs.
- ❑ SMEs also regret the lack of specific budget and financing procedures adapted to correspond to their own constraints, concerning in particular a short ROI and their cash-flow shortage.
- ❑ Concerning industrial property, SMEs face the lack of protection for their innovative proposals, in particular in relation to DGA "Propositions Non Sollicitées" (unsolicited proposals).
- ❑ DGA research partners have similar criticisms as industrial firms, mainly a procurement procedure insufficiently adapted to R&D contracts and to their requirements (slow response delay, inadequate financing procedures, in particular regarding industrial feasibility). Concerning industrial and intellectual property, research organisations regret the strong constraints linked to confidentiality imposed by DGA and the lack of precision in intellectual property clauses included in DGA research contracts.

### ***The new French public procurement rules (CMP)***

- ❑ The study of the new public procurement rules ("Code des Marchés Publics" or CMP), carried out by the Montpellier Law School, showed better degrees of freedom for research contracts than expected and perceived by industrials.
- ❑ In application since September 2001, the new CMP allows simplified procedures for government institutions wishing to encourage SMEs to reply to calls for tenders: reduction in legal burdens, easier allotment and pooling of candidates, financial rules favourable to SMEs.

- ❑ The CMP allows simpler contracting procedures for intellectual services (negotiation, competition, market definition). Its article 3.6 waives certain clauses of the public procurement constraints in case of R&D contracts which are not 100% financed and owned by DGA.
- ❑ These various possibilities are not well-known inside DGA, because they are not clearly taken into consideration in reference documents of DGA procurement services. This often results in a “self-censorship” of these departments in order to limit risks. Obstacles to innovative proposals are therefore more internal than legal.
- ❑ Industrial firms generally consider that DGA does not communicate explicitly on these legal possibilities and inform its industrial and R&D partners about them.

### ***Industrial property***

- ❑ CMP defines three industrial property « options » for public contracting. Option C is the most favourable to innovation. The contractor keeps all his rights in the case of industrial services involving a patent. DGA keeps only the rights to use the corresponding results for its own needs.
- ❑ The study did not allow to define in a general way a systematic policy to contractually dispatch the results of research between private partners and the public operator, which would be potentially incentive to a stronger cooperation between DGA and SMEs. Nevertheless one can imagine contractual techniques allowing to organize this dispatching in one way or another, with R&D results either covered by patents or copyrights, linked to know-how and in free access.

### ***Key factors of success***

- ❑ Three types and levels of factors promoting innovation have been identified by Nodal :
  - Upper level or « strategic » factors improving DGA co-operation with research institutions and industrial firms, its involvement in dual approaches and the creation of « start up » companies, and the implementation of specific relations with SMEs.
  - « Contractual » factors exploiting CMP possibilities and creating a better management of industrial property.
  - « Cultural or organizational » factors, transforming procurement culture and competences, training and organization, project management and communication within DGA.

### ***Recommendations on DGA R&D strategy***

- ❑ DGA strategic orientations must be more focused on innovation and disrupting technologies:
  - DGA can extend the scope of its R&D by a wider institutional cooperation, in particular with other French ministries (Industry, Research) and European institutions. Other strategic

factors of success are a stronger involvement of DGA in networks and innovation programmes, new public / private partnerships and, if possible, an increased R&D budget.

- DGA stronger involvement in dual approaches should reduce costs, increase performance of military systems and competitiveness of SMEs. This involvement requires the implementation of specific dual technology platforms or national networks and the harmonization of civil and military standards at a European level.
- ❑ Specific DGA actions favouring SMEs could increase their involvement in defence innovation and develop their direct link and participation in DGA R&T programmes. One can mention, for instance, the access to new financing sources, simplified contracts and procedures using all the possibilities offered by the CMP. Legal support of SMEs, under a form to be defined, should also be considered by DGA, in particular regarding industrial property.
- ❑ A greater involvement of DGA in start-ups creation and promotion of research, especially through its participation in operations of venture capital, up to the creation of a defence-oriented VC fund. DGA participation in networks and technology transfer programmes specific to the industry of defence would also foster the creation of technologically innovative SMEs.

### ***Recommendations on contractual and industrial property clauses***

- ❑ The adaptation of DGA contractual procedures and industrial property rules will have a strong short-term influence to strengthen its partners motivation to innovate, mainly to SMEs:
  - DGA should define contracts procedures more adapted to research activities, using CMP possibilities
  - Calls for tenders might be function- rather than solution-oriented to create a window of opportunity for original proposals. This approach could be further enriched by the definition of performance criteria for innovation and the update of DGA procurement reference documents.
  - « Propositions Non Sollicitées » and « PEA » procedures could be made more attractive to SMEs, for instance by a higher amount of mutual agreement contracts and more stringent industrial property clauses.
  - A systematic use of « option C » of Code des Marchés Publics
  - The pursuit of DGA co-operation with its European counterparts to harmonise industrial property policies is also a strong factor of success.

### ***« Cultural and organisational » factors of success***

- ❑ DGA must extend its cultural opening and improve its structural reactivity, in particular through:
  - An evolution from a « technical » culture towards a « social and economic » culture, in particular regarding specific R&D procurement.

- The training of its procurement managers to project management and negotiation.
  - The implementation of simple R&D project management tools, and criteria as well as methods to assess external R&D services.
- ☐ External communication actions should be organised to:
- Better inform on and explain DGA R&D programmes and procedures to its partners.
  - Present CMP possibilities to its R&D partners under the form of a simple "vade mecum" for SMEs managers and contractors.
- ☐ Prepare and communicate a simple document explaining CMP options for R&D projects and include them in procurement guidelines.

### ***DGA priority actions***

- ☐ Priorities for DGA actions have been established by Nodal Consultants, based on three main criteria:
- Number and importance of partners involved in projects.
  - Feasibility in implementing these projects.
  - DGA progress in this field and similar actions already performed.
- ☐ According to these criteria, the five priority domains for DGA identified by Nodal Consultants to favour innovation are:
- The improvement of contractual modalities.
  - A stronger implication of DGA in dual approaches.
  - A stronger implication of DGA in R&D promotion and start-up creation.
  - A true transformation of DGA internal culture.
  - The training of DGA procurement managers and agents.