

9th SYMPOSIUM ON STEPPING STONES TO THE FUTURE: STRATEGIES, ARCHITECTURES,
CONCEPTS AND TECHNOLOGIES (D3)
Space Technology and Systems Management Practices and Tools (4)

Author: Dr. Cadiou Anne
Centre National d'Etudes Spatiales (CNES), France, anne.cadiou@cnes.fr

Mr. bellaiche gilles
Centre National d'Etudes Spatiales (CNES), France, gilles.bellaiche@cnes.fr

Mr. Franck Durand-Carrier
Centre National d'Etudes Spatiales (CNES), France, franck.durand-carrier@cnes.fr

Mr. Lionel Baize
Centre National d'Etudes Spatiales (CNES), France, lionel.baize@cnes.fr

Mr. Claude FRATTER
Centre National d'Etudes Spatiales (CNES), France, claude.fratter@cnes.fr

RESEARCH AND TECHNOLOGY MANAGEMENT AT CNES

Abstract

The Research and Technology activity at CNES is mainly carried out: • within the framework of the European Space Agency, through financial contributions by CNES to various mandatory (such as Technology Research) and optional programmes (GSTP, EOEP, ARTES, etc.), • within the multilateral framework, through the Pluriannual Research and Technology Program (PPRT).

The activity carried out under the PPRT primarily aims to cover our needs for: • forward-looking research, in particular for technology breakthroughs, • preparation of future projects, • development of our expertise.

This activity involves, alongside CNES, satellite prime contractors, major firms, SMEs and institutional research organisations.

The PPRT is defined and revised on an annual basis taking into account : • CNES internal proposals, • external proposals from industry and research laboratories, • thematic and technical roadmaps, • results and needs identified by the “orbital system feasibility study office”, • European Space Agency RT plan, • An annual funding capacity of 22M.

Since 2001, CNES organises forum for the whole scientific and industry community, the “Rencontres de Technologie Spatiales”, in order to ease the circulation of results obtained from RT work. The forum is open to a wide audience to achieve the best possible circulation of information and ensure that results are publicised and that there is a good chance for them being quickly used.

In addition to the PPRT, CNES has set up a demonstrator program in response to two observations: • the difficulty for new technologies to pass through the average TRLs (Death Valley), • significant surcharges and delays in programs that start with immature technologies. The demonstrator program allow new technologies developed in the frame of the PPRT up to a TRL of 5, to pass the TRLs 5 to 7. The demonstrators funded are selected by a committee of multi-disciplinary experts. This program is harmonized with the ESA GSTP (General Support Technology Program) and ARTES (Advanced Research in Telecommunications Systems) programs which cover activities in the same range of TRL. An evaluation of the PPRT and demonstrator activities and process is also conducted every year by an independent committee mainly composed of non CNES members (National Defense Agency, European Space Agency, Satellite Primes, SME, Research Organisms).