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

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TECHNOLOGICAL ROADMAPING AT CNES

Abstract

Space international programs appear more and more technically challenging and financially constrained. In this context, international cooperation as well as efficient technology management methods are required or at least welcome to overcome these difficulties. Four years ago CNES management decided to initiate a structured "technological roadmaping" process in order to: take technological decisions consistent with strategic objectives; increase legibility of the orientations; guarantee the coherence of the positions taken in-house and external; explore synergies when a technology can be used for several strategic objectives. This process was associated with the use of the Technology Readiness Levels (TRL) which have now been adopted by many companies and government agencies around the world and are "de facto" becoming an international language. The CNES roadmaps are used as basic references for decision-making in terms of planning and investments in Research Technology, laboratories and infrastructures, projects and programs. Three levels of roadmaps, requiring management of consistency, have been defined:

o thematic roadmaps which describe the development of requirements and missions, and identify key infrastructures,

o infrastructure roadmaps which describe how systems (or sub-systems) will be developed to respond to the earlier roadmaps, and which identify the key basic techniques,

o technical roadmaps which describe intended developments of basic techniques using the TRL scale.

Roadmaps are produced by multidisciplinary groups representing all the necessary areas of expertise. Then they are validated by a steering committee at company management level. To be operational, this kind of process or tool need to become a "corporate culture". It needs the approval and will of the various management levels, the recognition of its usefulness and efficiency by the engineering levels, and a progressive introduction. The aim of this paper is to present the status of this initiative at CNES, and provide feedback.