45th SYMPOSIUM ON SAFETY AND QUALITY IN SPACE ACTIVITIES (D5)
Knowledge Management and Collaboration in Space Activities (2)

Author: Mr. Lionel Baize
Centre National d'Etudes Spatiales (CNES), France

CAPTURING KNOWLEDGE TO REDUCE THE PROJECTS' RISKS

Abstract

The space activity has to face very special difficulties: the access to space is expensive, the launch induces heavy constraints on the fragile spacecraft, space is very hostile. As such risks shall be minimized, and in particular the difficulties or problems encountered by previous projects shall not be reproduced. Capitalizing the acquired experience and keeping the competences at the highest level, demand formalized capitalizing methods, excellent internal communications, an open attitude to the outside world and advanced cooperation with other national and international research organizations and industries. To achieve this goal, several complementary "tools" are in place at Toulouse Space Centre, the technical and operational centre for orbital projects of CNES, the French Space Agency. Amongst these tools, one shall mention:

- a matrix organization, where almost all the 50 projects, conducted this year by Toulouse Space Centre are grouped,

- a project "toolbox" to give the project manager the appropriate reference documentation (standards, internal rules,...),

- reviews conducted by independent senior experts, taking into account the lessons learned of the previous projects,

- an internal lessons learned portal, which collects all the mishaps happening in the course of the project development and also during operations. A board of experts analyses all the inputs and make applicable recommendations,

- an original tool: the Technical Competence Centers (CCT), which bring together specialists in networks that focus on the main scientific and technical disciplines used in Space,

- the "end of project" report, which obliging the project manager to take some hindsight vis-à-vis his(her) project, identifies areas for improvement, which can be extended to other projects.

This organization and these lessons learned tools allow each project to take benefit from the experience of the other projects. The paper will highlight the complementary nature of these mechanisms, to reinforce the capitalization of experience and its sharing within CNES projects.