Management tools for R&D engineering projects: Coordination perspective for large international consortium (NeXOS)

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NeXOS is a cross-functional and multidisciplinary project funded under the EU FP7 Program, which involves 21 organizations from six different European countries. They all have different backgrounds, interests, business models and perspectives. To be successful, NeXOS applied an international recognized management methodology tailored to the specific project's environment and conditions, with an explicit structure based on defined roles and responsibilities for the people involved in the project and a means for effective communication between them (Fig.1). The project, divided in four different stages of requirements, design, integration, validation and demonstration, allows a clearer monitor of its progress, a comparison of the level of achievement in accordance with the plan and an earlier detection of problems/issues, leading to implementation of less disruptive, but still effective corrective actions. NeXOS is following an ambitious plan to develop innovative sensor systems with a high degree of modularity and interoperability, starting with requirements definition through validation and demonstration phase. To make this integrative approach possible, a management development strategy has been used incorporating systems engineering methods (Fig.2). Although this is standard practice in software development and large scale systems such as aircraft production, it is still new in the ocean hardware business and therefore NeXOS was a test case for this development concept. The question is one of scale as ocean observation systems are typically built on the scale of a few with co-located teams. With a system of diverse technologies (optical, acoustic, platform interfaces), there are cultural differences that must be bridged. The greatest challenge is in the implementation and the willingness of different teams to work with an engineering process, which may help ultimate system integration, but may place additional burdens on individual participants. This presentation will address approaches for effective operations in this environment.