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Title of Presentation:

How to build evolution and adaptation within a military Defense SoS: a case study of SCORPION

Abstract:

We will discuss some aspects of SCORPION, which is an incremental program funded by the French Ministry of Defense (several billions euros), and is a key element to increase the operational efficiency of the Army. It allows soldiers, equipment and vehicles to intervene jointly in real-time within a fully digital battlefield. This major SoS represents the future of the Army, with a new generation of vehicles and equipment that are destined to polyvalent and reactive brigades. Launched in 2010, the program will have a development phase that should last till the end of the decade, with upgrades for next two decades. It is conducted with successive steps and predetermined capability increments, in order to deliver as soon as possible, incrementally from now on, new capabilities to the Armed forces. If we refer to the taxonomy relying on the four types of systems-of-systems, directed, acknowledged, collaborative, virtual, the SoS SCORPION can be seen as acknowledged during its acquisition phase (with centralized control of most tasks and actors) and collaborative during its utilization phase (with distributed control instead of centralized control). The utilization phase is characterized by: a varied operational context with users operating with different workflows and under different business processes while using the same capability; a rapidly evolving context, with unpredictable user demands (reacting with adaptive threats) and other modifications rippling through the global SoS. After a quick overview of the program SCORPION, we will discuss how the program management deals with evolution and adaptation, and tries to build in agility, while conforming to the more centralized way of defense programs.

Short bio:

Dominique Luzeaux (école Polytechnique 1987, école Nationale Supérieure des Techniques Avancées 1989, PhD Univ. Paris XI 1991, visiting research scientist at the University of California at Berkeley 1991-1992, Professor Thesis 2001) has occupied various positions within the Ministry of Defense since 1989.

From 2009 to 2013, he was in charge of the procurement of Land Systems. Since December 2013 he is Deputy Director of the Directorate of Infrastructures, Networks and Information Systems within the Joint Staff. He holds the rank of Major General.

Besides, he teaches robotics and systems engineering at graduate level. He has also published 9 books in French and English on nanotechnology, system-of-systems engineering, modeling and simulation of complex systems. He was Elected Chairman of the AFIS, the French chapter of the INCOSE, from 2009 to 2013.