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Title of Presentation:

EU DANSE Project: Results Demonstration

Abstract:

The European Union has placed significant funding for Systems of Systems (SoS) research into its Seventh Framework Programme (FP7). DANSE is an EU-funded FP7 project being executed by an industrial consortium of 12 major corporate partners. Now nearing the end of its 3-year objectives, DANSE has developed an effective, iterative methodology for the evolution and adaptation of a SoS. The methodology is supported by software extensions and add-ons to standard DoDAF/UPDM system architecting tools such as Rhapsody and System Architect. The add-ons to standard architecture diagramming allow:

- Joint simulation of UPDM, SysML, and other model forms created in Rhapsody, System Architect, Modelica, Simulink and other tools, such that all models simulate together.
- Statistical model checking of defined goals and objectives during the simulation.
- Automatic generation of architecture variations for analysis, using graph grammar rules.
- Automatic generation and optimization of architecture variants using concise modeling.
- An architectural pattern repository for modifying the SoS architecture, with results linked into Rhapsody UPDM models.
- Automated SoS validation methods. The methodology is currently being tested in three widely varied SoS developments by industrial partners.

Short bio:

Dr. Winokur is responsible for development, acquisition and technology transfer of methods, and tools for Systems development and engineering for the corporation. His corporate duties include coordination of IAI's participation in the EC Framework programs. Dr. Winokur holds a B.S. "Summa Cum Laude" in Electrical Engineering (1976) and an M.S. in Nuclear Engineering (1979) from the Technion in Haifa Israel, and a Ph.D. in Systems Engineering (1982) from Imperial College, London where he did his doctoral research under a British Council fellowship. Dr. Winokur is a part time lecturer at the MS in Systems Engineering in the Technion in Haifa. He has been Chairman of the Israeli Chapter of INCOSE, the International Council for Systems Engineering, for 2004-2005 and was the chairman of 2009 Israeli Conference on Systems Engineering. He holds over 30 publications in engineering subjects with emphasis on Systems.