

Labex MS2T Scientific day

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Jakob Axelsson

Professor, Senior Research Leader Systems-of- Systems at RISE SICS, Sweden.

Title: Analysis of incentives and risks in collaborative systems-of-systems.

Collaborative systems-of-systems (SoS) are characterized by the lack of strong central coordination. Instead, each constituent system (CS) has a large freedom to decide how it will act within the SoS, and whether it will participate at all. A key design consideration for such SoS is therefore how to create sufficient incentives for each CS to collaborate, in order to provide a maximal value for everyone. In this presentation, an overview will be given of how to analyze incentives and also risks as part of the design trade-offs. The foundations are concepts from game theory, agent-based simulations, and systems thinking, and examples will be given from several commercial application areas.



Yann Chazal

Expert in Systems-of-Systems, Groupe Renault.

Title: Sustainability issues in the automotive industry; how should automotive systems collaborate with others in systems-of-systems?

Global sustainability issues related to our development process are known for decades, smooth transitions can hardly happen on time now, but one thing we can be sure is that radical transformations will happen. The automotive industry is often considered to be involved in sustainability issues, but cars may still be a stake in many transformations that will occur, global or local. That doesn't necessarily mean that these transformations should be organized to preserve automotive assets, that rather means that automotive systems will in the end collaborate in a different way with others in SoS, following larger transformation processes. Understanding how to collaborate efficiently in SoS context as to make positive transformations happen, seems both crucial and out of reach for those aware of the complexity. However the worst would be not to try.