

Department of Systems Engineering and Engineering Management

Seminar Series

Model-Based Systems Engineering and Model-Based Safety Analyses

Prof. Antoine RAUZY

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Date: 16 October 2019 (Wednesday)

Time: 10:30 am - 11:30 am

Venue: P7510, Yeung Kin Man Academic Building (YEUNG), City University of Hong Kong

Abstract

The objective of this talk is twofold:

- First, to present a state of the art on model-based approaches for the assessment of the reliability of complex technical systems.
- Second, to discuss commonalities and differences between models designed by systems engineers and models designed by safety analysts.

Systems and reliability engineering can be seen as the two faces of the same medal. While systems engineers are designing models to specify what the system under study should do and should be, safety analysts are designing models to assess the likelihood that something goes wrong and the severity of the consequences. Although they consider systems at the about the same level of abstraction, processes followed by systems engineers and safety analysts are not fully aligned. The talk discusses why and what can be done to improve the situation based on industrial experience as well as on recent conceptual developments.

About the Speaker

Antoine B. Rauzy has currently a full professor position at Norwegian University of Science and Technology (NTNU, Trondheim, Norway). He is also the head of the chair Blériot-Fabre, sponsored by the group SAFRAN, at CentraleSupélec (Paris, France). During his career, he moved back and forth from academia to industry, being notably senior researcher at French National Centre for Scientific Research (CNRS), associate professor at Universities of Bordeaux and Marseille, professor at Ecole Polytechnique and Ecole Centrale Paris, CEO of the start-up company ARBoost Technologies he founded, and director of the R&D department of Systems Engineering at Dassault Systemes (largest French software editor).

Antoine B. Rauzy got his PhD in 1989 and his tenure (habilitation à diriger des recherches) in 1996, both in computer science. He works in the reliability engineering field for more than 20 years. He extended his research topics to systems engineering more recently. He published over 200 articles in international conferences and journals. He is on the advisory boards of several international conferences and journals and is regularly invited to deliver keynote talks in international conferences. He renewed mathematical foundations and designed state-of-the-art algorithms of probabilistic safety/risk assessment. Alone or with his students and collaborators, he developed safety/risk assessment software that are daily used in industry (Aralia, XFTA, MarkXPR). He is also the main designer of the AltaRica modeling language and the scientific advisor of the Open-AltaRica project (IRT SystemX). He managed numerous collaborations between academia and industry, in Europe, in the USA and in Japan, and has been the adviser of fifteen PhD theses.

All are Welcome!