

Keynote by Prof. Henderik A. Proper

Enterprise Systems Architecture - Essentials

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The concept of "system" is probably known to most of us. It may trigger some of us may think about software, and some of us about phenomena in nature. Yet others may be prompted to think about smart cities, mobility networks, and logistic chains.

In this keynote we will look at systems as complex webs of actors and resources, where there is a need for these "webs" to function as a whole. This may sound abstract. Nevertheless, as soon as we start talking about topics such as the circular economy, privacy, cyber security, regulatory compliance, sustainability, usability, risk management, and indeed management of virus outbreaks, we have started to scratch the surface of the world (complex) systems engineering. And as soon as we realise that these topics are quite often inter-connected, and delving into the underlying mechanisms, we have immersed ourselves fully in the world of complex systems.

Modern technologies, in particular IT-enabled technologies, further increase our ambition in creating such complex systems involving a mix of human and IT-enabled actors, while also increasing our dependence on the well functioning of such systems. This puts a lot of stress on the need to design such systems. This is where the field of systems architecting & engineering comes into play.

A specific domain of systems architecting & engineering, where a lot of experience has already been gained, is the domain of enterprises. In other words, systems with a clear driving purpose, such as companies, government agencies, etc. We will discuss some of the key instruments (i.e. design technologies) used to architect and engineer such systems, while ensuring alignment between the human, organisational, and technical components.