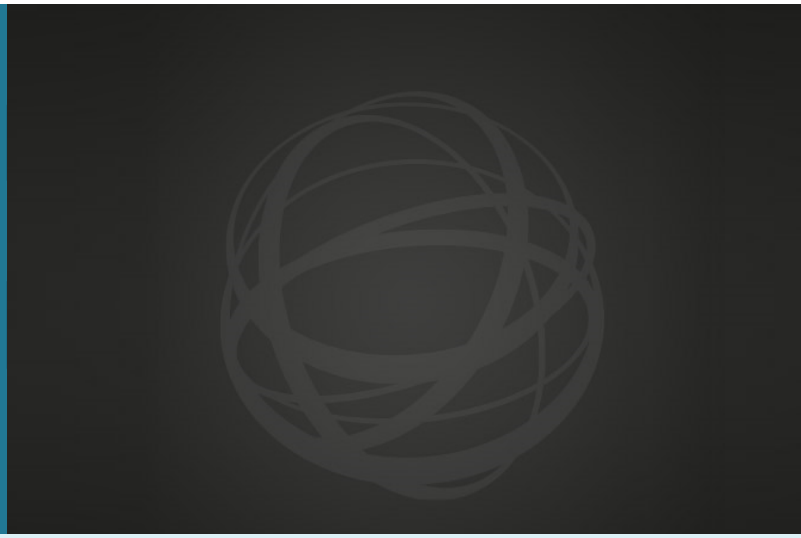
RESEARCH GROUP

www.list.lu/en/informatics/trusted-service-systems/group/informed-systems-engineering/

Informed Systems Engineering



The broader research domain of interest of the iSee group is systems modelling, where we focus on informed decision-making regarding the development, operation, and regulation of systems. Hence, the name of the group: informed Systems engineering.
The iSee group takes a model-enabled approach to enable informed decision-making, where it sees system models as the main carrier of information about a current/desired system.
As there are many, many, kinds of systems, the iSee group has specialised (but not limited) its activities towards the domain of enterprises (i.e. organisations, businesses, etc.). In doing so, it has developed a considerable expertise in this domain of enterprise engineering.

Challenges:

Using system models to enable informed decision-making about systems in general, and enterprises in particular, creates several challenges. To name a few:

- Modelling languages & frameworks to capture different (relevant) aspects of the current/desired affairs of systems, and their interrelationships.
- Hybrid (i.e. involving different mixes of humans and IT) derivation and validation of system models, resulting in "system cartographies"
- Next generation modelling tools to manage the resulting system models, including their compliance/transformational relationships.
- Next generation human-model interaction (using advanced IT environments) to enable informed-decision making in multi-stakeholder environments.

Application areas:

The iSee group has applied their results across different sectors. These include:

- Finance
- Regulation
- Government agencies
- Health

Current topics of interest

Foundational topics:

- The nature of enterprise modelling
- Hybrid assessment of enterprise models
- Human-model interaction

Applied topics, where iSee's generic interest on a model-enabled approach for informed decision making is applied to specific modern-day challenges:

- Enterprise risk management
- Enterprise regulations management
- Development of data ecosystems
- Development of AI & Digital Twin powered enterprises
- Development of Anti-fragile enterprises

Competencies

Enterprise modelling, including the modelling of aspects, such as:

- Value
- Access control
- Risk management
- Regulation management
- Interoperability
- Enterprise architecture & engineering
- Conceptual modelling & ontology modelling

Contact
5, avenue des Hauts-Fourneaux
L-4362 Esch-sur-Alzette
phone: +352 275 888 - 1 | LIST.lu

Prof. Dr Erik PROPER (erik.proper@list.lu)

LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY | LIST