

## Visualization of Health Information Exchange Patterns (V-HIEP)

**Proposer:** Patrick Kierkegaard, University of Copenhagen, Denmark

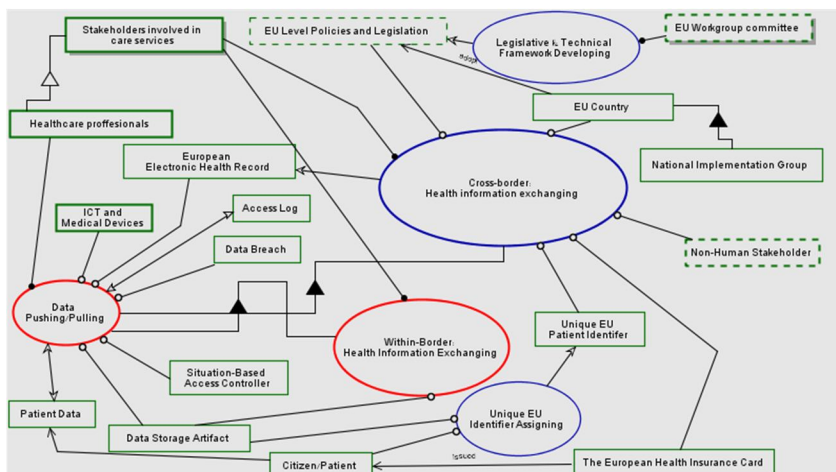
**Visited laboratory:** ESML - Technion, Haifa, Israel

**Visit dates:** 4 -13 May, 2014

In May 2014, a health informatics orientated project focusing on modelling and analyzing the complexities of health information exchange took place at the Enterprise Systems Modeling Laboratory (ESML) in Technion – Israel Institute of Technology. The research was conducted by Patrick Kierkegaard (PK) who was visiting from the Department of Computer Science, University of Copenhagen. The overall aim of the project was to create a conceptual model of the exchange mechanisms and factors affecting the flow of clinical information on a macro, micro and meso-level. Such a model would help aid researchers in identifying current and potential barriers to clinical information exchange and suggest potential interventions to improve the quality of care. The theme of the project is complimentary to PKs current research in eHealth and health information exchange and the ESML's specialism in conceptual modelling.

During the 10-day visit, PK was introduced to "Object Process Methodology (OPM)", the conceptual modelling tool developed and used by the ESML. OPM is an approach to designing information systems by depicting them using object models and process models to model, analyze, simulate, and verify complex systems.

During the course of the visit, a tutorial was provided during the first two-days. The remainder of PK's visit consisted of working with the ESML's OPCAT software (<http://esml.iem.technion.ac.il/opm/>) to conceptually model the components affecting European healthcare systems and the flow of clinical information. The figure below shows a screenshot of one of the models developed by Patrick Kierkegaard.



The results of this project suggest that visually modelling health information exchange patterns can assist researchers in identifying the bottlenecks that hinder the flow of clinical information during patient care. The implications of this study also suggest that developing a comprehensive conceptual model can also help aid health informatics researchers identify and develop potential interventions to improve the quality of patient care.