WORKSHOP: Modeling Information Exchange in Collaborative Tasks with C2Sketch

ABSTRACT

The response to disasters and crises often demands a collaborative effort from multiple individuals and organisations. To coordinate the efforts of the various actors and effectively allocate and align tasks, effective information sharing is essential.

To understand the information requirements of all parties involved, and how those can be satisfied, you need to understand: who is involved, what they are trying to accomplish and what information is required for the various tasks in which their shared effort is broken down into.

Although practically any basic tool (spreadsheets, pen and paper, whiteboard) could be used to map out and describe the actors, tasks and information exchange in such collaborative scenarios, there is an advantage to using a structured (formalized) approach. Agreed-upon structured models can be algorithmically verified and processed to identify potential problems and weaknesses. However, formal modeling languages always embed certain assumptions about their intended domains. Business-oriented (i.e. BPMN) or software-oriented (i.e. UML) models are therefore not automatically applicable to the context of information sharing during crises.

C2Sketch is a modeling package for modeling, analysis, and simulation of information-driven collaborative work systems. At its core is a formal modeling language in which the networks of actors, their tasks and the interconnected information spaces that are used to share information can be rigorously described. The formal structure enables logical reasoning about the models and dynamic validation through simulated execution. To facilitate the authoring of models, but also their analysis and graphical visualisation, C2Sketch is distributed as a package for the Python programming language. This package contains modules and APIs for convenient use of the models in Python programs, but also provides a web-based GUI for easy authoring and analysis.

In this workshop you will get hands-on experience with structured modeling of information exchange in collaborative tasks.

Workshop organisation:

Part 1: *Introduction of modeling concepts*

We will first cover the key concepts (actors, tasks, information spaces, locations etc.) that are described in a C2Sketch model. We will also touch briefly on constraints and data-types that can be added to enable analysis of the models.

Part 2*: Example model walkthrough*

In this part we will get to try out the tooling by creating an example model from scratch in guided step-by-step tutorial.

Part 3: *Application to participant case studies*

In this final part of the workshop, you are invited to try to create a model for a scenario that is relevant to your own work.

PRESENTER/DEMONSTRATOR

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The modeling method and C2Sketch tool are constantly evolving and have been influenced by more than 15 years of research interest in using task models as the basis for development of information systems for dynamic environments. Different iterations of the tooling have been used in various projects and courses at the Netherlands Defence Academy and published about in the ICCRTS and ISCRAM conferences. The workshop will be facilitated by Bas Lijnse who is the author of C2Sketch and has been active in the ISCRAM community since 2009. The tooling is FOSS and is freely available from https://gitlab.com/baslijnse/c2sketch

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