

Cheetah Experimental Platform Demo

Processes "Task Force Earthquake"

During this session, we will have a look at processes as they are run by the *GFZ German Research Centre for Geosciences*. In particular, we will focus on processes of the *Task Force Earthquakes*. The Task Force was founded in 1993, jointly by geoscientists, civil engineers, sociologists, search and rescue specialists, and experts from the insurance industry. The major purpose of the Task Force is to coordinate the allocation of an interdisciplinary scientific-technical expert team after catastrophic earthquakes worldwide¹.

The Task Force is activated immediately after a major earthquake has occurred, collects necessary information about the event and its location, decides about, and prepares for an in-field mission in the disaster area. In case of a mission, at most a week after the initial event, Task Force members begin collecting and analyzing data in the disaster area including seismic data of aftershocks, post-seismic deformation, hydro geological data, and the damage distribution as well as structural conditions of buildings. Their findings support local decisions and provide a scientific basis for an improved intermediate and long term mitigation of earthquake effects, and improve existing theories and their application.

The Task Force has developed effective processes for organizing their missions and achieving their goals in a disaster area. These processes specify the operations for a Task Force team of around 5-20 specialists, that is sent to the disaster area after the earthquake. In the following, we focus on the main purpose of a Task Force mission which is deploying a network of seismometers in the disaster area in order to measure seismic activities like aftershocks of the earthquake. Prior to this main goal, the Task Force members are also responsible for the logistics of their mission like transporting their scientific equipment from Germany to the disaster area. The information about these processes has been gathered in interviews with experienced Task Force members.

Modeling Hints

- For all process models, we focus on the activities that are done by task forces members as a *team*. Thus, we do not consider the members of the Task Force (and their roles) separately.

¹ Fahland, D., Woith, H.: Towards Process Models for Disaster Response. In: Proc. PM4HDPS '08. (2008) 254-265

Instructions

During the modeling session each of you will first work on one change task. The modeling session will be structured in the following way:

- 1) Demographic Survey
- 2) Modeling Tool Tutorial
- 3) Change Task
- 4) Cognitive Load Survey

Please be aware that we will confront you with difficult models in Parts 3 of the experiment, which require quite a mental effort to answer. Please do not feel discouraged by these models, but rather understand the modeling/change tasks as a challenge!

Please consider the following hints while answering the questions:

- You must answer all questions in order to proceed unless stated otherwise.
- In answering the questions within the questionnaire, please provide responses only based on your own perceptions or beliefs.
- Please remember that your answers are anonymous and answer each question honestly.

Confidentiality

All data, comments and responses from this survey will be treated and stored strictly confidential and anonymous. The names of individual persons are not required in any of the responses. You and your position will not be identified from any outcomes of this study. You will not be asked to disclose any confidential or sensitive information about you. All responses will be stored electronically without reference to names of individual persons.

Change Task Description

Background Information. The Task Force needs scientific equipment in the disaster area to complete its mission. The “transport of equipment” process describes how the Task Force transports its equipment, which can sum up to about 3 tons, for a mission from Germany to the disaster area. The process begins right after the decision for an in-field mission has been made and must complete before the Task Force can begin its work in the disaster area.

Due to the urgency of the Task Force mission, it happens frequently that the transport of the equipment is delayed at the customs of the host country because customs do not clear the equipment (usually because of missing freight documents). In this case, the process has to be adapted accordingly.

Description of the change to be conducted. Customs of the host country may deny clearance of the equipment after presenting equipment at customs in the host or after demonstration of devices. If the equipment is not cleared by customs of the host country, the Task Force members try to convince customs officials to clear the equipment with incomplete documents. In the meantime, the Task Force members contact their partners to trigger support from higher-ranked authorities of the host country. If the customs officials finally clear the whole equipment by negotiation and support, the equipment is transported to a storage location. In the other case, equipment is usually not cleared because of incomplete freight documents for some parts of the equipment. Thus, those parts that have been cleared are transported to the storage location, whereas the missing documents for the remaining parts are retrieved from the office in Germany. Once these documents are available, the remaining parts of the equipment are transported to the storage location as well.

Change the given process model in the BPMN Modeler, such that the case of incomplete freight documents is captured accordingly.