



Flexible Early Warning Systems with Workflows and Decision Tables

Decision Tables

Decision Tables are a **tabular representation of a set of if-then rules**. They first became popular in the 1960s and since then proved to be an easy-to-use representation for complex rule sets.

Nowadays, few developers are familiar with them or they have forgotten about this simple but powerful technique. Though, recent studies showed that they are still the best representation with regard to **comprehensibility and ease of use**.

We integrate decision tables into workflows in order to **allow end-users to adapt the behaviour** of the system.

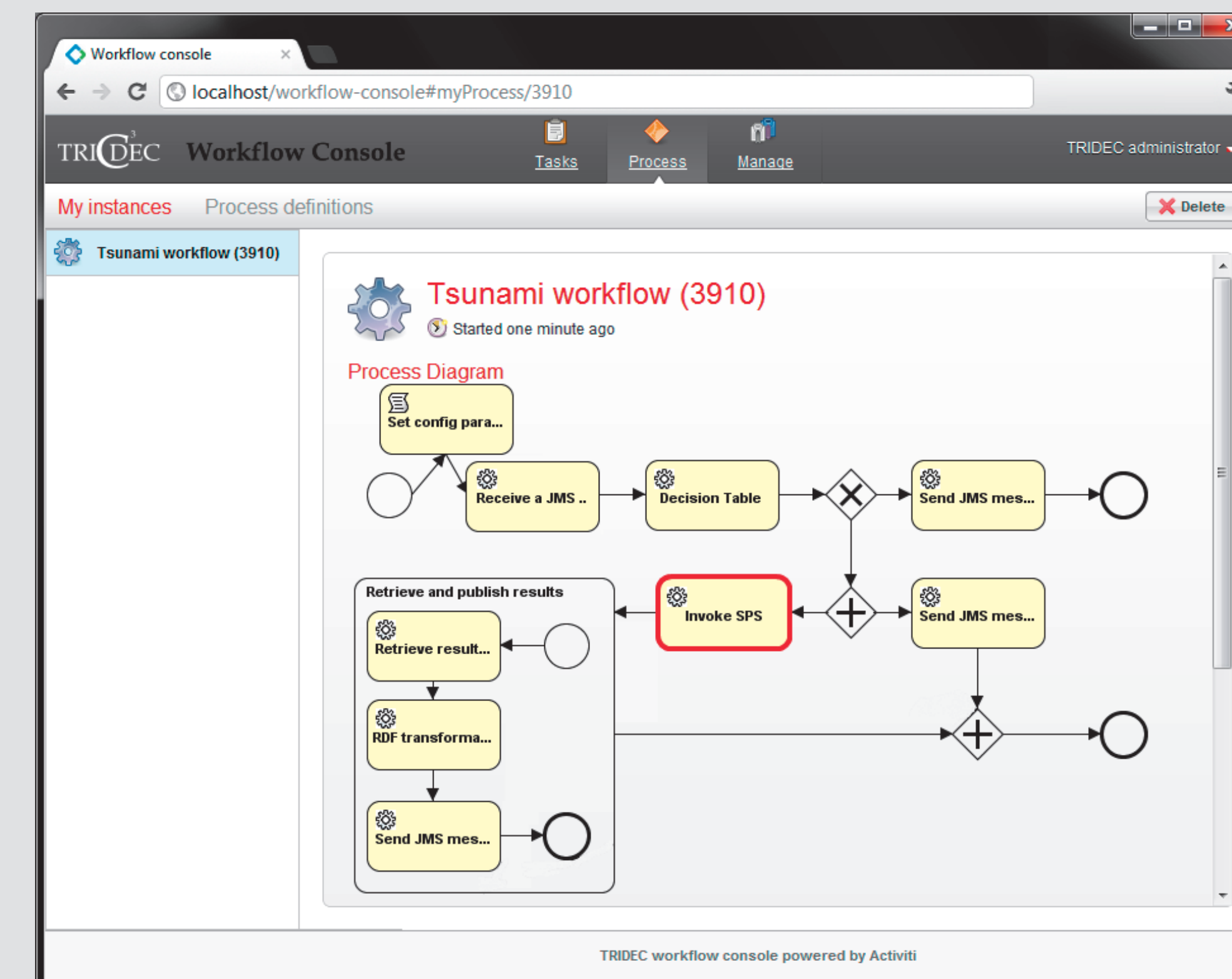
Implementation

Decision Tables

are edited either in a spreadsheet application (see below) or with a web-based editor. The decision tables are then deployed to a repository and translated to rule sets that are executed by the JBoss Drools rule engine.

Workflows

are implemented using *Activiti*, a modern open-source BPMN 2.0 workflow engine. The tool suite includes, among others, a graphical workflow editor and a web-based console.



Web-based Workflow Console



Project Facts

Collaborative, Complex and Critical
Decision Support in Evolving Crises

Acronym: TRIDEC

Reference: 258723

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Coordinator:

Prof. Joachim Wächter
Helmholtz Centre Potsdam GFZ German Research Centre for Geosciences
Centre for GeoInformation Technology
(Potsdam, Germany)

Partners:

University of Southampton, IT Innovation Centre
(Southampton, United Kingdom)

Queen Mary and Westfield College, University of London
Department of Electronic Engineering
(London, United Kingdom)

Joanneum Research Forschungsgesellschaft GmbH
DIGITAL - Institute of Information Systems & Information Management
(Graz, Austria)

Fraunhofer IOSB
Institute of Optronics, System Technologies and Image Exploitation
(Karlsruhe, Germany)

TDE Thonhauser Data Engineering GmbH
(Leoben, Austria)

Q-Sphere Limited
(London, United Kingdom)

Instituto de Meteorologia,
I.P. - Departamento de Sismologia e Geofísica
(Lisbon, Portugal)

Alma Mater Studiorum - Universita di Bologna, Department of Physics
(Bologna, Italy)

Bogazici Universitesi
Kandilli Observatory and Earthquake Research Institute
(Istanbul, Turkey)

Workflows

Workflows and workflow engines are commonly used to automate processes and structure human collaboration. They can also be used in early-warning systems. The advantages of workflows are:

Comprehensibility

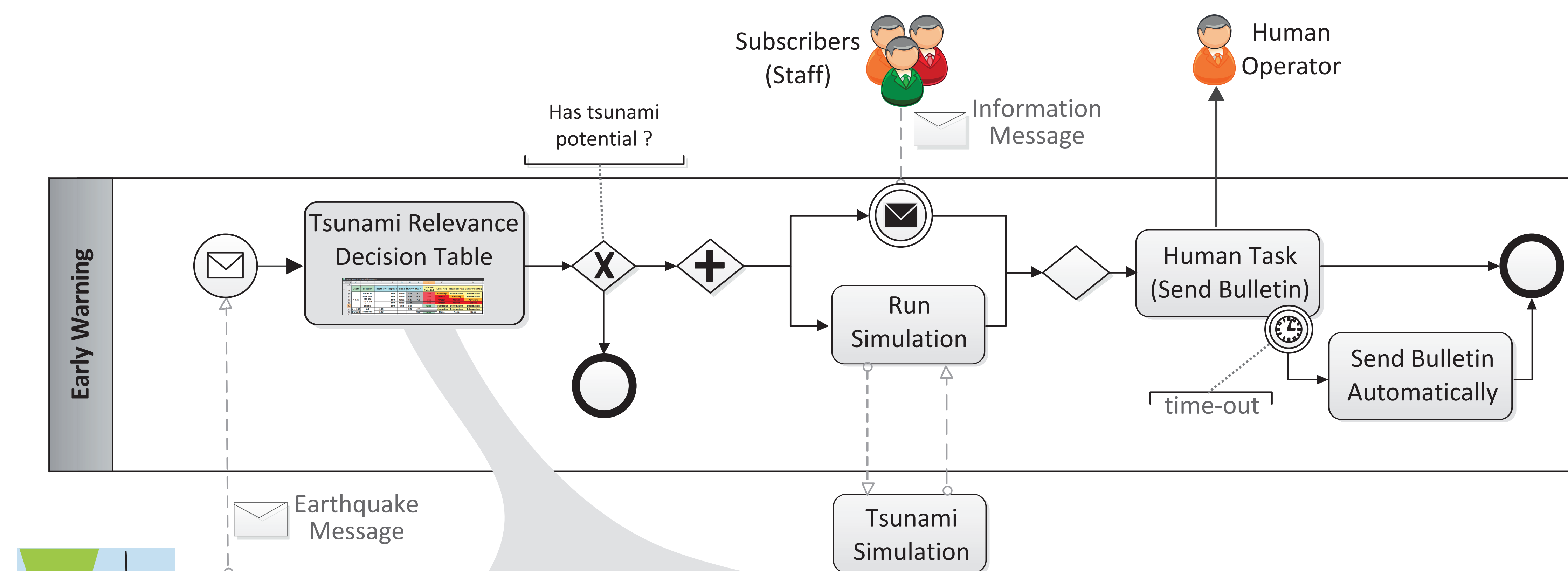
Non-IT personell can follow the flow of information

Logging & Auditing

Standard mechanism to provide auditable execution histories

Monitoring

Running workflows can be inspected and their status can be monitored



Decision Table (edited in Microsoft Excel)

Depth	Location	depth >=	depth <	inland	Mw >=	Mw <	Tsunami Potential	Local Msg	Regional Msg	Basin-wide Msg
Under or very near the sea (D < 30)		100	false	5.5	6.0	true	Advisory	Information	Information	
< 100		100	false	6.0	6.5	true	Watch	Advisory	Information	
		100	false	6.5	7.0	true	Watch	Advisory	Advisory	
		100	false	7.0		true	Watch	Watch	Watch	
Inland		100	true	5.5		false	Information	Information	Information	
>= 100	All locations	100		5.5		true	Information	Information	Information	
Default						5.5	raise	None	None	None

