DEWS – Information Logistics with FOSS and OGC Standards

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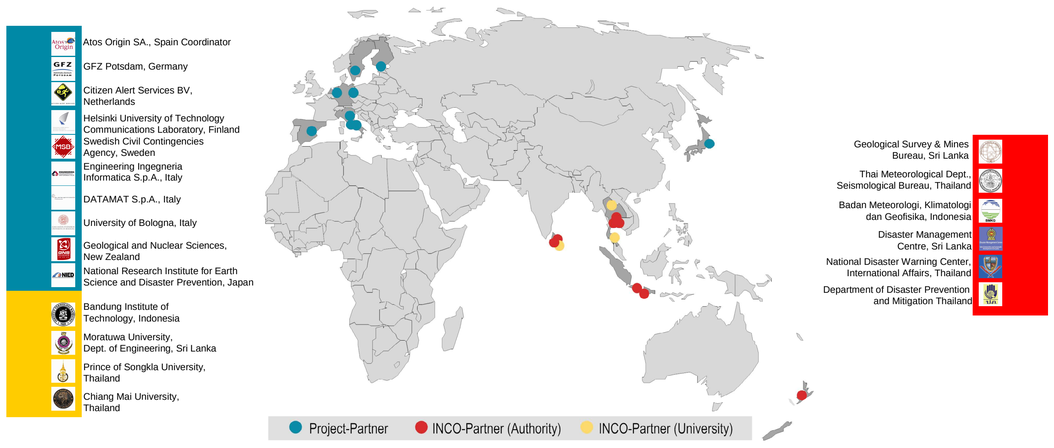
Characteristics

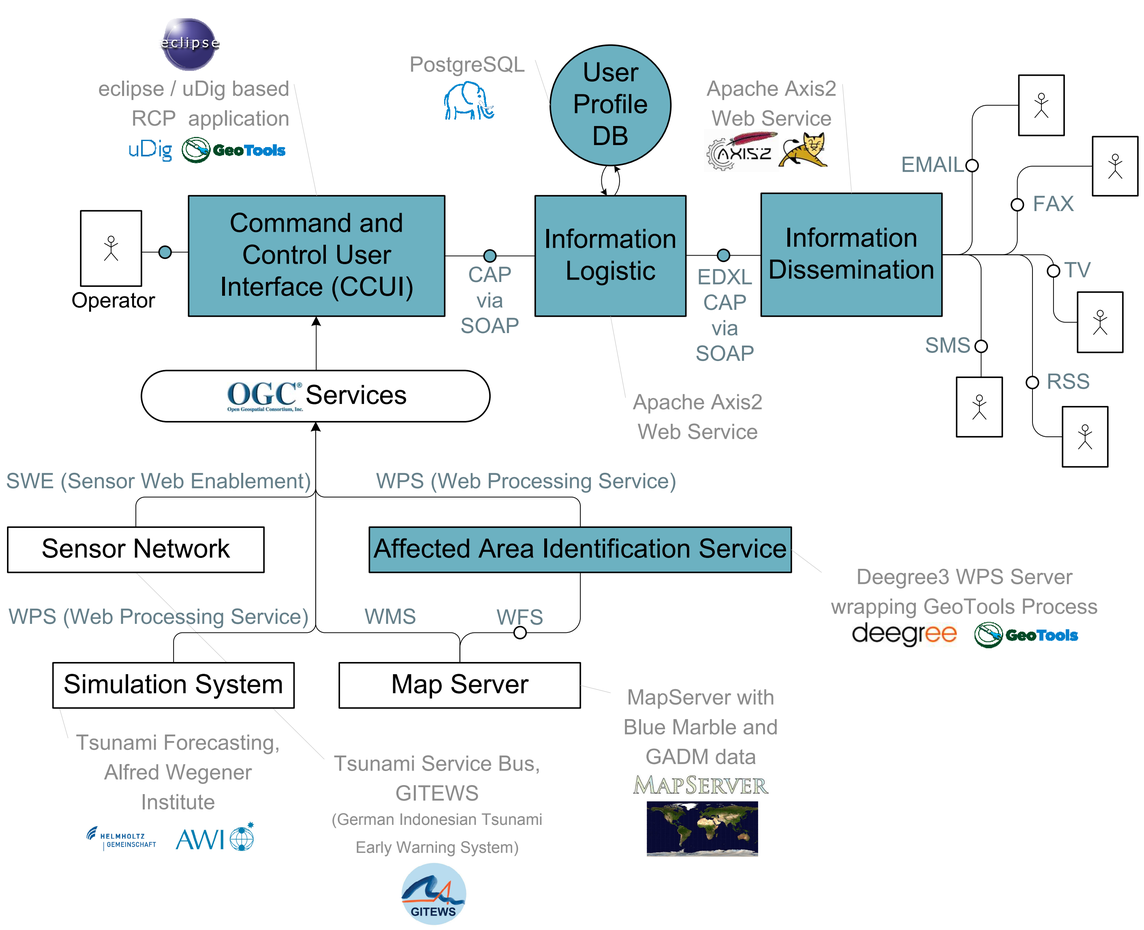
- New generation of open standard based early warning systems
- Reliable hazard detection and effective warning dissemination
- Multi-hazard approach: Application potential for all types of hazards
- Transferable to different geographic areas
- Modular architecture with standardised interfaces
- Upstream: Open integration platform for sensor systems
- Downstream: Information logistics and warning dissemination components
- Open Source wherever possible
- Existing standards wherever possible
- Principal focus on tsunami in the Indian Ocean Region
- Sensor platform provided by GITEWS project
- DEWS focuses on downstream by improving information logistics and multi-channel warning dissemination
- Message dissemination to rescue services, authorities and the public
- Multilingual environment

Framework Conditions

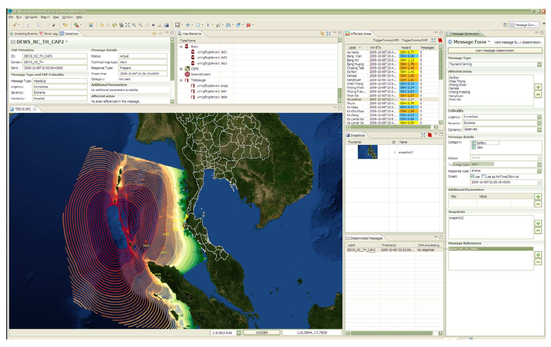
- European Union Research Project (FP6)
- EU Partners from industry and research/HE institutions
- Partners in the Indian Ocean & Pacific Region
- GFZ acting as technical coordinator and Atos Origin as project coordinator



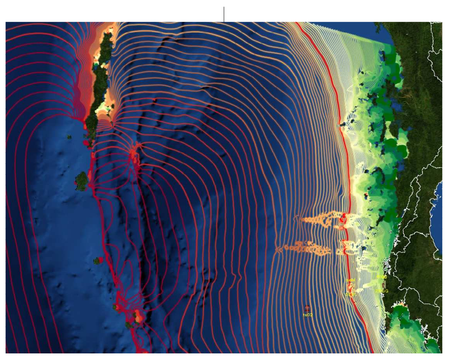
System Architecture



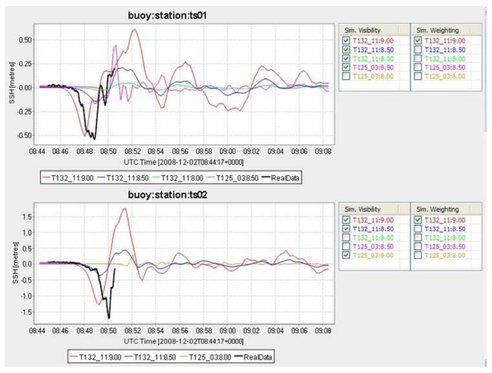
uDig and GeoTools Integration



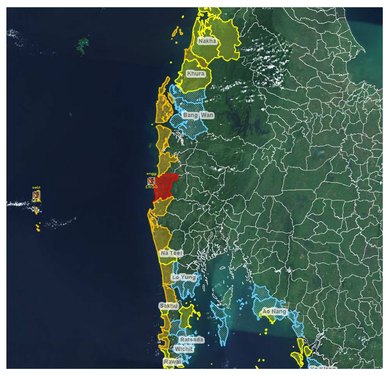
GIS functionality provided by uDig. Map is central component of application showing administrative areas, sensor positions, affected areas, wave front, epicenter, etc.



Isochrones (wave front) generated by Simulation System as shapefile. Processing with GeoTools. SLD programmatically added. Real-time wave position highlighted in red.

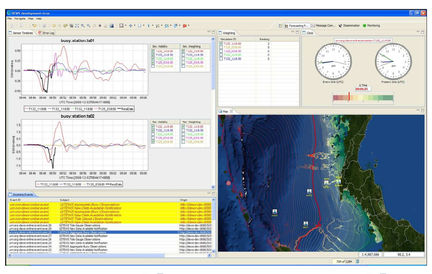


Sensor time series (forecasts) generated by Simulation System as shapefiles. Processing with GeoTools. Diagram with JFreeChart. Real data (black line) based on SWE events.

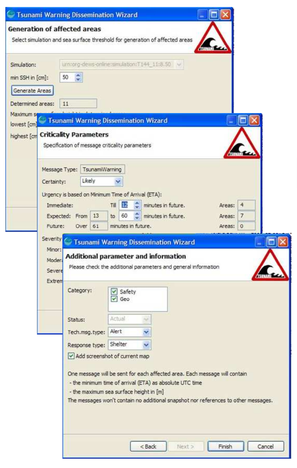


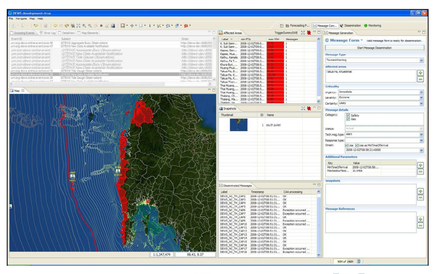
Affected Areas calculated by AAIS: Intersection of simulation result (coastal points with ETA and inundation height) and administrative areas polygons (GADM).

Workflow and Information Logistics



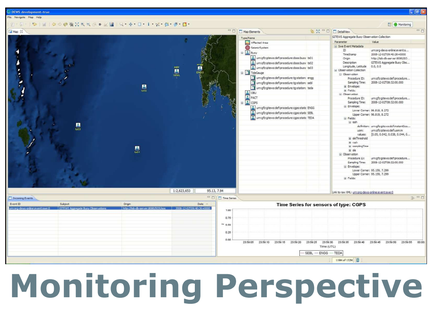
Forecasting Perspective





Message Composition Perspective

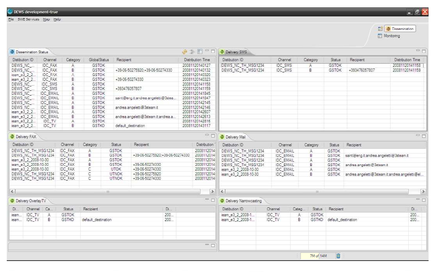
Simulation Results



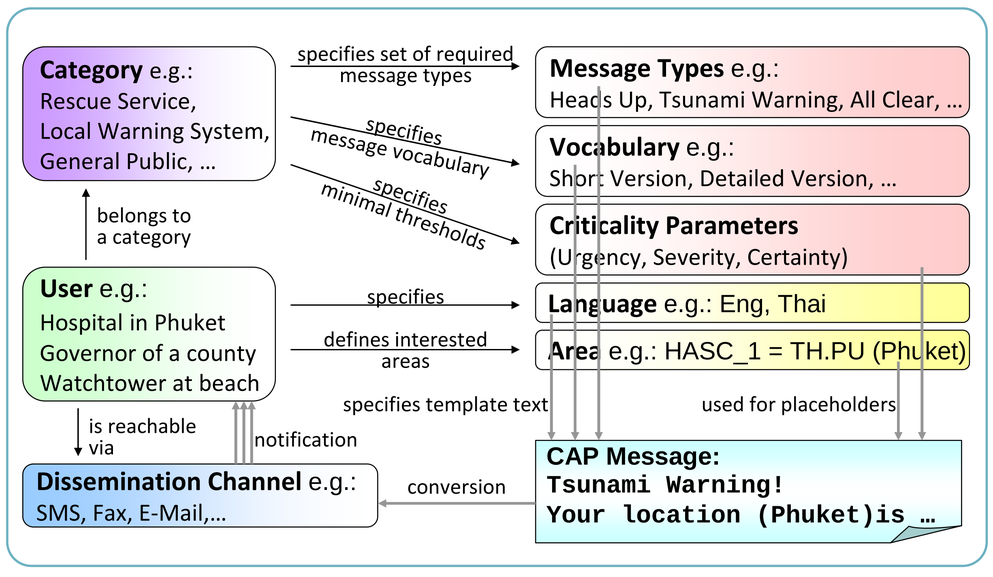
Monitoring Perspective

Sensor Data

Feedback Dissemination Channels



Dissemination Perspective



Information Logistics Component

- Generation of custom tailored warning messages
- Common Alerting Protocol (CAP)
- Addressing with EDXL-DE (Emergency Data Exchange Language, Distribution Element)