# RIESGOS DEMONSTRATOR

Exploration tool for multi-risk situations based on web services

## PURPOSE AND FUNCTIONALITY

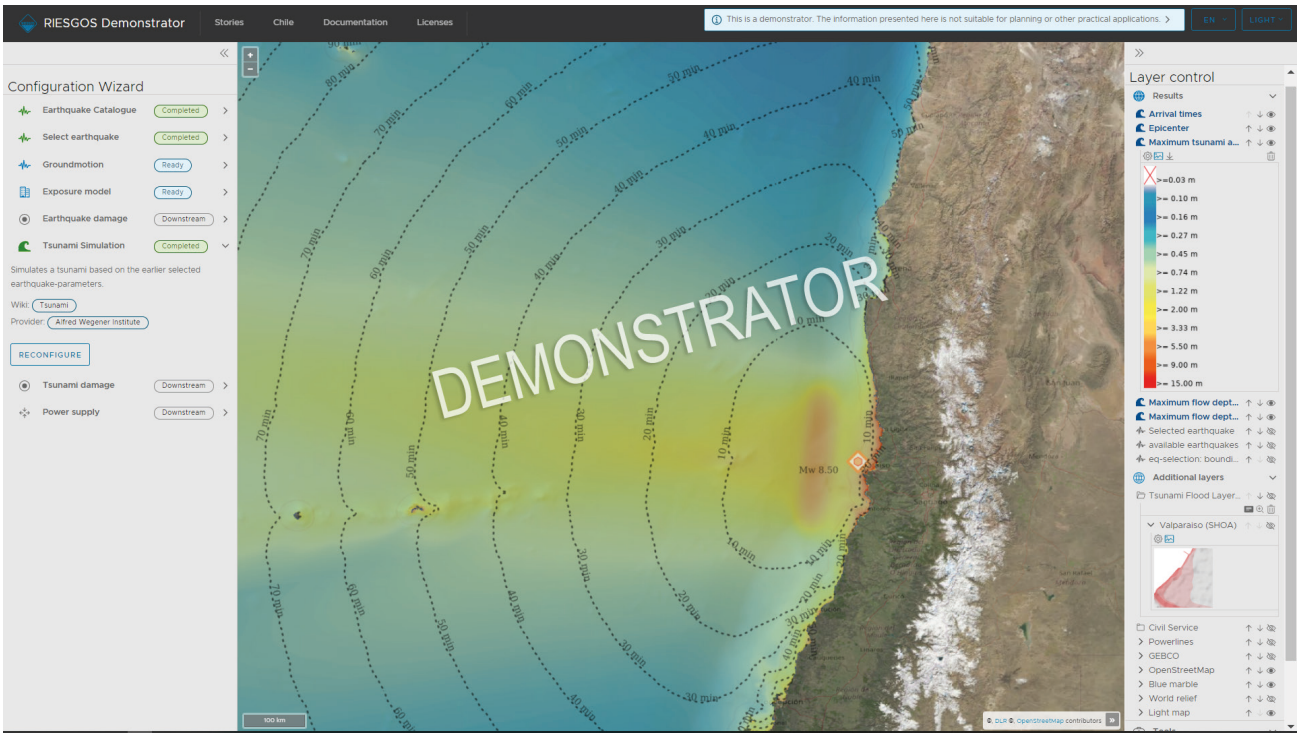
The demonstrator of RIESGOS' Multi-Risk Information System enables users to **explore, describe and quantify multi-risk situations**. Main functionalities include:

- **Display and exploration** of multi-risk analysis data products and information
- **Configuration of input** for (remote) data processes, simulations and models
- **Orchestration** of web services

In close cooperation with potential users realistic multi-risk situations (so-called "stories") have been elaborated.

The **stories for Chile and Peru** are based on an interaction of earthquake and tsunami hazards and their impact on people, property and critical infrastructure. The **story for Ecuador** involves volcanic activities, lahars, landslides and floods as well as consequences of the impact on critical infrastructure systems.

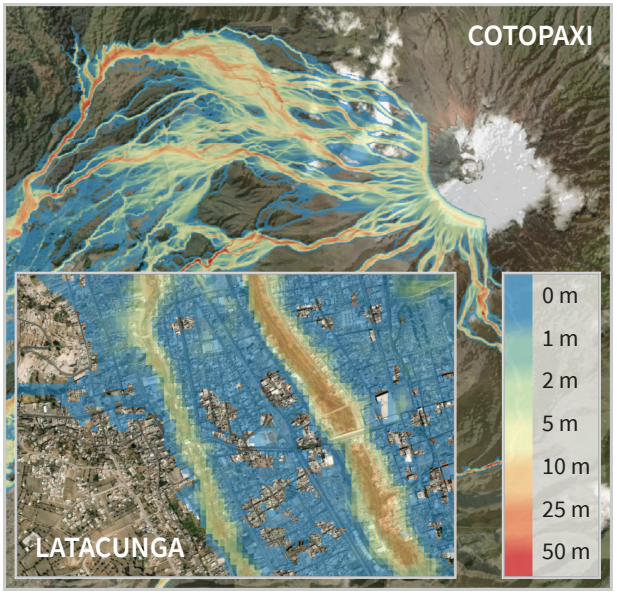
For each story, a storyboard has been developed which guides the user step by step through the application. Each step is represented by a web service. **The web services are connected in a chain where each link simulates the input the next web service requires for running. That allows the user to visualize scenarios with cascading effects.** Based on the storyboards the workflow and layout of the demonstrator has been designed and implemented.




*RIESGOS Demonstrator Graphical User Interface, with configuration wizard (left), central map window (center) and results panel (right).*

## INTERACTION DESIGN

The **Graphical User Interface of the demonstrator** can be accessed from a web browser. The main screen is divided into three main display areas: the central **map** window, the **configuration wizard** for the control of each web service to the left, and the **results panel** to the right. The latter allows the user to select and display the processed results and to receive further information on the output.

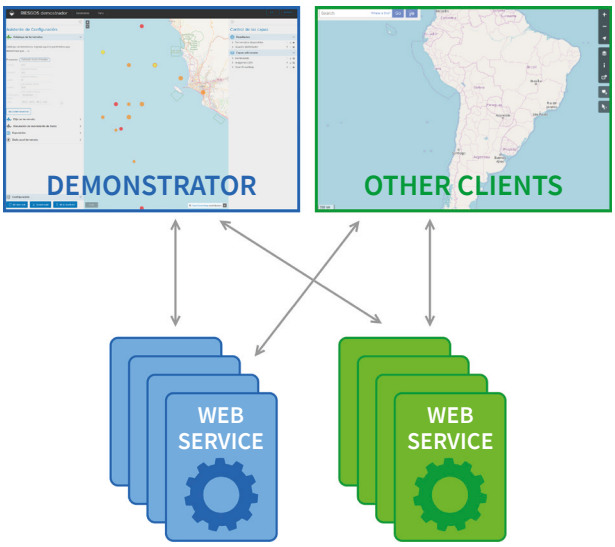



*Lahar Simulation: one of many available web services.*

## FLEXIBILITY AND RE-USE

The use of **standardized (geospatial) web services** such as those defined by the Open Geospatial Consortium (OGC) allows users an **open and flexible access to multi-risk information and data products.** Web services and exposed data resources can be accessed using a variety of clients: from a simple command line tool, over a web browser, to existing graphical user interfaces of public authorities and companies which are equipped with a map client. **OGC web services allow all kinds of geospatial functionality out-of-the-box including data access, data display, styling and processing**.

The providers of web services define their products, display options and configuration items. The user is enabled with the flexibility to visualize the web service product according to his needs. By transferring the styling instructions from the client-side to the service-side environment modularity and scalability are increased. This flexibility allows for **re-use of the developed RIESGOS components into other contexts, e.g. system environments of South American institutions**.




*All services can be used in other clients, and the existing client can be extended by external services.*

Institutions can in turn offer their tools as web services to be accessed by the demonstrator. Through this the configuration wizard allows for the **selection of alternative web services**, e.g. earthquake or tsunami event catalogues.

More information about the project:
www.riesgos.de

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