Implementing a Distributed Processing Framework for Multi-Risk Analysis - A Lessons Learned Perspective

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Analysing individual hazards and the associated risk is a challenging task in its own right. It requires a lot of expertise built up over dozens of years. Unfortunately, there are situations where that a single hazard can trigger following - often horrific - consequences. The history of international catastrophes is full of examples: The fires in San Francisco after the 1906 earthquake due to destroyed gas pipelines; the tsunami that destroyed the Fukushima nuclear power plant after the Tohoku earthquake, or the climatic effects of the Krakatau eruption in 1883.

In our RIESGOS project we have been working on an demonstrator app to analyse multi-risk-scenarios - with a strong focus on the earthquake-tsunami combination. This is an use case that is very relevant in our partner countries Ecuador, Peru and Chile - and the knowledge is provided here by the partner institutions of the RIESGOS consortium.

The technical approach is strongly focused to be standard based using OGC Web Processing Services, as well as to be distributed. This allows to use the specific expertise of each of the partner institution to be taken into account, to share the involved data & algorithms that have been built up and refined over years.

What we focus in this presentation is a deeper insight into the implementation perspective, with the benefits as well as strategies to overcome challenging
aspects that we encounted when working with the distributed risk analysis framework. These include requirements on interoperability, deployments of bundled versions for testing & transfer, monitoring and others.