

GRASS Development with Eclipse/CDT in the Distant Early Warning System (DEWS) Project

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The Distant Early Warning System (DEWS) Project is a Strategic Targeted Research Project of European Commission (EC). It provides a standard-based reference model (RM) for integrated tsunami early warning systems focussing on information logistics and dissemination aspects of the delivery of messages to end user groups.

The RM will be implemented based on proven FOSS GIS technologies such as uDig and PostGIS. It is a step toward a new generation of interoperable tsunami monitoring systems integrating reliable tsunami detection and effective warning dissemination.

The strategic decision for FOSS GIS tools enables flexible and widespread use among all participating nations, yet especially includes developing nations with limited resources. Also, the openness of the approach ensures flexibility, adaptability and its future-proofing: Since the occurrence of the next major tsunami is unknown, the longevity of the monitoring and warning systems is crucial.

DEWS provides upstream functions based on a multi sensor platform and on the downstream-side target group-oriented compilation of warning messages and multi channel dissemination.

It is based on the sensor integration platform of GI-TEWS (German Indonesian Tsunami Early Warning System) with development focus on warning centre and dissemination functionality.

Most of the initial geodata infrastructure integration was based on GRASS GIS. This poster showcases a new development for platform independent customisation of GRASS GIS by relying on an integrated development environment (IDE). For this, the GRASS source code repository is accessed via the Eclipse IDE combined with the C Development Tool (CDT) plugin. For a distributed group of developers working on different hardware and operating systems this approach brings short term benefits enabling collaborative development, code refactoring mechanisms and the embedding of the traditional build chain in ant-code. This extends beyond the conventional text-editor based development which is still widely used.

On a strategic level, this approach also significantly lowers the learning curve for new programmers joining the development community by allowing fast and effective navigation of the codebase (of about 500 individual GIS modules). This helps to optimize the overall development capacity and productivity, being critical resources in R&D projects.