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The application of Service-Oriented Architecture (SOA) as a basis for Delft Flood Early Warning System (Delft-FEWS) development.

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An increasing importance of flood forecasting and flood management stimulates development of the comprehensive software systems allowing heterogeneous infrastructure, high level of reliability and responsiveness. In this work the architecture of the Delft FEWS system is presented with a strong emphasis on its SOA nature. An implementation of the Delft FEWS system was performed using J2SE/J2EE and it consists of two main services: master controller and forecasting shell. Main frontend of the system is developed as a Swing-based application. The system allows to configure any complicated deployment scenario which enables loosely coupled interaction between different components. By use of SOA design principles the system allows easy coupling and management of sophisticated collection of modules customized to the specific requirements of an individual flood forecasting agency. The system defines a generic and simple XML interface which facilitates an easy extension of the system functionality by substantial number of third-party modules.

Keywords: hydroinformatics, software architecture, SOA, flood management, flood forecasting