



User and System Requirements for the Operational Flood-mapping Services

J. Silander (1), V. Keskiarja (1), M. Huokuna (1) and M. Sane (1), I. Solheim (2)

(1) Finnish Environment Institute, Helsinki, Finland, (2) Norut IT, Tromsø, Norway

Climate change is increasing risk of flooding in inland and coastal areas. In Finland, precipitation is foreseen to increase 6% to 37% and heavy rainfalls over 30 % during the next century (Jylhä et al., 2004). Equally the Sea level is expected to rise, this impact combined with storm surge can lead to a catastrophe. Recently, we have been reminded about this change by two severe floods. The first, the series of heavy rainfalls caused major damage in August, 2004. Storms caused approx. 10 million euros expenses. The second, a sea level rise and storm surge induced flood was experienced in the January 8-9th, 2005. It was caused by a strong low pressure which passed over the Southern Finland (wind speed nearly 30 m/s). The two meter storm surge was causing major damage in Helsinki area.

Recent studies on flood management has shown that we can reduce flood damage nearly 50 %, in some cases, by improving our flood preparedness. Flood mapping supports flood preparedness by increasing flood awareness. The end-users of flood mapping services can be divided into three different groups, according to their involvement in phases such as flood prevention, crisis and post-crisis management. Accordingly, the end-users have different informational and functional needs. In flood prevention the flood-maps are used for risk scenario assessment, monitoring flood prone areas and flood planning by federal or regional authorities. Flood-mapping services is to them a tool to carry out risk analysis and to produce guidelines and conditions for land development. During a flood-situation, the time-factor is critical. In the crisis phase the data is used to analyze the situation and effectuate damage reduction measures by fire rescue service and public. After the crisis the flood-map is used for damage assessment and experience capitalization by federal and regional authorities.

This paper explores the needs of different end-users such as fire services, the pub-

lic, regional and federal authorities, insurance companies. The user and system requirements are described based on experience with recent floods, water management system and flood mapping as well as on a customer survey. The planned federal and commercial flood mapping services are introduced.