Implementing systems for emergency response poses various challenges. Information from various sources and systems needs to be integrated, processed, aggregated, and visualized in a dynamic and consistent fashion. Amongst all those challenges, one key issue is the development of an optimal user interface, which allows for intuitive operation with different information as well as supports collaborative work, even in stressful situations.

In SoKNOS\(^1\), we develop an integrated system for emergency response with a focus on four core areas: information integration, information aggregation, information creation, and visualization and interaction.

We follow different approaches for improving the usability of emergency response systems. For that purpose, we have developed a framework for integrating user interfaces of existing applications. Such an integrated user interface allows for better interaction with data contained in different applications and lowers the learning efforts for users already familiar with the applications that are integrated.

In that framework, access to the functionality of the different parts of the system is aggregated in a toolbox, thus following a familiar metaphor. This toolbox can be personalized and contains only the subset of functionality that a user may access according to his role; thus, the overall complexity is lowered. Personalized toolboxes also lay the foundation for multi-user interaction.

We have evaluated the usability of the first SoKNOS prototype in different tests with end users from the fire brigade, the police, and the German THW (Agency for Technical Relief). The results show that the approaches taken in SoKNOS can significantly improve the usability of emergency management systems.

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\(^1\)Service-orientierte ArchiteKturen zur Unterst\"utzung von Netzwerken im Rahmen Oeffentlicher Sicherheit, German for Service Oriented Architectures for supporting Networks in Public Security: http://www.soknos.de/