FRAUNHOFER INSTITUTE FOR TRANSPORTATION AND INFRASTRUCTURE SYSTEMS IVI

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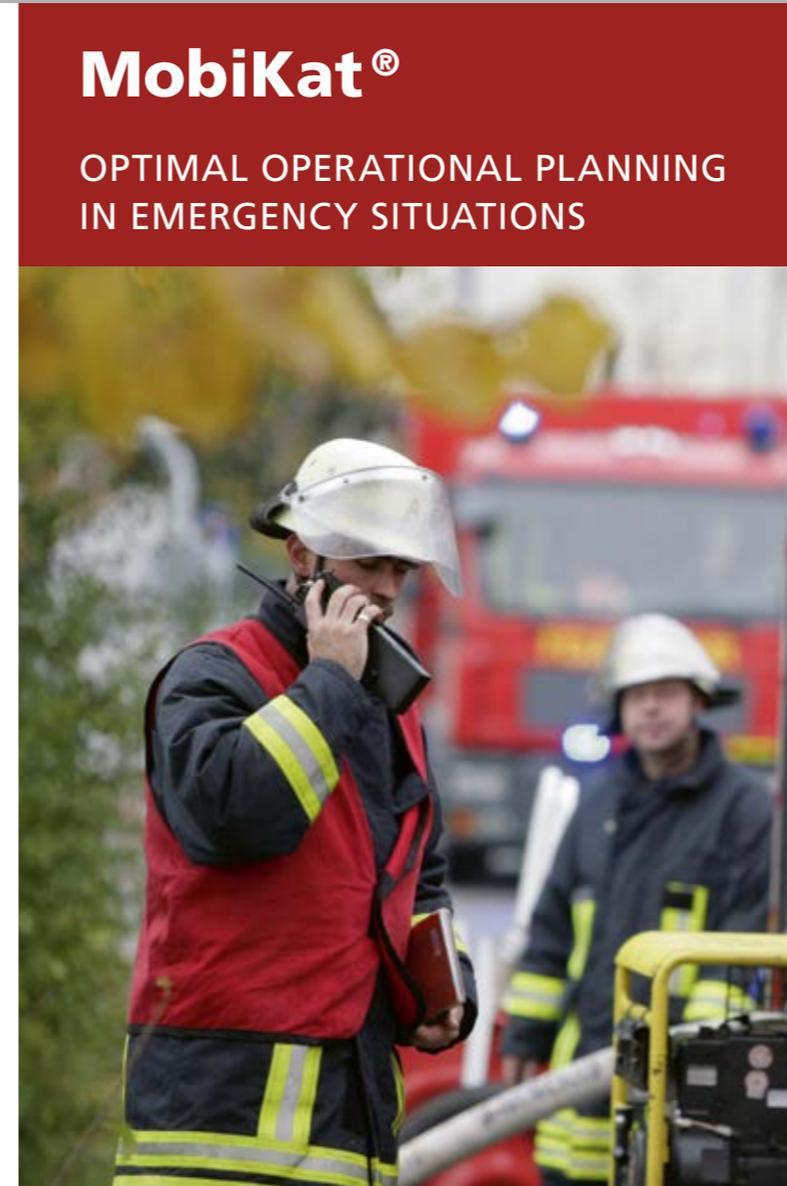Phone +49 351 4640-612 | presse@ivi.fraunhofer.de

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MobiKat®

OPTIMAL OPERATIONAL PLANNING IN EMERGENCY SITUATIONS

The MobiKat® technology provides effective support for complex strategic and operational decisions in hazard prevention. Users include planning staff, civil protection staff and operations managers in firefighting, emergency services, civil protection and police.

MobiKat® was developed in close cooperation with end users. The modularly designed system integrates highly efficient calculation and optimization algorithms, user-friendly control and visualization modules as well as database components. The system has been applied in everyday use for several years, supporting the management of large-scale disasters. The technologies are constantly being enhanced and developed.

MobiKat® can be applied flexibly in many application areas. The freely configurable system is used as a planning aid in administration, emergency management agencies and fire departments as well as in operative-tactical areas on mobile command vehicles, control rooms and mobile devices. Furthermore, functionality modules can be provided for other existing operational command and disaster management systems.

Basic modules

- visualization (infrastructure and operational picture using digital maps and aerial photography, damage accounts)
- management of sources and resources
- hazard, risk and infrastructure analysis
- action and emergency plans, object information
- interfaces to external modules (GIS, GPS devices, external command and control systems, video surveillance)

Modules – strategic planning

- analyses of risk, time frame and protection targets
- optimal site planning for fire, rescue and police stations
- concepts for the optimization of units and special equipment
- identification of optimal operational fields for units and response zones
- emergency plans, planning of large-scale disaster management
- security planning of large-scale public events

Modules – operational-tactical command and control

- optimized real-time tactical mission planning and control for resources (e.g. at major events)
- optimized guidance for units in affected regions, evacuation planning, scheduling and allocation of injured people to hospitals
- optimization of forces and means employed in missing persons search
- calculation of long-distance fire hoses and water pumping
- command and control in large-scale public events

User groups

- fire and civil protection offices
- operational managers, incident coordinators
- police and special forces commanders
- government and authorities
- civil protection and disaster management staff
- fire departments, first responders, emergency medical services
- decision makers in command and control centers
- operations manager (mobile terminal devices, tablets)
- command vehicles
- training personnel of management and operational staff

Selected application scenarios

- decision support in command and control centers
- mission control and documentation
- planning of operational zones for security, police and special forces
- disaster management and evacuation planning for floods, extreme weather, CBRNE assaults, earthquake
- incident management
- planning of fire and security requirements and risk analyses
- optimization of firefighting and emergency strategies
- planning of large-scale operations (police, emergency, army)
- real-time operational planning and optimization
- missing persons search
- mass-casualty incidents (MCI)

MobiKat® made its successful debut during the Elbe flood in 2006. The system actively supported the civil protection staff of the city of Pirna in terms of prognosis and the visualization of complex situations as well as in the optimization of operational planning. In addition to this practical application, MobiKat® has since been in both stationary and mobile use – i.e. on tablet PCs – in several rescue stations.

MobiKat® has also been successfully applied in large-scale operations, e. g. hospital relocations, firefighting exercises and major events such as the Bobsleigh World Cup in Altenberg, Saxony, in 2008. In addition, MobiKat® has been used for the planning of fire and security requirements and operational zones in the regions of Sächsische Schweiz-Osterzgebirge and Meissen, as well as in the cities of Dresden and Leipzig.

The MobiKat® system is also suitable for the optimization of operations strategies as well as disaster and emergency plans.