

23. Emergency communication technology for crowd safety

In emergency situations at crowded festivals and parades the 3G- and WiFi-networks often fail or become inefficient due to overload. We present a set of new and unique wireless sensor network technologies that help to solve this problem.

We demonstrate an efficient feature detection algorithm that is, for example, capable of learning the faces of suspects-on-the-run. We also show how to build a safe, privacy aware, emergency ad-hoc network by using the mobile phones of the visitors.

We show how unmanned aerial vehicles (UAVs) are used at parades or festivals to quickly deploy the infrastructure of an emergency communication network. Our final goal is to maintain communication when the standard infrastructure fails.



ICT science question

How can we develop efficient algorithms for detecting important image features? How can we use the mobile phones of the crowd's participants to cope with the low bandwidth of current networks? How can UAVs be used to quickly deploy a network infrastructure for monitoring crowds?

Application

We provide safe, reliable, and privacy-aware wireless sensor networking for crowd and city environment monitoring. Our technologies help festival organizers, crowd managers, urban environment monitoring agencies, and first responders (police, safety staff, and fire brigades) to obtain information in a faster and more reliable way.



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COMMIT/ project
SENSAFETY Sensor Networks for Public Safety

Alternative Application

Information networks are everywhere. Our technologies are also applicable for environmental hazards, military operations, and hard-to-deploy sensor networks. Also the monitoring of urban environmental conditions – especially in emergency situations such as explosions or contamination – can profit from a quickly deployable wireless sensor network. These features make us a potential partner for military units and environmental agencies.

Nice to know

At festivals or parades, bad news – such as a fire or a fight – reaches Twitter or Facebook earlier than they reach first responders like police or fire brigade.



Better surveillance of public spaces and crowded events by autonomous drones and smart infrastructure.



Use drones and smart connectivity to set up or repair your large scale sensor network in minutes!



Drones and smart phones help bringing emergency news faster to first responders.



Improve your sensor network with flying base stations and smart phone connectivity.