

Real time Flash Floods and Traffic Monitoring and Alerting Sensing Network

Saudi Arabia

Implementing Agency/organization	Sadeem Wireless Sensing Systems
Implementation Period	6 months
Location (City and Country)	Jeddah, Abha, Saudi Arabia/ Bali, Indonesia
Total Cost to implement the Project	US \$ 850 000
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The Challenge

Flood events are the most common natural disasters. They cause tremendous life and economic loss in most places of the world (40 billion USD losses annually on average worldwide). Most of the flood-related casualties occur because of the lack of real-time information on flooding conditions (which accounts on approximately 40% of flood damages). Existing flood warning systems can NOT provide the following:

- The full extent and location of the flood
- Flood propagation
- Flood severity
- Safe routes during flood events

The Innovation

Sadeem provides the ONLY patented solutions specifically designed for flood monitoring in urban environments. The systems developed by Sadeem complement existing smart cities solutions and provide real-time alerting, mapping and response applications for flooding events. The integrated solution developed by Sadeem is easy to install (plug and play), and can sense and map traffic flow conditions simultaneously, for the same cost .

Sadeem is a high-tech company with multi-patented technology (granted patents). This technology is the result of 5 years of advanced R&D at King Abdullah University of Science and Technology with multiple field deployments. The technology we propose consists in patented dual traffic/flood wireless sensors that are rugged, communication systems, and a suite of visualization/management mobile apps to display flood events and best respond to them (traffic routing, road blocking, evacuations) in real time.

The Impact

The provisioned impact that Sadeem system can provide is:

- Enabling saving lives and money (at least 30% of the economical losses).
- Reducing insurance costs for businesses or public (by at least 25%).
- Making cities more attractive to businesses (by providing more productive city infrastructures).
- Enabling the design of better defense systems with more robustness to uncertainties and benefits to cost ratios.