

Faster Emergency Medical Response in Disaster Situations

RescueWave® assists emergency medical personnel in answering important operations questions and enables a more efficient operational response in mass-casualty incidents (MCI).

www.itk-engineering.com



REFERENCE-STORY

RescueWave® assists first responders with/through:

- Position information
- Triage of patients
- Operational management
- Briefing
- Patient registration and care
- Transportation organization

► The Challenge

Maintaining an Overview in a State of Emergency

In a disaster incident, things need to move quickly. Especially in unclear circumstances with many victims, a few minutes can make all the difference. The triage of patients has, to this period in time, taken place through triage tags, upon which categories (life-threatening injuries, serious injuries, minor injuries, no chance of survival, etc.), time, name of physician and a short diagnosis are recorded.

Because the tags are made of paper, the incident commander faces the challenge of establishing a structured deployment plan for the incident response team. This overview takes time.

► The Solution

Electronic Systems for Specific Assistance

In a development partnership, VOMATEC Innovations GmbH, antwortING Beratende Ingenieure PartGmbH and ITK Engineering GmbH have developed **RescueWave®**. With the help of the electronic triage device **Rescue.Node**, which is attached to the patient, the patient status can be directly delivered to the incident response team. On the basis of real-time data, the tried-and-tested operations management software **Rescue.Board** establishes clearly prepared statistics with which decisions can be made. Misunderstandings are avoided and the need for coordination through radio communication is drastically reduced.



ITK-Services:

- System development, from industrial design to manufacturing
- Software and hardware development
- Development of IoT network and communication interfaces for the web application Rescue. Board
- Verification, validation and testing
- Transfer to series production and production of Rescue. Nodes as OEM product

► The Implementation

Rescue.Node for Patient Triage

The triage device **Rescue.Node** was completely developed by ITK Engineering and is the first of its kind on the market. During the development process, the usability of the device for the end-user was a particular focus. The requirements included, among other things, the energy-saving and robust implementation (protection class IP54), which makes an operating life of 4 hours for a range of several kilometers, the deployment from -20 to +60 degrees Celsius, and a maintenance cycle of one year possible. Sensors, i.e. GPS, additionally enable the precise tracking of patients.

The project coordination and technical alignment of various disciplines, from product design through design engineers to electronic development and final production, as well as the coordination with end users and project partners, is organizationally demanding. The comprehensive system engineering expertise of ITK Engineering was utilized because, among other things, a separate IoT network with its own radio transmission and the Rescue.Nodes as radio nodes were developed for Rescue.Wave®. The implementation was carried out in accordance with the new EU radio regulation "RED" (2014/53/EU). Verification took place through hardware-in-the-loop tests and the validation through exercises with the pilot partner in the district of Germersheim, Germany.

► The Result

Faster Emergency Medical Response for Mass-Casualty Incidents

RescueWave® is a robust system that significantly expedites treatment routes and delivers reliable deployment data in disaster situations and therefore helps to speed up the decision-making process. The Rescue.Nodes are delivered by ITK Engineering as a turnkey product. With years of experience in the development of medical electronics, devices have been delivered that, even under extreme conditions, function flawlessly.



” *RescueWave® is an innovative system that solves the most difficult problems of the chaotic phase – that takes place at the beginning of every mass-casualty incident – in one fell swoop: to gain a clear overview.* “

Emergency Physician Dr. Matthias Wölfel, District of Germersheim, Germany