



eAmbulance:

Complete information and communication solution  
for prehospital emergency medicine

## Value created

- Croatian product based on the regulations and user's requests
- An integrated solution that includes:
  - Application solution with continuous improvement based on new regulations or customer requirements
  - The latest computer and communication equipment from the reputable companies
  - Monitoring and vehicle tracking system with two-way communication with the Medical authentication dispatch unit
  - Customer supports (24/7 monitoring and maintenance)

As a result, in every moment the two-way-communication is secured. Via GPRS, key data about the intervention comes to the terminal, placed in the ambulance vehicle, and a dispatcher and a disponent through GIS navigation can see the status and expected time of vehicle arrival. Later, all data about the intervention, including also the data about the patient, will be sent to target hospital. In addition to these technologies, server infrastructure is also used, which is based on SuperMicro servers, as well as on security of network control Juniper SRX platform. Avaya Data is used to connect users, while constant power is ensured by Eaton UPS. The system is highly ranked by the World Bank as a complete software solution for the Emergency ambulance services.

### Increasing efficiency, reducing risk

The eAmbulance solution does not only remove potential points of failure from the service, but it also helps to add flexibility and to deliver better insights through enhanced reporting.

Doing business with Avaya means to us great experience.

To get real-time information we have one provider end-to-end for the network architecture, call management together with phones themselves provides efficient handling.

eAmbulance is the first point of entry for information coming into the emergency medical system.

It includes resource management, call taking, tagging location, dispatching, unit status management and call disposition.

Problems that company was faced with the beginning of the project were:

- No controlled communication between dislocated locations
- No integration with external IT system
- Dispatchers personal touch
- Inaccurate and outdated reports
- Lack in business decision-making

eAmbulance provides:

- Automatization of dispatch crew communication with data saving
- Constant awareness of the location and status of all available resources
- Rapid access to all basic call/patient information
- Standardization of processes, integration of external systems and reporting in real time

**“Solution that helps medical professionals to have control over their work, patients to have “Golden Hour”, to manage better control and to monitor of all business processes in emergency ambulance system.”**



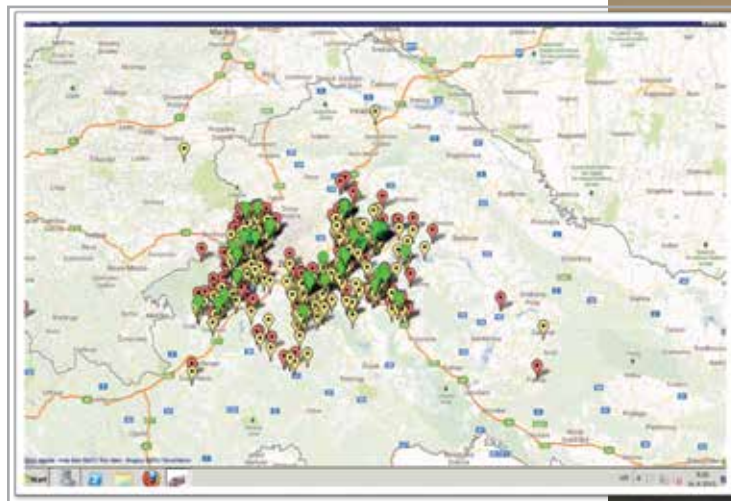
- The latest technological development tools:

- API (Application Programming Interface), CAD (Computer Aided Dispatch system)

- Many years of experience in the development of the information systems in health care fields

- Successful implementation covers over the 80% of the Croatian territory

- Models of financing



## About company STORM Grupa

STORM Grupa is the business partner in the design and construction of modern information and communication systems in the enterprise, telco and hotel sector. From 1989. the company helps businesses to differentiate and strengthen their business, improve their communication, organization, efficiency and business performances. Our expertises are related to business telephony, contact centers, construction of safe and efficient business networks, wireless systems and integrated hotel solutions. As a reliable partner, which the company Avaya has chosen for collaboration and development of their broad portfolio of products in the field of IP and PBX communication solutions, contact centers and application systems, we offer solutions that can fully support the customers' demands and needs and provide them safety and reliability.

## Emergency ambulance services in Croatia

Croatia is a country consisting of 21 counties, out of which is eAmbulance successfully implemented and used in 17 of them. At the moment we are implementing in the 18<sup>th</sup> county.

The counties in Croatia have Emergency ambulance services consisting of the departments:

- Medical authentication dispatch unit
- Teams on field
- Laboratory
- Ambulance transport
- Administration
- Financial department ,etc.

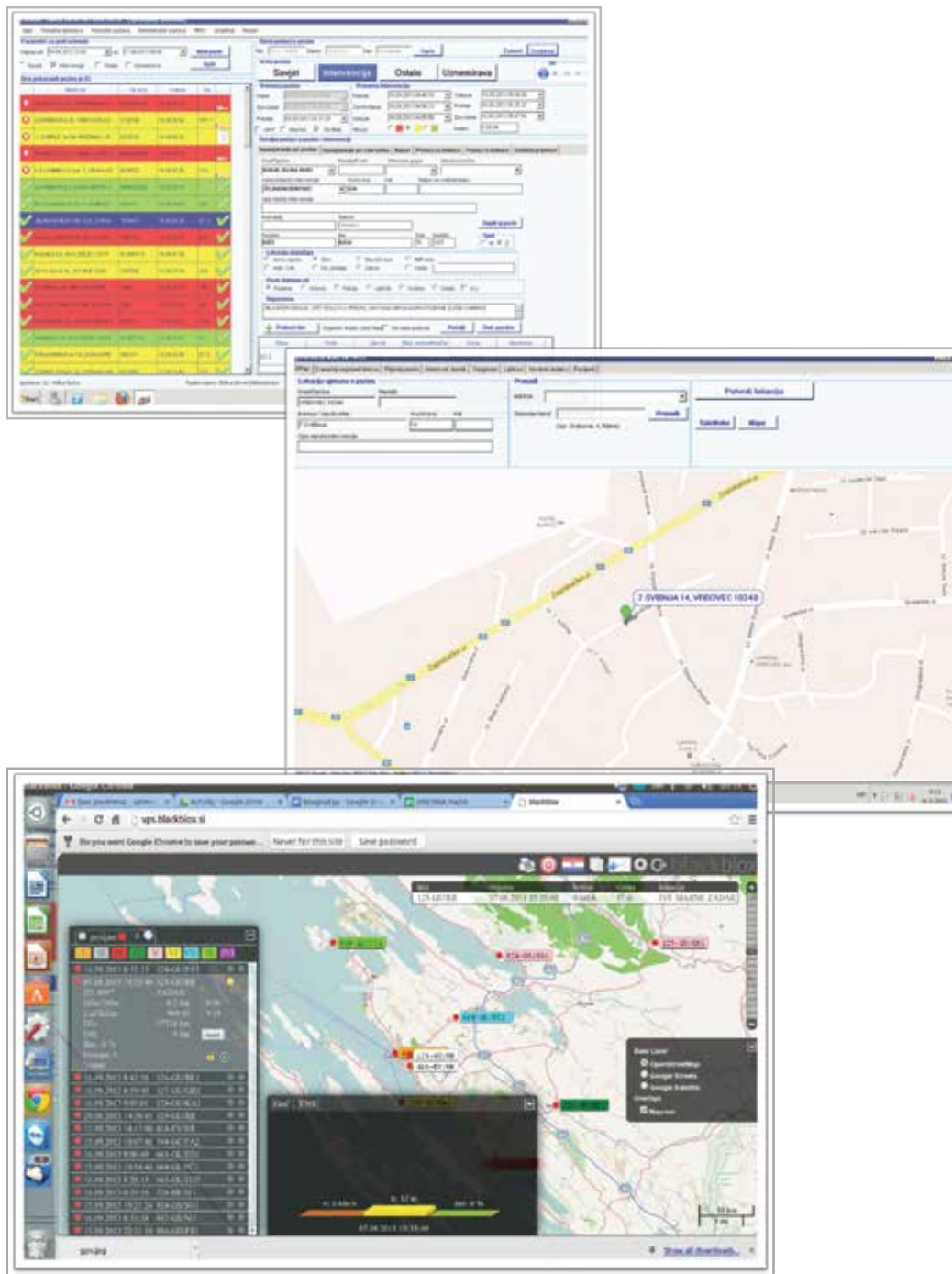
The vertical in all professional levels uses this software solution designed for their needs.

Number of population in the care of eAmbulance is over 3 million and annual number of calls is over 700.000.

## Solution elements

1. Modern dispatch technology used in the Medical authentication dispatch units:

- Use of the interactive Norwegian index
- Simultaneous display of all intervention statuses
- Conversation recording and archiving (UKW, TETRA, GSM, fixed line phones)
- Fast re-listening of recorded calls
- Review of the intervention on the map
- Display of the position and statuses of vehicles (the nearest available vehicle, display of vehicles from the nearest counties,...)
- Various presentation types of the maps (hybrid, satellite)



2. "Standard Operation Procedures" are used by the Medical authentication dispatch units after receiving emergency calls ("Interactive Norwegian index")

3. Intervention management (intervention allocating, guidance, coordination, data sending to the terminal in the vehicle)

4. Medical authentication dispatch units transfers remote vital data to ER (Emergency room)

5. Medical documentation (DLHS, Utstein,...)

6. Invoicing

- Automatic retrieving of the lists (gas, medicines and procedures)

- Invoicing based on the Croatian Health Insurance Fund (HZZO) specifications

7. Medical insurance

8. Statistic reports and work indicators for the Croatian Institute of Emergency Medicine (HZHM)

9. Human Resources Management module

10. Medical transport (integrated module or separate solution)

11. Integration with PBX

12. All based on Avaya technology

“Medical authentication dispatch unit is the central point of entry for an emergency call, forming the basis of communication with the caller, determining the degree of urgency (triage and re-triage) due to interactive Norwegian index, alarming adequate team (through the programme sending the data about intervention on navigation), transferring all the information collected in the field teams and collaboration with other emergency services. It is the vertical of an emergency ambulance service recognizing the reform importance of the emergency ambulance services and their new activities.”



Complexity of project task that it was needed to be solved is multidisciplinary. It includes technological challenges (communication, integration of ICT segments, system reliability), organizational challenges (reorganization of emergency medicine, territorial divisions, unequal resources) and administrative factors (legislation, regulations of the Ministry of Health, HZZO-Health Insurance, HZHM-Institute of Emergency Medicine).

STORM Grupa solves technological challenges in the field of communication, issues related to system reliability, which should be operational 24/7 and leads the project implementation on the site (county centers with branches).

eAmbulance system consist of three fully integrated units:

- Communication equipment
- Application part
- Vehicle/car navigation

We have chosen a platform Avaya IP Office as a base of the communication system. It can absolutely handle with their modularity, robustness and openness for integration with applications.

Avaya IP Office is via CTI link integrated with applicative solution of the company Rinels (STORM Grupa). Therefore it is the center of entire solution and with the navigation system sending the data to and from the vehicle. Each communication is recored and accepted on before mentioned platform, including all calls from clients, radios GSM connection forwarded to vehicles and communication with branch offices, hospitals and health centers.

Using a CTI link, we send to the application all necessary information about the call that is promptly entered into the current display of each call. Inside the system we make the differences between two types of customers: a dispatcher (taking the calls and provides technical assistance) and disponent (communicating with other departments and institutions).





**STORM Grupa d.o.o.**

HR-10000 Zagreb

Savica I. 127

Tel: + 385 1 2352 200

Fax: + 385 1 2352 299

[info@stormgrupa.hr](mailto:info@stormgrupa.hr)

[rinels@rinels.hr](mailto:rinels@rinels.hr)