

## **DISTANT WIRELESS TRANSMISSION OF PICTURE AND SOUND - NEW AID IN CRISIS MANAGEMENT**

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### **Abstract**

At the beginning of 2005 the activities concerning the development of a new “device” for distant wireless transmission of picture and sound were taken up at the University of Defence in Brno (in the Czech Republic). The device, having a working title "Interoperable Terrain Videoconference System of Civil Protection", is applicable in the sphere of crisis management and civil protection.

The primary aim of the project is to transfer the activities from the site of an extraordinary event (area of interest) near to the directing staff (directing workplace).

On-line visual information from the place of extraordinary event origin has a much higher predicative ability than a spoken word.

Our endeavour was to develop a system that is cost-effective and is built-up from commercially available equipment that is off-shelf in any salesroom specialized in wireless components.

### **Introduction**

At the beginning of 2005 work on the development of a new “tool” for distant wireless transmission of picture and sound applicable in the field of crisis management and civil protection was started. The project called “Interoperable terrain videoconference system of civil protection” is begin developed by a team under the direction of Assoc. Prof. Jiri Frisons Urbanek, PhD.

### **Interoperable Terrain Videoconference System of Civil Protection**

The main impulsion for opening this project was idea of approximation of activities from the place of extreme event to the operative workplace. Video informations on-line directly from the place of extreme event have much higher predicative ability than speaking.

To assemble the system of “Interoperable terrain videoconference system of civil protection” The effort was used technology of Wi-fi (simplified diagram of data transmission is shown on figure).

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Effort of the problem-solving team is to develop the system which is undemanding for finance and can be set up from the commercially available equipment which you can buy in each specialized shop with Wi-fi components.

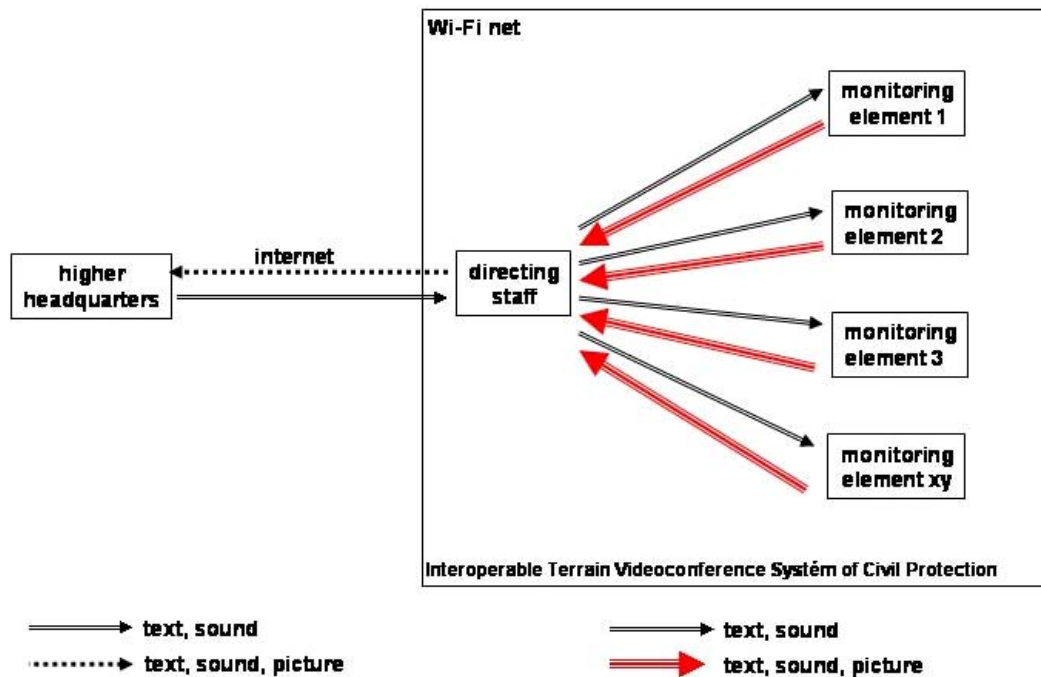


Figure: Fimplified diagram of data transmission

In specialising the output in similarity full-functional program unit of Interoperable terrain videoconference system of civil protection, solving team came out from the following ideas:

- sensing of tight spot (position) of monitoring item via GPS and display it in map (including providing the further information, for example speed of movement, altitude, etc.),
- possibility of archiving of all data transferred on-line from area to interes to directing workplace and their further process and upgrade,
- posibility of fixation Wi-Fi kamera on the arbitrary carrier (e.g. car, aircraft prototype, person, etc.),
- except of verbal communication is possibility of transit suggestion to monitoring item by alternative method (e.g. formation of necessary standard operating procedure for particular option of monitoring and their activation via Wi-Fi net, short message system, etc.),
- directness of system i. e. possibility of dissemination and adding of other items.

Current version of „Interoperable terrain videoconference system of civil protection“ operate as „extension“ of software product of Emergency Office (EMOFF). EMOFF was developed by czech company T-SOFT s.r.o. based in Prague. It is implementation of module „Mobile workplace“ to the current version of EMOFF.

We can find that starting plan of solving team was realized. Developed system uses (as a basic component) personal digital assistant (PDA) where is installed EMOFF software (corrected version for PDA). PDA is equipped with GPS for scannig of tight spot. Monitoring item is equipped with Wi-Fi camera for video transmission from interest place to the operative workplace. Operative workplace has a notebook with installed EMOFF software. Part of EMOFF are standard operational procedure for monitoring. Specific

standard operational procedure is assigned to monitoring subject through the directing notebook. Monitoring subject does appropriate activities in agreement with standard operational procedure. Monitoring subject (after activation of standard operational procedure) starts his activities according to steps which are defined exactly. He has to confirm beginning and ending of his activities with every step. It is subsequently displayed on directing notebook. Operative workplace has perfect overview about specific activity of monitoring subject.

## Conclusion

“Interoperable terrain videoconference system of civil protection” is still developed and innovated by the problem-solving team. The system is entirely independent on stationary source of electrical energy (it has his own source of electrical energy). It is possible to use this system on almost any place (it is fully mobile and it is possible to create you own Wi-Fi net at least 25 square kilometres).

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