

MOBILE TELECOMMUNICATION TECHNOLOGY FOR INCIDENT MANAGEMENT SYSTEM

MOBILNE TELEKOMUNIKACIJE U SUSTAVIMA UPRAVLJANJA INCIDENTIMA

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Abstract: An overview of the Road Weather Information System (RWIS) for the needs of Croatian Intelligent Transport System is presented in the paper. The basic features of the system architecture, components configuration, application software, as well as some machine-human interface solutions are described. Road weather monitoring is the basis for successful road traffic with respects to the weather condition that significantly affect to the safety, functionality and efficiency of road traffic. The paper also focuses on new ways of utilizing the massive amount of weather sensor data collected from RWIS. Traditional ways of using Road Weather Information Systems have been to forecast road icing before its formation for proactive winter-road maintenance. The algorithm of applying artificial neural networks for short-term forecast of surface temperature road is presented in the paper.

Keywords: Incident Management System; Cell Broadcasting; Location Dedicated

References:

- [1] Bošnjak, I., Inteligentni transportni sustavi 1, Fakultet prometnih znanosti, Zagreb, 2006.
- [2] Bošnjak, I., Mandžuka, S., Šimunović, Lj., Mogućnosti inteligentnih transportnih sustava u poboljšanju stanja sigurnosti u prometu, Zbornik radova: Nezgode i nesreće u prometu i mjere za njihovo sprječavanje, Hrvatska akademija znanosti i umjetnosti, Zagreb, 2007. 12-20
- [3] Škorput, P., Stvarnovremensko upravljanje incidentnim situacijama, Magistarski rad, Fakultet prometnih znanosti, Zagreb, 2009.
- [4] Mandžuka, S., Matulin, M., Škorput, P., Napredna telematička rješenja za žurnu medicinsku pomoć, Znanstveni skup: Medicinski, tehnički i pravni aspekti sigurnosti prometa, Hrvatska akademija znanosti i umjetnosti, Zagreb, 2009. (u pripremi).
- [5] Cambridge Systematics, Incident Management, Alexandria : Trucking Research Institute, 1990.
- [6] Judiycki, D. i Robinson, J. R. Freeway Incident Management. Washinton D. C.: Office of Traffic Operations, Federal Highway Administration, 1988.
- [7] Kachroo, P., Ozbay, K. i Wei, W. Development of Wide-Area Incident Management Expert System Software. s.l. : FHWA, 1997.
- [8] Subramaniam, S. Wide-Area Incident Management Expert-GIS System Development, Project Progres Report. s.l. : Virginia Tech Center for Transportation Research, 1994.
- [9] Evanco, W. M. The Impact of Rapid Incident Detection on Freeway Accident Fatalities. Virginia: Mitretek Center for Information Systems McLean, 1996.
- [10] Ericsson; Content Delivery System, FC 101 097/3, , Stockholm, Sweden.
- [11] Ericsson; Mobile Positioning System, FC 101 0351, Stockholm, Sweden.
- [12] 3GPP TS 23.041; 3GPP TS 23.041, Technical realization of Cell Broadcast Service (CBS), 3GPP, V4.1.0
- [13] GSM 03.41; Digital Cellular Telecommunications System (Phase 2+); Technical Realisation of the Short Message Service Cell Broadcast (SMSCB), ETSI