

Conducted 1 State of the art analysis in KAZUP

Final Version of June/2023

Deliverable number 4.2.2.

Project Acronym	STREAM
Project ID Number	10249186
Project Title	Strategic Development of Flood Management
Priority Axis	2 - Safety and Resilience
Specific objective	2.2 - Increase the safety of the Programme area from natural and man-made disaster
Work Package Number	4
Work Package Title	Development of innovative technologies and systems of flood forecasting and early warning system
Activity Number	4.2.
Activity Title	Response system improvement - communication technologies improvement
Partner in Charge	PP12
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Distribution	Public

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1. Introduction

As part of A.4.2. Response system improvement – communication technologies improvement, D 4.2.2. Conducted 1 State of art analysis in KAZUP is completed.

2. Conducted 1 State of the art analysis in KAZUP

Type of work: Service of creating conceptual project documentation (technical solution) for the modernization of the radio network of the operational forces of the Karlovac County




Executor: SCAN projekt d.o.o.

Based on purchase order no. 79/2021 from 09.02.2021.

It is established that according to order no. 79/2021 from 09.02.2021. according to SCAN offer no. 007/21 from 09.02.2021. the following service delivered:

The service of creating conceptual project documentation (technical solution) for the needs of modernizing the radio network of the operational forces of Karlovac County in the amount of HRK 17,500.00, on April 2021.

Figure 1. Record of performed services

		Buzinski prilaz 38, HR-10010 Zagreb Tel.: +385 1 3707-987 Fax: +385 1 3707-989 e-mail: scan@scan.hr http://www.scan.hr	
ZAPISNIK O IZVRŠENIM RADOVIMA Br. GB-006/21			
Izvršitelj:		Datum:	
SCAN projekt d.o.o.		12.05.2021.	
Kupac / Korisnik:			
KARLOVAČA ŽUPANIJA URED ŽUPANA A. Vranjczyanya 2/II, 47000 Karlovac			
Vrsta radova:			
Usluga izrade idejne projektne dokumentacije (tehničko rješenje) za potrebe modernizacije radijske mreže operativnih snaga Karlovačke županije			
Temeljem ugovora / narudžbe:			
Narudžbenica br. 79/2021 od 09.02.2021.			
Ovim zapisnikom utvrđuje se da je korisniku KARLOVAČA ŽUPANIJA, URED ŽUPANA, prema narudžbi br. 79/2021 od 09.02.2021. (prema SCAN projekt d.o.o. ponudi br. 79/2021 od 09.02.2021. isporučene sljedeće usluge:			
1. Usluga izrade idejne projektne dokumentacije (tehničko rješenje) za potrebe modernizacije radijske mreže operativnih snaga Karlovačke županije			
te se sukladno tome može izvršiti fakturiranje u iznosu od 17.500,00 kn			
Kupac / Korisnik		Izvršitelj	
 URED ŽUPANA KARLOVAČKA ŽUPANIJA		Goran Božić, dipl. ing. el. 	

3. Conclusion

With this documentation on the modernization of the radio network for the needs of operational forces of civil protection Karlovac County considered the technical and functional applicability of DMR III radio system, the general model of the technical solution was analyzed and set up, the business analysis and the analysis were carried out the costs of building one's own network in relation to the rental of DMR III professional radio capacity and services networks CRONect from the company OIV - Digital signals and networks. Based on the requirements for the quality of radio coverage, system capacity and high availability the general technical solution of the system with two central network switches 8 DMR III base is proposed radio stations. The financial model tested different scenarios of application and performance of the DMR III system for needs of operational forces. The optimal services for implementation using the DMR III system have been defined. Taking into account the fact that public telecommunication systems cannot meet the high level of reliability required for activities related to the daily operational work of OSCZKŽ and accordingly by assigning corresponding financial values to the communication flows in the DMR III network for voice purposes communications.

The radio network topologies proposed by this technical solution are primarily conditioned by the requirement for a very high quality coverage of the territory with a radio signal and the toughness of the radio network. The analysis carried out on the continuation of the construction of the DMR system for the needs of operational forces undeniably showed:

- that at the moment it is the only technology that can satisfy functional and technical needs of operational forces, technology compliant with ETSI standard DMR III.

The goal of the analysis carried out as part of the Technical Solution was to establish what the capital cost would be establishment of DMR III networks in the area of Karlovac County. The stated cost was compared with the cost rental CRONect DMR III service that provides all the necessary functionality of the DMR III radial radio networks. In the previous period, hand-held immobile radio devices were also delivered for testing and testing which work on the DMR III standard, and which were connected to the DMR III radio network CRONect of the OIV Digitalni company signals and networks to get an insight into the way it works and the full functionality of ETSI defined DMR III radio networks of large capacity and availability.

Based on the technical solution, a financial model of the DMR III network was created for the needs of operational forces, which is made it possible to test several performance and application scenarios of the system within the framework of user-defined ones requirements and the selection of the optimal solution that will represent a relevant basis for further decision-making the continuation of the construction of radio systems for the needs of operational forces.