

## **Terms of Reference**

### **Project MARS: "Modernization and Restructuring of the Road Sector" IBRD Loan No. 8749-HR**

#### **Proposal development for the optimal model of organizational and management structure of Centers for Traffic Control and Management and National Access Point**

### **B6 – F – CQS - MARS**

#### **1. Introduction**

The World Bank Project *Modernization and Restructuring of the Road Sector* (Project) is aimed at supporting the commitment of the Government of the Republic of Croatia (Government) to enhance institutional effectiveness, operational efficiency and financial sustainability of the road sector. The Project includes a portion of the investment loan to be used by the Ministry of the Sea, Transport and Infrastructure (MSTI) for the restructuring of road management companies - Croatian Roads (HC) and Croatian Motorways (HAC). The Project supports the implementation of measures contained in the Letter of Sector Policy, a document formally approved by the Government in March 2017. Some of the Project objectives that have already been achieved include significant debt relief of the state-owned companies, HC and HAC, and their operational restructuring and reorganization. The tasks listed below are related to the final organization of HC as part of maximizing efficiency in the processes related to traffic control and management as well as to the implementation of the ITS Directive 2010/40/EU (Directive).

#### **2. Traffic control and management on state roads – "as-is" state and planned upgrade**

HC operates a network of state roads with a total length of 7.279 km. Currently, traffic on certain sections of state roads is managed from the regional centers for traffic control and management (RCNUP).

- Traffic control and management Dugopolje
- Traffic control and management Hvar
- Traffic control and management Sveti Ilija
- Traffic control and management Most Dubrovnik

In the mentioned RCNUPs, the tasks of traffic control and management are performed by operators and electricians. Traffic operators supervise and manage traffic flows while electricians monitor and manage SCADA (Supervisory Control and Data Acquisition) system. Those tasks are performed by 31 employees who are distributed as in the table below:

RCNUP	Existing number of employees	
	Operator	Electrician
Dugopolje	10	5
Sveti Ilija	5	5
Hvar	1	-
Dubrovnik	4	1
In total	20	11
Overall	31	

It should be emphasized that the traffic monitoring and management service on the section of the DC425 expressway is performed for HC by HAC from RCNUP Vrgorac.

Presently, **individual RCNUPs form part of different** technical units (TI) of HC and are not united into one technical-technological organizational unit. This is why the following objectives are expected from consultants:

- Uniform traffic management on state roads
- Standardized education and training
- Uniform organization of the work carried out by operators
- Quality communication and exchange of best practices between individual RCNUPs
- Uniform procedures during exceptional circumstances and failures

RCNUP	Responsible technical units (TI)
Dugopolje	Split
Sveti Ilija	Split
Hvar	Split
Dubrovnik	Dubrovnik
Zaradeže	Dubrovnik
SCNUP/NPT	Department of Transportation

The reasons for the uneven management are as stated below:

- different time period of road construction due to which RCNUPs were equipped with diverse technology
- some RCNUPs have been managed by other road operators
- technical units are responsible for RCNUPs and therefore have different approach to management.

Given that the ToR considers a model according to which RCNUPs would not form part of technical units, the consultants are not expected to review the existing structure of technical units, but only the work of RCNUPs. Finally, the consultants should consider the EU projects that are being implemented, such as Crocodile 2 Croatia, Crocodile 3 Croatia, NAP CORE and DATA4PT, which are directly related to setting up and developing the NPT as an umbrella body for collection and distribution of road and transport information in the Republic of Croatia.

### **Optimization of traffic control and management systems on state roads**

HC, MSTI and motorway managers will modernize the existing regional centers for traffic control and management, implement the DATEX II protocol and establish:

1. Centre for supervision and management of state roads (SCNUP-DC)
2. Centre for supervision and management of motorway traffic (SCNUP-AC) and
3. National Access Point (NPT).

These activities are carried out as part of the implementation of the EU funded Crocodile II Croatia project which should be completed by December 2021. This project will harmonize the ITS systems between all bodies in the road sector. It will also coordinate the exchange of data and information between traffic control centers, traffic information centers, transport service providers and users from neighboring countries for their further distribution (Slovenia, Hungary, Italy and Austria), all with the aim of ensuring continuous traffic monitoring and management on European transport corridors. In accordance with the EU Delegated Regulations arising from the Directive, the scope of application is prescribed and in that sense also the key stakeholders involved in the Project and providing road transport information to the NPT:

- Hrvatske ceste d.o.o.
- Hrvatske autoceste d.o.o.
- BINA-ISTRA d.d.
- Autocesta Zagreb-Macelj d.o.o.

The key users of the information from the NPT are:

- Ministry of the Sea, Transport and Infrastructure
- State Administration for Protection and Rescue
- Ministry of Internal Affairs
- NPTs and traffic management centers in other countries
- EU Common Emergency Communication and Information System (CECIS)
- Cities (Zagreb, Split, Rijeka, Osijek, Zadar, Dubrovnik, Vukovar)
- Croatian Auto Club
- Croatian Radio-Television
- Other interested users

Furthermore, the traffic management has been optimized by merging the existing 4 RCNUPs to 2 RCNUPs:

-RCNUP Dugopolje has expanded its competence to the area of management of RCNUP Šibenik (RCNUP Dugopolje remains)

- RCNUP Sveti Ilija will expand its competence to the area managed by HAC operators from RCNUP Vrgorac (RCNUP Sveti Ilija remains).

In order to establish SCNUP-DC and NPT, it is necessary to plan recruitment of certain number of employees for the posts of operators, heads of SCNUP and NPT and one associate. Since HAC is taking over the management of A7 motorway from Orehovica to Križišće, there will be no need for RCNUP Čavle. Traffic monitoring and management on the existing DC 404 (currently performed by RCNUP Čavle) and DC 403 which is under construction are planned to be performed by SCNUP-DC / NPT Karlovac.

The construction of the Pelješac Bridge and access roads envisages the construction of RCNUP Zaradeže, and the construction of the bridge near Okučani initially envisaged the construction of RCNUP Okučani, whereas it has been subsequently decided to ensure traffic management on that road section from SCNUP-DC Karlovac.

The implementation of the Crocodile 2 Croatia project has ensured scalability of the system for the purpose of traffic management and providing users with information.

Under the Project and through MSTI, the Government will engage a consulting firm (Consultant) to provide technical assistance in assessing the roles and tasks of the two entities outlined above (SNCUP-DC and NPT) and providing recommendations on the NPT organization.

This also includes all obligations arising from the ITS Directive and related delegated regulations, as well as the EU strategy papers in the field of smart mobility and ITS. Furthermore, with regard to the role of HC as competent authority for setting up the NPT, this includes obligations to conduct professional operational and technical work of technical-technological unity for the needs of MSTI in accordance with the Act on Roads and the obligation to establish a public roads database. In addition, it is necessary to consider the possibility of integrating all traffic information from public road network (including county roads authorities) within the NPT. This would increase the effectiveness of the implementation of Article 31, paragraph 1, item 1 of the Act on Roads "*ensuring that the public is informed about the condition of traffic flows on public roads, emergency events and meteorological conditions necessary for ensuring traffic safety*". Finally, all transport related information would be provided in Datex II format in real time and its distribution would be without any costs or fees to HAK, navigation service providers, etc.

After that, the Consultant will assist MSTI to define legal framework for activities performed by the NPT, in particular with regard to the stakeholders who will provide traffic information related to the roads within the scope of their competence. It should be emphasized that by the MSTI Decision HC are appointed as competent authority for setting up the NPT related to the road transport. Furthermore, HC are responsible for setting up the NPT in terms of multimodal travel information as set forth in specific law (Law on provision of multimodal travel information). According to the *Study on multimodal traffic information*, it is foreseen to extend the NPT from road related information to multimodal travel information, which has to be taken into account as well.

Finally, during the present development and introduction of the ITS system, HC have so far provided technical support for the implementation of the ITS Directive and adoption of the legal framework. The NPT should play the role of the main provider of travel and traffic information related to all modes of transport.

### **3. Objective of the assignment**

The Republic of Croatia is obliged to build a comprehensive system of collection, processing, analysis and distribution of traffic information through various communication channels at the state level, which will be the task of the NPT. SNCUP-DC and SNCUP-AC are two of the key members of the future NPT system.

Also, an extremely important factor in traffic management and part of the traffic management system are RCNUPs, which represent the most demanding part of the system in terms of operating costs and operational-technical organization. In particular, the construction of bypasses, expressways and other traffic-demanding road facilities will increase the need for operational management at the RCNUP level in future, which will further emphasize the challenges in question.

Objectives expected from the Consultant:

- (a) Option to develop an organizational model for establishing **business processes and in that sense managing the work** of RCNUPs, SCNUP-DC and NPT,
- (b) Option to identify the linkages between RCNUPs and SCNUP-DC as well as between SCNUP-DC, SCNUP-AC and NPT;
- (c) recommendations on the organizational structure and business processes of the traffic management and traffic information, including a CBA and an analysis of advantages and disadvantages of locating them within HC or MSTI or as a separate company, including:
  - maintaining the existing model of organization and setting clear and defined rules of conduct and relations between organizational units of the company
  - RCNUP, SCNUP-DC and NPT as a separate department within HC
  - RCNUPs as a separate company, SCNUP-DC and NPT as a part of HC
  - RCNUPs, SCNUP-DC and NPT as a separate company
  - setting up the NPT within MSTI.

#### **4. Scope of work**

The Consultant shall undertake the assignment in two phases, each lasting 2 months.

**In the first phase**, the Consultant shall make a study of possible options including the advantages and disadvantages of each of the possible organizational models. Specific tasks shall include:

1. Introduction (existing laws and bylaws which define obligations of RCNUP, SCNUP-DC, SCNUP AC and NPT as well as their purpose and objectives)
  - 1.1. Analysis of the best experiences of the surrounding EU countries
  - 1.2. Analysis of potentials of current organization within HC
  - 1.3. Proposal for business organization and management models
  - 1.4. Proposal for the optimal model. Development of the proposal for the optimal model should be supported by the cost-benefit assessment of variant models, which should be based on appropriate comparative presentation of the advantages and disadvantages of each model, viewed through financial, legal and possibly other relevant aspects
  - 1.5. Workshop with MSTI, HC

**In the second phase**, after MSTI and HC choose the model, the Consultant shall carry out the following tasks:

- 2.1. Prepare all necessary amendments to laws and bylaws to implement the chosen solution, including the legal framework for the operations conducted by the NPT in terms of responsibilities and obligations. Proposals concerning acts prepared by the consultant during the study preparation will be agreed with HC and MSTI and consequently submitted for adoption. In case of any further need or request by MSTI, the participation of the Consultant will be required. The laws to be drafted should be written in Croatian.
- 2.2. Prepare all necessary acts, e.g., statute, founding statement, organization rulebook with job systematization and descriptions. The Consultant shall perform all these activities in collaboration with HC and MSTI. The work on legislation acts will depend on the chosen option. If a new organizational model is chosen, the regulation of newly established relations with HC will be required.

2.3. Prepare the risk management procedures for NPT and SCNUP-DC as recommended by the Ministry of Finance <https://mfin.gov.hr/istaknute-teme/sredisnja-harmonizacijska-jedinica/financijsko-upravljanje-i-kontrole/upravljanje-rizicima/231>

2.4. Prepare the organization rulebook for RCNUPs, SCNUP-DC and NPT as outlined under 2. 2. With regard to the selected option, it is necessary to elaborate at length the mutual relations of all control centers involved from the aspect of business process management (subjects), from the aspect of mutual financial and legal relations to relations with third parties (from the aspect of responsibility, etc.). At the same time, it is necessary to define clearly the authorities and responsibilities of an individual entity over the traffic management process: individual jobs related to the traffic management process.

2.5. Workshop with MSTI, HC

The mode of operation during the first and second phase includes regular bi-weekly meetings attended by the entire team of consultants and representatives of HC/MSTI project implementation units (PIU). If necessary, meetings will be held through an on-line platform chosen by HC. The day after the meeting, the Consultant shall submit a short HC/MSTI PIU meeting minutes, which should be commented by HC/MSTI PIU on the day after receipt of the minutes.

There is a two-week break between these two phases. In this period, consultants will be *demobilized* and the consultations within MSTI (HC – MSTI) will be held. The Consultant will be informed about this via email from an authorized HC representative named in the contract in SCC part.

## 5. Milestones and Deliverables

	Task Description		Deliverables*
	<b>Phase 1</b>	<b>Obligatory to be included</b>	
1.1	Analysis of the best experiences of the surrounding EU countries in terms of organization and management of related business processes	RCNUP, SCNUP-DC and NPT legal organization, status and relations to other traffic bodies, for at least 5 countries (including Slovenia, Hungary and Austria)	2 weeks
1.2	Analysis and assessment of the "as-is" models of organization and management of business processes systematized within the HC organizational structure, including the analysis and assessment of the existing/planned number and deployment of RCNUPs as well as the number of employees.	The potential of HC in the current organization for additional jobs and responsibilities.	2 weeks
1.3	Development of proposals (including implementation of action plan with an appropriate Gantt chart of activities and a cost projection.) for business organization and management models for each of the possible organization models.	Detailed overview of each organizational model option to be presented in a structural way (financial, legal and time frame aspect).	6 weeks

1.4	Development of the proposal for the optimal model, which should be supported by the evaluation of each of the models and based on appropriate comparative presentation of the advantages and disadvantages of each model, viewed through financial, organizational, legal and possibly other relevant aspects. For all models, CBAs and SWOT analysis have to be made taking into account the same criteria (financial, organizational, legal...)	-	8 weeks
	First Workshop with MSTI, HC	Up to 4 hours in HC	9 weeks
	<b>Phase 2</b>		
2.1	Prepare all necessary amendments to laws and bylaws in order to implement the accepted solution.	See the same item under 4. Scope of work	4 weeks
2.2	Prepare all necessary acts (e.g., statute, founding statement, organization rulebook with job systematization and descriptions, etc.). Prepare all necessary acts for establishing and organizing the selected organizational model.	See the same item under 4. Scope of work.	4 weeks
2.3	Define the mutual relations of all involved companies or the relation of a separate entity within HC with regard to the selected solution from the aspect of business process management (subjects), from the aspect of mutual financial and legal relations, as well as relations towards third parties (from the aspect of responsibility, etc.). In this sense, it is necessary to make proposals for legal solutions and / or contractual proposals that would regulate these relations.	It refers to mutual relation (financial, legal, regarding responsibility) of the chosen organizational model within HC or as separate entity towards HC, and even towards third parties, which will be possible to define just after the model is selected.	8 weeks
	Second workshop with MSTI, HC	Up to 4 hours in HC	9 weeks

\*Deliverable due dates:

1. In the first phase, from the date of signing the contract
2. In the second phase, after the second phase start.

The Deadline for MSTI to accept deliverables is 5 working days after the draft is received from the Consultant in electronic form. If no comments on the draft reports are provided by MSTI, the draft reports will be considered final and payments will be due and payable.

If comments are made by MSTI, the Consultant will finalize the documents within 5 working days, and the payment will be considered due and payable when the corrected draft is delivered and approved.

All reports shall be submitted in Croatian and English in electronic form and as hard copy - in 3 copies.

## **6. Duration**

The expected duration of the assignment is 22 weeks: **9 weeks for each phase**, and the period between 2 phases (for workshops and the MSTI response) up to 4 weeks. The Consultant will be informed about the beginning of the second phase by email from the authorized HC representative, named in the contract in SCC part.

## **7. Required qualifications**

It is expected that this project will require a team of consultants - international and local consultants - experts possessing the following range of skills.

### **8.1. Details on company capability requirements:**

Companies (or joint ventures) should be experienced in providing consulting services, with at least three [3] projects or more in the last five [5] years in the country or in the neighboring European countries with a value of 100 000 EUR and related to any or all of the following:

- road sector operations, ITS experience is required,
- business organization / operational restructuring including optimization of technical and administrative processes and functions, including development of operational efficiency and cost rationalization measures,
- analysis of out-sourcing potential for business processes and functions.

### **8.2. Details on personnel capability requirements:**

- Team leader - work specialist, BSc in engineering or economy, specialist in the organization of business processes within the transport sector, at least 5 projects as team leader on high complexity projects or establishment of organizations in the transport sector, the experience in the designing, implementation or management of the ITS systems in road transport is required.
- Law graduate - at least 10 years of experience in jobs in the field of corporate and labor law, precedence is given to people with experience in the transport sector.
- Bachelor of traffic Engineering, at least 3 high complexity projects or projects of establishing road traffic management systems; experience in designing, implementation or management of the ITS systems in road transport is required.