TERMS OF REFERENCE for TECHNICAL ASSISTANCE in
IT AUDIT OF ROAD SECTOR COMPANIES
(A2-B-LCS-MARS)

I.   INTRODUCTION

The Croatian government, through the Ministry of Sea, Transport and Infrastructure, has committed to a road sector modernization and restructuring project (henceforth „the Project") which includes among others the following key actions in the state-managed motorway sector: (a) absorption of operator HAC-ONC within HAC and transfer of ARZ operational activities to HAC; (b) rationalization of maintenance operations within the new HAC; (c) introduction of a fully automated toll system. In addition, the Project supports operational rationalization in the state-road managing company HC. The World Bank is funding technical assistance in the Project as part of its support to the financial and operational restructuring of Croatia's road sector. The Project's time horizon reaches to the end of calendar year 2021, by which time -or earlier- the reforms including the new toll system should have been implemented. Existing toll and maintenance systems as well as the associated processes are therefore to remain in operation in the short term and transitionally in the medium term.

It is necessary to have IT audit before operational restructuring is in place, both in the motorway companies (following the recent merger) and in HC. Audit would cover the tolling systems of motorways as well as the main business systems used in the three companies (HAC, ARZ, HC) for resource management and accounting. Interfaces to maintenance and operational/safety systems would also be covered, to the extent that the audit does not overlap with the review phase of a separately-procured road asset management system scoping study.

II.   OBJECTIVES OF THE ASSIGNMENT

IT audit shall examine and evaluate each organization's (HAC, ARZ, HC) information technology infrastructure, policies and operations and determine whether IT controls protect corporate assets, ensure data integrity and are aligned with the business overall goals. IT audit includes not only physical security controls, but also overall business and financial controls that involve information technology systems. Analysis and evaluation of a companies' information system (whether manual or computerized) must detect and rectify blockages, duplication, and leakage of information. The objectives of this audit are to improve accuracy, relevance, security, and timeliness of the recorded information.

The audit of toll management processes, in particular, aims to examine the current function of each individual step in the course of toll revenue from the customer to the bank account of the motorway manager (HAC and ARZ respectively). An analysis of the existing situation shall help identify risks associated with every distinct stage and all involved staff categories and external parties, as well as the respective system functionalities. Finally, proposals will be made on operational, IT, technical,

financial, accounting and other areas for improvement, in order to mitigate or eliminate risks and maximize the proportion of toll revenue that ends up in the motorway managing company's account.

III.   PHASE A: ANALYSIS OF CURRENT SITUATION

The consultant will review condition of existing IT systems and adequacy of IT systems management of all 3 companies (HAC, ARZ, HC), including, in particular for the tolling part, administrative and operational checks at all major plazas (Lučko/Demerje, Zagreb Istok, Bregana, Lipovac, Sveta Helena, Rijeka, Rupa) and a representative selection of smaller ones and propose dynamics plan.

 IT audit shall cover following areas:

- IT system security policy
- IT security function
- IT organization
- Authorization of IT functions (ie. developers, system administrators etc…)
- IT and associated technologies risk management
- Data classification
- Logic and managing control access management
- Network and remote access of the IT system control
- Cryptographic key management
- IT property management
- Operative and system record management
- Data backup management
- Service providers' relations management
- Equipment suppliers' relations management
- IT system development management – project management
- Physical security of primary and secondary location; secondary location assessment
- Password policy
- Configuration management
- Change management
- Operations continuity planning
- IT systems disaster recovery plan in case of unplanned incidents
- Incidents management
- Applying malicious code protection
- Internal policies, procedures and instructions
- Internal IT audit

Tolling processes are performed by toll collectors, maintenance staff, toll subscription administrators, head of toll plazas, toll center operator, earning administrators, head of administrative and financial affairs for tolling, toll collection manager/assistant, accounting manager, system engineer/administrator, toll system maintenance subcontractor and other subcontractors. Audit of tolling shall cover following processes:

- Toll center operator

- User passage from exit or charge point – manual, card or ENC

- Cash handling at toll plaza (advances to collectors, petty cash, counting/deposit)

- Toll staff access / monitoring / presence recording

- Auto and manual classification

- Distance calculation

- Exempt and other special passages treatment

- Cash transit / bank interface

- Accounting

- Verification and internal control / business operation processes and tools

A report titled „Analysis of Current Situation" shall be the deliverable of this phase.

IV. PHASE B: RISK ANALYSIS AND PROPOSED CHANGES IN OPERATIONS, PROCEDURES, CONTROLS

The consultant will:

- discuss the Phase A report with the Client (MSTI) and the road managers (HAC, ARZ, HC),
- perform risk analysis (covering all process functionalities and utilization thereof, vulnerabilities etc.), and finally
- develop a proposal for improvements in operations, procedures and controls, covering the entities and processes as listed in Phase A, based on national and international benchmarks and good practices.

The deliverable of this phase shall be a „Final Report" prepared in two phases:

(a) Draft Final Report for discussion with the Client (MSTI) and the road managers (HAC, ARZ, HC), and
(b) Final Report, containing
- Identification of all risks in accordance with degree of importance (priority, medium and least urgency)
- Action plan including proposals for improvement (elimination or mitigation of risks), including suggested methods, procedures, tools
- Quantified estimation of impact and corresponding implementation costs

V. QUALIFICATIONS AND OTHER PROVISIONS

V.i. Company's capabilities

a) Consultancy shall demonstrate overall experience in IT and business intelligence
b) Experience in tolling systems will be considered a plus
c) Number and complexity of IT audit projects will be additionally taken into account (only projects over 20.000 EUR)

V.ii. Personnel capabilities

a) Key expert with at least 10 years of experience in audit of IT systems
b) Key expert with at least 10 years of experience in business processes analysis

At least 30% of person-days will correspond to fieldwork (companies' premises and field incl. toll plazas visits).

VI. CLIENT'S RESPONSIBILITIES

Client (MSTI) will provide coordinator and ensure availability of company (HAC, ARZ, HC) contact persons, who in turn shall provide to the consultant all reasonable access in order to perform current scope.

VII. REPORTING AND DELIVERABLES

All reports shall be confidential and delivered exclusively to the designated persons of the Client and companies. No information will be revealed under any circumstances to third parties.
Reports will be in Croatian and English. Translation is responsibility of the consultant. Croatian text takes precedence.

Required deliverables and frequency of their submitting:

i) Analysis of Current Situation Report – 2 months from the start of the contract
ii) Draft Final Report – 3 months from the start of the contract
iii) Final Report – 4 months from the start of the contract

VIII. PAYMENTS

Payments will be lump sum, based on the following deliverables:

a) After submitted Analysis of Current Situation Report - 40% from the lump - sum price;
b) After submitted Draft Final Report - 30% from the lump - sum price;
c) After submitted Final Report - 30% from the lump - sum price;

IX. DURATION OF THE CONTRACT

Contract duration will be 4 months.