DEVELOPMENT OF INTELLIGENT TRANSPORT SYSTEM CONSULTANT (CSP-3)

TERMS OF REFERENCE FOR CONSULTANTS

A. Introduction

1. High fatality rates, truck overloading, low revenues from transit charges have been partly due to inadequate road operations and traffic management system. Road operations and traffic management requires reliable and accurate data about all aspects of the road network. Advance information system could be potentially applied to include axle load monitoring and control facilities, road weather information systems, highways advisory radio and electronic signs, and traffic recording equipment. Such system will provide data required by maintenance managers to make the right winter maintenance decisions to ensure that road restrictions are minimized and costs are low, and also to timely inform road users of road conditions.

2. Improvement of transport operations through the application of information technology will ensure seamless cross border movement. The application of intelligent transport system (ITS) in improving road operations requires feasibility assessment of the system. A thorough examination will be needed to identify the overall implementation strategy, enabling environment, possible services, investment requirements, and short-term investments for the Corridor.

3. MOTC is seeking to engage consulting services to examine the potential for implementing ITS on key corridors, identifying the services that should be included and also the development of a strategy for implementing ITS, taking account of the size of the country, the existing communication network and systems and the needs of stakeholders. This initiative will be funded through the Investment Program.

B. Scope of Services

4. The assignment is to identify the potential for establishing ITS, the form it might take, the ITS features and services that should be considered and also developing criteria for establishing the ITS in its various forms. It should also develop a strategy for progressively establishing ITS on existing and recently improved roads. This will mean identification of key stake holders and involving them in the development of the strategy plan.

5. The consultant is to develop a comprehensive “roadmap” setting the direction and pace of ITS investments over the next 10 years in a coordinated and focused manner. A study and strategy plan should addresses the growing transportation needs through the staged implementation of ITS network designed to meet the requirements of road users, especially during winter. The plan should list viable, cost-effective projects that could be implemented to achieve ITS short, medium and long term goals. The plan should also take account of development in adjoining countries to ensure consistency, where possible.

6. The Consultant is to prepare a short-term investment plan including project selection and prioritization process, implementation criteria for specific roads or ITS applications and the identification of the projected benefits and costs of an ITS program to Kazakhstan and its transport system users. The planning process must also create a framework that allows partnerships to form around strategic ITS initiatives to help implement the plan.

7. The development of the strategic plan for the deployment of ITS technologies will require a well balanced approach based on consensus building. The Consultant shall recognize the needs of all participants, identify specific benefits, and generate a long term strategy that lends itself to a staged implementation program. The Consultant shall focus on addressing local user needs rather than simply looking for opportunities to utilize new technologies. Key steps include:

(i) Identifying stakeholders and working with them to identify their area and extent of interest in the rolling out of an ITS program and the ITS user applications that could be provided.
(ii) Needs assessment and the development of goals and measurable objectives, development of a vision for ITS, identifying applicable user services (traffic control, early warning, GPS, etc), their costs and extent of need, developing appropriate criteria for providing the service and assessing benefits.
(iii) Opportunity assessment namely the identification of institutional barriers, state of support services, technological and communication limitations and funding sources.
(iv) Defining the ITS program by developing the functional requirements for the provision of the identified user services, and identifying the technical enabling environment and required technologies and the criteria for their use based on road standard, traffic levels, commercial traffic levels and environmental conditions.
(v) Defining the deployment program and plan for the road network and/or for specific roads.

C. Input

8. The services will be carried out by international firms in association with national consultants, to be selected by the EA in accordance with ADB's *Guidelines on the Use of Consultants* (2007, as amended from time to time). A total of 12 person-months of international consultant inputs and 12 person-months of national consultants will be required.

9. Consulting services are expected to take place over 6 months. The international consultants will be a road/transport ITS and communication specialists with sufficient experience with needs evaluation and ITS system design and strategy development. The national consultants would include a roads engineer who is familiar with MOTC transport and traffic systems, and a communications specialist with knowledge of the communication setup in Kazakhstan and some knowledge of ITS systems. All experts, international and national, must be proficient in both written and spoken English. It is desirable for international consultants to have basic knowledge of Russian.

Proposed Staffing

Position	No.	Person-Month	Position	No.	Person-Month
Team leader/Highway Engineer	1	6	Highway engineer	1	6
ITS Specialist	1	6	ITS Specialist	1	6
International Consultants	**2**	**12**	**National Consultants**	**2**	**12**

Source: MOTC and ADB Staff estimates.

10. The consultant's staff will be based in Astana for the duration of the services but will be expected to travel to project sites when required.

D. Deliverables

11. The following documents and reports shall be submitted by the Consultants to ADB and MOTC.

(i) Report of the existing situation and opportunities and indicative costs at the end of month 2;
(ii) Submit Draft Final Report containing ITS strategy and implementation plan with recommendations at the end of month 5; and
(iii) Submit Final Report after incorporating stakeholders' comments and suggestions at the beginning of month 6, but no later than three weeks from the completion of the services.