

SMART CONNECTIVITY ALONG THE ASIAN HIGHWAY NETWORK IN THE TIMES OF COVID-19

"Transport and trade connectivity in
the age of pandemics: Contactless,
seamless and collaborative UN
solutions"



5. Applications for real-time
updates on the route operational
conditions

OVERALL DESCRIPTION

A key component of the information requested by transport participants is information about the operational situation on the transport route, including on restrictive measures in connection with COVID-19. The introduction of new digital management methods and tools for intelligent transport systems (ITS) requires remote and free access to this information (ICT).

In this regard, one of the most effective tools of ICT, which provides an increase in the efficiency of the transportation process, as well as forming a common open information space, is the creation of public and free WEB and mobile applications.

A key element of services for informing participants in international road transport is the provision of cartographic information for planning and managing international road transport.

This is due to the need to make significant changes to previously created and agreed transportation plans, partially or completely change them, as well as promptly communicate the corrected plans to drivers via email, or information in special software installed on drivers' smartphones, tablets or on-board computers.

OVERALL DESCRIPTION

Planning of international transport passing through the territory of several States is particularly relevant and difficult. Since the existing differences in standards, requirements and conditions for transportation may present significant difficulties in processing documents for:

- vehicles, including the validity period of technical inspection certificates, certificates of environmental class confirmation, and others;

- the driver, including the availability and required validity periods of visas, medical certificates, insurance policies, etc.;

- the cargo being transported, including the availability and required validity periods of sanitary and phytosanitary certificates for the cargo, etc.;

- as well as documents defining the conditions of transportation, including the availability and required validity periods of permits for international road transport, transportation of certain types of cargo, including oversized, heavy and dangerous goods, and others.

Expected benefits and linkages to the pandemic response

Implementation of the WEB service and mobile applications will allow participants of road transport along international transport corridors to remotely in an online format:

- receive official, reliable and promptly corrected information necessary for the organization and management of the transportation process;
- optimize the processes of planning and coordinating optimal transportation routes, border crossing points, monitoring and managing traffic schedules;
- use the information obtained to reduce fines and costs from unexpected obstacles to transportation, including those related to restrictive measures against the spread of the COVID-19 pandemic;

Expected benefits and linkages to the pandemic response

- use special information software that implements digital technologies for planning, coordination and operational management when solving multi-criteria tasks of planning and managing a large fleet of cars, taking into account real restrictions and the current transport situation;
- plan the work schedule of drivers (vehicle crews), taking into account compliance with labor and recreation standards, the availability and location of transport and road infrastructure facilities for safe Parking and drivers ' recreation;
- improve the quality and safety of transportation, including the correct registration of transport and permit documents;
- ensure compliance with the requirements of transport, customs and other types of national and international legislation, international conventions on the organization of road transport, including in terms of transportation of certain categories of goods.
- The implementation of WEB and mobile application services will enable the development of various ICT services, as well as the integration of current information about the traffic situation and infrastructure objects into various external services and application software products, both state and corporate.

IMPLEMENTATION EXAMPLES

Examples of successful implementation of services for providing information to transport participants via a WEB service and publishing data are:

- Yandex services. Maps and Yandex. Transport from the company Yandex, Russian Federation ;
- Google Maps Service ;
- Baidu search engine .

Examples of the most successful implementations of the route planning service are:

- the Yandex service. Routing from Yandex ;
- The route planning system of the company Maxoptra ;
- Verizon Connect Route Planning Software ;
- Samsara Route Planning Software ;
- Teletrac Navman Route Planning Software(1);
- Silent Passenger Route Planning Software(2);
- US Fleet Tracking Route Planning Software(3);
- WorkWave Route Planning Software(4);
- Pro Transport Route Planning Software(5);
- KeepTruckin Route Planning Software(6);
- Fleetio Route Planning Software(7);
- Omnitrac
- Route Planning Software(8).

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(1) <https://yandex.ru/maps> and <https://yandex-transport-online.ru/>

(2) <https://www.google.ru/maps>

(3) <http://www.baidu.com/>

(4) <https://yandex.ru/routing>

(5) <https://maxoptra.ru/postroyeniye-marshruta>

(6) <https://www.verizonconnect.com/v/fleet/gpsfleet/here-and-ready/>

(7) <https://www.samsarastatus.com/>

(8) <https://www.teletracnavman.com>

(9) <https://www.silentpassenger.com/>

Examples of the most successful implementations of the route planning service are:

- the Yandex service.Routing from Yandex(4);
- The route planning system of the company Maxoptra(5);
- Verizon Connect Route Planning Software(6);
- Samsara Route Planning Software(7);
- Teletrac Navman Route Planning Software(8);
- Silent Passenger Route Planning Software(9);
- US Fleet Tracking Route Planning Software(10);
- WorkWave Route Planning Software(11);
- Pro Transport Route Planning Software(12);
- KeepTruckin Route Planning Software(13);
- Fleetio Route Planning Software(14);
- Omnitrac's Route Planning Software(15).

(10) <https://www.usfleettracking.com/>

(11) <https://www.workwave.com/route-manager/>

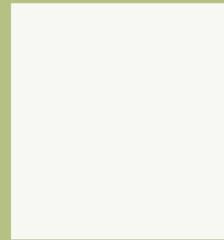
(12) <https://www.pro-transport.com/>

(13) <https://keeptruckin.com/>

(14) <https://www.fleetio.com/>

(15) <https://www.omnitrac.com/products/route-optimization>

Initial recommendations for launching/strengthening similar initiative in an interested country/sector



It is recommended to provide information to transport participants by publishing data on a special information portal and WEB services using mobile applications.

Such services, depending on the accepted national practice, can be created either on the initiative of the state and at the expense of budget funding, or on the initiative of business in the framework of commercial projects. In addition, it is possible to use the mechanism of public-private partnership to create, organize the operation, as well as update the data of such services.

Initial recommendations for launching/strengthening similar initiative in an interested country/sector

Comprehensive development of the service is recommended in the following areas:

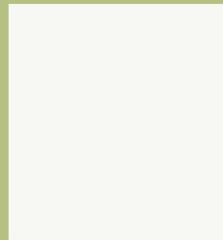
- publication of official, reliable and promptly corrected cartographic information about roads and infrastructure, including emergency services on the route, through a special WEB portal and mobile application;
- implementation of a set of basic road navigation functions, including planning the optimal route taking into account the current traffic situation;
- providing tools for using map information to integrate it into third-party software products, including official and commercial services;
- providing assistance to drivers in case of emergency situations related to transport accidents, diseases, etc. during transportation (call center).

Initial recommendations for launching/strengthening similar initiative in an interested country/sector

The recommended composition of map information data should contain the following information:

- public road networks that are part of international transport corridors, including road graphs and current restrictions;
- current and planned changes to the traffic pattern due to repairs or other activities, events, etc.;
- current traffic congestion of sections of the road network, the presence of road accidents, the likelihood of traffic jams, etc.;
- time restrictions for the movement of certain categories of vehicles;
- permissible weight and axial loads on the roads of the transport route;
- restrictions for transportation of certain types of cargo, including dangerous goods, taking into account the class of danger of the cargo being transported;
- limitations of dimensional parameters;
- location of the network of transport and road infrastructure facilities, including contacts, operating hours and current situation on the site, etc.

Initial recommendations for
launching/strengthening similar
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To create an optimal transportation route, including for a fleet of vehicles that serve several geographically distant customers, it is necessary to use special optimization methods, including mathematical graph theory and Queuing theory.

With particular importance is the integration of special software with the IT systems of the state oversight agencies for approval, if necessary, electronically routes and schedules transportation of certain categories of goods as well as processing in electronic form of special permits to transport such cargo. It will require appropriate improvements and adaptations of IT systems of state bodies and organization of their information integration.

