Smart Corridor Definition and Characteristics

The Smart Corridor Concept

Smart Corridor is a new concept of developing and operating corridors that has been adopted in the PIDA and included in its PAP. This concept has been applied in a number of countries including in North America and the word “SMART” stands for “Safety, Mobility, Automated, Real-time Traffic Management”. It is important that the AUC and all its stakeholders have a common understanding of what is meant by “Smart Corridor”. The Smart Corridor definition and characteristics hereunder was presented to and adopted by AUC stakeholders at the Validation Committee meeting held in Addis Ababa, Ethiopia 23-24 February 2016. The definition in its Intelligent Transport Systems (ITS) requirements provides outputs specifications or functions which corridors can use to assess their current ITS or for specifying their ITS requirements to vendors when they decide to convert their corridor into a smart corridor.

Key Smart Corridor Attributes

- Monitoring of traffic movements along the corridor and providing real-time information to stakeholders to enable them to manage trade and transport facilitation processes.
- Paperless trade and transport administrative and clearing procedures and logistics processes.
- Implementation of key WTO/WCO and RECs transport and trade facilitation tools such as electronic National Single Windows, One Stop Border Posts, Weigh-in-Motion Weighbridges.
- Provision and maintenance of quality transport corridor infrastructure and safety enhancement measures.

1. Summary Definition of a Smart Corridor

In a summary, a Smart Corridor (SC) is defined as follows:

A modal or multimodal surface transport corridor with quality infrastructure and logistic facilities, between two or more countries, used to carry intraregional and international cargo and passengers facilitated by the latest trade facilitation tools and conducive policies; the corridor includes innovative Intelligent Transport Systems (ITS) aimed at facilitating trade through simplification of transport administrative processes and providing real-time information to the key corridor stakeholders to monitor cargo clearance and movement.

2. Objectives of a Smart Corridor

The objectives of a Smart Corridors are to:

- a) Increase the use of real time traffic data and statistical information to optimise use of corridor resources and infrastructures;
- b) Enhance trade and transport facilitation by:
i. Simplifying and harmonizing cross-border administrative procedures and documentation

ii. Implementing paperless automated administrative procedures;

c) Reduce cargo transportation time and costs;

d) Increase safety and security of transport services;

e) Simplify trade while Increasing Customs and other authorities control efficiency;

f) Ease the opening-up of landlocked countries for intraregional and international trade; and

g) Enhance corridor countries competitiveness.

3: Characteristics of a Smart Corridor

What makes a corridor “smart” are the four actions discussed below which are also smart corridor characteristics.

3.1 Implementation of Cross-border Intelligent Transport Systems (ITS)

The ITS systems simplify the administrative procedures and logistics processes, monitor traffic movements along the corridor and provide real-time information to stakeholders to enable them to manage the processes. A Smart Corridor’s key ITS components are computerized networks infrastructures, Electronic Data Interchange (EDI) and software. See Figure 1 below.

A Smart Corridor (SC) countries should implement SC ITS with the following minimum output specifications/modules/functions (See Annexure B for explanations):

1.1 Cross border Trade Community Data Hub (TCDH) & Electronic Data Interchange (EDI);

1.2 Customs Management Systems (CMS) connected through the TCDH / regional network;

1.3 Customs Risk Management Systems for cargo physical examination selection;

1.4 Electronic payment systems between stakeholders banks via the TCDH;

1.5 Real time monitoring and tracking system for cargo and vehicle movements - GPS/GPRS tracking devices and electronic seals for all types of cargo transport vehicles;

1.6 Corridor Coordination Entity (CCE) statistical performance monitoring and reporting system;

1.7 Customs Transit Security Bond Guarantee monitoring software at regional level;

1.8 X-ray Cargo Scanners remote image analysis at destination for cargo examination;

1.9 Weigh-in-motion weighbridges automated and interconnected to the TCDH;

1.10 Electronic toll portal equipment on highways;

1.11 Electronic application / delivery of authorizations /credential by government agencies; and

1.12 Traffic information / route status / alerts - data collection and report delivery to corridor users.

Some stakeholders such as the trucking industry, Customs Administrations, and others, have already implemented information systems to satisfy their own specific needs. All these individual systems should be connected to one central ITS system which allows all the stakeholders to have access to a given set of specified data while ensuring confidentiality of information. Whenever necessary, corridor countries must issue appropriate regulation to recognize the use of electronic documents in their legal system for the ITS system to operate legally. The operations of the ITS shall be financially sustainable through “users pay principle” while their overall impact shall be a reduction in trade and transport costs.
Figure 1: Smart Corridor ITS Key Components Processes

The diagram below depicts smart corridor ITS key components processes.

3.2. Implementation of the WTO/WCO Trade Facilitation Tools such as:

The World Trade Organization (WTO) published an agreement on trade facilitation on December 7th, 2013. The agreement presents a set of tools to be introduced in each country’s regulation to improve trade facilitation which include the following that should be implemented by the Smart Corridor countries:

a. National Single Windows  
b. Coordinated Border Management  
c. One Stop Border Posts  
d. Common Customs declaration form - Single Administrative Document (SAD)  
e. Customs procedures modernization and streamlining (e.g. Pre-arrival clearance)  
f. Risk Management based procedures for Customs physical examination

3.3. Implementation of Regional Economic Communities (REC) agreed trade facilitation policies, laws, regulations, procedures and safety measures:

Smart Corridor countries should implement the agreed measures such as the following:
a. Authorized size and axle loads of vehicles
b. Liberalization of the trucking industry
c. Vehicle and freight insurance laws and regulations
d. Regional Customs Transit Bond Guarantees regulation
e. Selection and control of vehicles authorized to operate along the corridors
f. Electronic Certificate of Rules of Origin
g. Standardization and harmonization of processes, procedures, fees, taxes etc.

3.4. Implementation of quality transport infrastructures (Road, rail, maritime transport, border crossing, etc.)

Smart Corridor countries should take measures to ensure the following:

3.4.1. Quality of the design and layout of the transport infrastructure

   a. For road: size of the road lanes, bypass of key cities and villages, third climbing lane when the road rises by more than 3% gradient, stop facilities such as provision of Road Side Stations/Truck Stops or One Stop Inspections Centres mainly by the private sector.
   b. For rail: gauges, size of crossing, private siding etc.; rail capacity (quality of rail rolling stock i.e. locomotives, wagons etc.)
   c. For port: capacity (and equipment for short dwell time), loading and unloading container facilities, inland container depots (ICDs).
   d. Intermodal facilities (and appropriate equipment)

3.4.2. Quality of the maintenance of these infrastructures

   a. Contribution of the private sector through Public-Private Partnership (PPP).
   b. Enabling financing mechanisms for the maintenance and modernisation of the transport infrastructure etc.
ANNEXURE B: ITS SYSTEMS DESCRIPTIONS

1.1 **Cross border Trade Community Data Hub (TCDH):** The TCDH is a central database that collects and distributes the electronic documents (data) to the various stakeholders. The TCDH manages processes and assign tasks to the members. The system gathers information on the duration of each stage of the transit process. The objective is to get rid of paper documentation and stamped authorization from the process to make it paperless. It removes the risk of fake documentation, fasten the transit process and enables corridor monitoring.

1.2 **Customs Management Systems (CMS) regional network:** Customs administrations of the corridors are connected with each other through the TCDH network and EDI. The objective is to transfer transit Customs Declarations from one country to another without re-entering data into the next country Customs Management Systems.

1.3 **Customs Risk Management Systems (CRMS):** Customs administrations are using a software that provide risk information score for each declaration. The score determine the level of intervention regarding physical examination of each consignment. The objective is to reduce the cargo customs examination delays while protecting revenue collection.

1.4 **Electronic payments:** Many stakeholders are providing services along the corridor for which an invoice is issued. These invoices are paid using electronic solutions. The banks and stakeholders are connected together via the TCDH. The system triggers and confirms payments. The objective is to avoid delays related to payment request and confirmation.

1.5 **Electronic Cargo Tracking Systems (ECTS) for transit:** GPS/GPRS tracking devices and electronic seals for trucks or rail rolling stocks. The system enables to monitor, in real time, on an electronic map, cargo and vehicle movements. If seals are tempered while in transit, ECTS activates an alarm that triggers the intervention of the relevant authority. The system also allows transporters’ fleet control and users’ consignments location information.

1.6 **Statistical performance monitoring and reporting system (PMRS):** Corridor Coordination Entities (CCEs) are connected to the TCDH. The PMRS collects the data related to process times at each stages and computes average durations for each critical steps. The reports points out the various bottlenecks in order for the CCE to coordinate corrective actions.

1.7 **Customs Transit Security Bond Guarantee:** This system insures Customs taxes/duties for cargoes declared in transit. Customs get paid their dues in case the goods do not reach the declared country exit point. The system secures an amount from clearing agents’ accounts. This system is implemented at regional level involving Customs of each corridor countries.

1.8 **X-ray Cargo Scanners remote image analysis:** This system transfers X-ray images generated in a sea port to the corridor’s final destination. Customs can analyze the image at destination. The objective is to reduce the cargo customs physical examination delays while protecting revenue collection.

1.9 **Automated Weigh-in-motion weighbridges:** Weighbridges along the corridors are interconnected to the TCDH. Weight is electronically shared between relevant parties, government agencies (Road Authority and port authorities, Customs, etc.). It avoids the cargo to stop at each weighing station and avoid redundant weighing processes.

1.10 **Electronic toll portal equipment on highways:** The system provides automated payment for trucks at a toll on highway. The objective is to reduce time for the driver by removing one stage of physical payment of road toll.

1.11 **Electronic authorization application & delivery form government agencies:** The TCDH develop EDI or web application for government agencies. Users apply for authorization through these
web-software like driver registration, import declaration, sanitary agencies inspections, etc. The objective is to avoid queuing at the various agencies for the authorization delivery.

1.12. **Traffic / maintenance / Safety status & alert report:** The system collects information along the corridors (Traffic, accidents, maintenance, weather conditions and deliver reports / alerts to the stakeholders. The objective is to facilitate transport scheduling and monitoring.