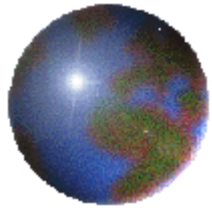


Dar-es-Salaam Corridor



Dar es Salaam Corridor CPMS

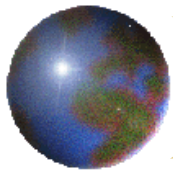
**Strategic Objectives
and Project Plan**

2-3 July, 2018

Abuja, Nigeria

**African Union Pilot SMART Corridor
SATTFP (World Bank) Beneficiary**

pmasi@darcorridor.org



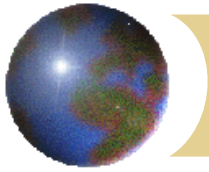
Strategic importance of CPMS

- ✦ Role of corridors in regional economy
- ✦ Cost effectiveness of African logistics vs global logistics
- ✦ Competitive situation of Dar es Salaam Corridor vs Competing Corridors



Dar es Salaam Corridor





Background

- Effective participation in the global economy requires fast turn-around times and predictable deliveries
- African border posts characterized by high levels of inefficiency - long cross-border delays that hamper the African economy
- Results from conflicting objectives of the multiplicity of stakeholders:
 - cargo owners and transporters focus on short turn-around times
 - priority of customs authorities - prevent the movement of illegal contraband and optimize the collection of customs duties
- High incidence of physical inspections by customs authorities, which is a primary contributor to cross-border delays, results from the lacking abilities to perform 'cyber' risk inspections based on available data
- CPMS will further the objectives of all stakeholders by using technology to monitor the status of freight consignments and by sharing of such data amongst key stakeholders
- The expected benefits of reduced time delays to corridor users and the regional economy will far exceed the cost to implement improved systems and processes

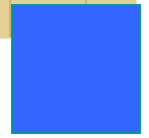
Contribution of CPMS - Outcomes

Performance

Outcomes

1. Efficient, safe & competitive transport & transit services
2. Improved competitiveness of Dar Corridor
3. Enhanced trade & investment & socio-economic growth of 4 contracting parties

B

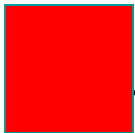


Desired state

Challenges

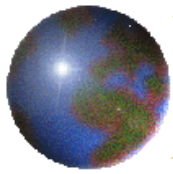
1. Lack up-to-date info on movement of goods, persons and associated services in corridor to inform policy, investment & business decisions
2. Perceived cost of doing business
3. Corridor competitiveness

Undesired state



A

Time



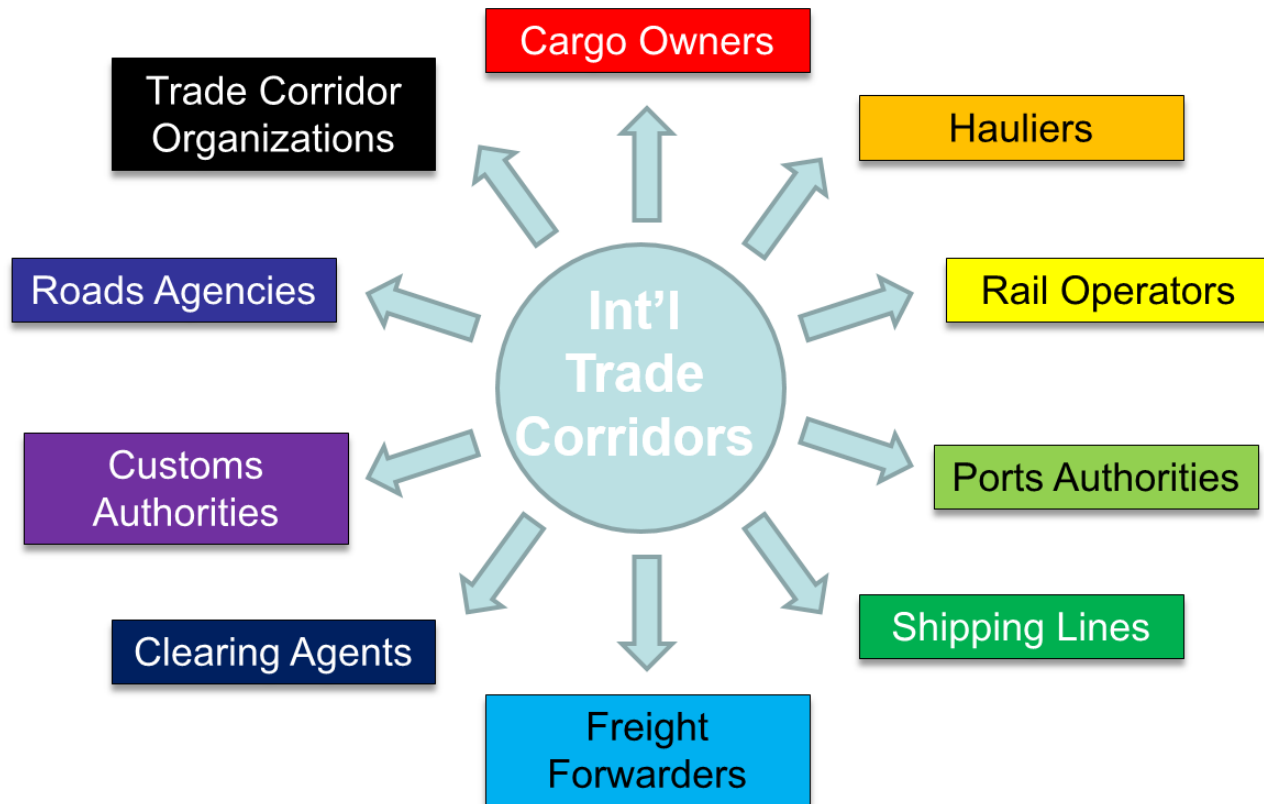
Key Corridor Stakeholders

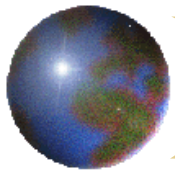
Public sector

- Ports, customs, roads, police, rail operators

Private sector

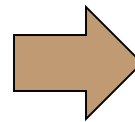
- Freight agents, shipping lines, road transporters

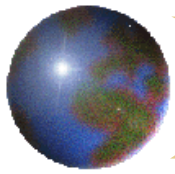




Challenges requiring collective action

- ✦ The African economy critically depends on an effective Transport Industry
- ✦ Global competitiveness requires excellence in two areas that were historically viewed as being in conflict:
 - ✦ Maximization of commercial profits
 - ✦ Protection of public infrastructure
- ✦ CPMS will play a critical role to reconcile the simultaneous achievement of these two essential objectives

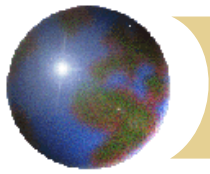




Benefits of integrated corridor management

- ✦ Enable performance benchmarking
- ✦ Enabling improved coordination between corridor participants
- ✦ Reducing time delays and improving asset utilization
- ✦ Reduction of avoidable costs
- ✦ Supporting continuous improvement

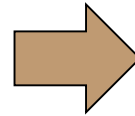




Objectives of CPMS

Against this background DCC plans to offer these benefits:

- ✦ Providing coordination platforms to corridor participants
- ✦ Reducing cargo and truck turn-around times
- ✦ Reduction of storage and demurrage charges
- ✦ Provide relevant performance benchmarks to all stakeholder categories
- ✦ Support improved decision making through cause-effect analysis

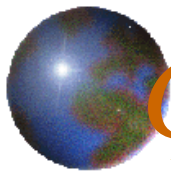




Benefits of reduced delays for corridor users

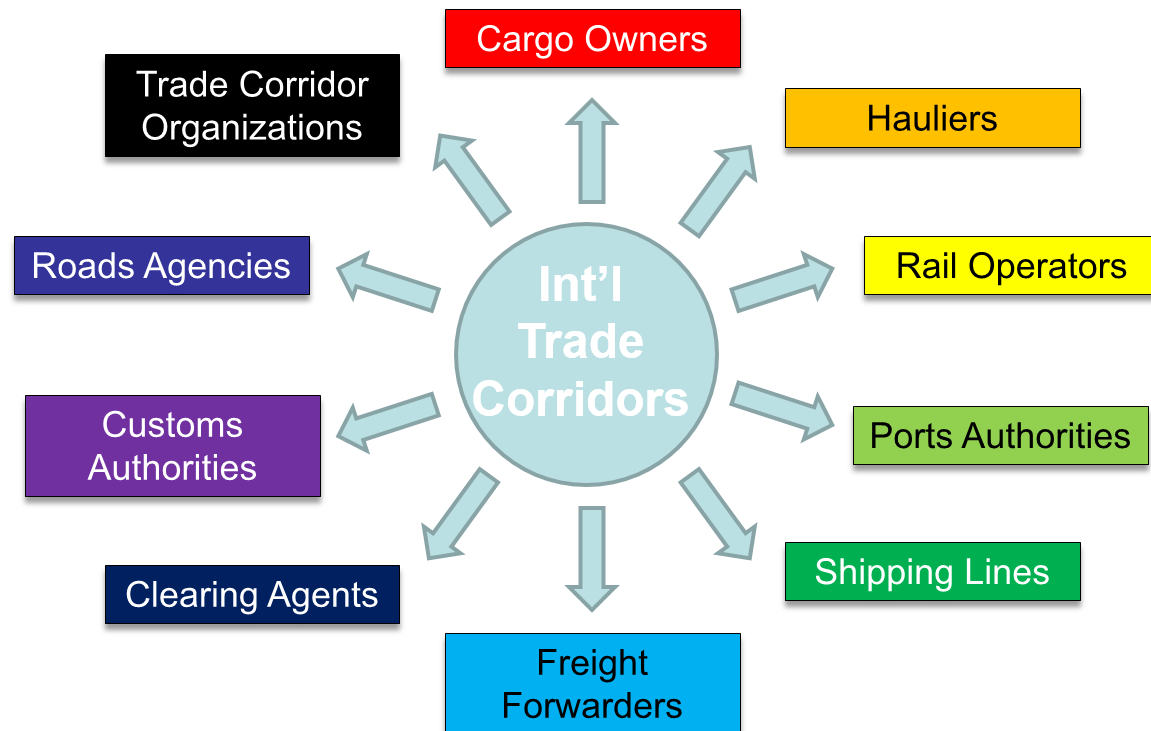
- ✦ A comparison was performed to transport the same volume of goods with current versus improved truck turn-around times
- ✦ Current scenario based on physical measurements on corridors in SADC
- ✦ Improved scenario based on reduced delay times achieved through various interventions

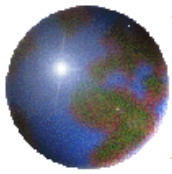
	Current scenario	Improved scenario
Number of trucks	6000	2960
Investment in trucks	\$1 080 000 000	\$532 713 195
Annual installments	\$129 600 000	\$63 925 583
Total profits per month	\$16 119 991	\$23 971 967
Increase in annual profits	-	\$94 223 708



CPMS as Service Delivery Platform

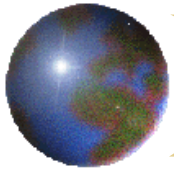
- ✦ Integrating data from all corridor stakeholders into the CPMS will provide an ideal platform for Corridor Management Services
- ✦ By offering these benefits the CPMS plans to achieve a critical mass of industry adoption





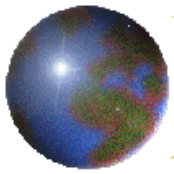
Which Existing Data Sources will be Covered by CPMS?

Nr	Activity Area	Data Sources	Performance Area
1	Cross-border	Customs authorities Freight forwarders Truck GPS tracking	Time to cross borders Percentage Customs Infractions
2	Overload control	Road agency weighbridges Traffic cameras Truck GPS tracking	Evasion of weighbridges Percentage overloaded Time at static scales
3	Ports	Ports operators Shipping lines Truck GPS tracking	Truck waiting time at port gates Truck processing time through ports Percentage Customs Infractions
4	Road corridors	Road transporter planning data Truck GPS tracking Fuel usage records	Average speed of travel Number of route deviations Route turnaround times Fuel efficiency



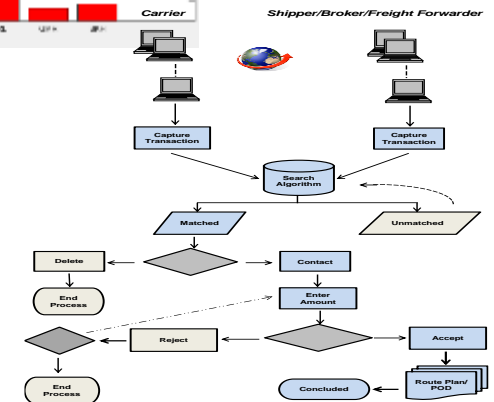
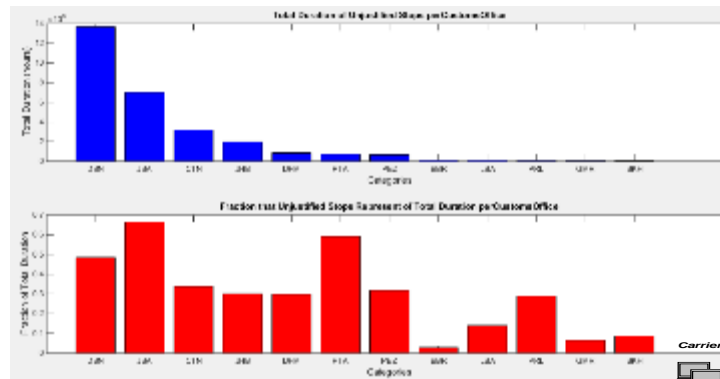
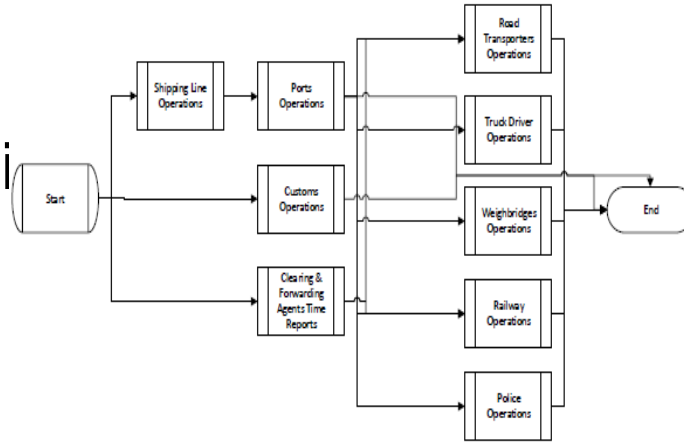
Modules included in CPMS

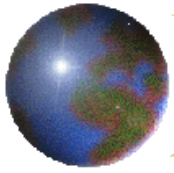
- ✚ Smartphone based truck driver management
- ✚ End-user corridor feedback platform
- ✚ End-to-end Key Performance Indicator (KPI) measurement:
 - ✚ Time delays per activity, route, transport mode and cargo type
 - ✚ Costing per route, transport mode and cargo type
 - ✚ Security incidents
- ✚ Performance benchmarking:
 - ✚ Comparison between routes
 - ✚ Comparison with other corridors
 - ✚ Comparison with commercial competitors
- ✚ Market place for cargo and road transport capacity
- ✚ Social media feedback



Logical operation of CPMS

- Corridor process flows and points where data is extracted
- Working of truck driver app
- Working of Feedback Web Portal
- Working of KPI Dashboard and Report Generator
- Working of Collaborative Transport Management





Truck driver Smartphone app

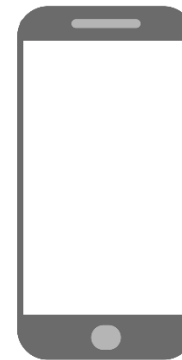
Traditional manual data collection

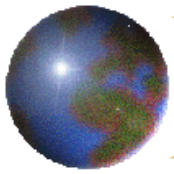
- ❖ Data could easily be lost
- ❖ More susceptible to human error
- ❖ Data can easily be tampered with
- ❖ No real time feedback from field
- ❖ No two way communication with field operators



Automated data collection system

- ❖ Minimises the possibility of human error
- ❖ More controlled data collection
- ❖ Data is more secure (Electronic format)
- ❖ Feed from field is received in real time
- ❖ Two way communication with field operators

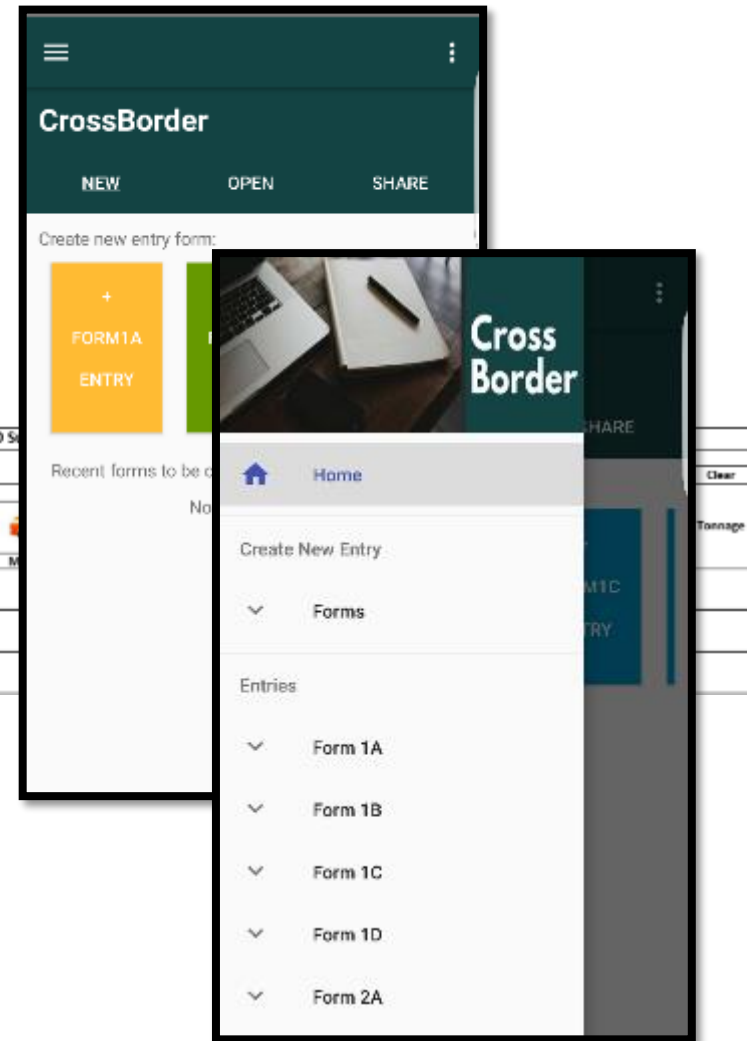


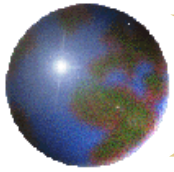


Solution

- Menu driven fields are selected per activity
- Simple enough for use by operators:
 - Create a new Entry by selecting New Form Entry.
 - Once a new Entry has been selected, the user fills it in
 - Entry Options
 - Done button
 - Completes Entry
 - Save button
 - Stores Entry to be finished later
 - Discard button
 - Deletes the current Entry

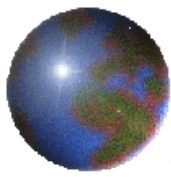
Border Stations		Vehicle		Nationality of Vehicle	Vehicle Type		
Count	Entry Time	Registration No.	Vehicle Type				
			Containerized Truck e.g. 1 x 40' or 2 x 20'		Fuel Tanker	Break Bulk	





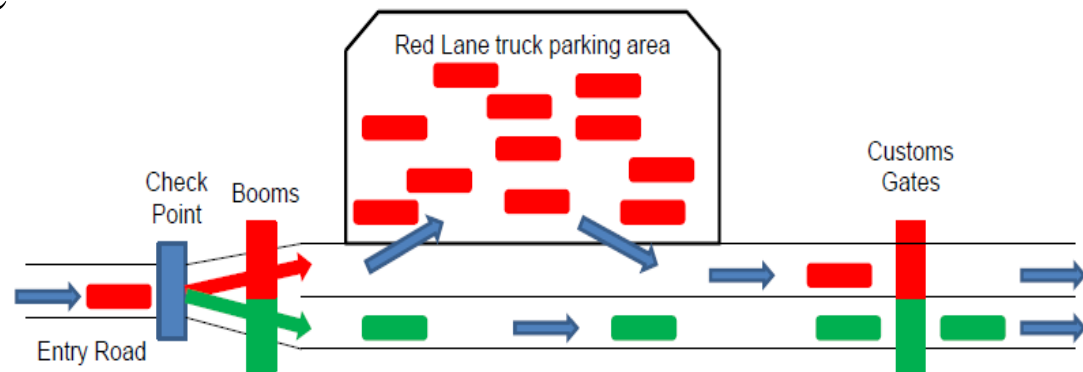
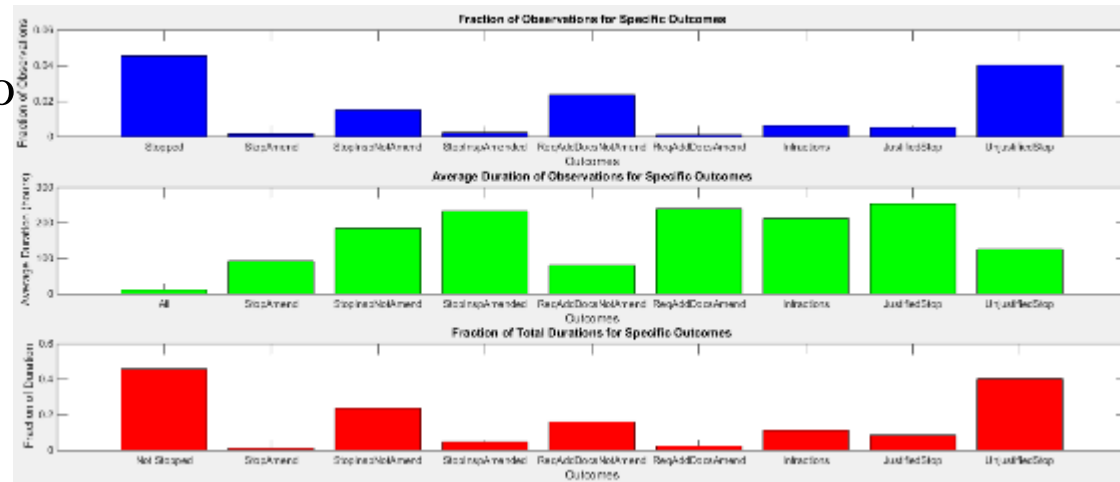
Performance Benchmarking

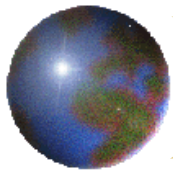
- ✦ The CPMS will provide Corridor Performance Benchmarking that measures the following Key Performance Indicators (KPIs):
 - ✦ Infrastructure and asset utilization levels
 - ✦ Turn-around times for major routes
 - ✦ Processing times at critical service points
 - ✦ Cargo and vehicle losses to support risk management
 - ✦ Driver and operator performance to enable incentive schemes
 - ✦ Profitability of routes per cargo type to prevent loss of business to other regional corridors



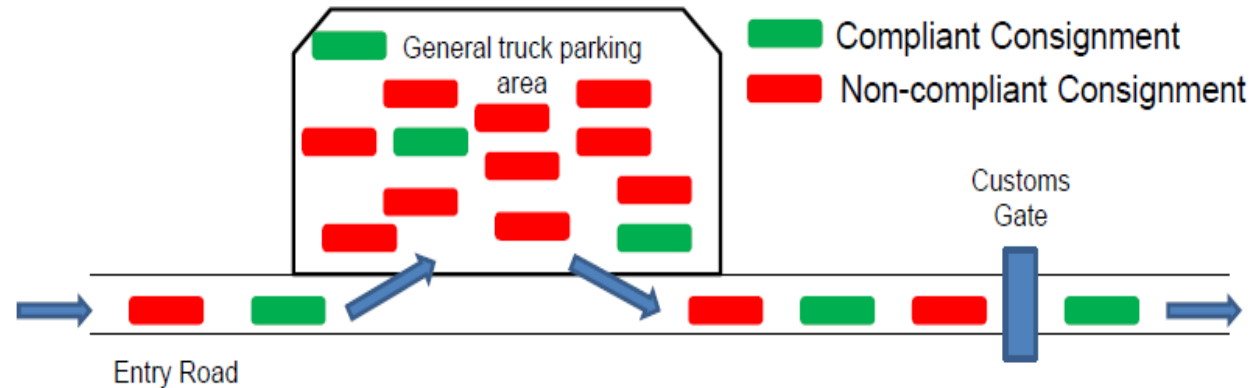
Example of Data Analytics used for Corridor Diagnostics

- Data is collected from all corridor participants, including road transport, rail, customs, freight forwarders, ports and shipping lines
- This data is then converted into Performance Analytics that explain the causes of time delays and identify compliant operators
- A Data Analytics based Corridor Risk Management Engine can be used to scrutinize all corridor users based on operational performance – establish certification levels to qualify for Green Lanes treatment

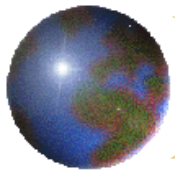




Economic cost of inefficient corridor operations

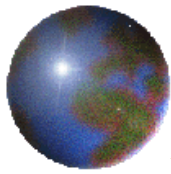


- ❖ Weakness of current system: compliant and non-compliant operators are channelled together
- ❖ The consequences of this border post inefficiency:
 - ❖ Reduced truck utilization levels
 - ❖ Loss of production time and retail sales for customers due to delays
 - ❖ Loss of customs revenue due to corrupt practices
 - ❖ Reduction in the regional economy due to loss of foreign trade

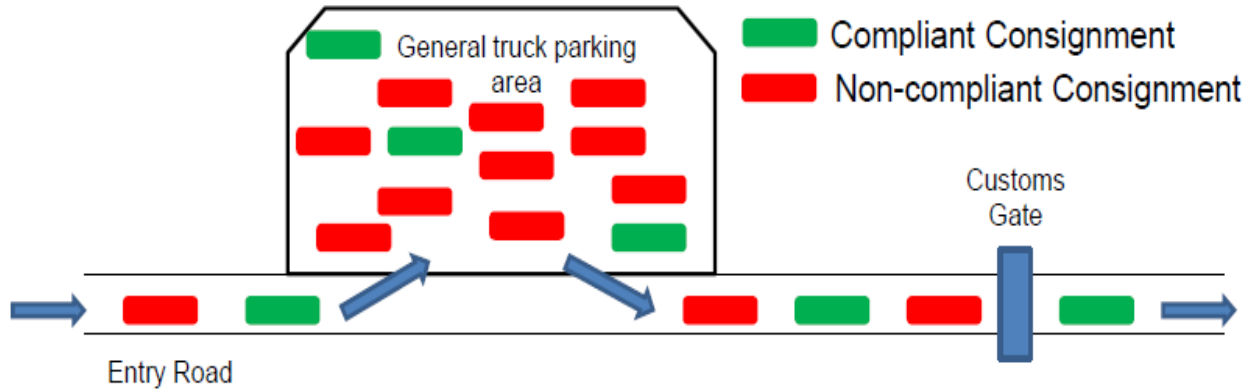


Leveraging KPIs for Compliance Verification towards AEO Status

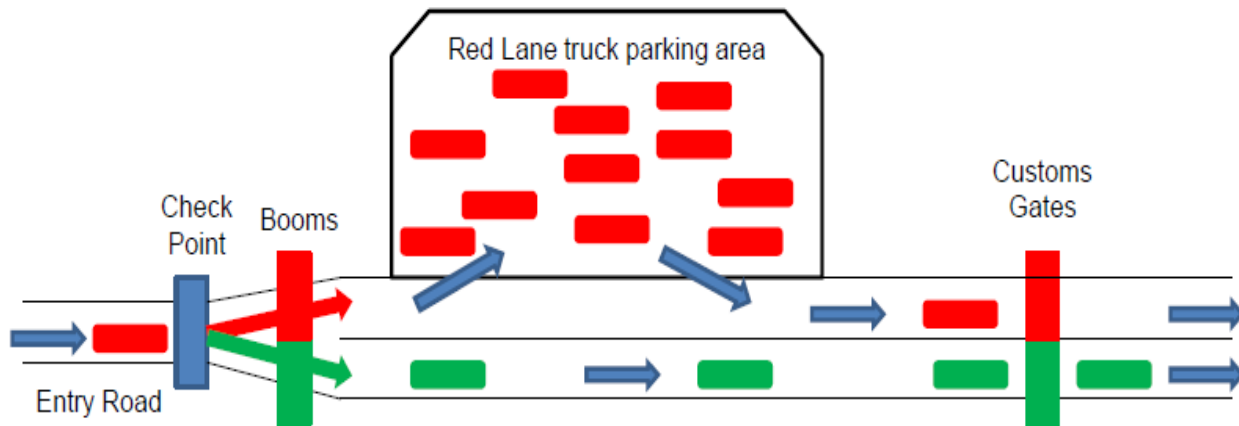
- ✦ The set of measurements can be used for Compliance Verification to support Authorized Economic Operator (AEO) status of corridor users
- ✦ This can be achieved by combining data per commercial operator from a variety of sources, including:
 - ✦ Customs compliance data
 - ✦ Overload compliance data
 - ✦ Route compliance data (ECTS)
 - ✦ Cargo security compliance data



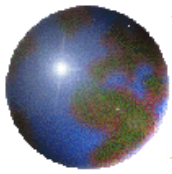
Green Lanes for Trucks at Border Post



(a) Current border post lay-out

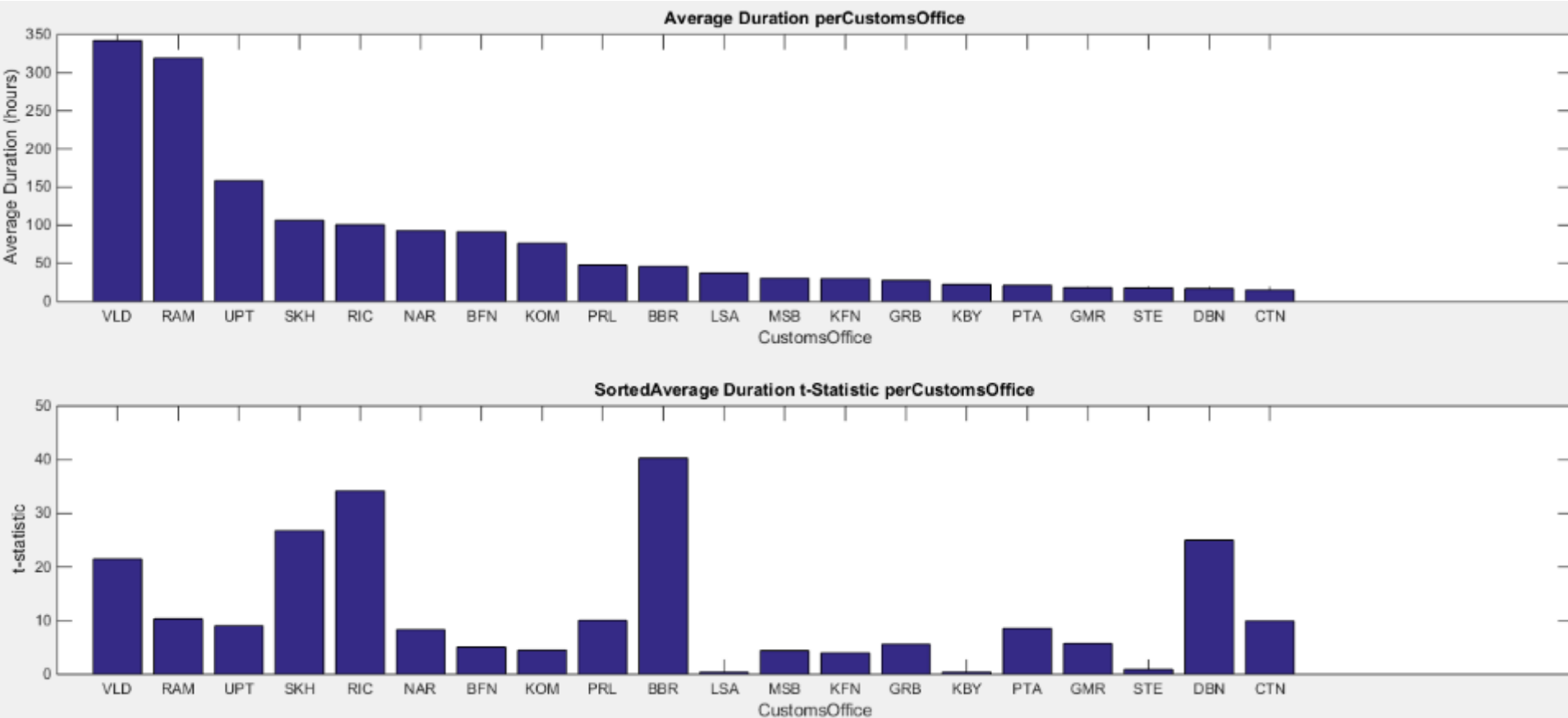


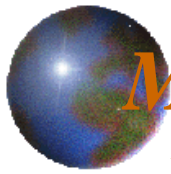
(b) Green Lane / Red Lane border post Lay-out



Examples of Customs Analytics 1: Average Duration to Process Consignments per Customs Office

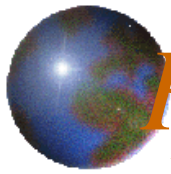
Service points that cause most delays are identified and it is verified if deviations from population average are statistically significant – this allows identification of ineffective service points and pro-active management of exceptions





Market Place for Cargo and Transport Capacity

- Manufacturers are requiring shorter lead times to get products to market
- Cargo imbalances result in millions wasted on empty trips - (un)availability of return loads and the costs associated with empty legs
- Fraction of empty legs can be reduced by meeting the demand side of the supply-demand equation quicker
- Lack of visibility/barriers across organisation/s' (silos)
- No effective electronic data interchange between counter-parties
- Ineffective utilisation of transport providers
- **Profitability of transport sector will be improved through collaborative, industry-wide and corridor-wide initiatives with both the public and private sectors**



Percentage of trucks running empty

**Source - European Environment Agency (EEA) / NPTC
National Private Truck Council USA**

- Hong Kong (46%)
- Holland (40%)
- UK (29%)
- USA (28%)
- Germany (25%)
- East Africa (??)





Solution – Collaborative Transport Management

Case Study: Best Buy, Walmart, AutoZone, Procter & Gamble, J.B. Hunt

Resulting improvements:

-- Transporter

empty mileage reductions (15%)

dwell time reductions (15%)

fleet utilisation improvements (33%)

driver turnover reductions (15%)

-- Shipper

on-time service improvements (35%)

lead-time reductions (75%)

inventory reductions (50%)

sales improvements through improved service to customers (23%)

freight cost reductions (greater than 20%)

administrative cost reductions (20%)



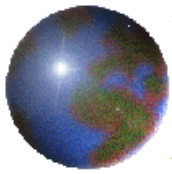
Solution – Collaborative Transport Management

□ CPMS Collaboration Platform:

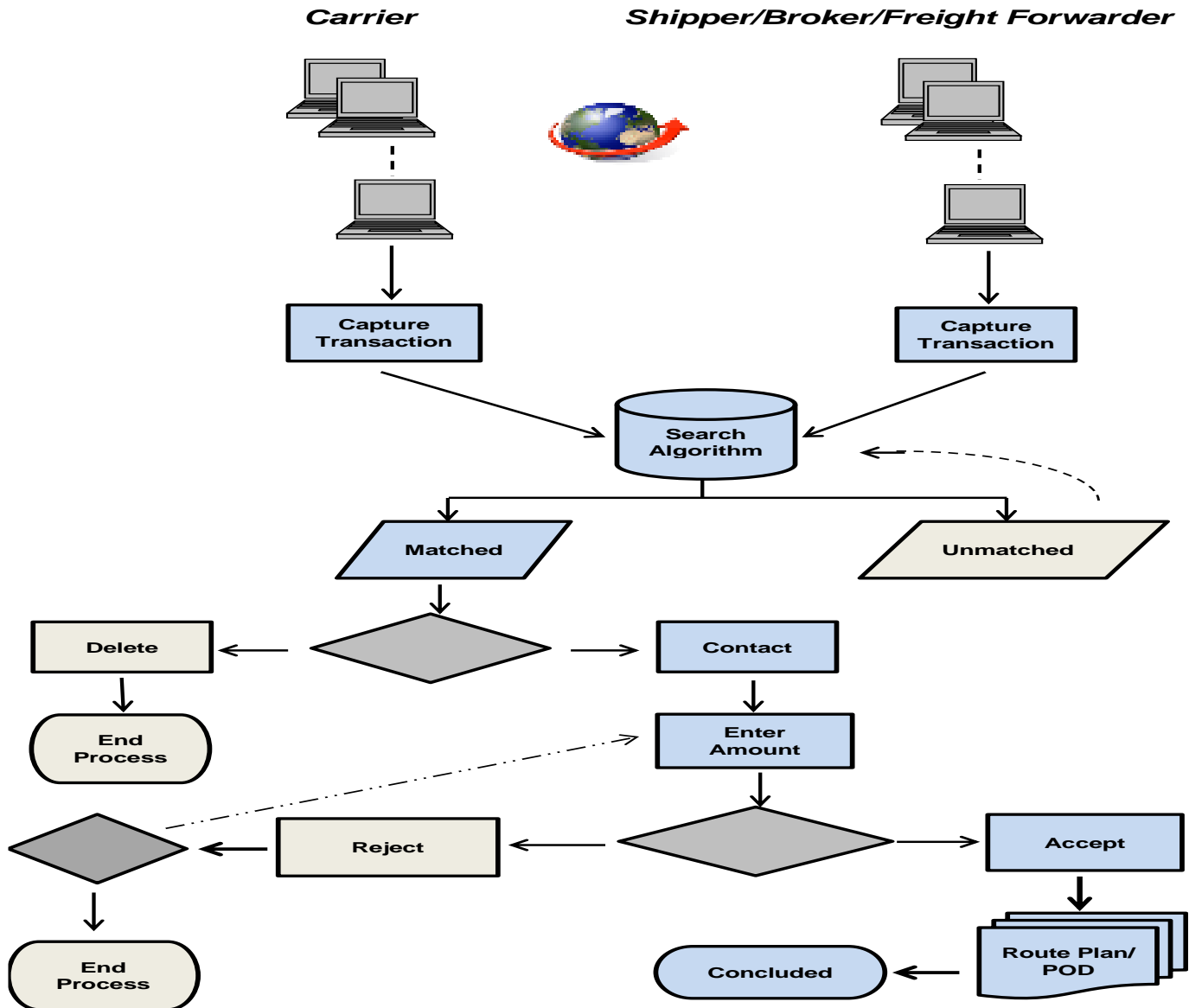
A collaborative software platform designed to bring together Shippers and Transporters to create efficiency by utilising available capacity

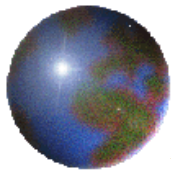
- closed system granting access to reputable members
- cloud based
- ***encompass all defined freight sectors***
- real-time search algorithm with notifications
- cost model based on results
- integration into mapping technologies
- handles the existing contractual relationships
- launched with road freight in mind, but can migrate into intermodalism
- consolidation of multiple loads into one truck
- electronic tendering
- **drive efficiency, innovation and competitive advantage**



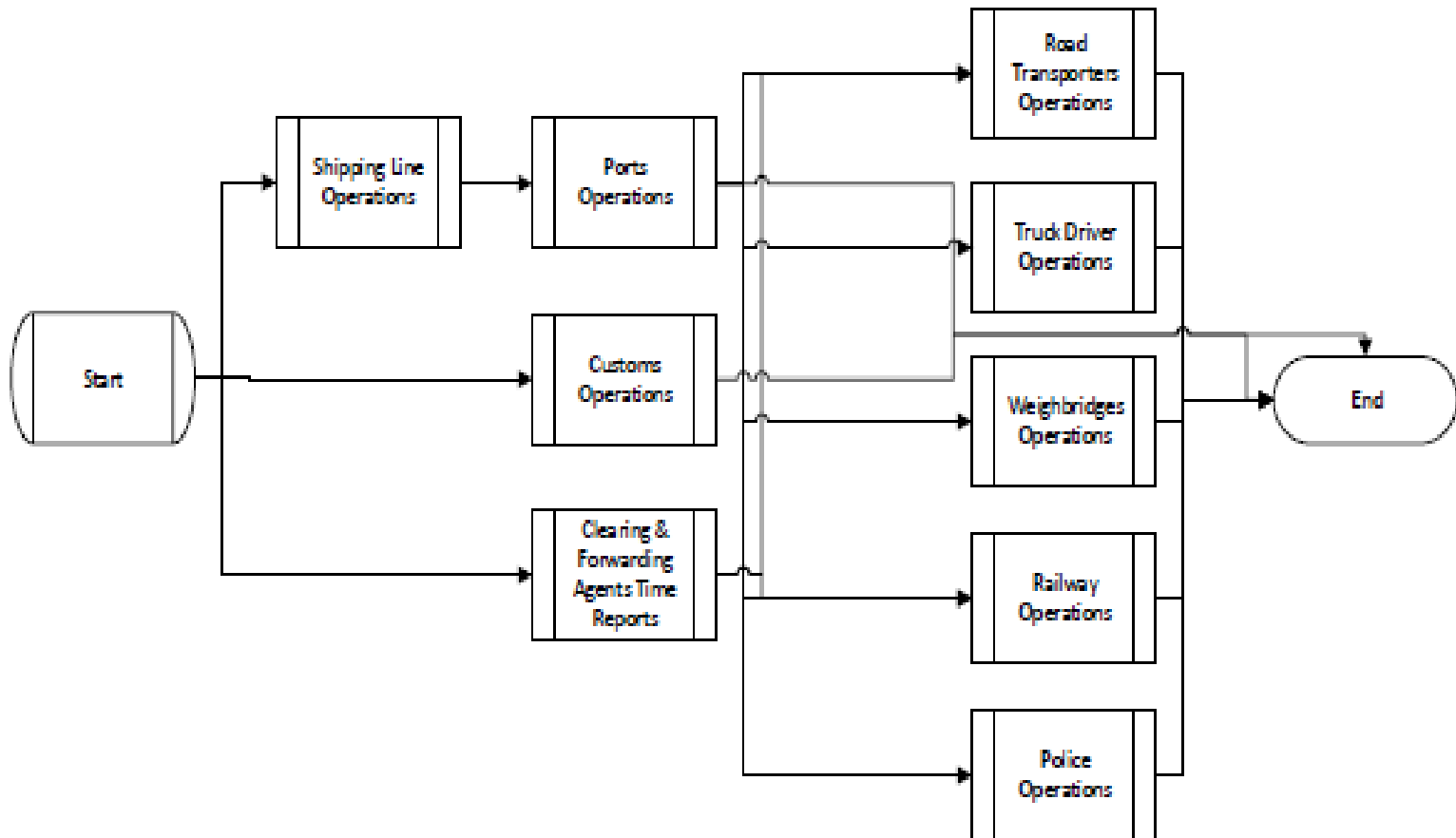


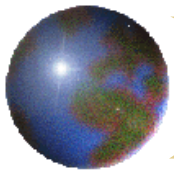
CTM Process Flow



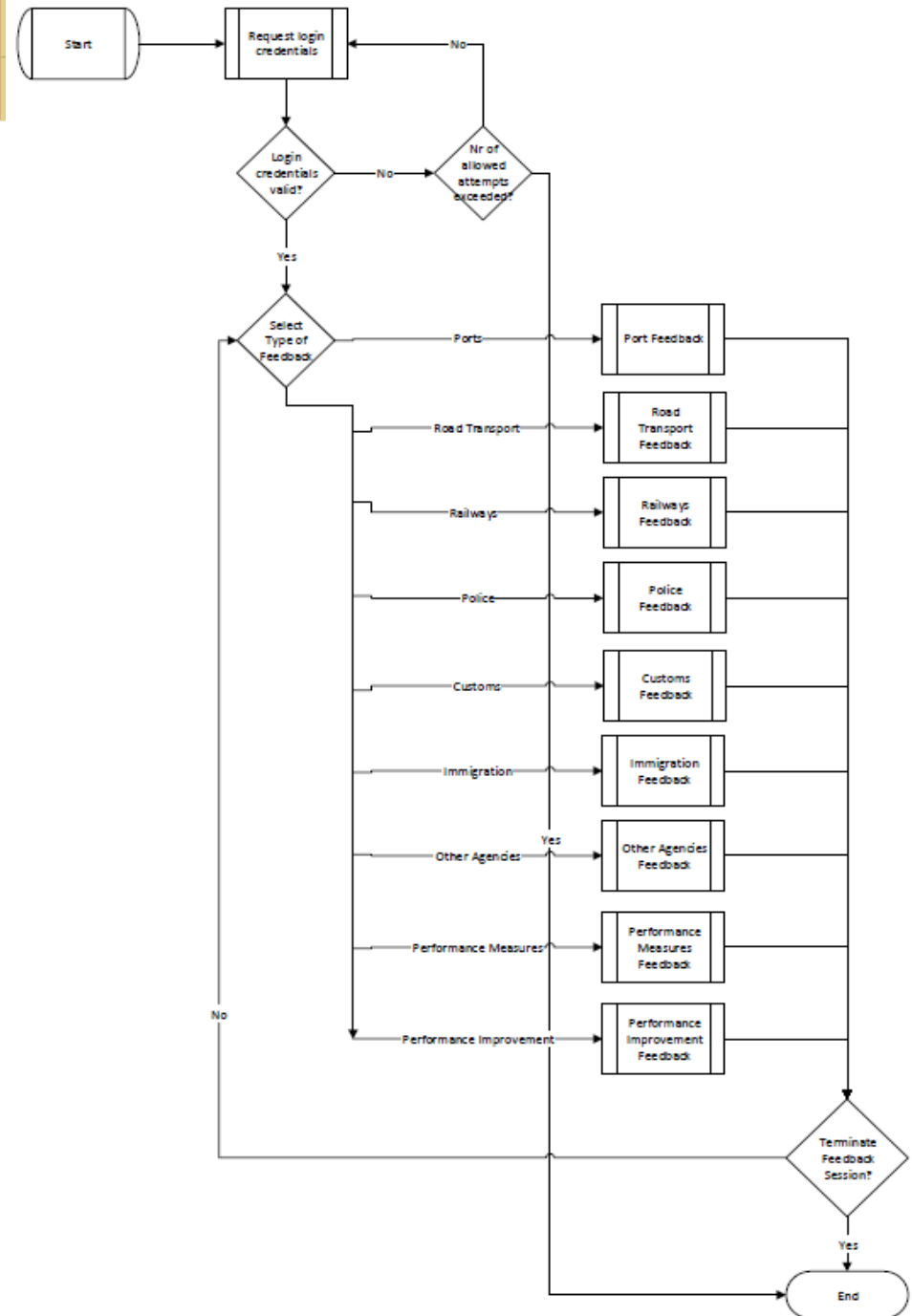


Corridor process flows and points where data is extracted





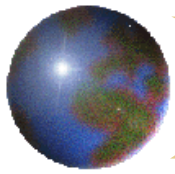
Working of Feedback Web Portal





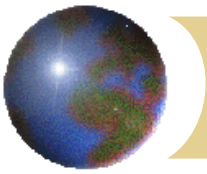
Summary of CPMS benefits to Corridor Users

- ✦ Detection of underlying causes to delays
- ✦ Access to objective Performance Benchmarks
- ✦ Accurate costing of routes
- ✦ Evidence of overload and customs compliance
- ✦ Through cooperation with the authorities this is expected to lead to reduction in delays through access to Green Lanes treatment at weigh bridges, ports and border posts
- ✦ Access to a Cargo and Transport Services Market Place



Contributions required from corridor stakeholders

- ✦ Commit to active participation by signing MoUs
- ✦ Provide description of available data and information on operations
- ✦ Provide IT resources to allow **ONE-WAY** export of **ANONYMOUS** data from participant systems to CPMS and
- ✦ Provide feedback once CPMS is operational
- ✦ Actively use CPMS to improve coordination and corridor performance



Planned time schedule

- ⊕ Engagement phase: May/June 2018
- ⊕ Development phase: July – Sep 2018
- ⊕ Deployment phase: Oct – Nov 2018
- ⊕ Operational phase: Dec 2018 – Dec 2019



Addressing stakeholder concerns

⊕ Conflicts of interest

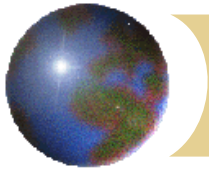
- ⊕ CPMS will not compromise the independence of any participant
- ⊕ CPMS strive to achieve an optimal reconciliation of the needs of the Public and Private sectors

⊕ Data confidentiality and security

- ⊕ Data exchange will be one-way (participant to CPMS)
- ⊕ No data of individual participants will be displayed on CPMS – only aggregate statistics
- ⊕ No competitors will have access to each other's data

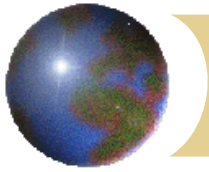
⊕ Resources required from participants

- ⊕ DCC and the CPMS contractor will provide all possible support to participants to make data available
- ⊕ Active support from the IT staff of participants is however essential to successfully launch CPMS



Summary and Conclusions

- ✦ The CPMS will offer a complete set of Trade Corridor Performance Benchmarking and Collaboration services
- ✦ Data received from participants will be anonymous and participant ITS systems will not be compromised
- ✦ Commercial trade corridor stakeholders who use these services will improve asset utilization, reduce costs and delays and improve governance and compliance
- ✦ With sufficient support from government agencies, parastatals, industry associations, freight agents and road transporters this system can be leveraged to offer Green Lanes benefits for compliant corridor users



Thank you!

Questions and comments welcome...

info@darcorridor.org