Enhance border control and streamline operations

ice
borders

> ICE Borders

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› Enhance border control and streamline operations

ICE Borders manages activity, legal processes and requirements, traffic control; import/export revenue collection associated with citizens, tourists and commercial vehicles traversing a country's national border. It shares data and event notifications in real-time and integrates with disparate systems from neighbouring countries and jurisdictions that do not use ICE Engine.

National border management, without the cooperation of multiple agencies that interface and share information, results in a porous, poorly governed border, and significant revenue loss. ICE Borders coordinates with and informs multiple government agencies operating at borders to facilitate the efficient flow of people and vehicles and adherence to border regulations. Providing a turnkey, double-sided border-crossing solution makes the following possible:

○ Facilitates payments
○ Electronic, traceable border processing and traffic control
○ Enables the advanced processing of transit vehicles border permits and payments via the client portal

› Key Features

○ Processing the collection of border-approved fees paid at the border.
○ Facilitates a valid border passage by issuing a QR-coded coupon at the border entry, linking the vehicle details via Automated Number Plate Recognition (ANPR) cameras.
○ The issued QR-coded coupon is electronically scanned and validated at all relevant border agencies throughout the procedure.
○ Smart control booms across the border site permit passage based on the electronic validations triggered by verifications from ANPR camera readings.
○ The transparency of electronic validations received and integrations with traffic control equipment allows for improved and enhanced border control and throughput.
○ Transit vehicles can obtain transit coupons at tolling locations en route to the border. The coupon is issued for a predetermined transit passage and is validated at tolling stations along the way and finally at the border entry. The coupon is processed quickly due to the high level of integration, improving and enhancing border control and throughput from entry to exit of the country.

❯ Key Capabilities

Online Registration and Payment Portal

The ICE Borders online client portal is easily accessible to foreign and national parties via a mobile device or standard browser. Registered users can manage their profile, preload vehicle details or freight fleets, prepay the prescribed fees and preprint the QR-coded border transit coupons, all before a vehicle is despatched to the border. Reducing the time spent at border posts improves productivity for commercial interests, enabling goods to reach their destination sooner.

❯ Key Features:

⬡ Single sign-on system

⬡ Determine and log routes for transit vehicles

⬡ Online preclearance and preregister vehicles for entry or transit

⬡ Accommodates various payment types

⬡ Prepay border-approved fees

⬡ Preprint access or transit coupons to 'jump the queue' at the border

⬡ Helps border officials to anticipate traffic flow and plan capacity

⬡ Real-time system performance monitoring and reporting

⬡ Integrates with existing systems

⬡ Reduces revenue loss

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Beitbridge Border Post

› Transit and Border Solution Coupon

The electronically generated QR-coded coupon for either border access or border transit is a secure way to validate and coordinate cross-border movement legally and efficiently. The coupon can be printed on paper or presented electronically on the bearer's mobile device. Once the data on the QR code is validated, the vehicle can proceed.

The data embedded in the QR Code includes:

- Vehicle class
- Vehicle registration number country of origin
- Route and distance
- Date of issuance
- Payment method
- Payment value
- Secure digital signature

› Key Features:

- Automatic vehicle classification (AVC) information is immediately available at the entry for validation and auditing

- System generates unique coupons based on vehicle class, vehicle registration, route, payment method and fees paid

- Automatic management of fees collection and disbursement

- Cashiers can reissue lost or damaged coupons

- Accommodates various payment methods. e.g. cash (multi-currency), prepaid vouchers, card payments, etc.

- Point-of-sale system can process transactions offline in the absence of internet connectivity

- Route locking to prevent reuse of coupons

- Validation of mandatory government agencies' approval

- Parking management

- Determine at what stage an individual or entity is in the overall process

- Entity ingress and egress monitoring

> Border Risk and Compliance

The ICE Borders ANPR cameras and QR-coded coupon automate compliance enforcement.

○ On entry, ANPR cameras capture the vehicle's record (class and registration number), which is validated by the operator and stored in the centralised system. This allows for post-entry auditing against the vehicle record captured at the border entry or on preregistered and paid vehicles.

○ The coupon received at entry is electronically scanned, validated and approved by border agencies (where system integration is not possible) as the vehicle proceeds.

○ Traffic control equipment (booms, direction boards, etc.) across the site can automatically validate a vehicle's compliance and electronically approve access by identifying the vehicle number plate on the ANPR camera as it approaches, or by scanning the QR-coded coupon.

> Key Features:

○ Retains historical records for auditing or investigation by linking the vehicle to a process or the public operator

○ Tracks non-compliance

○ Identifies non-compliant vehicles for inspection

○ Predetermines the vehicle flow based on electric approvals or vehicle risk

○ Vehicles with a good track record have access to the express lane

› Vehicle Immigration Control

ICE Borders integrates with legacy border immigration systems, which ensures smooth, uninterrupted immigration processing. Approvals processed on a legacy system are automatically and electronically approved and stored in the centralised ICE Borders system. This approval is electronically linked to the vehicle detail captured at entry and the entry coupon, which is validated at the exit to allow the vehicle to proceed.

› Customs and Excise

Revenue collection is imperative for e-governance. ICE Borders integrates with existing systems for customs and excise revenue collection ensuring secure and accurate financial management. Information and risk management decisions are pushed from customs legacy systems to ICE Borders.

This information is then linked to the vehicle detail captured and coupon processed at the border entry. The vehicle and coupon in turn can be validated at traffic decision points and are guided to either an inspection point if the vehicle was flagged as a risk, or bypass inspection through an express green lane.
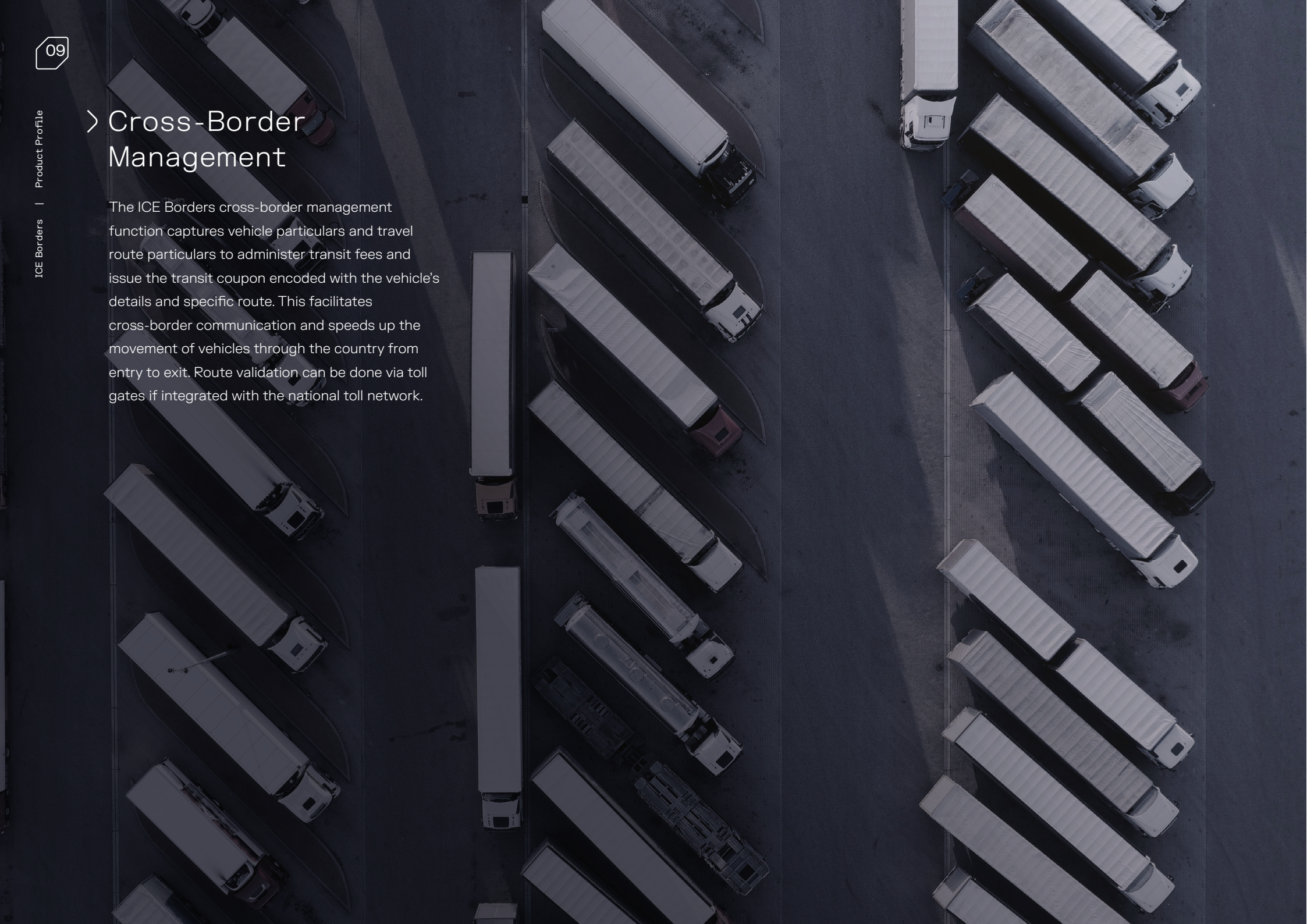
Beitbridge Border Post

> Key Features:

○ Integrates with legacy
border systems

○ Cross-communication between
border agencies

○ Improves information sharing

○ Real-time integration

○ Direct connection with
a centralised system for vehicle
details sharing and retrieval

○ Data is shared and accessed
instantaneously

○ Real-time non-compliance
reporting

○ Eliminates manual
compliance checks

○ Vehicle risk-flagging

○ Express lane for non-risk vehicles

› Cross-Border Management

The ICE Borders cross-border management function captures vehicle particulars and travel route particulars to administer transit fees and issue the transit coupon encoded with the vehicle's details and specific route. This facilitates cross-border communication and speeds up the movement of vehicles through the country from entry to exit. Route validation can be done via toll gates if integrated with the national toll network.

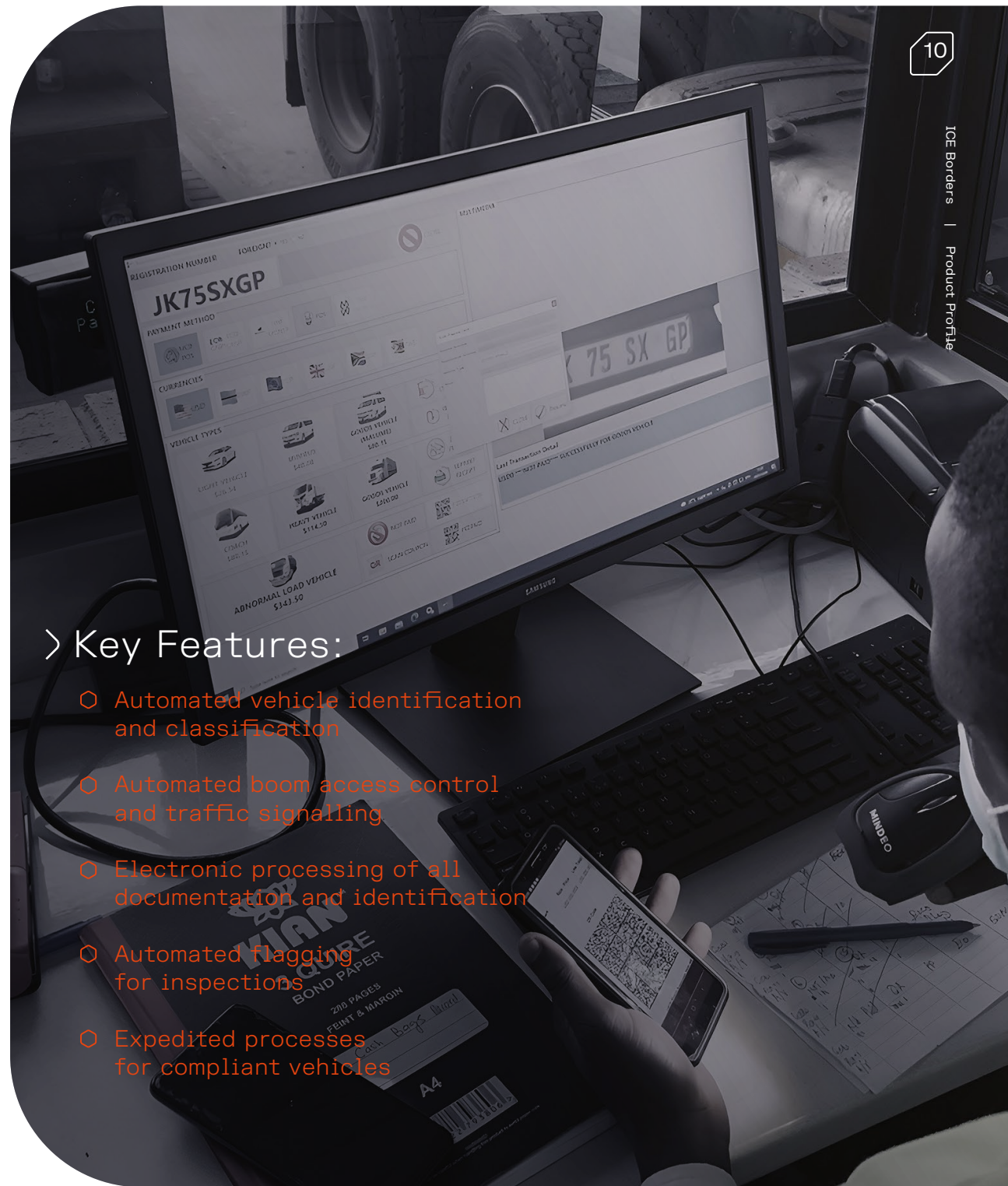# › Border Post Access Control and Queueing System

ANPR cameras and automated boom access control help secure the border post while day-to-day operations are in progress. ANPR cameras capture the vehicle number plate and the data is stored on the centralised ICE Borders system.

The Artificial Intelligence (AI) aspect of the ANPR cameras automatically classifies a vehicle according to specific criteria, which can be validated against the vehicle class captured by the operator at entry or online.

At the entrance, the vehicle receives a unique entry coupon encoded with the vehicle class and registration particulars. ICE Tech's integrated traffic control equipment (booms, ANPR cameras, traffic signals and QR scanners) evaluates vehicle compliance and manages vehicle access, queueing and flow around the border site accordingly. Fully approved vehicles are navigated along the express exit lane via large outdoor LED screens. Vehicles requiring further validation are directed to an inspection area. The ICE Borders queueing system monitors capacity and manages traffic volumes and flow through the boom access points.

› Key Features:

○ Automated vehicle identification and classification

○ Automated boom access control and traffic signalling

○ Electronic processing of all documentation and identification

○ Automated flagging for inspections

○ Expedited processes for compliant vehicles

〉 Inspection Agencies

Inspection agencies use mobile devices to process vehicles through the border post, which supports the complete digitalisation of the process, facilitates information sharing and enhances compliance enforcement. Inspection information is integrated and stored in ICE Borders in real-time.

Across-border agencies can access the unified data via an App to make informed decisions regarding vehicles and consignments quickly. Non-compliance is recorded and shared, which ensures that culpability is not overlooked, and any penalties or legal processes can be enforced with accurate and reliable information before a vehicle proceeds through the border post.

〉 System and Operational Control

The ICE Borders master control room oversees and assists with the smooth day-to-day running of the border operations. Equipped with a service desk infrastructure, it manages logged calls, monitors border statistics and reports data in real-time so agencies can identify bottlenecks, mitigate risks and take action based on an immediate need or a building trend. Data is only provided to authorised role players.

〉 Key Features

○ Fees collected per entity

○ Transaction detail report per fee collected

○ Vehicles per category entering and exiting the country

○ Vehicle stay duration

○ Vehicle inspection reports including passed and failed inspections

> ## System Integration and Interoperability

The ICE Borders solution fundamentally automates, digitises and secures the processing of vehicles through a border post. It is proven to improve border management with increased throughput, commercial activity and revenue generation along with happier citizens/travellers.

The ICE Borders module fully integrates with other ICE Tech vertical modules to create a comprehensive solution that can service national requirements at scale. ICE Borders on its own easily integrates with government systems to share

information between countries and enable law enforcement agencies to collaborate in joint operations, crime prevention activities, customs and excise and border security operations, etc.

⟩ Increased Transaction Capacity

08 MILLION

Tolling transactions from inception and counting

14 MILLION

Integration transactions between various systems... and counting

Close to 100 PERCENT

Increased vehicle compliance rule check from below 30% to near 100%