

Next Generation Border Crossing

ePassports and their Impact on Border Control

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- Trends
- Status quo ePassports
- Impact on border control
- Future border control requirements and processes
- Conclusion

Mega trends

- Globalization and growth in international travel
- Terrorism, illegal migration, organized crime

Subtrends

- Integrated border management
- New technologies
- Integration of upstream processes
- Risk profiling
- Large-scale IT systems
- Automation, self-service, and mobile control

Electronic passports

- Until 2010 approx. 43 countries will introduce ePassports
- Most travellers will then have an electronic passport
- ID cards with RFID and biometrics will be issued soon

Others:

- Visa Information System – VIS
- Schengen Information System II – SIS II



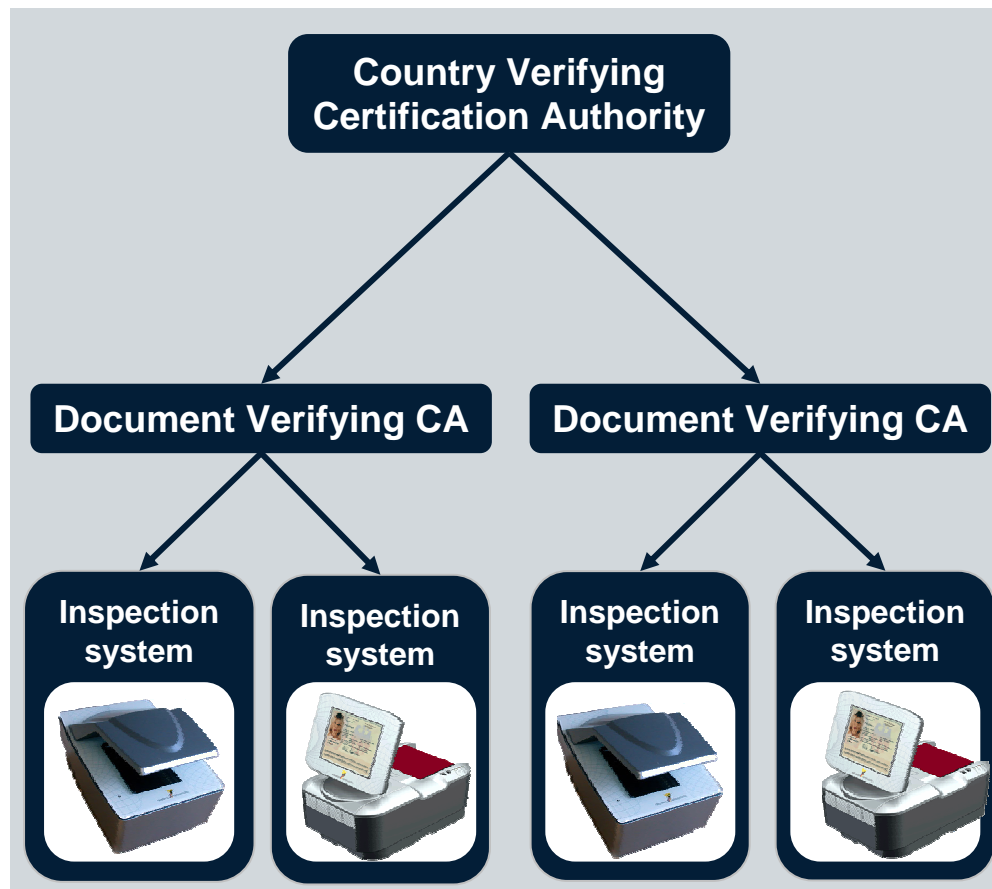
Technical issues

- MRTDs, chips and contactless interfaces are specified
- Functional range and quality of the reading devices vary
- Chip position and reader layout define reading process
- Few initiatives regarding end devices
- ePassport interoperability tests
- Technical report on test standards for ePassports
- ➔ No interoperability tests in future?

Privacy issues

- Privacy/security applications are not mandatory
- BAC - Keys generated from MRZ
- EAC – Key management and PKI structure required





Supreme CA of the PKI

- Issues document verifying certificates
- Typically a sovereign task

Manages doc reader certificates

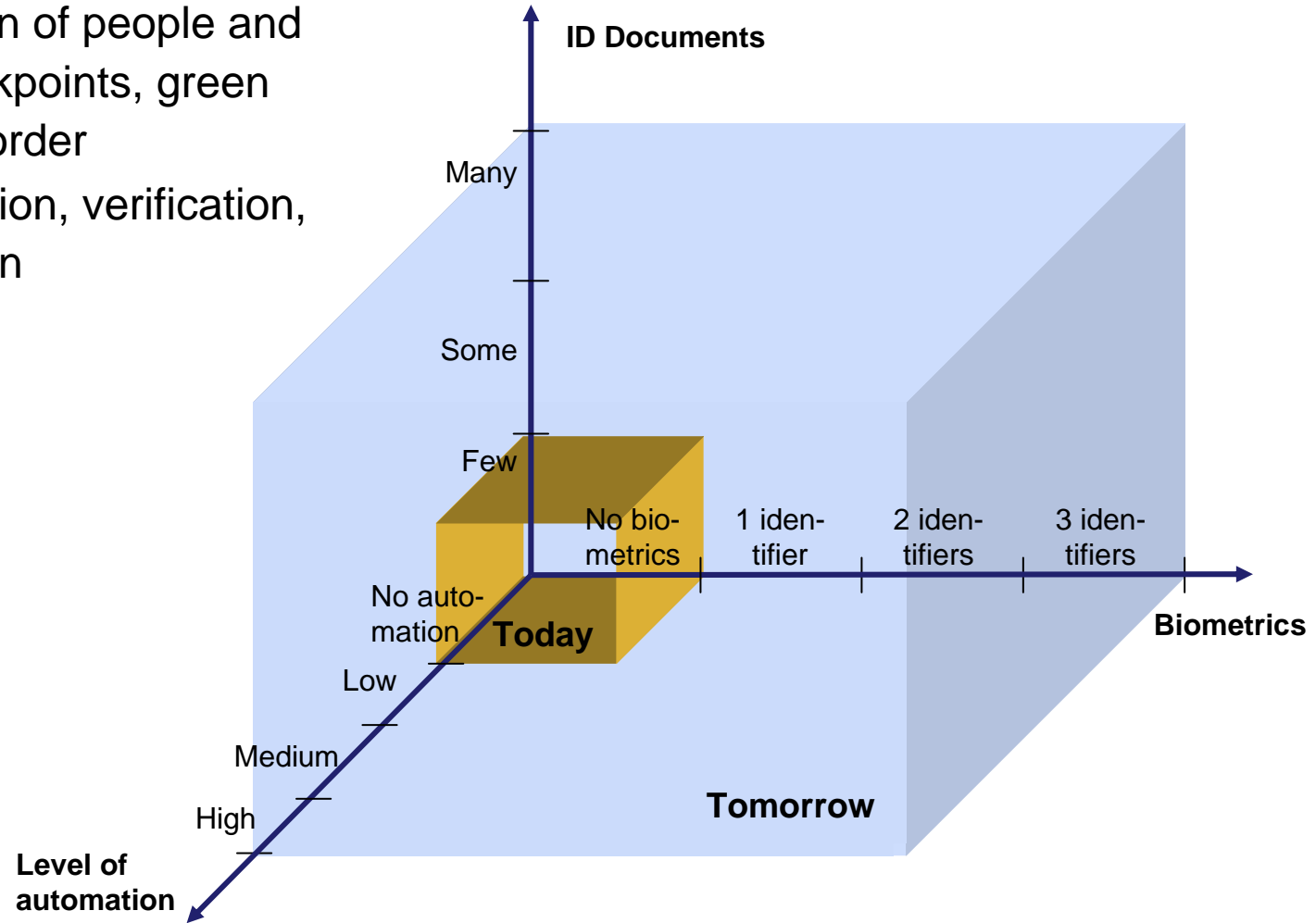
- Restricts access rights and the validity period
- Issues inspection system certificates

Document Readers

- Access rights and access period defined by the IS certificates

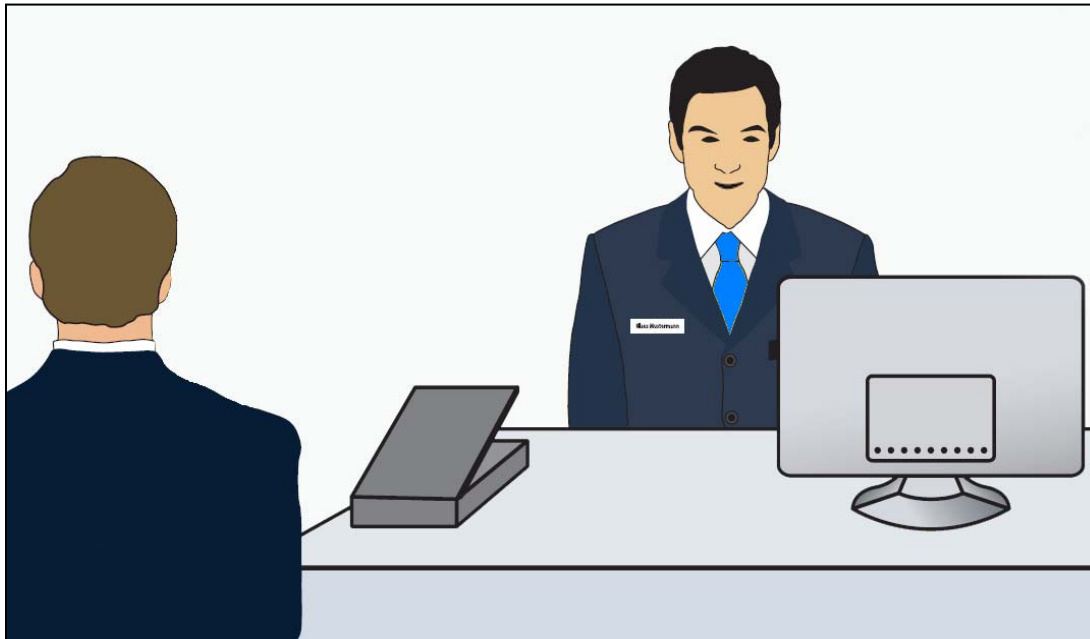
Challenges facing border control

- Examination of people and TD at checkpoints, green and blue border
- Authentication, verification, identification



Example: Automated forgery detection

Border control point

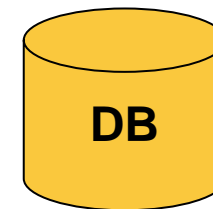
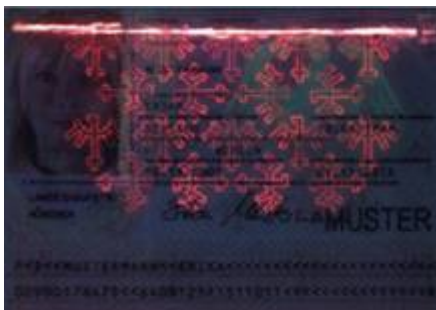


Automated MRZ detection

- Basis for database queries

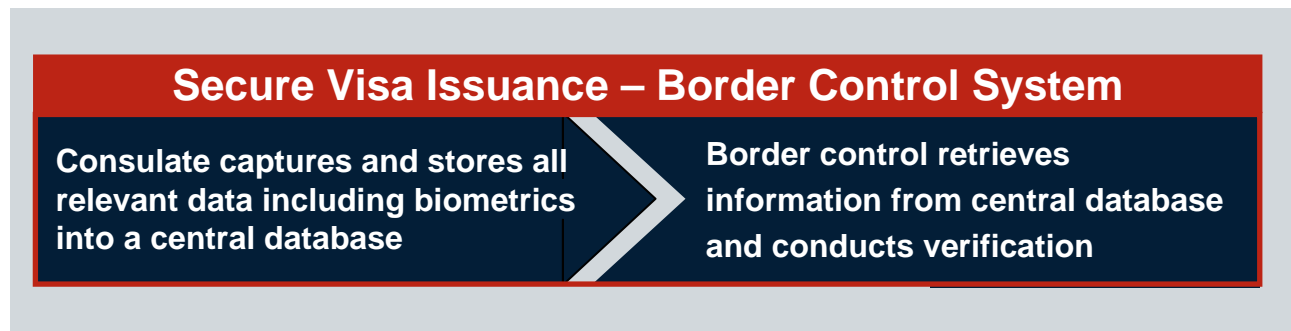
Automated forgery detection

- Embedded security features
- Verification with reference database



Visa issuance

- Pre-processing of data
- All data available and accessible at the border control point
- Biometric verification possible



Potential

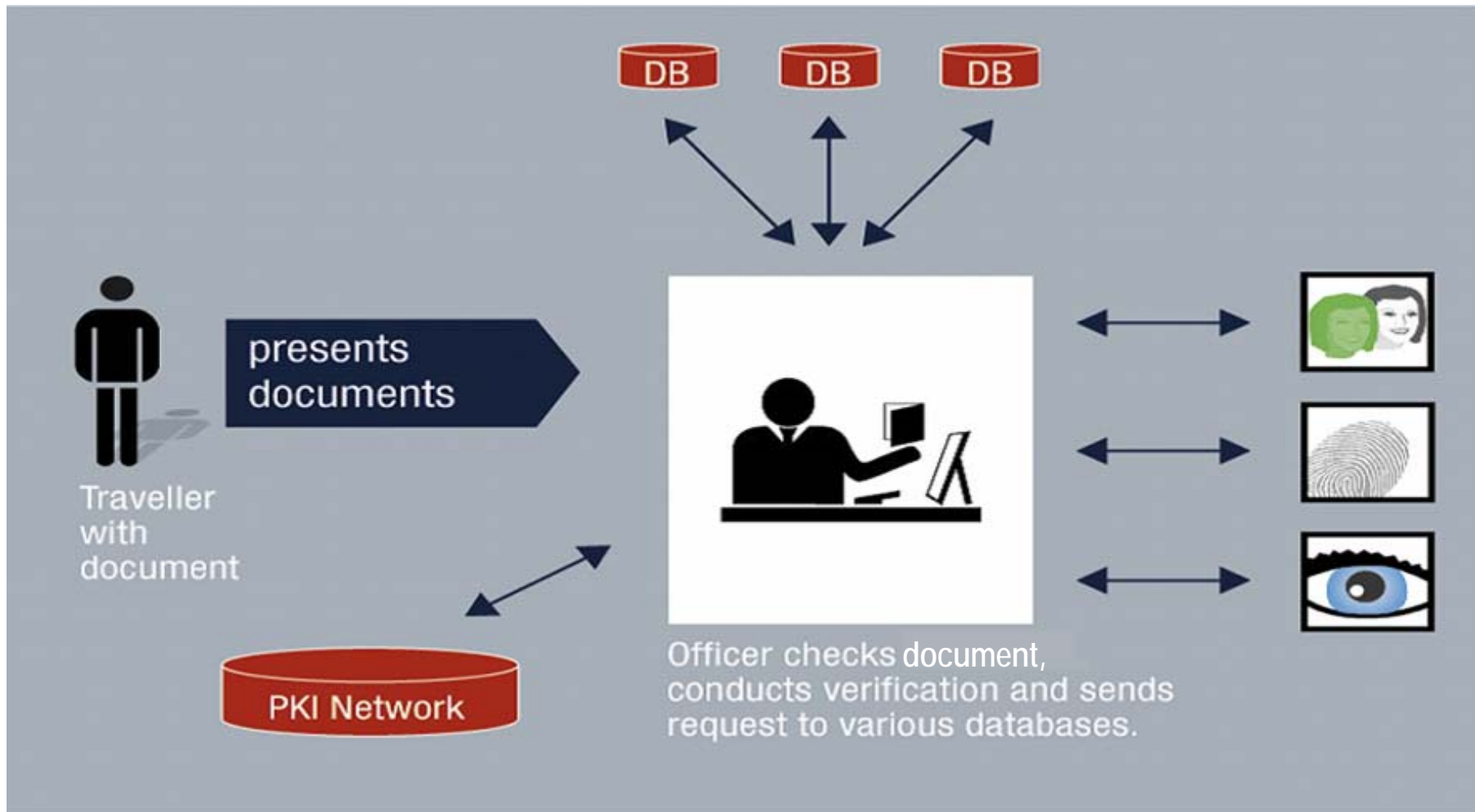
- Speed up border clearing process
- Close and secure chain between visa issuance and border control

The primary inspection point

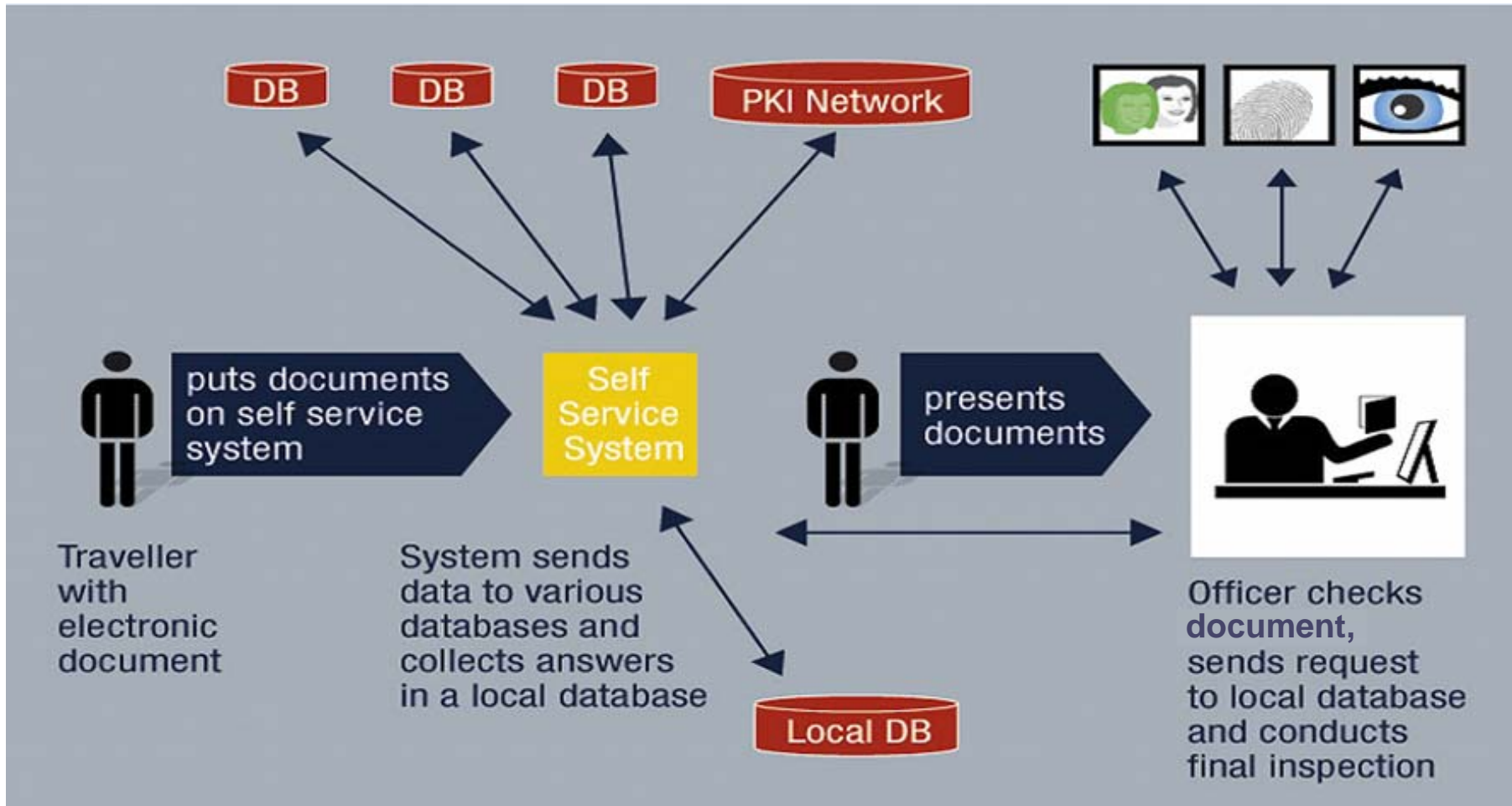


	Authentication	Verification	Identification
Ongoing procedures	MRZ reading, rarely forgery detection	Visual	Matching of MRZ data with database
Future procedures (2 – 5 years)	<p>Data page</p> <ul style="list-style-type: none"> Automated forgery detection Different document databases <p>Chip data</p> <ul style="list-style-type: none"> Validation of signatures Integrity of data <p>Data page matching chip</p> <ul style="list-style-type: none"> Facial image match Biographic data match <p>Additional documents</p> <ul style="list-style-type: none"> Visa Registered traveller cards 	<p>ePassport vs. live data</p> <ul style="list-style-type: none"> Chip image vs. live image Chip finger vs. live finger Chip iris vs. live iris <p>ePassport vs. database</p> <ul style="list-style-type: none"> Chip image vs. database image Chip finger vs. database finger <p>Visa vs. live characteristics</p> <ul style="list-style-type: none"> Database finger vs. live finger 	<p>Matching of MRZ data with database</p> <p>Biometric identification at secondary control</p>

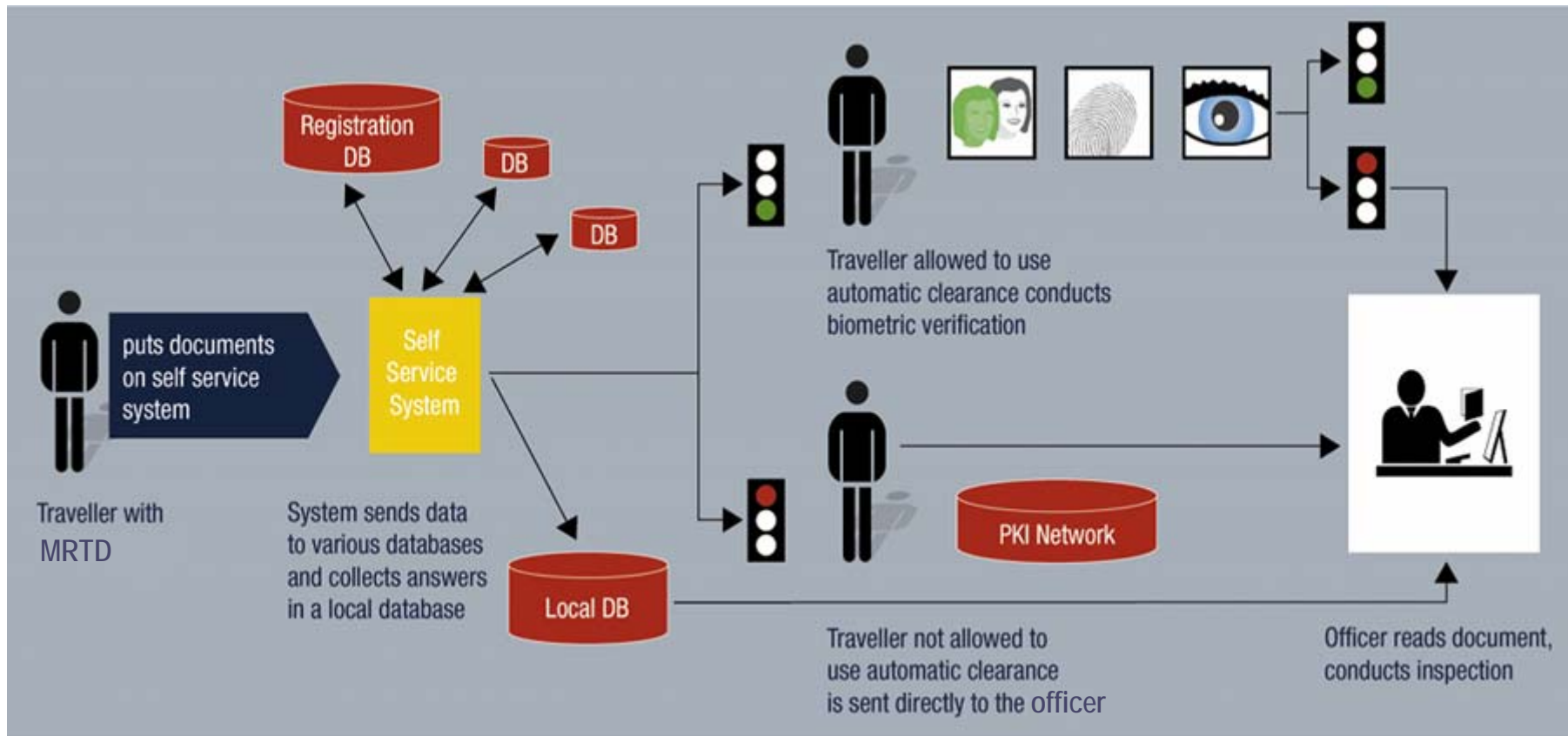
Staffed process



Separated process



Automated process



- Future border control will be based on ePassports
- Interoperability depends on the capability of the supplier
- Data collection and control will be moved upstream
- Risk profiling and clustering of travellers for efficient allocation of resources
- Data sharing, inter-agency cooperation, Integrated Border Management
- Automation changes border control but does not substitute human work
- New technologies enable secure and convenient border crossing

Contact



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