

GDPR-COMPLIANT MOBILE ID

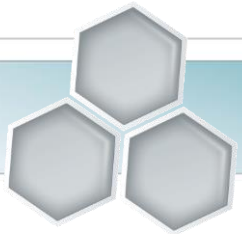
DE-CENTRALIZED PASSENGER IDENTIFICATION
WITH PRIVACY BY DESIGN

DR. MIKE BERGMANN

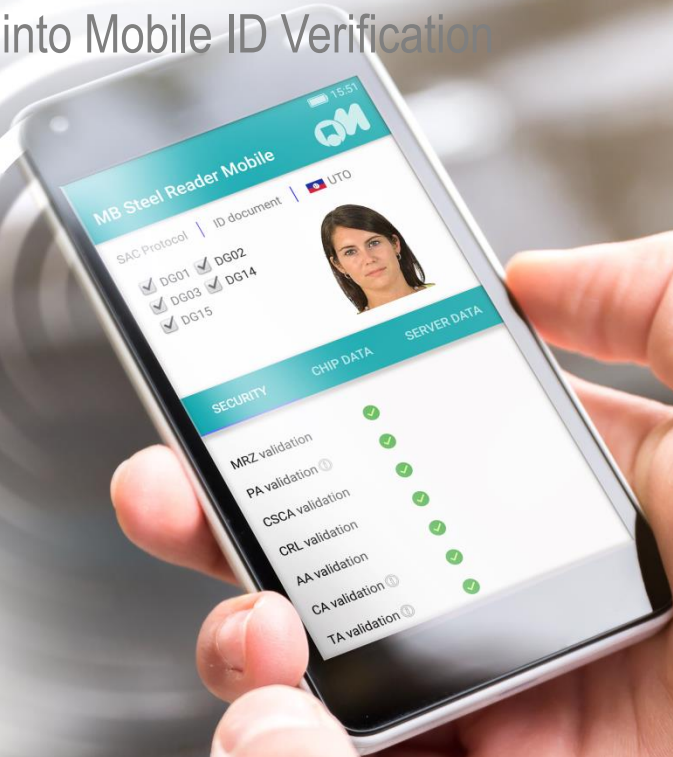
BUSINESS ANALYST AND SECURITY CONSULTANT
MÜHLBAUER ID SERVICES GMBH, GERMANY



OUR VISION

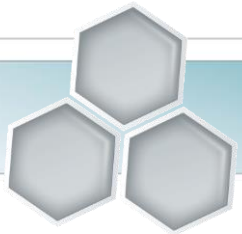


Mobile ID – transform eMRTD Verification into Mobile ID Verification

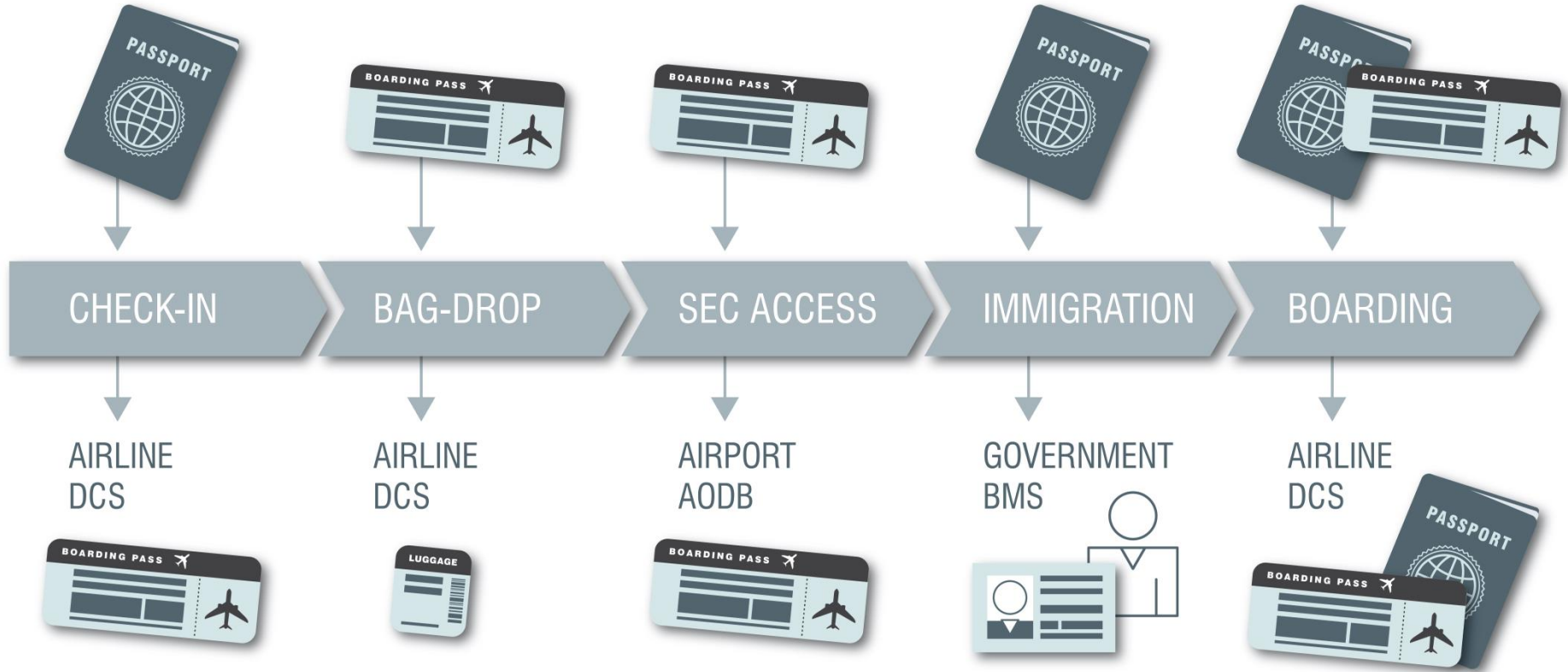




CURRENT SITUATION

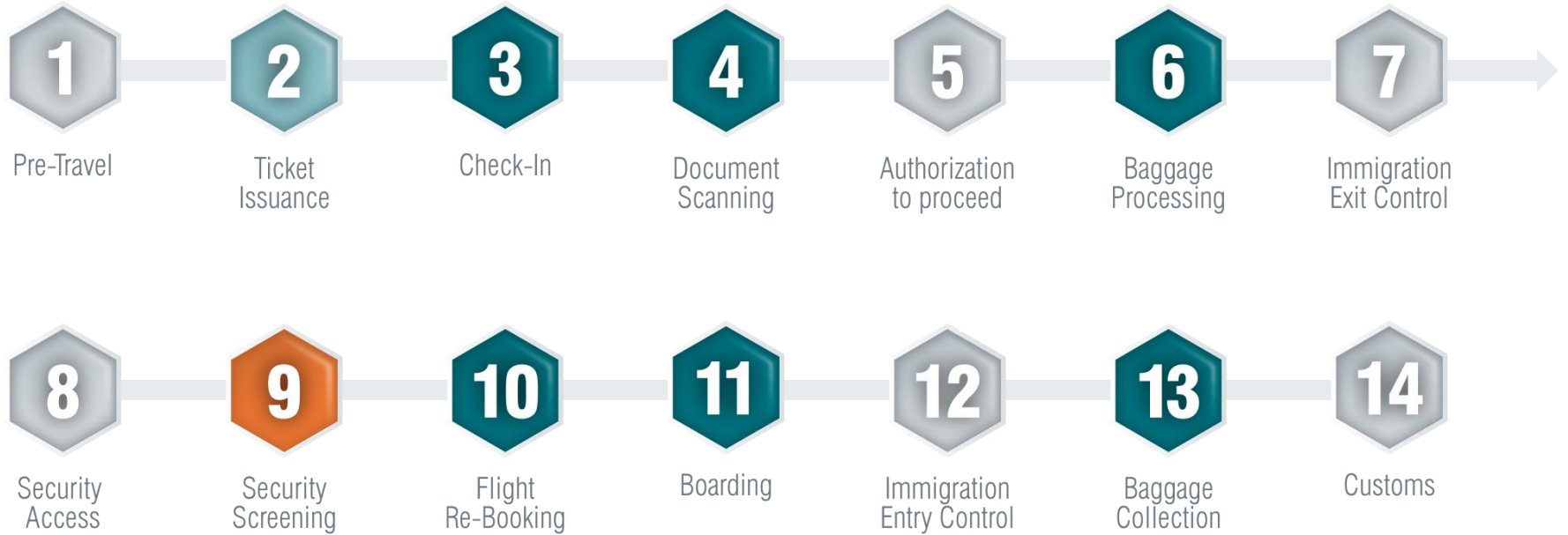


Documents at Departure



Current Situation

IATA – 14 STEPS OF PASSENGER PROCESS



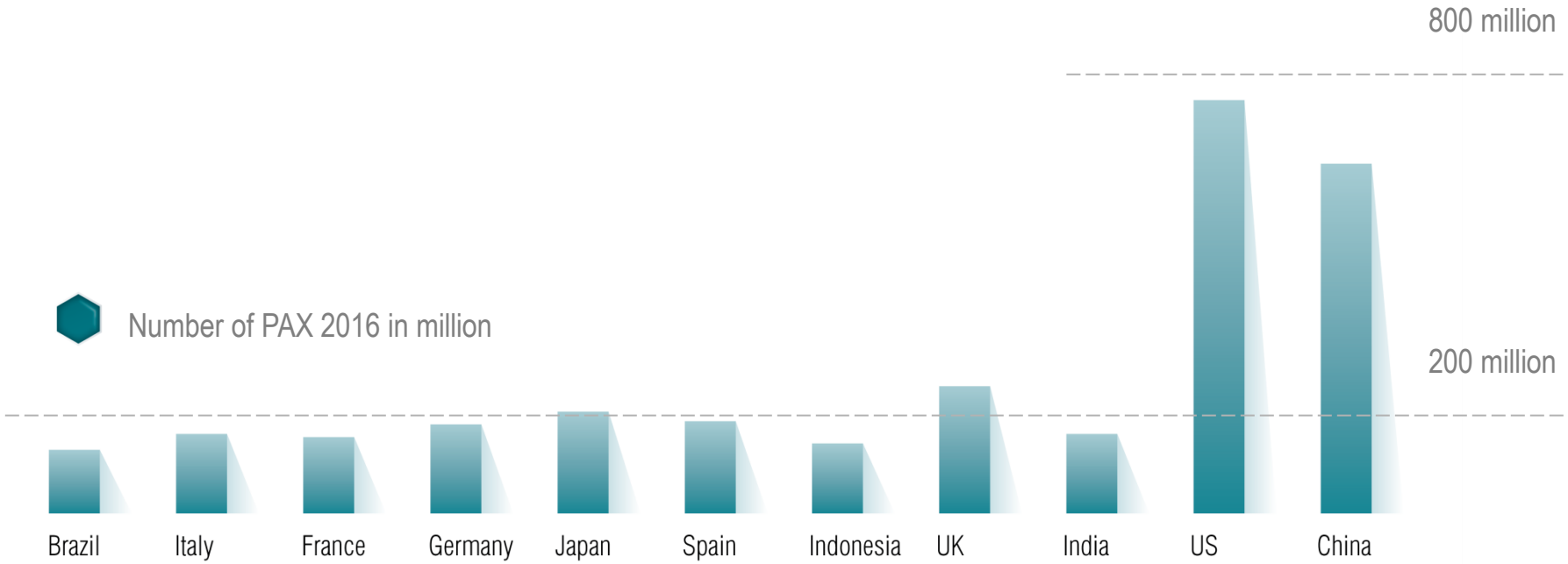
 Not yet automated

 Automated solution available

 Manual facilitation

Current Situation

- Many airports already operate at full capacity
- The potential for new airports is limited
- More and more security checks



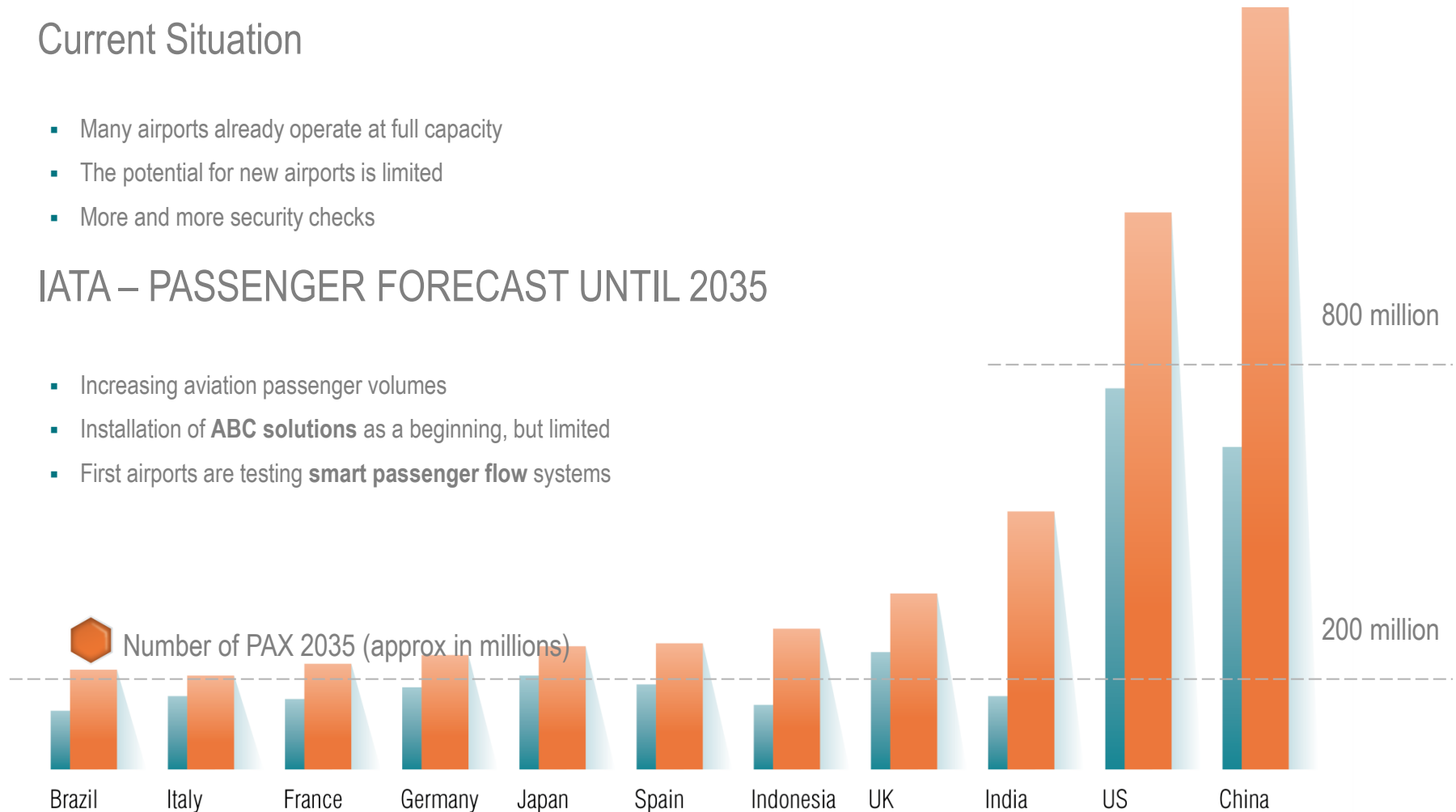
Source: <http://www.iata.org/pressroom/pr/Pages/2016-10-18-02.aspx>

Current Situation

- Many airports already operate at full capacity
- The potential for new airports is limited
- More and more security checks

IATA – PASSENGER FORECAST UNTIL 2035

- Increasing aviation passenger volumes
- Installation of **ABC solutions** as a beginning, but limited
- First airports are testing **smart passenger flow** systems



Current Situation

TRENDS – AUTOMATED GATES for PASSENGER FACILITATION



DIFFERENT DATA
SOURCES

CENTRAL DATA BASE
FOR PASSENGER DATA

CHECK USING
ELECTRONIC DOCUMENTS

Current Situation

TRENDS – AUTOMATED GATES for PASSENGER FACILITATION



DIFFERENT DATA
SOURCES

- More and more **face recognition** for automated matching
- Growing amount of personal data
- Growing privacy concerns
- Growing legal privacy issues
- Lost citizen autonomy



CENTRAL DATA BASE
FOR PASSENGER DATA



CHECK USING
ELECTRONIC DOCUMENTS
BIOMETRICS and
VIDEO SURVEILLANCE



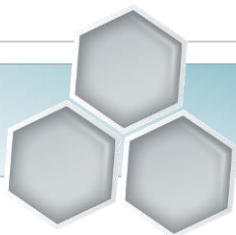
APPROACH

Gefördert durch:



Bundesministerium
für Wirtschaft
und Energie

aufgrund eines Beschlusses
des Deutschen Bundestages



De-centralized Digital PAX Token

INTER-COMPANY RESEARCH PROJECT – CONSORTIUM PAIRING HIGH-TECH COMPANIES AND SCIENCE INSTITUTIONS



MAIN GOAL

- Trustworthy
- Digital
- Privacy-friendly

representation of passengers' travel documents



APPROACH

- Storing personal data in a trusted environment of the passenger
- Cryptographically protecting the storage
- Using existing devices resp. facilitation of the passenger



DISCLOSE

- On Purpose
- On Demand
- On Permission

De-centralized Digital PAX Token

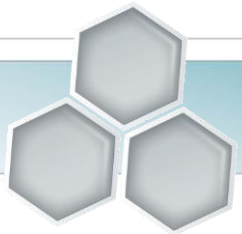
INITIALIZING

- Reading an eMRTD as a trust anchor
- Proving the user via selfie and face recognition
- Adding data step by step on demand
- Using cryptographic certificates and signatures





USE CASE SCENARIOS



3 Different Major Use Cases

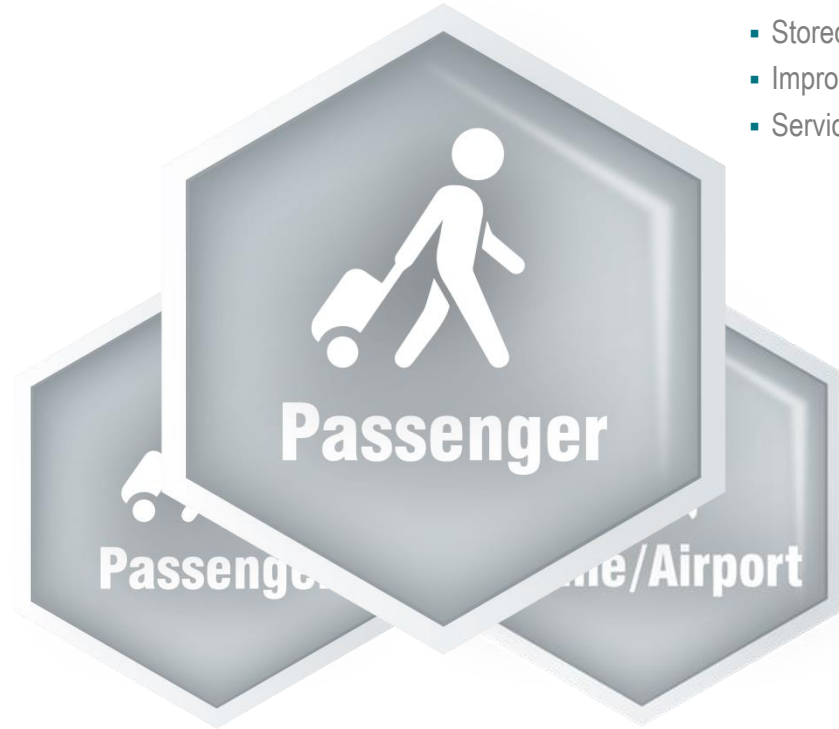
PASSENGER ONLY HAS
THE PAX TOKEN INSTALLED



- **More comfort**
- Benefit is very limited
- Similar to a keystore where different data items are stored
- At least all travel information is stored in one place (for the passenger)

3 Different Major Use Cases

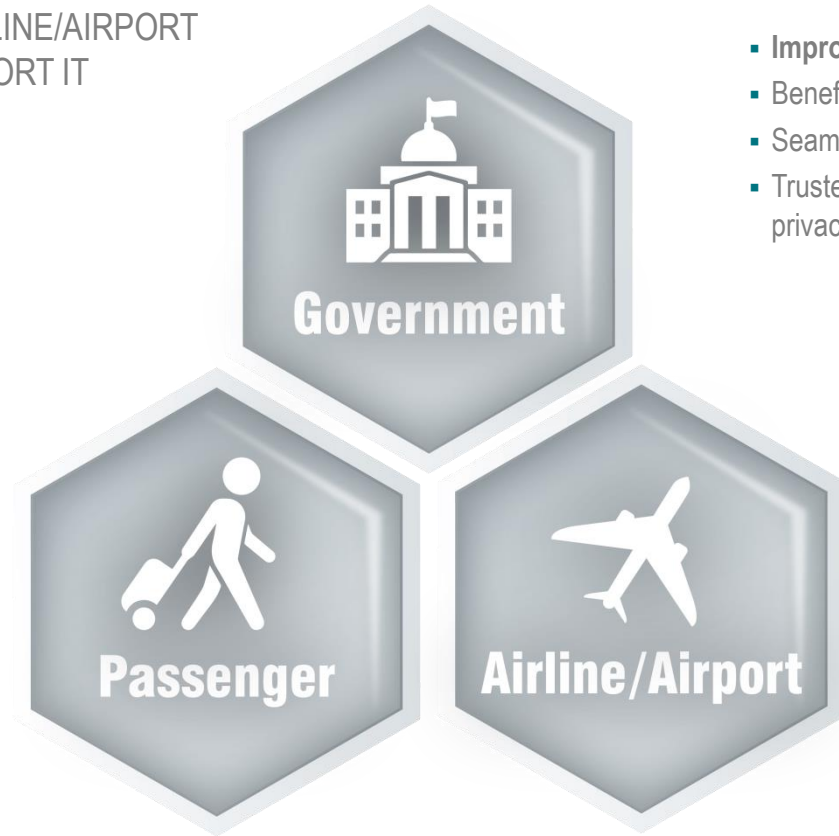
PASSENGER USES IT AND
AIRLINE/AIRPORT SUPPORTS IT



- **Higher quality of passenger data, less mistakes**
- Benefit is similar to a dedicated Airline/Airport app
- Stored in one place
- Improved communication, instant messaging
- Services available (check-in, messaging, boarding)

3 Different Major Use Cases

PASSENGER USES IT, AIRLINE/AIRPORT
AND GOVERNMENT SUPPORT IT



- **Improved security, better data quality**
- Benefit for all becomes visible
- Seamless process possible
- Trusted framework → a paperless and privacy-friendly approach is possible



Government



Passenger

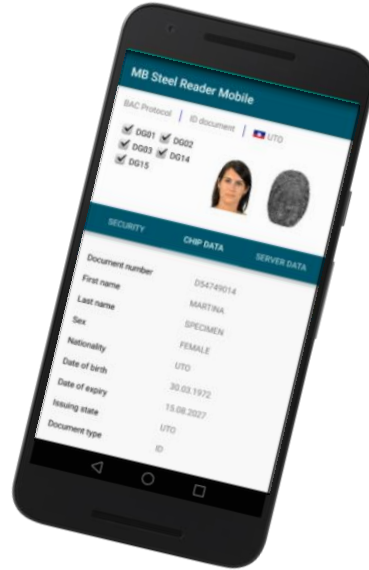


Airline/Airport

Passenger Only

DATA FLOW AND IMPLICATIONS

- Travel Wallet
- Optional - Mobile ID
- User decides when and what to disclose



MAJOR KEY POINTS

- ✓ Higher comfort for passenger
- ⚠ Depends on acceptance of partners
- ✗ No additional trust level



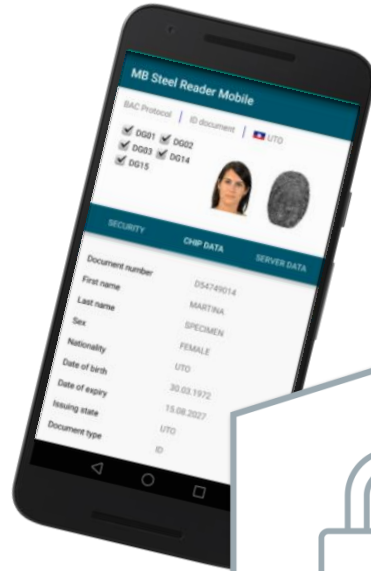
Passenger & Airline / Airport

DATA FLOW AND IMPLICATIONS

- Wallet becomes a token
- Optional - Mobile ID
- User decides when and what to disclose

MAJOR KEY POINTS

- ✔ Additional trust level, higher data quality
- ✔ Higher comfort for passenger
- ✔ Additional services possible
- ⚠ Still a media break, because trust chain not closed



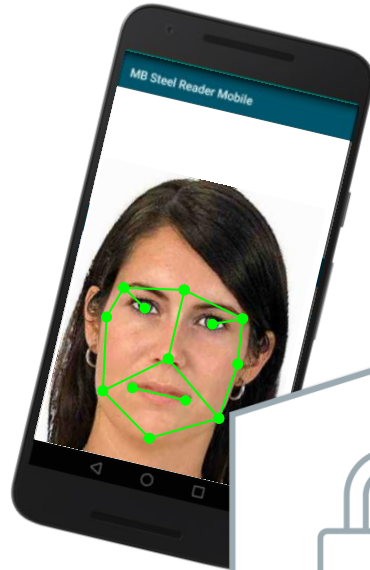
Passenger, Airline / Airport & Government

DATA FLOW AND IMPLICATIONS

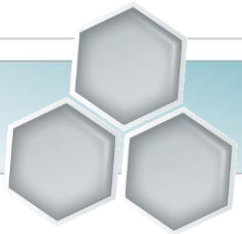
- Full-featured Pax Token
- Mobile ID as trust anchor
- User still decides when and what to disclose

MAJOR KEY POINTS

- ✔ Highest level of trust and security
- ✔ Highest value for all stakeholders
- ✔ Offers various additional use cases



BENEFITS



Benefits if all stakeholders work together



VERY RESOURCE-EFFICIENT



VERY COMFORTABLE

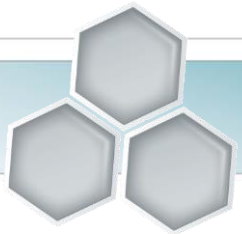


LOW INITIAL INVESTMENT REQUIRED



RESPECTING PRIVACY

EXAMPLES



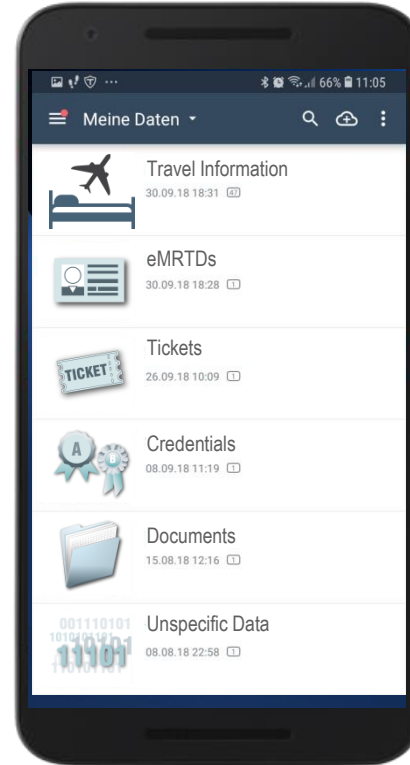
Mobile Application – Home Screen

- Comes as a native Android app



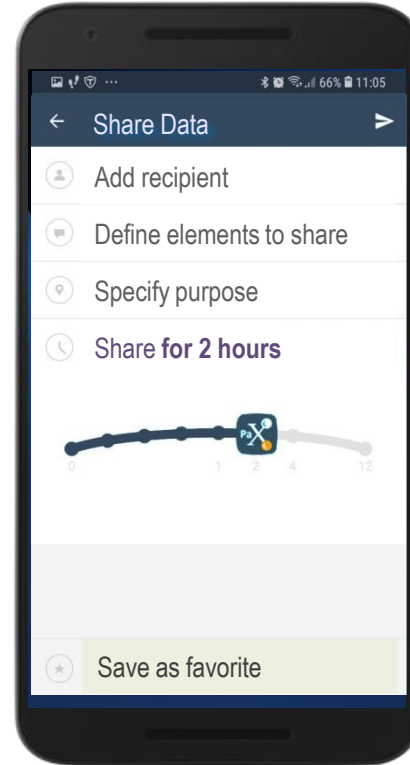
Mobile Application – Home Screen

- Comes as a native Android app
- Offers easy access to all stored elements



Mobile Application – Home Screen

- Comes as a native Android app
- Offers easy access to all stored elements
- Offers an intuitive approach to share
 - with **dedicated** contact(s)
 - only **dedicated** element(s)
 - For **dedicated** purpose(s)



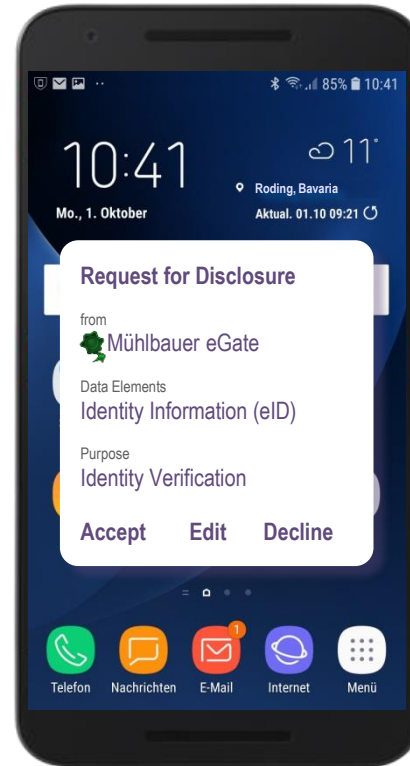
Mobile Application – Data Reception

- From a vendor's perspective, we can send a "request for disclosure"



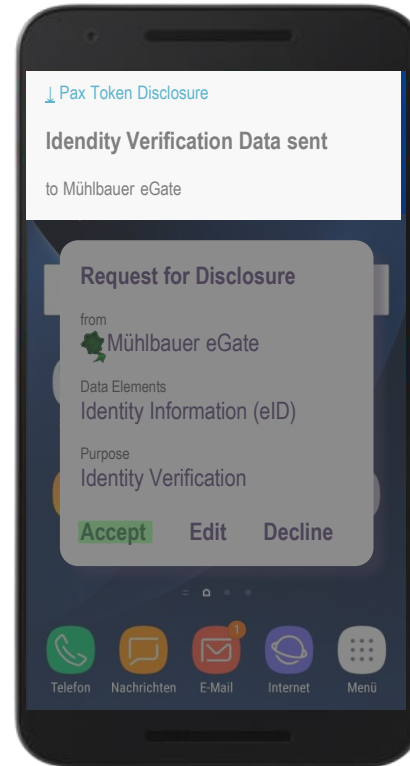
Mobile Application – Data Reception

- From a vendor's perspective, we can send a “request for disclosure”
- The popup shows the important facts following the GDPR
- The trustworthiness is shown directly
- User can accept, edit or decline



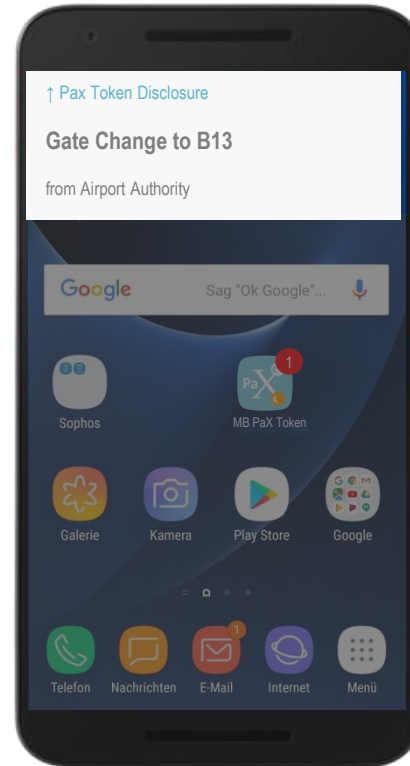
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Mobile Application – Data Reception

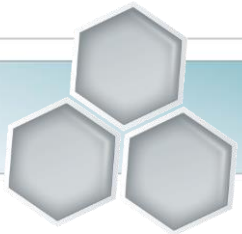
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- User can accept, edit or decline
- If data is disclosed, a corresponding message is shown
- Same way vendor can push useful information



Mobile ID – Government ID Verification



NEXT STEPS



Research and Development Schedule

RESEARCH

- User Studies
- User Interface
- Protocols

DEVELOPMENT

- Interaction models
- IATA Open Air and other APIs

Early Adopters

- Involving Airline Partners
- Involving Airport Partners
- Lobbying Mobile ID for Governments

Timeline



05 2019

MB Pilot Prototype



END OF 2019

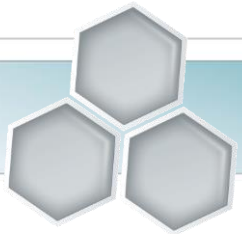
MB Mobile ID



END OF 2020

MB Mobile ID V2

CONCLUSION & SUMMARY



A photograph of an airport terminal with people walking and sitting. The scene is overlaid with several green Wi-Fi symbols, suggesting connectivity. The background shows airplanes on the tarmac and hangars.

By creating a de-centralized PAX TOKEN ...

we provide several **advantages for aviation stakeholders**

we use **state-of-the-art technologies** for mobile verification

we support **privacy** by using de-centralized & user-centric approaches

we provide **seamless integration of additional applications**

THANK YOU FOR YOUR ATTENTION!

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