



Aeronautic SEamless Transport



Project acronym: **ASSET**  
 Project full title: Aeronautic Study on Seamless Transport  
 Transport  
 Grant agreement no.: **FP7 – 211625**

SEVENTH FRAMEWORK PROGRAMME  
 Transport  
 Aeronautics and Air Transport

## DELIVERABLE 1.1

### Assessment of stakeholders's bottlenecks and issues


Originator: <b>ID Partners</b>	Deliverable No.: <b>D 1.1</b>  Actual submission date: <b>12.01.2010</b>  Duration: 36 months  Revision: <b>2.0</b>
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Project coordinator: <b>DLR</b>	


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V1.0	6th July 2009		Charles de COUESSIN ID Partners
V1.1	17th September 09	Comments by RWTH / DLR	RWTH/DLR
V1.2	27th October 09	Modified to incorporate comments	Charles de COUESSIN ID Partners
V1.3	27th November 09	Minor Changes	RWTH/DLR
V1.4	1st December 09	Renaming and abbreviating abbreviating	DLR
V2.0	27th January 10	Completion on objectives	DLR/RWTH

# Executive Summary (1)

On time performance of European air transport is suboptimal largely resulting from a variance in off-block times. This leads to **poor punctuality and predictability** and the necessity for costly time buffers.



Thus  contributes to all air transport stakeholders by **developing and assessing methods for improvements** in terms of punctuality regarding the airport landside process-chain in an integrated approach.

 will elaborate **possible solutions** for today's bottlenecks in the landside process-chain **on the basis of a thorough requirements review**. All stakeholders requirements will be analysed in order to contribute to an in-depth analysis of relevant airport processes regarding passenger-, baggage- and aircraft handling on the ground of an applicable generic airport-model as well as enhanced and harmonised simulation tools.



# Executive Summary (2)

- **The WP1 aims to assess the requirements of the various stakeholders with regards to regulatory constraints and IT automation so that to optimize aircraft (A/C) turnaround times (TRT) .**
- **The airport process is broken down in Points Of Activity (POA), managed under the responsibility of a stakeholder's category.**
- **The assessment is conducted as follows: current situation, regulatory framework (ICAO, EC, national) and finally the expectations for future improvements.**
- **We anticipate at this stage that many procedures will be standardized across EU airports; this means that processing times at the various POAs shall become quite similar, provided that both staff and equipment are dimensioned according to passengers flows.**
- **However, we shall keep in mind that increasing distances between POAs will generate delays, unless airport operators provide suitable equipment like conveyer belts or shuttles.**
- **This assumption clearly demonstrates the value of the ASSET initiative as our modeling software shall be considered as a typical tool to help stakeholders suitably dimension their infrastructures. infrastructures.**
- **Eventually, we have refined both the objectives and quantifiable parameters as proposed by the the DoW , so that to better reflect the status of the airport process.**

# Glossary

A/C	Aircraft	ICAO	International Civil Aviation Organisation
ACI	Airport Council International	IPF	Ideal Process Flow
API	Advance Passenger Information	LAG	Liquids and Gels
AQQ	Advance Quick Query	MCT	Minimum Connecting Time
ATM	Air Traffic Management	MRTD	Machine Readable Travel Document
CUSS	Common Usage Self Service	NFC	Near Field Communication
DCS	Departure Control System	NTWG	New Technology Working Group
DG JLS	Directorate General Justice Liberty Security Security	PNR	Passenger Name Record
DG TREN	Directorate General Transport and Energy Energy	POA	Point of Activity
DHS	Department of Homeland Security	SESAR	Single European Sky ATM Research
DOT	Department of Transport (US)	SIS	Schengen Information System
DoW	Description of Work	SPT	Simplifying Passenger Travel
DPC	Data Protection Commissioner	TRT	Turnaround Time
EDS	Explosive Detection System	TSA	US Transport Security Administration
ECAC	European Civil Aviation Conference	TWIC	Transport Workers Identification Credential Credential
IATA	International Air Transport Organisation	VIS	Visa Information System

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# Interviews, conferences and material (1)

- **Interviews and meetings**
  - **Airports operators and associations**
    - ADPi (Orly), ADP (Orly), Geneva airport
    - ACI HQ (Airport Council International, Geneva), Airport Council International Europe (Brussels)
  - **Goernment and European Commission, Brussels**
    - DG JLS (Directorate General Justice Liberty Security)
    - DG TREN, Directorate General Transport and Energy
    - France Ministry of Interior, ANTS, Agence Nationale des Titres sécurisés (Paris)
    - France CNIL (Data Protection Commissioners) (Paris)
  - **A/C manufacturers**
    - AIRBUS Hamburg
  - **Retail**
    - AELIA (Duty Free, Paris),
    - Philip Morris (Lausanne),
    - TFWA (Tax Free World Association, Paris)
  - **Security**
    - Brinks (Paris, CDG)
  - **Airlines and handling agents**
    - Air France (Paris CDG),
    - IATA (International Air Transport Association, Geneva-Montreal)
    - Swissport, (Zurich)

# Interviews, conferences and material (2)

- **Methodology for interviews**
  - Identification of key players for each module of the airport value chain starting starting from the terminal access to final A/C boarding.
  - Identification of executives (exec level) to assess how they address the flow of passengers in their specific POAs to comply with A/C TRT :
    - **Current situation**
    - **Regulatory constraints and framework**
    - **Trends and vision over the next 10 years**
  - Design of a generic questionnaire (see in Annex), which has been adapted to meet the particular situation of each stakeholder
  - 2 hours meetings and discussion based on the questionnaire
  - Meetings debriefing and report to the consortium (see Annex)
- **Many interviews have been carried informally in parallel to conferences and seminars.**

# Interviews, conferences and material (3)

- **Methodology to attend conferences and specific committees**
  - Selection of relevant events addressing airport issues, facilitation and security programs.
  - Events attendance, minutes written, complementary discussion with speakers and panelists.
  - Evaluation of new equipment and technology progress for airport security (LAG, body scanners, biometrics systems, Explosive Detection Systems)
  - Collection of technical publications and vendors' brochures to evaluate what improvements can be expected in the area of passengers' facilitation
  
- **An extensive assessment of specialized press has been carried on, on a daily basis and consolidated every week (see Annex).**
  - Particular attention has been paid on security, facilitation and ID programs which will be used for facilitation purposes
  - Assessment of daily newsletters (<http://www.dailylead.com>, <http://www.atwonline.com>, <http://www.smartbrief.com>, <http://www.traveldailynews.com>)
  - Identification of new trends, prototypes, equipments addressing passenger needs and facilitation in airports
  - Particular attention has been paid to US programmes as these will greatly influence pax processing and generate new delays in EU airports (ESTA, API...).

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## Assessment of stakeholders' background and issues: PASSENGERS (1)

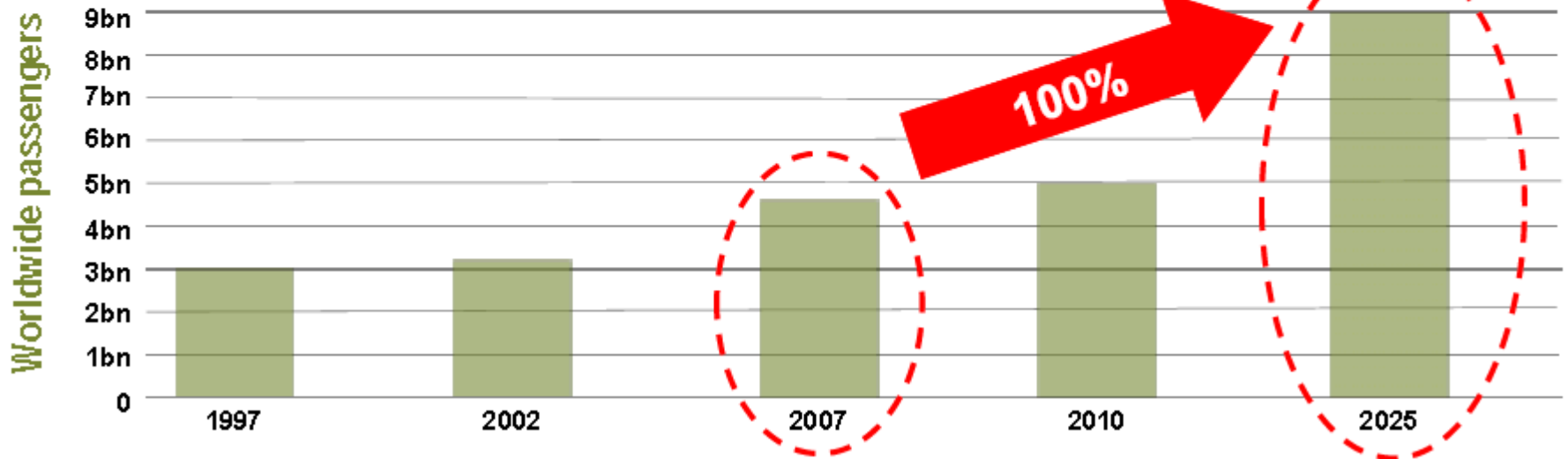
- **Europe represents the most important destination for tourism**
- **The air traffic will double over the next twenty years**
- **Airports stakeholders are facing the double challenge to**
  - **Facilitate airport boarding procedures**
  - **Reinforce security and ID control measures**
- **The time spent by passengers in various controls has more than doubled since the 09/11 security context**
- **For long range flights, check in minimum 2 hours before boarding has become a rule rule**
- **As he is faced to increasing hassle factors, the passenger is less prone to spend time in leisure areas: restaurants, duty free, shops....**
- **There are a many Points Of Activities (POA) in passenger processes which can create create bottlenecks if staff and equipment are under dimensioned**
- **POAs are separated by increasing distances in large hubs or international airports. These are not anticipated by passengers**
- **Both passengers and airports' stakeholders clearly lack a modeling tool that would allow anticipating the various delays spent for both aviation and government controls controls and to cover the various distances between POAs.**

## Assessment of stakeholders' background and issues: PASSENGERS (2)

- The world's airports currently welcome 4,5 billions of passengers. This number will double over the next 20 years

### ACI Forecast 2025

9 billion passengers

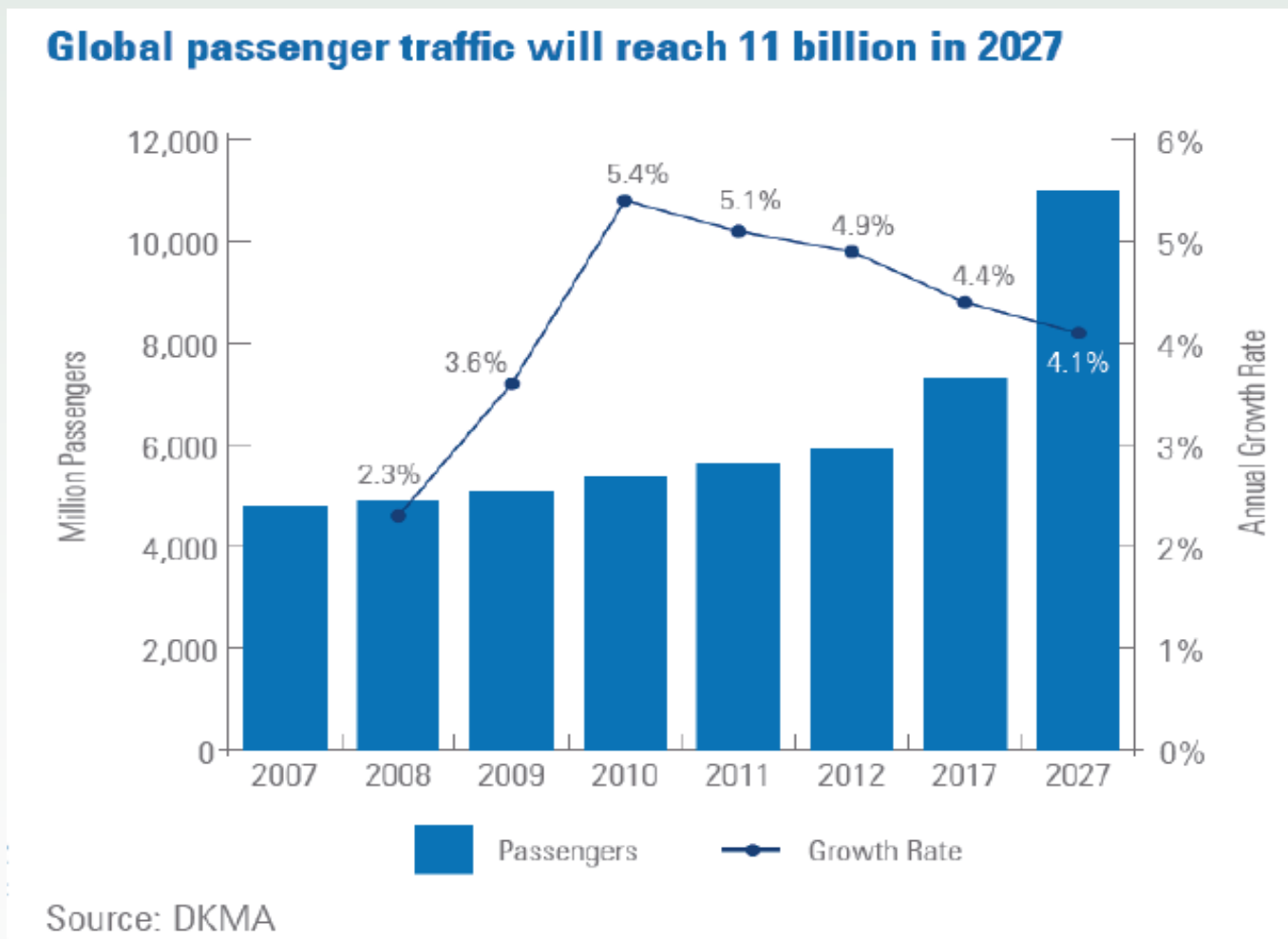


## Assessment of stakeholders' background and issues: PASSENGERS (3)

- **The world's airports currently welcome 4,5 billions of passengers.**
- **This number will double over the next 20 years**
- **The annual growth rate will increase until 2010, then slow down but keep steady around 4-5%**

## Assessment of stakeholders' background and issues: PASSENGERS (4)

- The annual growth rate will increase until 2010, then slow down but keep steady around 4-5%.

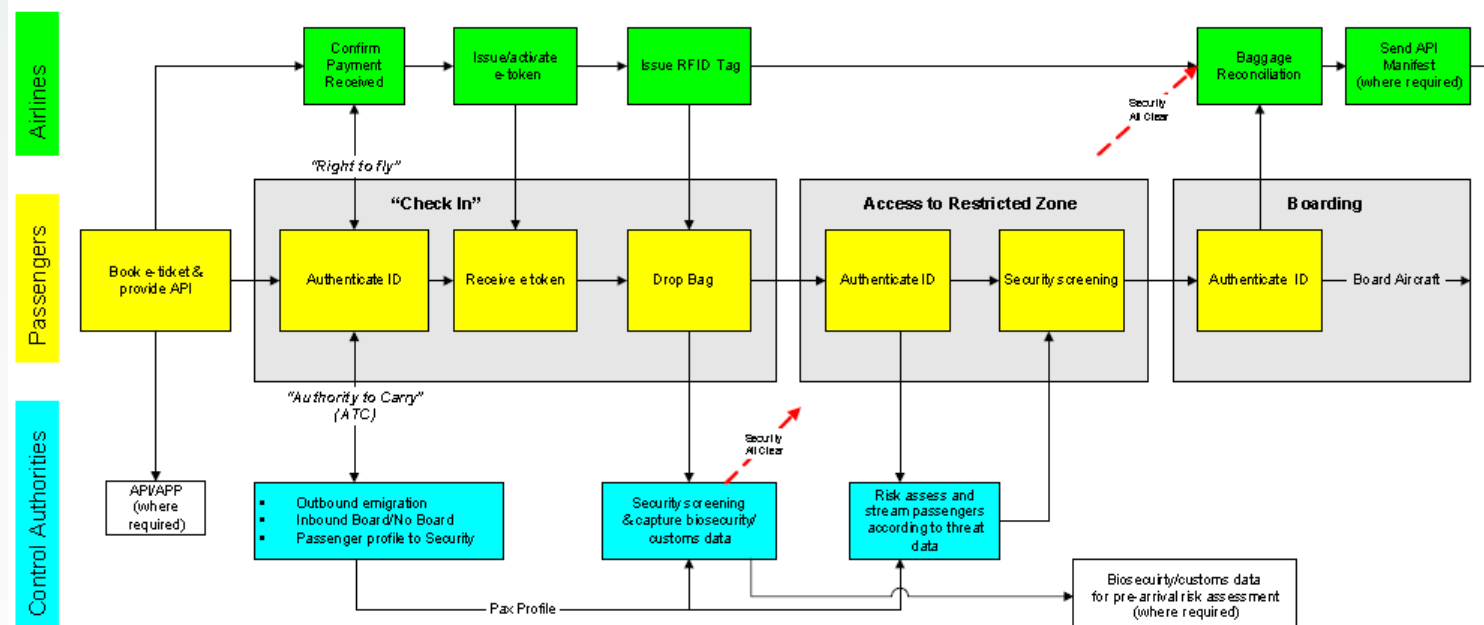


# Assessment of stakeholders' background and issues: PASSENGERS (5)

- IATA SPT-IG (Simplifying the Passenger Travel Interest Group) has proposed a pioneering approach based on biometrics and smart cards for ID controls  
> the **IPF (Ideal Process Flow)**
- But the ASSET' approach is more comprehensive as it addresses all airports POAs, rather than those dealing with ID issues.

## Simplifying Passenger Travel : Departures Process - Overview

### SPT IPF vs ASSET



## Assessment of stakeholders' background and issues: PASSENGERS (6)

- **The IATA vision (IPF, Ideal Process Flow) does not include access to parking facilities and tarmac zones**
- **Only POAs based on ID controls are taken into account by IATA's IPF**
- **In addition, IPF does not take into account both ID controls at the airport's gate and ETKT verification.**
- **Ticketing dematerialization (eTicket, barcodes, NFC) has created new bottlenecks:**
  - **Access to the airport gate (eg. security controls)**
  - **Access to airlines kiosks and airports CUSS (Common Usage Self Service)**
  - **Access to airside zone (eTicket verification without interface to the airline DCS (Departure Control System))**
- **IATA SPT-IG has not anticipated that a modelling tools would be needed to identify airports bottlenecks and facilitate passengers' flows.**

## Assessment of stakeholders' background and issues: PASSENGERS (7)

### ▪ ACI AQS (Airport Quality Survey)

- The AQS mentioned above by Craig Bradbrook (ACI HQ) clearly stresses the importance of IT systems to alleviate the passengers' burden.
- Even safety shall rely on IT systems (not considered by ACI)

#### How important are the service elements?

##### Top 10 most important elements (stated importance by passengers)

1. Waiting time in check-in queue
2. Ease of finding your way through the airport
3. Ground transportation to/from airport
4. Feeling of being safe
5. Thoroughness of security inspection
6. Cleanliness of washrooms
7. Comfort of waiting / gate area
8. Efficiency of check-in staff
9. Waiting time at security inspection
10. Passport and visa inspection

7 out of the Top 10  
most important  
elements are enabled  
or made more  
efficient by IT  
*7 or 8 ?*

Source: ASQ Survey (ACI)

## Assessment of stakeholders' background and issues: PASSENGERS (8)

### ▪ **Recommendations for ASSET**

- Identify new POAs that will be generated from dematerialization procedures (eg. Control of eTicket prior accessing the airside zone)
- Anticipate that pax will more and more rely on IT and automation systems as these become standardized across EU airports
- Pax will privilege facilitation devices (ETKT, fast track, smart boarding...) at the various stages of the airport process to decrease their stress curve
- A majority of airports POAs will shift from manual controls to automated procedures.

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# Assessment of stakeholders' background and issues: AIRPORTS (1)

- **State of the art**
  - Current taxonomies consider four main models (rather than ASSET hub and medium-sized choice)
    - **Hub**
      - Facilitate connecting flights
      - Overcrowded boarding areas
      - Sophisticated luggage processing
    - **LCC terminal**
      - Ticket dematerialization
      - Pax carry their luggage as far as possible
      - Minimize luggage processing (cost issues)
    - **Alliance terminal**
      - Middle and long haul flights
      - Mutualisation of infrastructures
    - **Domestic terminal**
      - Minimize distances and processing areas
  - Airport facilities are considered as a «cost centre» by stakeholders, especially by airlines who are eager to minimize their costs
  - Non aeronautical revenues (restaurants, shops, duty free, parking...) account for more than than 50% of airports' turnover
  - Growing trend towards privatization in main EU airports
  - Main trends for costs reduction influenced by Low Cost Carriers (eTicket, luggage, smart boarding, etc...)

## Assessment of stakeholders' background and issues: AIRPORTS (2)

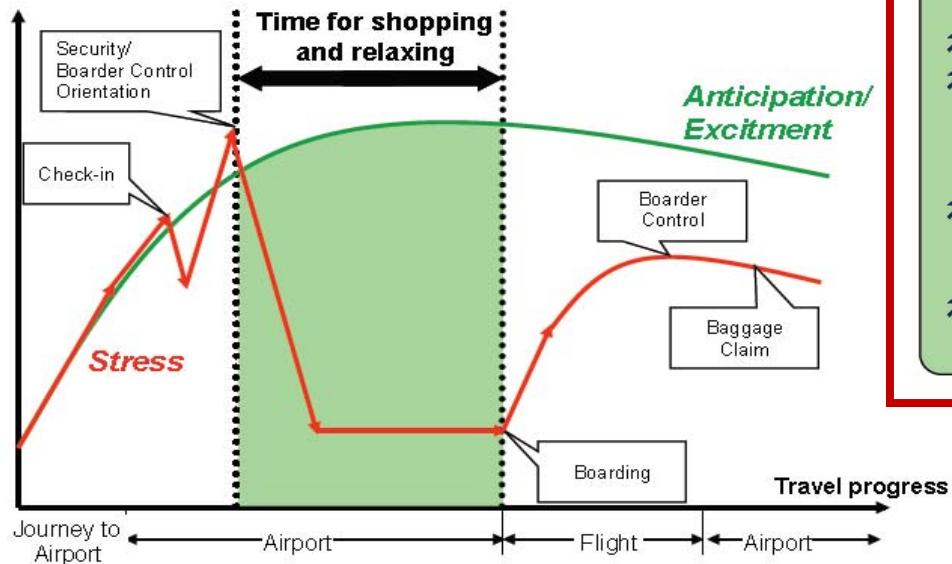
### ▪ **State of the art**

- Only core services are considered as essential by pax (eg. ACI AQS)
  - Shopping and Duty Free are ranked 17 out of 30 services listed by the ACI questionnaire
- Distances between POAs depend from the strategy of the airport's operator.
  - Either a quick access to the gate
  - Either provision of various shopping centers. There is no common rule
  - Both quick access to gates and shopping centers shall be taken into account by the the modeling s/w. (Distance between POAs is as important as the processing at POA itself)
  - Each strategy influences the pax progress in the airport
- Restaurants and shopping areas have no influence on A/C TRT (ADPI statement, but this opinion is not shared by all operators)
- Tarmac activities shall be done sequentially for security reasons (eg.refuelling shall not be done during pax deboarding)
- ADP recommends to evaluate the « lower limit » for each POA (what is limiting the processing time ? ).
  - This is the typical approach that we have used for the selection of quantifiable parameters (see slide 122)

# Assessment of stakeholders' background and issues: AIRPORTS (3)

- The slide below (Berlin Airports) clearly demonstrates that pax are undergoing a stress curve until they pass security controls. This does not allow to relax and spend time in leisure areas (Even though these generate most of the airports' revenues) .
- Due to increased processing times, they frequently arrive late at shopping and relaxing areas

## The air trip stress curve




- Decrease PAX stress level with more information
- Expand relax time for PAX
- Guidance of passengers must be orientated at low stress and short process times
- Generate high quality and good ambience in waiting areas
- Provide sufficiently spaced waiting areas

# Assessment of stakeholders' background and issues: AIRPORTS (4)


- The slide below (Berlin Airports) clearly demonstrates that there is a steady trend towards sourcing POAs outside of the airport premises.

➤ How to achieve throughput enhancement at an airport?


➤ PAXs walk faster through departure




➤ PAXs walk shorter ways



➤ PAXs meet less stops during departure



*Reduce / source airport's POA ?*



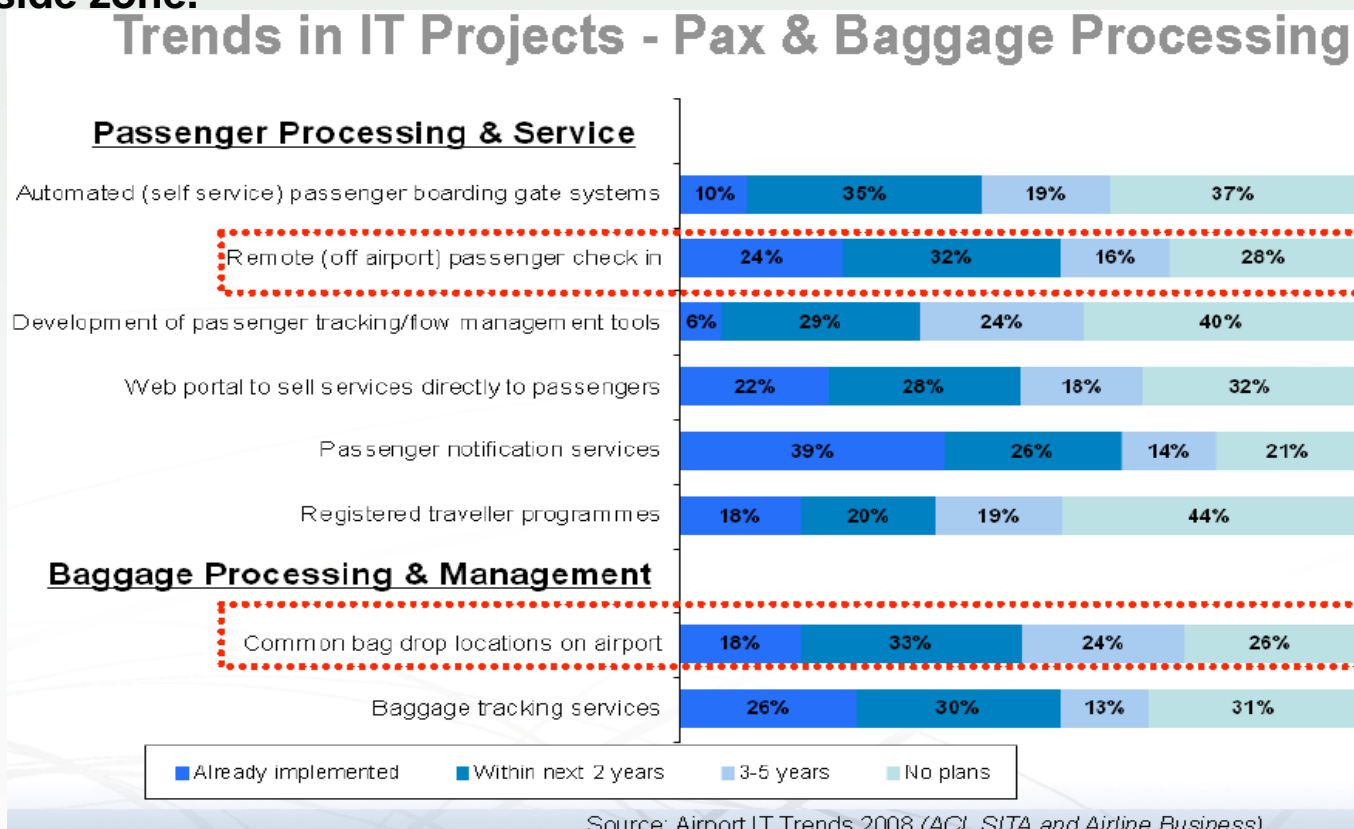
6

# Assessment of stakeholders' background and issues: AIRPORTS (5)

- **The future**
  - Many core functionalities will be performed outside the airport's area (considered as « back office » functionalities).
    - eTicketing (very standard today, IATA claims to have achieved 100% eTicketing)
    - Remote check in (Terminal not limited to its physical area, pax' home becomes part of Terminal)
    - ACI promotes the concept of off-site check in (hotels, train stations, etc...)
    - Remote baggage handling and delivery (concierge services)
    - Immigration clearance (ESTA, Electronic System Travel Autorisation, PNR, PIU) filled by pax on their PC
    - Duty Free : to buy on-line based on eTicketing verification
  - Terminals will be restricted to “core” A/C related processes
    - Security (1st contact of pax with airport facilities)
    - Boarding / deboarding
    - Airports will manage new areas for non-aeronautical activities (retail, others) generating extra brevenues
    - Minimize pax processing within airports to let them conduct purchasing activities
  - Automation
    - Check in Kiosks, Common Usage Self Service (CUSS)
    - Mobile / NFC check in, BCBP boarding
    - ABC, Automated Border Control,
  - Multi-modality trains to A/C to reduce delays (AF will operate their own trains)
  - Trend to decrease turnaround times to leverage slot capacity and generate more revenues
  - Increase A/C contact rate to accelerate deboarding times
  - Reduce environmental impacts
  - Pax provision
    - Basic offer
    - More and more paying services (luggage, smart (facilitated) boarding, Wi-Fi, etc...)

## Assessment of stakeholders' background and issues: AIRPORTS (6)

- The slide below (ACI, SITA and Airlines Business) clearly demonstrates that luggage processing services are considered as a priority by passengers (already implemented and planned over the next 2 years).
- In parallel to eTicketing services, remote baggage handling is currently considered as a means to dramatically reduce the “stress period” and facilitating the access to the airside zone.



# Assessment of stakeholders' background and issues: AIRPORTS (7)

## • **Recommandations for ASSET**

- In many airports, several POAs might be externalized or automated in the future.
- The modeling software shall take into account the number of automation equipment at POAs as these might generate new delays if under proportionate. proportionate.
- As the stress curve will diminish, pax will spend more time in relaxation areas, shops and catering facilities.
  - **Will this generate new delays and impact TRT ?**
- Due to increased procedures automation, POAs processing times shall not be different between airports (provided that equipment are conveniently dimensioned).
  - **The distance between POAs (if automated) shall be considered, especially in large large airports and international hubs.**

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# Assessment of stakeholders' background and issues: AIRLINES (1)

## ▪ Interviews

- AF, IATA,
- Assessment of aviation literature

## ▪ State of the art

- Guarantee a MCT, Minimum Connecting Time, for pax transfers (Average objective is 45')
- Expect a 100% contact rate (currently ADP 70%) from airport authorities (the contact rate corresponds to the % of A/C boarding directly to the airports' gates, rather than boarding on tarmac)
- Minimize distance between landing and contact stand (reduce wheeling)
  - Save fuel and minimize environmental impact
- Optimize A/C parking and boarding facilities
- Passenger processing times depend mainly of the airport's location
  - E.g. Riga: Many pax from former Soviet republics need special visas to the US
  - Three categories of passengers to the US : Visa Waivers, Visa holders and « Rogue states » (Iran, Syria, Korea, former Soviet republics...)
  - Visa holders and pax from «rogue countries» shall fill in a form between the checkin checkin counter and the gate
    - In this case an Advance Quick Query (AQQ) is implemented
    - This procedure certainly influences the processing times

## Assessment of stakeholders' background and issues: AIRLINES (2)

- **Differences between low cost and full fare airlines (source: Macquarie):**
  - Full fare airlines are not that keen to increase the number of flights as these correspond to specific transfer arrangements
  - Even if they try to reduce their costs, full fare airlines regularly invest in complex IT to monitor pax transfers and ensure end-to-end service to customers (eg. CRM)
  - Due to their point-to-point strategy, LCC do not need complex IT equipment mainly required to manage luggage and streamline connecting flights

### What do low cost airlines want?

- Fast turnaround times: Max. use of assets through minimising ATC/ stand delays and rapid boarding
- Simple systems
- Efficient use of ground staff
- Facilities which match demand
- Long term deals (up to 20 years)
- Low landing fees and other costs

### What don't they want?

- Complex systems
- Transfer facilities
- "Gold plated" terminal and other facilities

### What do full fare airlines want?

- Access to major hubs
- High quality facilities (but not marble palaces)
- Premium services for higher paying passengers
- Sophisticated information systems
- Designated branded facilities
- Complex baggage systems which facilitate transfer
- Short queues

### What don't they want?

- Technologically backward systems
- Facilities worse than their competitors
- Poor transfer systems

# Assessment of stakeholders' background and issues: AIRLINES (3)

## ▪ State of the art

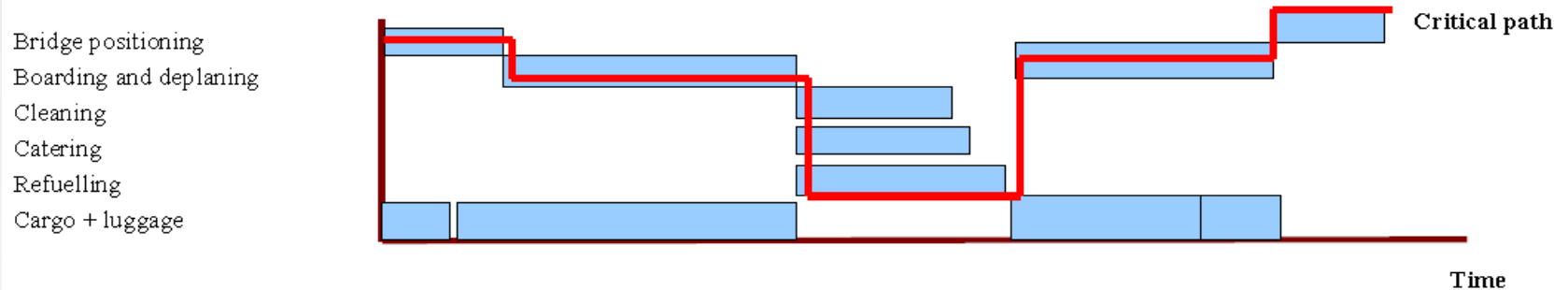
- Low cost carriers and national flag carriers have different business models.
  - LCC: minimize turnaround times to increase the number of flights.
  - Flag carriers: ensure regular transfers for connecting flights to international destinations where they make their revenues.
  - As an example, a LCC can limit its turnaround time to 20' whereas a flag carrier will spend more than 45' at the same stand.
- For short range flights, decreasing turnaround times is not the objective of the full fare carriers as they manage long haul transfers
- Similarly increasing turnaround times is not an issue for long range flights.
- LCC don't operate cargo services, as they might generate extra costs by increasing tarmac tarmac activities and security issues.
- Cargo activities represent 10-15% revenues of the full fare airlines. These shall be considered by our modeling approach but only for flag carriers.
  - But ASSET shall take into account the US demand to screen 100% of the airline freight (2010)
  - IATA's Secure Freight Program (SFP) has launched several prototypes to face this issue
- No shows represent 1/10 of passengers (business travelers changing their flights)
  - Most of them do not generate delays, unless the luggage have already been registered
  - No shows is less frequent with LCC as their ticketing policy is very severe
- Refueling is not done at each arrival but only where the fuel is the cheapest (this is the rule rule for both LCC and full fares airlines)

# Assessment of stakeholders' background and issues: AIRLINES (4)

## ▪ Critical path: Full fares airlines vs LCC

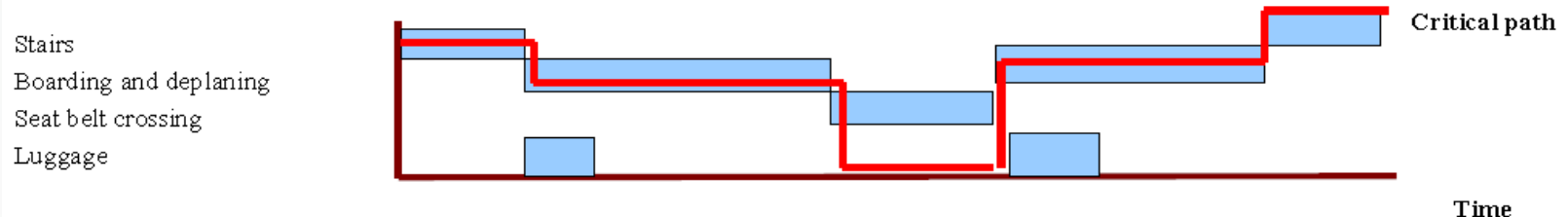
- The LCC objective is to ensure an average TRT in less than 30'
- As shown by the drawing below (courtesy Airbus), LCC aim at reducing tarmac activities (cargo, refuelling, catering)

### Typical tarmac activities for classic airlines



*LCC objective: 25-30'*

### Typical tarmac activities for low cost airlines



# Assessment of stakeholders' background and issues: AIRLINES (5)

## ▪ The future

### ▪ Luggage models and issues :

- Emphasis on hand luggage (size increases) vs hold luggage
- The average number of luggage depends from the geographic origin of the passengers (generally (generally higher in APAC and Middle East region than in EU)
- More and more, pax will have to pay extra charges for hold luggage as full fare airlines consider that « belly cargo » is more profitable than pax' luggage (10-15% revenues).
- Extra fee on oversized luggage will become the rule (for both LCC and full fare airlines)
- Share of hand luggage : 50% of the total
- Boarding / deboarding delays are mainly due to oversized hand luggage (AF source)
- Conversely, the average check in time is decreased as pax register less hold luggage
- Two main luggage trends shall be taken into account:
  - **LCC and large companies (AF)**
    - Pax keep their luggage either in the cabin, either they drop it in A/C belly before boarding
    - AF: pax locks his luggage in a container (under project)
  - **Pullman (courrier model)**
    - Pax separated from luggage
    - Luggage managed at departure and arrival by valet services
- **Automated bag drop**
  - **Certain countries do not allow automated bag drop (France).**
  - **Swissport figures**
    - Average time per bag drop 27 sec
    - Automated bag drop: 15 sec saving compared to current check in method

# Assessment of stakeholders' background and issues: AIRLINES (6)

## ▪ The future

### ▪ Luggage models and issues :

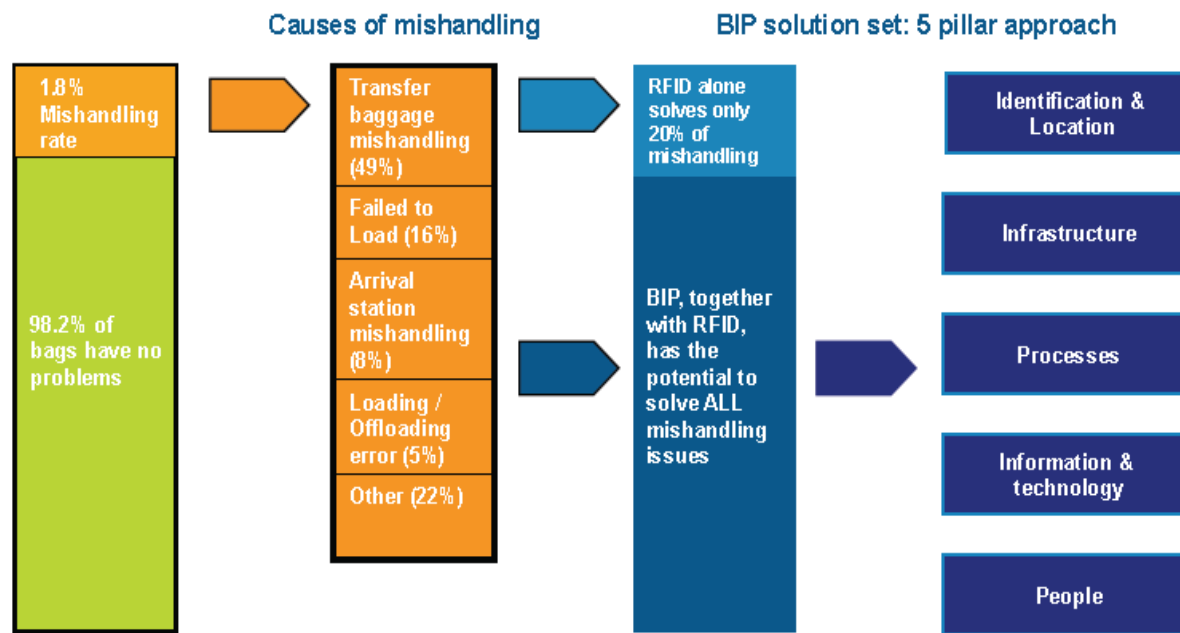
- **IATA Baggage improvement program (BIP)**
  - Annual cost to the industry 3,8 Billion USD (Average: 1.8% of checked-in bags are lost or delayed )
  - IATA launched BIP with 6 airlines and 6 airports by end 2008
  - Develop the BIP long-term strategy and methodology
- 33% of airlines will offer off-airport baggage check-in by end 2009 (currently 15%)
- LH quite pioneer for self dropping
- AF negotiates with authorities

## Assessment of stakeholders' background and issues: AIRLINES (7)

- **IATA Baggage Improvement Program (BIP):**
  - **IATA claims that 49% of baggage mishandling occurs during transfers**
    - 20% of transfer mishandlings can be solved based on RFID technology
    - New methodology and processes shall be able to solve the rest

### BIP – Reducing baggage mishandling

*ASSET will not focus on technologies / process changes for reducing mishandling of baggage. Nevertheless it could be a side effect of proposed solutions.*



Source: SITA Worldtracer 2007

# Assessment of stakeholders' background and issues: AIRLINES (8)

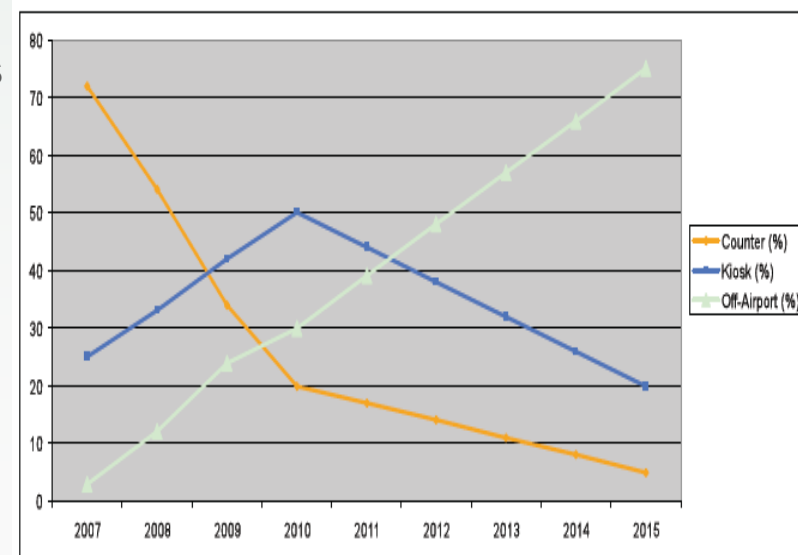
## ▪ The future

### ▪ Mobile and Kiosks check in, two main trends:

- Absolute Check-in kiosks will grow for several years and then return to today's numbers
- Mobile Check-In is mainly adopted by Premium Carriers
- The diagram below shows that more than 70% of travelers will rely on off-airport systems to check in in
- AF figures 2009
  - Internet 15%
  - Kiosks 30%
  - For shuttle flights (Paris / Toulouse / Marseille / Nice/ etc..) > 50%
- Alternative devices
  - NFC (IER/Amadeus) at Nice

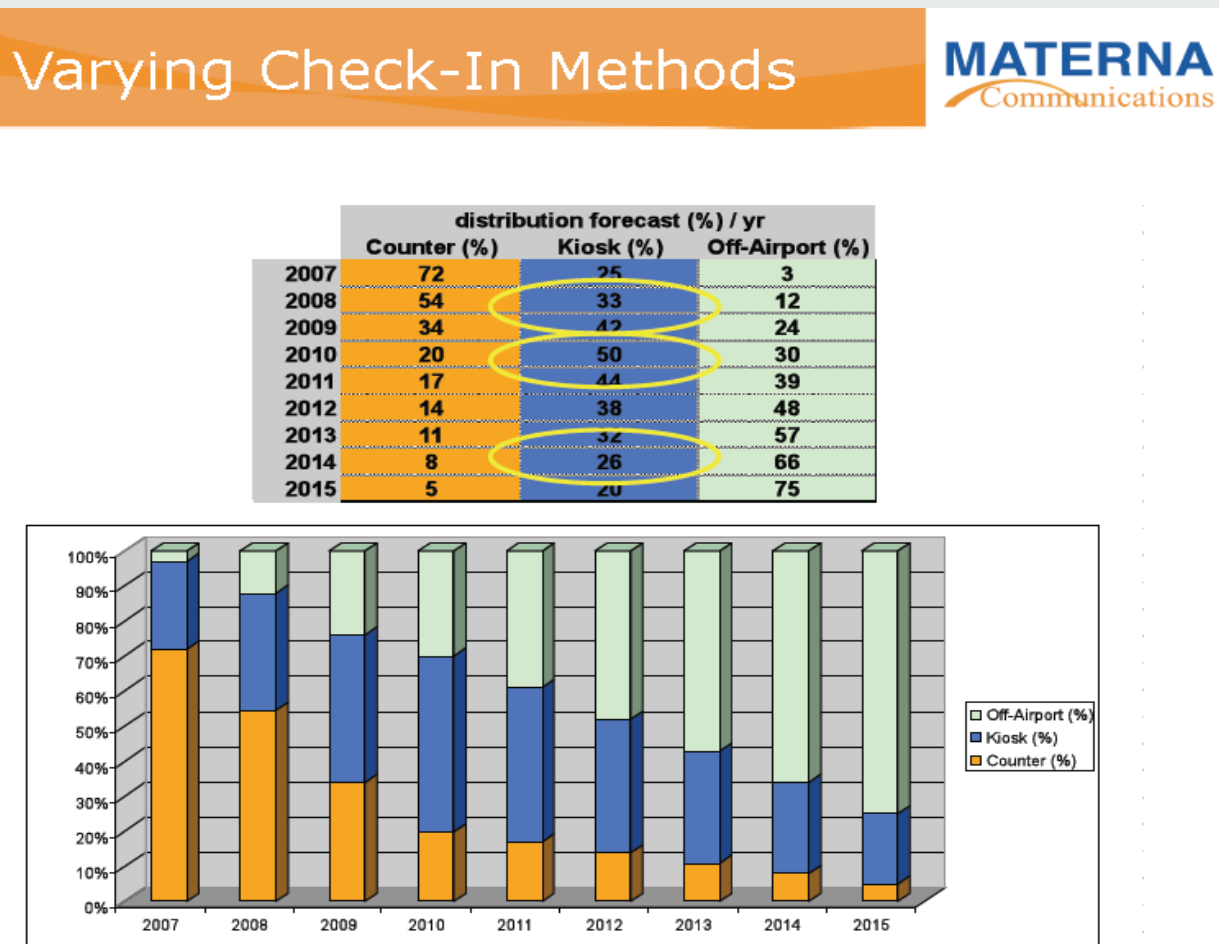
### ▪ Specific security measures for US flights

- API
- AQQ
- Specific waiting zone
- Queries mandatory by airlines staff



## Assessment of stakeholders' background and issues: AIRLINES (9)

- The slide below (Materna Communications) demonstrates how off-airport check in will progressively replace counter and kiosk check in in five years time.



## Assessment of stakeholders' background and issues: AIRLINES (10)

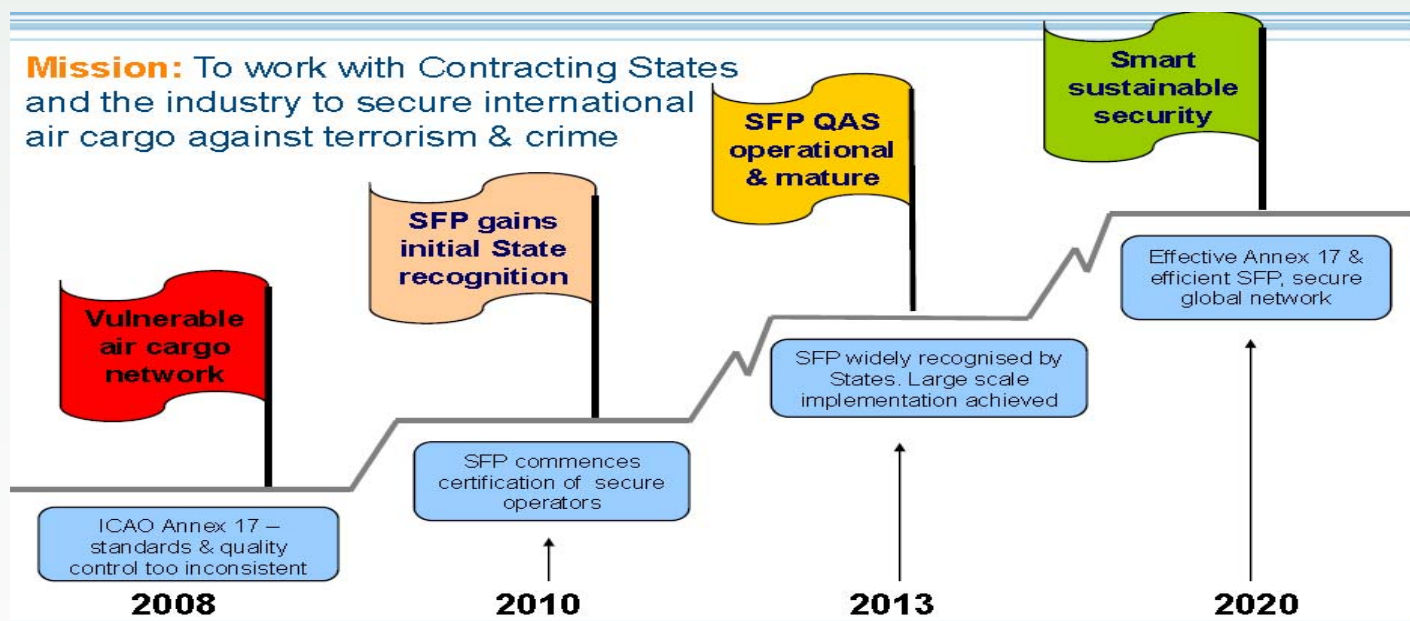
- **The future**
  - Most of the countries are setting up programs to process pax data before boarding
  - US API, US ESTA, EU PNR
    - These shall be communicated minimum 48h in advance to the airlines
    - There is no clear procedure on how authorities of the departing country will reconcile pax with the data send in advance.
    - At check in counters? Kiosks ?
    - What infrastructure shall be put in place?
    - Will the control of pax data create a new POA?

# Assessment of stakeholders' background and issues: AIRLINES (11)

## ▪ The future

### ▪ Freight

- IATA is promoting its Secure Freight Program to meet the US demand for screening 100% of civil airlines freight (see below)
- It is not clear at this stage which technologies shall be put in place
  - Active RFIDs
  - Explosive Detection Systems (EDS)
  - Olfactive technologies ?
- What will be the impact on TRT and tarmac operations ?



## Assessment of stakeholders' background and issues: AIRLINES (12)

### ▪ **Recommendations for ASSET**

- Most of the airlines related POAs might be dematerialised due to IT systems
  - Internet / mobile /NFC check in
  - BCBP, Bar Code Boarding Pass
- Processing times at POA shall be similar across all airports provided that equipment is correctly dimensioned
- Only the distances between POAs shall be considered
- The modeling software shall anticipate what will be the time impact of the following issues:
  - Delays related to pax data reconciliation (EU PNR, API, ESTA...) with physical travelers
  - Security measures applied to cargo freight
  - AQQ, Advance Quick Queries procedures, demanded by certain destination countries to certain nationals

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# Assessment of stakeholders' background and issues: Handling Agents (1)

## ▪ Interview

- Rico Barandum, Swissport , Head of eServices
- Swissport company profile
  - *Swissport International Ltd. provides ground services for over 70 million passengers and 3.5 million of cargo a year on behalf of some 650 client companies. With its workforce of around 33 000 personnel, Swissport is active at 178 airports in 40 countries on five continents.*

## ▪ State of the art

- Their customer are mainly the airlines, Full fare carriers and LCC
- But they have specific contracts with airports for security services
- They operate the following duties:
  - Pax check in and luggage processing
  - Cargo loading
  - Refueling and line maintenance
- The airlines prefer to source these activities as they are considered as more efficient and cost competitive competitive
- They provide their own equipment to speed the airport processes
  - Check in kiosks, bag drop systems, mobile check in, smart boarding
  - Security equipment: biometrics fast track system
- Their contracts depend from the customer airline
  - Pax maximum waiting time and Service Level Agreement (mainly the full fare carriers)
  - Fixed staff (LCC scheme)
- They are not directly motivated by eID authentication systems as they need to invest in new equipment (e.g. MRZ readers)
- Leveraging TRT is the concern of the airlines, not of the Handling Agents

## Assessment of stakeholders' background and issues: Handling Agents (2)

### ▪ **Recommendations for ASSET**

- Rather than airlines, Handling Agents shall be considered as one of the main airport players for the various pax and tarmac activities.
- Due to their implementation worldwide, one shall anticipate a progressive standardization of airport activities, due to company's procedures and cost efficiency requirements.
- Furthermore, handling agents have sufficient geographic coverage to promote promote the usage of new equipment and automation systems to reduce operating costs.

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# Assessment of stakeholders' background and issues: Security Agencies (1)

## ▪ Interview

- Mr Ourson, Airport Quality officer, Brink's Villepinte (close to CDG)
- Mme Malzac, Development Director Airport services, Brink's

## ▪ State of the art

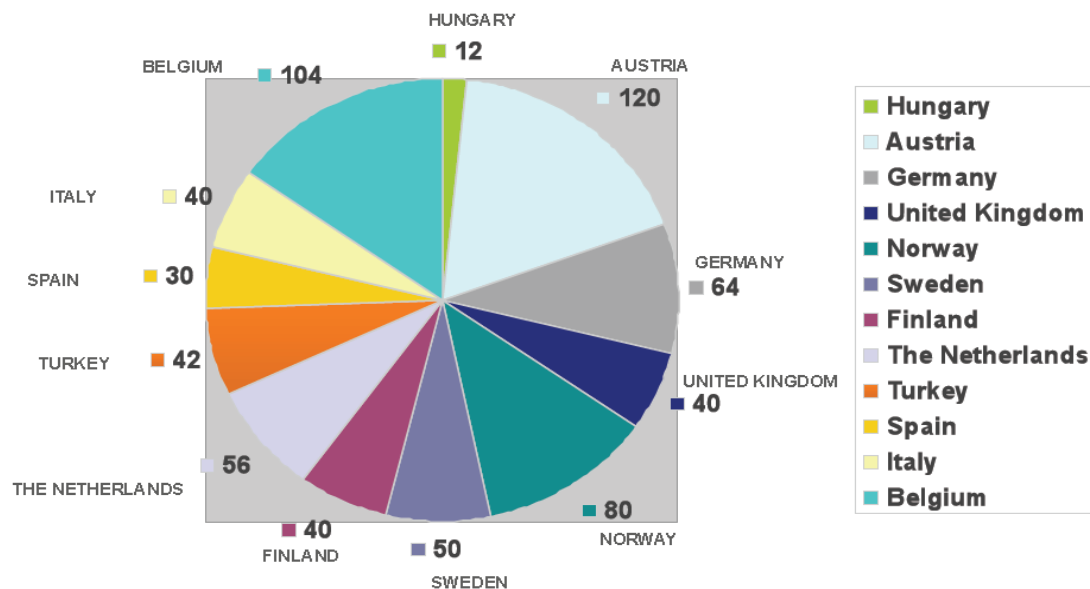
- They are mainly hired by airports (rather than airlines)
- Security equipment are usually provided by airports
- They lack a strategic vision on automation and facilitation as they comply with with the demands of their customers (airports)
- Standardization of training and screening procedures are currently investigated by the CEN (European Standardization Committee) TC 384, under the leadership of Vienna airport\*.
- The ban on LAG, Liquids And Gels, constitutes a key point for investigation, as it dramatically increases security processing times.

*•Following a proposal from ÖN (Autriche), the Technical Board created CEN/TC 384 Project Committee Airport and aviation security services. CEN/TC 384 will work on a European Standard specifying requirements and quality criteria for the delivery of civil aviation security services related to aircraft, airports and airlines requested by public and private clients, including organisation, personnel management and method of practice of private security companies offering these services. The first meeting of CEN/TC 384 will take place in November (e-mail: [karl.gruen@on-norm.at](mailto:karl.gruen@on-norm.at)).*

## Assessment of stakeholders' background and issues: Security Agencies (2)

- **What is the purpose of the CEN TC 384 ?**
  - This TC, Technical Committee was initiated by Vienna airport and the COESS (Confederation of European Security Services) in December 2008
  - It is attended by major security agencies (lead SECURITAS)
  - The objective is to harmonize the training procedures dramatically differ across Member States
  - The current context is shown by the slide below (Securitas)

Hours of Mandatory Training

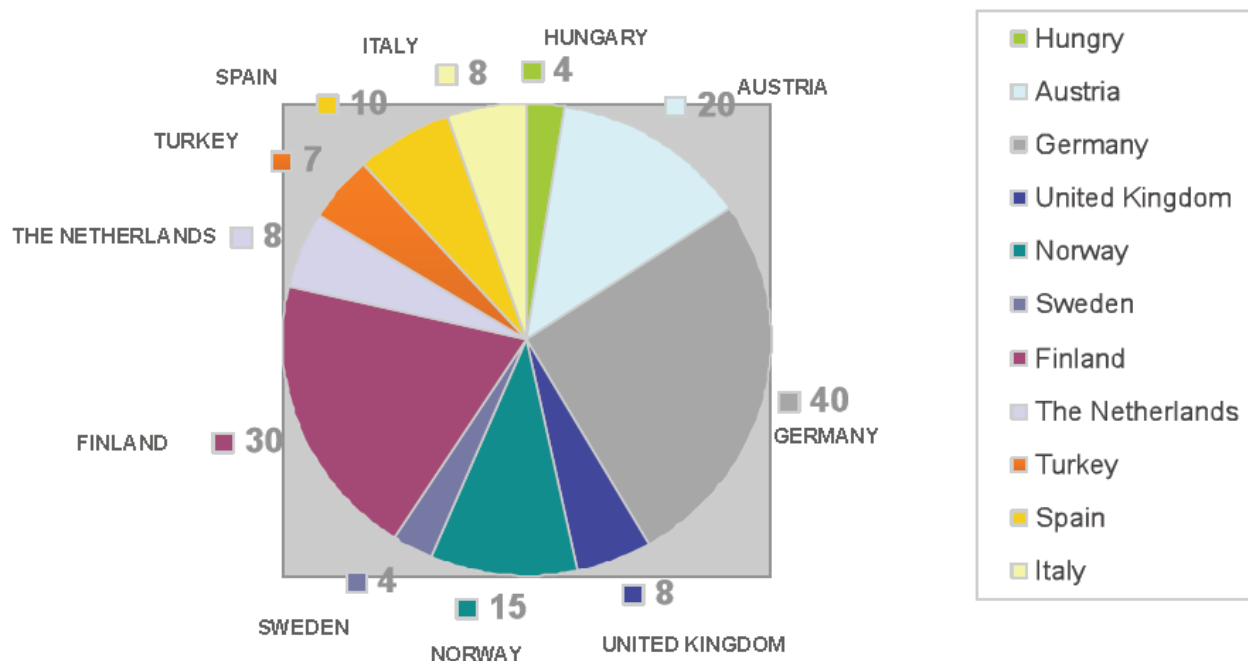


Airport Exchange '08 - Berlin

## Assessment of stakeholders' background and issues: Security Agencies (3)

- **The mandatory hours of recurrent training / y are very different across MS**
  - It is not yet clear whether this will impact the airport processing times
  - But it is clearly the scope of the TC to homogenize security measures across MS

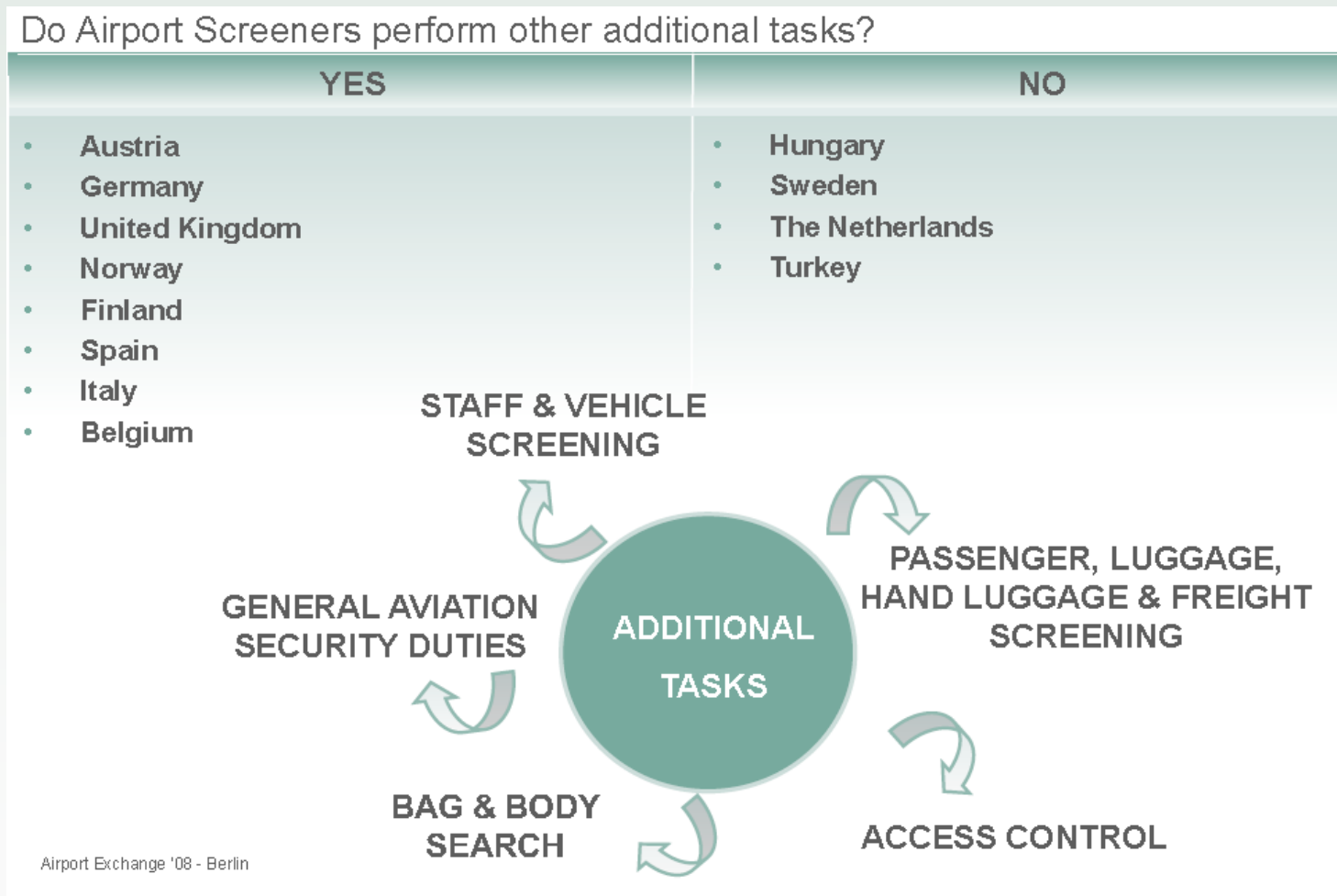
Hours of Recurrent Training / per year



Airport Exchange '08 - Berlin

## Assessment of stakeholders' background and issues: Security Agencies (4)

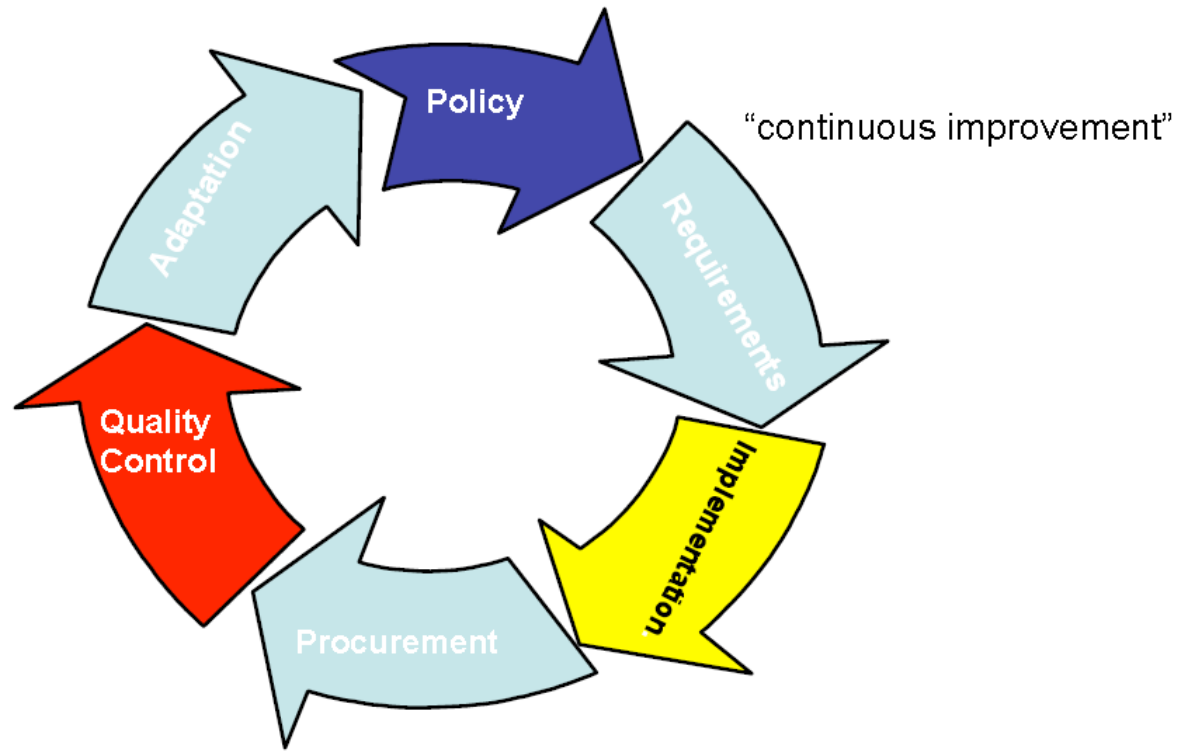
- **Depending on the country, security agencies perform different duties**



## Assessment of stakeholders' background and issues: Security Agencies (5)

- **TC 384 shows a strong demand for harmonization of procedures across the MS to avoid a discrepancy in security measures**

### Circle process for security measures



## Assessment of stakeholders' background and issues: Security Agencies (6)

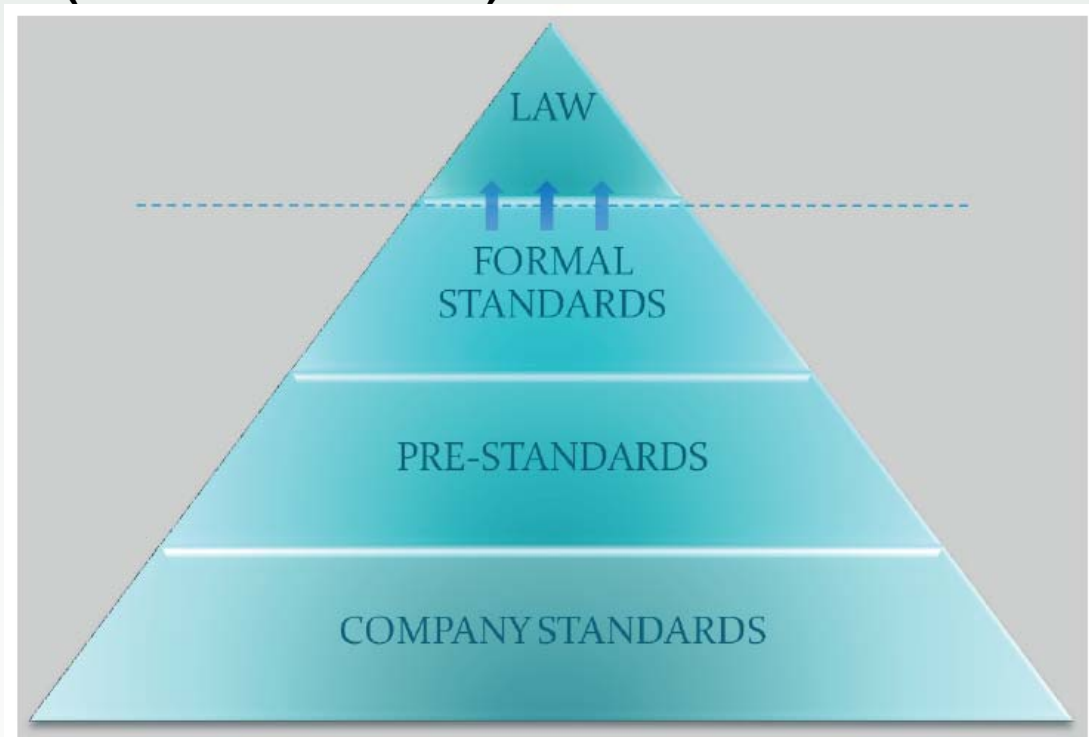
- Driven by major security agencies, the TC384 proposes the following initiatives (Securitas slide):
- It is worth mentioning that this initiative is driven by industry players themselves.

### What is the purpose?

- Necessity of a **European-wide** standard
- Civil aviation must comply with the **highest possible** set of rules and standards
- **No industry-driven** standards exist today
- Common standards will strongly enhance the '**best value**' principle
- Designed to guide civil aviation **customers** through key quality criteria when **selecting a service provider**
- Initiated by the private security **sector** itself

## Assessment of stakeholders' background and issues: Security Agencies (7)

- **Based on proprietary /company rules, the TC 384 aims to both influence standards and regulatory authorities**
- **The process shown below demonstrates how formal standards can be established based on industry initiatives**
- **It shall be pointed out that standardization activities can be run in parallel to regulations (an influence them)**



## Assessment of stakeholders' background and issues: Security Agencies (8)

- **Long term objective of CEN TC 384**
  - The security framework regulation should be simplified, clarified and harmonised
  - Agreement on a risk-based approach
  - Proposition of a road map for new procedures (liquids, body scanners, enhanced x-ray equipment)
  - Certification of new products

## Assessment of stakeholders' background and issues: Security Agencies (9)

- **The LAG, Liquid And Gels, case (1)**
- **A typical example of dramatic increase of security processing time**
  - **10 Aug 2006** Thwarted plot in the UK
    - **30 Aug 2006** Working Group Meeting EU Commission
    - **27 Sep 2006** Approval by AVSEC Committee
  - **04 Oct 2006** Formal Adoption of Regulation 1546/2006 by EC
    - **100 ml ban on cabin bags for departing passengers**
    - **Confiscation of duty free liquids purchased outside EU at transfer**
    - **Use of tamper-evident bags (STEB) for liquids purchased within EU**
    - **Proof of purchase and definition of the “day of purchase”**
  - **06 Nov 2006** Regulation (EC) 1546/2006 entering into force
    - **06 Dec 2006 30 Mar 2007** ICAO State Letters issued
      - **No confiscation, exemptions .....**
    - **31 July 2007** Formal Adoption of Regulation 915/2007 by EC
  - **20 Aug 2007** Regulation (EC) 915/2007 entering into force
    - **13 Dec 2007 Reg. (EC) 1477/2007, effective 3 January, 2008 (STEB)**
    - **08 Aug 2008 Reg. (EC) 820/2008, effective 20 August, 2008 (STEB)**

# Assessment of stakeholders' background and issues: Security Agencies (10)

- **The LAG, Liquid And Gels, case (2)**
  - Increase of passenger screening process time by approx. 30%
  - Almost two tons of discarded liquids per day during the initial phase / airport
  - The value of confiscated liquids is roundabout 2 million € per week / airport
  - Enhanced security measures
    - Additional queues and delays
    - Additional staff and training
    - Additional expenses
  - Confiscation of LAGs
    - Huge financial consequences for retailers
    - Operational difficulties for removal and disposal of LAGs confiscated
    - Inconvenience and financial impact for passengers

# Assessment of stakeholders' background and issues: Security Agencies (11)

- **The LAG, Liquid And Gels, case (3)**
  - **The Abolishment of Liquids Restrictions is Politically Desired –But the Threat Remains**
    - **The new draft legislation, effective in April 2010 at the latest, foresees that liquids and gels (LAGs) are no longer defined as “Prohibited Items“**
      - **Legal basis for the current procedures using 100 ml / 1l bags and Secure Tamper Evident Bags (STEBs) would be annulled**
      - **European Parliament would have to approve the renewed classification of LAGs as Prohibited Items**
      - **According to experts, it is unlikely that technology being capable to detect liquids in bags will be available by April 2010**
    - **Different procedures at airports within the EU, not to speak of airports outside the EU?**
    - **Can we really afford to abolish existing restrictions before there is equipment ready to reliably screen LAGs in carry-on bags?**
    - **What will be the time impact (reduction ? ) of automated LAG identification based on density and atomic number ?**

## Assessment of stakeholders' background and issues: Security Agencies (12)

- **Identification of prohibited materials based on smart equipment**
  - Many debates on body scanners or smart corridors
  - Vendors are currently designing new security systems that will allow passengers to avoid being submitted to body searches and physical patdowns
    - **No need to remove belts, PC, cellular phones and shoes**
    - **Different technology are under investigation**
      - **Millimeter waves : body scanners for detection of illicit goods**
      - **Smart corridors : identification of illicit goods without body visualisation**
  - **Airports will not invest in such equipment unless a national or EU rule make them mandatory**
  - **It shall be anticipated what will be the time impact of such equipment if they are implemented in the future by airports**

# Assessment of stakeholders' background and issues: Security Agencies (13)

## ▪ Recommendations for ASSET

- The consortium shall take into account the works carried on by the CEN TC 384
  - Minimum security check time applied to each passenger ?
  - What mandatory equipment will be imposed to security staff ? What will be their impact on processing times ?
- Liquid And Gel identification
  - Will regulatory authorities impose LAG identification equipment ?
  - What will be their impact on security check time ?
- Body scanners / smart corridors
  - Will regulatory authorities impose illicit goods and objects identification equipment ?
  - What will be their impact on security check time ?

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# Assessment of stakeholders' background and issues: Retailers and non-aeronautical services (1)

## ▪ **Airport charging scheme (1)**

- Since the Chicago Convention (1947), Airports have evolved from public funded infrastructure providers to become commercial entities
- Due to the financial weakness of Airlines, Airports cannot yet apply the “User pays” principle as recommended by ICAO and EC whereby Airlines shall be charged the real cost of services and infrastructures
- **Large Airports**
  - Derive more than half of their incomes from non-aeronautical sources.
  - Commercial revenues make up the gap between aeronautical charges and what airlines should actually pay for using their infrastructures
- **Medium and small airports**
  - Bulk of revenues still come from charges to airlines (in Africa, twice the non-aeronautical revenues)
- **Non-aeronautical revenues become critical to:**
  - Replace public funding in large airports
  - Provide medium and small airports of developing countries with additional resources to face the growing demand in security infrastructure

## Assessment of stakeholders' background and issues: Retailers and non-aeronautical services (2)

### • **Airport charging scheme (2)**

- Airports charges have remained stable (4% of Airlines operating costs) since 1978
- Airports profitability depends on either:
  - **Public funding**
  - **Raising the cost of services provided to airlines**
  - **Increasing the share of non-aeronautical revenues**
- As public funding diminishes and airlines are not ready to pay the real cost of accrued security measures, non-aeronautical revenues become the corner stone of the airports' financials
- Any threat to reduce the share of non-aeronautical revenues mobilizes Air transport international organisations (ACI, IATA, ICAO) at it will strongly affect the fragile financials of the sector.

## Assessment of stakeholders' background and issues: Retailers and non-aeronautical services (3)

- **Interview**
  - Aelia, main French Duty Free retailer, Paris
- **State of the art**
  - The longer the flight, the more pax arrive in advance to the airport
  - Main sales are for long haul flights as pax arrive quite in advance
    - Duty free shops can create bottlenecks if the staff is not proportionate.
    - In main airports, retailers are informed by airport operators of the flight schedules and destinations to proportionate their staff accordingly
  - Duty free bags shall remain sealed otherwise the goods will not be allowed in the aircraft.
  - Certain countries (intra-EU) recognize sealed bags from other countries for connecting flights (other do not). Time impact ?
  - Usually pax buy duty free goods on their way back from a business travel
  - Due to the suppression of borders within the Schengen area, many retailers are are paying the VAT on their behalf to attract pax.
    - This is not the case for tobacco as tax represent 60-70% of the costs
  - LCC flights does not mean less duty free
  - Pax are reluctant to “on seat” delivery of duty free goods (as this is the case in many US airports). They prefer to carry on their bags !

## Assessment of stakeholders' background and issues: Retailers and non-aeronautical services (4)

- **State of the art**
  - **Objective: increase quality of service**
  - **Propose tax free VIP products**
    - **French wines and gastronomy in CDG and Orly**
  - **Physical presence of shops and goods remains key**
  - **The shopping behavior depends from the destination and the nationality of pax.**
  - **More sales at mid- day than for early morning flights**
  - **Average time spent in Duty Free shops is 3-4' (French airports)**
  - **Retailers are very keen on IT systems that will speed up the airport automation processes so that to free passengers for purchasing activities**
- **The future**
  - **Online sales is currently investigated but no decision has yet been taken to launch new services, as the physical presence of goods remains key.**
    - **Shall not replace direct sales in airport shops.**
    - **Will constitute another channel and address other categories of sales**

## Assessment of stakeholders' background and issues: Retailers and non-aeronautical services (5)

### ▪ **Recommendations for ASSET**

- Evaluate the time impact of duty free bags control at boarding
- Assess the time impact of duty free bags control for connecting flights
- Investigate the consequence of LAG screening (instead of ban) on duty free activity (perfumes and liquors)
- Investigate whether the delivery of goods at A/C seats will be implemented in the future due to security constraints
  - **Time impact ?**
- Investigate the time consequence of increased surfaces of duty free retailers as control procedures will be more and more automated
- Do not underestimate the risk that passengers spend more time at shopping activities and arrive late at the gate.

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# Assessment of stakeholders' background and issues: A/C Manufacturers (1)

- **Interview**
  - Daniel Glaser, Engineer, Airbus Germany
- **State of the art**
  - Security checks should be performed before the A/C access
    - No complementary check envisioned at A/C
    - But boarding pass control creates a bottleneck at A/C boarding
  - No specific A/C design to comply with the various business models (LCC, full fare).
  - Cabin keeps the maximum flexibility
  - No specific A/C design to speed up boarding / deboarding processes
  - Minimize number of Ground Support Equipment needed to turn around the aircraft - Minimize number of people to turn around the aircraft
  - Reduce ramp damage (to aircraft mainly)
  - Minimize health and safety issues for ground handling staff. For example use Cargo Loading Systems, and not bulk loading
  - Improve communication aircraft-airline-airport on ground

## Assessment of stakeholders' background and issues: A/C Manufacturers (2)

### ▪ **The future**

- Airbus is investigating RFID systems for tracking luggage in the A/C belly
- Provision of s/w based on air to ground data link to anticipate tarmac activities: activities: deboarding, refueling, catering etc...
- Plans to facilitate boarding and deboarding: automatic seat belts, simplified seat pockets to minimize the cleaning activities, wider aisles.....

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# Assessment of stakeholders' background and issues: Data protection commissioners (1)

## ▪ Interviews

- Laurent Gabrie, CNIL Commission Nationale Informatique et Libertés, France
- Francis Lim, CNIL Commission Nationale Informatique et Libertés, France

## ▪ State of the art

- EC Directive 95/46 on data storage
  - Protection of individuals with regard to the processing of personal data and on the free movement of such such data
- EC Directive 97/66 on data transmission
  - Processing of personal data and the protection of privacy in the telecommunications sector
- EC Directive 2002/58 on data processing
  - Processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications)
- DG Internal Market :
  - Art 29 working party
- Each MS has the duty to translate the EC Directives into their national regulations, this is the reason why their might arise differences in the way privacy issues are treated.
- DPC are investigating how the various IT control systems might infringe individuals' privacy and provide recommendations to avoid this, particular for :
  - Electronic ID
  - Automated border clearance
  - Body scanners and illicit goods detection systems
  - Passenger data processing (API, AQQ, PNR, EU PNR...)
  - EU Entry /Exit systems (seen slides below)
  - LAG identification

# Assessment of stakeholders' background and issues: Data protection commissioners (2)

- It shall be pointed out that the CEN, (European Standardization Committee) has recently opened a consultation for setting up a CWA (CEN Workshop Agreement) on body scanners and privacy issues (Draft 2009 ICT Standardisation Work Programme)
  - PROTECTION OF PERSONAL DATA AND PRIVACY IN AVIATION SECURITY
    - The aim of [Regulation \(EC\) 300/2008](#) on common rules in the field of civil aviation security is to protect persons and goods within the European Union by preventing acts of unlawful interference with civil aircraft aircraft (e.g. hijack, sabotage of aircraft). One of the means for ensuring this is to screen persons before they enter security restricted areas at airports and board an aircraft. One possible method of screening persons at airports is by use of machines known as 'body scanners'.
    - Body scanners produce an image of the body of a person showing whether or not objects are hidden in or under his or her clothes.
    - A weakness in aviation security today is the detection of non-metallic items. The combination of metal detectors and hand searches is currently the optimal means of detecting concealed prohibited items. However, the quality of hand searches is very variable at Community airports.
    - Since body scanners can detect any item concealed on a person's body or in or under his clothes, they could be used as an alternative to the existing means of screening passengers.
    - Therefore, following an adoption of [Regulation \(EC\) 300/2008](#) and with due regard to the Commission's consultation on the impact of the use of body scanners in the fields of aviation security on human rights, privacy, personal dignity, health and personal data protection, ESOs are invited to present proposals in supporting privacy and data protection friendly deployment of body scanners.
    - In this sense, ESOs should propose solution on how to deploy body scanners in airports, being part of the aviation safety tool in a way that its use is fully in line with personal data protection principles and respects respects privacy of individuals and human dignity while serving its main purpose of identifying non-metallic objects. Such a privacy friendly solution could be e.g. to enable inspectors to see images or schematic representations of weapons or non-metallic objects, but not full and detailed images of the human body.
  - At this stage, it is expected that a MS state ESO (AFNOR, France is interested) carries on a 18 months workshop to publish a CWA (CEN Workshop Agreement) in coordination with industry players and EU DPC.

## Assessment of stakeholders' background and issues: Data protection commissioners (3)

### ▪ **Recommendations for ASSET**

- DPC can only issue recommendations but cannot oppose EC or national regulations.
- Body scanners - as the privacy of passengers is concerned due to the display of human appearance - is a typical case where DPC can strongly influence regulatory authorities both at national and EU level.
- The ongoing CWA (see previous slide) will certainly influence decision makers.

### ▪ **The future**

- The ASSET consortium shall anticipate that equipments will be implemented in the near future (e.g. body scanners) without to infringe passengers' privacy and what will be their impact in terms of time processing.

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## Assessment of stakeholders' background and issues: Home ministries, customs and EC (1)

### ▪ Interviews

- Gérard Bonningue, France, ANTS, Agence Nationale des Titres Sécurisés, Ministry of Interior
- Franck Paul, DG JLS, European Commission, Brussels, Head of Large scale IT systems
- Elfa Kere, DG JLS, European Commission, Brussels, Large scale IT systems
- Franck Paul, DG JLS, European Commission, Brussels, Head of large scale systems
- John Wilson, DG TREN, European Commission, Brussels,
- Renaud Bernhardt, Ministry of Interior, Police de l'Air et des Frontières France

## Assessment of stakeholders' background and issues: Home ministries, customs and EC (2)

- **State of the art**
  - Regulatory authorities intervene at the following stages
    - Airport security framework (DG TREN, MS Ministries of Interior)
    - Passenger data (DG JLS, security agencies of destination countries...)
    - Automated border clearance (MS Ministries of Interiors, DG JLS)
    - Electronic visas (DG JLS, MS Ministries of interior, Ministries of Interior of countries)
  - Regulatory authorities have strongly influenced airport procedures since the 09/11 events, and the subsequent processing time has been increased
    - On one side, reinforcement of security controls (e.g. LAGs ban, DG TREN) : processing time strongly increased
    - On the other side, pioneering vision of border clearance automation (DG JLS) to decrease passport control time by 50%.

# Assessment of stakeholders' background and issues: Home ministries, customs and EC (3)

## ▪ History

- Prior to Sept 11th 2001, EC had no legislative competence in the field of aviation security
- EU AVSEC rules were coordinated by the European Civil Aviation Conference (ECAC)
  - Comprises 41 countries in Europe
  - ECAC Document 30 provides detailed guidelines on security
  - But ECAC's work was not legally binding
- Following the 09/11 events, EC has been given a mandate to develop a legislation on aviation security

## ▪ Regulation 2320/2002\*, 12 Chapters (Mandatory)

- Airport security
- Passengers and cabin baggage
- Hold baggage
- Cargo, courier and express parcels
- Mail
- Air carrier mail and materials
- Catering
- Air carrier cleaning, stores and supplies
- General aviation
- Staff recruitment and training, and security equipment.

*“Within 6 months following the entry into force of this Regulation, each Member State shall require its appropriate authority to ensure the development and implementation of a national civil aviation security quality control programme so as to ensure the effectiveness of its national civil aviation security programme”*

## Assessment of stakeholders' background and issues: Home ministries, customs and EC (4)

- **But, after 5 years, a need to review**
  - Key objective: Improving a balance between quality-of-security and operational operational implications
- **REGULATION (EC) 300/2008 . New Framework Regulation.**
  - Replaces Regulation 2320/2002
  - Published in OJ April 2008
    - Will apply no later than April 2010 (See Article 24)
    - The two years period allows for adoption of the complementary implementing rules rules
    - Leaves all details to implementing legislation
    - This allows greater flexibility to revise the rulemaking – both to add, modify and to remove
    - Greater flexibility to introduce new screening technologies
    - Reduction in the frequency of aircraft security checks and protection of aircraft .
    - Greater harmonization in cargo Simplification of the prohibited items list

## Assessment of stakeholders' background and issues: Home ministries, customs and EC (5)

- **Passenger data. Do they impact the processing time of passengers at the various steps of the ID control within airports ?**
- **The following slide (SITA) highlights the different categories of pax data:**

### **What Data is Available - Air Passenger?**

- **Legacy or Interactive APIS**
  - Passenger Biodata - Family & Given Name, Date of Birth, Sex, Nationality, Travel Document Type & Number, Expiry Data & Issuing State
  - Flight Details - Flight Number, Arrival/ Departure Date & Time, Embarkation & Disembarkation Points, Transit Flags, PNR Source/Reference
- **PNR Data from Reservation**
  - Full Itinerary including flight details, date & time (eg SIN-PVG, PVG-SEL, SEL-TYO, TYO-LAX)
  - Travel Agency details
  - History – when booking made and changed etc. plus all flights taken within the booking
  - Other persons booked or traveling together
  - Other bookings eg car, hotel bookings
- **Check-in Data**
  - Check-in Sequence
  - Baggage Information eg number of bags, bag tag number
  - Special Requests
  - Go Show ie no bookings made

# Assessment of stakeholders' background and issues: Home ministries, customs and EC (6)

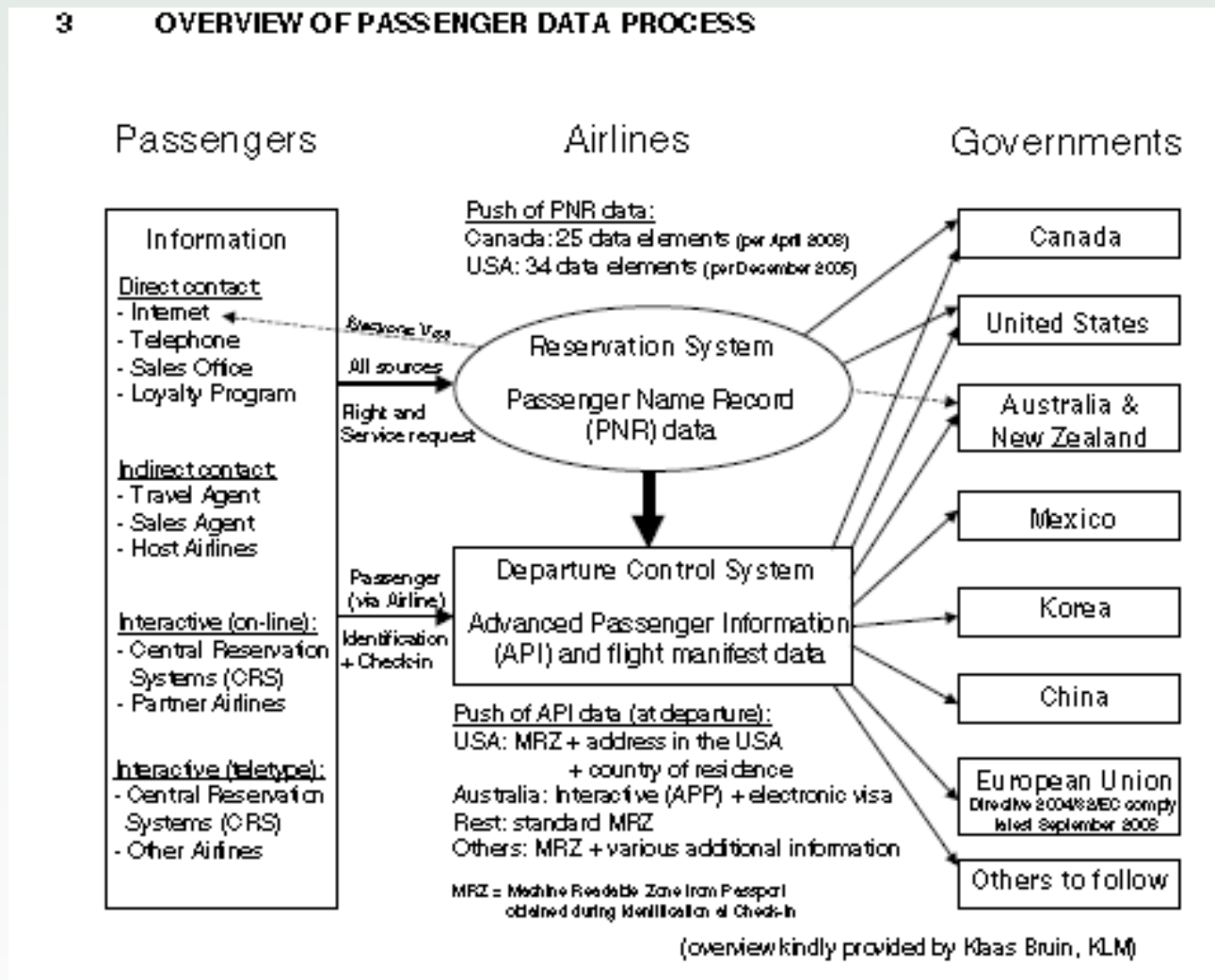
- **BACKGROUND INFORMATION ON PASSENGER DATA TRANSFER (From AEA, Association of European Airlines)**
- **PASSENGER DATA COLLECTED FOR AIR TRANSPORT PURPOSES**
  - In principle airlines (or travel agents) only collect passenger data for the purpose of commercial air transport. In most cases this process includes flight reservation from origin to destination (and back). The passenger might also have some special service requests which are registered to best serve the passenger according to his/her needs. All this information is registered as Passenger Name Record (PNR) in the Airline Reservation System. A frequent traveler can also become a member of the airline's loyalty program. This requires some additional personal information to be able to supply the passenger with all benefits (e.g. check-in for a flight based on the membership membership card / send membership information). This commercial information is temporarily stored in the Customer Relationship Management (CRM) database of the Airline.
- **REQUIRED DATA FOR GOVERNMENTS (1)**
  - PNR-data
    - Currently there are two countries requiring captured PNR data (the average of available data per passenger are 6-10 10 data elements). For the USA, access to the data is provided to the US Customs and Border Protection – US-CBP since early 2003, whereas for Canada, data are pushed to the Canadian Border Services Agency – CBSA since 11 April 2006. The data is sent to Canada at a fixed moment before a flight departs:
    - A Passenger Name Record (PNR), in the air transport industry, is the generic name given to records created by aircraft aircraft operators or their authorized agents for each journey booked by or on behalf of any passenger. The data is used by operators for their own commercial and operational purposes in providing air transportation services. The Industry Standards related to PNR creation are detailed in IATA's Passenger Services Conference Resolutions and in the ATA/IATA Reservations Interline Message
    - A PNR is built up from data that has been supplied by or on behalf of the passenger concerning all the flight segments segments of a journey. This data may be added to by the operator or his authorized agent, for example, changes to requested seating, special meals, additional services requested, etc.

# Assessment of stakeholders' background and issues: Home ministries, customs and EC (7)

- **BACKGROUND INFORMATION ON PASSENGER DATA TRANSFER (From AEA, Association of European Airlines)**
- **REQUIRED DATA FOR GOVERNMENTS (2)**
  - **API-data**
    - For immigration purposes Airlines have been obliged to collect passenger data and send Advanced Passenger Information (API) to a number of countries. Current API data is the passenger's full name, date of birth, gender, nationality and passport number. The collection and transmission of API passenger data is obligatory for USA, Canada, Mexico, South Korea. The number of countries requiring API data is increasing. The EU has also enforced EU Member States to enable API data requirements by a national authority for passengers travelling to, from and via the EU (based on EU directive 2004/82/EC). All countries that require API data, apart from the USA, restrict API data demands to data that can be stored in the Machine Readable Zone (MRZ) of a passport.
    - However, a number of countries do not have passports that are machine readable. This requires manual input, which is costly and slowing down passenger handling at check-in. The USA requires for non-US citizens passengers the address while staying in the USA and country of citizenship (both items are not on the MRZ). According to proposed rulemaking, data will have to be sent to the US-CBP either 60 minutes before departure of the flight or at the moment of check-in (APIS Quick Query – AQQ). Only after clearance of all passengers (based on AQQ or on batch process for all passengers between 60 minutes and departure) the flight is allowed to depart.
    - Advance Passenger Information (API) involves the capture of a passenger's biographic data and other flight details by the carrier prior to departure and the transmission of the details by electronic means to the Border Control Agencies in the destination country. API can also act as a decision making tool that Border Control Agencies can employ before a passenger is permitted to board an aircraft.
  - **Alternative: Advanced Passenger Processing - APP**
    - Australia requires passenger data before the flight departs. The Australian system is based on direct communication between the Australian Government and the passenger who is required to obtain an electronic visa (see example). The passenger receives a 'Transaction Reference Number' (TRN). This number is used by the airline for on-line verification during the check-in process with the Australian Government. If the verification is positive, the passenger is allowed to travel to Australia.

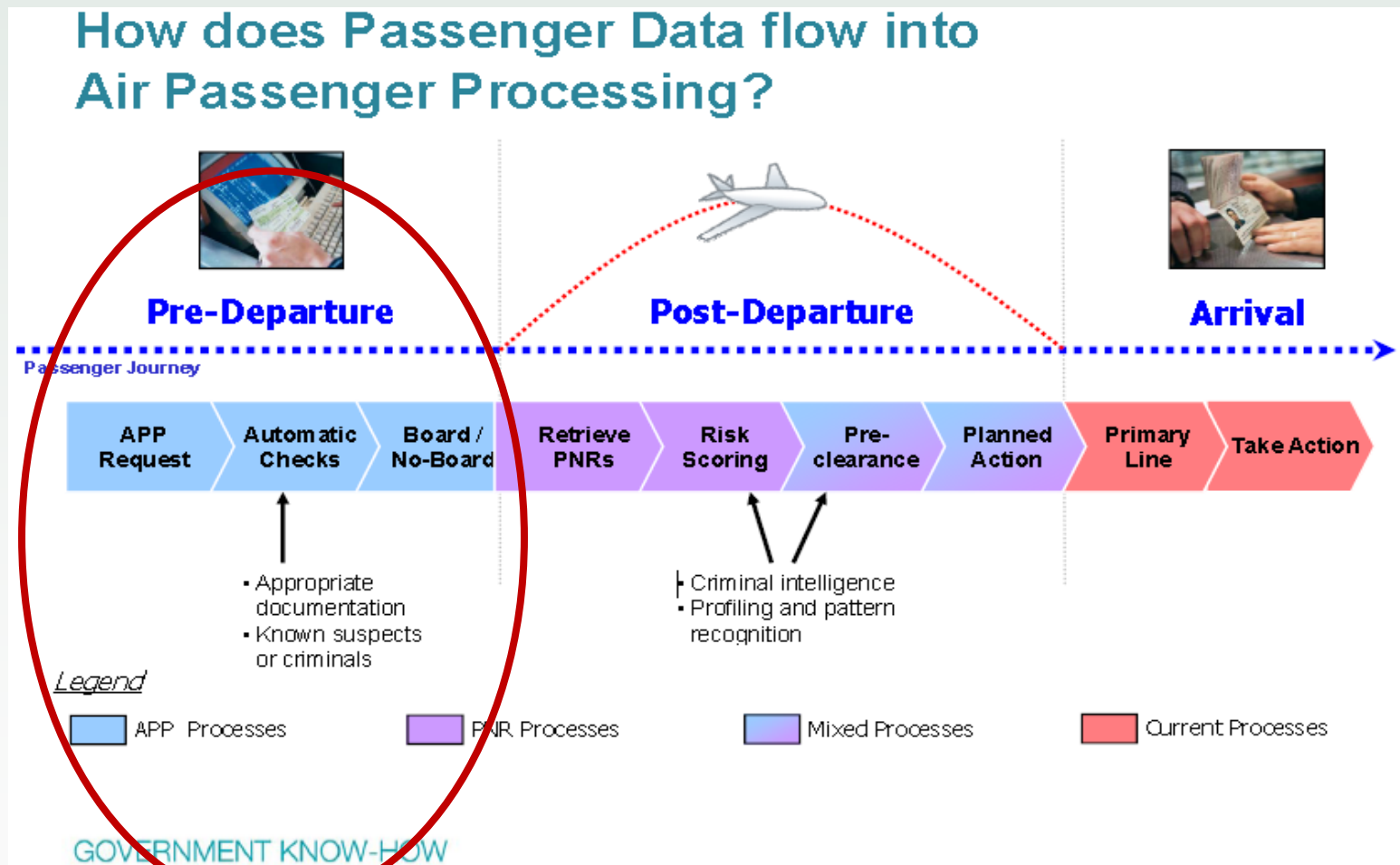
# Assessment of stakeholders' background and issues: Home ministries, customs and EC (8)

## How does it work (1) ?



# Assessment of stakeholders' background and issues: Home ministries, customs and EC (9)

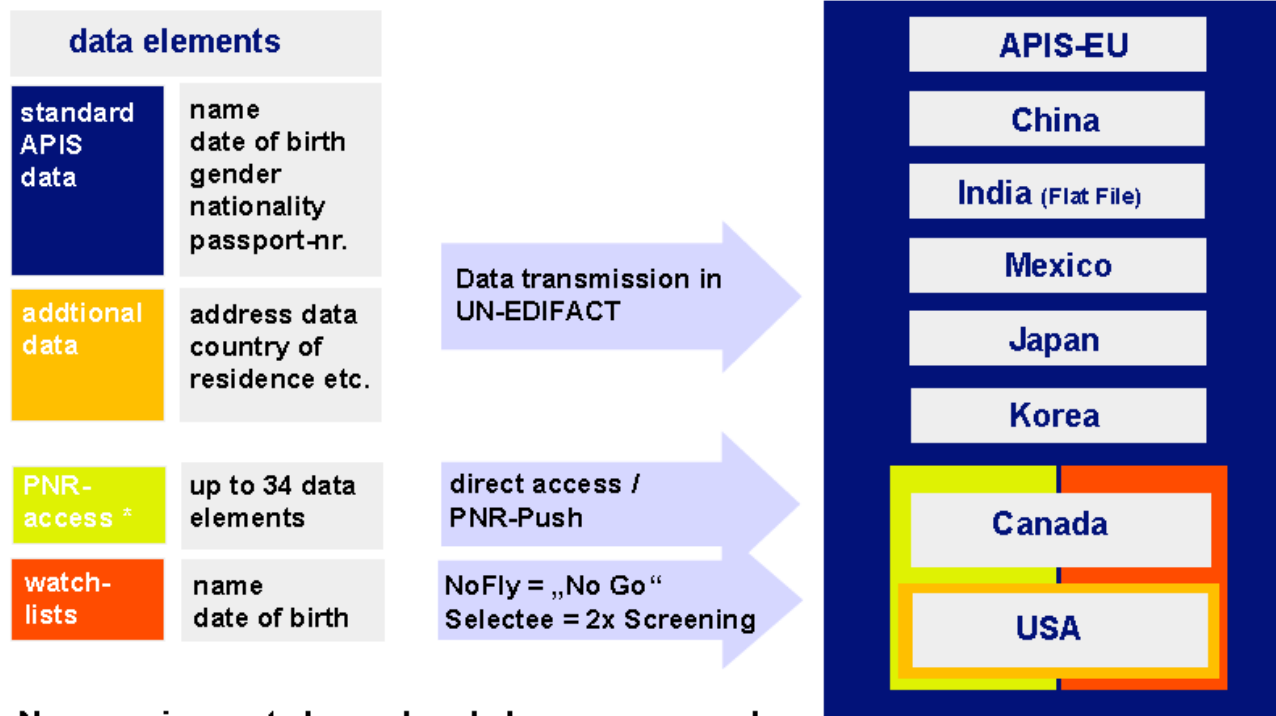
- **How does it work (2) ?**



# Assessment of stakeholders' background and issues: Home ministries, customs and EC (10)

## ▪ How does it work (3) ?

**The data requirements regarding passenger data are constantly increasing and represent a challenge for airlines.**



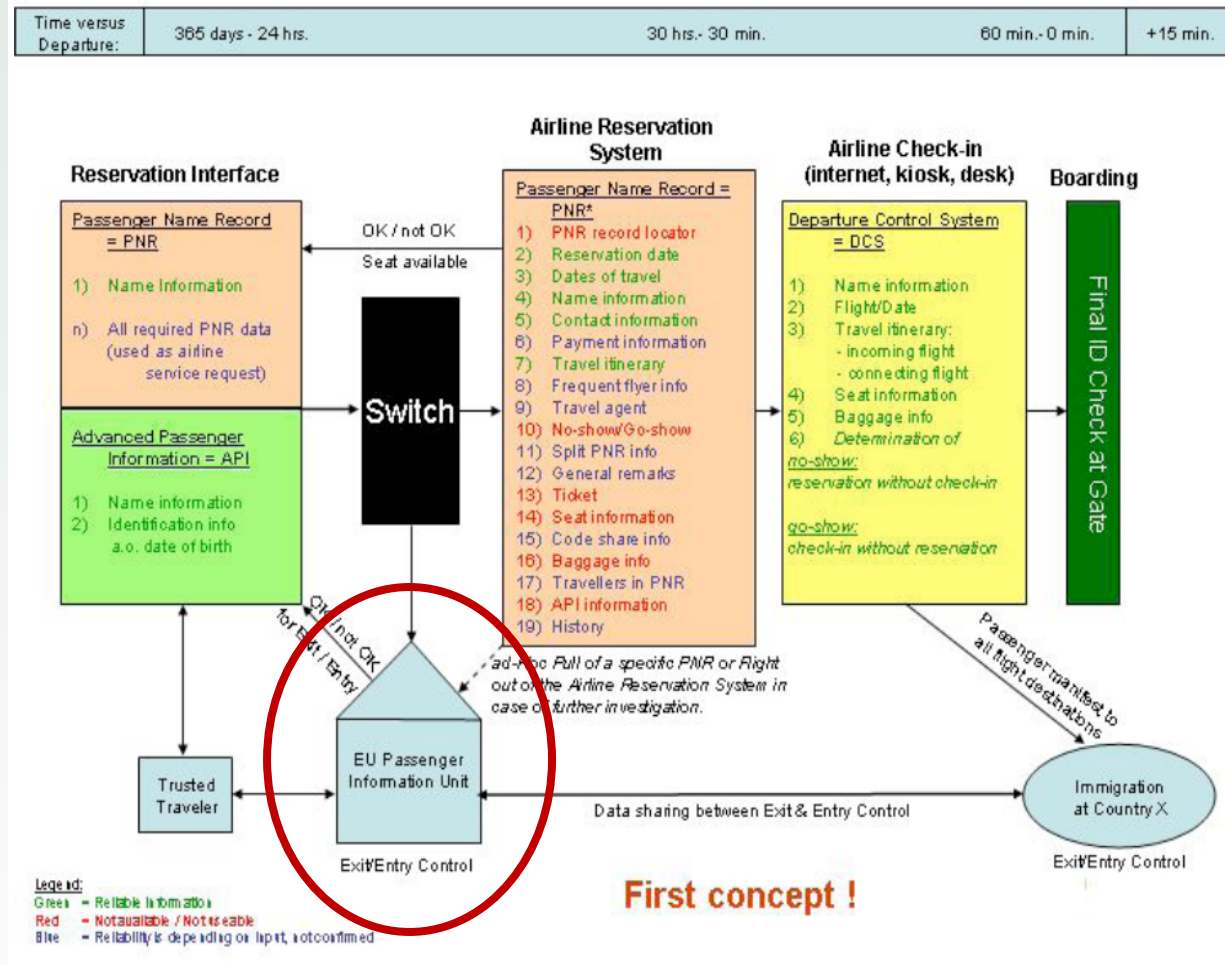
**New requirements have already been announced:**

- EU PNR
- US ESTA, US Visit Exit, Secure Flight
- APIS data transmission requirements imminent for UK (eBorders), Thailand, UAE, Indonesia, Kuwait, South Africa etc.

# Assessment of stakeholders' background and issues: Home ministries, customs and EC (11)

## How does it work (4) ?

- EU PIU program (2010)
  - Passenger Information Unit
  - Pax processing for all extra EU flights
  - How will stakeholders reconcile pax data with travellers showing at the airport ?



## Assessment of stakeholders' background and issues: Home ministries, customs and EC (12)

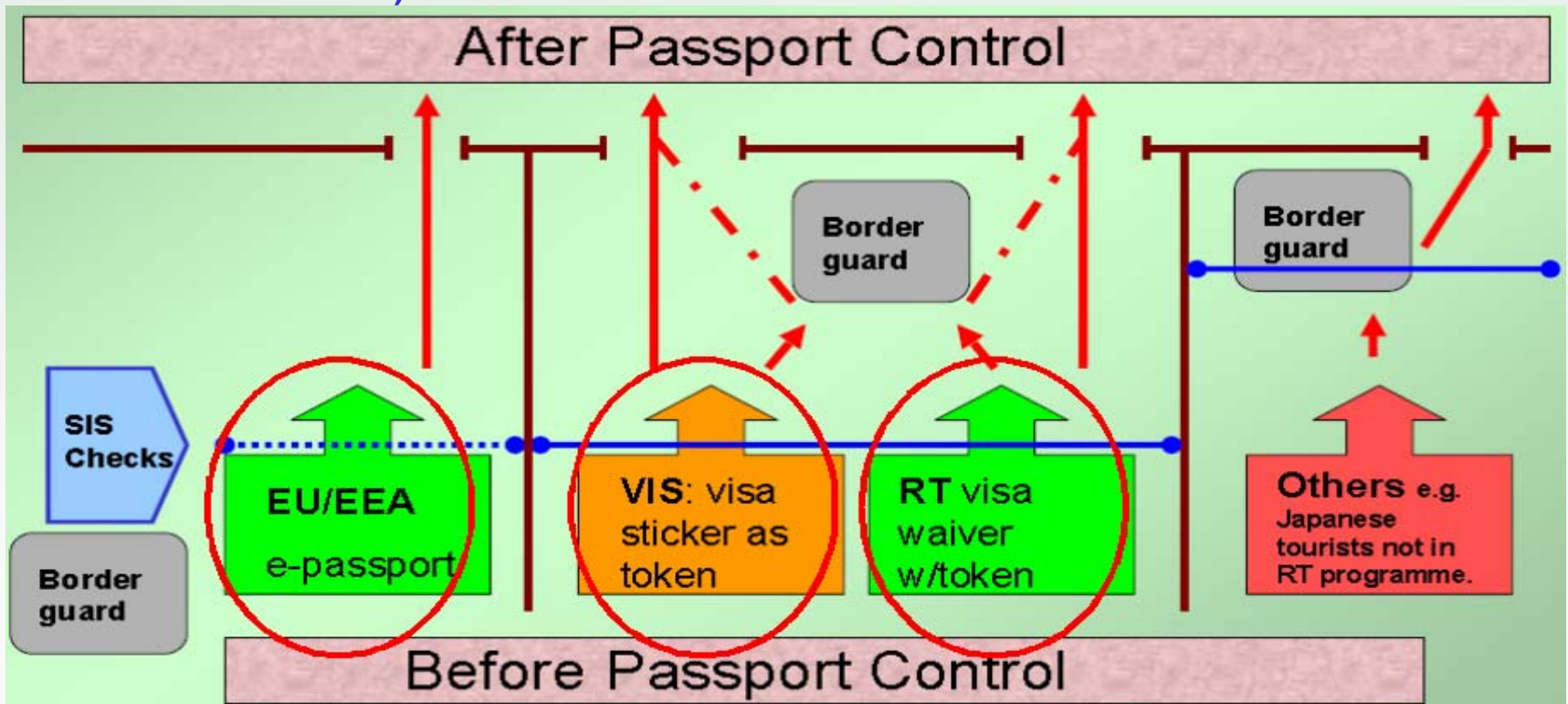
### • **The future (1)**

- **DG TREN is planning a Registered Traveler program at EU level and mutual recognition from the US + other countries .**
- **This initiative will be launched between 2010 and 2015**
  - **Centralized database will be managed by DG JLS (the procedure not clear yet)**
  - **Each country will manage its own system based on specific RFPs (Under definition)**
  - **The system will be linked with the US (Hit/ no hit, exchange of minimal data. Shall be clarified).**
  - **Access to the PNR or DCS is envisioned to confirm pax's registration by airlines**
  - **80% of border controls will be performed based on automated systems**
  - **In principle (To be confirmed), the procedure will be based on face recognition from from passports .**
  - **The consortium shall investigate the processing times for this technology**
    - **Assess the RAPID technology installed in Portugal (facial recognition)**
  - **Certain airports (AMS) are starting RT programs with the US, before a global system is agreed between TSA and DG JLS (the AMS Privium is based on IRIS recognition)**

## Assessment of stakeholders' background and issues: Home ministries, customs and EC (13)

- **The future (2)**

- DG JLS (Frank Paul)'s view on border control: 80% automated
  - 1/3 Schengen visas
  - 1/3 Automated border control for EU citizens
  - 1/3 Registered Traveller Program with third countries (US, Canada, Japan etc..) etc..)



# Assessment of stakeholders' background and issues: Home ministries, customs and EC (14)

## ▪ **Recommandations for ASSET**

- **ASSET shall take into account the delay to process the following data**
  - **API, Advance Processing Information, for several destination countries, done at the check in counters, if not filled in advance.**
  - **AQQ, API Quick Query, done at check in counters by airlines for certain countries (e.g. US)**
  - **Reconciliation between passengers and EU PNR forwarded to airlines 48hours prior departure.**
    - **The EU PNR is under consideration at DG JLS**
    - **The final version should be released this year for a roll out in Jan 2011 (To be confirmed)**
  - **What would be the procedure for the reconcile these ?**
  - **Provision of an ETA, Electronic Travel Authorization (TBD)**
    - **The concept of ETA, dates back from the Sydney Olympic Games, where the Australian Government authorized only duly registered pax, based on an electronic visa issuance**
    - **What time processing does it imply ?**
    - **Will it generate delays at security controls ?**
    - **These issues shall be considered in the scope of ASSET, as the implementation of an ETA is planned for 2012**
  - **What will be the impact of the EU Entry Exit program ?**
    - **Non Schengen residents shall undergo specific visa validity checks when both accessing and leaving the Schengen area**
    - **In principle, this will be done at the check in counter**

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    - Data Protection Commissioners
    - Home Ministries, Customs and EC
    - Professional organisations and standardisation committees
  - Operational Bottlenecks
  - Conclusions

# Assessment of stakeholders' background and issues: Professional organisations and standardisation committees (1)

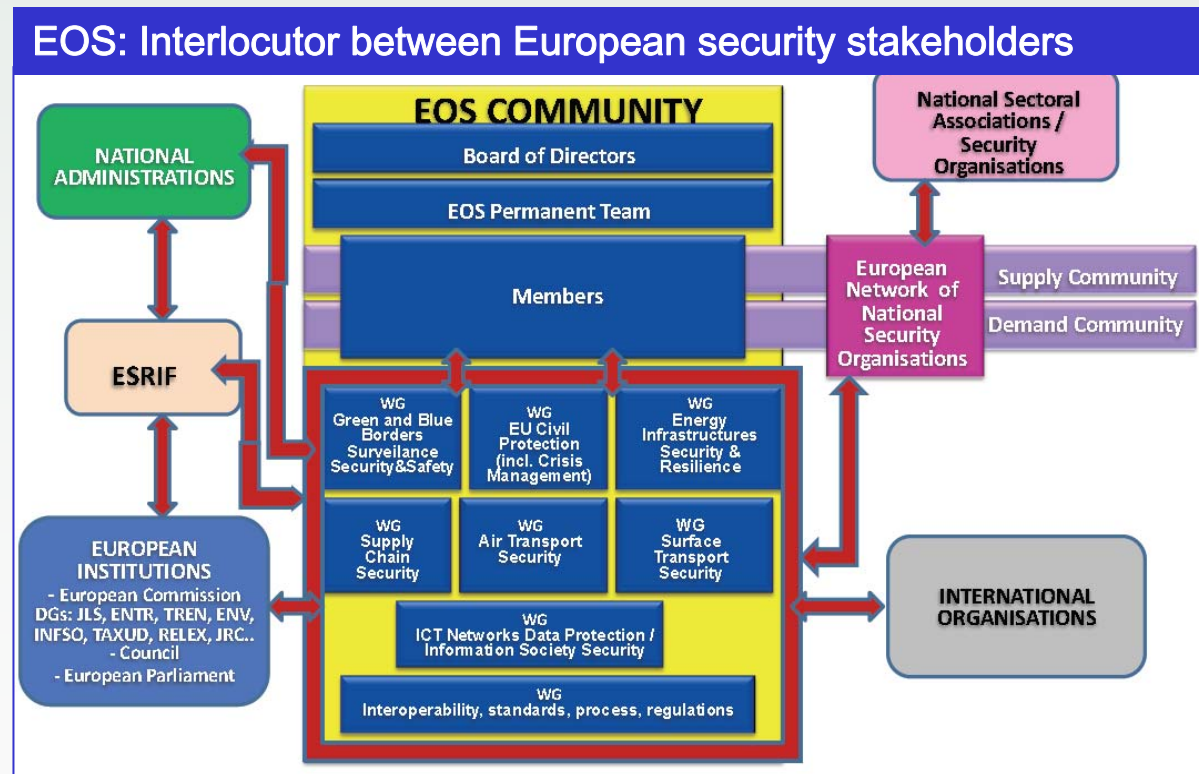
- **Selection of suitable aviation committees addressing pax facilitation and security**
  - ASD, Aerospace and Defence, Brussels
    - Security commission
  - IATA, International Air Transport Association
    - SPT, Simplifying the Passenger Travel , Interest Group
      - Security and passenger facilitation
    - StB, Simplifying the Business
      - Bar coded boarding passes (BCBP)
      - Common use self-service kiosks (CUSS)
      - IATA e-freight
      - Baggage Improvement Programme (BIP)
      - Fast Travel Programme
      - Simplifying the Business (includes all project updates)
  - ACI, Airport Council International
  - ACI Europe, Airport Council International, Europe
    - ACI standing committee (Europe and HQ)
  - Eurocae , European Organisation for Civil Aviation Equipment
  - ICAO, International Civil Aviation Organisation
    - Implementation and Capacity Building Working Group (ICBWG)
    - The New Technologies Working Group (NTWG)
  - EASA, European Aviation Safety Agency

## Assessment of stakeholders' background and issues: Professional organisations and standardisation committees (2)

- **Selection of standardisation committees addressing pax facilitation and security**
  - **ISO/IEC JTC 1/SC 37.**
    - This International Technical Committee coordinates standardisation activities related to human biometrics
  - **ISO/IEC JTC 1/SC 17/WG 3**
    - This international committee is in charge of standardizing the new travel documents under the guidance of ICAO
  - **CEN TEC 224,**
    - This committee has been launched by AFNOR, the French standardization committee to pave the way for the the definition of a common Citizen European Card with the view to leverage the digital economy in the context context of Enlarged Europe.
  - **CEN/TC 384 Project Committee Airport and aviation security services.**
    - Will work on a European Standard specifying requirements and quality criteria for the delivery of civil aviation aviation security services related to aircraft, airports and airlines requested by public and private clients, including organisation, personnel management and method of practice of private security companies offering offering these services. The first meeting of CEN/TC 384 has taken place in November 2008.

# Assessment of stakeholders' background and issues: Professional organisations and standardisation committees (3)

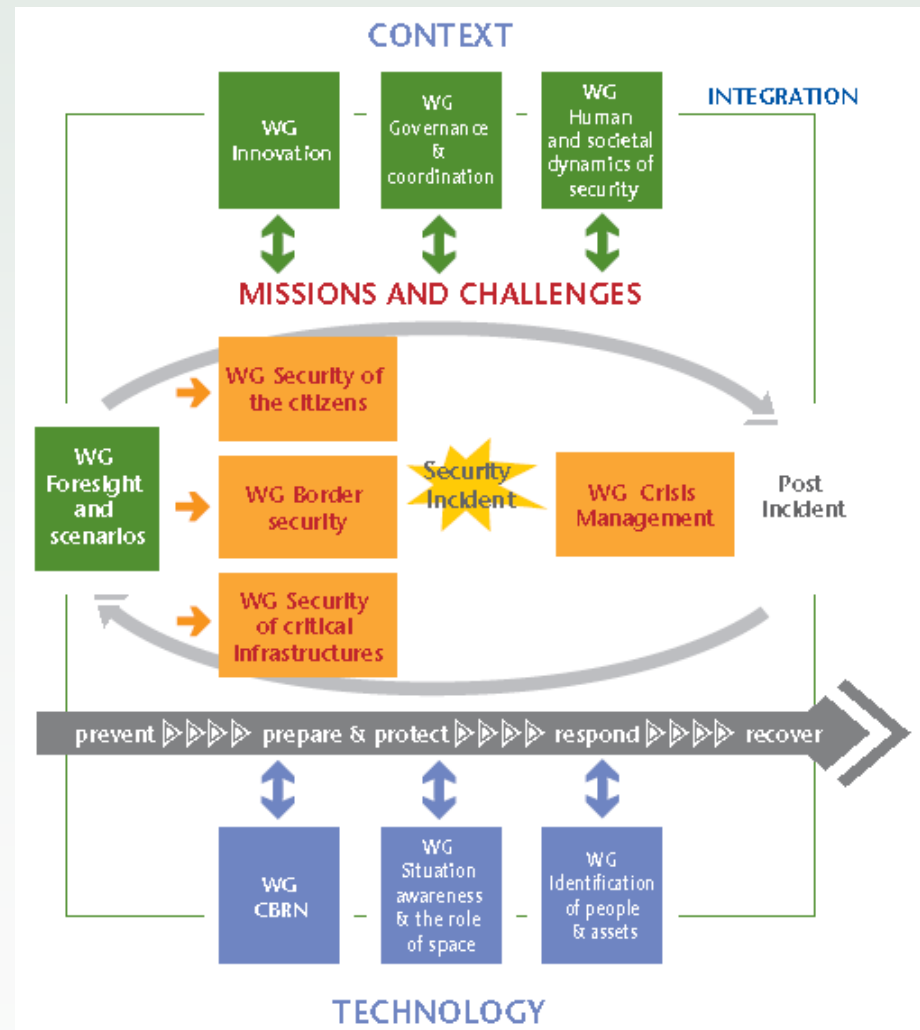
- Launched in 2008, as a subsidiary of ASD, EOS aims to bridge the gap between industry, EC and national administrations
- EOS is carrying studies (WP) on the following topics:
  - Border surveillance
  - Air transport security
  - Surface transport security
  - ICT networks, Data Protection, Information Society security
  - Supply chain security



## Assessment of stakeholders' background and issues: Professional organisations and standardisation committees (4)

### ▪ **ESRIF, European Security Research and Innovation Forum**

- To propose a European agenda for research and innovation in the field of security capable of guiding European institutions, governments and the private sector in the coming two decades.
- ESRIF's task is to present the end of 2009 a widely-shared perspective on European security research needs and priorities.



# Assessment of stakeholders' background and issues: Professional organisations and standardisation committees (5)

## ▪ **Recommendations for ASSET**

- During the course of the project, the consortium shall be able to identify new rules that might have a « time impact » (increasing / decreasing) on the pax airport process
  - **Types of committees**
    - Airlines (ATA, IATA, ERA)
    - Government aviation bodies (ICAO, ECAC)
    - Airports (ACI, ACI Europe)
    - Standardisation (CEN, Eurocae)
    - Industry bodies (ASD, EOS, ESRIF)
  - **Types of technology that might impact the airport processing**
    - Automated check in (kiosks, CUSS)
    - Automated border control
    - Body scanners, smart corridors
    - LAG, (Liquid And Gel) detection

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  - Conclusions

# Operational Bottlenecks

From the information gathered here critical elements as regards the airport ground processes can be derived. Concerning airport ground process the various stakeholders regard different (or sometimes similar) elements as critical. These events can be infrastructural like certain points within the airport operation process chain (passengers, baggage, turnaround) but can also be immaterial like regulations. These elements constitute the bottlenecks of operation and inefficiencies there will have to be tackled to achieve improvements in operation.

The identification of bottlenecks at this stage is of a qualitative nature and will have to be backed by research at a later stage of the project when actual operational data will be implemented in the simulation.

**Bottlenecks identified in Workpackage 1 are:**

- wayfinding
- check-In process
- security check process
- boarder control process
- implementation of new technology/automatisation, delay thereof
- information system/data interfaces
- transfer baggage handling system
- general turnaround time
- security regulations and necessity/ban of new equipment thereof

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  - **Conclusions**

# Conclusions (1)

- **Based on the current study, we propose the following assumptions**
  - **Pax rationale**
    - **Pax become more and more confident and familiar with IT devices**
      - **Consequence : There is a growing trend towards an extensive usage of IT devices which require all stakeholders to invest in new equipment to automate the airport processes**
  - **Airlines rationale**
    - **Strong trend towards automation (kiosks, smart boarding) and dematerialization (internet, 2D Barcodes, NFC) shall decrease pax processing times**
      - **Consequence : Check in and boarding times shall become quite similar across EU airports, irrespective of the airport**
    - **Strong trend towards pax data processing (PNR, API). These regulatory constraints shall increase the burden of airlines. It is too early at this stage to evaluate the time impact as the EU PNR is not yet implemented.**
      - **Consequence : Unless electronic ID documents are used (eID card, epassports), we shall anticipate an increase of the carriers activity which will compensate the current trend towards automation**
  - **Airport rationale**
    - **Strong trend towards additional services (mutualized kiosks) and the development of non aeronautical activities**
      - **Consequence : Even though check in is more and more dematerialized, the other POAs shall follow the same same trend, otherwise new bottlenecks will be generated**
  - **Government rationale**
    - **Strong trend towards increased pax data processing**
      - **Consequence : Unless both pax data processing and border management are automated, ID controls shall generate new delays (PNR, APIs, AQQ)**
  - **Security rationale**
    - **Strong trend towards automation of security checks (body scanners, LAG identification) and standardized methods and procedure (due to the CEN 384)**
      - **Consequence : Security processing shall become quite uniform among EU airports**

## Conclusions (2)

- Due to both regulatory constraints and automation devices, processing times for each pax **will become quite similar in the future at the various POAs across EU airports, provided that staff and equipment are suitably dimensioned.**
- The difference in processing times will mainly come from pax categories themselves (business, tourism, origin, family, etc...)
- A highly relevant difference will come the **distance between Point Of Activities, Activities,** as these might generate delays if pax are not informed and airport do not provide suitable infrastructures.