FastPass

A harmonized, modular reference system for all European automatic border crossing points

Proposal: **FASTPASS – 312583**

Topic SEC-2012.3.4-6 Enhancing the workflow and functionalities of Automated Border Control (ABC) gates – Integration Project

Markus Clabian
markus.clabian@ait.ac.at
+43 664-8157890

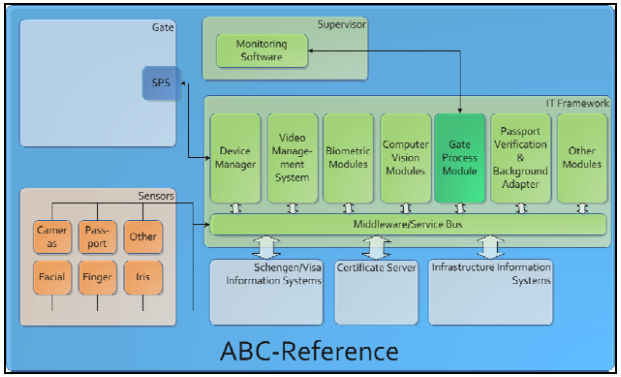
Talk Overview

- Motivation
- Project Overview, Objectives and Consortium
- Progress beyond …
- Project Outline, Workpackages
- Summary

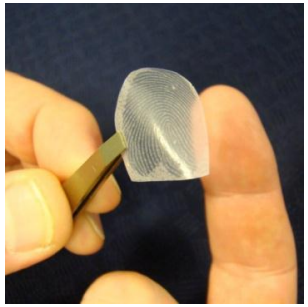
Motivation to employ Automated Border Control (ABC)

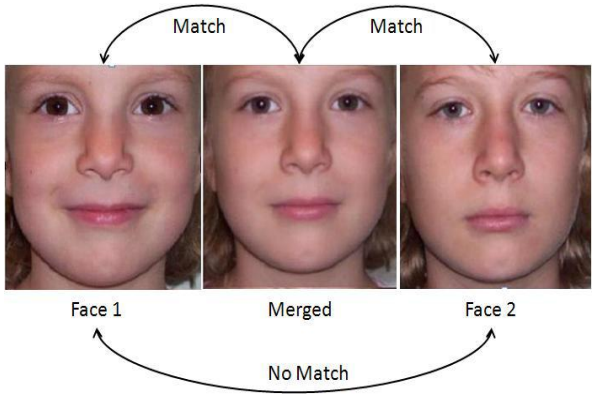
- Address **dramatically increasing** passenger flows
  - 700 million per year today
  - +75% at airports by 2030
- **Smart Border** initiative (entry-exit, registered traveller programme)
- Duties of border guards are **overwhelming**
  - Check document (more than 2000 different documents)
  - Check identity is correct
  - Check, whether the person has the right to enter
  - Decide, whether the person poses a potential threat

Challenges of current systems



- **Current systems are limited**
  - No usage by third country nationals
  - No usage by frequent travellers
  - No harmonization and no interoperability
  - No or weak integration into infrastructure processes
- **Current systems are not developed around the user**
  - No harmonized usage
  - No customer interaction and satisfaction management
  - Human factors are not analysized and considered
  - Privacy issues are not properly addressed
- **Current systems have not been security evaluated**
  - Passport security features are only partially checked
  - Biometric spoofing is not fully addressed
  - Passport document lifecycle is not fully addressed





Motivation for research on ABCs

- Systems are different
  - Overall usage/usability
  - System security
  - System operation (land, sea, air)
  - Border process
- European industry is fragmented
- Compliance with European societal values and policies
  - Data protection
  - Freedom of travel
  - Minimum privacy intrusion
  - Acceptance
- Benefits of time and resource savings

=> Contribution to a more convenient travel, while keeping security at a high level !

Project Overview

- FastPass will **develop and demonstrate a next generation automated border control gate solution** for different (land-, sea- and air-) border control points across Europe, through a three-pillar approach:
  - **user-centric:** design around the needs of travellers and border guards
  - **innovative:** research and development on the major technical and conceptual challenges for identification and verification with respect to spoofing, usability and data protection
  - **context aware:** demonstration pilots to verify the feasibility and full functionality under various conditions and constraints

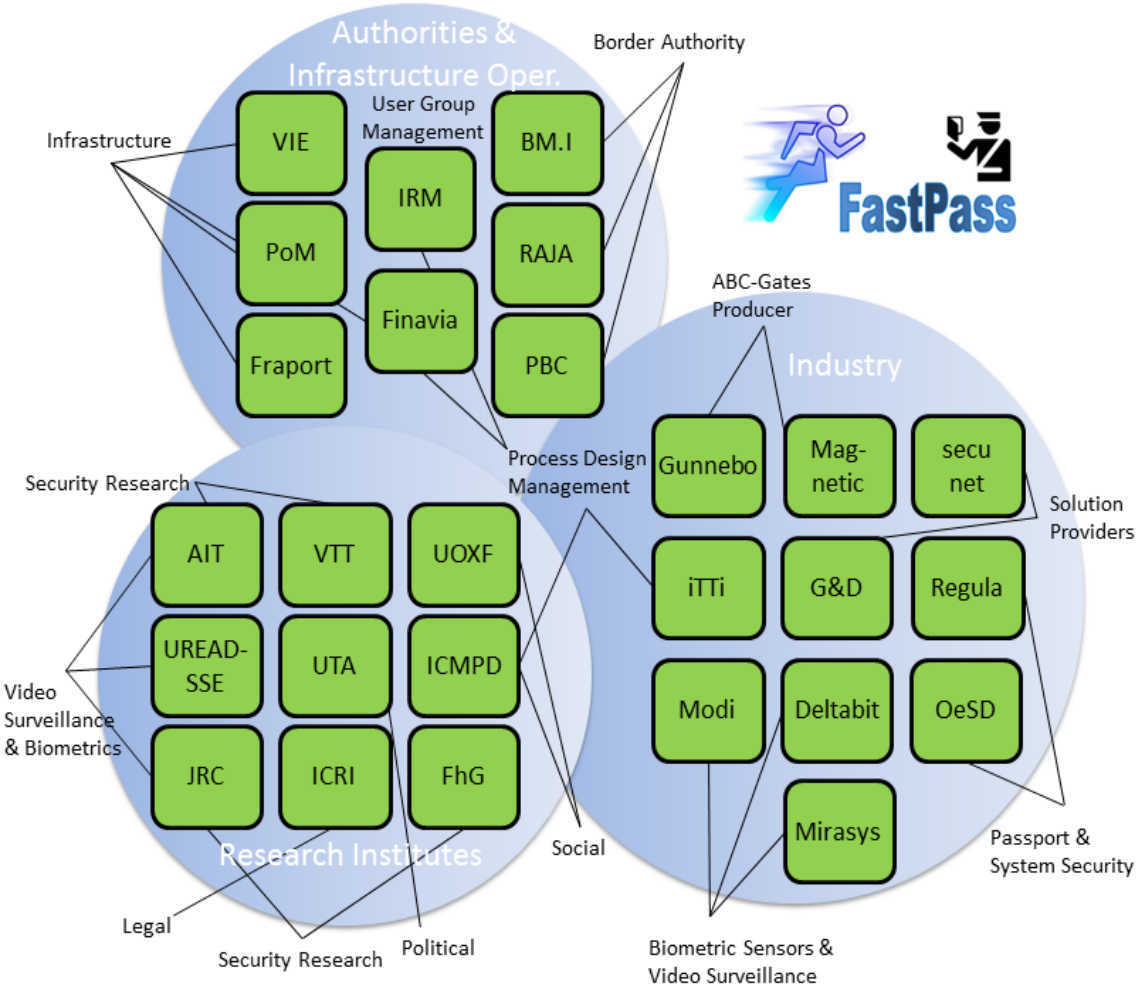
  FastPass will **design a modern border control process,** taking full account of privacy, social, ethical and legal issues. This will result in **smooth and fast border crossing** for legitimate travellers, **while ensuring a high level of security**.

  FastPass will result in a **harmonized ABC gate** contributing to **a modern and efficient management of the EU's external borders**.
- Project Duration: 4 Years
- Project Budget: approximately 15 Mio. €

Project Objectives

- Harmonized ABC solution that is able to integrate EES and RTP.
- Harmonized ABC usability, based on travellers' feedback and supporting the border guard to focus on potential risks.
- ABC solution supporting an innovative border crossing concept with interfaces to existing security and infrastructure processes demonstrated at air-, land- and sea borders.
- ABC reference architecture based upon innovative technology within interoperable modules.
- A European solution and a new European ABC suppliers network.

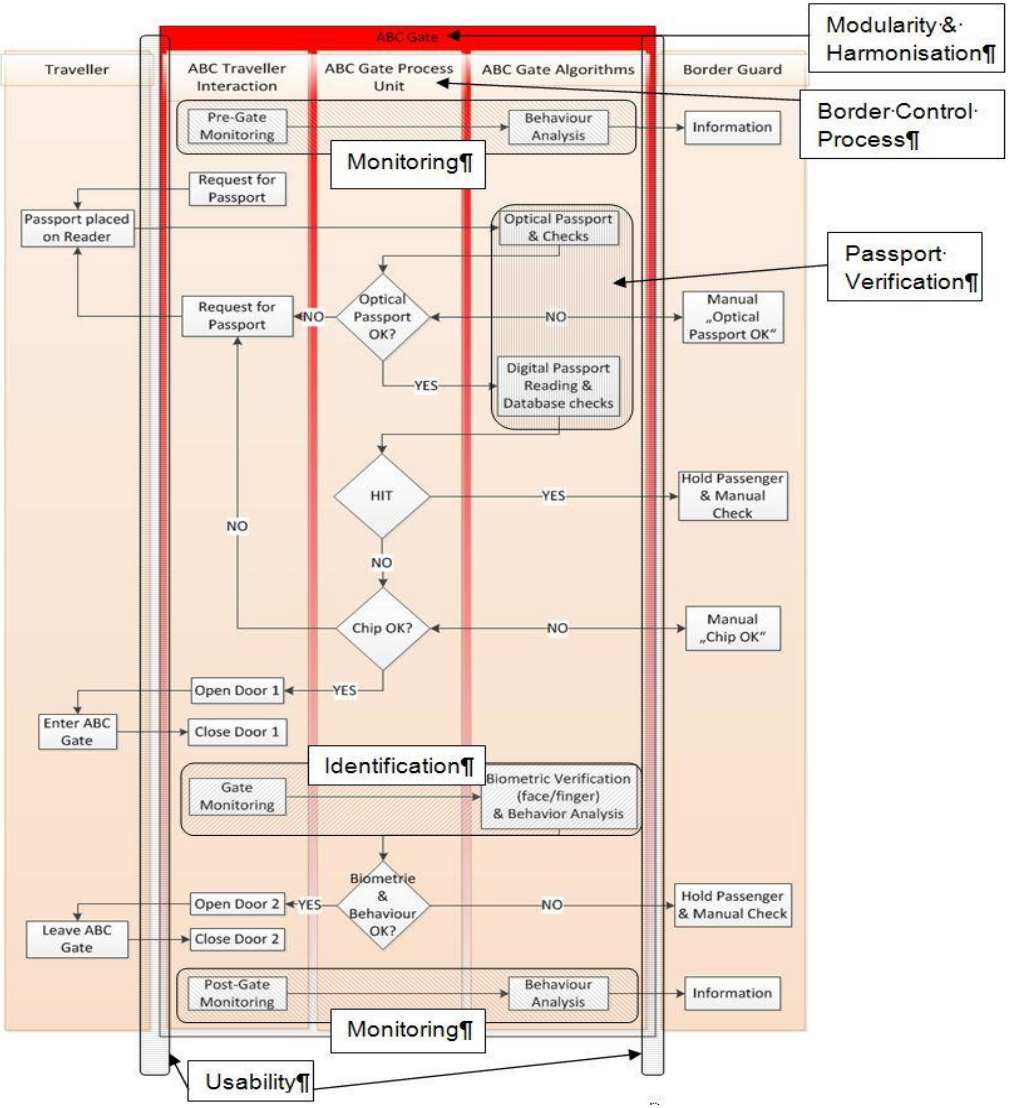
Consortium



Participant organisation name	Participant short name	Country
Austrian Institute of Technology GmbH	AIT	Austria
Teknologian tutkimuskeskus VTT	VTT	Finland
Federal Ministry of the Interior, Republic of Austria	BM.I	Austria
Österreichische Staatsdruckerei GmbH (Austrian State Printing House)	OeSD	Austria
Fraunhofer IOSB	FhG	Germany
Interdisciplinary Center for Law and ICT - K.U. Leuven	ICRI	Finland
Finnish Border Guard RVL	RAJA	Finland
secunet Security Networks AG	secunet	Germany
Mirasys Ltd	Mirasys	Finland
Regula Baltija Ltd.	Regula	Latvia
University of Reading	UREADSSE	UK
International Centre for Migration Policy Development	ICMPD	Austria
Tampereen yliopisto (University of Tampere)	UTA	Finland
Gunnebo Entrance Control Ltd	Gunnebo	UK
Giesecke & Devrient GmbH	G&D	Germany
MODI Modular Digits GmbH	Modi	Germany
Magnetic Autocontrol GmbH	Magnetic	Germany
European Commission - Joint Research Center	JRC	n.a.
ITTI Sp. z o.o.	ITTI	Poland
Deltabit Oy	Deltabit	Finland
Oxford Internet Institute, University of Oxford	UOXF	UK
Polish Border Guard	PBG	Poland
Finavia Cooperation	Finavia	Finland
Port of Mykonos	PoM	Greece
Fraport AG	Fraport	Germany
Flughafen Wien AG (Vienna International Airport)	VIE	Austria
Intrepid Minds	IRM	UK

Progress beyond … Topics

- Identification (WP 5)
- Monitoring and Surveillance (WP 5)
- Usability and Crossing Speed (WP 6)
- Modularity and Harmonization (WP 8, WP 9)
- Border Processes and Process Integration (WP 6,WP 7, WP 8)
- Passport Verification (WP 4)



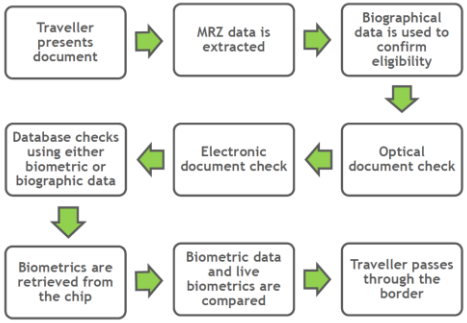
Progress beyond …(1/3)

	Gaps and limitations of SotA	How FastPass innovates
Identification	Biometrics not exploited - Single feature - Bad quality	Intelligent combination using full richness of features; investigate additional features; Enhanced feature aquisition
	Spoofing and deception not investigated	Non-deterministic effects Research on deception
Monitoring	Behaviour analysis has limited detection quality in uncontrolled environments (small controlled areas)	Behaviour analysis in pre- and post gate area. Check for non-compliance or avoidance tactics.
Usability	Lack of universality in passenger experience Differences are in the looks, but also in functionality and usage.	Support harmonised user experience for both the end-user and the border officer. End-users participation in all project phases

Source: Nec

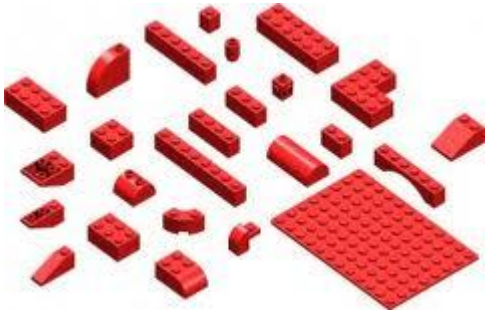
Progress beyond …(2/3)

	Gaps and limitations of SotA	How FastPass innovates
Usability	No adequate education and information No positive experience	Creating positive awareness and education
	No efficient course of passenger	Gate design to ensure efficiency and smooth passenger process.
Process	ABC Gates procedures differ from country to country.	Provide knowledge on border control processes- including ABC Gates, in EU member states
	Innovative technologies are available, but not integrated process-wise	Evaluation of novel technologies and its influence to security and speed of border crossing

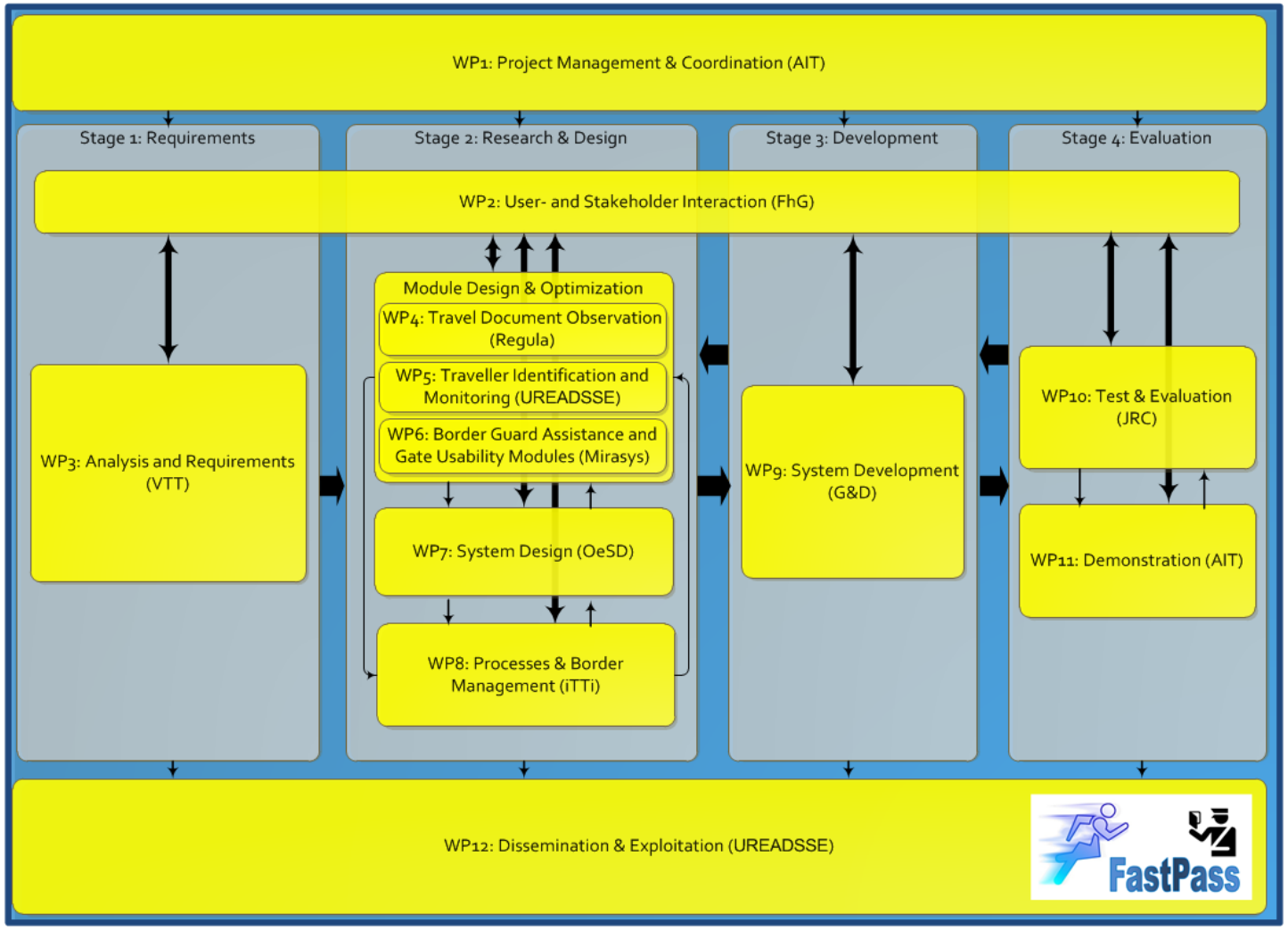


Progress beyon …(3/3)

	Gaps and limitations of SotA	How FastPass innovates
Modularity	Proprietary interfaces Interoperability gaps	Open, standardized architecture for ABC systems and a reference implementation
	Market fragmentation Vendor lock for the users	Highly modular, interfaces are published as open specifications. Facilitate establishment of the European ABC components market.
Passport verification	Spoofing and identity fraud have not been investigated	Enhanced checks of security features.
	Security features are not fully exploited	Improve the overall inspection abilities.

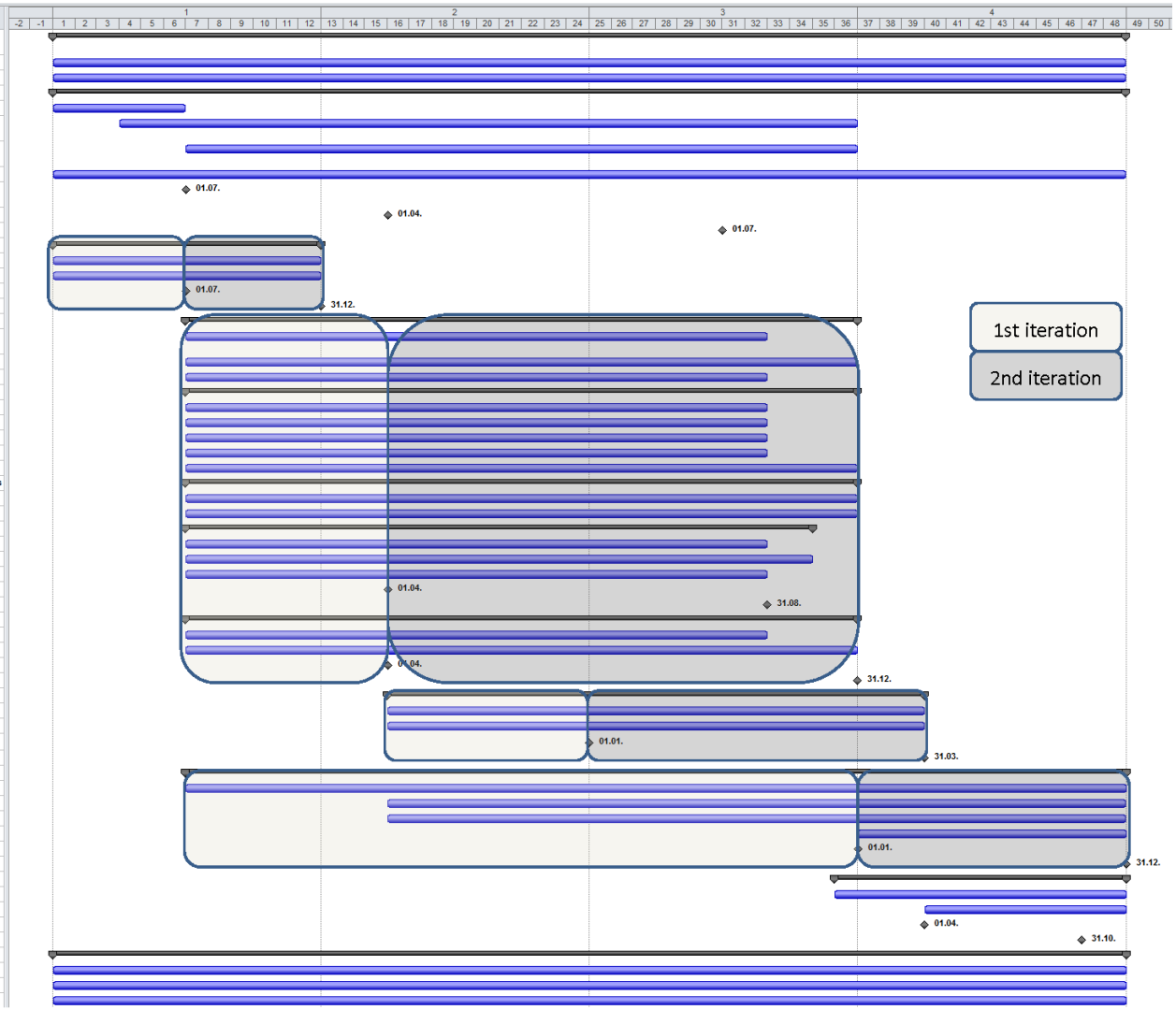


Project Plan



Project Plan

	Task/MS Nr.	Vorgangsname
1	**WP 1**	**Project Management, Communication and Coordination**
2	T 1.1	Consortium Management
3	T 1.2	Monitoring and Reporting
4	**WP 2**	**User and Stakeholder Interaction**
5	T 2.1	Establishment of Stakeholder Groups
6	T 2.2	Stakeholder Support and Guidance of Development Activities
7	T 2.3	Interdisciplinary Design of a Concept for Acceptance and Privacy
8	T 2.4	Impact and Risk Assessment
9	*MS 1*	*User groups and PAB established, Requirement Specification Draft*
10	*MS 6*	*Stakeholder Interaction (First stage) finished*
11	*MS 8*	*Stakeholder Interaction (Second stage) finished*
12	**WP 3**	**Analysis and Requirements**
13	T 3.1	Analysis of current and future scenarios
14	T 3.2	Requirements and evaluation/success criteria
15	*MS 2*	*Requirement Specification Draft*
16	*MS 3*	*Requirement Specification Final*
17	**WP 4**	**Travel Document Observation**
18	T 4.1	Automated Inspection of Optical and Electronical Security Features
19	T 4.2	Document Verification Module
20	T 4.3	Background Adaptor
21	**WP 5**	**Traveller Identification and Monitoring**
22	T 5.1	Evaluation of Applicable Technologies and Sensors
23	T 5.2	Development of Advanced Biometric Identification
24	T 5.3	Biometric Optimised Engine (Face, Fingerprint, Iris)
25	T 5.4	Development of Advanced Video Surveillance
26	T 5.5	ABC Detection and Alarming
27	**WP 6**	**Border Guard Assistance and Gate Usability Modules**
28	T 6.1	Border Guard Assistance Modules
29	T 6.2	Gate Usability Modules
30	**WP 7**	**System Design**
31	T 7.1	System Design
32	T 7.2	Risk analysis
33	T 7.3	System Security and Availability
34	*MS 5*	*System Design Draft*
35	*MS 9*	*System Design Final*
36	**WP 8**	**Processes and Border Management**
37	T 8.1	Processes and Monitoring
38	T 8.2	Operation and Training
39	*MS 4*	*Module and Process Design Draft*
40	*MS 10*	*Module and Process Design Final*
41	**WP 9**	**System Development**
42	T 9.1	Software Development
43	T 9.2	Integration and Setup of Test-Systems
44	*MS 7*	*System Draft*
45	*MS 12*	*System Final*
46	**WP 10**	**Evaluation**
47	T 10.1	Security Asssessment Methodolody
48	T 10.2	Privacy Impact Assessment
49	T 10.3	Evaluation of System & Processes
50	T 10.4	Recommendations and Best Practice Report
51	*MS 11*	*Evaluation Report Draft*
52	*MS 15*	*Best Practice Report, Evaluation Report Final*
53	**WP 11**	**Demonstration**
54	T 11.1	Demonstrator Integration
55	T 11.2	Demonstrator Operation
56	*MS 13*	*Start Demonstrations*
57	*MS 14*	*End Demonstrations*
58	**WP12**	**Dissemination and Exploitation**
59	T 10.1	Dissemination
60	T 10.2	Exploitation
61	T 10.3	Standardisation Process



Summary

- *Compliance with European societal values and policies despite dramatically increasing passenger flows*
- *Optimize ABCs to user needs (smooth, fast and secure)*
- *Advance security and border control processes*
- *Achieve technological leadership*
- *Establishing an European ABC solution*

According to the motto of the EU:

***„In varietate concordia“* - „United in Diversity“ - „In Vielfalt geeint“**

AIT Austrian Institute of Technology

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Markus Clabian
Safety & Security Department
Video- and Security Technology

AIT Austrian Institute of Technology GmbH
Donau-City-Straße 1 | 1220 Vienna | Austria
M +43(0) 664-8157890 | F +43(0) 50550-4150
markus.clabian@ait.ac.at | http://www.ait.ac.at