THALES

Università di Pisa

NETstudio

MICC
Media Integration and Communication Center

Università degli Studi Firenze

WiNet

RESOLVO
RESPONSIBLE SOLUTIONS

magenta
softwarelab

QUID
ICT for Business

The results reached today,
thanks to strong partner collaboration
and integration of their different expertise,
helped PITAGORA Project to win
the Innovation Award
within the category
"Grandi Imprese"
awarded by the
Tuscan Regional Government
on 7th March 2014.

PITAGORA

A DEMONSTRATION
EVENT
will be organised in
SPRING 2015.

DO NOT MISS IT!

For more information follow us on Facebook and on the Web!

Regione Toscana

POR CReO 2007-13

Repubblica Italiana

Unione Europea

Le ali alle tue idee

PITAGORA

PITAGORA PROJECT

Innovative technologies and processes for Airport Management R&D project co-funded by Tuscany Region

FINAL NEWSLETTER

March 2015

www.pitagora-project.eu

PITAGORA's Partners have been cooperating for more than two years on the study and development of an Innovative Airport Management system improving existing Integrated Platforms for Airport Operations in terms of:

- Modularity, multiservice, expandability
- Security and privacy
- Enhanced airport cooperation and crisis management
- New algorithms for Airport processes optimisation
- Energy efficiency and environmental impact
- New services for improved passenger experience

After 2 years of cooperation, the following goals have been reached within the Design Project phase, for four functional modules.

MODULE 1 - Airport Collaboration module

Thales has designed and developed the airport collaboration module. It provides functionalities related to:

- the Airport Collaborative Decision Making (A-CDM), with focus on the three A-CDM phases (inbound, Turn-round, Outbound) realized through the integration of airport AODB;
- tracking and monitoring of real time aircraft routes realised by the integration of ADS-B equipment and Asterix data; aircraft data model is provided, aircraft tracking and localisation in real time on the geo-referenced map;
- monitoring of operational KPI module in order to calculate and display airport and aircraft delays indicators;
- collaborative tool for information sharing based on user chat and bulletin board.

MODULE 2 - Resources Optimisation module

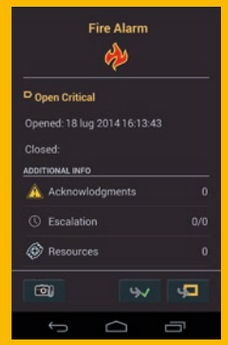
Project Partners have designed and developed the airport resource optimisation module. It provides functionalities related to:

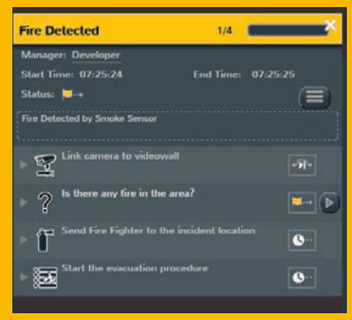
- Passengers flow monitoring and management: Pitagora platform provides the capabilities of queue and encroachment detection, with the possibility to measure in real time the queue holding time. Video analysis algorithms use the latest technologies for flow monitoring, and depth cameras (RGB-D) are played;
- Passengers flow forecasting: it provides a queue forecasting module to forecast people presence in queues in order to be able to schedule in advance all the necessary resources, and to inform previously passengers of expected delays;
- Automatic outdoor area inspection: it provides hardware and software tools to record and monitor the relevant activities and support the maintenance team on daily operations. It ensures outdoor area inspection in maintenance processes and allows operators to electronically fill the outdoor area inspection report according to ICAO/IATA rules.
- Automatic maintenance tasks assignment according to optimisation policies;
- Wifi resource tracking: airport trolley use case;
- WSN module: it provides environmental information to the platform in order to detect immediately possible issues on environmental aspect.

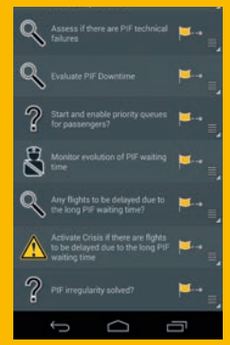
MODULE 3 - Passenger Experience module

Project Partners have designed and developed the airport passenger experience module. It provides functionalities related to:

- Airport social network: it aims to increase the passengers' experience and the passengers' satisfaction providing information based on user profiling acquired from social network integration and airport's activities;
- Mobile NFC boarding card: possibility to generate and automatically validate an electronic NFC boarding card speeding up screening processes;
- Digital kiosk: it provides broadcast information and video to passengers and allows passengers to access updated information and video topics directly on the kiosk;
- Automatic boarding card and baggage validation: the module is able to validate a standard IATA boarding card and check automatically the dimension of hand baggage avoiding delays during boarding processes.







MODULE 4 - Crisis Management Module

Thales has designed and developed the crisis management module. It provides functionalities related to:

- Critical alarm detection and management. The functionality allows to open and manage alarms according to their severity, configuring escalation rules, number of required acknowledgments and providing its description and georeferenced position on real word or indoor environment;
- Alarms management according to airport procedures. The functionality allows the dispatching of resolution procedure's tasks only to involved stakeholders and the overall monitoring of resolution process;
- Historical database of alarms for a posteriori analysis;
- Mobile application to manage critical alarm directly on the airport area.

Since confidentiality, integrity, and privacy are a MUST for critical infrastructure such as airports, the platform solution design has been based on standard SOA paradigm, by using a Public Key Infrastructure, securing the communication channels, and employing a flexible system for context-aware access control, making PITAGORA more secure and safer.

The project is now at the ending phase after an iterative three step cycle of development, integration and testing in order to deliver the integrated platform prototype by March 2015.