



## Security of Aircraft in the Future European Environment

### BACKGROUND

The SAFEE IP is a large integrated project designed to restore full confidence in the air transport industry. The overall vision for SAFEE is the construction of advanced aircraft security systems designed to prevent onboard threats. The main goal of these systems is to ensure a fully secure flight from departure to arrival destination whatever the identified threats are.

### PROJECT OBJECTIVES

The project baseline is past experience, which has demonstrated that hostile persons may go through the different airport controls and security measures, access an aircraft, and even initiate hostile actions. There is therefore a need to secure the aircraft itself as the last barrier to attacks. The project is focused on the implementation of onboard threat detection systems and the provision of reliable threat information to the flight crew. In the decision making and response management process, secured air/ground exchange of threat level information is foreseen. SAFEE also anticipates the future use of the European Regional Renegade Information Dissemination System (ERRIDS) by all organizations involved in response to acts of unlawful interference on-board aircraft.

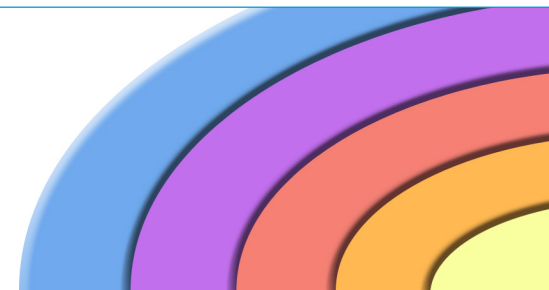
One of the short term goals of SAFEE is to influence security bodies at National level, at European level (proposal to EU directive 23 20 and to ECAC Doc 30) and at world level (proposal to Annex 17 of ICAO-OACI).

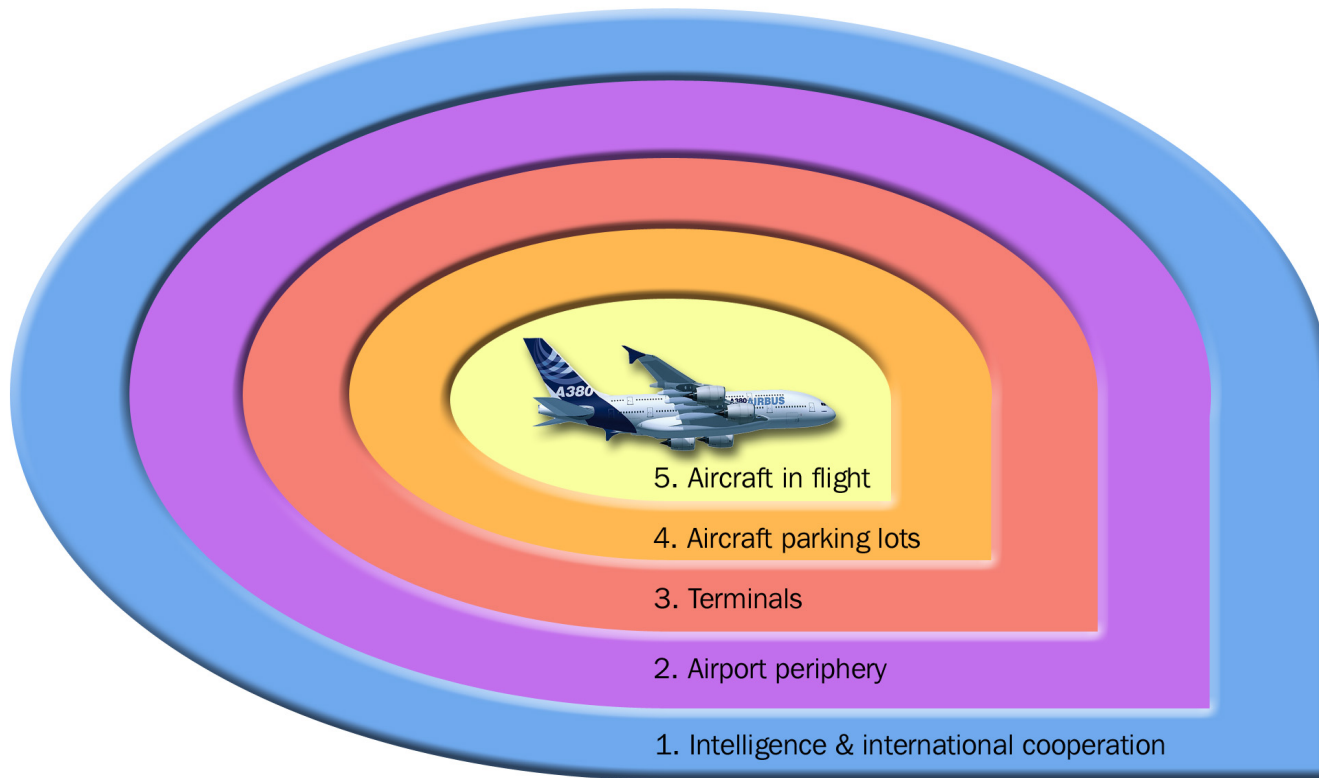
### DESCRIPTION OF THE WORK

For reaching these objectives SAFEE has 5 key activities (Sub-Projects):

1. Onboard Threat Detection System (OTDS): an integrated threat detection system based on processing of multiple sensor information is being specified, prototyped and evaluated.
2. Threat Assessment and Response Management System (TARMS): an integrated information management system and decision support tool
3. Flight reconfiguration: includes an Emergency Avoidance System (EAS) and a study of an automatic guidance system to control the aircraft for a safe return
4. Data Protection System (DPS) securing all the data exchanges (in and out the aircraft).
5. Security evaluation activities, including legal and regulatory issues threat assessment, operational concept development, validation approach, economic analysis, and training.

The proponents are major European industrial actors of the Aeronautical sector associated with a high level research centre, several relevant SMEs and some specialised universities. A certain degree of confidentiality on proposed sensors and technologies will, for obvious reasons, be imposed on the obtained results.





## EXPECTED ACHIEVEMENTS

Validation of SAFEЕ systems will be performed at 3 sites:

- The evaluation campaigns of the Onboard Threat Detection System (OTDS) will be conducted in a mock-up of an Airbus aircraft cabin at Airbus' Hamburg site.
- The final validation of TARMS will be built around the Generic Research Aircraft Cockpit Environment (GRACE) at NLR in Amsterdam.
- The capability of EAS will be validated on a Thales-Avionics simulator (in Toulouse).

The DPS securing all the data exchanges — both inside and outside the aircraft — will be validated at each site where it is possible to do it.

The project has established a large User Club, in which some 100 stakeholders, security experts, and operational experts, from various European organisations are represented. The participants include National Governments, Pilots Associations, Airlines and Trade Unions.

Title: Security of Aircraft in the Future European Environment

Acronym: SAFEЕ  
 Contract No.: AIP3-CT-2003-503521  
 Total Cost: 35,824 M•  
 EU Contribution: 19,450 M•  
 Starting Date: 01/02/2004  
 Duration: 48 months  
 Web-site: secure web site with password access

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Athena GS3 Security Implementations Ltd	IS
Selex Communications S.p.A.	IT
SITA Information Networking Computing B.V	NL
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