EU/Eurocontrol Aviation Security Research

Fred Abbink

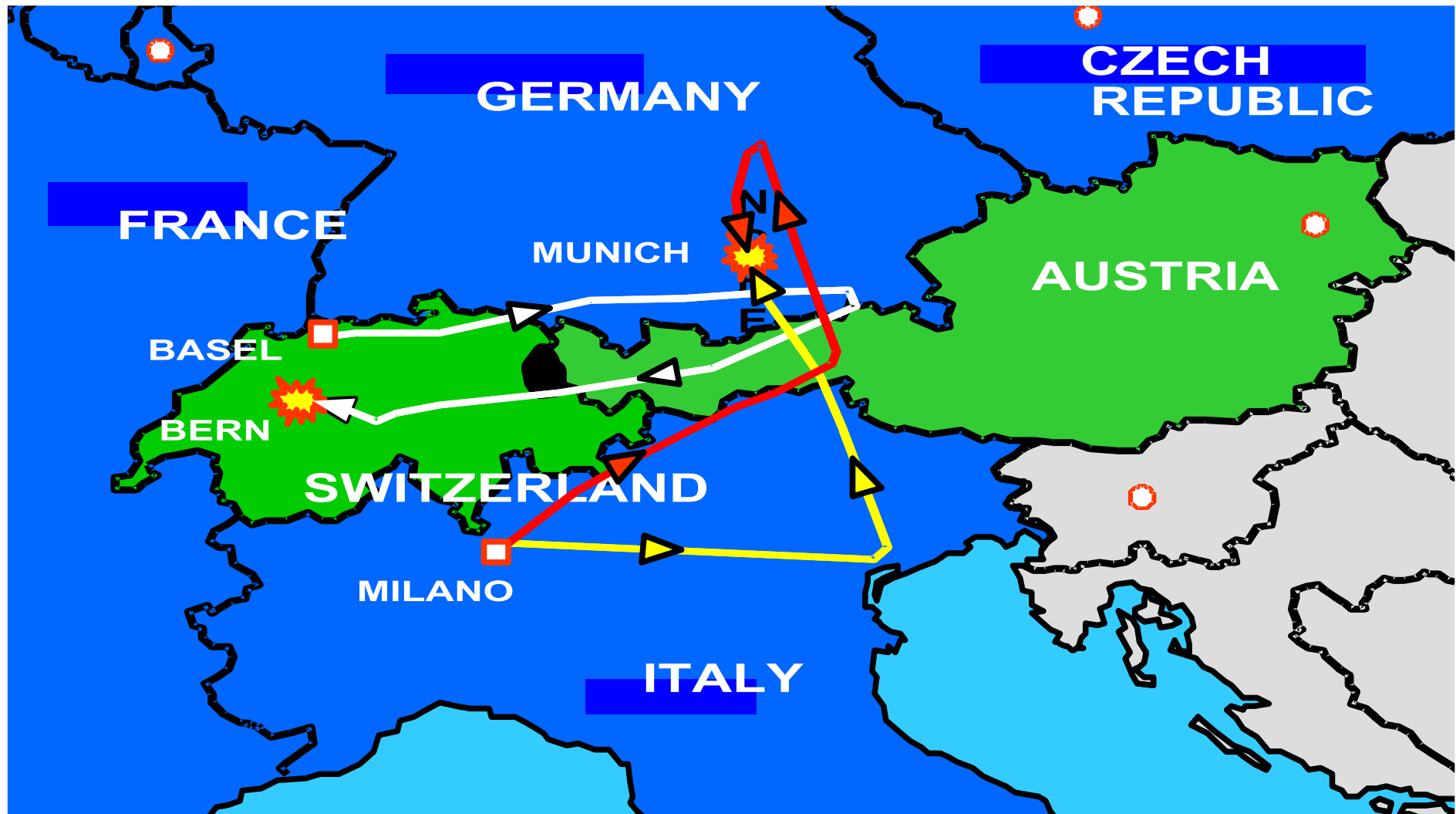ICAS Mykonos; 3 October 2005

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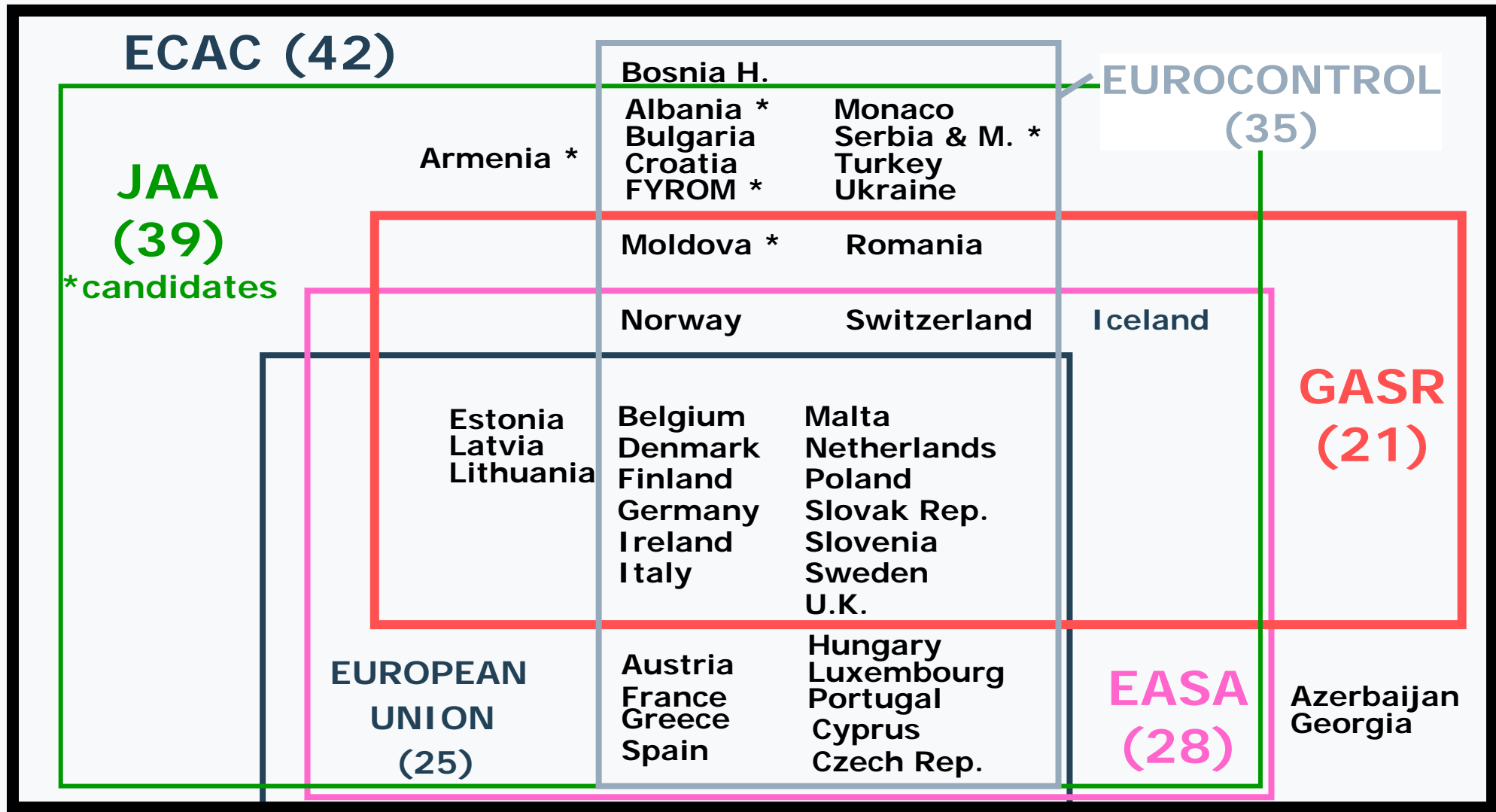
- The way forward (next steps)

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Bosnia H.

Armenia *

Albania *   Monaco
Bulgaria   Serbia & M. *
Croatia   Turkey
FYROM *   Ukraine

Moldova *   Romania

Norway   Switzerland   Iceland

Estonia   Belgium   Malta
Latvia   Denmark   Netherlands
Lithuania   Finland   Poland
            Germany   Slovak Rep.
            Ireland   Slovenia
            Italy   Sweden
                        U.K.

            Austria   Hungary
            France   Luxembourg
            Greece   Portugal
            Spain   Cyprus
                        Czech Rep.

Azerbaijan
Georgia

Group of Personalities (GoP):
Report "A Secure Europe in a Better World"

he mission of the GoP is to help establish a vision on a secure

urope, and to enhance the European industrial potential in the field of

ecurity research for the protection of the European citizen

he report outlined 12 recommendations, including:

- oordinate national, governmental, and community RTD efforts

- ridge the gap between civil and defence security research

- uropean Security Research Program (**ESRP**) of 250 M€ per year

EU Aeronautics:
Improving Aircraft Safety and Security

Research for a Secure Europe

Report of the Group
of Personalities
in the field of
Security Research

Research objectives

- Reduce accident rate by 50% (80%) in the short (long) term

- Reach 100% capability to avoid or recover from human error

- Mitigate results of survivable accidents

- *Reduce to zero hazards of on board hostile actions (in-flight)*

Safety and Security have been clustered, into a Specific Research Area for *improving aircraft safety and security*

European Security Research

- **Preparatory Action Security Research, 65 MEuro (3 years)**

- **European Security Research Programme, 250 MEuro per year**

- **DG- TREN: Network for Security of Transport and Energy**

- *DG – RTD Aeronautics : Improving Aircraft Safety & Security*

- *NATO/Eurocontrol ATM Security Strategy and activities*

EU PASR:
Preparatory Action for Security Research

A Commission immediate response to requests from the European Council, the European Parliament and the European Industry

A Commission contribution to the wider EU agenda to address challenges & threats set out in the European Security Strategy

An initiative outside the 6th EU RTD Framework Programme

Broad comprehensive security concept going beyond military aspects and security of States with focus on the <u>security of EU citizens</u>

Multidisciplinary and multi-sectoral with a European dimension and <u>Community added value</u> and a <u>mission-oriented</u> approach

EU PASR:
Preparatory Action for Security Research

Proposed projects should be mission-oriented and should lead to tangible results. 5 Priority areas have been defined:

- Improving situation awareness

- Optimising security and protection of networked systems

- Protection against terrorism

- Enhancing crisis management

- Achieving interoperability and integrated systems for information and communication

Total EU funding of 65 MEuro from 2004 - 2006

PASR 2004: 7 Projects (and supporting activities)

TERASEC: detection of hidden weapons and explosives

IMPACT: integrated European CBRN technological capabilities

CRIMSON: crisis management system

SUPHICE: on-demand secure communications provision

ASTRO+:   integration of earth and space observation to support
             security operations

ISCAPS: surveillance of crowded areas exposed to terrorist attacks

VITA: protection of critical infrastructures –
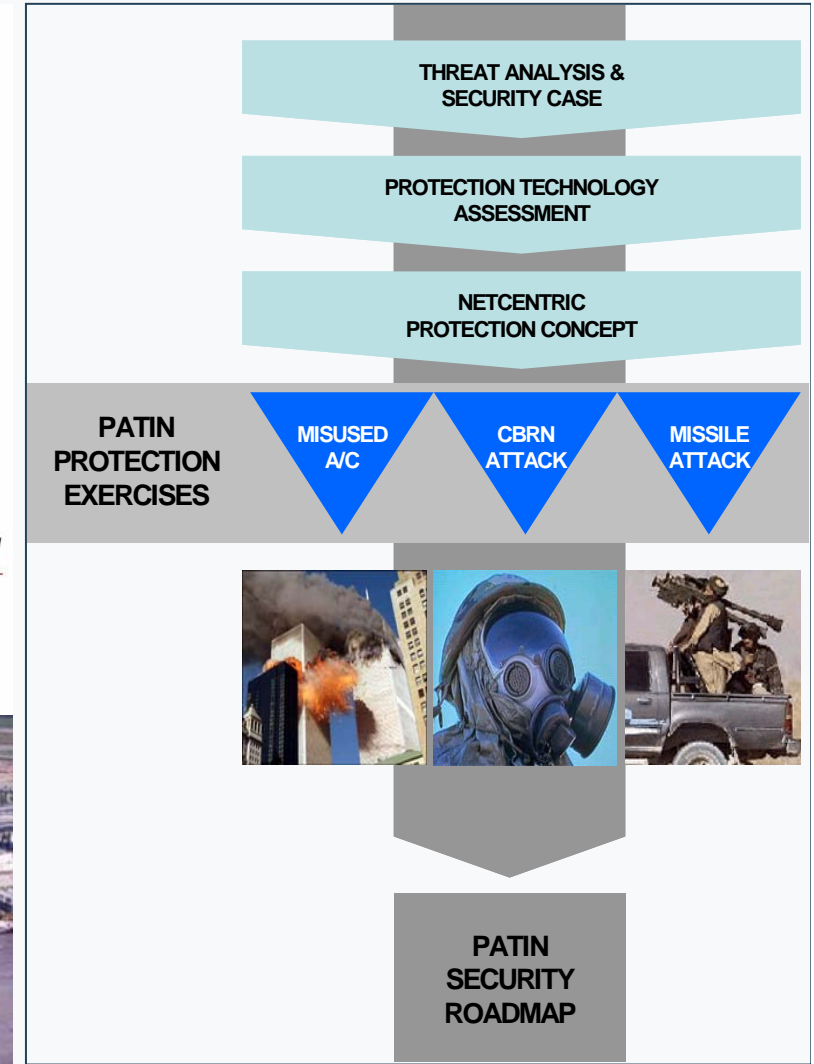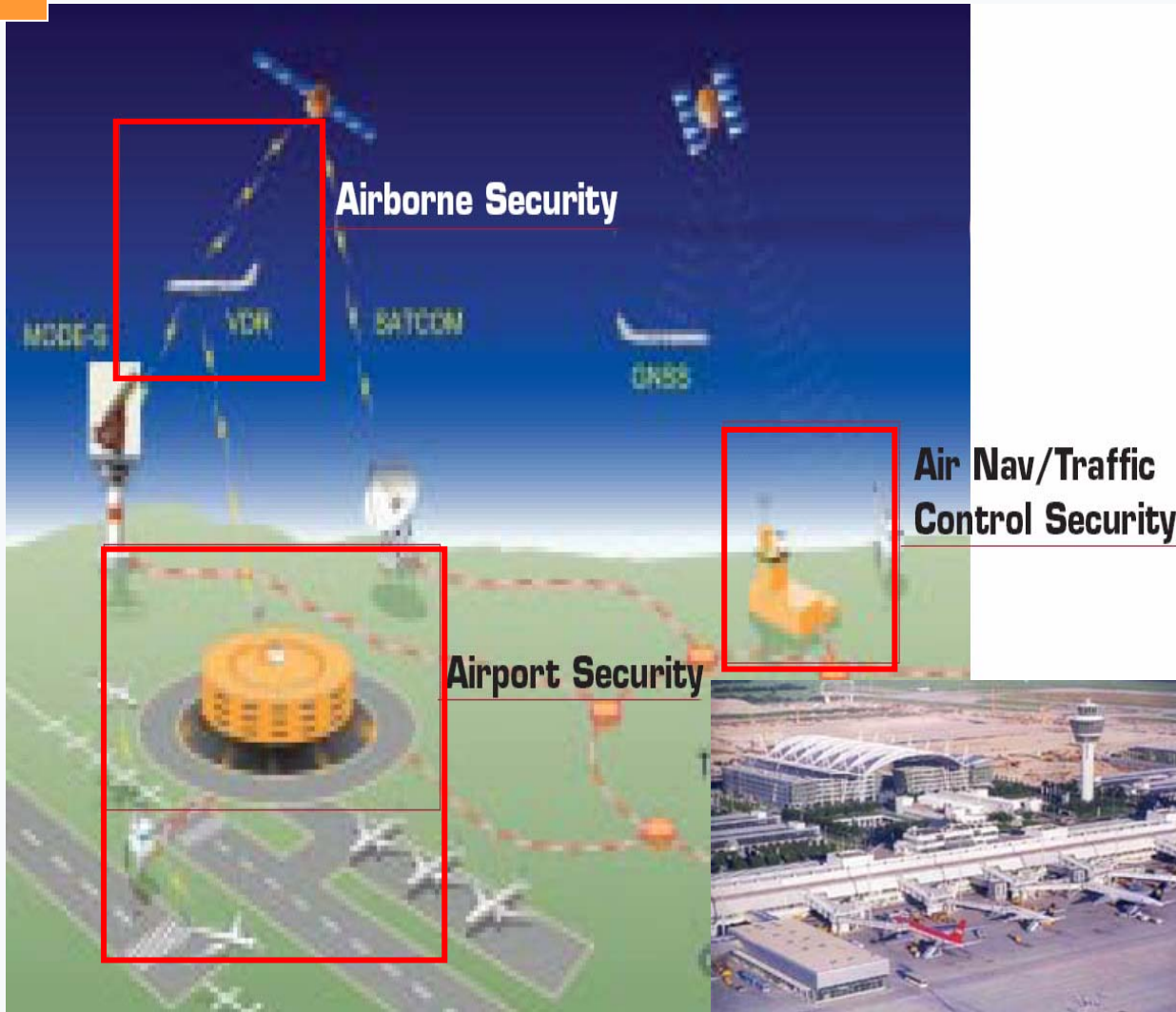   methods and scenario demonstration on energy

PASR 2005: 8 Projects (and supporting activities)

TRIPS: improvement of the protection of rail passengers

SOBCAH: safer European borders through surveillance across Europe

ROBIN: securing computers linked to networks

PROBANT: people real-time observation inside buildings

HiTS/ISAC: highway to secured interoperability of intelligence services

MARIUS: more rapid and efficient crisis management

PALMA: protection of airliners against MANPADS attacks

PATIN: protection of air transportation and infrastructure
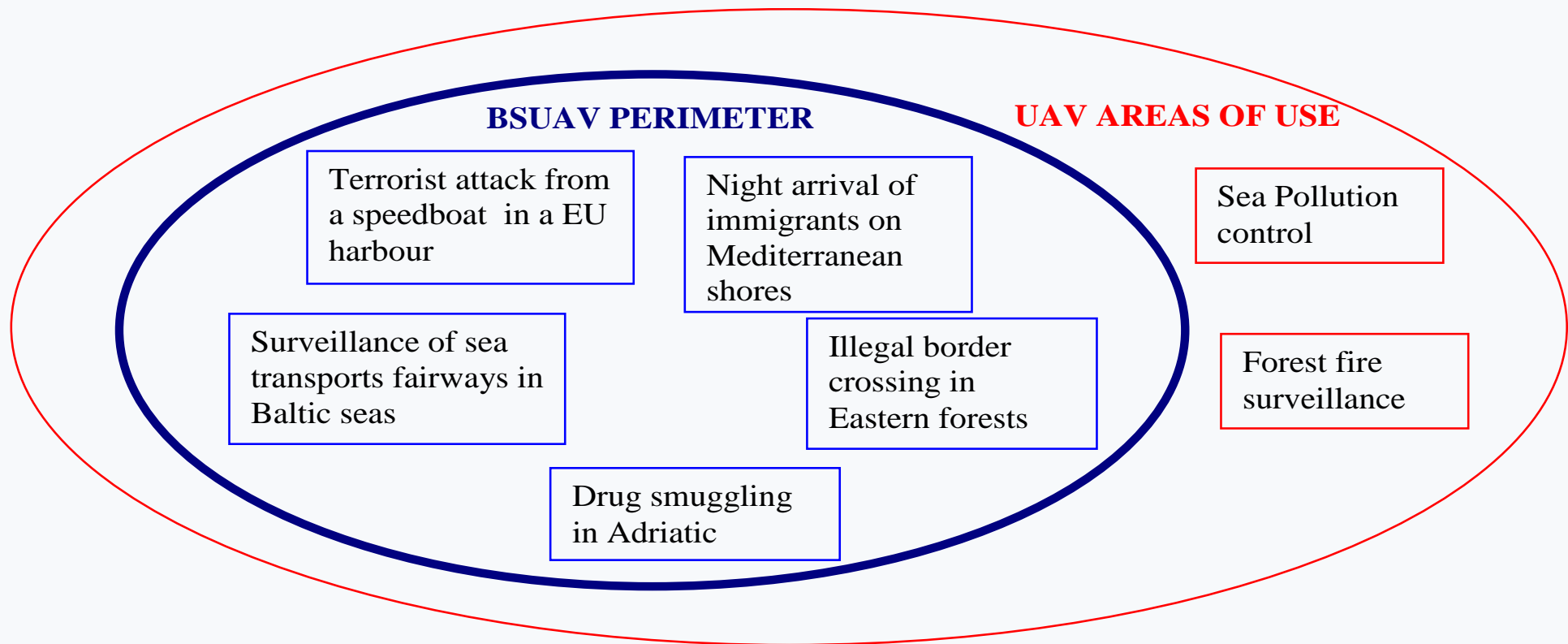
European Aviation Security Context

- *The EU Common Foreign & Security Policy* (CSFP), in which the *European Security and Defence Policy* (ESDP) is being developed

- ICAO Aviation Security recommendations & requirements
  - Annex 17, Doc 9873 (*restricted*), Doc 9811 (*restricted*)
  - Supplemented by national security legislation and procedures
  - Supplemented by airlines security manuals

- ECAC Security regulations (focusing on airport environment)
  - ECAC Doc 30 (to be incorporated in EU security regulation)

- Single European Sky security regulation initiates development Security Management Systems, to be implemented by ANSPs

- NATO/Eurocontrol ATM Security Coordination Group (NEASCOG) provides the European ATM Security Strategy

PATIN:
Protection of Air Transportation and Infrastructure

Airborne Security

MODE-S   VDR   SATCOM

GNSS

Air Nav/Traffic
Control Security

Airport Security

THREAT ANALYSIS &
SECURITY CASE

PROTECTION TECHNOLOGY
ASSESSMENT

NETCENTRIC
PROTECTION CONCEPT

PATIN
PROTECTION
EXERCISES

| MISUSED A/C | CBRN ATTACK | MISSILE ATTACK |

PATIN
SECURITY
ROADMAP

BSUAV:
Border Surveillance using UAVs

BSUAV is a Supporting Activity for the potential contribution

of UAVs to peacetime security on European borders

BSUAV PERIMETER

UAV AREAS OF USE

Terrorist attack from a speedboat in a EU harbour

Night arrival of immigrants on Mediterranean shores

Sea Pollution control

Surveillance of sea transports fairways in Baltic seas

Illegal border crossing in Eastern forests

Forest fire surveillance

Drug smuggling in Adriatic

Roles and responsibility (JAR-OPS 1.085)

- Role: "The Pilot has the authority to give all commands deemed necessary for securing the safety of the aeroplane and all persons carried therein."
- Responsibility: "The Pilot is responsible for the safe operation of the aircraft and for the safety of the aircraft and its occupants during the flight."

SAFEE:
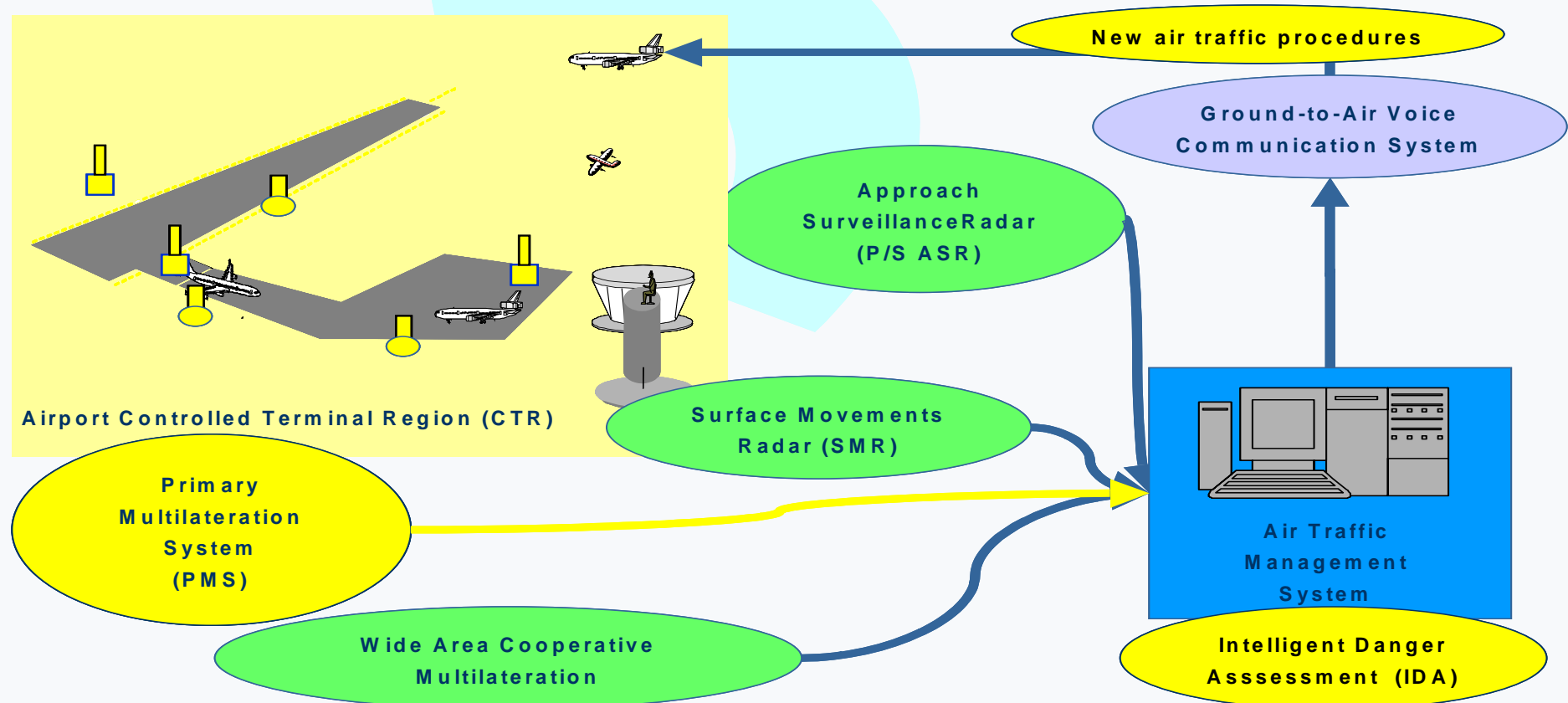## Security of Aircraft in the Future European Environment

The aim of SAFEE is to ensure a fully secure flight from departure to arrival destination, whatever threats and/or terrorist actions might occur. SAFEE has 5 key activities:

- On-board Threat Detection System   (Airbus)

- Threat Assessment and Response Management System (BAE S)

- Flight protection and automatic safe landing   (Thales)

- Data protection   (SAGEM)

- Security evaluation (threat assessment, operational   (NLR) concept, validation approach, economic analysis, training)

MATISSE:
Maximizing Traffic Awareness for Airport Safety & Security

To reduce the risk of hostile or accidental collision of aircraft

by non cooperative small aircraft (in the airport environment)

New air traffic procedures

Ground-to-Air Voice Communication System

Approach SurveillanceRadar (P/S ASR)

Airport Controlled Terminal Region (CTR)

Surface Movements Radar (SMR)

Primary Multilateration System (PMS)

Wide Area Cooperative Multilateration

Air Traffic Management System

Intelligent Danger Asssessment (IDA)

EU DG Transport and Energy (TREN): Global Security Analysis and Validation Systems

COUNTERACT creates a common security platform to stimulate networking between user organisations. The 3 clusters are:

- Public passenger transport

- Inter-modal Freight Transport

- Energy

NEASCOG:
NATO/Eurocontrol ATM Security Coordination Group

Strategic Objectives focus on the following actions:

- Civil-military radar data sharing

- ATM Security systems for crisis management

- Communications for encryption and transmission of aircraft voice and video information

- ATM Security Training and procedures

EUROCONTROL:
ATM Security Strategy

- States that recent terrorist activities have led to ATM related security issues assuming greater importance

- Identifies the NEASCOG' Four Strategic Initiatives

- States that while security remains a State responsibility, ATM must be able to assist the appropriate authorities where possible

- States that the ATM network shall satisfy national security as well as national and international Defence requirements

- *Specific objective: "Determination of effective mechanisms and procedures to enhance the response of ATM to security threats affecting flights (aircraft and passengers) or the ATM system"*

Objectives ERRIDS:
European Regional Renegade Information Distribution

Info to all organizations involved in response to unlawful acts

Support civil/military authorities in decision making

Interoperable with/complementary to existing (inter) national systems

Release of info on a need to know basis (source /owner decides)

Low cost basis (secure internet connection, off the shell systems)

ERRIDS:
# European Regional Renegade Information Distribution
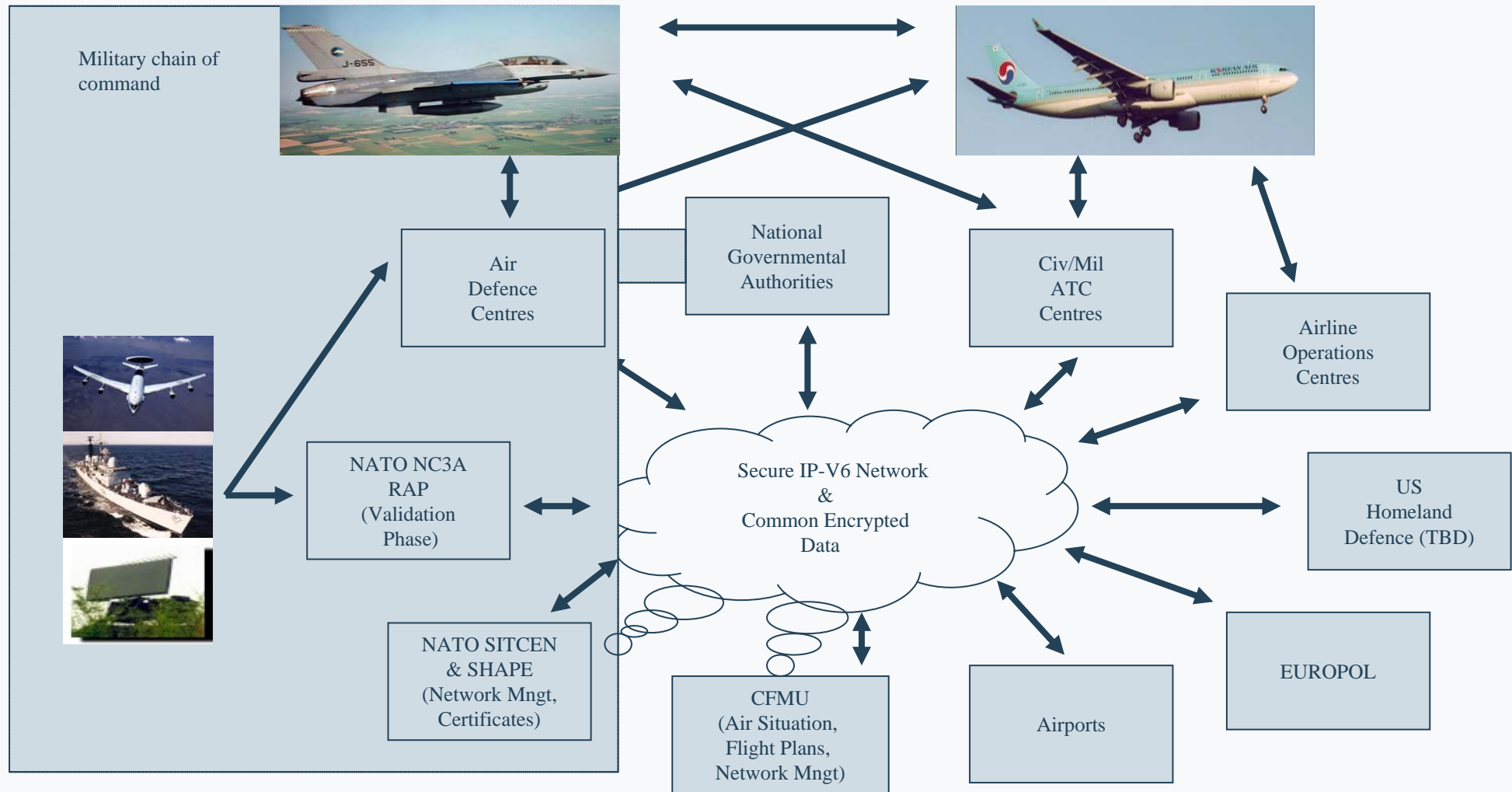
Basic functions ERRIDS actors

- National Governmental authority
  - *Decision maker, threat assessment*

- Air Defense / NATO
  - *Renegade action, QRA*

- Air Traffic Control (Civil / Military)
  - *Initial alert, maximum (Nav) support*

- Airline Operations Center
  - *Flight info, support to captain*

- Intelligence services (nat / internat)
  - *Pre flight, in-flight, alert phase*

- Airport security management/police forces
  - *Negotiations, intervention, bomb alarm*

ERRIDS Trials (with airlines) in 2005

23 August: simulated terrorist action (cross border NL / Germany)

15 September: Life trial (also Belgium MoD, with Learjets and QRA)

Early December: considering full scale exercise (*Germany / BE / NL*)
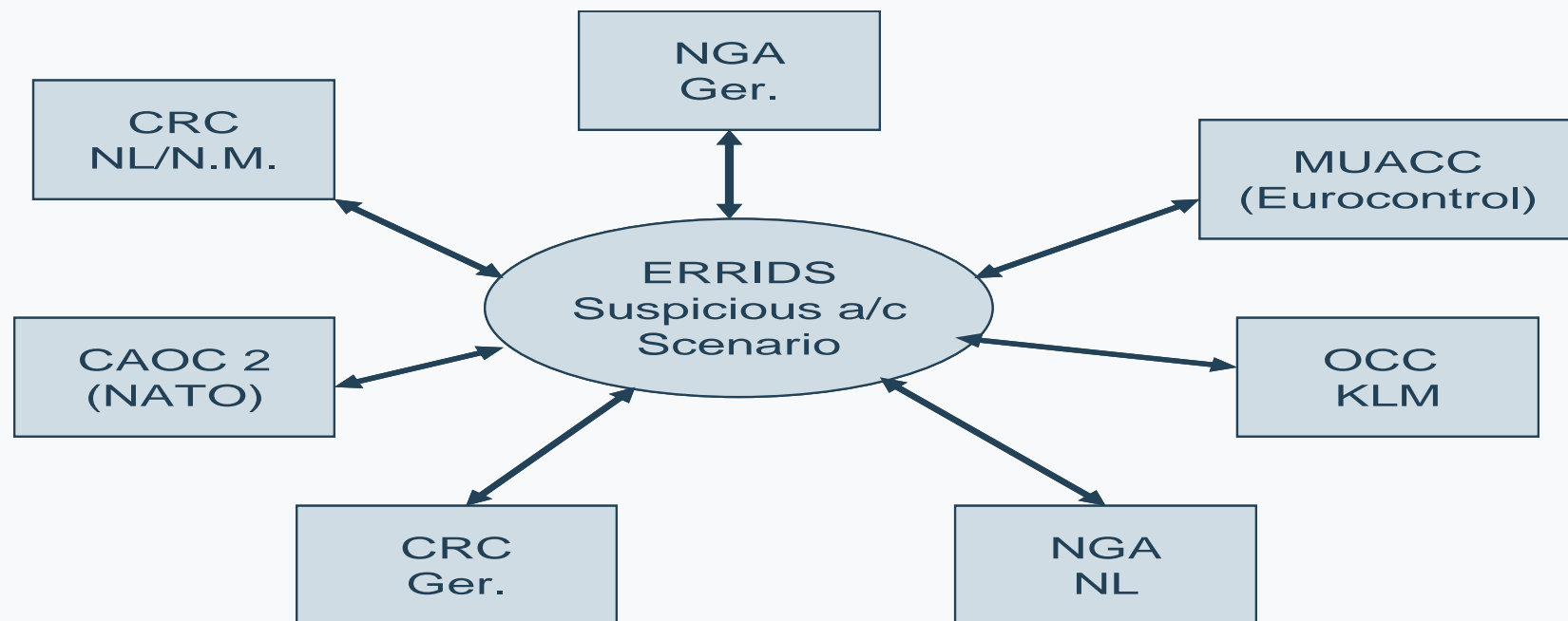
ERRIDS International basis

Recommendation of the ICAO Ministerial conference (2002)

- *ICAO security program*

- *Need for regional coordination/info exchange*

Resolution in the ICAO Assembly (2004)

- *Commitment by Member States*

Eurocontrol/NATO Mutual Strategy (via NEASCOG)

- *ERRIDS consistent with the NEASCOG strategy*

- *Response to new ATM security needs in Europe*

EU / Eurocontrol look beyond its organisations: Co-ordination with key Security Working Groups

|	
International Civil Aviation Organisation:	ICAO AVSEC Panel
European Aviation Civil Conference:	ECAC Security Working Group
Airlines and Pilots Associations:	IFALPA Security Committee
Stakeholders and industrials:	IATA, ESRAB, SMIG, ASD, ESDAG
United States organisations:	TSA, HSD, FAA
Research establishments:	EREA Security Group (ESG)

The way forward with Aviation Security: Strengthen cooperation between EU/Eurocontrol
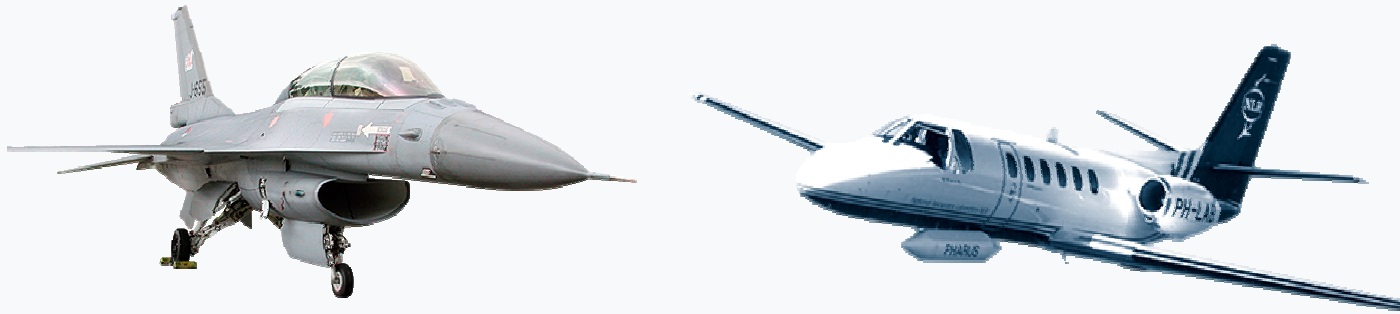
SAFEE:
The EU Post '9-11' Aircraft/In-flight Security Project

Current Incidents
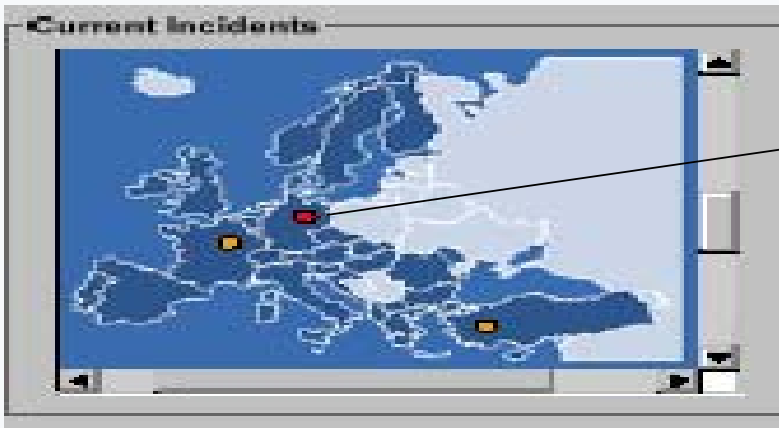
Flight Plan xxxxxx
Transponder Switched Off
Communication Loss
Further Info from Pilot
Intercept launched
No Visual Contact Yet
AOC contacted for Airborne Info
Fuel level
Other Information

ERRIDS:
The European NGA/ATM/Airport Security Project

Next steps and future developments

- Continuation Preparatory Action for Security Research (**PASR**)

- Consultation European Security Research Advisory Board (**ESRAB**)

- Launching European Security Research Program (**ESRP**) (2007)

- Potential integration of **SAFEE** (in-flight) and **ERRIDS** Programmes

- Strengthening of cooperation between civil & military organisations

- New roles and responsibilities for Air Navigation Service providers, in response to new Single European Sky ATM Security regulations

GEOCREW:
Geodata and Crisis Early Warning Situation Awareness

Early detection of potential security breaches, to solve crises before they would evolve to critical or military dimensions

CREW : architecture for integrating different information sources (using Remote Sensing Ground Stations and Earth Observation Infrastructures)

GEODATA : utilization of geospatial data for improving situation awareness

The EU Post '9/11' In-flight Security Project