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Network Manager View on dealing with Operational Safety from a 'Systems' Perspective

ANSP CEOs' Safety Conference
Split ,11 June 2015

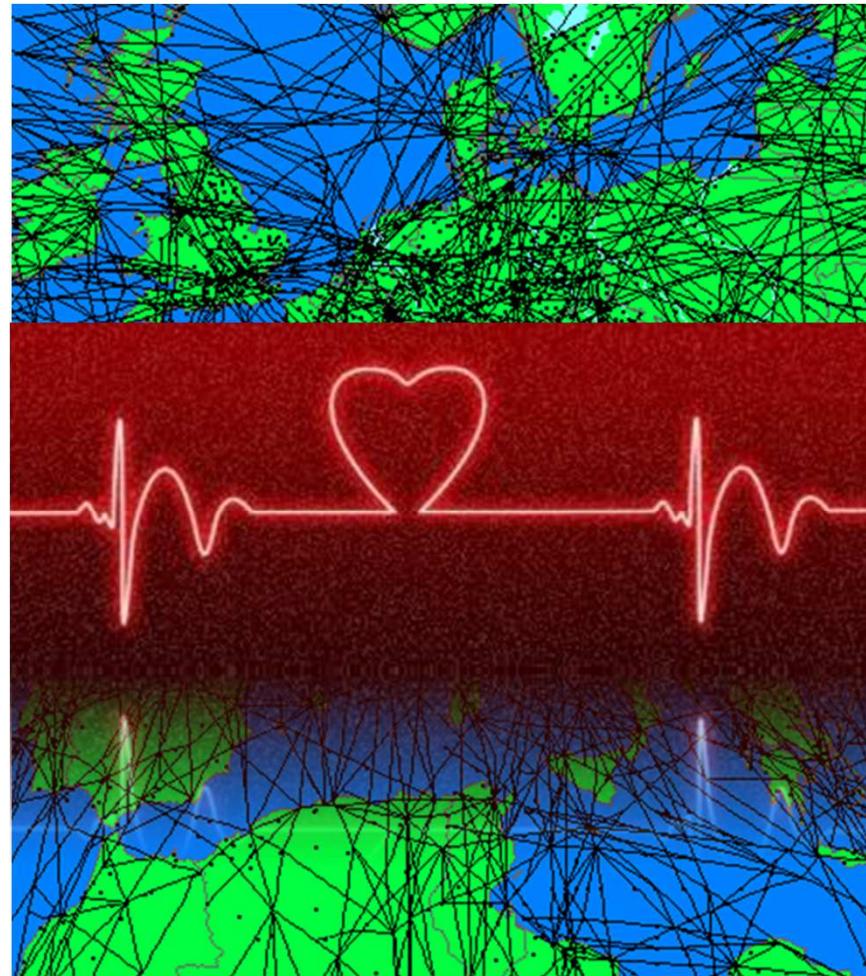
Joe Sultana
EUROCONTROL Director Network Manager



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NM 'heartbeat' of the European ATM 'system'





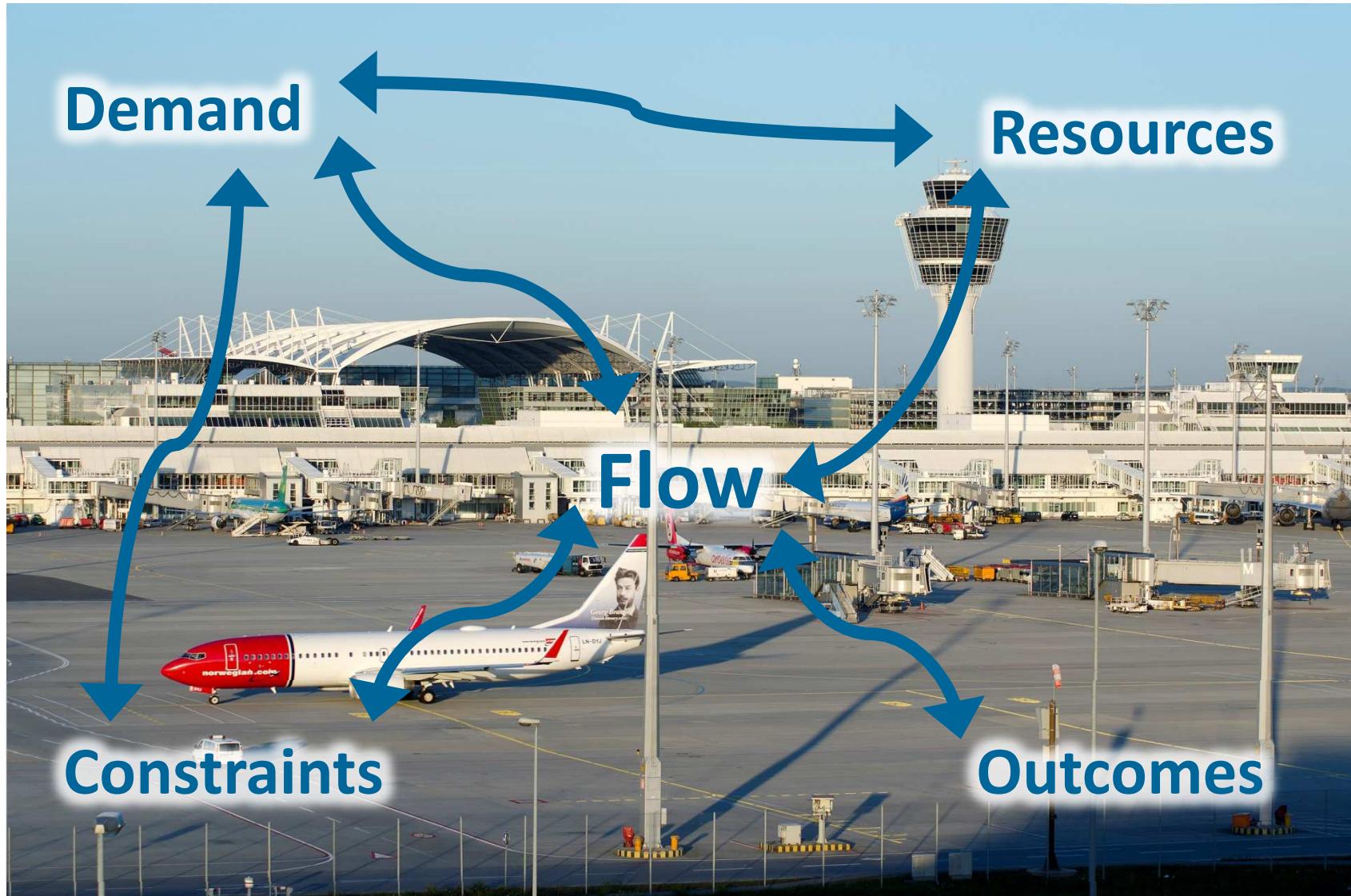
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Network Manager Functions (EU Reg 677/2011)

- Design European Route Network.
- Provide ATFCM.
- Coordinate scarce resources: radio frequencies and SSR transponder codes.

Also scope in the legislation to add further requirements – addressed later.





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Five Fundamental Questions

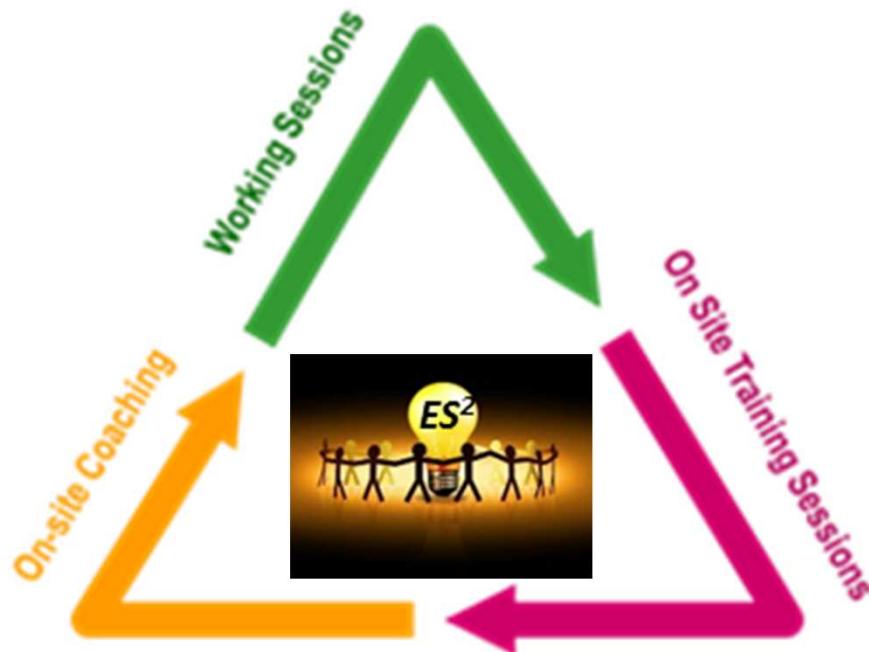
- Is the Network safe?
- Where are the safety threats in the Network?
- Where are the safety opportunities?
- What should be done to keep the Network safe and improve?
- Who do we tell to make it effective?.





ES²

2014 -2015 Programme



- FAB Safety
- Safety Human Performance
- Just Culture
- Safety Tools
- Strategic Safety (CEO Conference)
- Systems Thinking



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NM 'Top 5' Operational Safety Issues (EU Reg 970/2014)



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Top 5 ATM Operational Safety Priorities for 2013

Our Mission

Contributing to safety management and operational safety across the Network, the Network Manager identifies Network safety issues to enable aviation stakeholders to mitigate existing hazards and anticipate new operational risks. Our ultimate goal is to keep the Network safe and able to increase its capacity and efficiency.

The EUROCONTROL Safety Improvement Sub-Group (SISG), reporting to the EUROCONTROL Safety Team, was tasked to identify the Top 5 ATM Operational Safety Priorities. In 2012, the SISG followed a structured process of operational safety prioritisation. After further analysis, the Safety Team agreed the following Top 5 ATM Operational Safety Priorities for 2013.

TOP 5 ATM OPERATIONAL SAFETY PRIORITIES FOR 2013:

- 1. RISK OF OPERATIONS WITHOUT TRANSPONDER OR WITH A DYSFUNCTIONAL ONE**
Operations without transponder or with a dysfunctional one constitute a single threat with a potential of "passing" through all the existing safety barriers up to "see and avoid".
- 2. LANDING WITHOUT CLEARANCE**
For various reasons, aircraft sometimes land without ATC clearance resulting in Runway Incursion Incidents that are often only resolved by "provisional".
- 3. DETECTION OF OCCUPIED RUNWAY**
Some Runway Incursion Incidents could have been prevented if controllers had better means to detect that the runway was occupied at the time of issuing clearance to the next aircraft to use the runway.
- 4. "BLIND SPOT" - INEFFICIENT CONFLICT DETECTION WITH THE CLOSEST AIRCRAFT**
Losses of separation "Blind Spot" events are typically characterised by the controller not detecting a conflict with the closest aircraft. They usually occur after a descent clearance and in the context of a rapidly developing situation - often when the conflicting aircraft are 100ft and 15 nm apart.
- 5. CONFLICT DETECTION WITH ADJACENT SECTORS**
Losses of Separation in the En-Route environment sometimes involve "inadequate coordination" of clearance with an adjacent sector. These typically involve either an early (premature) transfer of control to or from the neighbouring sector.

→ **What will the Network Manager do and deliver?**

Each Top 5 priority will be subject of a dedicated Operational Safety Study during 2013 that will aim to:

- Provide additional insight on causal/contributory factors.
- Suggest actions to reduce or eliminate risk factors.
- Identify industry best practice and lessons learned for sharing amongst affected stakeholder groups.
- Inform development of regulatory materials (to further all of the above).

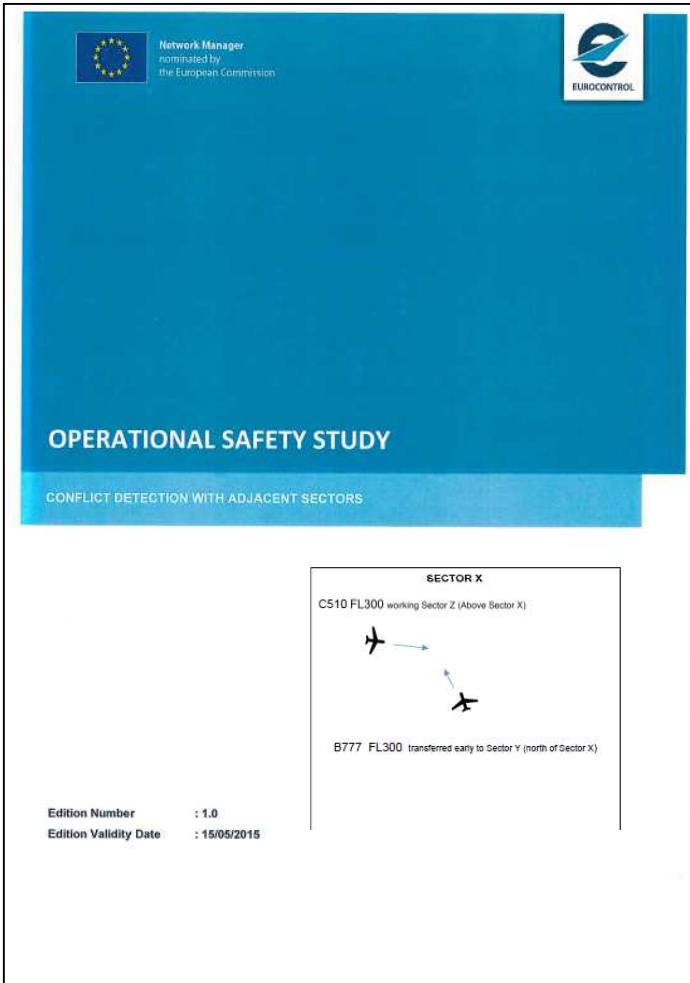
For more information, please contact: tzvetomir.blajev@eurocontrol.int



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NM Top 5 – Conflict Detection with Adjacent Sectors High Severity Events



- Hazards often are generated by “interfaces”.
- Some STCA algorithms are suppressed for the neighbouring airspace – to avoid non-RVSM alerts.
- HMI may not be supportive for conflict detection – color and intensity of the track labels not under control
- Very topical subject for the Free Route Environment

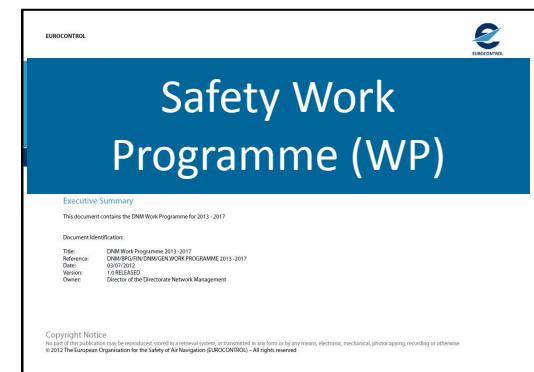
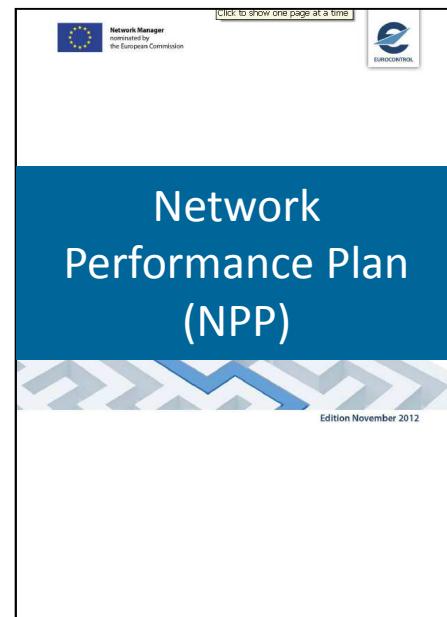
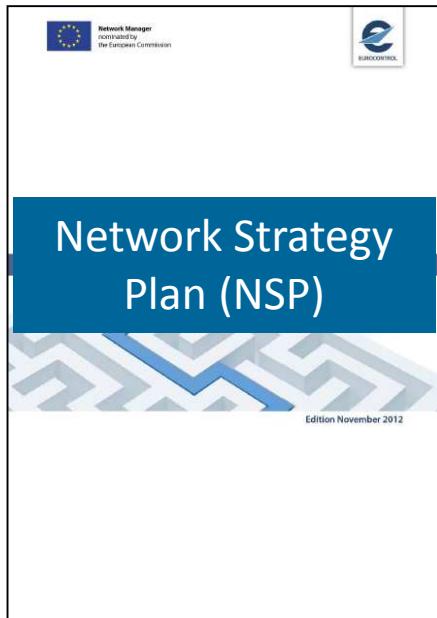


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NSP, NPP, KPIs/Targets, SAF Work Programme

The cascade from top objectives to activities



Safety Objective SO7
Ensure network safety,
security and robustness

Safety sub Objectives
ATM Safety Performance KPIs and targets

Safety Work Programme



Safety Team (ANSPs)



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Supporting implementation of safety plans

European Action Plan for Airspace Infrastructure Risk Reduction

European Action Plan for the Prevention of Runway Excursions
Edition 1.0

European Air Ground Control

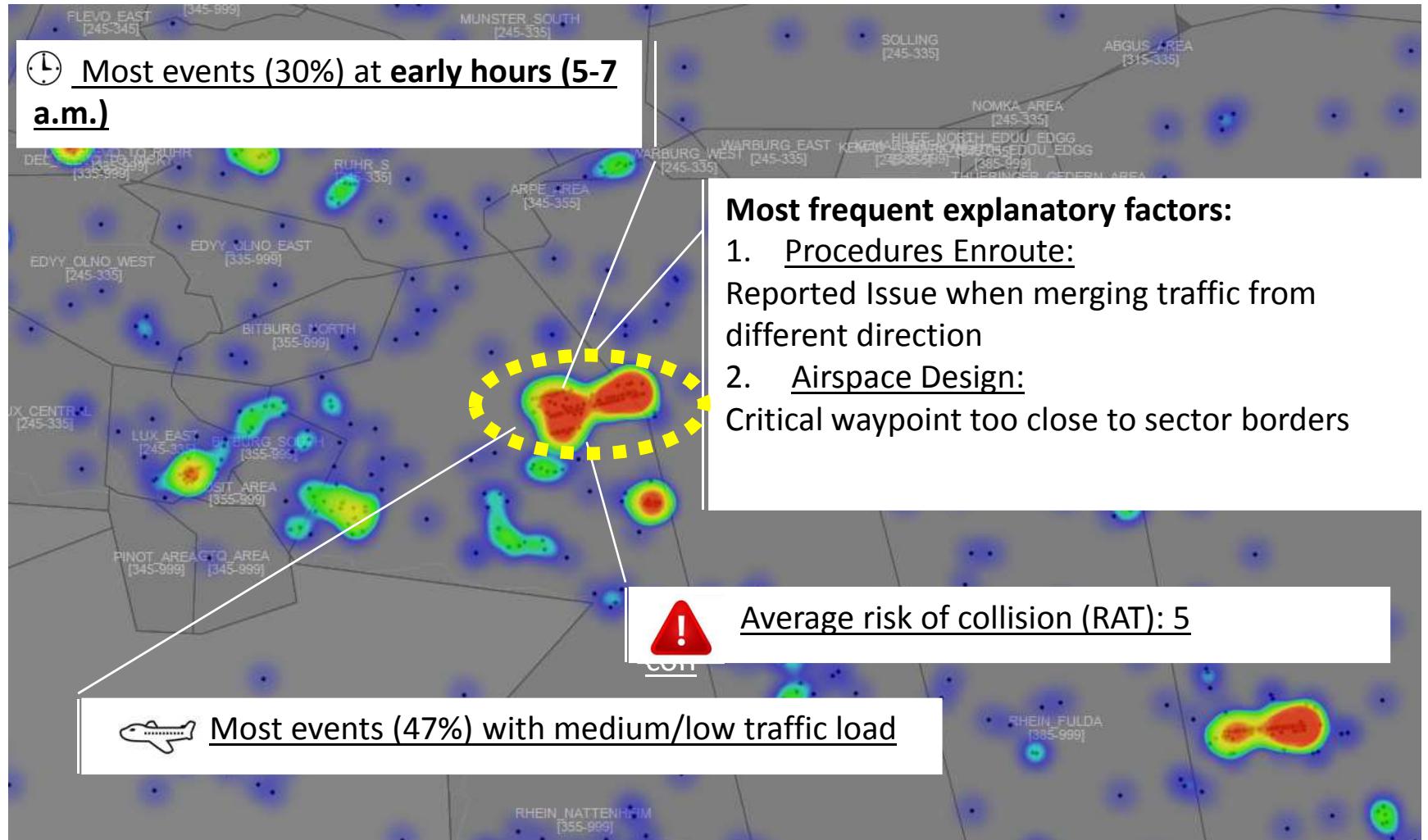
European Action Plan for the Prevention of Runway Excursions

Implementation of the recommendations should commence in 2015.

Logos of participating organizations: ECA, era, NATS, Belgocontrol, DFS Deutsche Flughafen, IATA, dgac, EASA, ENAV, AEA, ICAO, ECA, ECAST, ICAO, BAA, Boeing, FALPA, and EUROCONTROL.



Safety Tools Implementation – ASMT





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Safety Tools Implementation

Risk Analysis Tool

Risk Matrix

Aircraft-aircraft-tower

Description

Severity

Risk of collision

Reliability Factors

InCAS
Interactive Collision Avoidance Simulator

Version 2.6

TCAS Logic provided by MITRE corporation

TOKAI

ATS Notification Data Gathering RAT Statistics Admin

Hello, Tony! Welcome to your dashboard!

2 ATS Reports 13 Occurrences 0 Risk Analyses 2 Queries

EUROCONTROL APF

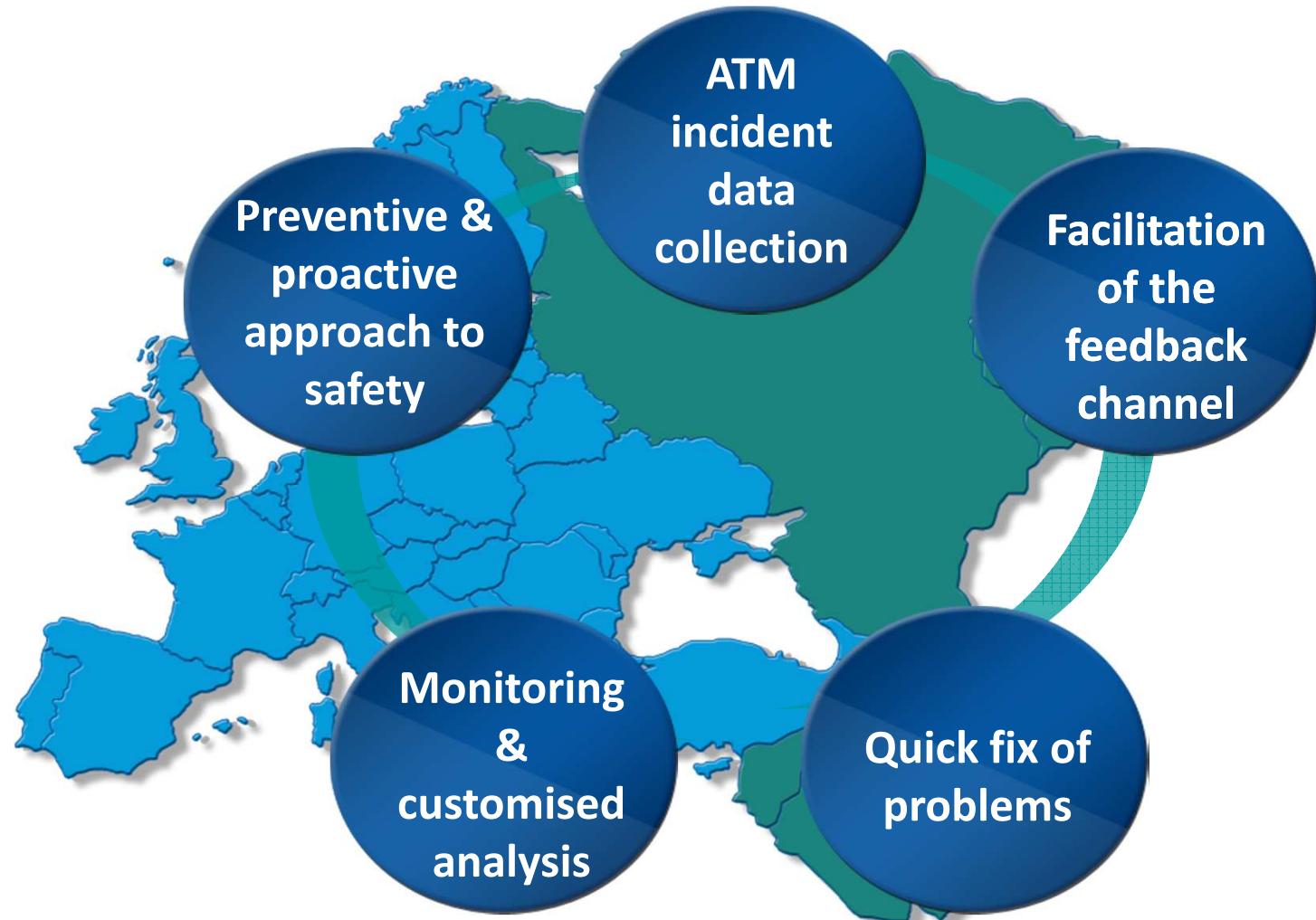
Risk tree

Main chart

Traffic

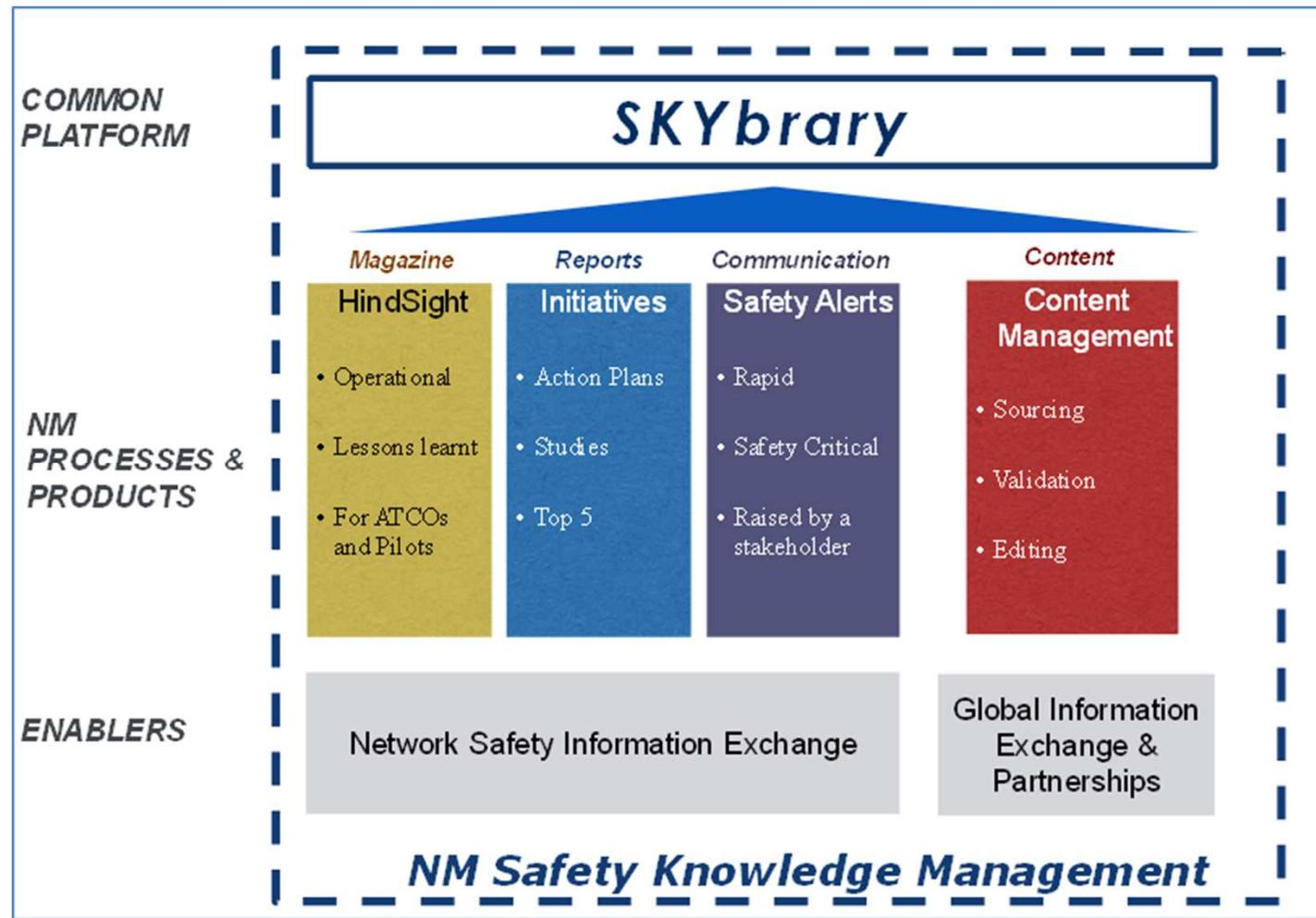


EVAIR – “Taking the Pulse” of Network Safety





NM Safety Knowledge Management Landscape





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Sharing Safety Knowledge

SKYbrary - The Global Aviation Safety Encyclopedia

The screenshot shows the SKYbrary website homepage. The top navigation bar includes links for user account management (Alexander.Krastev, my talk, admin links, my preferences, my watchlist, my contributions, log out), page actions (page, discussion, edit, history, delete, move, protect, watch, refresh), and a search bar with a Google Custom Search integration.

The main content area features the SKYbrary logo and tagline: "The single point reference for aviation safety knowledge". A sidebar on the left contains links for navigation, work in progress, and information.

The central content area is a grid of safety topics:

Operational Issues	Human Performance	Enhancing Safety	Safety Regulations
Air Ground Communication	Airspace Infringement	Bird Strike	Controlled Flight Into Terrain
Ground Operations	Airworthiness	Level Bust	Loss of Control
			Loss of Separation

Highlighted Article: Wake Turbulence Hazard - A Pilot Check List (posted 17 September 2012) - A collection of tips and best practice for avoidance and recovery from encounter with wake turbulence... [Read more...](#)

Safety Alert: Lessons Learned from a Power Outage Incident (posted 18 July 2012) - A European ATM service provider reported on an



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2014 SKYbaray Statistics and Growth

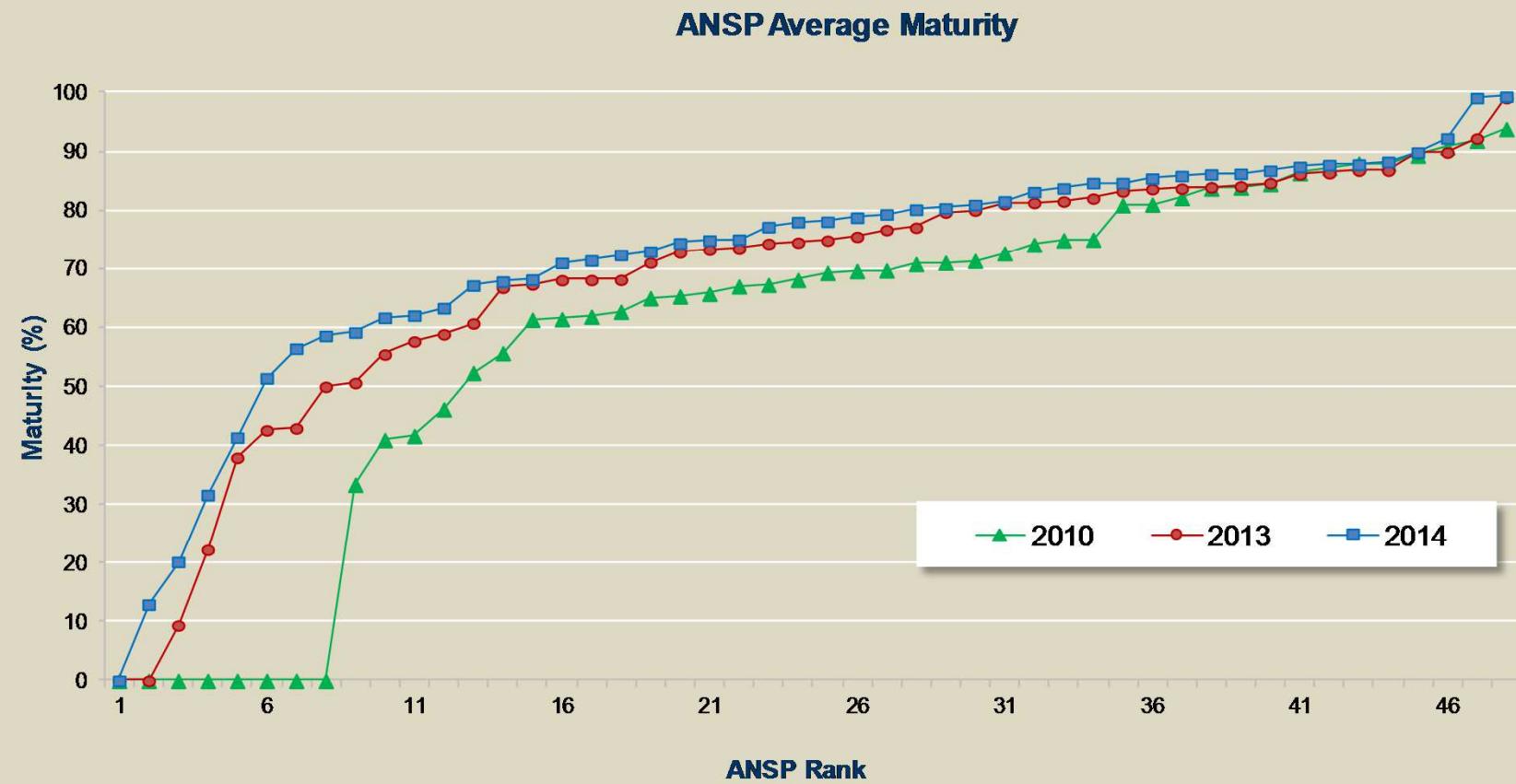
- 21.070 registered aviation safety professionals (2 %)
 - On average 5.252 visits* per day (22 %)
 - More than 159.750 visits* per month (23 %)
 - 1.231.480* unique visitors (25 %)
 - 1.917.075 visits* to SKYbrary (excluding bookshelf) (22 %)
 - 1.696.135 visits to SKYbrary bookshelf ** (PDFs)
 - More than 5.500 content pages
 - More than 4.539.084 page views* (16 %)
 - 1.306.634* visits originated from search engines (30 %)
 - 165.733* visits originated from mail campaigns (-2 %)
 - 6.756* visits originated from Facebook (-33 %)
- * source Google Analytics
 - ** source Awstats (not measured by Google Analytics)



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ANSP Safety Management Maturity (Measuring Standard of Excellence) in support of RP2 Safety Target

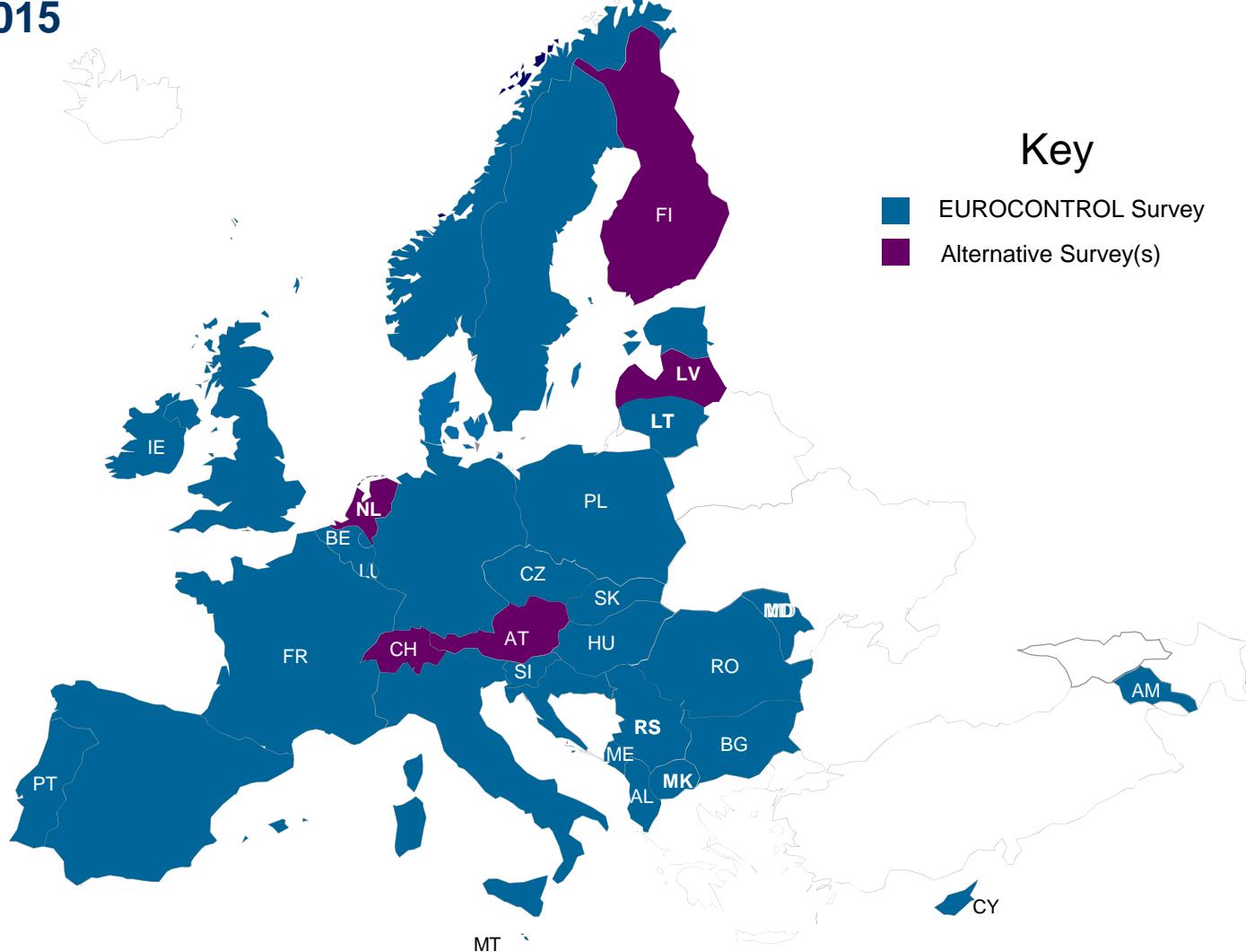




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The EUROCONTROL Safety Culture programme 2003-2015





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Safety I & Safety II

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EUROCONTROL

From Safety-I to Safety-II:
A White Paper

DNM Safety

www.bitly.com/SAFETY-II

Systems Thinking for Safety

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Systems Thinking for Safety: Ten Principles
A White Paper
Moving towards Safety-II

DNM Safety

www.bitly.com/ST4SAFETY



Key Takeaways

- The ATM Network is a complex system. So **we have to think systemically** in all that we do, including safety.
- **We work better together** than in isolation; **building and sustaining partnerships** enables a systems approach.
- We must **balance competing priorities without compromising the safety** of the whole ATM Network. But safety should be the first item on our agenda.
- **We are here to support you** and help you reach your safety goals at European and local level.



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