



EUROPEAN NETWORK OPERATION SAFETY – TOP 5 RISKS.
HOW TO IDENTIFY, ANALYZE AND RESPOND?
RUNWAY SAFETY ACTION PLANS.

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Network Manager Director
October 2014

In this presentation:

- *What is our operational NM safety task?*
- *How do we decide our network operational safety priorities?*
- *What are the Top 5 for this year?*
- *What next?*
- *Runway Safety Action Plans*



Network Manager
created by
the European Commission

EUROCONTROL

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 action 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 2013, the SISG followed a structured process of operational safety prioritisation. After a thorough analysis, the Safety Team agreed the following Top 5 ATM Operational Safety Priorities for 2013:

TOP 5 ATM OPERATIONAL SAFETY PRIORITIES FOR 2013:

- 1. RISE OF OPERATIONS WITHOUT TRANSPONDER OR WITH A BIFUNCTIONAL ONE**
Operations without a transponder or with a bifunctional one constitute a single threat with a potential of "grading" through all the existing safety barriers up to "loss and avoid".
- 2. LANDING WITHOUT CLEARANCE**
For various reasons, aircraft sometimes land without ATC clearance resulting in Runway Excursion Incidents that are often only resolved by Spraybrake!
- 3. DETECTION OF OCCUPIED RUNWAY**
Some Runway Excursion Incidents could have been prevented if controllers had had better means to detect that the runway was occupied at the time of landing clearance to the next aircraft to use the runway.
- 4. "TOO LOW OVER" - UNEXPECTED CONTACT DETECTION WITH THE CLIFFTOP AIRSPACE**
Cases of unexpected "Too Low Over" events are typically those initiated by the controller and involving a conflict with the cleared aircraft. They usually occur after a descent clearance and in the context of a rapidly developing situation - either when the conflicting aircraft are "TOO LOW" and "TOO HIGH".
- 5. CONTACT DETECTION WITH ADJACENT AIRSPACE**
Cases 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 from the neighbouring sector.

Our Process
The "Top 5" were identified after a detailed review of the high priority risk areas "Runway Excursion" and "Loss of Separation En Route". The review was performed during summer 2012 and involved a series of dedicated workshops with 8 ANSPs, covering a large part of Europe as well as Comparative Safety Analysis (CSA) - more developed and implemented with representative data from the participating ANSPs. The incident data was for high severity, identified as R and W1 occurrences that had been thoroughly investigated. The data is highly informative because the incident situations were not simply the outcome of a safety barrier failure. The validity of the results was assessed by a careful peer analysis of the investigation reports with the respective ANSPs. The statistical data forms a significant overall snapshot of Europe's ATM B (Incidents) and W1 (Safety Critical) occurrences and 70% of all losses of Separation En Route reported during 2011.

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 contributory factors;
 - Suggest actions to reduce or eliminate risk factors;
 - Identify industry best practices and lessons learned for sharing amongst affected stakeholder groups;
 - Initiate development of ICAO materials (to further all of the above).

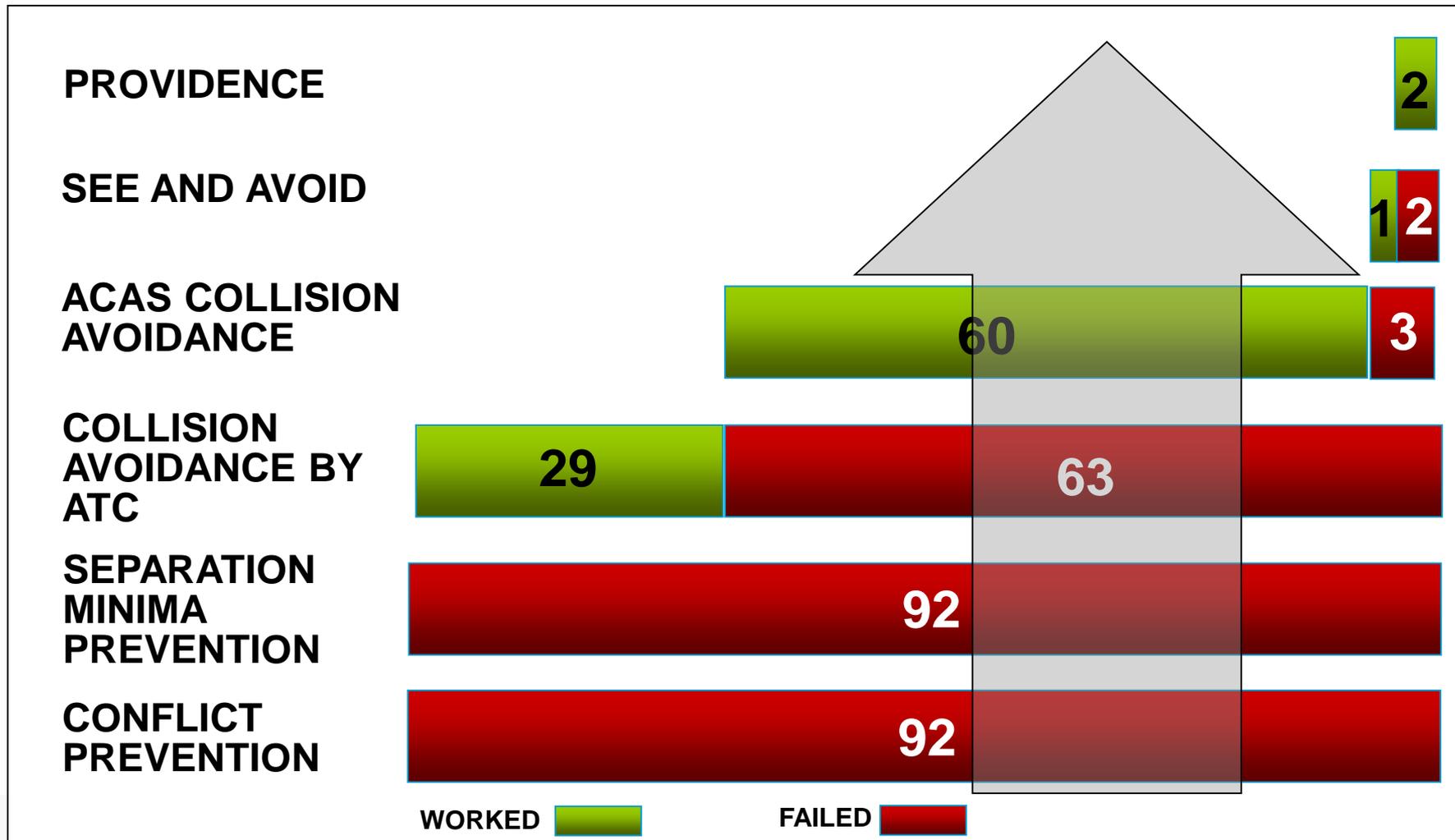
For more information, please contact: tsweb@eurocontrol.net

2014 - the new cycle of prioritisation

- We studied the same two risk areas:
(1) Runway Incursion (2) Loss of separation en-route
- *Workshops with 10 major ANSPS during 2013 and 2014*
- *Reviewing severity A and B incidents for 2012, 2013*
- *Mapping the incidents on SAFMAPs (Safety Functions Maps – several hierarchical levels were developed)*

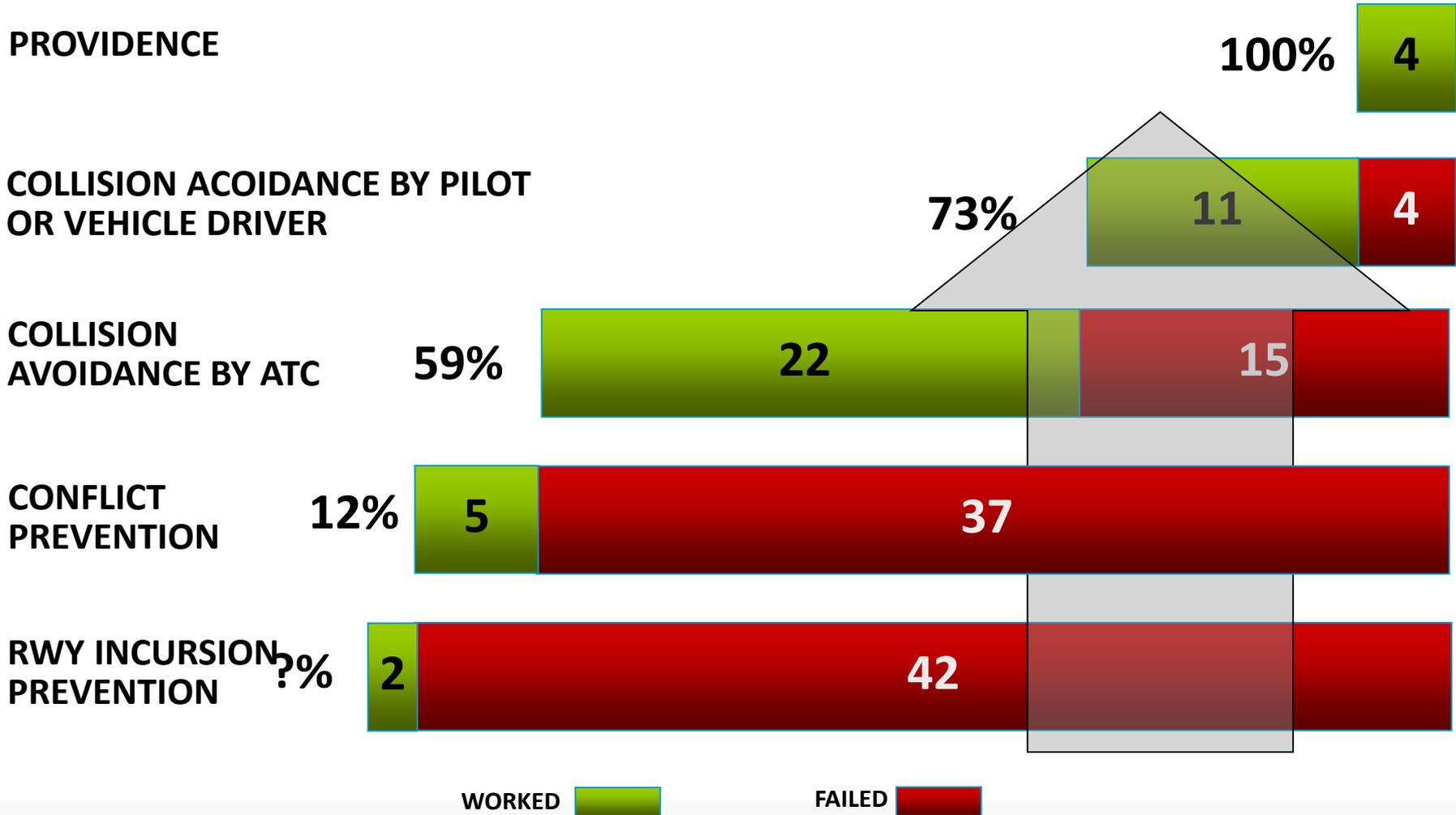
The efficiency of the barriers - MIDAIR

What proportion of the incidents that “tested” a barrier were prevented by it?

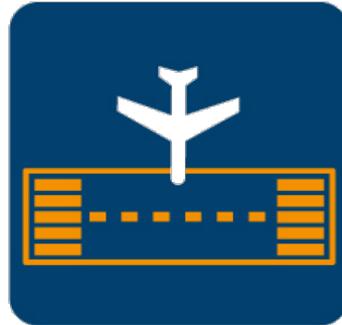


The efficiency of the barriers - RWYC

What proportion of the incidents that “tested” a barrier were prevented by it?



Top 5 (2013-2014)



Top5: (1) Risk of operations without transponder or with dysfunctional one



- ***A single threat often removing all the barriers up to ‘see and avoid’;***
- ***No ATC awareness;***
- ***No STCA;***
- ***No TCAS/ACAS.***

Top5: (2) Landing without clearance



- *For numerous reasons, aircraft sometimes land without ATC clearance;*
- *This is resulting in Runway Incursions that are often only resolved through ‘providence’.*

Top5: (3) Detection of Occupied Runway



- *Good share of the severe Runway Incursion incidents could have been prevented;*
- *Need for the controllers to detect that the runway was occupied at the time of giving a clearance for the next aircraft to use it.*

Top5: (4) “Blind Spot”



- ***Conflict was not detected with the closest aircraft;***
- ***After descending clearance;***
- ***Rapidly developing situation – often 1000ft and 15 Nm between the conflicting a/c.***

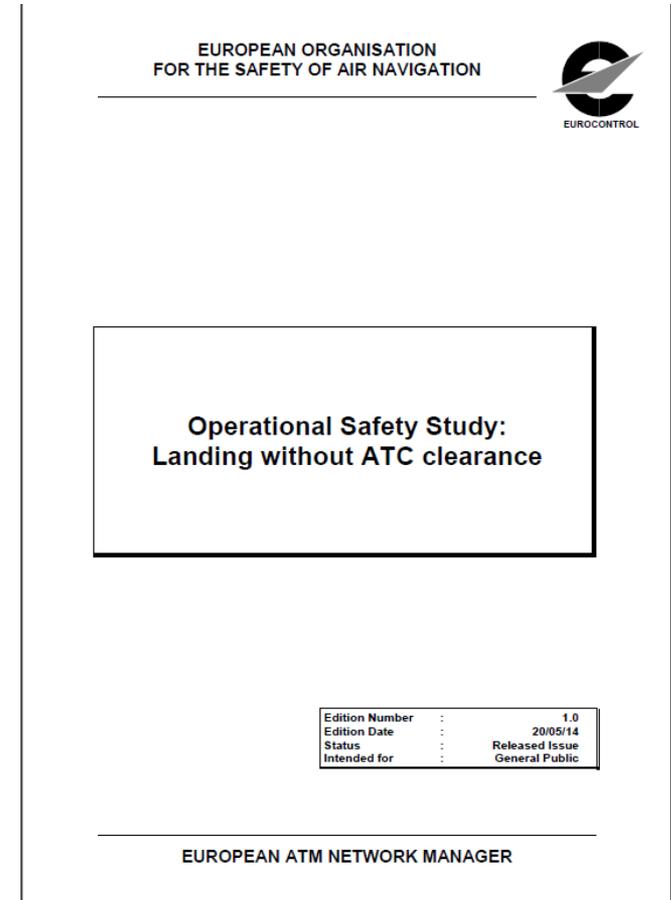
Top5: (5) Conflict detection with adjacent sectors



- *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?

- ***For each 'Top 5' - a dedicated Operational Safety Study***
- ***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 SKYbrary materials (to further all of the above).***



Runway Safety Action Plans

- **Top 5 Risks – “Tactical” management of operational safety**
Addressing in short term the current safety issues
- **Runway Safety Action Plans - “Strategic” safety improvements**
Addressing in long term the major safety concerns
- **Two Action Plans released in partnership with many actors:**
 - *European Action Plan for the Prevention of Runway Incursions*
 - *European Action Plan for the Prevention of Runway Excursions*

Use ground navigation ICAO compliant signs, markings and lighting



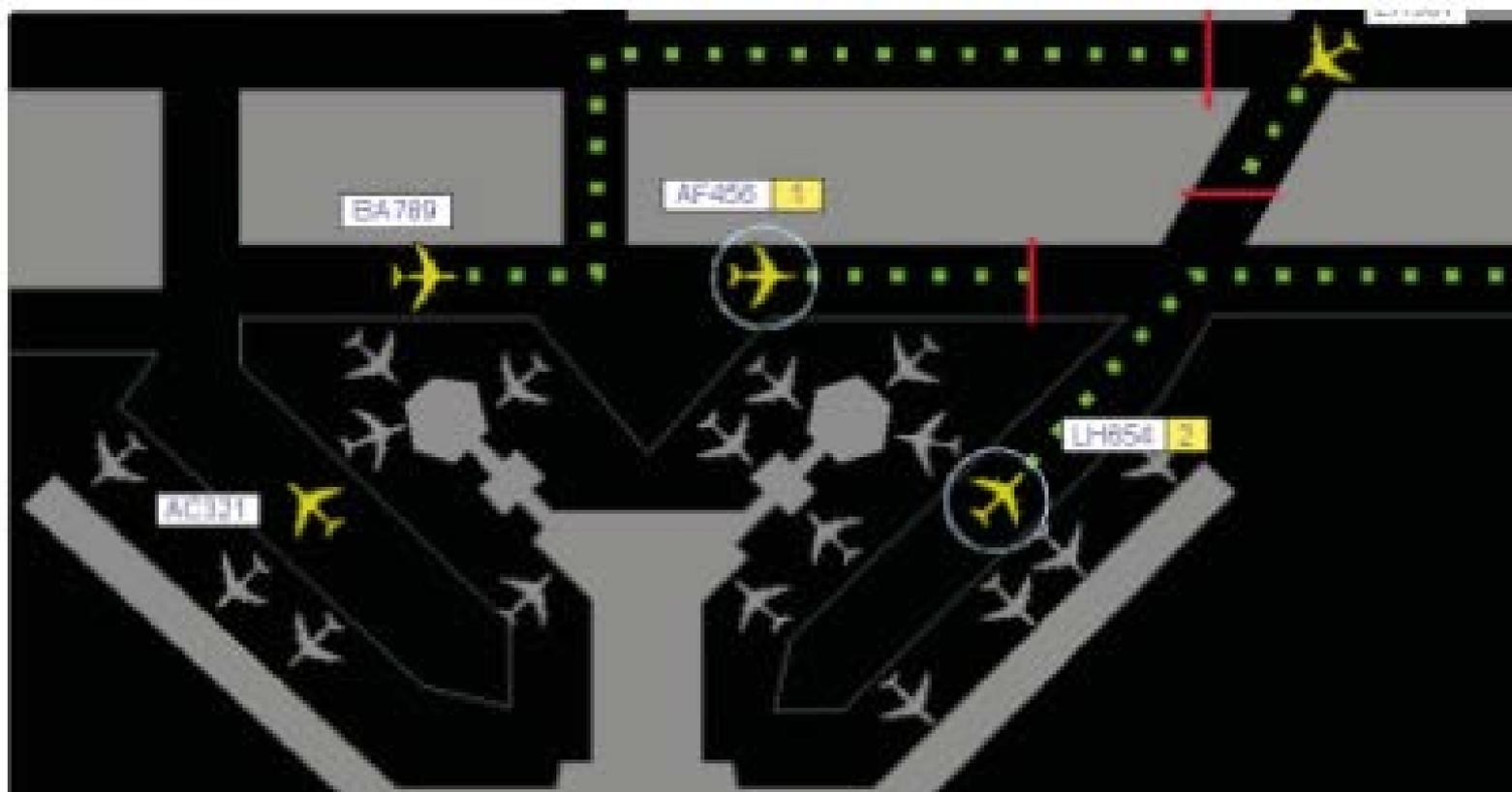
24H use of Stop Bars

- 
- The key messages for the Stop Bars are:
 - **Pilots – NEVER cross a lit red Stop Bar**
 - **ATCOs – NEVER issue a clearance to cross a lit Stop Bar** (except in contingency)

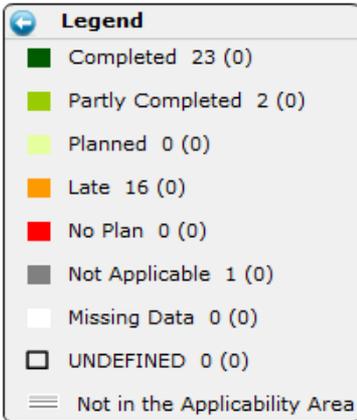
A SMGCS



A-SMGCS: Advanced-Surface Movement Guidance and Control System

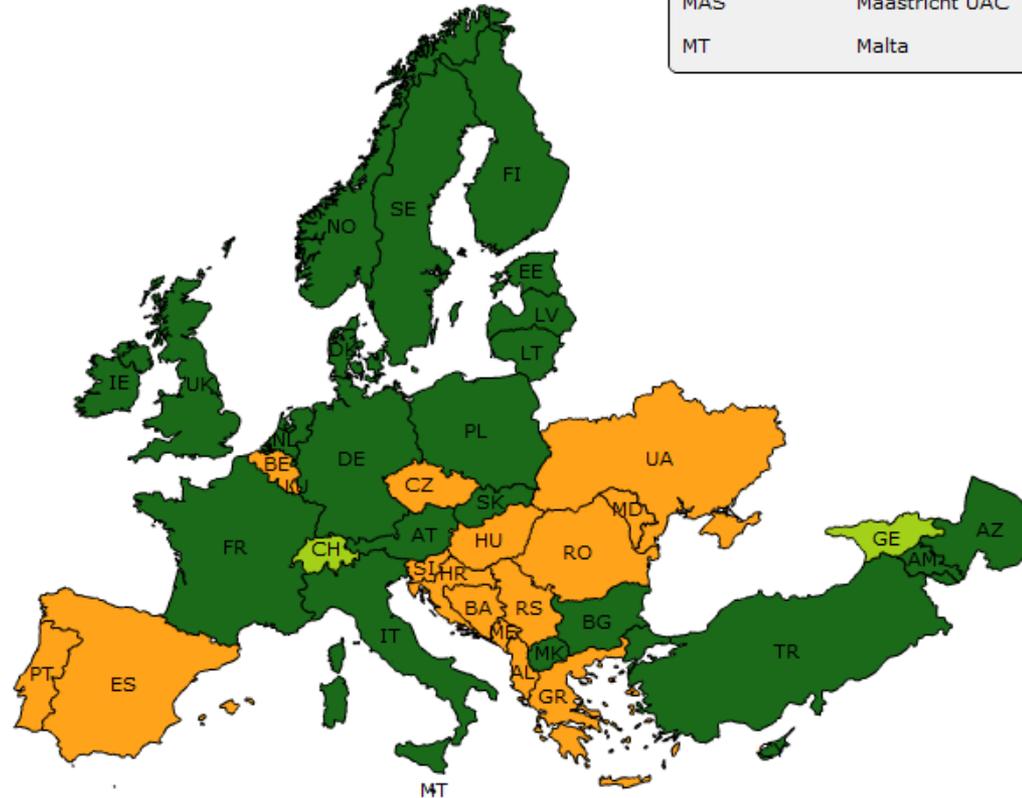
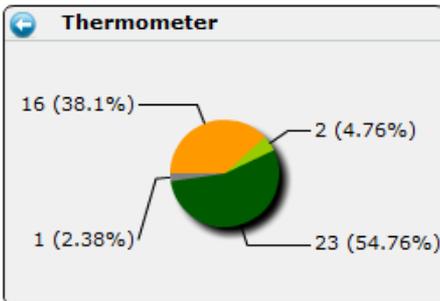


Runway Incursion Action Plan - EAPPRI



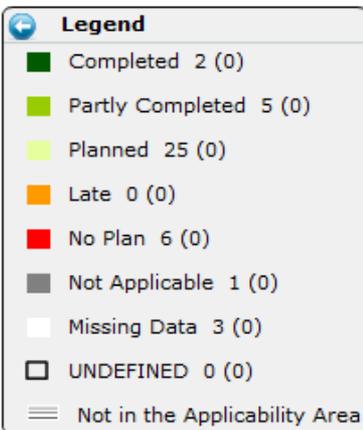
Overlaps

Country code	Full name	Progress
LU	Luxembourg	■
MAS	Maastricht UAC	■
MT	Malta	■



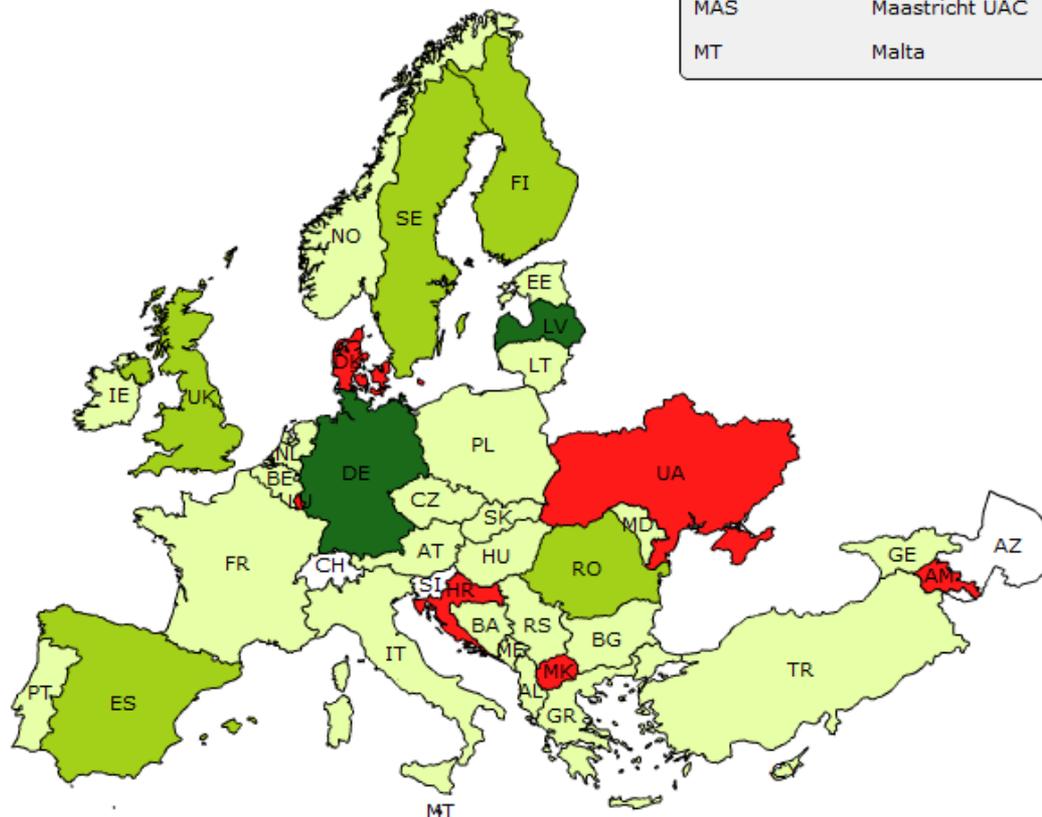
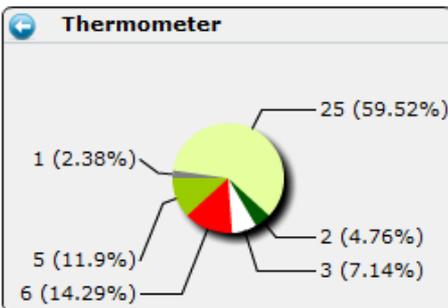
2011-2015 Year 2011 Year 2012 Year 2013 Year 2014 [2015] [2016] [2017] [2018]

Runway Incursion Action Plan - EAPPRE



Overlaps

Country code	Full name	Progress
LU	Luxembourg	■
MAS	Maastricht UAC	■
MT	Malta	■



Year 2013 Year 2014 [2015] [2016] [2017] [2018]

The Network Manager

- **Ready to support the stakeholders for Top 5 Risks**
- **Supports the implementation of Runway Safety Action Plans**
- **Building and maintaining a recognised knowledge base**
- **Measuring and improving safety culture in operational stakeholder organisations i.e. ANSPs**

[Demand, Pressure, Resources, Constraints, Flow of work, etc...]

SYSTEM

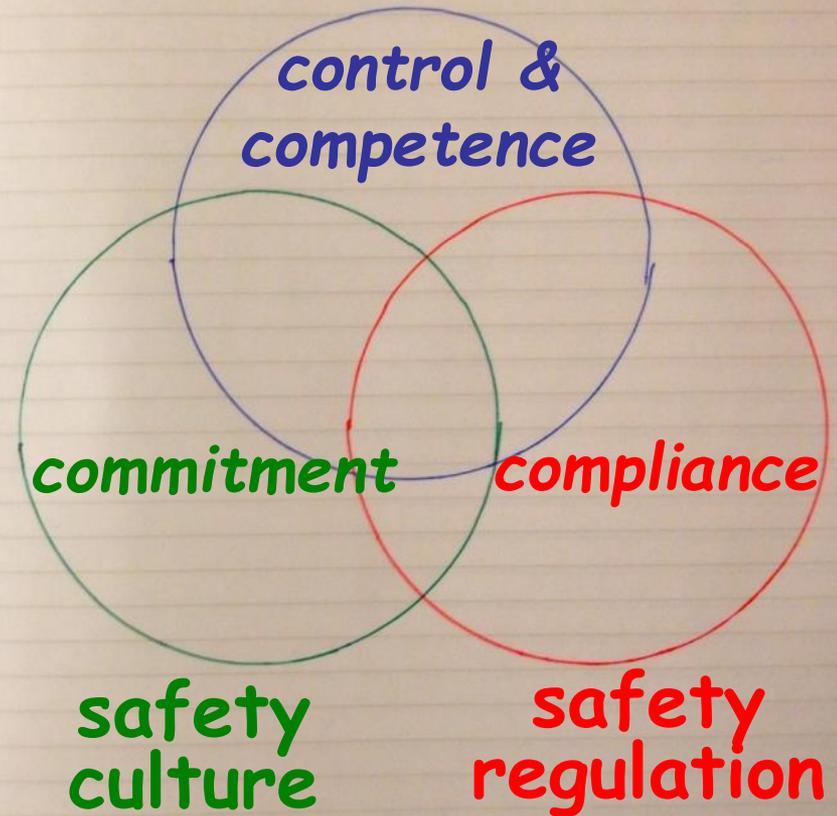
How do we
THINK
about safety?

What do we
SAY?

What do we
(really) **DO?**



safety management system



professional culture national culture



organisational culture



SKYbrary

The single point reference for aviation safety knowledge

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 Air Ground Communication	 Airspace Infringement	 Bird Strike	 Controlled Flight Into Terrain
 Ground Operations	 Airworthiness	 Level Bust	 Loss of Control
 Runway Excursion	 Runway Incursion	 Wake Vortex Turbulence	 Weather
			 Emergency and Contingency
			 Fire Smoke & Fumes
			 Loss of Separation

Highlighted Article

Is it necessary for vehicles to enter an active runway when there are alternative routes?

posted 20 October 2014 in Category:Accidents and Incidents

On 29 July 2008, a flight crew taking off in accordance with their TWR clearance saw vehicles that had previously been cleared to enter the same runway by a GND controller. The aircraft became airborne approximately 760m from the vehicles...

[Read more >>](#)








2014 Safety Forum Airborne Conflict

One Safety Issue - One Coordinated Outcome

posted 29 July 2014 in Portal:Airborne Conflict

The findings and conclusions of the recent Airborne Conflict Safety Forum are now available on SKYbrary along with all the presentations.

[Read more >>](#)

- ### References
- Accidents and Incidents browser
 - Airport Directory
 - Aircraft Types
 - Safety Alerts
 - CAST Safety Enhancement Plan

- ### Thematic
- Single European Sky
 - HindSight Magazine
 - EUROCONTROL Training Zone
 - Operators Guide to Human Factors in Aviation
 - General Aviation

- ### Toolkits
- Systems Thinking for Safety **New**
 - AIClear?
 - Airspace Infringement Prevention
 - Stabilised Approach Awareness Toolkit for ATC
 - Flight Deck Procedures - A Guide for Controllers

Questions?

