# Automatic Safety Monitoring Tool

## Safety Performance Monitoring in FAB context

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ES² - WS1 Larnaca Mai 2015

# The Automatic Safety Monitoring Tool

**Objectives**
**To provide you with the necessary information to tell us YOUR needs and/or recommendations to introduce ASMT at FAB Level**

*Session Rationale*

*(9. 50 - 14.45)*

asmt_video-Setting the Scene.mp4

**Setting the Scene & Demo**

**ASMT Operational Experience LPS SR**

*Coffee Break (10.20)*

**FAA Safety Performance & Replay Tools – TARP & FALCON**

*Lunch (12.30)*

**Tool Considerations & EC Regulatory Context**

**1st Q & A  on presentations delivered (15 mn)**

**ASMT V5 – Evolution**

**ASMT in FAB Context**

**Q & A Introduction at FAB level, YOUR needs & Recommendations (20 mn)**

- ✓ Collects automatically raw data from the ATC data processing equipment, e.g. radar tracks, FPL data

- ✓ Detects safety events upon generated alerts from ground or airborne equipment (external triggers)

- ✓ Detects safety events upon internal triggers, e.g. separation minima infringements, airspace infringements,..

- ✓ Records & Replays safety events with background information

- ✓ Presents sound operational computed information to support analysis of safety events including Risk of Collision (based on RAT values)

- ✓ Provide automated set of statistics

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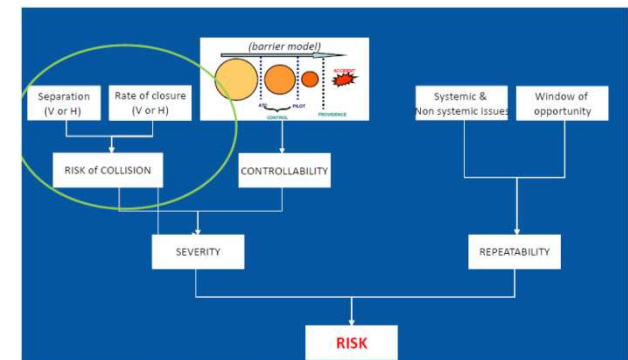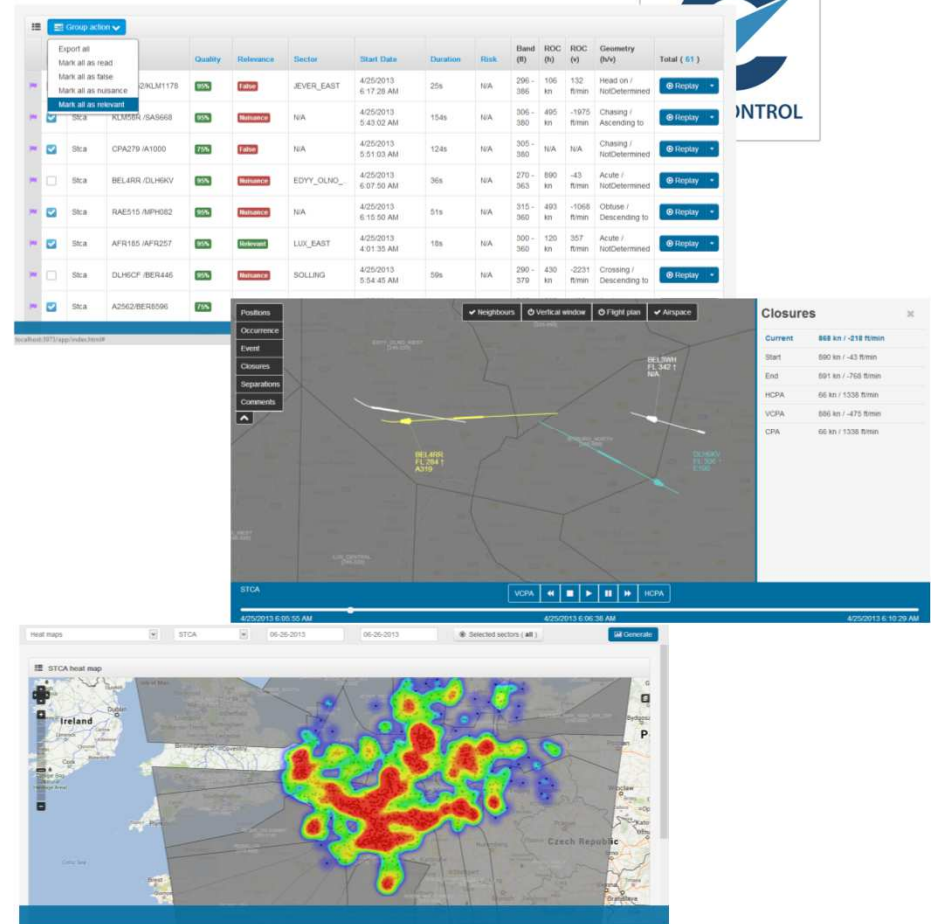
**ASMT – internal safety occurrences** - (internal triggers)

Internal events are computed by ASMT own logic

➢ Separation Minima Infringement - SMI

   *Vertical and/or Horizontal separation infringement*
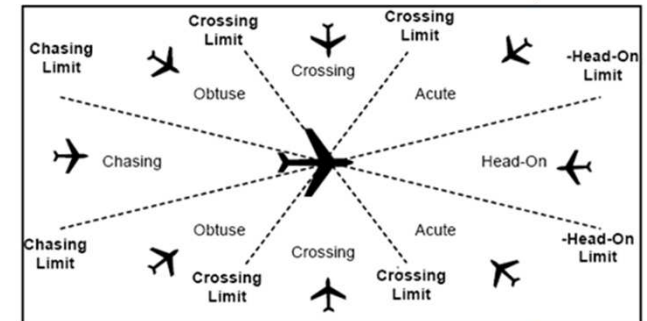
   *With Rate of Closure – ROC*

   *With Type of Conflict*

➢ Airspace Infringement – AI, Entering or Exiting a defined airspace

➢ Altitude Deviation - ALT DEV

   ▪ Altitude bust,

   ▪ Level non-compliance,

   ▪ Wrong level compliance

   ▪ Delayed compliance

**ASMT external safety occurrences** - (external triggers)

External events are alerts generated by:

   ✓ ground system (Safety Nets)

      ✓ STCA

      ✓ APW

   ✓ airborne system (TCAS) down linked via Mode S

      ✓ ACAS-RA

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Introduction of Automatic Safety Monitoring Tool

Considerations

Cultural Changes

Regulatory Context

EUROCONTROL  Approach

▶ Tool for Monitoring Technical & Operational Safety Performance

▶ Does not replace Manual Reporting – Complementary to

▶ Not a tool designed for investigation as far as legal aspects are concerned

▶ Systematic Collection of all Safety Events and Traceability

▶ Recording relevant Safety Events after operational validation

▶ Management of Database Access ensuring Data Confidentiality
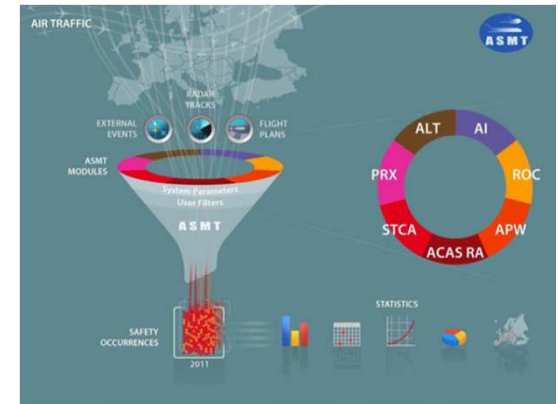


➢ As the tool can collect safety events that may have not been reported and record them (most probably the case for marginal infringement of safety margins)

▪ Sometimes only blocking issue has to do with the reporting

▪ Can create a workable balance between Safety and Sanctions

▪ Also a sense of discomfort for the staff who have an obligation to report and those who become aware of the automated safety event collected.

Then a challenge for

➢ operational staff with regards to reporting

➢ safety department, with regards to the management of events non reported manually but collected automatically

➢ It is just legitimate for Management, having regards his safety accountabilities, to seek the reporting of all occurrences

➢ It is legitimate as well to answer to the questions raised by staff:

- is this going to affect me?

- how this is going to change my work from tomorrow?

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➢ A successful deployment factor of ASMT is to keep and adapt its use to standard operating practices and safety management processes already agreed and implemented in the Organisation

➢ An "honest mistake" remains an "honest mistake" despite the presence of ASMT or not

➢ A need for infringing safety margins because of the operational conditions to temporarily accommodate (e.g. heavy traffic) remains "normal work" despite ASMT is installed or not.

Then also a challenge for:

➢ Managers, with regards to the adherence to just culture

➢ ASMT is a tool for detecting events which, after operational validation, might require to be investigated with the Organisation existing legal tools and processes, i.e. in full compliance with the just culture principles, regulations in force and international best practices

➢ If just culture is really in place and staff confident, there is nothing to be afraid about the detection of events that are:

- honest mistakes
- minor infringements of separation minima that were needed considering the situation

➢ Major infringement of minima would always probably require investigating the event

- isn't this what actually happens now?
- does not everybody agree on the need of looking into serious events?

**❖ Need a solution shared between Unions and Staff Representatives and Management that makes ATCOs confident**

- Identify Roles and Responsibility of Management and Staff using ASMT data and outcomes
- Define what can be done and what cannot be done
- Assure Unions & Staff representatives about the use of ASMT
- Obtain **endorsement** by DG and become "credible"

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Automatic Safety Monitoring Tool
ASMT Guidance – Support for the development of an ASMT Policy

**POLICY**

10 Principles

**Starting Deployment Monitoring phase Best Practice**

0.2
20/05/2014
Draft
Restricted Audience

NETWORK MANAGEMENT

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**OPSCON**

"what" to do with ASMT "for which" Objectives

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**CONOPS**

Automatic Safety Monitoring Tool
ASMT Guidance – Support for the development
Concept of Operations

How the Tool will be used for

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Status:             Draft
Intended for:       Restricted Audience

RECTORATE NETWORK MANAGEMENT

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- ➢ **Performance Review Commission's** Report 2013 recommendation has requested the EUROCONTROL DG to initiate a pan-European harmonization project, in order to deploy automated safety data reporting/monitoring tools at State, FAB or European level.

- ➢ **EUROCONTROL as Network Manager** in accordance with Reg. 677/2011 has the obligation to manage the European network, including a continuous monitoring of its performance and ensuring the achievement of the corresponding targets and the reporting at the EU level, as set by the SESII legislation.

- ➢ SESII legislation incumbent on EUROCONTROL and on the Member States, as per the **Performance Scheme Regulation (EU) 390/2013**, lays down the requirements for a performance scheme for ANSPs and network functions for the Reference Period 2 : 2015 to 2019 inclusive. Targets for Safety Performance are introduced as well as the automatic safety collection of data to report identified safety occurrences where available.

- ➢ **Regulation (EU) 376/2014** addressing the reporting analysis and follow-up of occurrences in civil aviation (safety occurrences and other relevant safety-related information), appropriate use of collected safety information, dissemination of anonymized information to interested parties to improve aviation safety – Also foresees a voluntary reporting to EASA.

- ➢ Recently, pursuant to the Commission Implementing Regulation (EU) 390/2013, a Decision (**ED of EASA, Decision 2014/035/R)** addresses the safety performance Regulation issue related to the evaluation of Safety (Key) Performance Indicators at the level of ANSP and at State level. Objectives is to propose AMC/GM for SPIs for the RP2

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Considering the Regulatory Context and PRC initiatives, it can be said that tangible future exists for automated collection and reporting of safety data both for regulatory and voluntary data flow.
Playing a key role both in safety regulation and safety management.

EUROCONTROL has committed to implement the Automatic Safety Monitoring Tool: ASMT, within 90% of ANSPs by the end of RP2 (DG letter addressing the PRC Chairman answering PRC Recommendations 2013)

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ECAC, EUROCONTROL, ECAA
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ECAC, ECAA, EU
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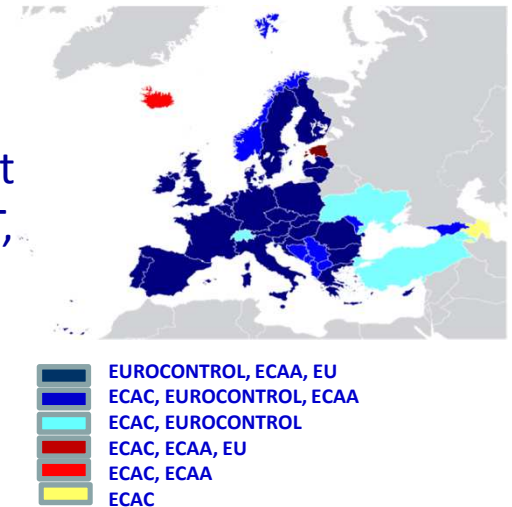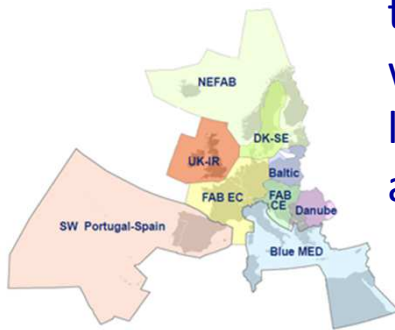
Better not to wait and be imposed but to be proactive and use these changes as the leavers to best prepare the use of automated collection, reporting and monitoring of safety data.

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## ASMT position wrt AMC and GM practices – EASA Decision 2014/035/R

✓ Use of automated data safety recording systems where available, monitoring of SMI and RI

✓ Level of occurrence reporting linked to the reporting culture

✓ Number of Safety Occurrences at all ATS unit (as a minimum: SMI, RI, AI and ATM-specific Occurrences

➢ Provides means for SMI, then to assess the number of SMIs, AIs, ALT DEV, STCA, ACAS-RA, APW) – *not a tool to detect ATM-specific occurrences, no RI detection at the moment*

➢ Gets the functional basic capabilities and features to ensure the reporting to the competent authority (except for RI) – AMC 11 SPI, ED 2014/035/R

  ✓ Detection module interface with ATC System / automatic and manual Filtering module to extract relevant events / Recording module in a local database for analysis and reporting

  ✓ Deployed at ACC, APP, TWR / SE recording SMI and RI as a minimum / Recording SE by types

➢ Provides means to implement operational practices (JC environment, keeping genuine SE after filtering according to operating practices that are recognized appropriate for various reason, Recording for a period of time)

➢ Provides means to contribute to identification of level of occurrence reporting wrt JC principles)

  In addition provides a complete pictures of all SE that happen then means to improve Reporting Culture and Voluntary reporting

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➢ **SMS Effectiveness**
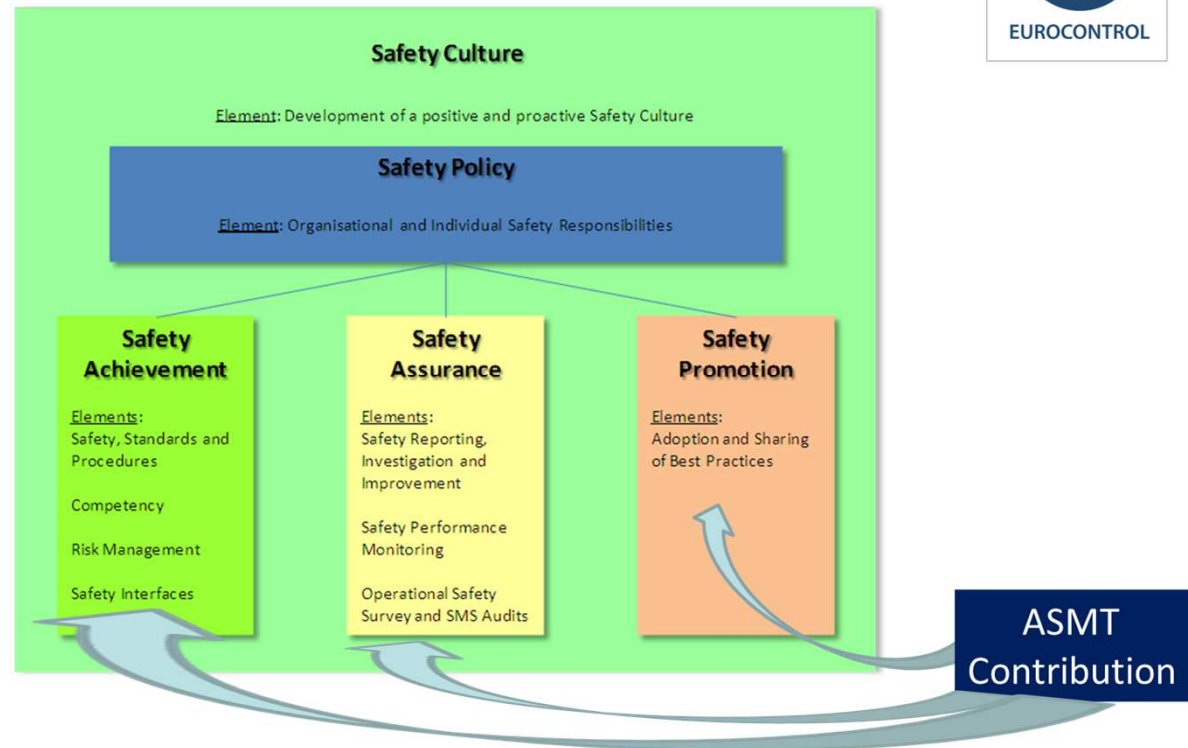


➢ Allows feeding RAT with Risk of Collision based on the achieved separation and the rate of closure

➢ Future version: extension of capabilities with new module and Implement Interface with other SAF Tools

# Discussions