



# ***Safety Performance: From Local to FAB to Network Approach***



**Giancarlo FERRARA**  
**ENAV S.p.A. Safety Postholder**



- 2004: SES I adopted to **improve safety and efficiency** of air transport in Europe
- 2009: SES II package adopted to reinforce the European commitment on **continuous safety improvements** and more sustainable air transport by:

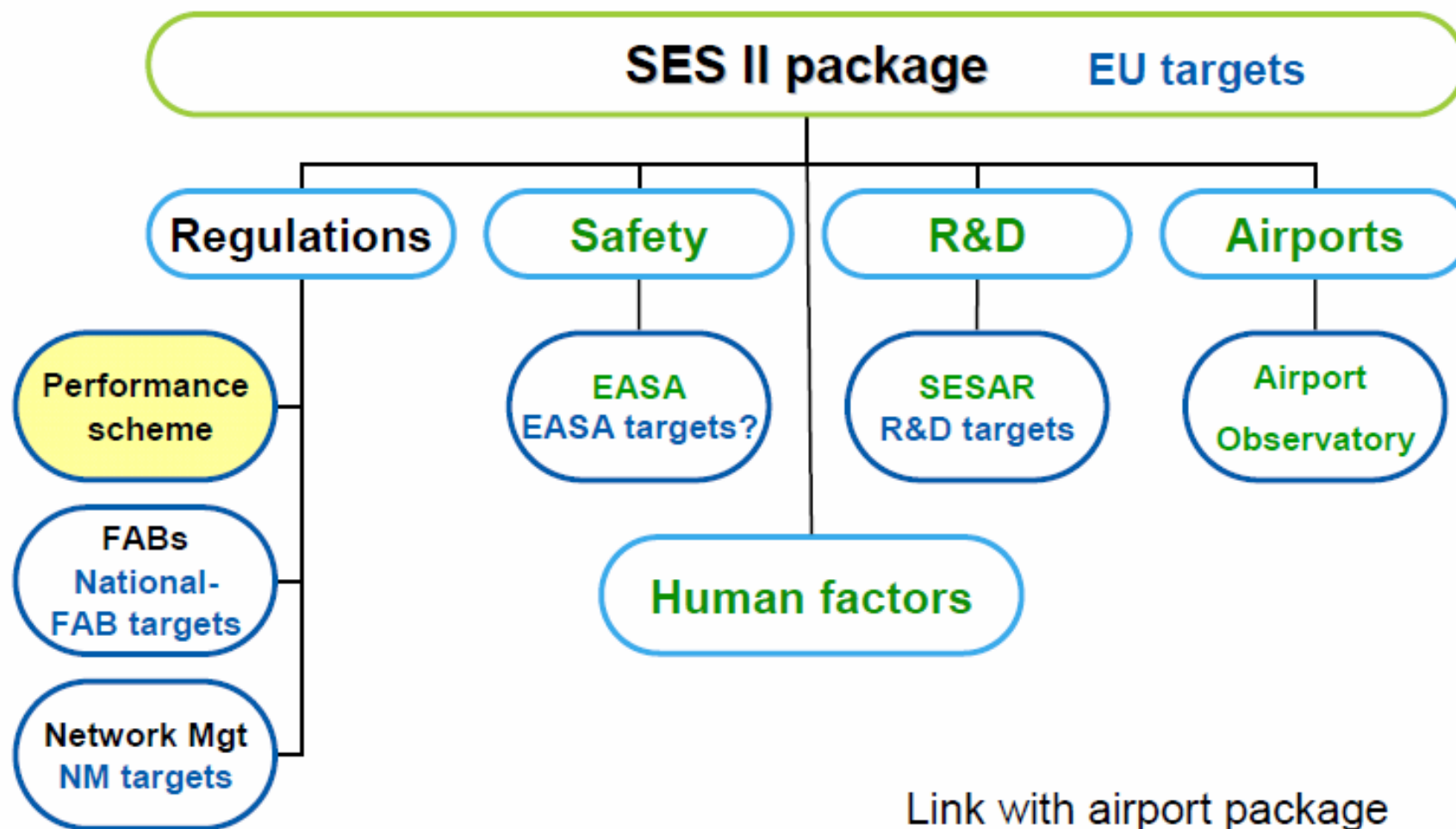


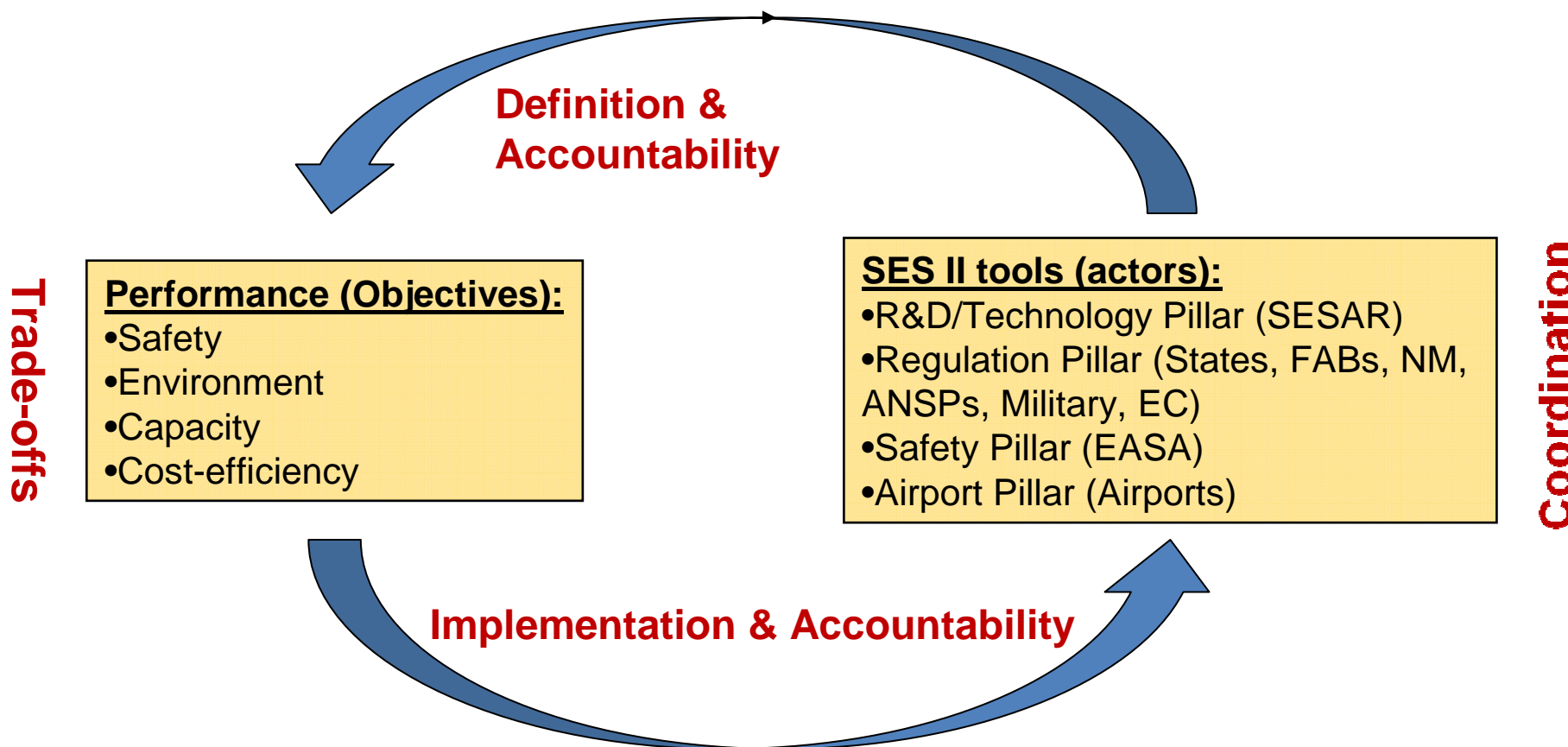
- Introducing a **performance framework** with quantified target setting;
- Creating a **reference safety framework** to enable harmonised development of safety regulations and their effective implementation;
- Enabling the implementation of new technologies, operational concept and **increasing safety levels** by a factor of ten;
- Improving management of airport capacity.



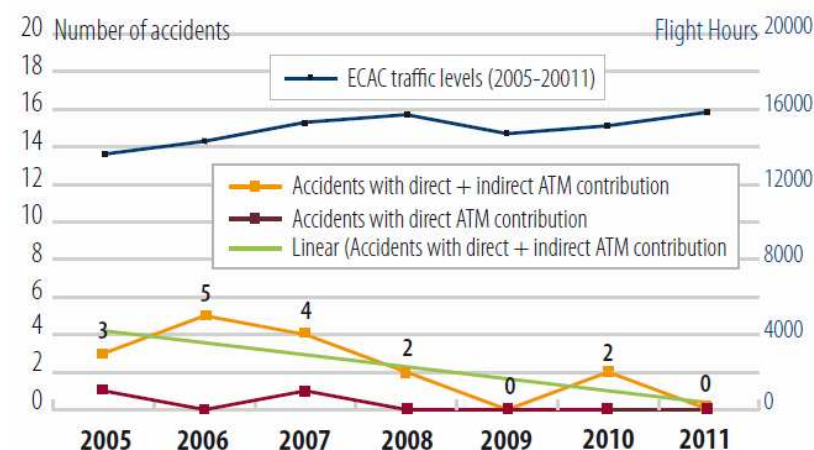
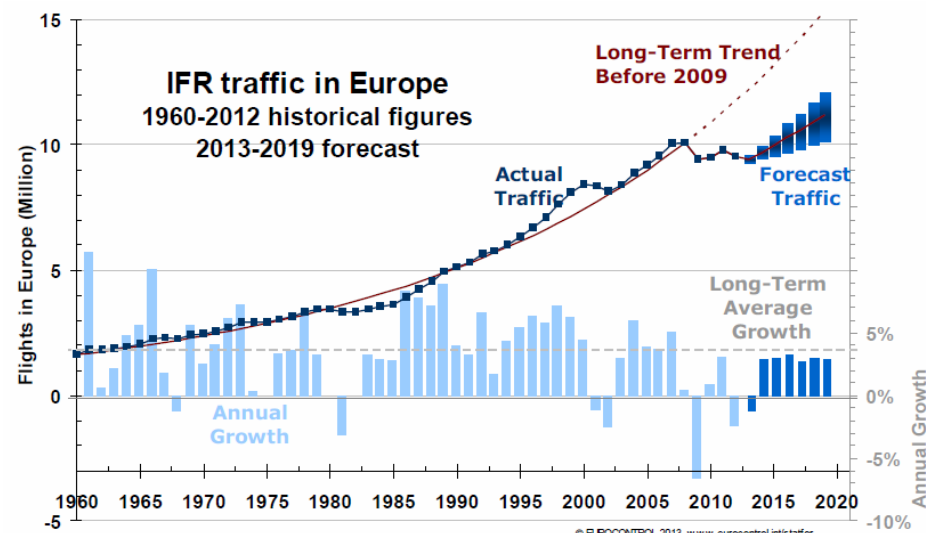
- **Goals:**
  - Handle 3 times more traffic
  - Improve **safety** by a factor of 10
  - Cut ATM management costs by 50%
  - Reduce the environmental impact per flight by 10%
- **Network perspective, i.e., EU-wide targets:**
  - Performance of the network: targets, integration (NM, FABs, airports)
  - Safety (**single safety framework**)
  - Technology (dynamic flow management, SESAR deployment)
  - Airports (capacity, efficiency, **safety**, planning, investments)
  - Humans (who make the network “work”)
- **Implementation through numerous actors:** EC, EUROCONTROL, FABs, ANSPs, Airports (Airport Package), National Governments, EASA, etc.







- The **NM** has been appointed
- **PRB** has started its work
- **FABs** implementation still in progress
- Significant **downwards revision** in medium term forecast ... 2008 traffic level not before 2015 !
- The implementation of **RP1 Performance Scheme** has started
- Consultation process for **RP2 targets** has been launched to be consolidated by the end of 2013
- We are now clearly in the **world of Performance Regulation**
- **SES II+ ... ??**

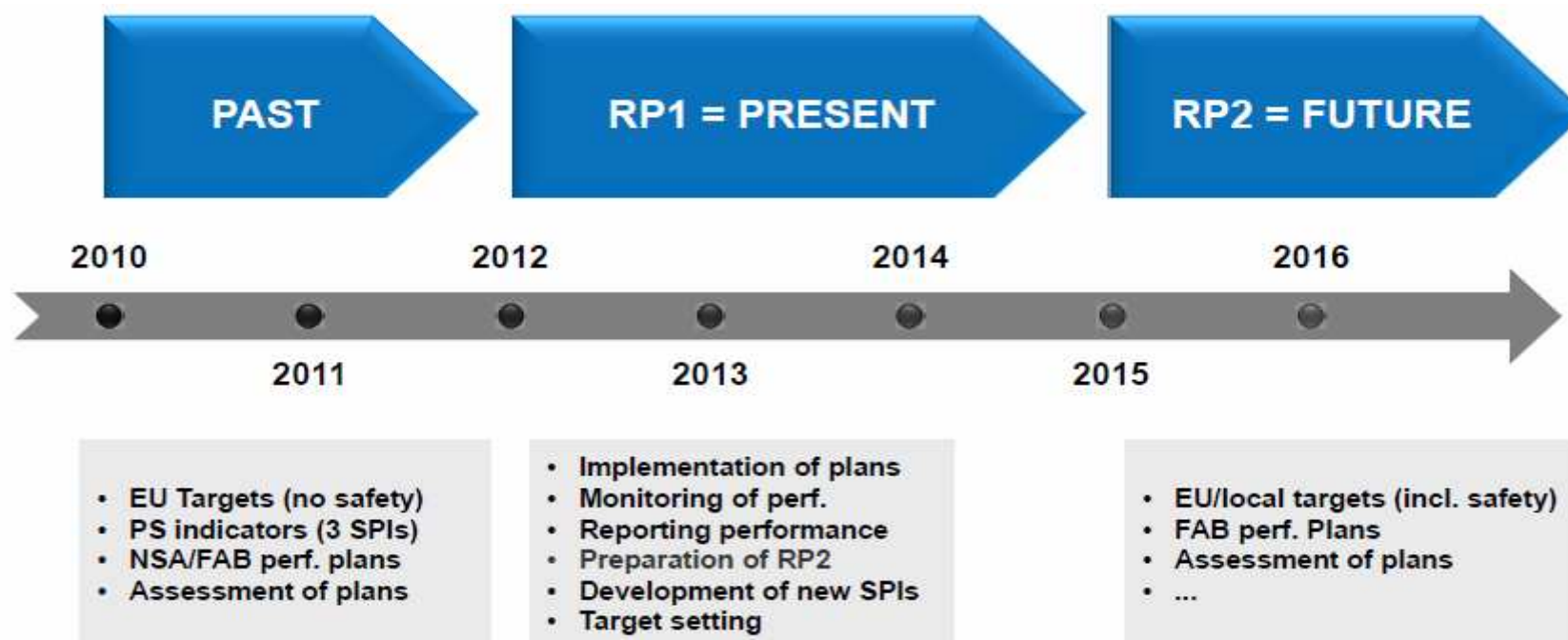


Accidents in ECAC with ATM contribution and traffic levels - aircraft above 2250 kg MTOM (2011 preliminary data)





- Build on RP1 achievements:
  - KPIs need to be robust, tested and stable
  - Do not change KPIs that already work
- Secure **adequate convergence** with other SES tools (FABs, Network Manager, SESAR) and related policies (airport package)



- Safety is the **rationale of ATM** and it is “non negotiable”!
- Safety and efficiency are **positively linked**
- Safety represents an **efficiency driver** for the overall ATM system
- Overriding safety objectives shall be protected against **interdependencies/trade-offs of different KPAs** at local and FAB level
- Safety targets setting **must not drive inappropriate behaviour** (e.g. just focusing on targets achievement) or negatively affect safety culture or reporting culture





- Full **collaboration** among the different stakeholders to reach the expected safety performance targets
- SPIs shall be **effective, easy to measure and meaningful** across all States and within FABs
- Safety targets shall be **apportioned in a meaningful way** at FAB level and leading to focused actions
- From a safety perspective, each organisation must be able to focus, as appropriate, on the **most significant risks and mitigations** at local, FAB and Network level



- PRB's proposal for RP2 safety performance is to set EU-wide targets on the **two indicators monitored during RP1**
- A lack of maturity for the selected SPIs has been noted due to a **lack of validated data**

Safety Performance Indicator	EU-wide	Local
Effectiveness of Safety Management (EoSM)	Target	Target
Application of the severity classification based on the Risk Analysis Tool (RAT) methodology to the reporting of occurrences, as a minimum, Separation Minima Infringements, Runway Incursions and ATM-specific occurrences at all ATS Centres and airports.	Target	Target
Just Culture	No	Target

- (EU) No 691/2010 : “*laying down a performance scheme for air navigation services and network functions*”
- **Article 5, Para 1:** Where Member States decide to adopt a FAB performance plan they shall: ...(c) make appropriate arrangements to ensure that a **single target is established for each key performance indicator**;
- **Article 5, Para. 3:** Where Member States of a FAB do not adopt a performance plan with targets at FAB level, they shall communicate for information to the Commission **aggregated performance targets** highlighting the consistency at FAB level with the European Union-wide performance targets.



- ***(EU) 176/2011: “Information to be provided before the establishment and modification of a functional airspace block”***

**Annex Part 2:** With regard to the FAB safety case, the following information should be provided:

- A description of the arrangements dealing with **accident and incident investigation** and plans on how to address safety data collection, analysis and exchange;
- A description of the safety management system in place or planned **to avoid degradation in safety performance** within the FAB;
- A description of the arrangements clearly identifying and allocating the responsibilities and interfaces with relation to the **setting of safety targets, safety oversight** ... in regard to the provision of air navigation services within the FAB.



... from CEOs Safety Conference – Limassol, Feb. 2012 ...



- *Where do we stand today, together as a FAB?*
- *Where do we go?*
- *How do we get there?*
- *Do we meet the regulatory requirements?*
- *Do we have **any new risks** (due to the FAB)?*
- *Are there **any safety benefits** to be gained?*

*FAB Safety  
Performance*



...action plan aligned with the reference periods of the  
performance regulation...



## SHORT TERM

- FAB Safety Policy
- FAB SMS organisation
- Occurrence reporting and assessment
- Risk Management
- Setup of FAB Safety Performance monitoring
- FAB Safety Programme

## MID- TERM

- Harmonisation of SMSs
- Implementation of FAB Safety Performance monitoring
- FAB-wide occurrence reporting and assessment
- Adoption of best practices
- Harmonisation of safety culture
- FAB Safety Report

## LONG TERM

- One unique FAB SMS
- Continuous improvements through FAB-wide surveys
- Management of external services
- Ensure harmonised competence in all SMS areas
- FAB Acceptable levels of safety
- Going beyond FAB boundaries

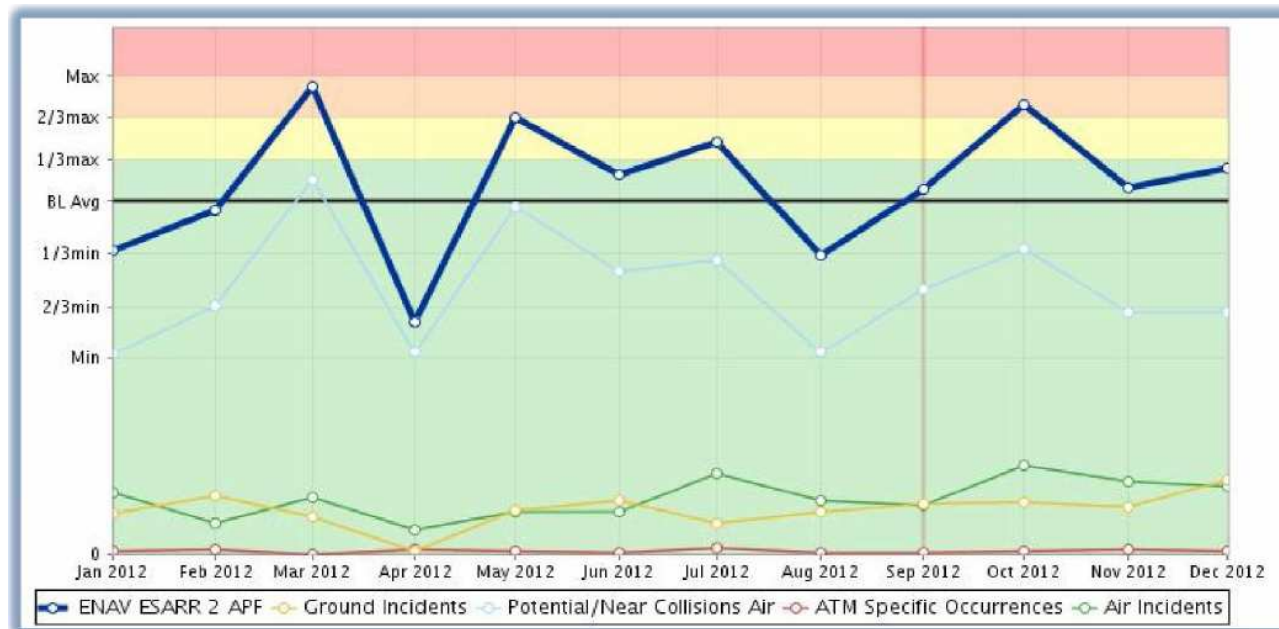
Performance IR – First Ref. Period

Performance IR – Second Ref. Period

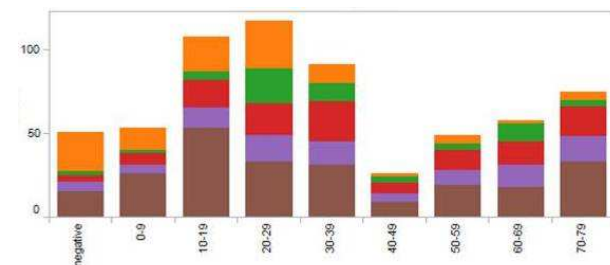
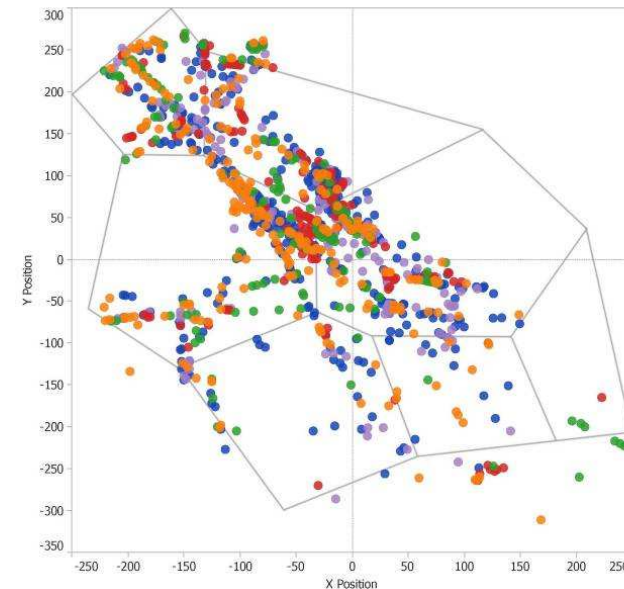




- Agreement on a **FAB-wide safety monitoring process**
- Common **monitoring tools/methodologies** should be tested and adopted (e.g. APF)
- **FAB safety performance further analysed and aggregated**, through a combination of leading and lagging indicators (e.g. AHP - Analytical Hierarchy Process and APF – Aerospace Performance Factor)



- SES II compliant **FAB-wide safety performance indicators** defined
- EoSM measured at each ANSP level and **aggregated** with an agreed/validated methodology
- The FAB **top 5 safety concerns/risks** shall be defined, based initially on expert judgment and, subsequently, complemented by data.
- Additional **tools for safety performance monitoring** (e.g. ASMT Automatic Safety Monitoring Tool) may be considered for adoption, initially at ANSP level and then at FAB level.

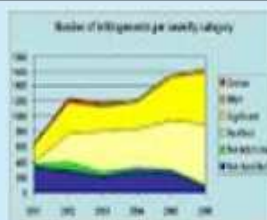


- What will be the **FAB Safety Performance Indicators**?
- SPIs **proposed by the regulation** or additional ones?
- **What** safety data do we need to collect at FAB level?
- **How** do we collect the safety data?
- How do we overcome **legal / confidentiality / compatibility issues** with the collected safety data?
- How do we **aggregate** national safety targets into FAB ones?



## Ensure a safety approach to the network operations – SO 7

**Identification of  
Network  
Safety risks**



**Improve the safety of  
operations in  
the ATM network**



**Improve Safety nets**



**Support to enhance and  
harmonise Safety Management  
Systems and Safety Culture  
Across the ATM network**



**Reduce the human  
contribution to risk in  
operations**



- Does current **performance-based regulation** actually drive the expected safety performance improvements?
- If **collaboration among the different stakeholders** is the only way to reach the expected safety performance targets, then how can this be achieved under the current institutional framework?
- Will stakeholders **concentrate on their own safety targets** to the detriment of FAB or Network ones?
- Who is **responsible** for what?
- How can the stakeholders **work effectively** with the network manager?
- Who is the **leader** of this process? If any?





