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Practical example on problem tree analysis before developing a new regulation -SPI

ARISE + Activity 4.3

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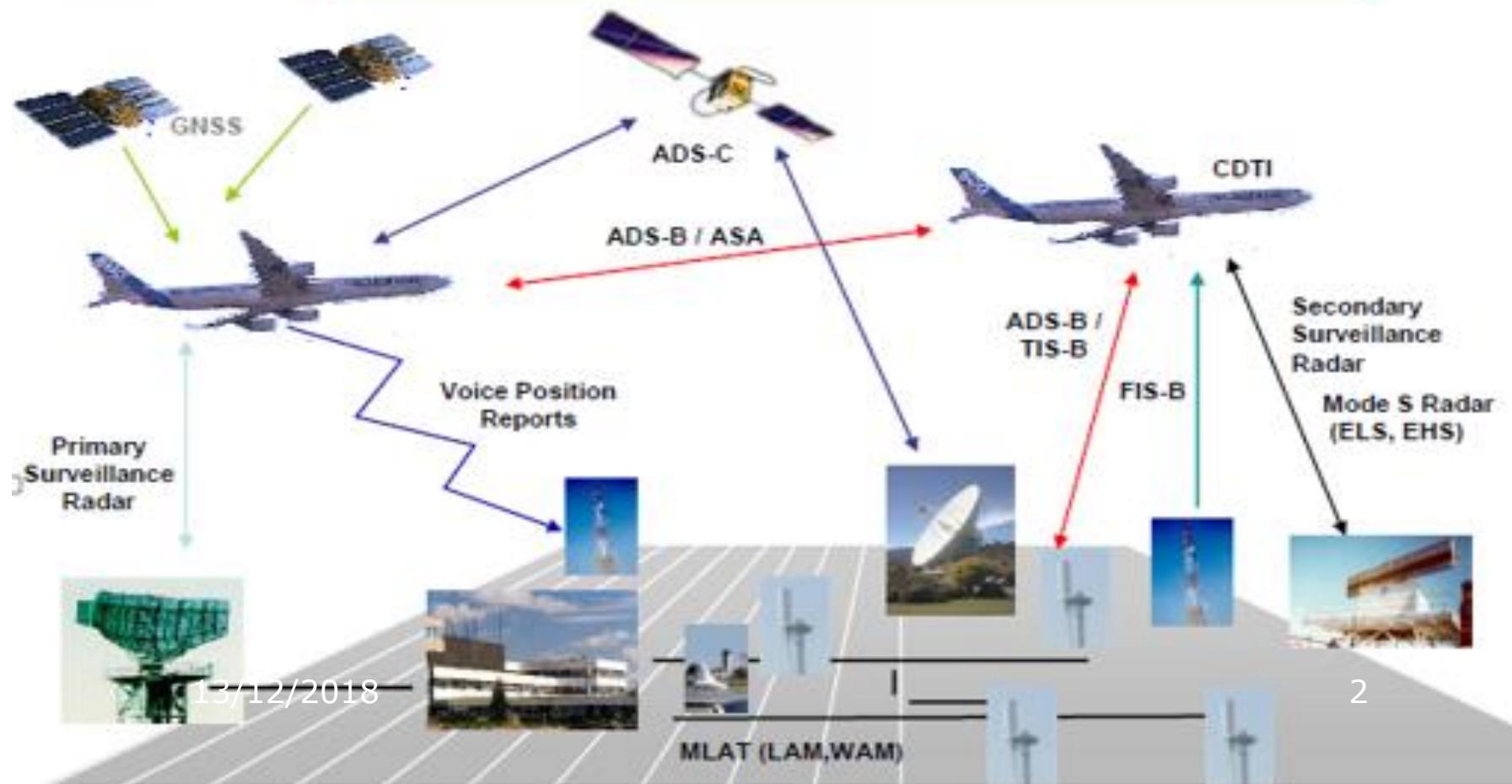
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Surveillance - Evolving Environment



Practical example



Issue

Commission Implementing Regulation (EU) No 1207/2011 of 22 November 2011* ('SPI Regulation') details the requirements on the systems, within the European air traffic management network (EATMN), contributing to the provision of surveillance data, their constituents and associated procedures.

While it addresses both air and ground environment, **most of the specific obligations are addressed to operators of aircraft (both civil and State)** for the carriage and operation of airborne surveillance equipment **specifically ADS-B** and the dates by which qualifying aircraft must be equipped.

- . Unbalanced regulation from stakeholders point of view
- . Implementation issues with ANSPs (use of ADS-B)

*Commission Implementing Regulation (EU) No 1207/2011 of 22 November 2011 laying down requirements for the performance and the interoperability of surveillance for the single European sky (OJ L 305, 23.11.2011, p. 35).



Issue

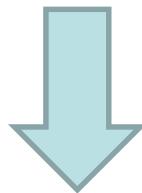


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Undertake detailed review and impact assessment of:

- the underlying assumptions in terms of expected costs and benefits;
- the scope and applicability of the Regulation; and
- exemptions and monitoring conditions.



Objective

To ensure the safe, efficient, cost effective, proportionate and harmonised implementation of a rationalised surveillance infrastructure and functionality.



Main issues identified



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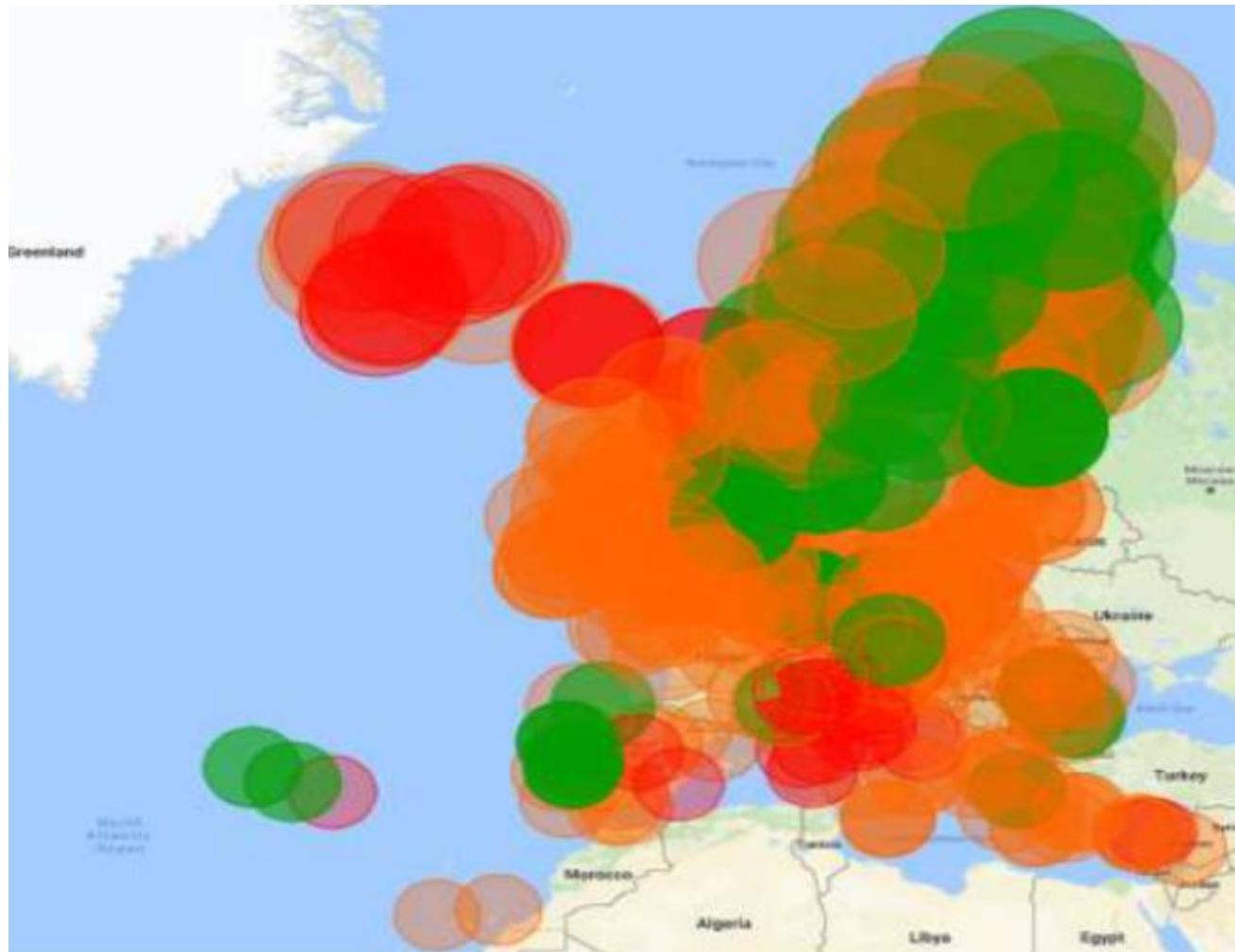
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- » **Performance:** surveillance systems and infrastructure need to ensure that surveillance capability can continue to fulfil its role as the operational environment evolves. The system performance needs to reflect the services being provided.
- » **Spectrum protection/rationalisation:** air traffic management (ATM) is required to improve the manner in which the radio frequency (RF) spectrum currently assigned to it is managed and used.
- » **Cost rationalisation:** Keeping the costs to a minimum and maximising the benefits is a key consideration, the use of systems with lower procurement and maintenance costs could result in significant savings if deployed in a coherent manner.
- » **Interoperability:** the interoperability between ground-ground, airborne-ground and airborne-airborne systems needs to be ensured.
- » **Safety;** the required performance whilst maintaining or enhancing safety needs to be ensured.

What are
the
causes?



Existing capability



ADS-B in red,
SSR in orange
WAM in green



Better Regulation



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EC

- **Better regulation** principles:

- Design EU policies and laws so to achieve their objectives at minimum cost.
- Evidence-based and well designed measures that deliver tangible and sustainable benefits for citizens, business and society as a whole
- Policies prepared, implemented and reviewed in an open, transparent manner, involving stakeholders
- [Link](#)

Tools

- Key **tools**:

- **Impact Assessment** before legislative adoption
- **Evaluation** to check the implementation
- Stakeholder **consultation**
- **Plain English**

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- “Better Regulation” elements in the **EASA rulemaking** procedure:
- Management Board Decision 2015-18: [Link](#)



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1. Define the problem tree

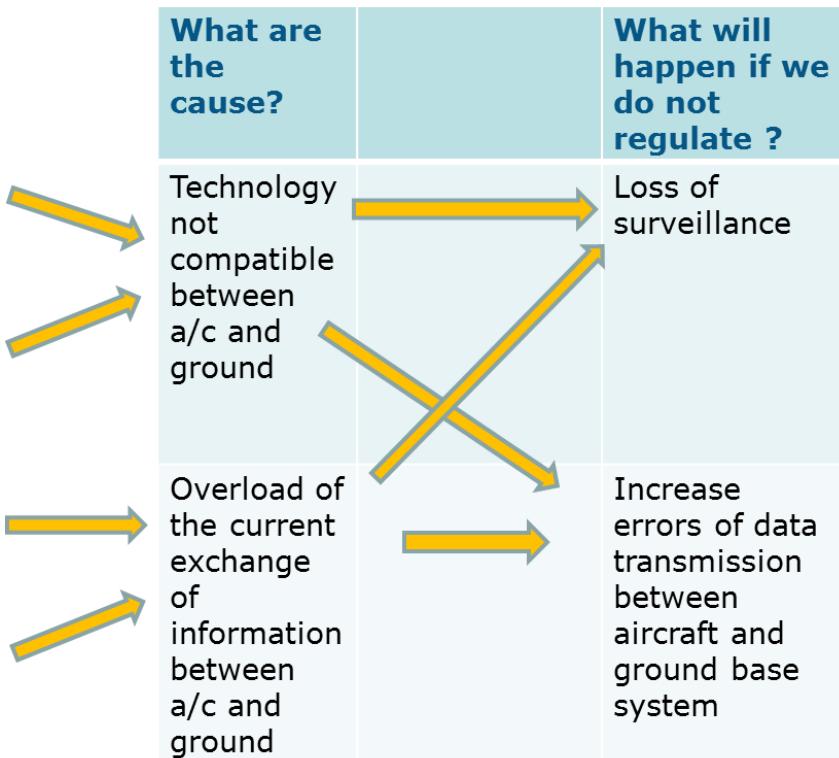
**What will
happen if we
do not
regulate ?**

Loss of
surveillance

Increase
errors of data
transmission
between
aircraft and
ground base
system



1. Define the problem tree



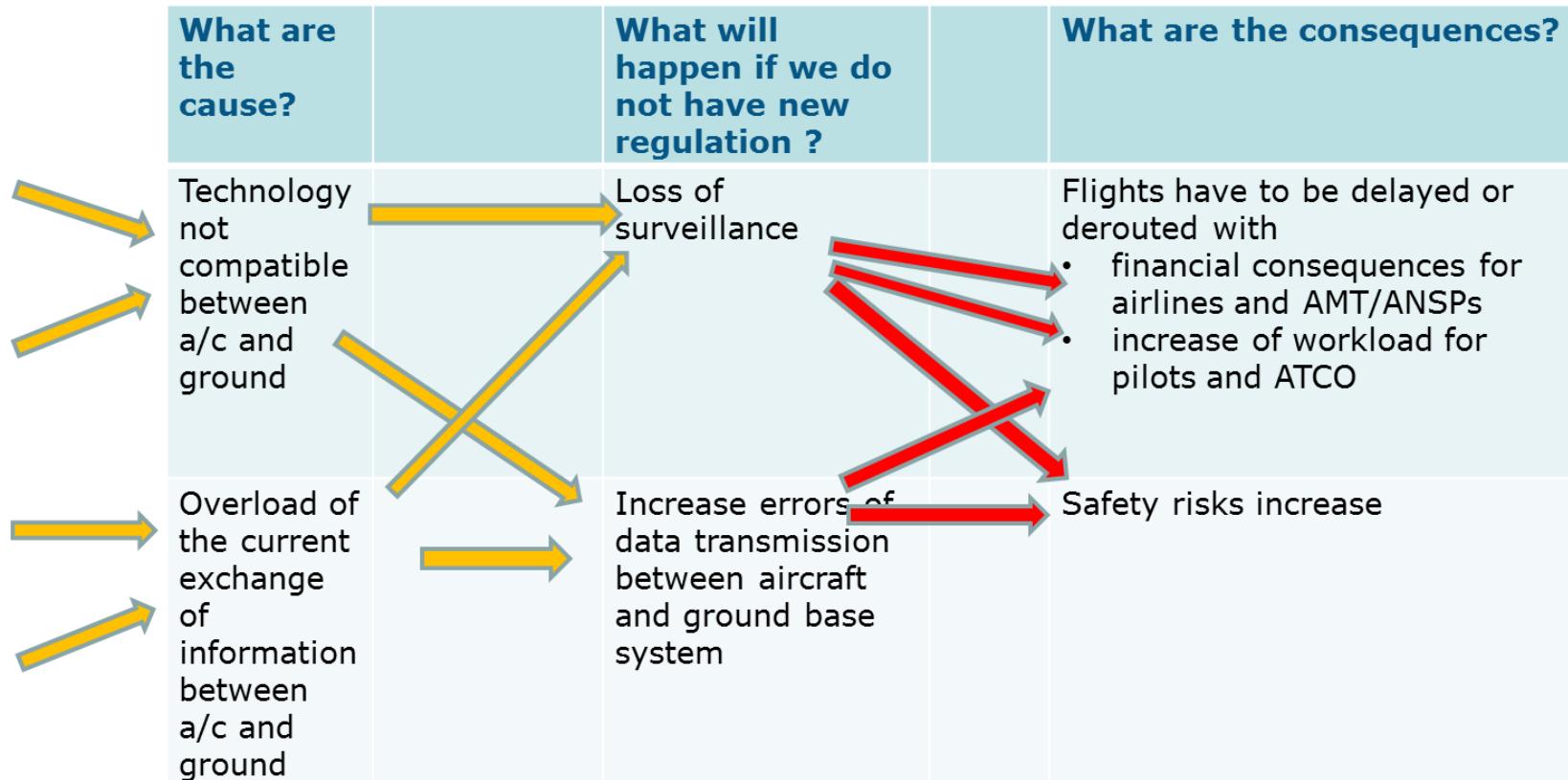


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1. Define the problem tree





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Now we divide into groups



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EASA Results

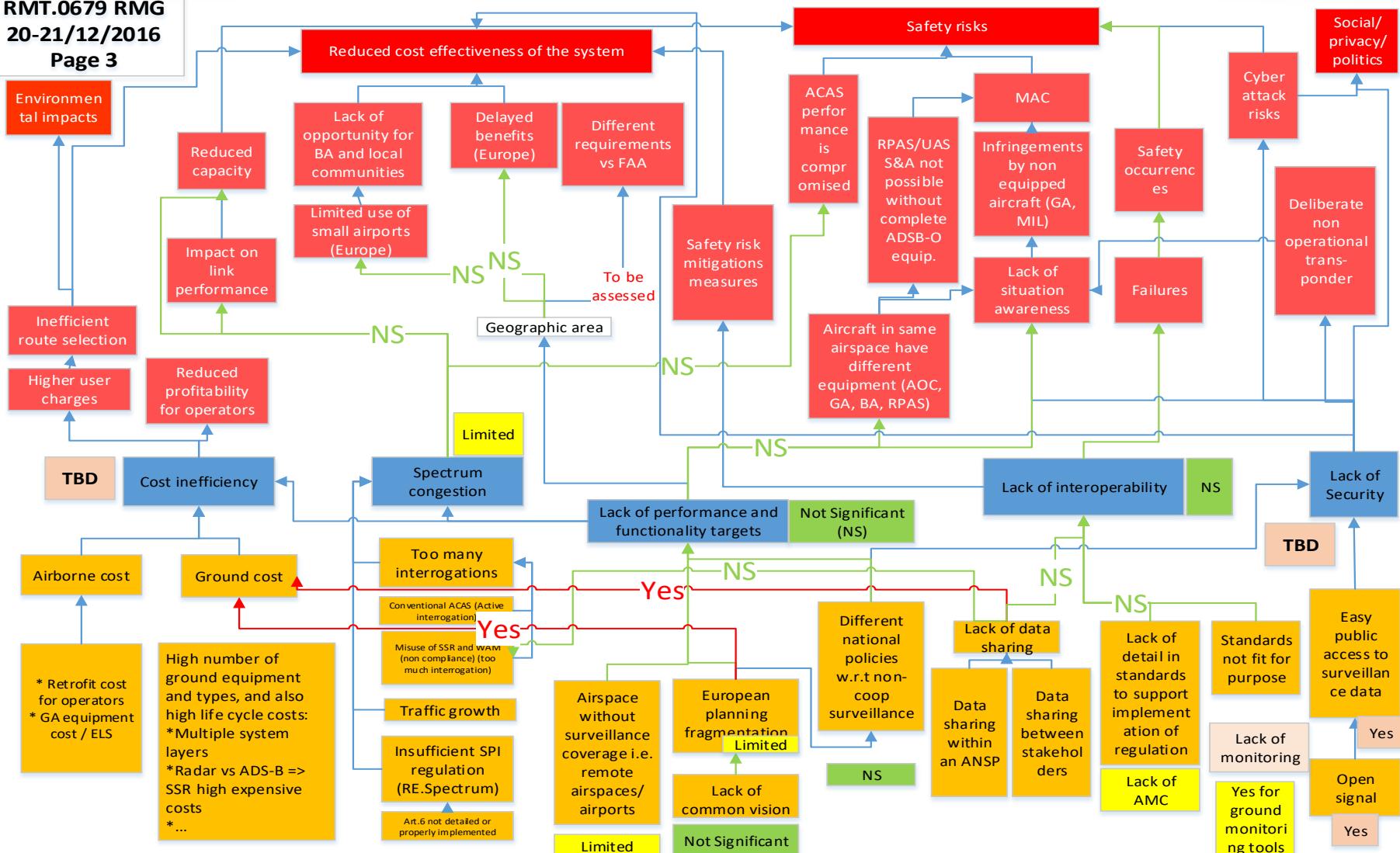


Original problem tree



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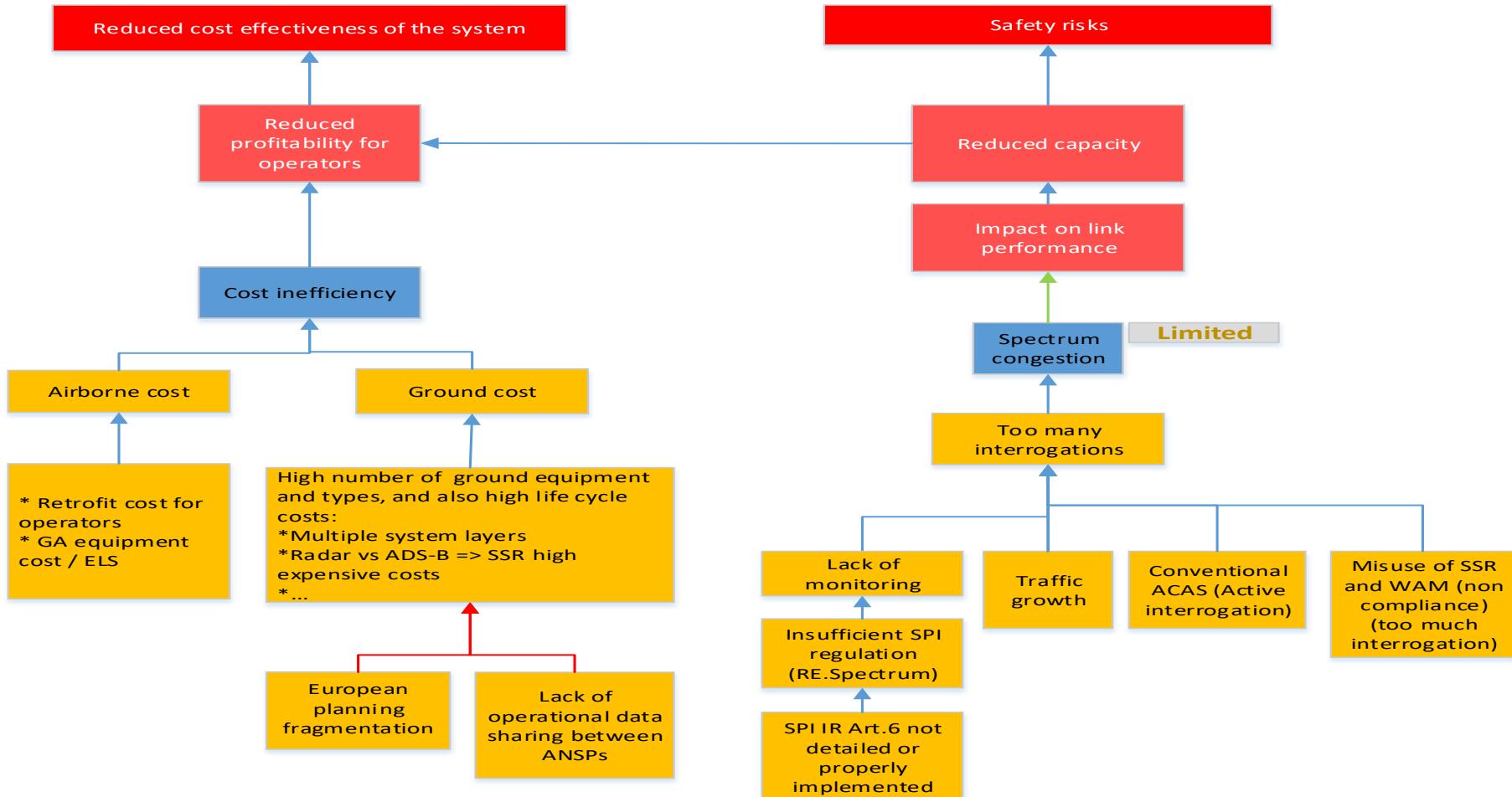
Updated problem tree



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**The purpose and
goal of the
regulation;**

**The scope and
applicability of the
regulation;**

**The underlying
assumptions in
terms of expected
costs and benefits;**



Results



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- A quick calculation provides the following for SSR en-route rationalisation
- Currently 200 SSR radars
- Theoretical optimum: 50 (no incl WAM)
- As a consequence 150 SSR for en-route could potentially be withdrawn
- $150 \times [\text{CAPEX (2 M€/SRR)} + 20 \text{ years lifetime} \times \text{OPEX (0.2M€/SSR)}]$
- = **800 M€** of avoided costs over 20 years
- However this needs an ADS-B sensors' implementation of **250 M€** (over 15 years)
- Which means that globally the avoided cost would be around **500 M€** (over 15 years)

- Overall it seems that the cost impact for CAT is between **200** and **800 M€** in 2024, GA could be impacted by **300 M€** in 2027 and the maximum benefits with radar rationalisation would be 500 M€ ...
- Total Spend **500 -1100 M€**
- Total saving **500 M€**

**CONCLUSION: NO OPERATIONAL BENEFIT IN
EXTENDING THE MANDATE**



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Thank you for your attention



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