The SCALES framework for identifying and extracting resilience related indicators: preliminary findings of a go-around case study

I.A. Herrera, A. Pasquini, M. Ragosta, A. Vennesland

SESAR Innovation Days, Madrid, 2014
Resilience Engineering (RE)

“A system is resilient if it can adjust its functioning prior to, during, or following events (changes, disturbances, and opportunities), and thereby sustain required operations under both expected and unexpected conditions” (Hollnagel & P16.01.02)

Some lessons learned, body of knowledge documented in SCALES D1.1
Enterprise Architecture (EA)

- Use of different perspectives of the system.

- These are normally called viewpoints.

- Harmonize to SESAR European ATM Architecture (EATMA)
What added value can the combination of Resilience Engineering (RE) with Enterprise Architecture (EA) bring to measure the resilience potential of the ATM system?
The SCALES core elements
The SCALES process

ATC System

EA Analysis

EA representation of the system

ATC Process View

Functional View

Role View
The SCALES process
EA viewpoints example: demo
Validation through case studies

- 4 selected case studies
- Missed approach procedure
  - Go-around procedure
Preliminary conclusions
With regard to RE

- SCALES support identification of RE related indicators
- Common RE vocabulary and modelling capabilities
- New RE viewpoint under development
- EATMA harmonization makes possible to evaluate current operation and SESAR changes
With regard to EA

- Combination of RE & EA support contextualization of indicators related to specific operations

- Rather than a static tool and method we have been able to develop a tool that is able to evolve
With regard to the Framework

- Need to improve guidance
- Refine resilience viewpoint
- Include more case studies, no only incident also observations of everyday operation and validate
Thanks for your attention…
Any Questions?