Remote Tower

current status of SESAR JU activities

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PJ05 Remote Tower for Multiple Airports
DLR (AT-One)

WP2 Solution PJ.05-02
Multiple Remote Tower Module

WP3 Solution PJ.05-03
RTC with Flexible Allocation of Aerodromes to MRTMs
Validation Phases

**2017**
- PJ.05-02 Multiple Remote Tower Module (V2)
  - 2x Braunschweig (Germany)
  - Sturup (Sweden)
  - Asker (Norway)

**2018**
- PJ.05-02 Multiple Remote Tower Module (V3)
  - Braunschweig (Germany)
  - Växjö (Sweden)
  - Asker (Norway)
  - Rome (Italy)

- PJ.05-03 RTC with Flexible Allocation of Aerodromes to MRTMs (V2)
  - Braunschweig (Germany)
  - Sturup (Sweden)
  - Asker (Norway)
  - Langen (Germany)

**2019**
- End of Project Nov 2019

*EUROPE FOR AVIATION*
Mid - Run
- ISA – Scale

Post – Run
- NASA-TLX
- SASHA
- AIM
- Safety
- Tailored questions

Debriefing
- open questions to:
  - acceptance and
  - recommendations for improvement
Safety Assessment

1. Can the situation be solved without major impairment?
   - Yes
     - No impairment: ATCO workload is low to easily achieve the desired performance.
     - Good: ATCO workload is adequate to achieve the desired performance.
   - No
     - Minor Impairment: ATCO requires a minor increased workload to achieve the desired performance.

2. Can the situation be solved by measures reducing capacity?
   - Yes
     - Minor Unpleasant delays: ATCO responds with delay to pilot's requests.
   - No
     - Moderate Disturbing delays: Situation leads to moderate delays in the traffic management.
     - High Very disturbing delays: Situation leads to strongly delays in the traffic management.

3. Can the situation be solved by measures reducing safety?
   - Yes
     - Impairments in prediction of traffic development: ATCO directs traffic sporadically, abruptly and does no longer plans ahead.
   - No
     - Impairments due to information processing: ATCO cannot build a complete picture of the traffic situation, confuses information and corrects himself/herself often.
     - Impairments due to information gathering: ATCO must neglect areas/information while monitoring and therefore misses aircraft.
     - Major Impairment: ATCO cannot longer control the traffic situation.
Safety Results

Cooper-Harper Scale

N = 35
\( M = 3.80 \)
\( SD = 1.24 \)
Splitting & Merging
I.S.A. Workload over the time

- **BASELINE - 3 Airports 100%**
- **SPLIT - 1 Airport 50%**
- **SPLIT - 2 Airports 50%**
Home

The modernisation of air traffic management is one of the main challenges of current aeronautics research. The Single European Sky ATM Research (SESAR) project defines, develops and deploys what is needed to increase ATM performance and build Europe's intelligent air transport system. The current programme is SESAR 2020, running from 2016 to 2024 with a budget of 1.6 billion Euro, supports projects to deliver solutions in four key areas, namely airport operations, network operations, air traffic services and technology enablers.

Part of SESAR 2020 is the Project PJ05 "Remote Tower for Multiple Airports" with focus on the safe and efficient airport of the future. By bringing the concept of remotely controlling multiple airports to a higher maturity level, the SESAR project aims at providing small and medium sized airports with more cost-efficient and service balanced air traffic services.
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