Building a regulatory framework for 'remote aerodrome ATS'

RMT.0624 & NPA 2017-21

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Regulatory approach/starting pointing

▶ Requirements on aerodrome ATS provision exists -> still applicable

▶ Requirements for the assessment of change to functional systems exist -> still applicable

▶ Conclusion:
Provide/develop a regulatory framework and guidance helping ATS providers to fulfil the existing applicable regulations also in a "remote" environment.

RMT.0624 – Objectives

➤ EASA <u>R</u>ule<u>m</u>aking <u>T</u>ask initiated 2014 to:

  ➤ Address SESAR developments

  ➤ Address expectations on EASA from the ATM community

  ➤ Support implementation initiatives within Europe (and worldwide)

  ➤ Support technological development

  ➤ Support a cost-efficient and proportionate ATS

  ➤ Facilitate harmonised implementation and provide a level playing field

  ➤ Support and recognise standardisation activities undertaken by EUROCAE

RMT.0624 – Set-up & deliverables

➤ **Phase 1, 2014-2015**

- ➤ Scope limited to 'single mode of operation' and mainly 'low density aerodromes'
- ➤ Completed summer 2015 via the publication of:
  - ⇒ EDD 2015/014/R: 'GM on the implementation of the RT concept for single mode of operation'
  - ⇒ EDD 2015/015/R: AMC & GM to Reg. (EU) 2015/340
    'Requirements on ATCO Licensing regarding remote tower operations'
    (EDD = EASA Executive Director Decision, GM = Guidance Material, AMC = Acceptable Means of Compliance)

➤ **Phase 2, 2016-2018**

- ➤ RMT.0624 re-launched summer 2016, under the same Terms of Reference (ToR)
- ➤ Extended scope to expand into more complex mode of operations, taking into account:
  - ⇒ the latest SESAR results + other available research/validation results
  - ⇒ gained operational experiences
- ➤ Consider adoption of industry standards (EUROCAE ED-240, ED-240A when available).
- ➤ New Notice of Proposed Amendments (NPA) published: **20 Dec 2017**
- ➤ Public consultation closed: **3 April 2018**
- ➤ Expected publication of the expanded EASA material/revised ED Decision(s): **late 2018**
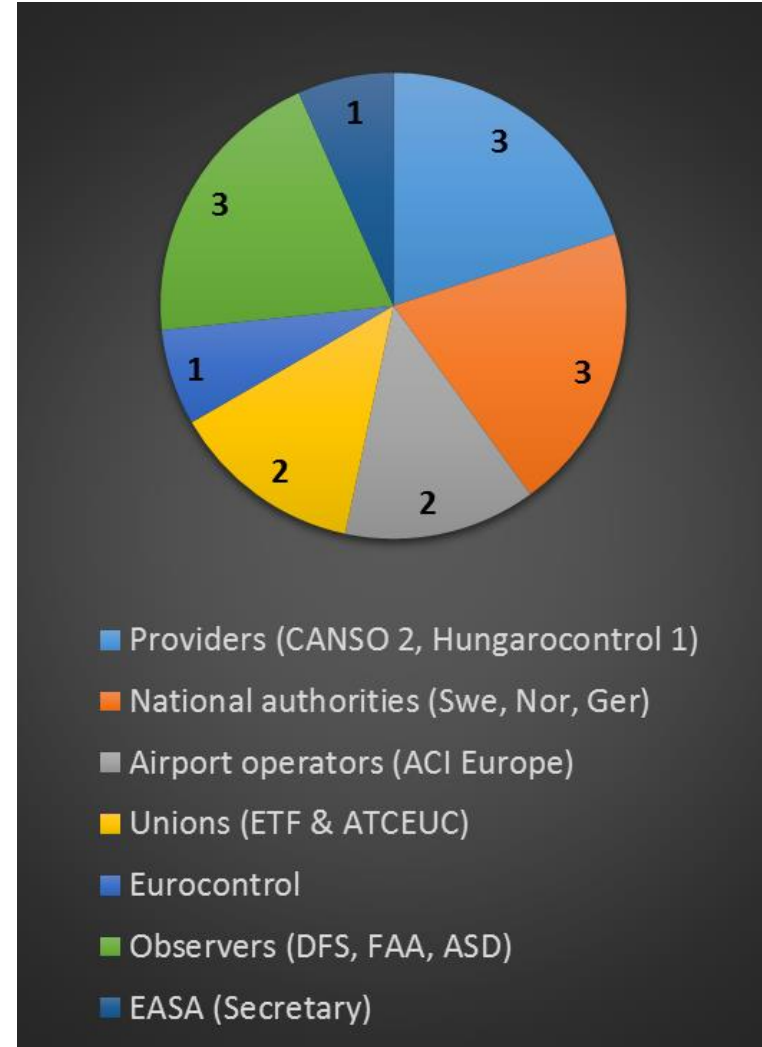
RMT.0624 – Rulemaking Group

➤ **This RMT has been supported by a RMG**

(Full group composition published on EASA webpage)

➤ **Representation from a broad variety of stakeholders from around Europe + US:**

- ➤ ATS providers
- ➤ National Supervisory Authorities (NSAs)
- ➤ Airport operators (ACI Europe represented by Avinor & Munich airport)
- ➤ Trade Unions
- ➤ The manufacturing industry, via ASD* *(added for phase 2)*
- ➤ Eurocontrol
- ➤ FAA

* AeroSpace and Defence Industries Association of Europe, represented by 3 observers.

- Providers (CANSO 2, Hungarocontrol 1)
- National authorities (Swe, Nor, Ger)
- Airport operators (ACI Europe)
- Unions (ETF & ATCEUC)
- Eurocontrol
- Observers (DFS, FAA, ASD)
- EASA (Secretary)

Approach & NPA contents

- **NPA 2017-21** consists of two main regulatory proposals:

  - Guidelines on 'Remote Aerodrome Air Traffic Services (ATS)'
    - Will replace the existing EASA GM on Single Remote Tower.
    - Extended in scope, covering also more complex mode of operations (e.g. 'busier/larger airports', 'multiple mode of operation' and 'contingency solutions') and the use of new technical enablers.
    - Enhanced/improved, taking into consideration gained operational experiences and new R&D results.

  - GM* & AMC** to the ATCO training and licensing Regulation (2015/340)
    - This new set of GM & AMC will replace the existing corresponding GM & AMC.
    - Refined and extended in scope to cover also e.g. multiple mode of operation.

    *GM = Guidance Material, ** AMC = Acceptable Means of Compliance*

Scope of the NPA / regulatory proposals

➤ <u>Generic</u> guidelines (i.e. not limited to specific operational applications/contexts)

➤ Main target audience;
  ➤ ATS providers & aerodrome operators,
  ➤ NSAs/Competent Authorities,
  ➤ *(Also a foreseen interest from the manufacturing industry.)*

➤ Addressing <u>operational/procedural</u>, <u>technological</u> and <u>human resources</u> aspects of remote aerodrome ATS and <u>the management of change</u>, in order to facilitate:
  ➤ safe operations,
  ➤ that the ATS objectives are fulfilled,
  ➤ a harmonised implementation throughout EASA Member States and provide a level playing field for stakeholders.

➤ Social and economic aspects <u>not</u> in the scope
  ➤ These aspects hugely depending on the individual case of implementation and need to be addressed at a local level.

Reasoning for the regulatory approach

➤ ## Why producing guidelines/GM/AMC instead of hard law?

➤ Need to go to **performance-based regulatory environment** when addressing a very fast evolving technology. A general tendency is to rely on industry standards and soft law for supporting and enabling safe implementation of new technology.

➤ **Same service (aerodrome control service or AFIS)** regardless if provided from a conventional/remote tower and no change in the requirements for assessment of change to functional systems by ATS service providers, therefore the **high level regulations are not impacted**.

➤ Easier, more useful for the ATSP and their CA to have a **single source of information** encompassing all the aspects together, rather than specific AMC or GM to higher level regulations, which would make the overall application more complex.

➤ As technical solutions and implementations are so different, there are no common elements for a common rating endorsement in the ATCO licensing, therefore the **unit endorsements can sufficiently cover the training of ATCOs.**

Outcome of NPA public consultation

➤ In total 832 comments from 46 stakeholders/individuals received.

➤ Comments review in progress – thematic/ad-hoc review meetings with relevant expert groups may be organised.

➤ Publication of the **ED Decisions** expected for **late 2018.**

➤ Comment-Response-Document (CRD) to be published concurrently.

EASA implementation support

➤ Following the ED Decisions, EASA have the ambition to set up a 'remote aerodrome ATS implementation and support action':

  ➤ A fora to be created under the existing EASA advisory bodies (ATM/ANS TeB & ATM/ANS TeC) with a view to exchange best practises for the implementation of the remote tower project as well as their oversight.

  ➤ The fora can e.g. provide a platform for questions and exchange of experiences.

  ➤ Possibilities for EASA to provide support to competent authorities and ATS providers, for implementation projects within Europe as well as outside Europe.

Related regulatory/standardisation activities

➤ **ICAO**

- ➤ Amendments to Doc 4444 (PANS-ATM) which fully enables remote aerodrome ATS approved by the Air Navigation Commission. They include, inter alia;

  - ⟫ A new definition for 'visual surveillance/presentation system'.

  - ⟫ A new chapter 7.1.1.2.1 stating that visual observation can be achieved through direct out-of-the-window observation OR through indirect observation utilizing a visual surveillance system.

  - ⟫ A new "Note" referring to the EASA Guidance Material, thereby giving it global status.

  - ⟫ Applicability date of new the Doc 4444 edition (Amendment 8): **8 November 2018**.

- ➤ ICAO ATM Operations Panel (ATMOPSP) has reinitiated the 'remote ATS' Working Group, for the development of ICAO guidelines.

  - ⟫ AN-Conf/13 likely to provide the basis for this work (ToR yet to be defined).

  - ⟫ Several Working Papers related to remote/digital ATS submitted to AN-Conf/13.

Related regulatory/standardisation activities

➤ **EUROCAE**

　➤ WG-100 "Remote and Virtual Towers"

　➤ ED-240 published September 2016:
　　» First 'Minimum Aviation System Performance Specification (MASPS) for Remote Tower Optical Systems'
　　» Specifying the end-to-end performance of the optical (camera) system
　　» Did/does **not** consider augmentation functions or other sensors (then cameras)

　➤ Work on extended MASPS, **ED-240A**, just finalised:
　　» Inclusion of "visual target tracking" technologies
　　　» *Typical use cases: highlighting of moving objects in the visual presentation & PTZ/binocular camera automatic object following*
　　» Expected publication **late 2018**

　➤ To be followed by a further extension, ED-240B (as so far planned):
　　» Inclusion of "radar tracking", i.e. information from non-optical surveillance systems/sensors
　　　» *Typical use case: radar labels (aircraft & vehicles) overlaid in the visual presentation*
　　» Anticipated late 2020

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