

Project PJ05

Cost-effectiveness, clearly described in the topic SESAR.IR-VLD.Wave1-08-2015 as the main key performance area (KPA), is the principal KPA addressed by “PJ05 Remote Tower” project.

It proposes the development of a remotely provided aerodrome air traffic service by a “multiple” and/or “center” setting. Those settings help to combine ATS services from various aerodromes in a centralized control room independent on airport location in order to make use of the valuable resource ATS provider more efficiently. “Single” remote tower settings have already been deployed in former project, but most significant impacts in cost-effectiveness are to be expected with multiple and/or center settings that was only partly covered so far and needs immediate development effort to deploy it short term. PJ05 will bring the multiple/center concept to a higher matured level. In the end, the passengers will benefit from: More cost-effective aerodrome ATS would allow rural, less frequented airports to work cost-effective and to keep them in operations or even to increase the service levels for more day hours operations or even to

upgrade non-controlled to controlled airports. All this would contribute to a better passenger comfort in terms of shorter travel times and better point to point connections.

The PJ05 aim attracted plenty of European organizations to participate: ANSPs, industries, R&D and airport stakeholder intends to provide their specific competences to broaden the operational needs and technological expertizes. The PJ05 variety of partners and validation activities will help to adequately reflect the variety of operational needs and technical solutions which in the end of the project will consolidate into a harmonized and widely accepted SESAR2020 PJ05 solution. The complete work is structured in a very collaborative way throughout all work packages and will ensure the transfer of knowledge and know-how between all participants and external to SESAR2020 projects.

Solution PJ05-05

The main objective of MicroStep-MIS in this solution is provision of MET data to the controller including local weather for several remote aerodromes [e.g. make a fully automated MET system with omitting current drawbacks of such systems].

Small airports, targeted within this technical solution named **Advanced Automated MET System**, are typical candidates for application of Remote Tower, and for the same reasons (it is difficult or too expensive to implement and staff a conventional manned facility), they often utilize automated weather observation (AUTOMETAR) instead of full meteorological observation (METAR). AUTOMETAR, in contrast to full METAR contains some weather elements reported in simplified form only and some are omitted completely.

This technical solution is independent from usage of Remote Tower. **Advanced Automated MET System** can be advantageously used also with conventional Towers. The Advanced Automated MET System for Remote Airport will have two variants of technical solution:

- Fully-Automated MET System – the system is collecting meteorological data from a number of sensors and cameras located at one or more remote aerodrome. These data

are then processed automatically and presented directly to the Controller responsible, by means of a suitable HMI.

- Semi-Automated MET System – this concept represents a ‘human-in-the-loop’ MET solution. The remote MET Observer receives meteorological data from a number of sensors and cameras that are located at one or more remote aerodromes. The remote MET Observer is responsible for their processing before these are presented at the Controller’s HMI. We assume this variant will have broader range of recognized phenomena than the fully-automated one due to current limitations in artificial recognition compared to human brain.

This improved weather information, once properly integrated (utilizing SWIM standards) within air traffic management decision-making process, facilitates the advantage of staying up to date with the latest weather situation for airspace users, airports and air navigation service providers.