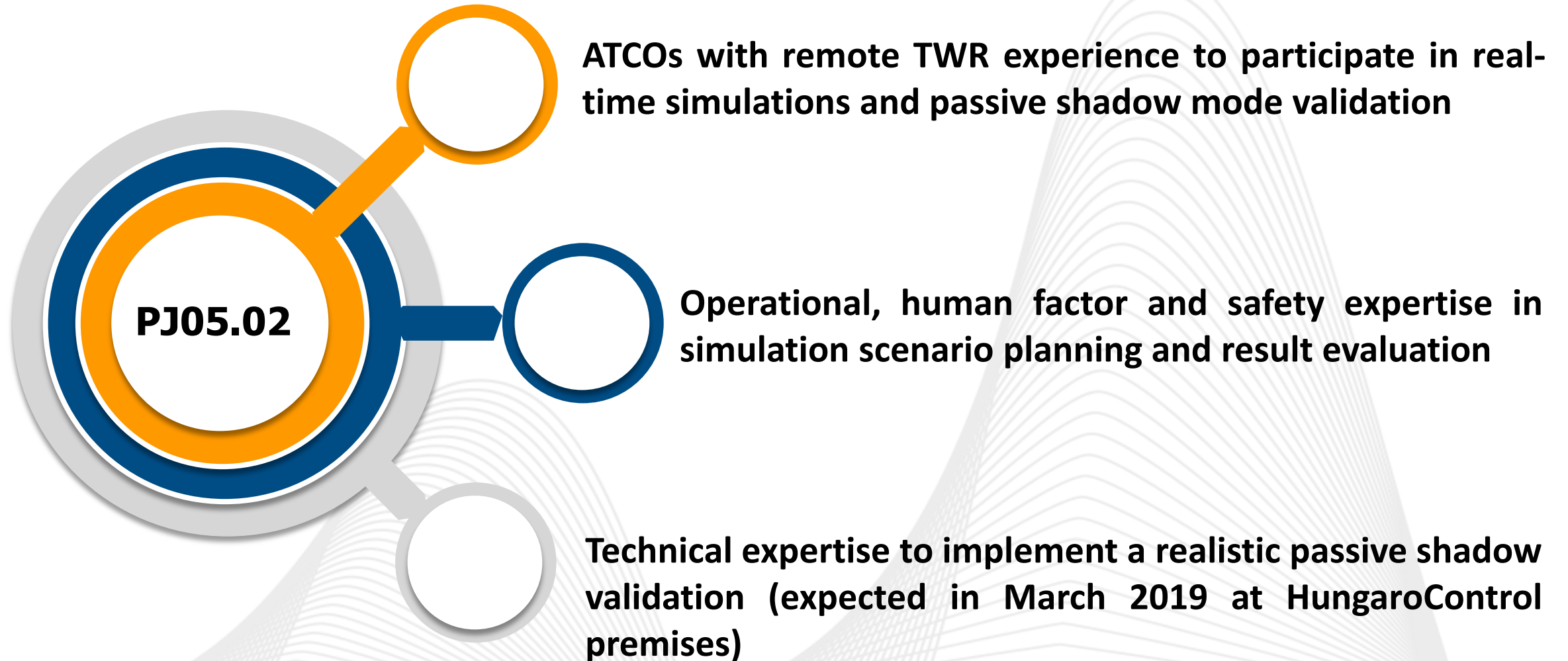# Multi-Remote Tower from an ANSP's Perspective

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BRAUNSCHWEIG
23 November 2018

HungaroControl's contribution to PJ05.02

PJ05.02

ATCOs with remote TWR experience to participate in real-time simulations and passive shadow mode validation

Operational, human factor and safety expertise in simulation scenario planning and result evaluation

Technical expertise to implement a realistic passive shadow validation (expected in March 2019 at HungaroControl premises)

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Our objectives with PJ05

1 Exploring possible future directions for our remote tower strategy

2 Finding cost effective ways of connecting regional airports to the ATC system
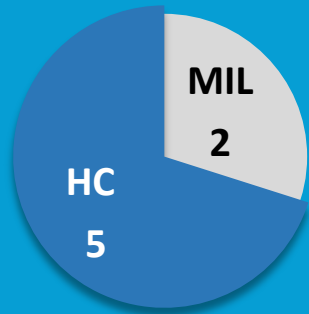
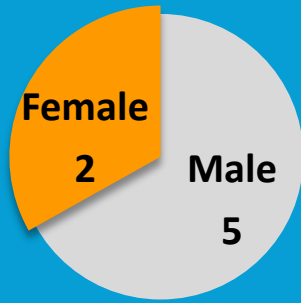**3** Expanding our remote tower experience while gathering inspiration from new technologies

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Our ATCO team

Air Traffic Controllers – a representative sample

MIL 2

HC 5

Female 2

Male 5

Budapest and Pápa Military Airbase

Female and male ATCOs – a wide age range from 38 to 60, different characters and perspectives

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Previous simulation Vs. the current one

The focus of the previous simulation in 2017 was:

- to evaluate if an ATCO can control 3 airports simultaneously in case of normal traffic (without the occurence of any non-nominal or abnormal events);

- to identify the volume of manageable traffic by a single controller in a multi-remote tower environment,

- to evaluate the usability of the HMI solution.

How was the current simulation different?

An increased level of complexity has been added to the scenarios, such as abnormal situations, runway direction change, windshear event and emergency situation.

The main questions we expect to get answers to are:

- How handling non-nominal and abnormal situations at one of the 3 airports affects the operations at the other two?

- Can a single ATCO handle these situations safely?

- What can be considered a safe complexity level?

- How can the different systems be improved further to support the safe handling of non-nominal or abnormal situations?

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Feedback and first impressions after the simulation

- Runway direction change has had an effect on the situtional awareness of the ATCOs in most cases.

- Communication has proven to be a bottleneck during non-nominal and emergency situations increasing the risk of ATCO's capacity reduction.

- PTZ has been considered a „nice to have" feature used only in emergency situations or for hot spot display.

- The attention sharing between and the usage of the different supporting systems (Wacom, radar and panoramic screens) are highly dependent on the ATCOs' personal preferences.

- Mentioning the airport's name during radio transmissions is contributing to the safe service provision.

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Thank you for your attention!

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