

CANSO ACADEMY:

BEST PRACTICES IN THE DESIGN OF NEW OR MODERNISED ATC FACILITIES

Thursday 12 May 2022

13:00 – 14:00 CEST



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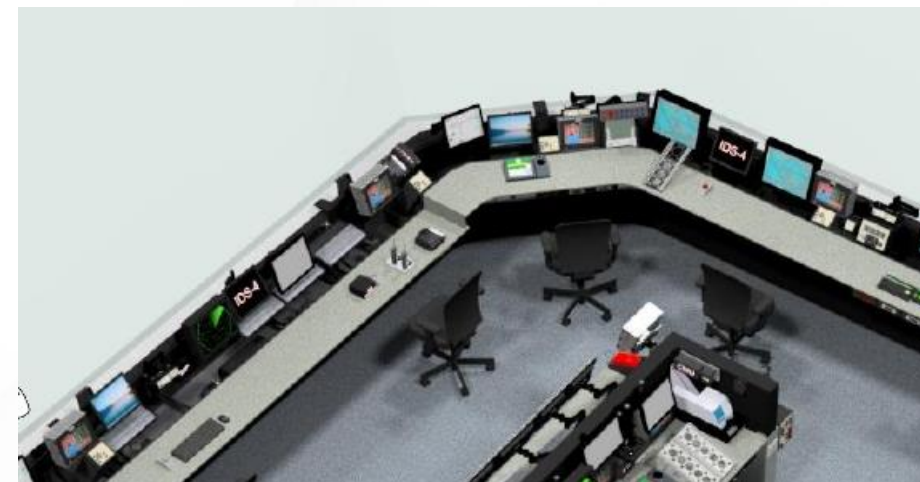
USING VIRTUAL REALITY AS PART OF THE DESIGN PROCESS

THE CHALLENGE: USER ENGAGEMENT

How can stakeholders engage in the design process for new or modernize facilities?

3-Dimensional static imaging starts to help users see the new space,..but....

- It is still a 2-Dimensional image
- Users can not gain depth perception from a 2-D image
- Users who do not regularly work with engineering designs and drawings have a very difficult time understanding the new space
- If decisions are needed for layout of positions and equipment, users remain challenged trying to understand
- Physical mockups are possible, but take time and costs can be a factor



ENABLING USERS WITH VIRTUAL REALITY

Virtual Reality allows users to “see & experience” what could be

Virtual Reality (VR) allows users to really understand the new space design

- VR is fully immersive
- Users “see” and “experience” the new design, in real time, at their pace
- Users can provide inputs on position layouts and equipment choices in a highly effective manner
- Decision making is accelerated dramatically
- Accuracy of decisions is increased and mistakes are avoided
- New technology is better understood
- Can replace physical mockups and save costs



EXPERIENCING NEW DESIGNS

Legacy Layout in VR



Proposed Layout with Infrastructure highlighted





THANK YOU





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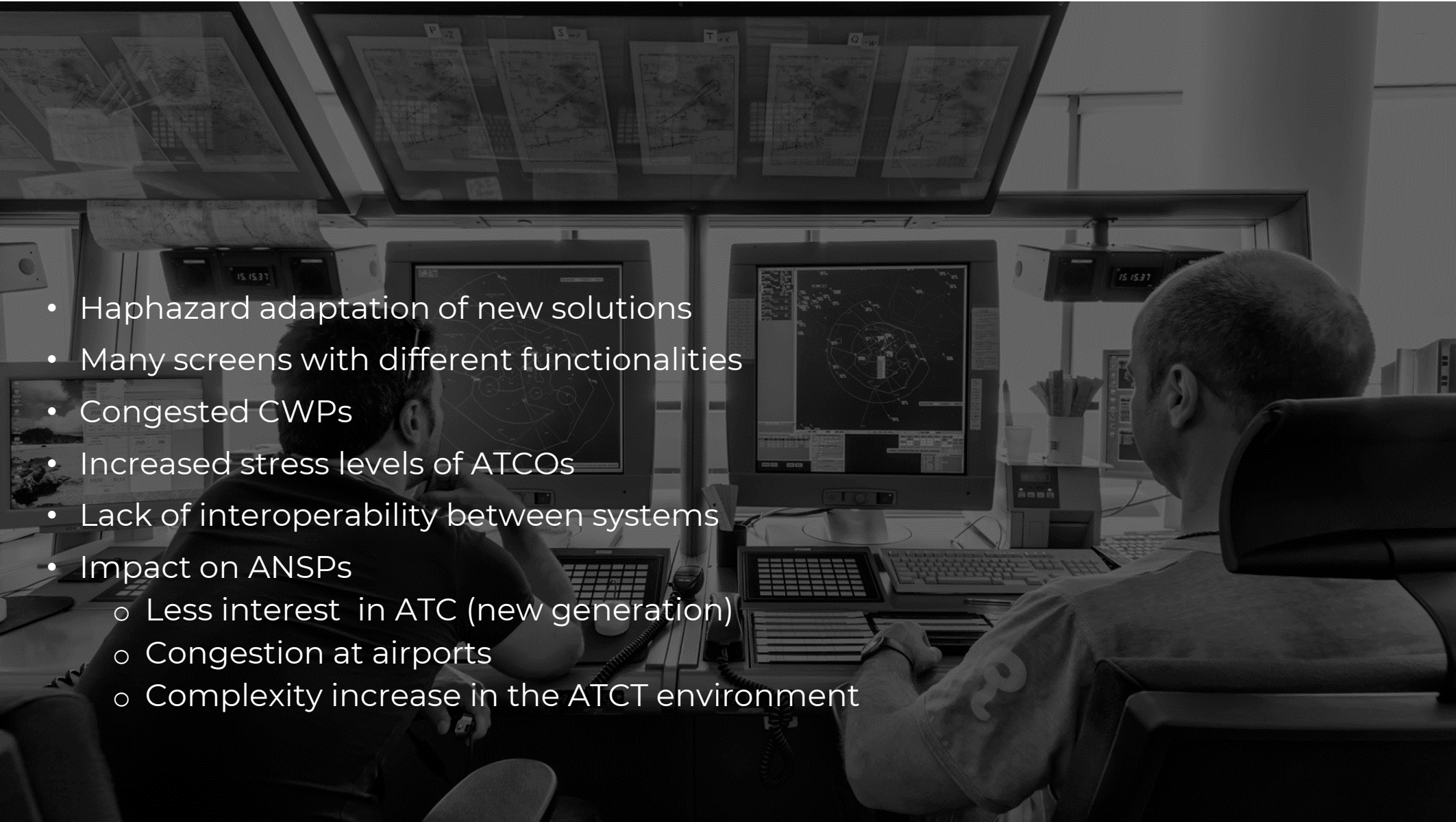
A HOLISTIC APPROACH TO COMPREHENSIVE TOWER DESIGN

AIR TRAFFIC CONTROL TOWERS 25 YEARS AGO

- No internet
- No cell phones
- No cloud environment
- No drones or UAVs
- No 5G
- All analog technology



ATC TOWERS – ADAPTING NEW SOLUTIONS

- 
- Haphazard adaptation of new solutions
 - Many screens with different functionalities
 - Congested CWP's
 - Increased stress levels of ATCOs
 - Lack of interoperability between systems
 - Impact on ANSPs
 - Less interest in ATC (new generation)
 - Congestion at airports
 - Complexity increase in the ATCT environment

SOLUTIONS TO ANSPS CONCERNS



- Integrate all Solutions into one digital CWP
- Integrate new tools into ATC
- Use new tools to make younger generations more interested in the field
(Digital Towers, eliminate mundane tasks)
- Update Tower environment to the new technologies.
- Train new ATCOs on digital platforms creating an enticing work environment



THANK YOU





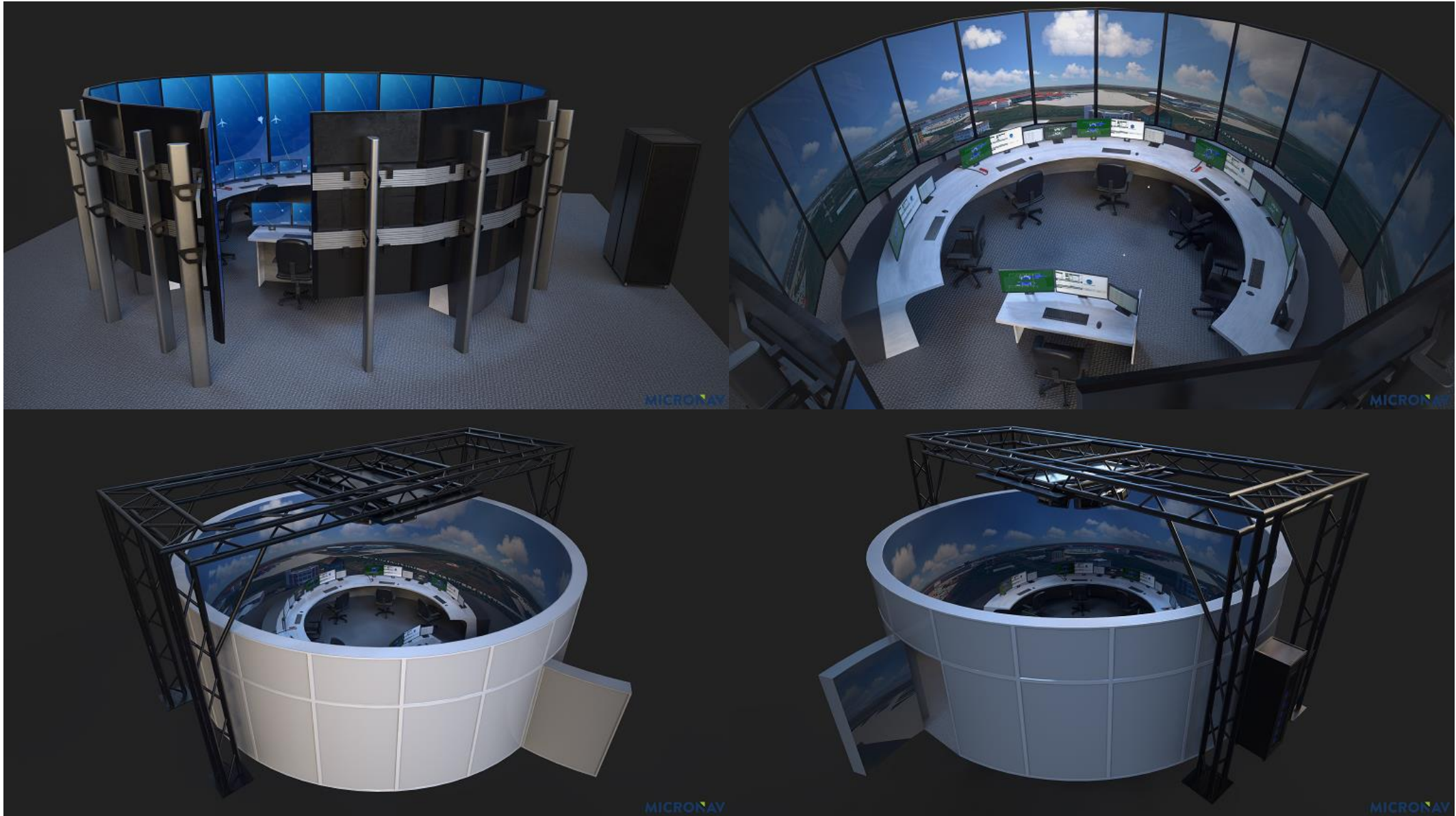
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START WITH SIMULATION













THANK YOU





Mr. Petar Danailov

Director of Sofia ATCC

BULATSA

MODERNIZATION?! – CONSIDER THE PEOPLE

THREE BASIC ASPECTS TO KEEP IN MIND...

MODERNIZATION?! – CONSIDER THE PEOPLE

Have People On-board

- **Demonstrate clearly the need for new design/modernization**
- **Convey the benefits of the project** – act proactively to show the staff what will be improved
- **Work as team-mates** – try to minimize the inherent subordination limitations
- **Discuss any challenges openly** – do not filter information based on competency assumptions
- **Keep people informed** – no matter whether part of the project team or not

MODERNIZATION?! – CONSIDER THE PEOPLE

Balance the change

- **Look for evolution** rather than revolution
- **Give freedom, yet harness emotions** – do not let the project drift away from objective
- **Work intensively on risks due to human factor** – check what's not working daily – it's not only about the scale of a risk but about number of occurrences
- **Try to stay focused on the objective** – do not let the execution of secondary activities hinder the overall progress
- **Set a realistic timeline** – communicate/coordinate possible discomforts in the immediate working environment

MODERNIZATION?! – CONSIDER THE PEOPLE

Expectations must be met

- **Value peoples' patience** – plan wisely not over-ambitiously
- **Look for ways to compensate delays** – try to plan some mitigation measures to compensate possible delays
- **Inform the colleagues about the progress/challenges – daily!**



MODERNIZATION?! – CONSIDER THE PEOPLE

If home refurbishment brings you stress...

Try modernization of safety-critical
infrastructure!



THANK YOU





QUESTIONS AND ANSWERS



THANK YOU

