



# EASA

European Aviation Safety Agency

EASA Annual Safety Conference  
Day 2, 15/10/2015

## Panel 5

# Training Air Traffic Controllers - Challenges and Solutions

**Your safety is our mission.**

An agency of the European Union

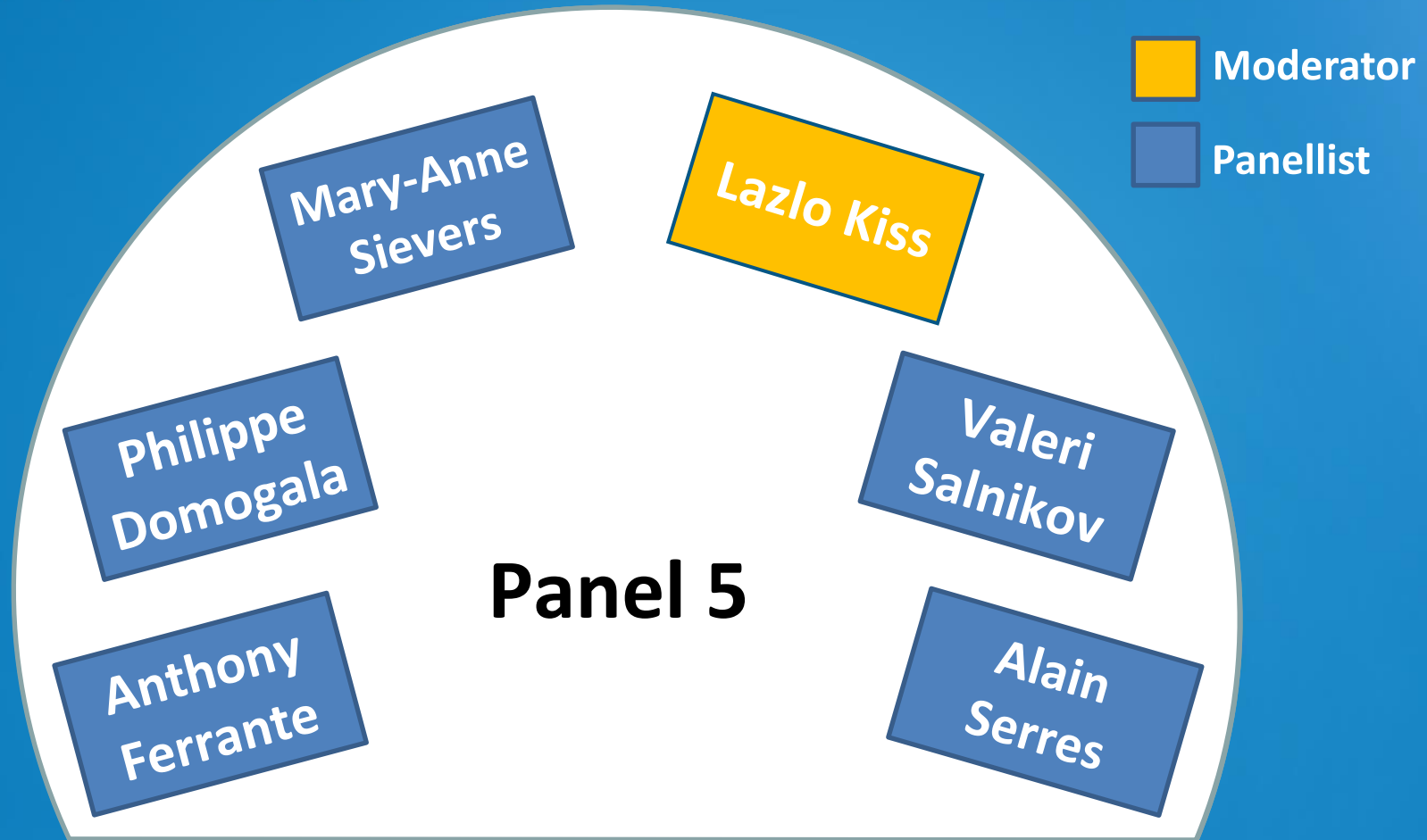




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## Training Air Traffic Controllers - Challenges and Solutions



## Your safety is our mission.



# Challenges

**Increase efficiency, maintain and enhance the safety level achieved, swiftly respond to the ever changing demands, decrease adverse effect on the environment.**





# Solution



Seek adequate responses to the challenges by **designing and implementing** the system that - within an ever changing environment, **relying on highly competent human resources** - is able to swiftly respond to the needs, to **enable an ever safer, greener and better performing aviation.**



# The panellists

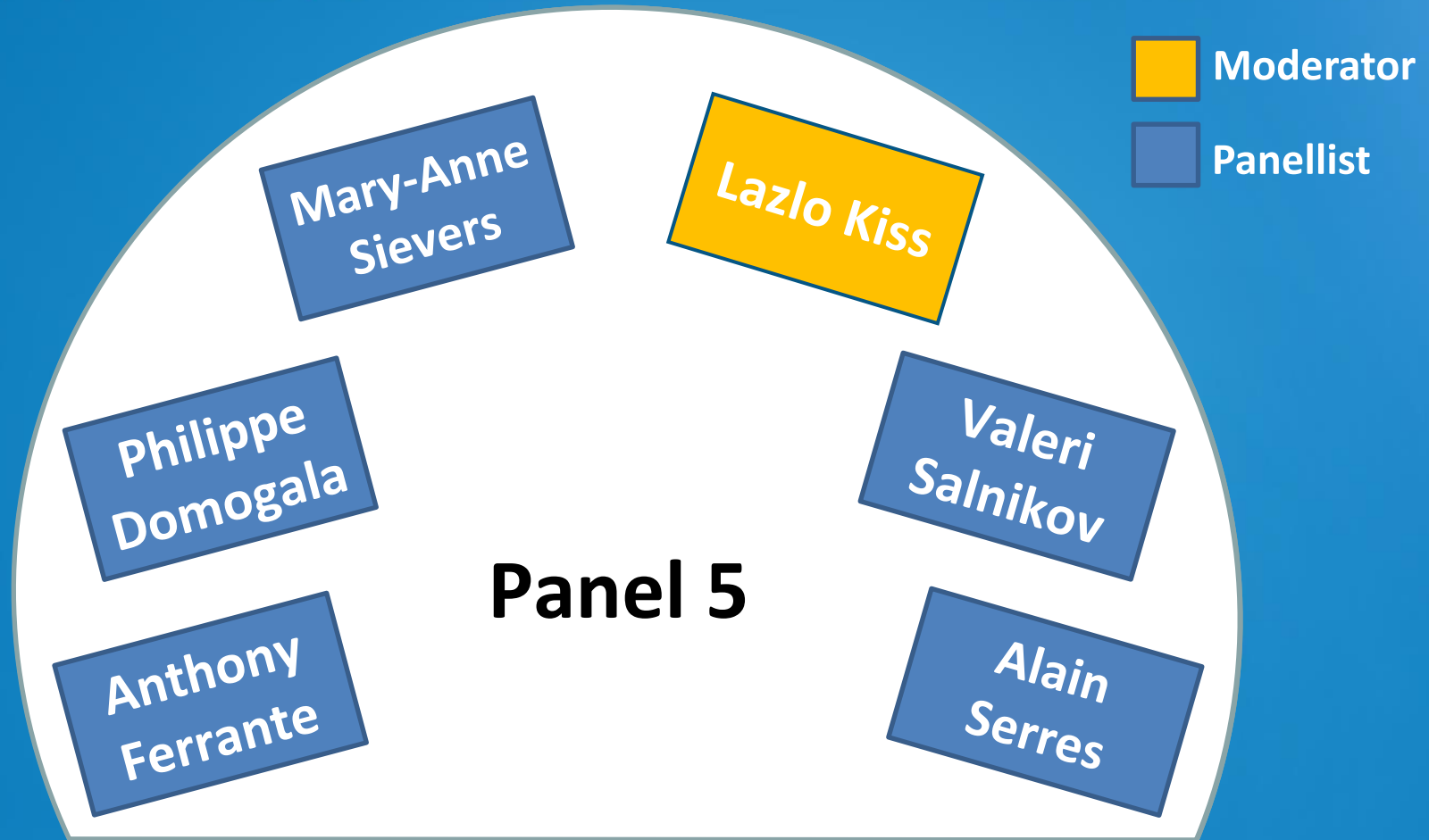
- **Mary-Anne Sievers**, Manager Training Services, Airways New Zealand
- **Anthony Ferrante**, Director ATM oversight, FAA
- **Philippe Domogala**, Conference Executive, IFATCA
- **Val Salnikov**, International and Regulations Manager, NATS
- **Alain Serres**, Head of ATM Dep.-École nationale de l'aviation civile (ENAC)
- **Laszlo Kiss**, ATM/ANS Team Leader, EASA



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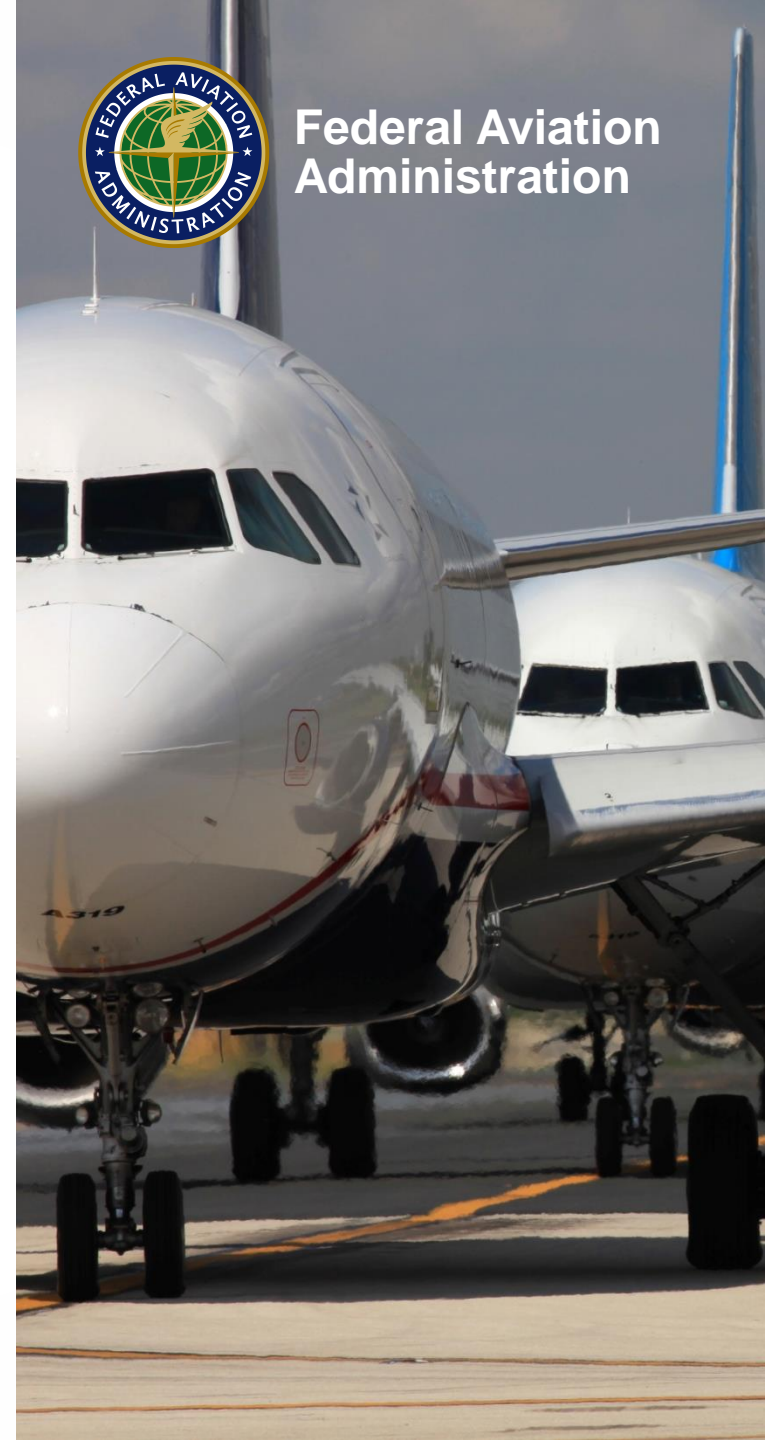
## Panel 5: Training for future technologies

By: Anthony Ferrante, Director  
Air Traffic Safety Oversight Service

Date: October 15, 2015



Federal Aviation  
Administration



# CHALLENGES...

AWD

ERAM

SATVOICE

PBN

SWIM

ADS-B

UM79



RCP 240

CATMT

CPDLC

ADS-C

RSP 180



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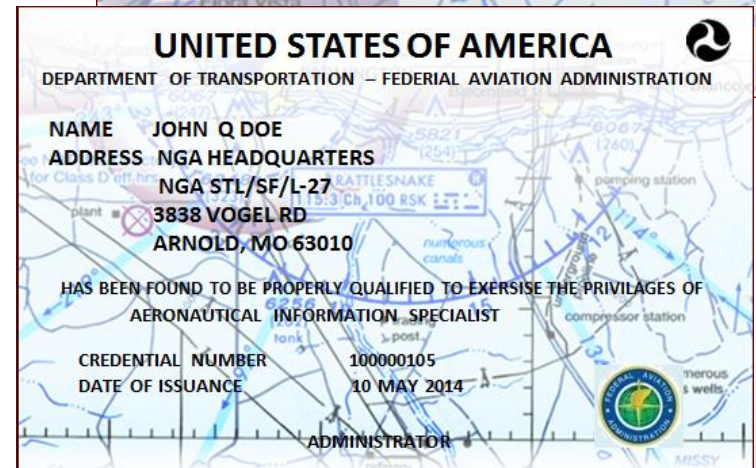
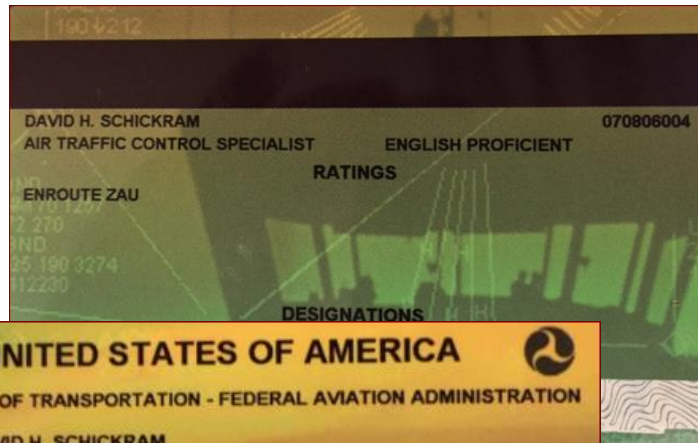


# **Facility Specific Safety Standards (FSSS)**

- **New tool for conducting oversight of ATS**
- **Modeled after Flight Standard's OpSpecs**
- **Addresses unique facility characteristics**
- **Simplifies national safety standards**
- **Eliminates inconsistencies in interpretation**
- **Can influence and enhance safety prior to the implementation of a new procedure**
- **Requires annual ATCO Training**



# Solution - Licensing



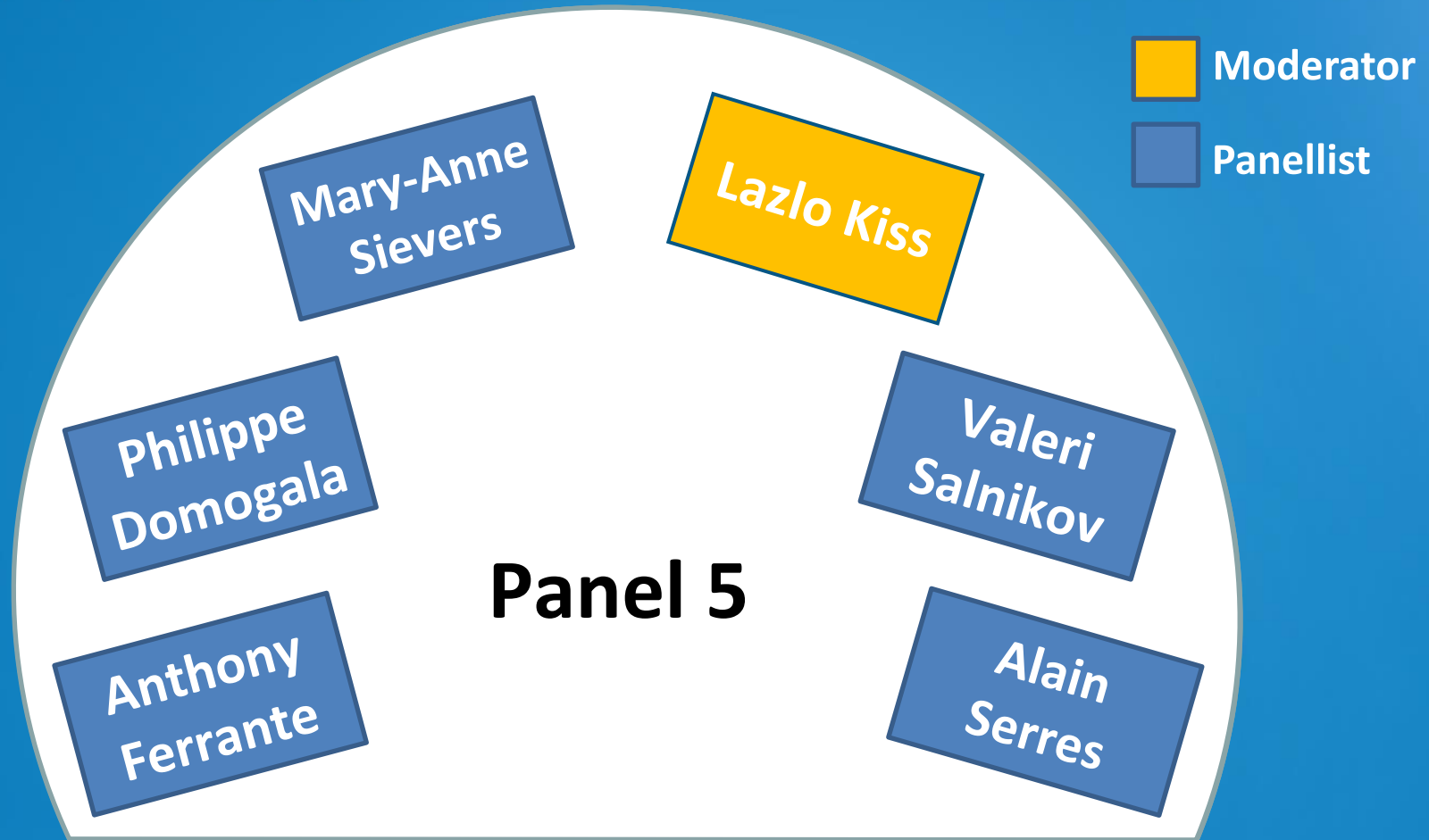
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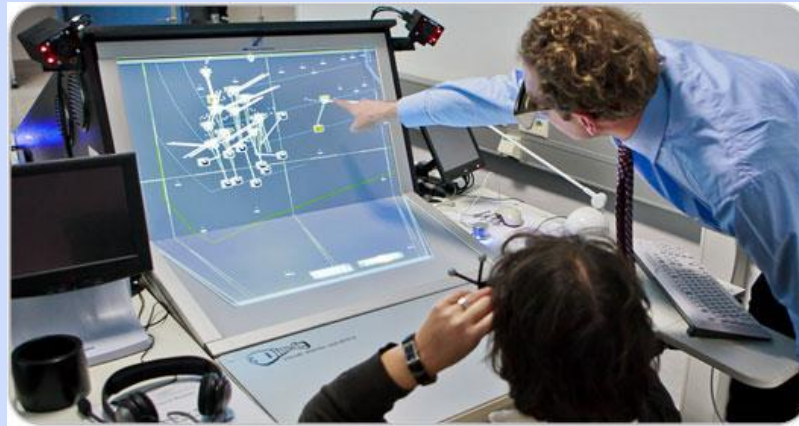
# **Philippe DOMOGALA**

# **IFATCA**

## **Training Air Traffic Controllers - Challenges and Solutions**



# 3 SORTS OF TRAINING



**AB Initio Recruitment**

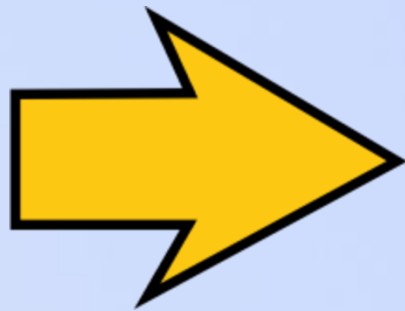
**On The Job Training (OJT)**

**Refresher, training for changes**



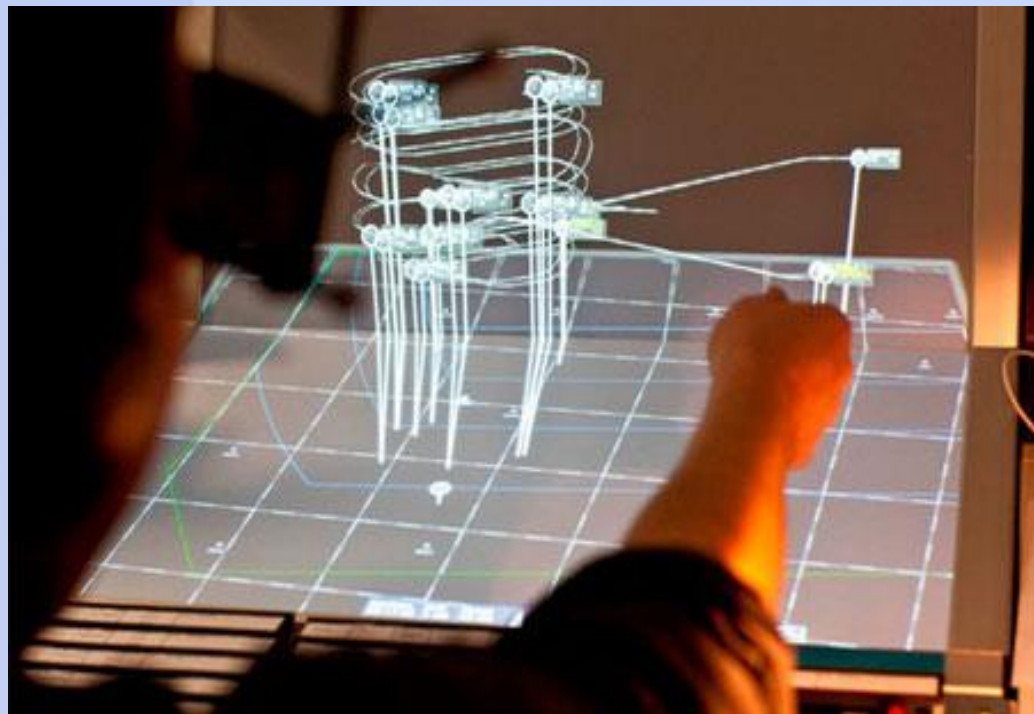
# ECONOMIC CONSEQUENCES

- BUDGET CUTS
- RP2
- LESS TRAFFIC





# HUMANS REMAINING IN CHARGE





## Complex workstation (North European ACC -2014)





## More complex environment (East European ACC 2014)





# **Training Air Traffic Controllers - Challenges and Solutions**

## **The Solution ?**



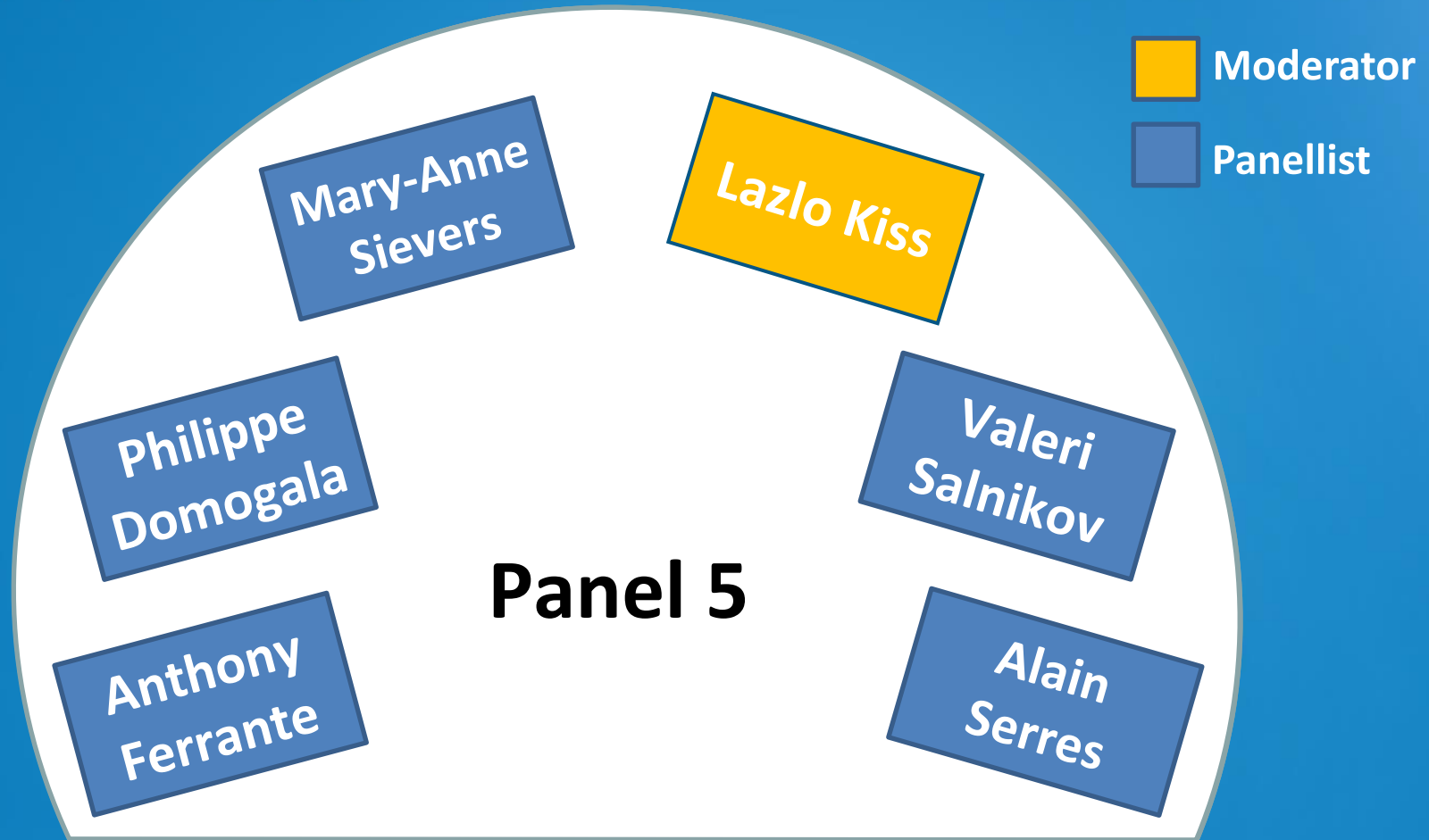
**Budget enough money and  
allocate resources to recruit and  
train properly for the future .**



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# Airways New Zealand



Mary-Anne Sievers  
EASA Conference 2015



**Airways**

InterAmerican  
University Puerto  
Rico

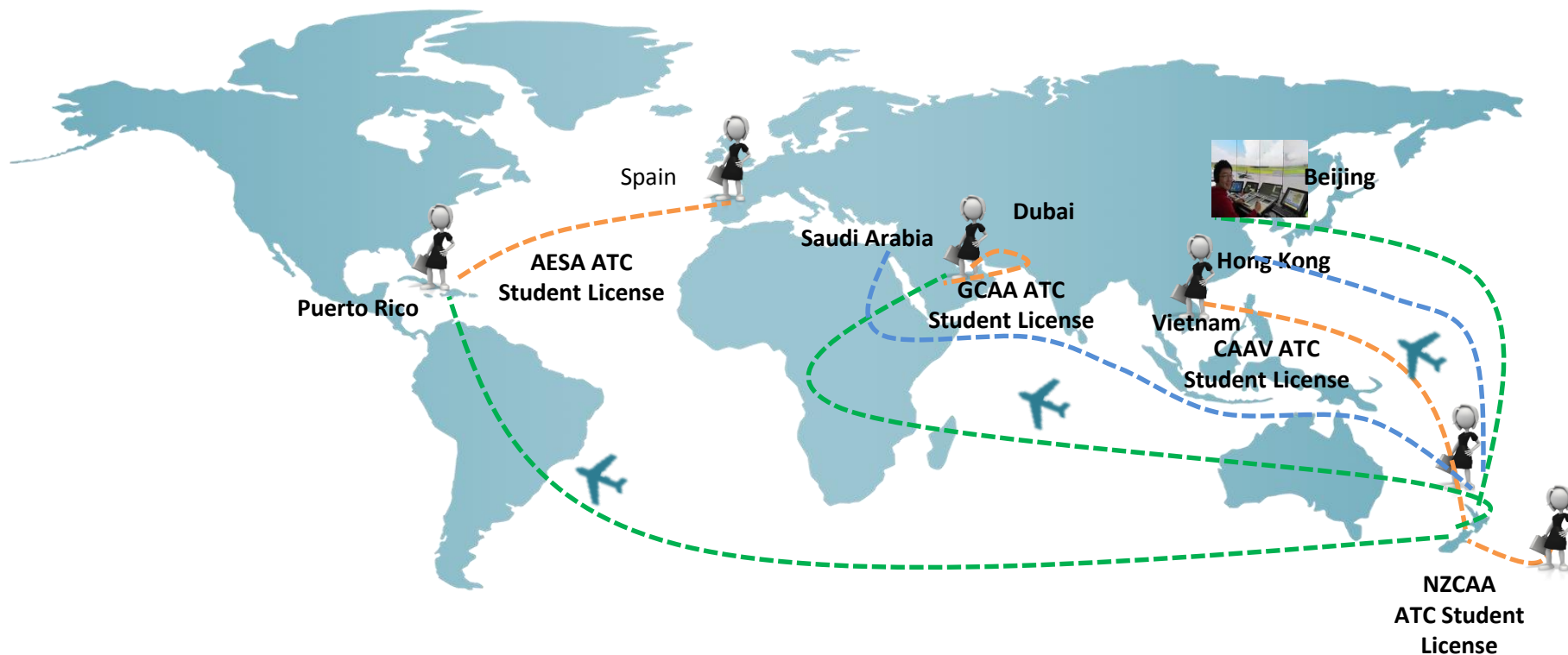


**NZ**side

Emirates Aviation  
University  
Dubai



CAMIC  
Beijing



# **SAME SAME...BUT DIFFERENT**



**Same**

Selection  
ATC Skills  
Standard  
Quality  
Technology  
Passion

We adapt to **different**  
ATC rules and Procedures  
Cultures

**Same**

Selection  
ATC Skills  
Standard  
Quality  
Technology  
Passion



# Global

# Success

Net . Gen

Future  
ATM

Right skills

And

Behaviours

collaborate

communicate  
share

# The future ATM ... is unstoppable

Core

Mobile  
Technology  
Environment  
Prepared



**AIRWAYS**  
making your world possible

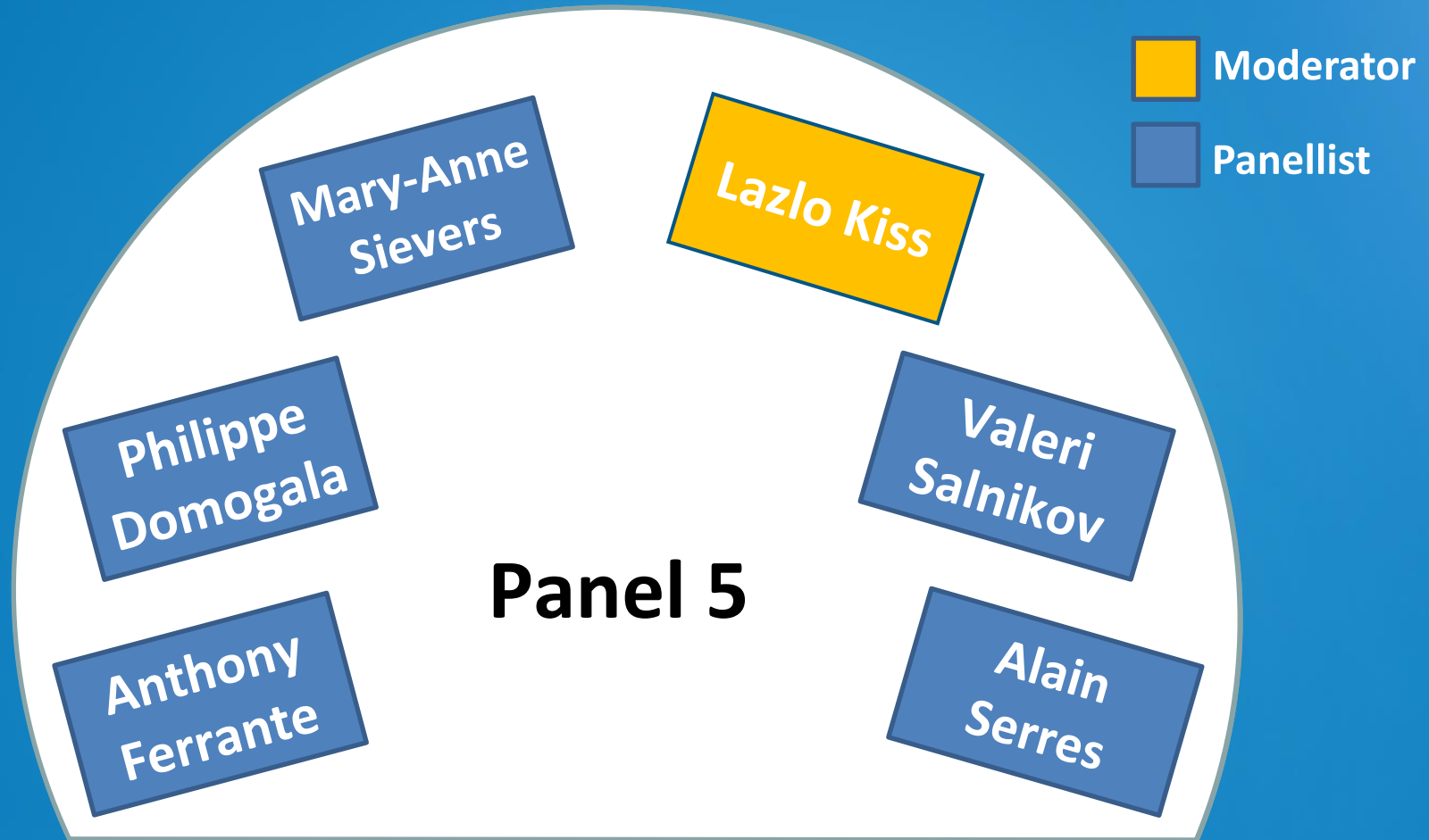




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## Training Air Traffic Controllers - Challenges and Solutions



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# Use of simulations in ATCO unit training

Val Salnikov  
NATS Training  
International and Regulations Manager



A detailed view of an air traffic control simulator. The setup includes three large monitors at the top displaying 3D airport and terrain visualizations. Below these are several smaller monitors showing various data screens, including radar, flight information, and communication logs. In the foreground, there are multiple trays containing colored strips (blue, orange, and black) used for flight planning. A microphone is positioned in front of the central monitor, and a computer mouse is visible on the right side of the desk.

**Simulations replacing  
“live” ATCO unit training.**

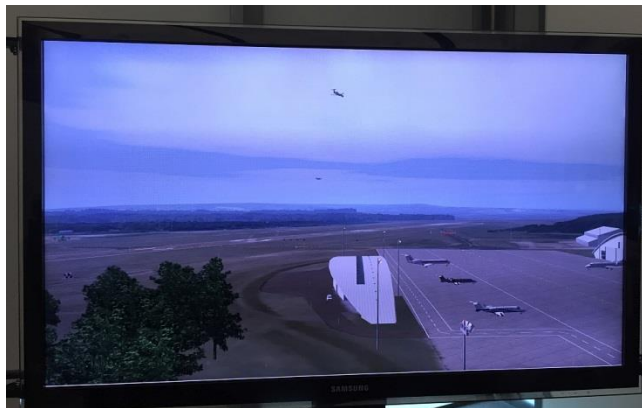
**Myth or future reality?**

## Why simulation rather than “live”?

- > Removes associated operational safety risks
- > Removes safety pressure from OJTI
- > Improves student’s learning experience:
  - No safety pressures
  - Errors allowed to develop and student learns from these errors
  - Scenarios/objectives where student underperforms can be repeated
  - Self-analysis of performance through replays
- > Reduction of training duration and costs through efficient utilisation of OJTI/student time:
  - Every training session filled with content
  - Scenarios are tailored to specific individual training objectives and competency elements
  - Specific scenarios (LVPs, RWY change, NDS) easily incorporated – no need to wait
  - Based on performance and competency criteria rather than training hours



## Farnborough (EGLF) Trial



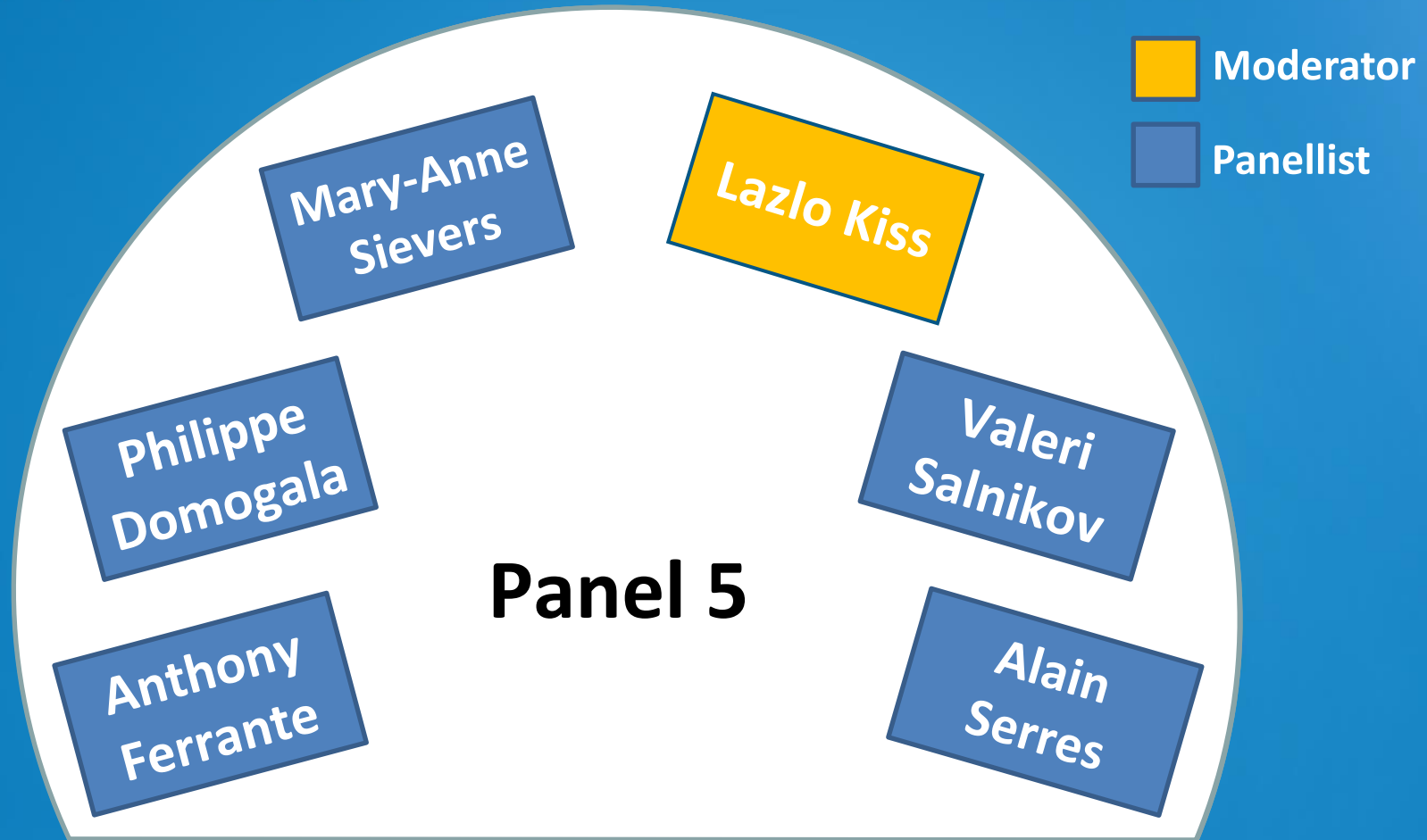
- > Ab-initio student - ADI and APS ratings
- > EGLF ADI was used as a basis for trial – VCR environment more difficult to simulate
- > Low fidelity 3D simulator with exact replica of EGLF aerodrome, airspace and procedures
- > CWP different from EGLF but with the same functionality
- > Training programme designed and delivered by EGLF OJTIs working as instructors at the college and as ROVIs at the unit
- > Roughly 50-50 split between simulations and “live” sessions delivered in 15 hour blocks
- > Training completed in 3 months and within 80% of the unit target UTP time
- > Very positive learning experience feedback from the student
- > Very positive feedback from the unit
- > Other NATS units are interested to follow



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## Panel 5

# Training Air Traffic Controllers Challenges and Solutions

**Alain SERRES**

**Head of Air Traffic Management Department**

**Ecole Nationale de l'aviation Civile – ENAC**

**October, 15 2015**





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	ATCOs 2030	Training needs	Training capacity	Shortage/surplus
Africa	2863	169	210	41
Asia/Pacific	44282	2931	1865	-1066
Europe	32616	1755	1440	-315
Latin America	10828	750	935	185
Middle East	4074	253	90	-163
North America	45133	2860	2200	-660
<b>World</b>	<b>139796</b>	<b>8718</b>	<b>6740</b>	<b>-1978</b>

\* ICAO Doc 9956







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- Based on actual technologies
- New technologies will increase the ATCO's individual performance
- Capacity vs. Quality
- In term of training ,Quality is Safety
- The quality needs appropriates schools with a high level of instructors and materials. (Cost efficiency)
- Need to mutualise training academies and/or develop collaborative standard in a region base on EASA rules (e.g: Collaboration with Chinese CAUC, MUAC ATCO's Training)
- Need to attract applicants, select and delivered a coherent and efficient training (Pedagogical Ingenerie)





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- Selection process is not “the” element of success/rate
- Two main policy in terms of Selection (Psy tests vs academic level)
- The key question : What is an ATCO and with which motivation?
- ATCO: only a real time Operator?
- ATCO : a complex system operator?
- An ATCO must be able to move and to participate to the future changes
- Success: “Understand more than learn!”

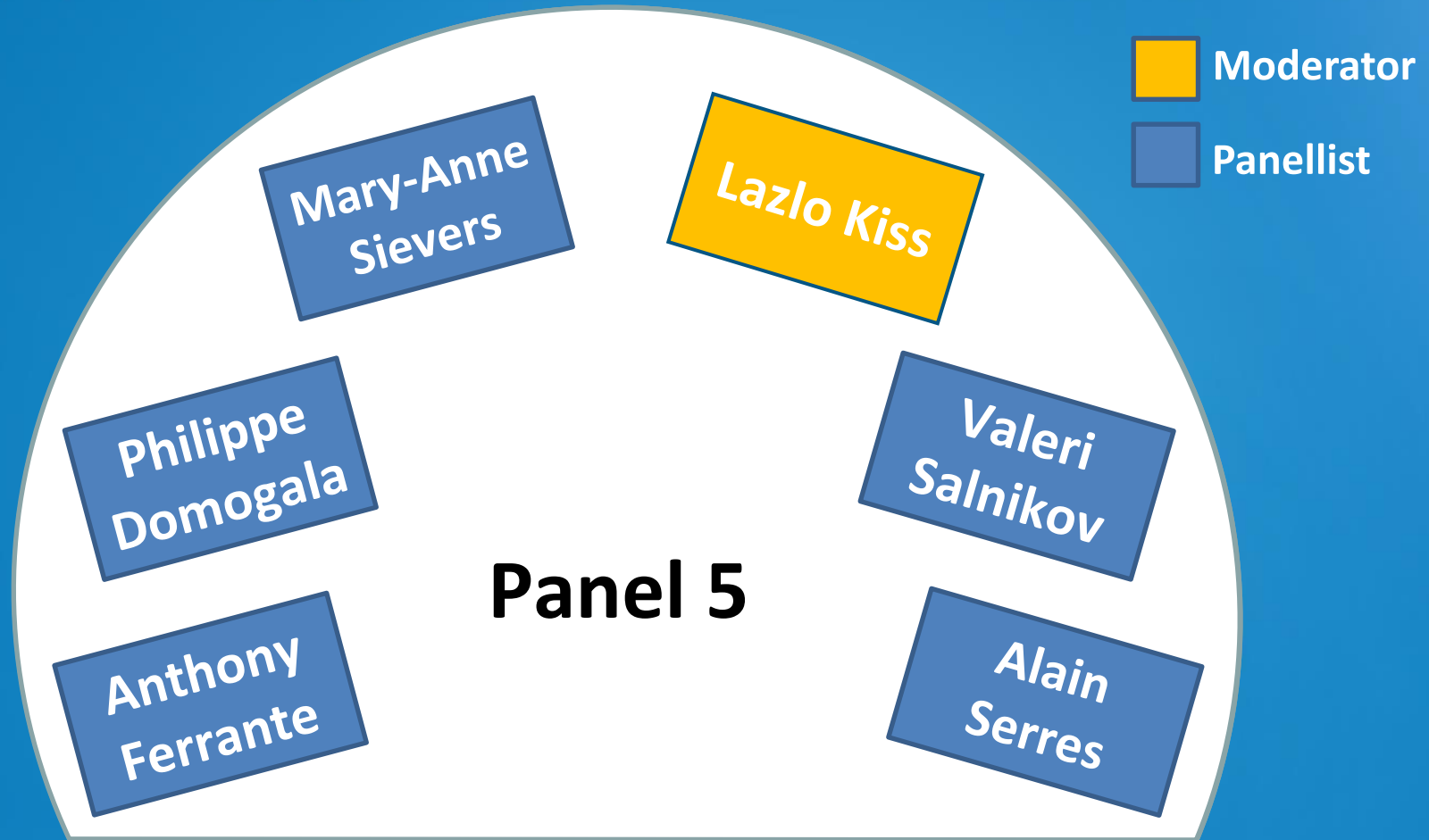




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