CANSO Global ATM Operations Conference

MADRID | SPAIN | 8-9 MARCH

Smart tower evolution – digital enhancement or remote operations?

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The NINOX Partnership

Indra	Kongsberg	Avinor ANS
Supplier and Developer of ATM Solutions	*Supplier and Developer of Defence Equipment*	*Innovative and Agile Air Navigation Service Provider*
Supplier of inNOVA AIR™ integrated tower module	Supplier and Developer of spinning camera turret and PTP (Pan Tilt Platform)	Experience in RTS Safety, Training, Human Factors and, implementation

The Avinor Remote Tower Program

The Avinor Remote Tower Program;

- 15 airports from one location with an option for 21 more
- Construction of a Remote Tower Centre, Contingency Centre and Training Facility in Bodo
- Includes redundant network infrastructure
- All airport systems are integrated
- Indra supplies the InNova AIR tower suite
- Kongsberg supplies the electro-optical sensor package
- Avinor is developing human factors, safety and training documentation and processes

Digital Enhancement

Digital Technology enables new tools;

- Fused IR visuals
- Pan / Tilt / Zoom
- Laser Range Finder
- Moving Target Indicator
- Data labels attached to out-the-window tracks
- Electronic Flight Strips
- Integrated single-system Heads Down Display

Multi-airport operations are now capable from the one position

A single controller workstation layout for everything & everybody

Remote Operations

Remote Operations enable;

- Centralised service provision
- increased flexibility
- economies of scale

Lesson #1 - Safety & Regulation

Keep it Simple ; one single top level hazard

Late, no or incorrect instruction issued by the operator induced by misleading or no information from the HMI at the Controller Working Position

Lesson #2 – Decision Flow

What is the Problem?

- Safety
- Cost control – Capex or Opex
- Service Provision
- Logistics

How can we fix it?

- Visually
- Digitally
- System Enhancement

Where will we be placed?

- Remote Tower Centre
- Local Virtual Tower
- Existing Facility
- Hybrid

Summary

The **NINOX partnership** is Indra, Kongsberg and Avinor

The Avinor Remote Tower Program will deliver a **first tranche** of 15 remote towers

Digital enhancement **enables** remote operation

Safety risks are best managed when they all refer to a **primary safety statement** / hazard

Understanding **“what is the problem we are solving”** assists gives clarity to the discussion between service provider and supplier

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