



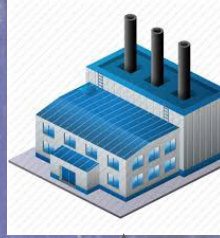
Laboratory of
Aviation Security

IATA eCARGO, ACC3,
IATA Dangerous Goods

Shippers



Consignees



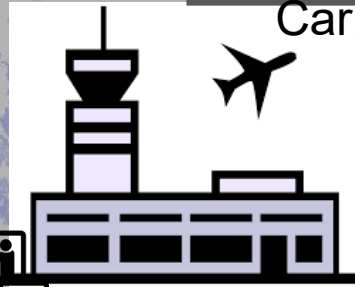
The SkyRadar System teaches Air Cargo Security for Ground handling - in the context of the whole supply chain



Origin Freight
Forwarders



Export
Customs



Origin
GHA

Carrier



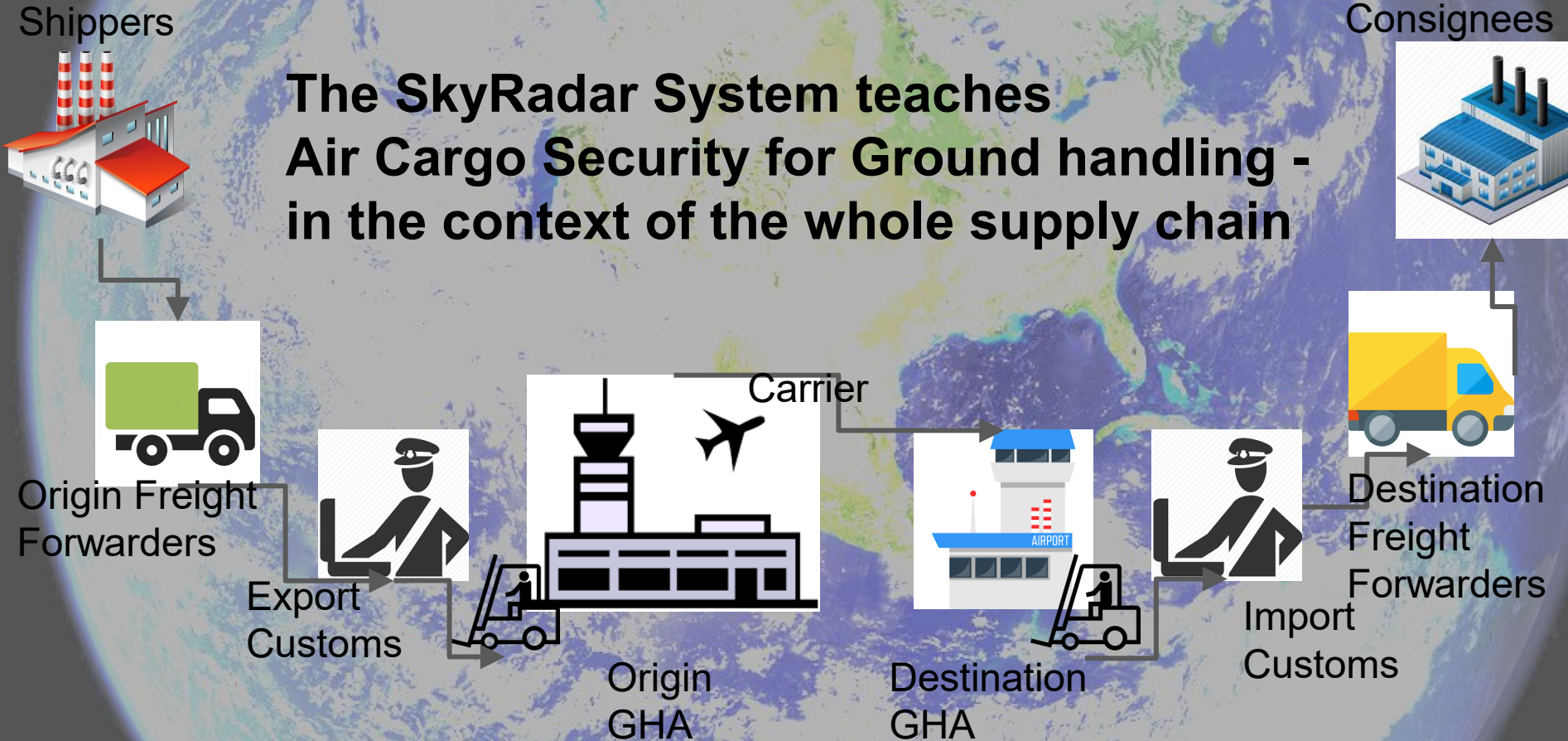
Destination
GHA



Import
Customs



Destination
Freight
Forwarders





The training laboratory allows for training and education in compliance to the IATA safety regulations



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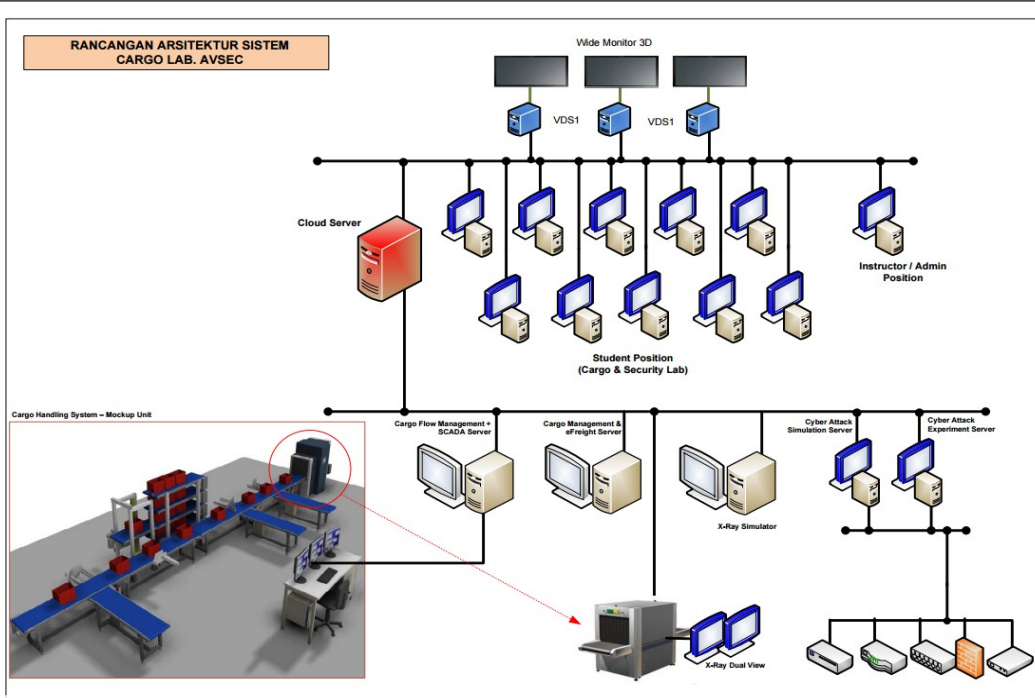
SYSTEM DELIVERABLES

The training laboratory consists of the following main subsystems:

- Cargo Flow Management and SCADA System
- Hardware and Software procedures following EU's ACC3 Condition of a secure supply chain for the designation a Carrier
- eFreight system compliant to IATA CARGO XML
- Hacker attack prevention through Cyber Attack Simulation
- Cargo Scanner with Simulants of Hazardous Materials
- Cargo Scan Simulator

Supportive systems

- Small Flight Data Processing System
- ULD configurator
- Cloud-Server giving access to manyConcurrent users



The training laboratory is interconnected,
Using state-of-the-art network and Cloud technology
With highest resistance against attacks

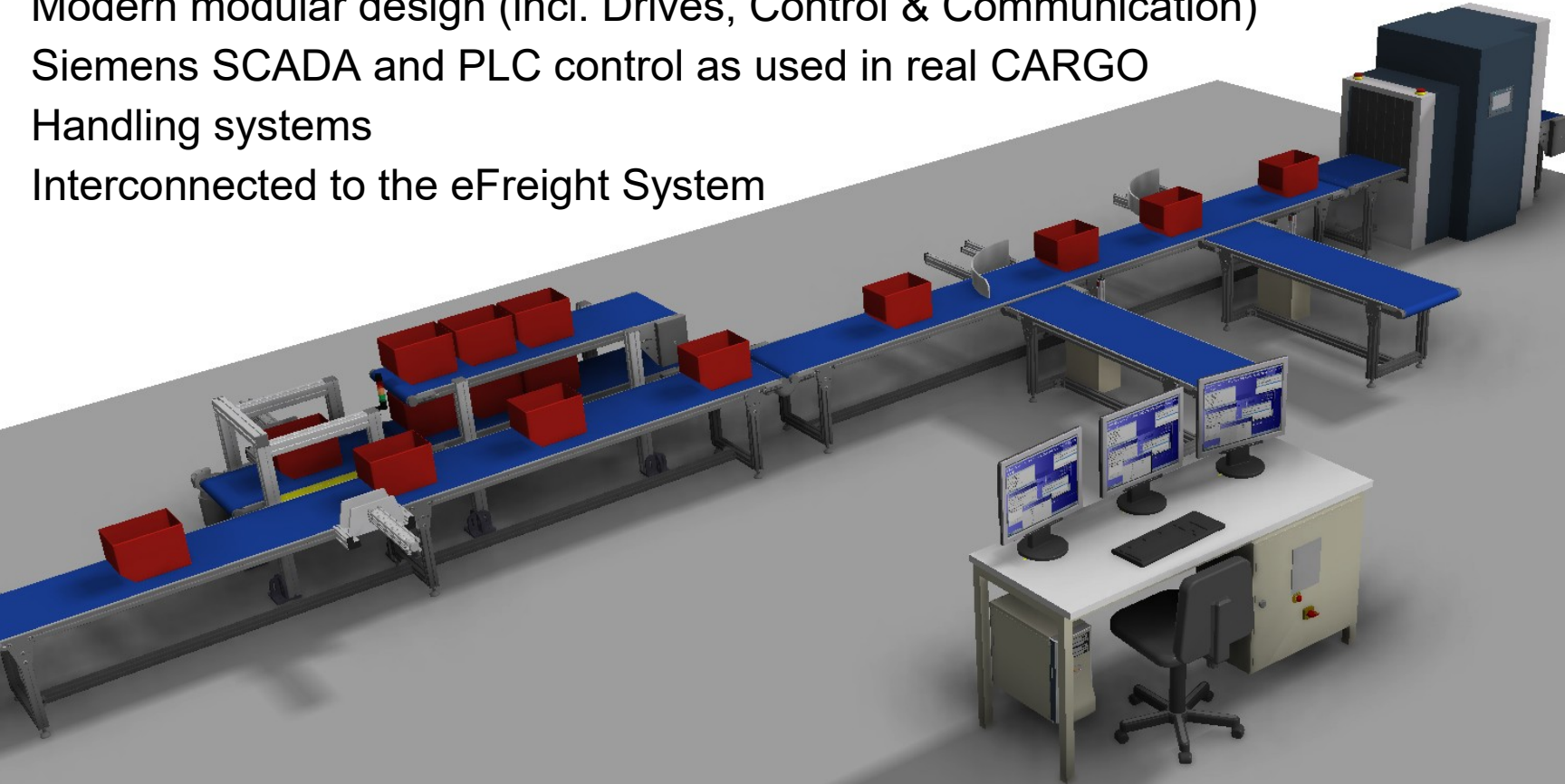
Cargo Flow Management and SCADA System:

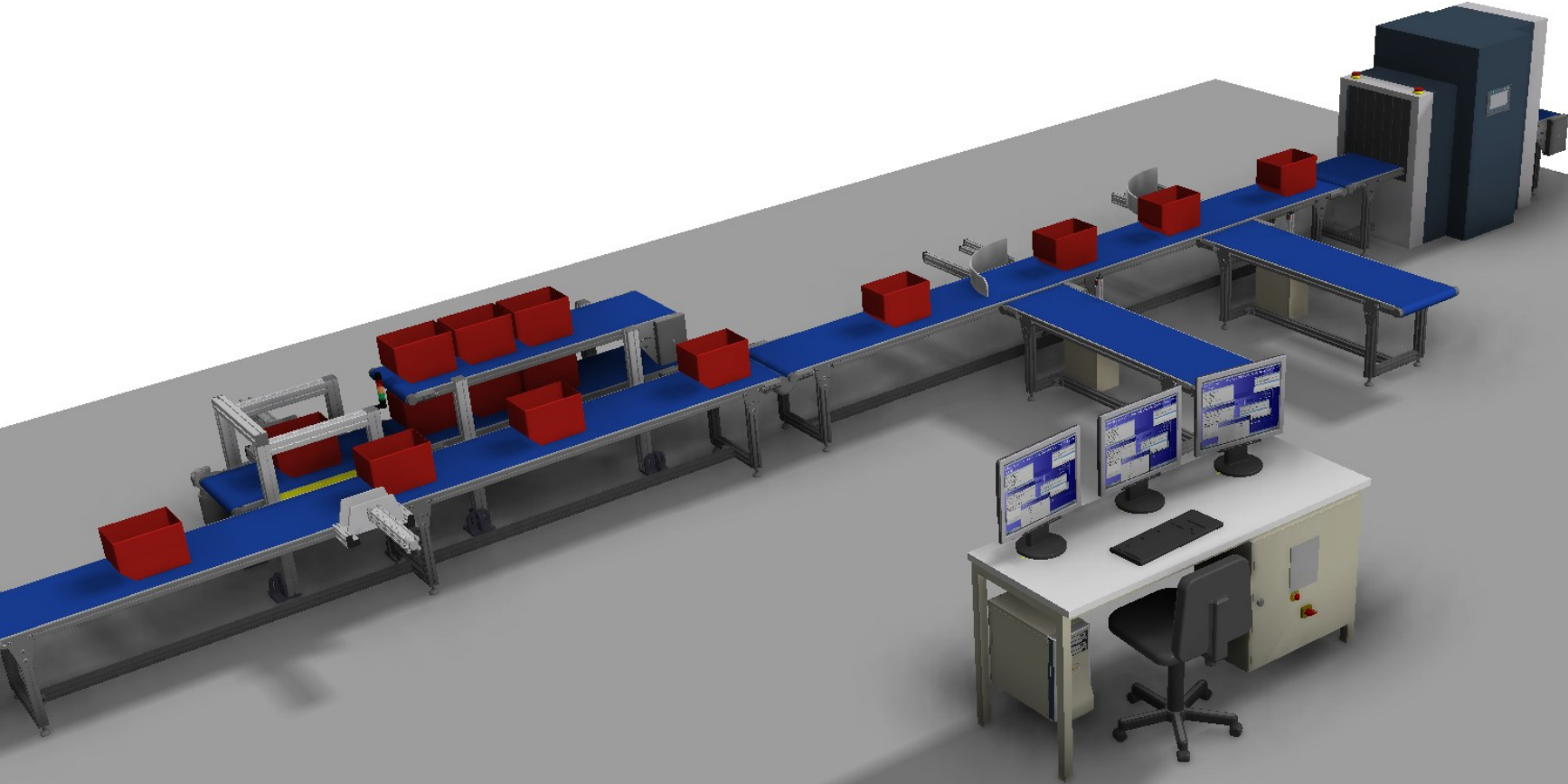
Modern modular design (incl. Drives, Control & Communication)

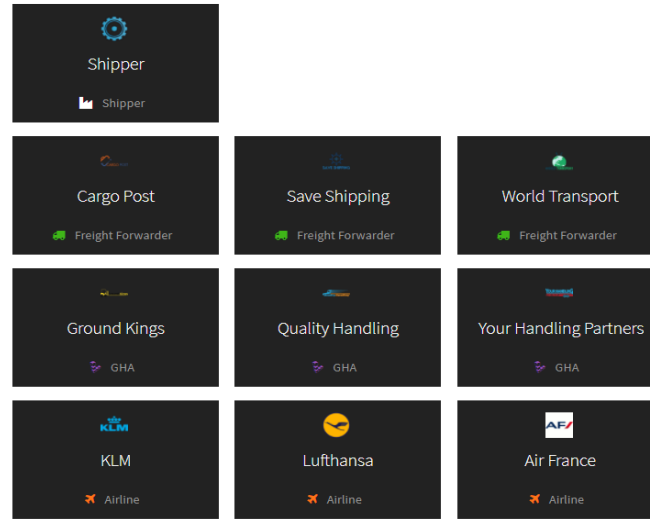
Siemens SCADA and PLC control as used in real CARGO

Handling systems

Interconnected to the eFreight System

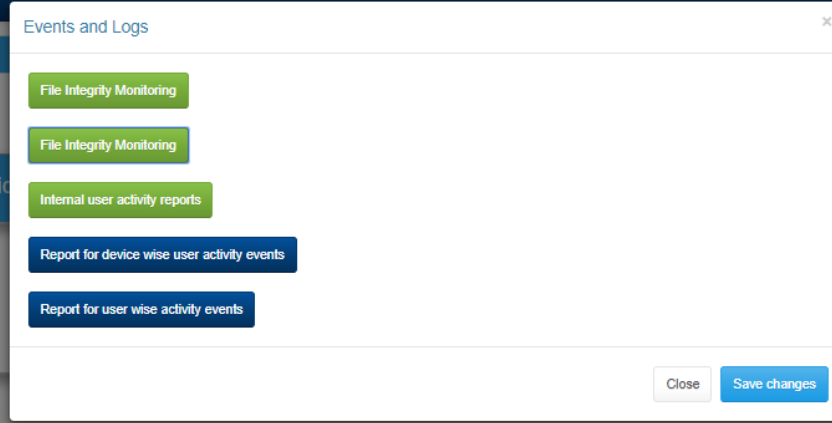






eFreight Training System compliant to IATA CARGO XML:
Including eAWB (Air Way Bill), eCSD (Consignment Security Declaration), eACI (Advanced Cargo Information) and eDGD (Dangerous Goods Declaration)

The supply chain is exemplarily implemented from Shipper to Airline allowing for role plays



Cyber-Security Lab following eCARGO and ACC3-
sniffer attacks,
insider threat,
trojan horse,
identity spoofing,



Baggage scanner, simulants and walkthrough scanner:

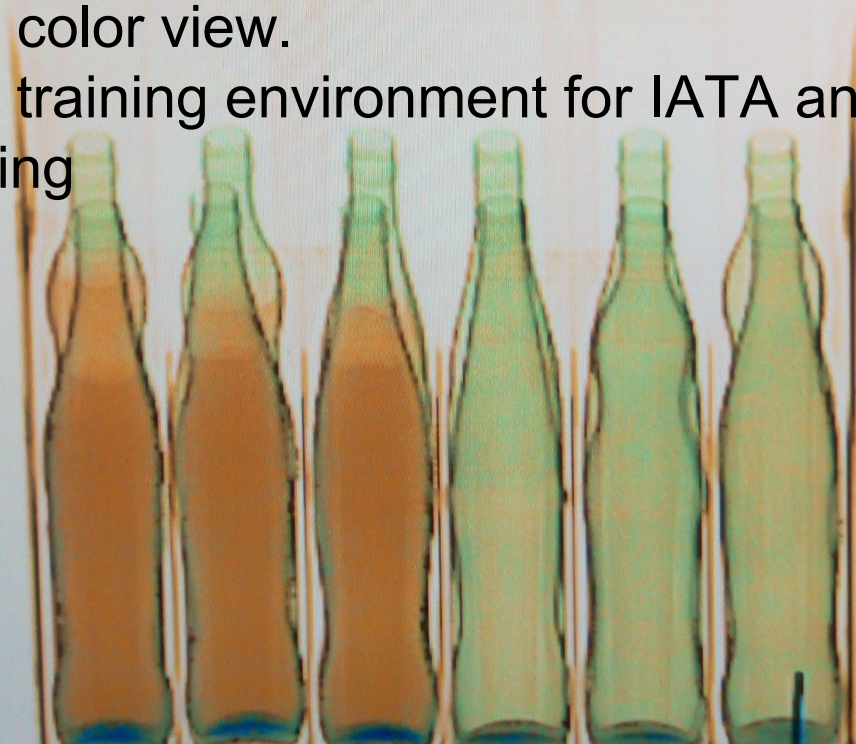
- High Penetration Scanner
- Explosives and Narcotics detection
- Safe for users
- Industry-typical processes

Cargo Scan Simulator:

The SkyRadar simulator represents a typical graphical user interface of an x-ray scanner with typical functions and keys.

Cargo Screening Systems, e.g. zoom function, black & white as well as enhanced color view.

to serve as a training environment for IATA and EC 185/2010 based security training



Departures
Arrival
Flight information System

14/04/2017 15:36

Flight Data

Flight No Aircraft Origin Gate sched.

Scheduled Expected GND Speed

Long. Lat Alt Route

Status

Flight Active Modified on 14/04/2017 at 15:35


14/04/2017 15:36

Modify

Change Departure (if landed) Change Speed (if active) Change Landing Time window (if active)


Cancel Flight ☒ Change Gate

Destination for departure screens

Departures						12:50	April 14
Flight	Airline	Destination	Gate	Expected	Remarks		
SQ 945		Dubai			Cancelled		
					Open		
					Closed		
					Delayed		

Supportive Systems:

- Small Flight Data Processing System
- ULD configurator
- Cloud-Server giving access to many
- Concurrent users

Arrivals							12:50	April 14
Time	Flight	Airline	Origin	Gate	Expected	Remarks		
10:13	SQ 945		Dubai			Landed		
						Open		
						Closed		
						Delayed		



Expandable:

- Pulse-mode and FMCW radars can be connected
- 3D Tower Simulators, Approach and en-route simulators
- Extension of cargo handling and eFreight
- ADS-B radars, SAR, simulators and many more ...