



INTEGRATED AIR TRAFFIC CONTROL SYSTEM

The Transportable ATC system consists of a Control Centre integrated with a radar system in order to combine the performance of a fixed system with the distinctive features (easy deployment and set-up) of a mobile system. Useful as a gap filler or in case of maintenance, the system can manage the Approach and Terminal Area along with emergency scenarios.

THE SOLUTION

Currently, systems in the ATC domain are moving towards a global two-way interoperability concept for Civil and Military traffic, in order to improve system efficiency, guaranteeing the appropriate level of security and safety in each scenario at the same time.

Within this context, the Transportable ATC system represents an attractive solution due to its high flexibility of intervention in many operations.

Developed following the requirements of the Italian Air Force, the ATC system can be used as gap filler in joint operations in harsh environments when no fixed ATC infrastructure is available. It is based on a combination of a state-of-the-art Control Centre and a Primary and Secondary Surveillance Radar systems.

The system can face many critical situations, e.g. :

- Crisis management in case of natural disasters to support Civil Protection first aid activities
- Service Continuity in case of fault, upgrade or maintenance situation for fixed systems (entire or partial)
- Special events (e.g. Olympic games, high visibility events)
- Gap Filler or Inter-forces Operations in critical and not outfitted environments
- Low and very low altitude Air Defence, coastal surveillance and border protection applications, integrated within Air and Coastal Defence networks

TRANSPORTABLE ATC

The high transportability on C130-J aircraft, on trucks ISO-std and ships, and the autonomous upload/download make the system flexible and deployable in a very short time, with limited personnel and without external support.

THE SYSTEM

The ATC Transportable System consists of a Surveillance System integrated with a Control Centre, joining capabilities and performances of a fixed system with the advantages of mobile systems like easy transportability, easy deployment and fast set-up.

Composed by three independent shelters, the system is equipped with two diesel generator groups and UPSs able to be connected to the European and American network for use worldwide or in NATO bases:

- Radar Shelter, with S-band Primary Radar, S-Mode Secondary Radar and the Radar Head
- Processor, completely redundant, forms an Approach Radar system capable to provide data to more than one remote Control Centres.
- Antenna Shelter, operating as a base of the antenna itself, integrates a lifting system able to raise the antenna up to a height of 5 m.
- Operative Shelter (OPS) includes three Controller Working Positions - CWP, with one configurable for Precision Approach Radar - PAR - Control, Automatic Dependent System - Broadcast (ADS-B), Dual - band radio (UHF/VHF), Voice Communication Switching System (VCSS), Radar Data and Voice Recording & Playback, AWOS Weather system and Multi Radar Tracking (MRT), to merge local and remote surveillance data sources.

It can be configured also for Military Missions, by integrating Automatic Frequency Selection and Frequency Agility against jamming effects for Primary Radar, Mode 4 and 5 for the Secondary Radar, and Nuclear, Bacteriological and Chemical (NBC) Filters making it well suited to operate also in potentially hostile environments.

It can be connected with a Precision Approach Radar (PAR) to implement a Ground Control Approach (GCA) system, or connected to a ATC Control Tower to realize a full operative Airport system.

TECHNICAL FEATURES

ENVIRONMENT CONDITIONS

External Temp	- 35° up to + 55° C
Salt atmosphere	0,75 µg/m ³ , as encountered in coastal zone
Sand and dust	concentration of 2 g/m ³
NBC filter	compliant with STANAG 4447
Transportation	aircraft (C130), truck (ISO blocks), ship, train
Self mobility	up to 2 km/h with use of own mobility system (motorized wheels)
Shock & Vibration	Longitudinal + 4g forward, +1,5 g back, Cross ±1,5g, Vertical ±2g

MECHANICAL RESISTANCE

in Emergency landing	9g
Deployment capability	load and unload from C130 and truck completely autonomous
Power Supply	2 diesel generator groups (100 kVA) with 24 hours of autonomy
UPS system	up to 40 min. of autonomy
Voltage	EU (400V 3-phases + N) or/ and US (208V 3-phases +N)

KEY POINTS

Based on a long standing expertise in ATC and surveillance radars, as well as on system integration, the ATC Transportable system stands out for the following key points:

- High level of modularity and flexibility to follow any operational needs and site-specific requirements
- High versatility based on a fast set up ensuring a sustainable solution minimising environmental impact
- Improvement of situational awareness in case of emergency to support decision making processes
- Fast Installation without use of external tools
- NBC Protection inside shelters
- Low Cost Solution supporting civil-military coordination within specific operational scenarios