

# ATR42 MP Surveyor



 **Alenia**  
AERONAUTICA  
A Finmeccanica Company

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## ATR42 MP Surveyor Coast effective

The ATR42 MP Surveyor is an Alenia Aeronautica program, integrating the worldwide successful ATR turboprop platform with the advanced ATOS System developed by Galileo Avionica.

The ATR42 MP Surveyor has been designed to perform a wide range of maritime patrol missions such as:

- > *Vessel Search, Identification and Surveillance*
- > *Maritime and Coastal Surveillance*
- > *Search and Rescue (SAR)*
- > *Pollution Detection and Control*

The aircraft is today fully operational with the Italian Customs Police (Guardia di Finanza) and the Italian Coast Guard.

## The Aircraft



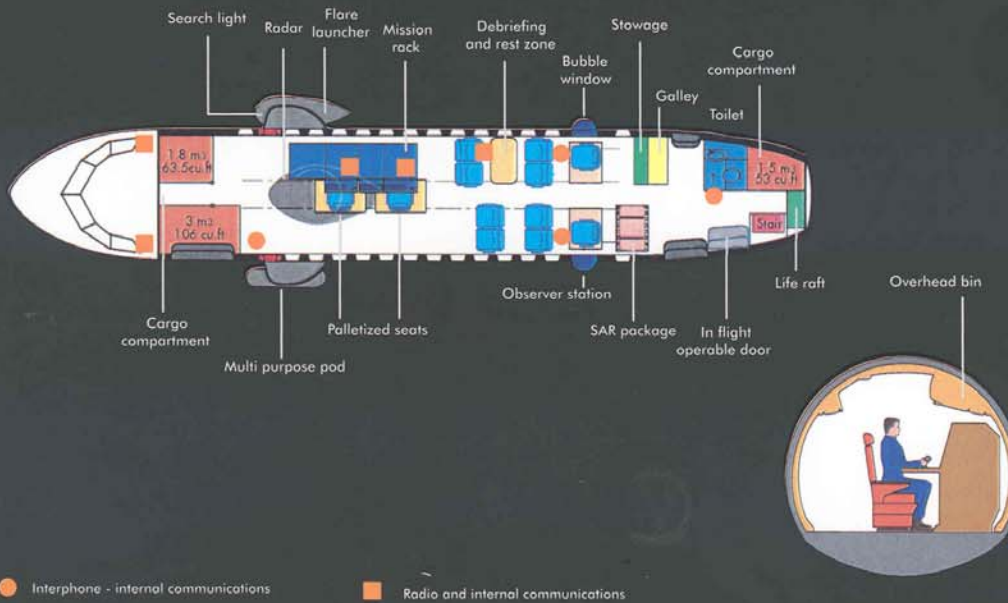
The ATR42 MP Surveyor is based on the ATR platform, the successful turboprop aircraft resulting from the cooperation between two leading European aircraft manufacturers: Alenia Aeronautica (Italy) and EADS (France, Germany, Spain). More than 670 ATR have been delivered today to more than 100 customers in the five continents and operate in all climates.

More than 12 millions hours have been flown worldwide by the ATR fleet.

## External layout



## Typical internal layout



# A very advanced maritime patrol mission system

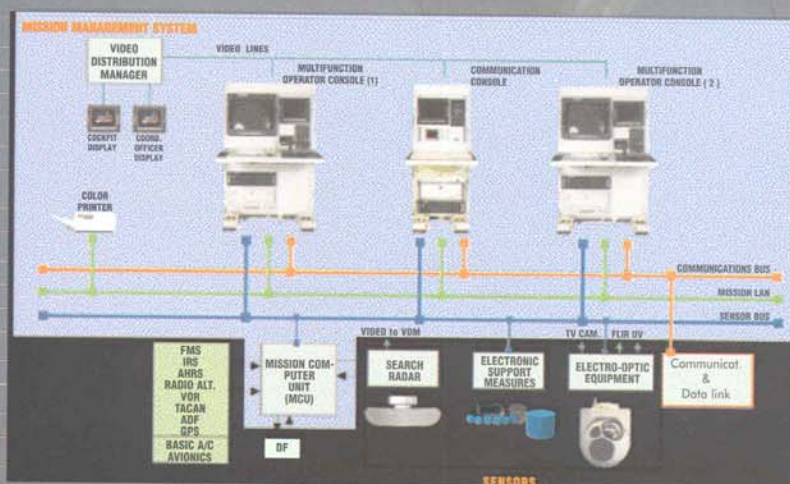
The Airborne Tactical Observation and Surveillance (ATOS) System developed by Galileo Avionica is an integrated package of equipment, software services and application software modules capable of covering several roles providing:

- > Tactical situation
- > Mission database
- > Mission planning
- > Reconnaissance in the visible and infrared band
- > Active electronic surveillance (radar and IFF)
- > Passive electronic surveillance (ESM and DF)
- > Operative communications

The ATOS is composed of three major sections:

- > Mission Management System (MMS) based on MIL-STD-1553B and ARINC 429 data buses
- > Mission sensors
- > Communication subsystem

## The ATOS (Airborne Tactical Observation and Surveillance) System



## Main mission sensors

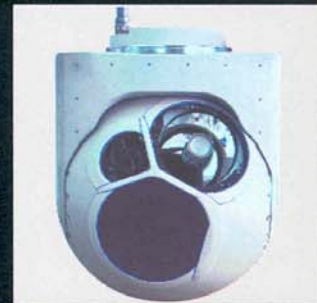
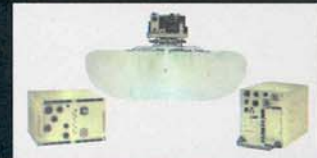
### Search Radar

#### Functions

- > Airborne sea surveillance
- > Small target detection

#### Capabilities

- > Long range multi target detection over 360° under adverse weather conditions, sea clutter and ECM
- > Detection and track of small RCS targets in high sea states
- > 32-target track-while-scan capability
- > ISAR Inverse Synthetic Aperture Radar (ISR) Imaging
- > SAR Synthetic Aperture Radar (SAR) Imaging



### Electronic Support Measures (ESM)

#### Functions

- > Detection of long range radar targets during night and in adverse weather conditions, even in dense signal environment
- > Recording data and loading libraries on intercepted radar

#### Capabilities

- > Radar emissions detection in a dense electromagnetic environment (2-18 Ghz)
- > Radar emissions analysis, identification and location
- > Tracking on multiple emission simultaneously
- > High degree of flexibility to meet the evolution radar of the environment



### Electro-Optical Surveillance and Tracking

#### Functions

- > Visual identification of surface targets
- > Detection and classification of surface targets during night operations

#### Capabilities

- > Triple sensors arrangement
- > High resolution IR camera (detection 5 nm, recognition 2 nm, identification 1,5 nm - 2,3x2,3 m target)
- > High resolution colour acquisition TV with high magnification lens
- > B/W long range TV (character height 20 cm at 1,5 nm distance)
- > 360° continuous azimuth scanning capabilities
- > Gyrostabilized five axis platform (LOS stability - 5 μ RAD) Based on Wescam M-20
- > Auto tracker



# The maximum system flexibility

Alenia Aeronautica has conceived the ATR42MP system with modular and flexible criteria, in order to comply with any operator need. The open system architecture of ATOS provides an inherent mission flexibility. Its modular structure offers high potential growth to accommodate additional sensors for further applications. The extensive use of Commercial Off The Shelf (COTS) components guarantees state-of-the-art performance in terms of Man Machine Interface (MMI), graphics capability and computer throughput.

## Basic Platform Avionic

Navigation: INS/GPS, VOR/DME, IFF, DF, TACAN\*  
Communication: VHF/UHF, AM-FM, VHF/FM/H, HF, interphone



## Basic Mission Equipment for Maritime Surveillance

Mission Management System  
Search Radar  
EO/IR System  
ESM\*  
Video Recording System\*  
Hand Held Camera\*  
Data Link\*  
ADELT\*  
Gun\*



## Pollution Detection Equipment

IR/UV Scanner  
SLAR\*  
MVR\*



## Search & Rescue Equipment

Searchlight  
Loudspeakers  
SAR equipment  
Flare launcher  
In-flight oper. door\*

## Roles

The ATR42 MP Surveyor capabilities are perfectly suited for maritime patrol missions complying with a wide range of specific requirements.

Main tasks performed are:

### Vessel Search, Identification and Surveillance

- > search, detection, identification, localisation and tracking of friendly/hostile vessels

### Maritime surveillance

Patrolling Time up to 11 hours



### Exclusive Economic Zone (EEZ) Patrol

Patrolling Time up to 11 hours



### Maritime and Coastal Surveillance

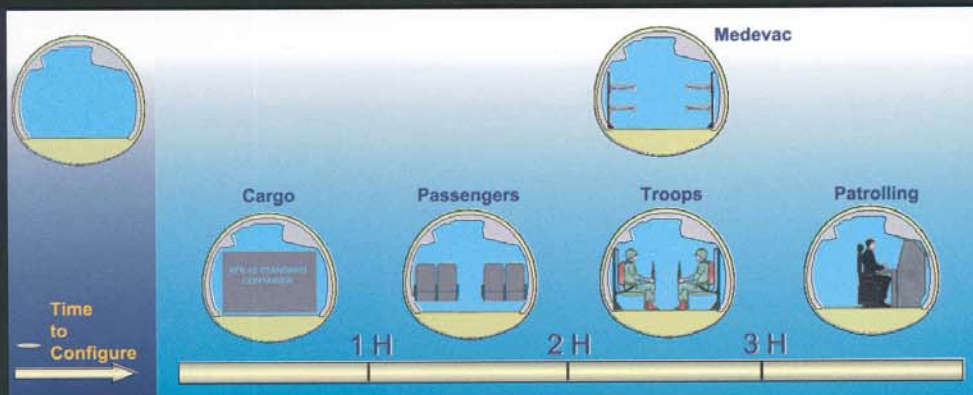
- > Maritime Exclusive Economic Zone (EEZ) Surveillance
- > boat activity monitoring and illegal shipping control
- > fishery protection
- > illegal immigration, piracy and smuggling control

# Outstanding versatility

Single basic platform easily and quickly convertible for different mission profiles.

Structural and system provisions are available to install all equipments for rapid and easy reconfiguration.

The high versatility allows to increase and optimise the aircraft utilization saving costs.



# Product support



A basic driver behind the ATR design philosophy has been to achieve an effective maintenance policy. Systems simplicity, reliability and accessibility are designed into the aircraft to maximise its availability. Block, partially equalised and fully equalised maintenance programmes are available with a typical manpower loading of two manhours per flight hour.

The results of this commitment are displayed in the continuing high reliability of the ATR in service, a world fleet reliability of 99%.

The basic platform enjoys the ATR Integrated world-wide support, overhaul and repair network already established for the commercial operators.

The mission system is fully supported by Alenia Aeronautica and its equipment manufacturers.

A complete set of spare parts, peculiar G.S.E., ground station have been developed in order to minimise the financial effort thus assuring an outstanding dispatch reliability.

**Field service**

Together with the usual field service for the basic platform a dedicated field representative is offered for the mission system.

**Training**

Comprehensive air crew and engineer training packages are designed to fully instruct the personnel to operate and maintain the aircraft in a safe and efficient way.

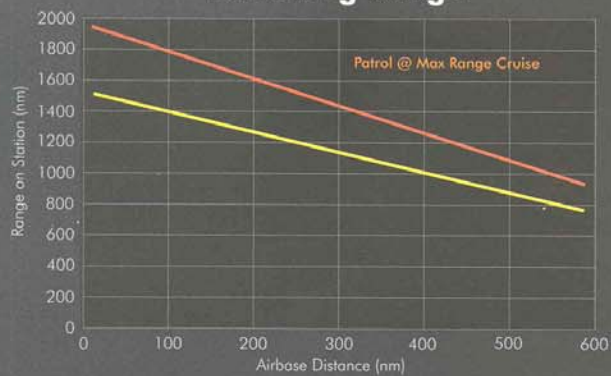
The training programmes use the latest computer based training methods; for flight crew a number of flight simulators are available; complete courses for mission system operators have been developed both on ground station and in flight.



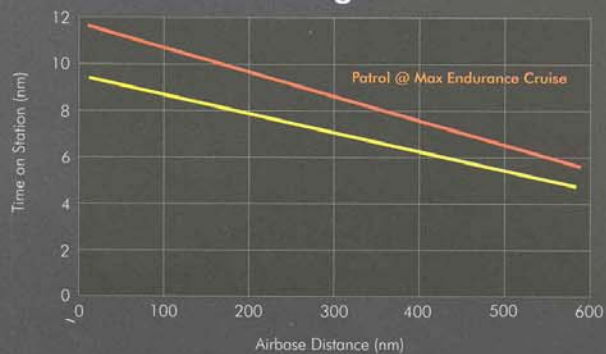
# Outstanding performance

Take-off Distance (ISA - Sea Level - MTOW)	1,050 m	3,440 ft	Maximum Cruise Speed (ISA - 97% MTOW @ 16,000 ft)	520 km/h	280 KTAS
Landing Distance (ISA - Sea Level - MLW)	1,150 m	3,770 ft	Ferry Range (ISA - LRC)	3,740 km	2,020 nm
Typical patrol speed			One-Engine-Out Ceiling (ISA - 97% MTOW)	3,960 m	13,000 ft
> Max Range	350 km/h	190 KTAS			
> Max Endurance (ISA - 90% MTOW @ 2,000 ft)	250 km/h	136 KTAS			

## Patrolling Range



## Patrolling Time



Transfert Flight @ LRC, ISA  
Reserves: 45 min  
holding @ 5,000 ft

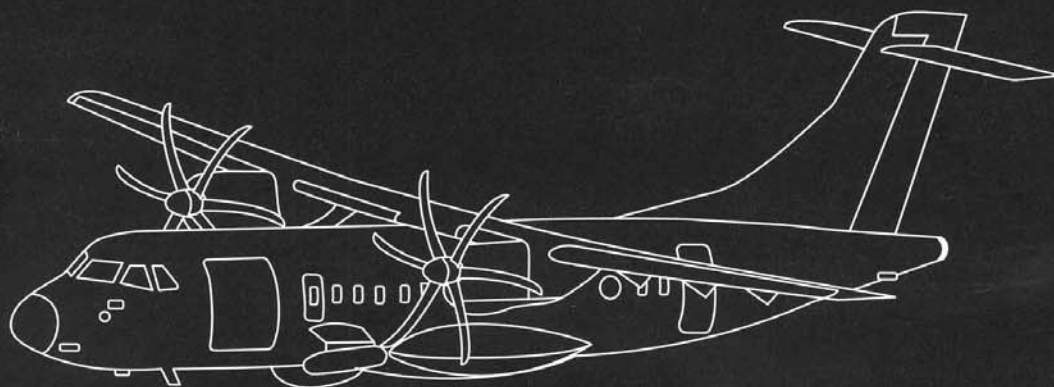
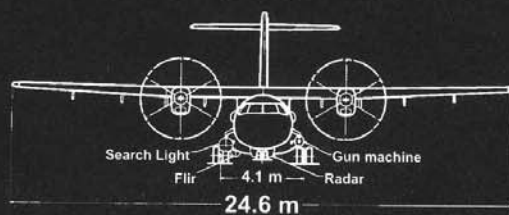
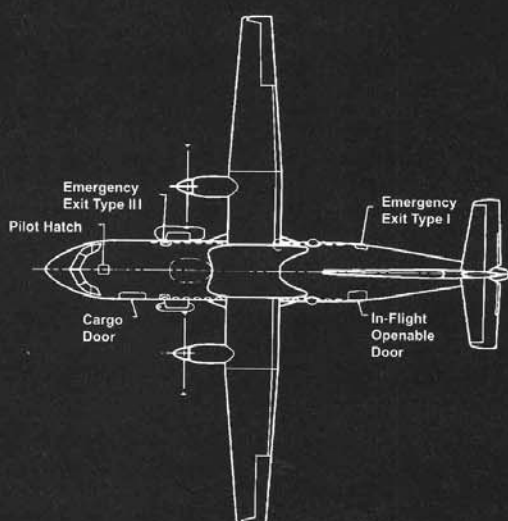
— 10,000 ft  
— 2,000 ft

## Dimensions and weights

Maximum Take-off Weight	18,600 kg	41,005 lb
Maximum Landing Weight	18,300 kg	40,345 lb
Maximum Zero Fuel Weight	16,700 kg	36,817 lb
Maximum fuel load	4,500 kg	9,920 lb

### Powerplant

- > PW 127E engines (Take off power 2160 shp)
- > 568F six-blade Hamilton Standard propellers







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