

DEFENCE AND SPACE
Military Air Systems

A330 MRTT

The Tanker of Choice



AIRBUS

A330 MRTT

The Tanker of Choice

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The A330 MRTT is the only new generation tanker combat proven and in operational service in 13 nations.

AIRBUS AND TANKERS

Airbus Defence and Space is responsible, within Airbus, for the design, production and marketing of Military Aircraft; for roles such as military transport, air-to-air refuelling, maritime patrol and surveillance, airborne early warning and many other applications.

Besides being responsible for the A330 MRTT programme, Airbus was also a reference in the tanker sector as the developer and supplier of six A310 MRTT mid-sized Tanker Transport aircraft; currently in operation with both the Royal Canadian Air Force and German Air Force.

THE MOST CAPABLE NEW GENERATION TANKER AND TRANSPORT AIRCRAFT

A330 MRTT: THE BENCHMARK

The Airbus A330 Multi Role Tanker Transport (MRTT) has transformed the air mobility options available to the world's air forces, thanks to:

- The most fuel, passengers and cargo of any new generation tanker transport
- True multirole: the best all-in-one solution for both national defence and international deployments
- Less sorties and flight hours to meet the same operational requirement
- Combat proven, fully interoperable
- Top-class reliability and economies of scale benefits due to the commonality with the A330-200 and the global presence of the civil platform

The A330 MRTT can carry more passengers and more cargo than any competitor whilst concurrently performing its air-to-air refuelling mission.

THE A330-200, A SOUND BASIS

The A330 MRTT is the military derivative of the highly successful A330-200 versatile widebody airliner; covering all ranges from short to long haul.

With over 1500 A330s sold and more than 1350 in service, the A330 is widely recognized within the competitive airline market for its reliability, sophisticated technology and cost effectiveness.

A330 and A330 MRTT operators rely on Airbus for innovation, continuous upgrades and fleet support service now and in the future.



The 111 000 kg (245 000 lb) of basic fuel capacity provides the A330 MRTT with an exceptional range and offload capability without additional tanks.



COMBAT PROVEN AIR-TO-AIR REFUELLING SYSTEMS

AERIAL REFUELLING BOOM

The Airbus Aerial Refuelling Boom System (ARBS) is the only new generation and Fly-by-Wire (FBW) boom in service today, providing quicker and easier operation through more responsive controls and boom disconnection systems.

Its fast fuel flow rate (up to 3600 kg/min - 1200 US gal/min) makes the ARBS the most capable new generation boom in service.

AERIAL REFUELLING RECEPTACLE

If required by an air force, the A330 MRTT can be equipped with a Universal Aerial Refuelling Receptacle Slipway Installation (UARRSI) compatible with boom nozzles and compliant with NATO standards.

The UARRSI allows the A330 MRTT to be refuelled from boom-equipped tankers with up to 3600 kg/min - 1200 US gal/min refuelling transfer rate.

- | | |
|---|----------------------------------|
| 1 Vent Tank | 8 Under-Wing Pods |
| 2 Outer Tank | 9 Vent Tank |
| 3 Inner Tank | 10 Trim Tank |
| 4 Collector Box | 11 Aerial Refuelling Boom System |
| 5 Centre Tank | 12 Fuselage Refuelling Unit |
| 6 Air Refuelling Console | 13 Enhanced Vision System |
| 7 Universal Aerial Refuelling Receptacle Slipway Installation | |



The full tanker crew shares a common area in the cockpit during operation, enhancing crew coordination and joint situational awareness.

UNDER-WING PODS

The Cobham 905E Under-Wing Pods, currently in service, enable the A330 MRTT to refuel any probe-equipped receivers such as the Eurofighter Typhoon, Tornado, Rafale, F/A-18 Hornet or Sukhoi 30. The 900 series pods incorporate a digitally controlled and electrically operated hose drum unit, optimizing reliability and maintainability.

The pods provide simultaneous hose and drogue refuelling at high fuel offload rate (1300 kg/min - 420 US gal/min), allowing receivers to minimise refuelling time and increase operation efficiency.

FUSELAGE REFUELLING UNIT

The advanced Cobham 805E Fuselage Refuelling Unit (FRU)* presents a reliable and capable single point alternative to the pods; offering a permanent hose and drogue capability with negligible impact on aircraft performance.

A high fuel offload rate (1800 kg/min - 600 US gal/min) provides air-to-air fuelling (AAR) of large probe-equipped aircraft such as the C-130 and the A400M, among others.

*Only UK MRTTs are equipped with FRU.

AIR REFUELLING CONSOLE

The A330 MRTT AAR systems and mission planning systems are controlled from the advanced Air Refuelling Console, located on the flight deck. This solution increases the safety of the AAR operation and ensures timely coordinated reactions of the flight crew to unexpected events. A second seat facilitates observation and training activities and can be used additionally for an optional mission system operator.

The Air Refuelling Console is seamlessly integrated in the A330 MRTT flight deck, following dark/quiet cockpit design principles and improving the situational awareness of the Air Refuelling Operator (ARO).

ENHANCED VISION SYSTEM

The A330 MRTT includes an Enhanced Vision System (EVS) that allows the remote operation of the AAR systems using a set of 2D/3D digital cameras.

This high definition camera system provides day, night and adverse weather operation images, a 270° sector view behind the aircraft, an option to monitor details of the refuelling equipment and allows high resolution video recording of the refuelling operations.

INTEROPERABLE WITH KEY PARTNERS

BOOM CLEARANCES

A330 MRTT | C-17 | E-3 AWACS |
E-7 WEDGETAIL | F-15 | F-16 |
F-35A | B-1 | F-22 | P-8A | B-52

HOSE AND DROGUE CLEARANCES

AV-8B | C-130 | E-3D AWACS |
EA-6B | EA-18G | EUROFIGHTER |
F-18 | F-35B | MIRAGE 2000 |
RAFALE | TORNADO | SU-30



A STEP CHANGE IN STRATEGIC AIR TRANSPORT

PASSENGER CAPACITY

- Standard: 268 passengers, in a two-class configuration
- Maximum: 300 passengers, in Economy-class

The A330 MRTT's extensive cabin provides greater comfort and a flexible cabin interior layout.

AEROMEDICAL EVACUATION CAPACITY

- Standard: 2 Intensive Care Stations, 32 stretchers and 88 passenger seats
- Maximum: 130 stretchers, in a full Aeromedical Evacuation configuration, plus additional Economy seats

Medical beds can be installed over designated fold-down seats in any seating configuration and stowed within the lower cargo compartment.

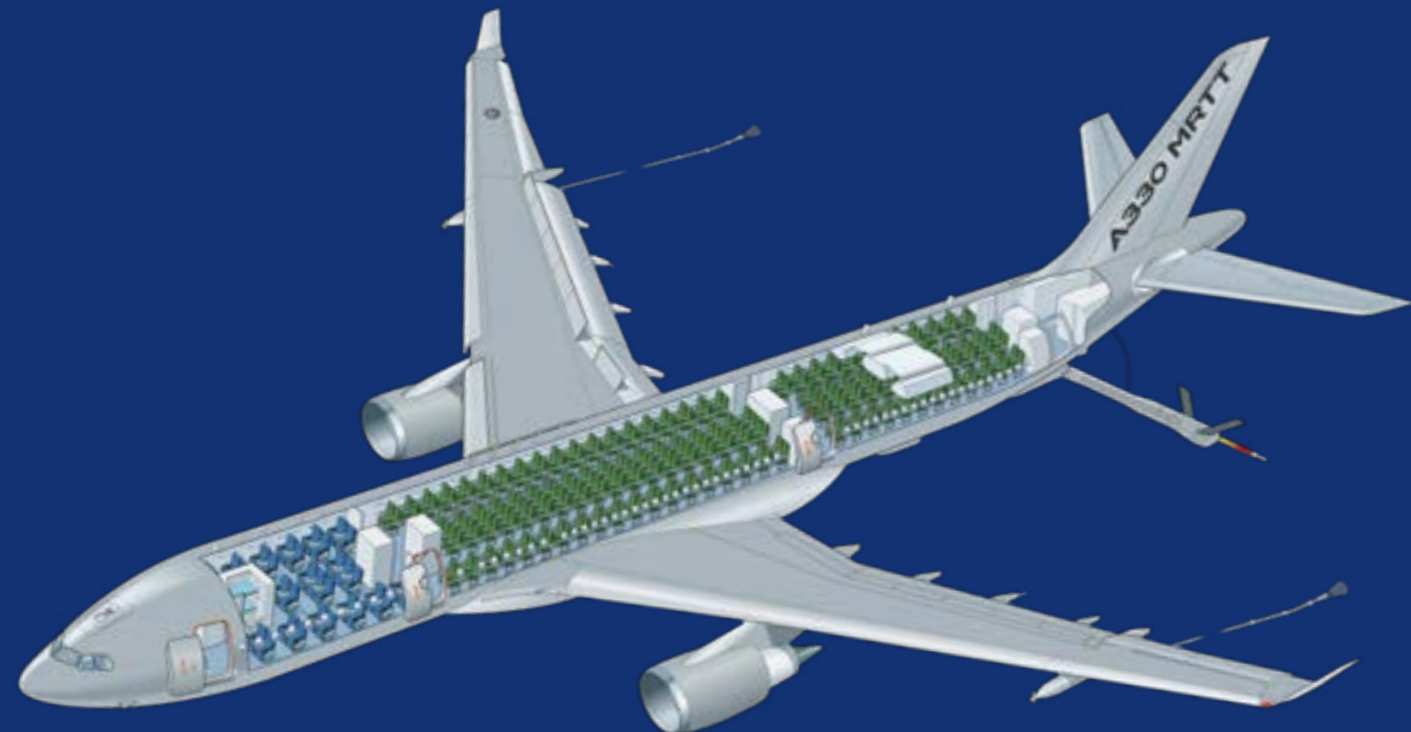
The A330 MRTT can be simultaneously used as troop transport on an outbound relief mission, and is capable of being rapidly converted into an aeromedical aircraft at any time.



Up to **300** PASSENGERS

Up to **130** STRETCHERS

The A330 MRTT can accommodate 5 times more passengers and 2 and half times more stretchers than competitors.



MAIN DECK CONFIGURATION

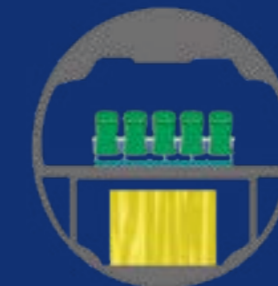
Legacy tankers with upper deck cargo space are being replaced by the A330 MRTT, featuring true multirole capabilities: upper deck for troops, VIPs or casualty transport and lower deck compartments exclusively for cargo.

IL-78



No cargo capability when additional fuel tanks added

KC-46



Permanent fuel tanks in the lower deck

A330 MRTT



Efficient side-by-side LD3 containers and no additional fuel tanks

The versatility of the A330 MRTT enables cargo to be conveniently carried within the lower deck in a variety of options covering the full range of existing under-floor containers and pallets.

Up to
8
NATO PALLETS

Up to
27
LD3 CONTAINERS



VIP CONFIGURATION

The outstanding Multi Role capabilities of the A330 MRTT can be further enhanced by selecting a VIP transport cabin configuration.

For a more flexible option, Airbus offers removable VIP transport kit modules.



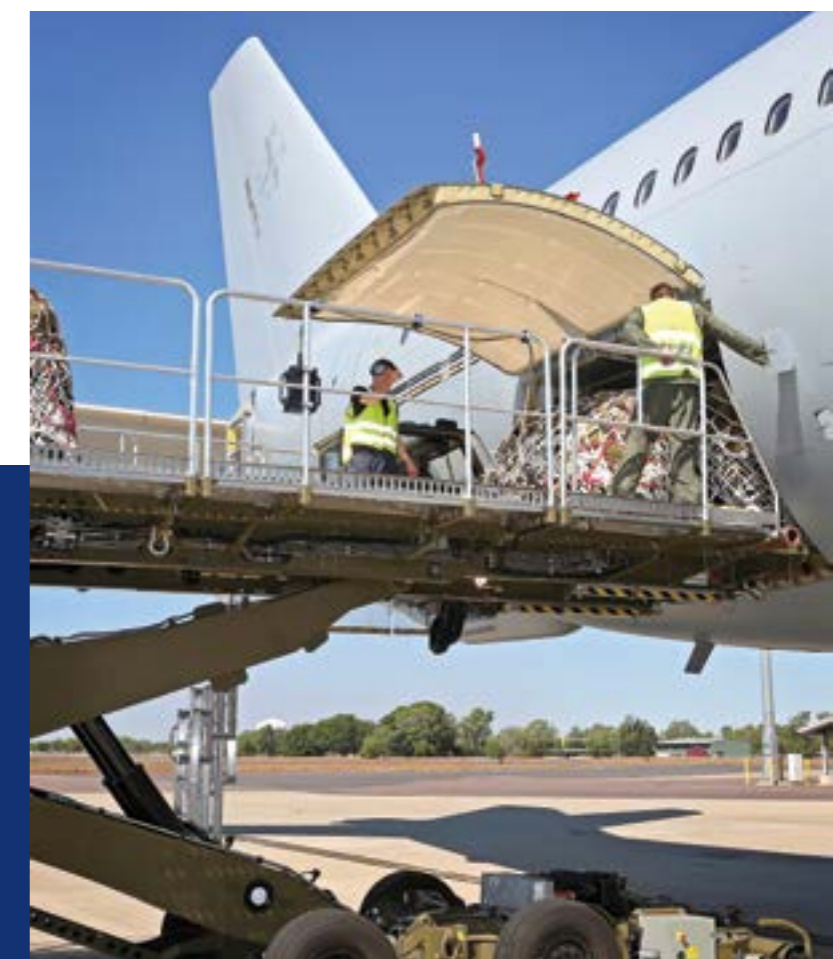
LOWER DECK CONFIGURATION

Like the A330-200, the A330 MRTT includes three lower deck cargo compartments (forward, aft and bulk) which further add to the versatility of the aircraft.

These areas provide as much volume as the C-130 and as much payload as the A400M. Moreover, the A330 MRTT is capable of carrying a total payload of up to 45 tonnes (99 000 lb), which can be any combination of passengers and cargo. The lower-deck can carry up to 37 tonnes of cargo (83 000 lb).

The A330 MRTT provides Air Forces with a new standard in strategic air transport:

- Maximum useable volume of 120 m³ (4200 ft³)
- No need for special containers
- Cargo compartments not penalised by AAR systems or additional fuel tanks





COMPLETE FLIGHT DECK CREW INTEGRATION

The A330 MRTT fully benefits from the latest developments in commercial aircraft cockpit design, including advanced avionics, a modern Human Machine Interface (HMI) and Fly-By-Wire (FBW) controls, reducing crew workload and enhancing situational awareness.

A complete glass cockpit provides the required flight data and specific AAR and mission data to both pilots. For the first time, the tanker commander has full awareness of the AAR operation behind the aircraft.

Two side-stick controllers give precise control to the FBW system, which delivers improved and safer flight characteristics.

The refuelling systems are operated from a console installed for the first time inside the cockpit, maximizing crew coordination. The Air Refuelling Console includes a second position to accommodate an instructor, when required.

The A330 MRTT avionics system ensures growth capability and a clear development roadmap, as confirmed by recent contracts to include IFF Mode 5 and ADS-B.

With one of the most advanced flight decks in service today, the A330 MRTT is certified for two-crew transport operation, providing high reliability and lower crew workload.

GLOBAL CUSTOMER BASE

In June 2011, the first A330 MRTT was delivered to the Royal Australian Air Force.

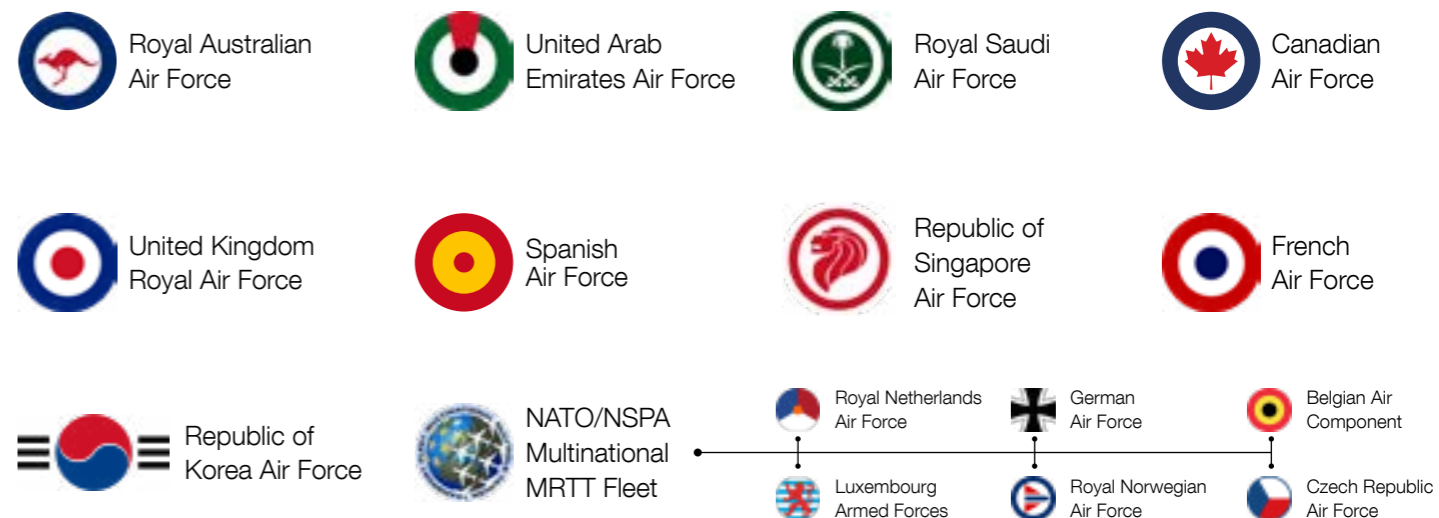
To date, 76 units of the Airbus new generation tanker and transport aircraft have been ordered by 15 nations; including the NATO/NSPA Multinational MRTT Fleet Programme (MMF). 57 A330 MRTTs are currently in service with 9 operators across the world.

The A330 MRTT has accumulated more than 275 000 flight hours since its entry into service.



“The A330 MRTT has had a transformative impact on the UK’s Air Mobility Force. The combination of its passenger and freight capability and its extremely high reliability and availability are providing the UK with unimaginable levels of force projection.”

Air Commodore Stephen Lushington
Deputy Commander NATO Air Command in Afghanistan
Royal Air Force



TAILORED IN-SERVICE SUPPORT

Airbus Services organization is backed by years of success offering performance-based services tailored to the demanding and unique expectations of our military and civil customers around the globe.

Services portfolio goes beyond traditional services up to extensive services packages as the DCare to ensure the accomplishment of missions. DCare includes:

- Integrated services solutions
- Local support
- Training and operation services
- Maintenance, Repair and Overhaul (MRO)
- Maintenance engineering and fleet management services
- Engineering services
- Material services
- IT solutions

Airbus maintains continuous contact with A330 MRTT operators; hosting once a year the Airbus MRTT User Group (AMUG) conference.



“The A330 MRTT, through various deployments and rotations in the Middle East, has achieved an outstanding mission success rate of greater than 97 per cent.”

Air Commodore Richard Lennon
Commander Air Mobility Group
Royal Australian Air Force



CUTTING-EDGE OPERATIONAL PERFORMANCE



Towline Mission Capability

Available Fuel	64 000 kg (140 800 lb)
Radius of Action	926 km (500 nm)
On Station Time	5 hours

Available Fuel	55 000 kg (121 000 lb)
Radius of Action	1852 km (1000 nm)
On Station Time	4 hours and 30 minutes

Strategic Deployment Mission Capability

Receivers	4 Fighters
Payload	25 000 kg (55 000 lb)
Distance	5200 km (2800 nm)

Receivers	4 Fighters
Payload	No payload
Distance	6700 km (3600 nm)



Towline and Strategic Deployment Missions performances have been calculated from Geilenkirchen NATO Air Base





"We can drag four Typhoons directly from the UK to the eastern seaboard of the United States, stay the night, and then go all the way to Red Flag (in Nevada). With a VC10 (...) that's four nights, versus two with the A330 MRTT."

Air Wing Commander Jamie Osborne
 Officer Commanding 10 Squadron (2013-2016)
 Royal Air Force

The A330 MRTT can fly **1000 nautical miles** and offload up to **70 tonnes of fuel in one hour**, 25% more than competitors.



Strategic Air Transport Mission Capability

	40 000 kg (88 000 lb)	300 troops and their equipment over 8400 km (4500 nm)
	30 000 kg (66 000 lb)	200 rescue personnel and their equipment over 10 200 km (5500 nm)
	20 000 kg (44 000 lb)	250 evacuees over 12 000 km (6500 nm)
	No Payload	Ferry Range over 16 100 km (8700 nm)

Strategic Air Transport Mission performance has been calculated at ISA +15 °C from Geilenkirchen NATO Air Base



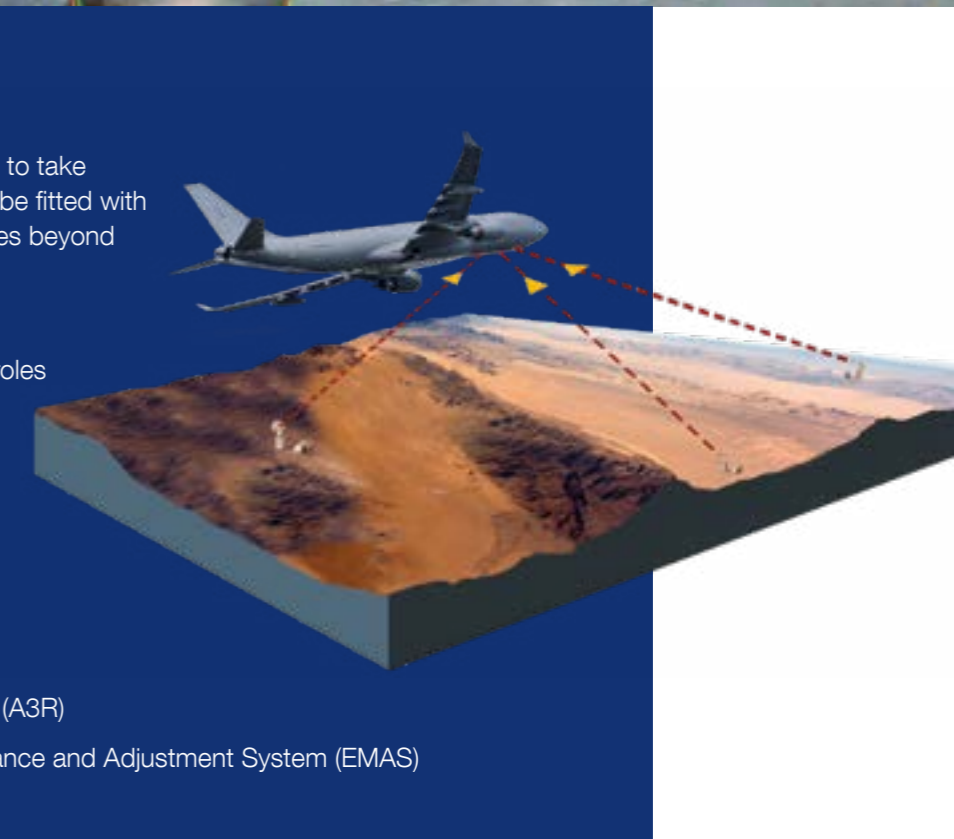
INTRODUCING THE **SMART MRTT**

FLEXIBLE ARCHITECTURE

The A330 MRTT has sufficient spare capacity to take advantage of new digital technologies and to be fitted with a wide range of sensors to enhance its features beyond air-to-air refuelling and air transport.

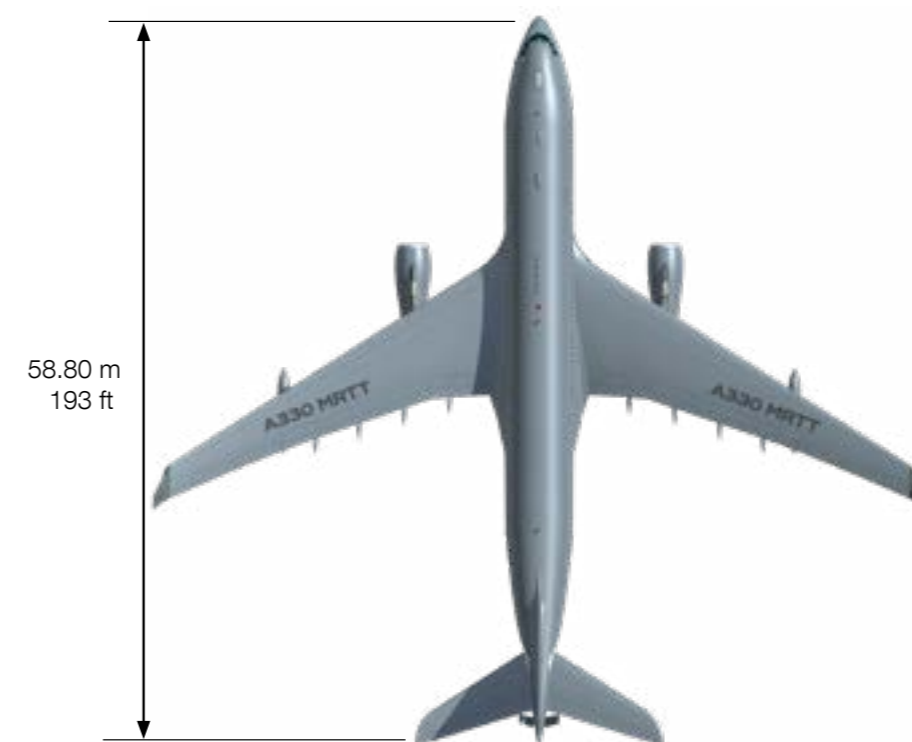
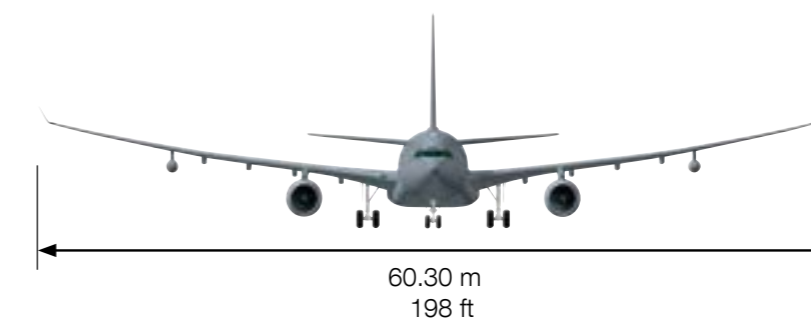
The Smart MRTT includes the following new roles and additional capabilities:

- Enhanced Connectivity:
 - Link 16 evolution (BU2/JTRS)
 - Link 16 / SATCOM connectivity
 - Wide Band SATCOM
 - Communications Node
- Covert Operations
- Automation: Automatic Air-to-Air Refueling (A3R)
- Digitalization/Big Data: Enhanced Maintenance and Adjustment System (EMAS)



SPECIFICATIONS AND DIMENSIONS

General Dimensions		
Overall length	58.80 m	193 ft
Overall height	17.40 m	57 ft
Wing span	60.30 m	198 ft
Wing area	362 m ²	3897 ft ²
Maximum Weights		
Maximum Take-Off Weight (structural) MTOW	233 000 kg	514 000 lb
Maximum Landing Weight (structural) MLW	182 000 kg	401 000 lb
Maximum Fuel Weight MFW	111 000 kg	245 000 lb
Maximum payload (Any combination of PAX & cargo)	45 000 kg	99 000 lb
Engine		
General Electric CF6-80E1A3	320 kN	72 000 lbf
Rolls-Royce trent 772B	316 kN	71 000 lbf
Performance		
Maximum Cruise Altitude	12 600 m	41 500 ft
Maximum operating altitude - AAR mission	10 700 m	35 000 ft
Maximum cruise speed	Mach 0.86	
Typical cruise speed	Mach 0.82	
Refuelling envelope	180-325 kt CAS	
Range		
Range with maximum payload (ISA+15)	7000 km	3800 nm
Range with 40 tonnes payload (ISA+15)	8400 km	4500 nm
Range with 30 tonnes payload (ISA+15)	10 200 km	5500 nm
Range with 20 tonnes payload (ISA+15)	12 000 km	6500 nm
Range with 10 tonnes payload (ISA+15)	13 900 km	7500 nm
Ferry range/ range with maximum fuel (ISA+15)	16 100 km	8700 nm
Take-off and landing performance		
Landing distance - LFL-SL MLW	1750 m	5700 ft
Landing distance - LFL-2000 ft, MLW	1800 m	6000 ft
Take-off distance - SL, ISA, MTOW	2800 m	9200 ft
Take-off distance - 2000 ft, ISA, MTOW	3000 m	10 000 ft
Crew		
Flight crew	2	
Mission crew	1 Air refuelling operator and 1 mission planning system operator (optional)	



Rolls Royce engine, reflected in the three-view of the aircraft, has been used for design purposes only. Airbus Defence and Space offers military customers two powerplant options for the A330 MRTT: General Electric and Rolls Royce, as described within the specifications section.



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