

# EUROMALE

The evolving nature of military operations has generated specific requirements for the tools used to ensure 'zero risk' during the operation. Today's warfare has radically changed, and one of the most visible aspects is manifested through satellite and 'dronised' conflict: soldiers who become operators ready to press a button in a bunker on the opposite side of the hemisphere from the place where a simple command turns into a bombardment. The invulnerability and safeguarding of 'their' soldiers has become the essence of 'humanitarian warfare'. Thus the remote control of entire populations finds its power projected into a balance in terror, in the territories of the world where it is information gathered by a machine, by an algorithm, that decides whether one can live or die. And if today (perhaps) it is still the 'operators' who have the final say on whether to bomb, tomorrow it will directly be artificial intelligence.

There are many projects being developed in Europe: here we analyse one of them, in collaboration between the German, French, Spanish and Italian states. It is called **European MALE RPAS**.

**Medium Altitude Long Endurance:** a drone flying at altitudes between 3,000 and 9,000 m.

**Remotely Piloted Aircraft Systems:** the set of all components of the drone (the vehicle, the station that remotely directs it, the systems that enable flight and transmit orders).

**COORDINATOR:** OCCAR (Organisation Conjointe de Coopération en matière d'Armement), an international agency that facilitates the development of military projects between several EU states (and also includes Turkey)

**Costs:** 7, 1 billion euros

**Italy:** 15 vehicles

**Germany:** 21 vehicles

**Spain and France:** 12 vehicles each

**EDF coverage:** €100m

**Delivery:** planned in 2025

## GENERAL CHARACTERISTICS

**Capacity:** 2,300 kg payload

**Length:** 16 m

**Wingspan:** 26 m

**Armament:** precision-guided weapons ("smart" missiles)

## CONTRACTOR:

Airbus Defence and Space (Germany)

## SUBCONTRACTOR:

Leonardo spa (Italy)

Airbus Defence and Space (Spain)

Dassault Aviation (France)

## On-board electronics and sensors:

### Production

Elettronica spa (Via Tiburtina Valeria, Km 13.7, Rome)

Hensoldt (Germany)

Thales (France)

Indra (Spain)

Mades (Spain)

## Fuselage/frame

### Production

**Wing:** Leonardo. Manufacture in the factory in Foggia (Zona ASI loc. Incoronata), assembly in the factory in Grottaglie (TA), Strada prov. 83

**Cooling system and bogie (braking system):** Leonardo

**Other metal components:** Leonardo. Nola (NA), ASI area, loc. Bosco Fungone

**Partial assembly:** Airbus (Spain)

**Final assembly:** Airbus (Germany)

## Engine

### Production

**General Electric Catalyst" turboprop:** manufactured by Avio Aero (Italy).

**Engine gearbox, turbines and combustor:** Avio Aero (locations: Rivalta di Torino, Via I Maggio 56 - TO; Pomigliano d'Arco, Viale G. Lu-  
raghi 20 - NA; Cameri, Via Montimperiale 81 - NO; Talamona, Via  
Roma 32 - SO).

**Rotating components (propellers):** GE Engineering

Design Centre in Warsaw (Poland)

MT- propeller (Germany).

**Supply chain:** Avio Aero in Italy and Poland, GE Aviation Turboprop (in the Czech Republic), GE Aviation Advanced Technology in Munich (Germany) and GE Engineering Design Center in Warsaw (Poland).

**Production of prototypes:** Avio Aero (locations: Bari, Via G. Amendo-  
la 132; Brindisi, Via A. Titi 16 - engine parts in additive manufactur-  
ing/use of 3D printers).

### Research and design

**Collaboration on the engine networking between leading European universities and research centres:** the EU technology development clusters (EUTDC)

Polytechnic University of Bari

UniSalento

Energy Factory Bari (partnership between Avio Aero and Bari Polytechnic) Apulia Repair Development Centre (partnership between Avio Aero and Bari Polytechnic)

Turin Additive Lab (partnership between Avio Aero and Turin Polytechnic).

## Aircraft guidance and ground control system

### Production

Telespazio (Leonardo, Thales). Designs and builds the 'BRLOS' (Beyond radio line of sight) guidance system, the RPASLNAR remote guidance system, and IOT systems (connecting individual components). It also deals with the 'CRUISE' system (drone security against cyber attacks).

### Research and design

**Control experimentation:** conducted by Leonardo through Telespazio and Piaggio Aerospace, through the "Piero Fanti" Space Centre in Fucino (L'Aquila) and Trapani Birgi airport.

\*The research work is partial as the contract awarding phase is not yet finished.

Any power is sustained by means that have a determined scope in each situation. Thus, it is not the same thing to command by means of soldiers armed with arrows, spears and swords or by means of planes and incendiary bombs.

The power of gold depends on the role played by trade in economic life; the power of technical secrets is measured by the difference between what can be done with them and what can be done without them.

Simone Weil

## Rare metals

These are a group of 17 chemical elements.

They are defined as rare not in terms of abundance but because of the low concentration of their deposits. Hence the very high extraction costs.

They are fundamental to the weapons industry and new technologies, specifically:



AEROSPACE AND DEFENCE



ELECTRIC CARS



NUCLEAR ENERGY



FIBRE OPTIC CABLES



COMPUTERS AND TELEPHONES



STEEL

One example: titanium aluminium is crucial in the production of several Eurodrone