MICROWAVE SYSTEMS AND COMPOSITES MATERIALS STRUCTURES
FOR SPACE, DEFENSE, CIVIL AND NAVAL APPLICATIONS

GROUP PRESENTATION
Gruppo Pasquali
Company Organization

Pasquali Microwave System srl
Leading company of group specialized in state-of-the-art RF technology.

Ride the wave srl
R&D department of EM\RF design for full-custom and turnkey's solutions.

Vega Composites srl
ADVANCED assemblies and COMPOSITE STRUCTURES design, manufacturing and test.

Galvanica Pasquali srl
Group division focused on surface galvanic treatments on metal parts

Pasquali Microwave USA
US Division Sales & Technical department. Located in Washington DC and Huntsville AL

abt 75 employees (43 years average age), 11,000 sqm facilities, Universities and Research Institutes stable collaborations.
Gruppo Pasquali counts 3 Facilities:

- Metallic Materials Manufacturing
- Composites Materials Manufacturing
- Surface Galvanic Treatments and Painting

- 75 Group Employees
  Mean age 43 years

- 11,000 Production Area
  5,500 sqm indoor / 5,500 sqm outdoor

- 8% Investments
  Equipment\Machinery
  investment over turnover
Gruppo Pasquali Mission

Gruppo Pasquali mission is to become a Technological Partner of its customer thanks to its unique heritage which matches well rounded capabilities from design and project to manufacturing and test.

More specifically, the key element of Gruppo Pasquali value proposition to its partners hinges on the capability of leveraging on the complementarity of the fields of expertise of the companies within the group, to offer a turnkey solution.

Even when approaching challenging Built-to-Spec antenna project, the Group is capable of taking on the various aspects of R&D, design, manufacturing, assembly and test full-in-house.
Gruppo Pasquali
Group Capabilities

R&D Engineering
- RF/EM Design
- RF/EM Optimization
- Mechanical Engineering
- System Engineering

Metal Manufacturing
- CNC Machining
- Oven Brazing/Welding
- Soft Soldering
- Electroforming

Composites Materials
- Single Skin/Sandwich Structures
- Bonding Structures
- 3D Structures Molding
- Special Metals Manufacturing
Gruppo Pasquali Group Capabilities

Galvanic Treatments
- Metal Plating (Gold, Silver, Copper, Nickel)
- Special Painting
- Passivation

Environmental Tests
- TVAC External Labs
- Anechoic Chambers
- Thermal Chambers

QA/PA Inspections
- 3-4-5 Axis
- X-Rays
- Ultrasonic
- Laser
Gruppo Pasquali Products Overview

- **µ-Wave and mm-Wave Waveguide Assemblies and Antennas Systems**
  [1 GHz ÷ 100 GHz or higher frequencies]

- **Blackbody RF Absorbers for Calibration Targets**
  [10 GHz ÷ 200 GHz, 4°K ÷ 330°K]

- **Carbon and Composites Fiber–Reinforced Structures and Metal Frames**
  [Carbon-Fiber, Kevlar, Rohacell, Innegra, Dyneema]
  [Special Steel, Titanium, Alumina Alloys]
  [Non conventional matrix Systems]

- **Electronics Subassemblies and Components**
  [On-waveguide integrated parts, microstrip/PCBs (1 GHz ÷ 50 GHz)]
Gruppo Pasquali
Synergic capabilities for customized projects

R&D - EM\RF Design – RF equipment integration - capabilities

The integration of EM/RF and FEM Analysis tools with our CAD-CAM/CNC Manufacturing processes let us carry-out turnkey products up to complex and extensive-scale solutions, such as:

- Optimized Multi-Layers Radomes
- Large and Complex Antenna Systems
- Shields and Structural Frames
From small sized integrated antennas:

BB30 integrated Ku-Ka band antenna
30cm Ø Reflector

To big sized integrated antennas (up to 10m!):

Integrated C band antenna
5.8m Ø Reflector

Gruppo Pasquali
Synergic capabilities for customized projects
Gruppo Pasquali
Synergic capabilities for customized projects

Radomes - capabilities

Radomes of different sizes and shapes for the most challenging Airborne, Naval and Ground applications.
Pasquali Microwave Systems

Italian leading manufacturer of microwave and mm-wave products and waveguide assemblies for Space, Defense and Civil Applications.

Since 1958 (more than 65 years ago) Pasquali Microwave Systems has developed a wide expertise and deep know-how in combining precision mechanics with microwave concepts, for supplying of custom products (1 GHz ÷ 100 GHz or higher), ranging from single prototypes to full stocks.

Pasquali Microwave Systems offers specialized activities of outstanding technical value, based on:

- R&D – Cutting-edge EM/Mechanical simulation tools and CAD/CAM systems
- Production – Full in-house Production (CNC Machining, Brazing, Electroforming)
- Plating and Finishing – Galvanic Treatments and Passivating (X-Rays certified instruments)
- QA and Tests – RF and Mechanical tests - UNI EN ISO 9001 and UNI EN 9100 certified

Pasquali Microwave Systems main products lines comprehend:

- Antennas, Waveguide Paths (Rigid and Semi/Flexible), Calibration Targets, Millimeter Components, Monopulse Comparators, Solid State TR-Limiters, Rotary Joints, MultiChannels Combiners, Ferrite Devices
RTW Ride The Wave Srl (RTW) was founded in 2003 by a team of engineers and researchers with specialized skills in \textit{\textmu}waves and sub-millimeter waves and deep know-how in \textit{EM design} and TLC systems.

\textbf{RTW} started in 2003 as a spin-off company of the University of Pisa.

In 2005 \textbf{RTW} started a collaboration with Pasquali Microwave Systems for the development of custom microwave components for RADAR systems.

In 2006 RTW joined Gruppo Pasquali, becoming its R&D company. Since then RTW has performed all the \textit{EM design} for Pasquali Microwave Systems production.
Vega Composites

Vega Composites is an Italian leading manufacturer of assemblies and mechanical structures realized in reinforced-fibers and metal parts for Defense, Civil, Naval and Space Applications.

Since its establishment in 2003, Vega Composites has developed a significant know-how and technical expertise in high tech design, manufacturing and test of:

- Composite fiber-reinforced structures (carbon fiber, glass fiber, kevlar, innegra, dyneema, quartz)
- NON CONVENTIONAL Matrix systems (like Cyanate-esters or BMI) for special applications
- Integrated complex metal parts (special steel, titanium, aluminium alloys)

Vega composites core businesses are Aviation & Space (e.g satellites and micro satellites), Defence (airborne and naval)- and Telecommunications & Civil applications (e.g Ground Stations).

By today Vega Composites is well-know reference company for the high-technology, quality and reliability of its products (UNI EN ISO 9001 and UNI EN 9100 certified)

Since 2020 Vega Composites is part of Gruppo Pasquali.
Galvanica Pasquali is specialized in high quality galvanic surface treatments. With more than 30 years of experience on galvanic processes of mechanical parts destined to the Defense and Space sector, Galvanica Pasquali can actually work on mechanical parts composed of both aluminum alloy and copper/bass alloys with:

- 18K gold-plating (high hardness, fit for rubbing contacts)
- 24K gold-plating
- Silver-plating
- Chemical nickel-plating
- Electrolytic nickel-plating
- Copper-plating
- Chromium plating
- Tin coating
- Passivation
- X-rays Inspections

Certified UNI EN ISO 9001 and UNI EN 9100 certified
On the 23rd of November 2023, blessed by the presence of Her Excellency Dr. Neena Malhotra, Ambassador of India to Italy and San Marino, Merlinhawk Aerospace and Vega Composites srl (Gruppo Pasquali) signed an agreement to constitute a Joint Venture which will be based in the state of Tamil Nadu.

This important event represents a milestone in the partnership between the two companies, enhancing the capabilities to support Indian customers for what concerns composite materials made components and assemblies for various high-tech industries.

Merlinhawk Composites, this will be the name of the JV, is expression of the strategic partnership between India and Italy. The initiative received widespread praise for being the first Joint Venture between the companies of the two countries.
THANKS FOR YOUR ATTENTION