



UMBRA GROUP

Gabriele Guidi
Head of Business Development
AEROSPACE

***Dalla ferrovia all'aerospazio: la
storia della meccanica a Foligno***

18 gennaio 2024

UMBRAGROUP: una presenza globale, un gruppo al 100% italiano

220 M€ (2023)

1600 persone

UMBRA CUSCINETTI Inc.
Everett (WA) - USA



Design, R&T and
manufacturing

LINEAR MOTION LLC.
Saginaw (MI) - USA



Part 21
Part 145



Aerospace focused plants

PRÄZISIONSKUGELN ELTMANN GmbH
Eltmann - GERMANY



KUHN PRÄZISIONSSPINDELN
und GEWINDETECHNIK GmbH
Freiberg - GERMANY



UMBRAGROUP S.p.A.
AMCo srl
Foligno (PG) - ITALY
Part 21 Part 145

ERA Electronics (new!) - Perugia (PG) - ITALY
COMEAR (new!) - Spello (PG) - ITALY
SERMS Srl
Terni (TR) - ITALY

UMBRAGROUP S.p.A.
Research Center
Albanella (SA) - ITALY



Design, R&T and
manufacturing

Restricted diffusion - CONFIDENTIAL - please do not share and forward without approval

UMBRAGROUP chi siamo

Our Mission

**TO BE THE CUSTOMER'S
INTELLIGENT SUPPLIER
OF ACTUATORS, BALL
SCREWS, BEARINGS AND
COMPONENTS IN HIGH-TECH
MARKETS.**



UMBRAGROUP chi siamo – l'uomo al centro



UMBRAGROUP chi siamo – l'uomo al centro



1972 UMBRAGROUP ieri...la UMBRA CUSCINETTI in via Piave

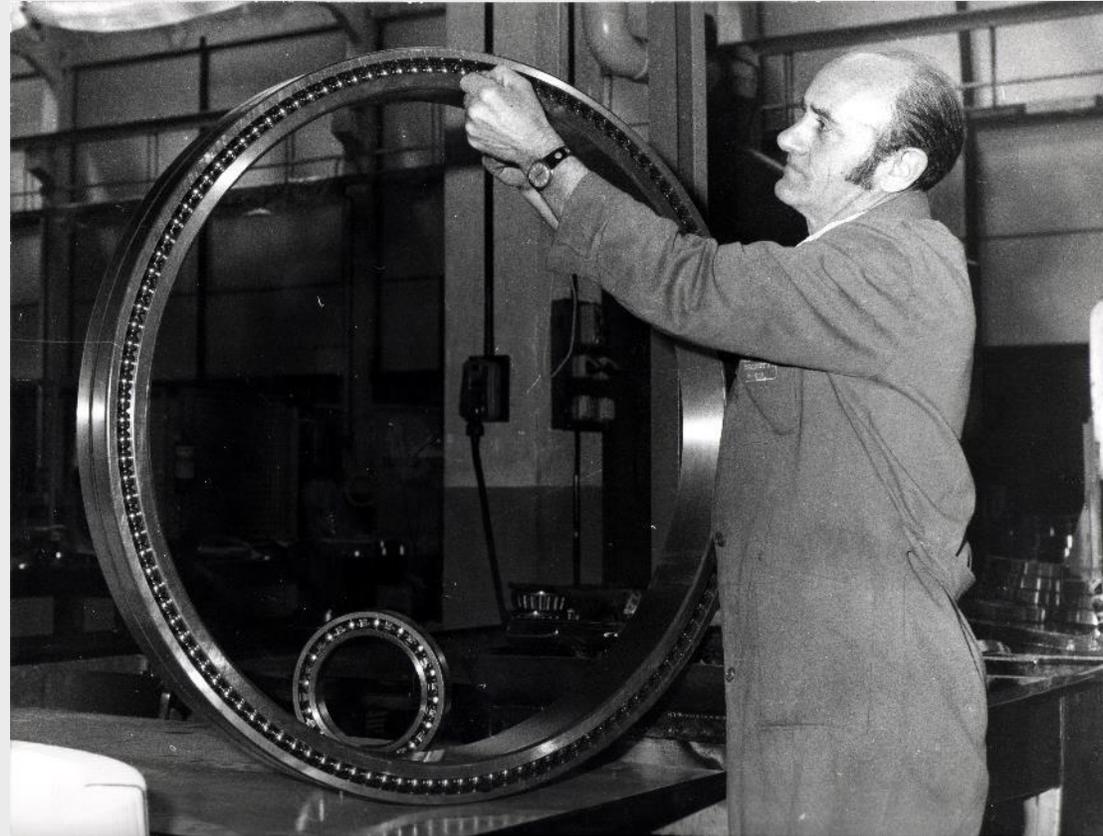
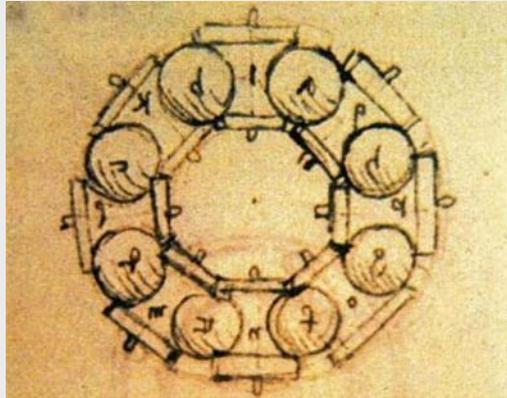


1972 UMBRAGROUP ieri...la UMBRA CUSCINETTI in via Piave



*Attuale attrezzatura e Montaggio Unità a forare;
ex Montaggio Cuscinetti*

Il primo prodotto: il cuscinetto a sfere

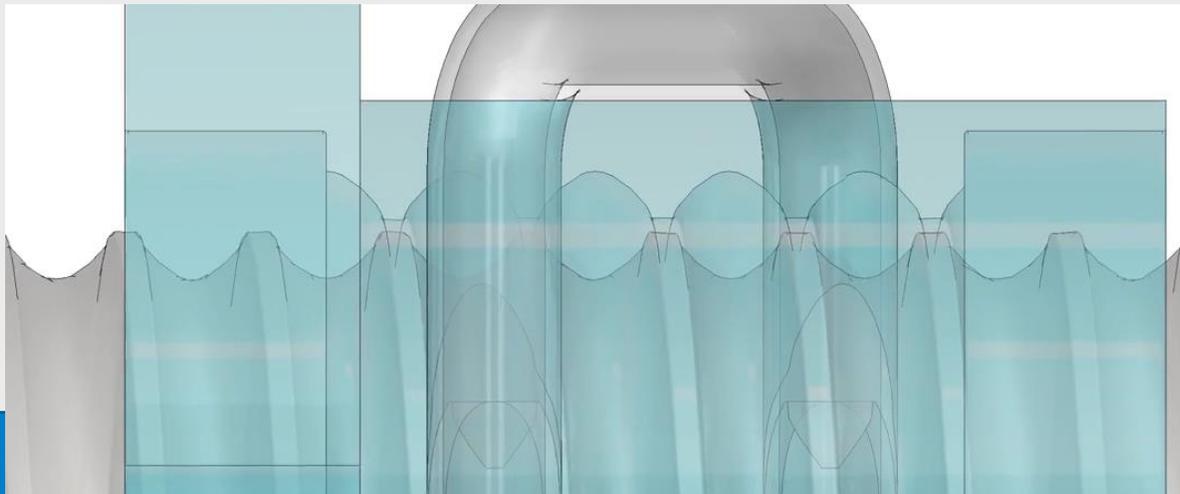
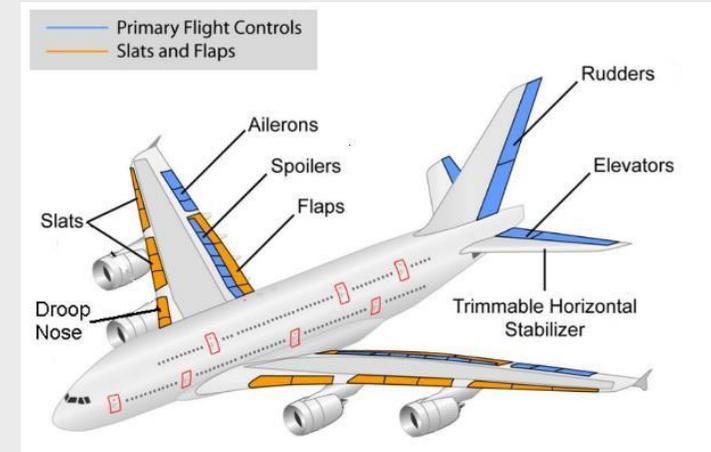
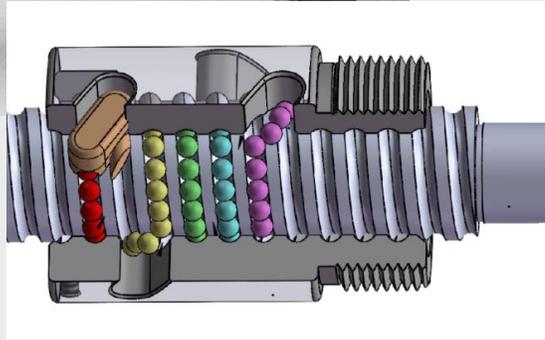
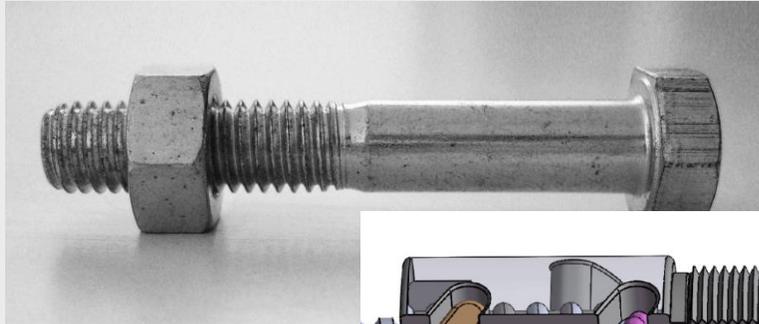


1974 - installazione prime macchine



Ma cosa sono le viti a ricircolo di sfere?

Trasformano un moto rotativo in un moto lineare



1990 - le prime «viti» per Boeing 747-400



1993 – la storia può finire...



1993 - il «management buy-out»

Attuale Presidente del CDA



1993 - il «management buy-out»

la proprietà di Umbra diventa tutta italiana, anzi **umbra!**



1993 - l'introduzione di un
materiale innovativo



Anni 2000 – Boeing Supplier Awards e il nuovo stabilimento

- BOEING PRESIDENT'S AWARD FOR EXCELLENCE 1997
- BOEING SUPPLIER QUALITY RECOGNITION EVENT 2000



2007 – primi prodotti con motore ed elettronica integrata

Electronic Control Unit



E-motor, E-brakes



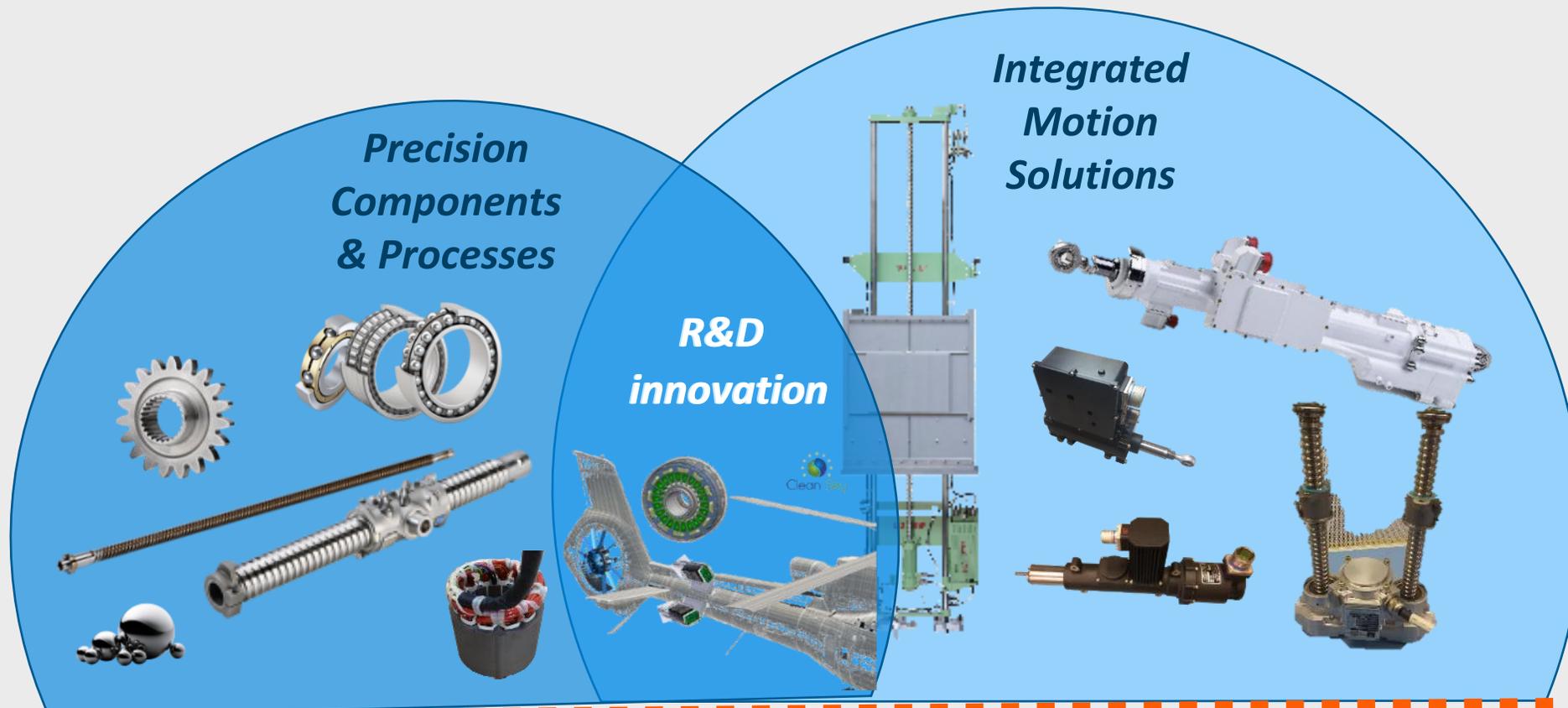
V. Baldaccini premiato come imprenditore dell'anno da Ernst & Young

categoria "Quality of Life»



Anni 2010 - l'evoluzione

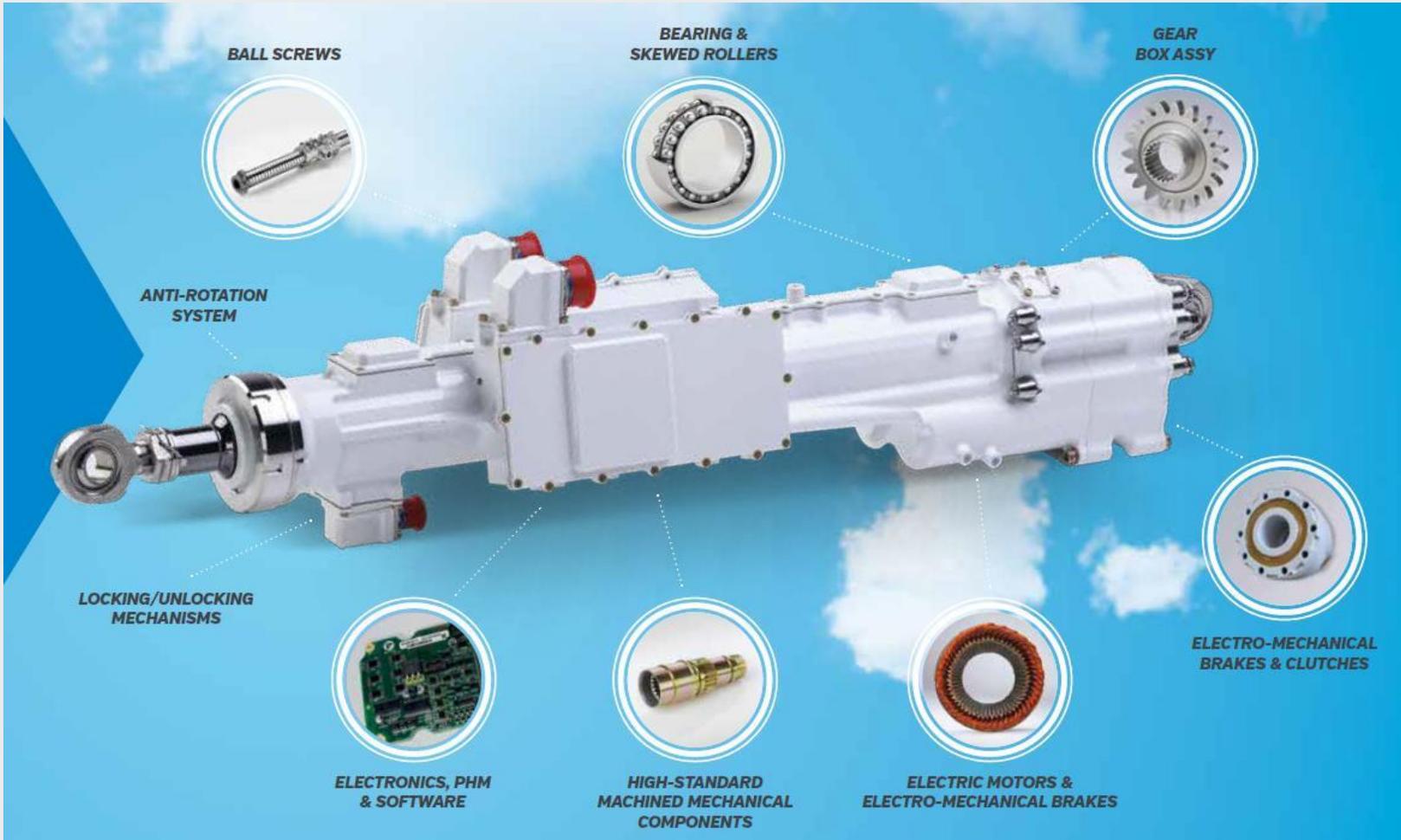
Da produttore di componenti a fornitore di sistemi di **attuazione elettromeccanica**.



Il ruolo centrale della ricerca e sviluppo.

Restricted diffusion – CONFIDENTIAL – please do not share and forward without approval

2017 - Il primo attuatore elettromeccanico Safety Critical per un carrello di atterraggio

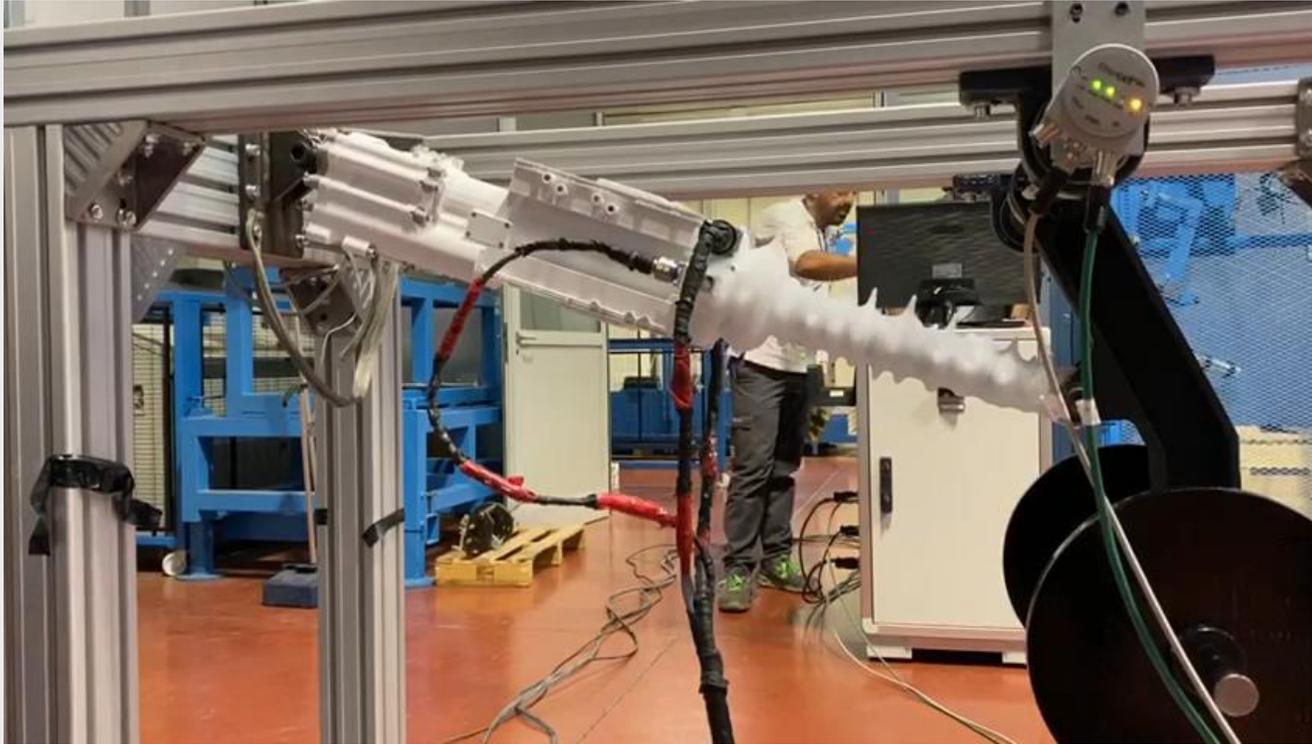


AIRBUS HELICOPTER H160

L'attuatore e tutti i sotto-assiemi sono progettati e prodotti da UMBRA!

2020 - entrata in servizio degli attuatori dell'H160

Restricted diffusion – CONFIDENTIAL - please do not share and forward without approval



Prove in laboratorio a Foligno

Flight Test



2022 - Innovation Award di Airbus Helicopters

Premiati per un innovativo attuatore rotativo basato su viti a ricircolo di sfera.



*Ma le viti a sfera non trasformavano un moto **rotativo** in un moto **lineare**???*

2023 - i primi attuatori per superfici di volo primarie e l'Advanced Air Mobility



UMBRAGROUP oggi...



DESIGN AND DEVELOPMENT

- Detail design
- Electric Design
- Electronics & Software**
- Functional Analysis
- Maintainability
- Reliability**
- Safety**
- Stress Analysis
- Thermal Analysis
- Verification & Validation**



FAST PROTOTYPING

- 3D Measurements
- Advanced robotics**
- Assembly**
- Tooling



INDUSTRIALIZATION

- Built-to-print Industrialization
- Fixtures
- Internal Specifications
- Manufacturing sketches
- Operative Procedures
- Routing
- Process PFMEA**
- Production Part Approval Process (PPAP)**



MACHINING

- CNC Lathe
- Conventional Lathe
- Grinding
- Haper
- Honing Machine
- Milling
- Precision Deep Drilling
- Turning
- Whirling



SPECIAL PROCESSES NADCAP

- Anodizing
- Black oxide coating
- Chromium Plating
- Chromic and Sulfuric Anodizing
- Copper Plating
- Gas Nitriding
- Gas carburizing
- Hardening and tempering
- Induction hardening**
- Low pressure hardening
- Low pressure carburizing
- Passivation
- Precipitation hardening
- Phosphate coating
- Zinc-Nickel plating



ENVIRONMENTAL & STRUCTURAL TESTS

- Combined Vibration + Temperature Test**
- Dynamic load Tests
- Endurance Test
- Environmental Test Limit
- Fatigue Test**
- HALT Test**
- Noise Test
- Operational shock and crash safety
- Performances Test
- Ultimate load Test
- Vibration Test**

Testing & Certification
RTCA/DO-254, RTCA/DO-178B, RTCA/DO160G



EMI TESTS

- Audio
- Frequency Conducted Susceptibility
- Electrostatic Discharge
- Emission of Radio Frequency Energy** - Radiated and Conducted
- Magnetic Effect
- Power Input
- Radio Frequency Susceptibility** - Conducted
- Voltage Spike



SERVICE & SUPPORT

- 2 Repair stations**
- AOG service
- ILS**
- Inventory mgmt

Azienda integrata verticalmente: tutte le capacità in un unico stabilimento.

Area della stabilimento produttivo: 25 000 sqm

Più di 400 machine primarie, capacità sistematica di back-up, stabilimento lean six-sigma.

UMBRAGROUP oggi...



**FAULT TOLERANT AND FULLY REDUNDANT
EMA**



L'uomo al centro – Valter Baldaccini



Valter Baldaccini
Foundation



“Every day, in the Foundation we take care of those who are most in difficulty by carrying out projects for girls and boys who otherwise would not have access to education, young women who, thanks to scholarships, can attend university or learn a trade, women and men who, thanks to job placements, can rediscover their dignity and walk towards autonomy and independence”

Beatrice Baldaccini - President of the Valter Baldaccini Foundation
Vice President UMBRAGROUP



Fondazione
Valter Baldaccini



*Insieme abbiamo gettato un grande seme che
diventerà una grande pianta.
(V. Baldaccini, 9 aprile 2014)*



UMBRAGROUP domani...



 **UMBRA GROUP**

KEEP EVOLVING
IN A **CHANGING** WORLD

umbragroup.com

UMBRAGROUP domani...

More electric
and hybrid aircraft



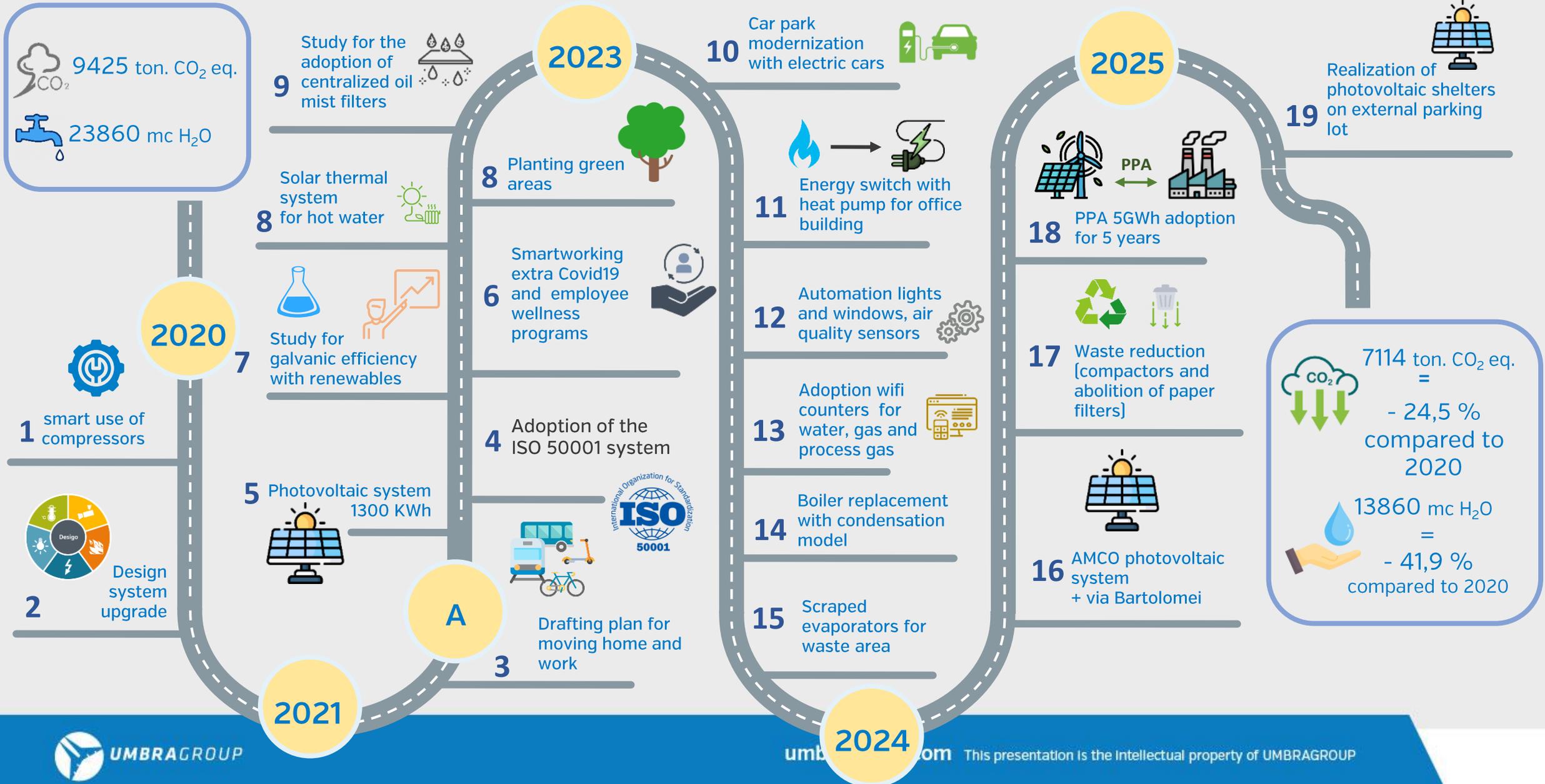
Urban and
Advanced Air Mobility



*Confidenziale -
immagine rimossa per
la pubblicazione*

*Confidenziale -
immagine rimossa per
la pubblicazione*

Sustainability ROAD MAP





UMBRA GROUP

UMBRA GROUP S.p.A.

Via V.Baldaccini 1
06034 Foligno (PG) - Italy
Tel. +39 0742 3481
info@umbra-group.com

www.umbra-group.com



THANK YOU FOR YOUR ATTENTION