



FLAG-MS
Company profile



FLAG-MS is an Italy based company, founded in Turin (April 2012), focused on mechatronics in **Automotive and Industrial fields**.

Since 2012 FLAG-MS is member of **MESAP** (Smart Product and Manufacturing) and **EPoSS** (European Technology Platform on Smart Systems Integration).

FLAG-MS is certified as **small-medium innovative enterprise**.

The staff competences are various in order to cover all the subjects involved in mechatronics:

- **Mechanics**
- **Information technology**
- **Automation**
- **Electronics**
- **Electrics**

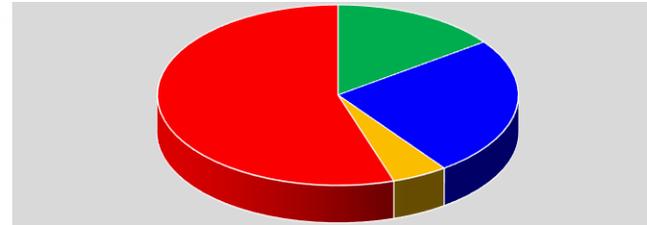


FLAG-MS is an Innovative SME, founded in Turin (April 2012), focused on mechatronics for **Automotive** and **Industrial fields**.

E-POWERTRAIN COMPONENTS

- **Battery Pack** development
- **BMS** proprietary solutions
- **E-Drives** development

Activities share



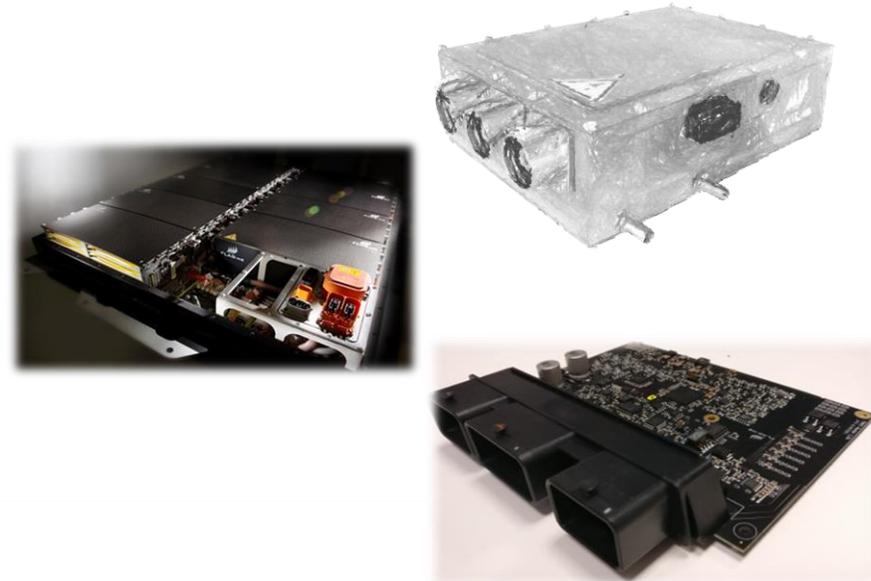
■ Industrial ■ Automotive ■ Motorsport ■ (H)-EV PWT

BUSINESS SECTORS

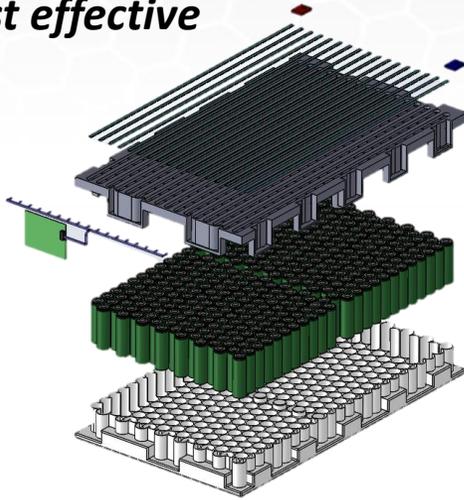
- **Passenger Cars**
- **Hypercar**
- **One-Off vehicles**
- **Off-Highway**
- **Construction**

ACTIVITY FOCUS

- **R&D**
- **Engineering**
- **System Integration**
- **Pre-Series**
- **Product industrialization**



Cost effective



21700 Cylindrical
Capacity 40kWh
Nominal voltage 400V
Application City car

Power 380kW

Energy 5kWh

Nominal voltage 750V

Application Hypercar and motorsport

High Power



Hyperbattery

400-900V Battery

AF-battery



Power 80kW
Energy 31kWh
Weight 360kg
Application City car

Peak power 130kW

Volume 200 l

Energy 43kWh

Integrated PDU



STDRIVE

Cost effective



Power
80kW

Volume
3.6 l

Weight
2.7kg

Application
Automotive

Power
380kW

Volume
6 l

Output current
550Arms

Application
Hypercar and motorsport

High Power Density



HeD380

**400-900V
SiC
Inverters**

4 E-Motors Drive



Power
4x20kW

Volume
4.9 l

Weight
5.5kg

Application
Off-Highway

Dimensions:
280 x 207 x 80 mm

Volume
3.5 l

Weight
3.5kg

Environment protection
IP67

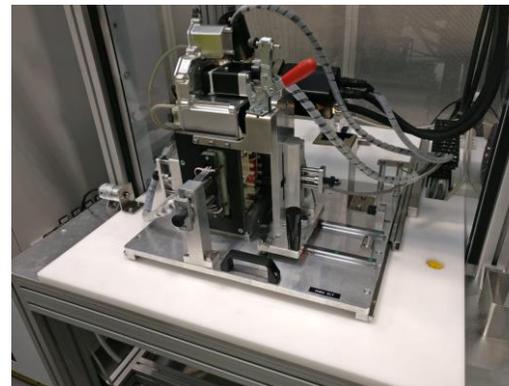
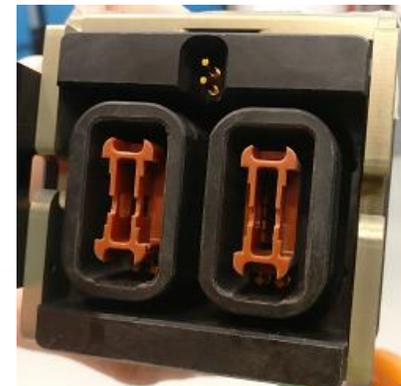
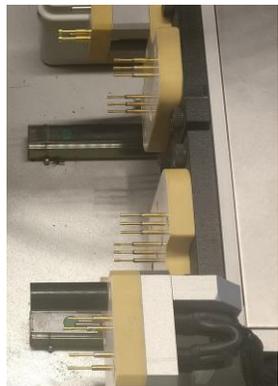
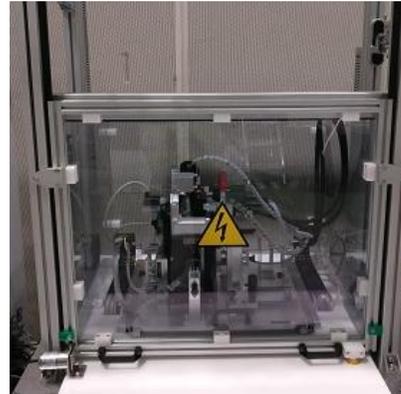
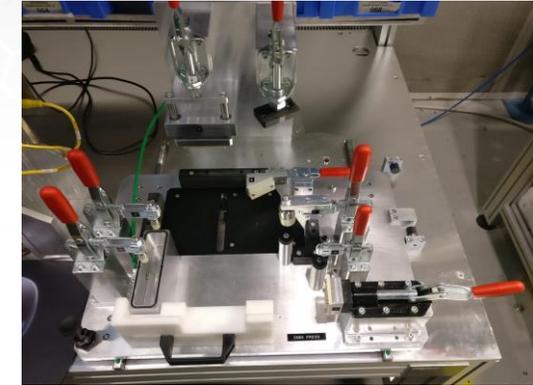
Flat and flexible



W4Fi/W4Fs

4WDrive

- Battery cell/module testing
- Battery pack EoL
- E-Box assembly & testing
- e-Powertrain test bench
- Electronic control unit flashing



FLAG-MS

1specialinsert



Project TISAT4IPP

SMART SYSTEM

- Threaded insert deformation process electronically controlled
- Process data collection
- Quality check
- Remote settings/control for automation system integration
- Digital twin and health prognostics
- Easy to be used by any operators (no specialized operators requested anymore)



PERFORMANCE

- Compliant with the whole threaded inserts range (M3-M12)
- Deformation force larger than 22kN
- Deformation length up to 8mm (with the possibility to extend up to 12mm)
- Immediate process quality feedback to the operator (OK, KO)

ERGONOMICS

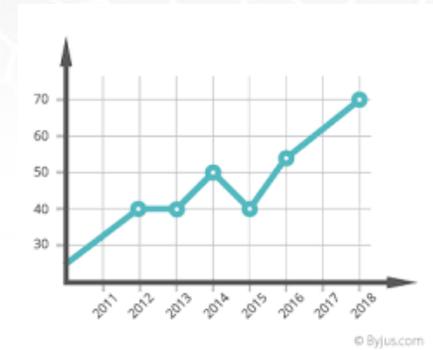
- Lightweight design (2.2kg)
- Quick coupling system for easy machine setup (no need for tools by the operators)
- Comfortable to be used by any operators



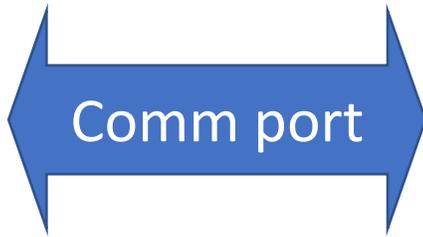
LOW ENVIRONMENTAL IMPACT

- Highly recyclable materials used (mainly Aluminum)
- Reduced chemical disposals if compared to electrical solution based on electrochemical batteries
- Reduced production scraps thanks to process electronical control and integrated quality checks (production process energy efficiency improvement)

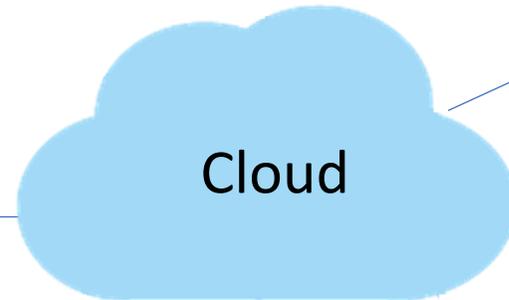
**Industry 4.0 architecture
implementation in the machine**



Statistical analysis



Remote command
&
Data acquisition



Maintenance prognostic

FLAG-MS experience on MIND4MACHINES project

MIND4MACHINES represents a good opportunity to develop your technology

- **Easy to apply**
 - Just few days to prepare the proposal documentation
 - Lean documentation needed to apply
- **Minimal effort on reporting** during the project
 - Only technical activities must be shown to the EU commission
 - No additional effort due to economic reporting or other bureaucracy
- **Economic aid**
 - No co-financing is requested
- **Technology development**
 - Ideal to contribute on pushing your technology to an higher level

Why you should apply to MIND4MACHINES?

MIND4MACHINES is a **really efficient program**

- **Small effort for proposal apply respect to other EU programs**
- **No economic reporting** is needed and it results in a huge amount of time saved
- The **Accelerator Program** offers lots of interesting learnings to fill your gap or simply to improve your company
- The program is really well supported by different entities
 - **We knew MIND4MACHINE program thanks to MESAP**
 - MESAP gave us a fundamental contribution providing information about the program and how to apply

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Thank you!