



# IMCS (Intelligent Motion Control System)

The **IMCS** includes three main parts:

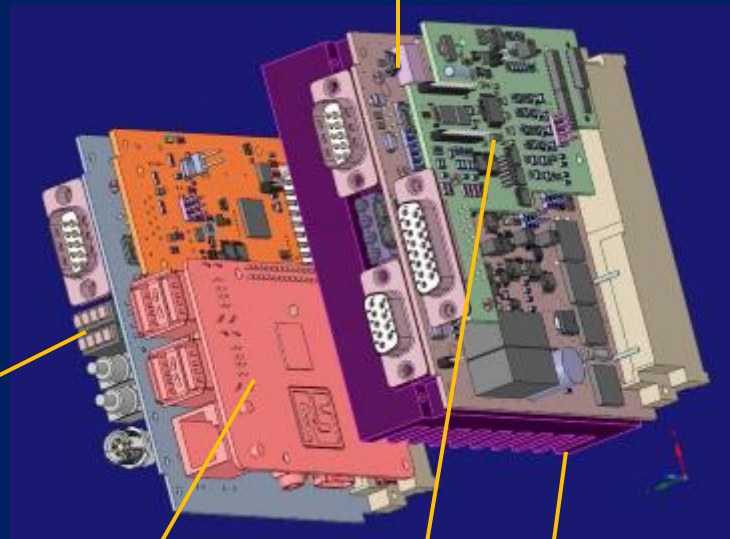
1. Power Supervisor Unit (**PSU**) **one for each application**. Its main goal is to control the Emergency Stop and Enable wired loops but also power supplies
2. Integrated and versatile Intelligent Motion Control Unit (**IMCU**) **one for each actuator**. In this case, the IMCU combines all functions necessary to "local/individual" control of one actuator, including: **DSP** (PIC32MK) and **CPLD**, **Power amplifier** in DC or PWM technologies and several **Communication** interfaces
3. **Accessories** as back planes, standard rack, connectors etc.

The **IMCS** is a cost and time effective solution to implement complex and high performance motion control/test systems or prototypes.

It constitutes a family of **ready-to-use** hardware and firmware components. A bespoke solution can be quickly and easily assembled from these components, corresponding to a particular combination of actuators and sensors.

The IMCU includes:

1. Common **MAIN** board including floating-point DSP (PIC32MK) and (CPLD) to interface external mezzanine boards and power amplifier



The (**PSU**) includes:

1. Internal supplies for electronic
2. Enable and State loops management and interconnection (CPLD) with power supply control
3. Power management including **DC or AC relay**
4. **Isolated digital I/O** applied to interface limits switches, emergency button, additional relays etc.
5. **On/Off** and state of **Enable/State Loops** to be connected to the Host, PMAC, Galil, PLC etc.
6. Internal (rack) temperature control
7. Interconnection with **Raspberry PI** to provide Ethernet, **Web** micro-server, USB etc.

2. Customized **MEZZ**anine to interface the particular sensors such as resolver, LVDT, incremental etc. for a specific application.

3. Range of **Power Amplifier** (s) (linear or PWM) for voice-coil, Brushless, step, DC and AC motors. It includes analogue measurements and several configurable protections.

