

## *Everything is holding, everything is solid*

What do electricians want today?

What do automation engineers want today?

What do those who are neither one nor the other, for example pure mechanics or hydraulics engineers, want?

What do design offices for manufactured, industrial or consumer products want?

What do production sites, either outsourced or in-house, want?

Electricians who use heavy equipment : alternators, transformers, heavy motors, etc... are motivated by energy, mainly optimization of energy consumption and anything which contributes to sustainable development. Electronics and IT are tools, more or less integrated, to achieve this.

Automation engineers are now part of the digital factory, or the three branches which make up the digital factory to be precise: the design of facilities, the means of production and production management.

The first branch uses CAD, calculations, simulation, prototyping, etc.

The second is linked to numerical control, controllers, industrial command posts, motion control, PLCs (programmable logic controllers), data acquisition and use of HMI (human-machine interfaces).

The third relates to scheduling, planning, ERP, MES and integrated management software.

Pure mechanics or hydraulics engineers are also associated with CADM, but are especially concerned with manufacturing quality, reduction of operating costs and conditional maintenance.

Those who design and produce finished products draw on all their previous tools, as well now as PLM (product life management), which is becoming the principal tool for overall design and collaborative working.

In fact, there is a parallel between mechatronics and PLM.

On the one hand, mechatronics assumes anticipation of all functions, all means of command, energy supply, interfaces, maintenance, manufacturing and control from the design phase – especially when technologies are combined, or even integrated.

On the other, PLM plans for all aspects of a product's life, focusing on all phases and interactions, from its production to its destruction, and feeds back the smallest information from a very early phase, even in relation to the upstream phase, provided that it saves time and money.