“Metrology has changed but it will be changing way more” Toni Ventura

Toni Ventura, founder and CEO of Datapixel, member of the Executive Committee of the European Machine Vision Association (EMVA), and member of several international standards committees, opened the 14th edition of the International Metrology Industry Conference, Metromeet, with a great paper “Zero Defects Manufacturing”.

The competitiveness of the manufacturing companies in our industrial environment goes through the efficient management of two parallel flows: the physical flow of materials and components throughout the processes of supply, processing, manufacturing and distribution, and on the other hand, digital flow of data, information and knowledge in the different phases of the product cycle – design, prototypes, production launch and series production. The new European re-industrialization initiatives (Industry 4.0 in Germany, Factories of the Future in the European Union) are committed to the massive digitalisation of industrial processes through the joint and synchronized management of both physical and virtual flows.

The "Metrology 4.0" term, discussed in Metromeet, was born with the "Industry 4.0" one. Each industrial revolution has required the development of metrology tools and methods that have made it possible. Industry 1.0 emerged from empiricism and the scientific vision of reality, extending the use of mechanical metrology instruments that allowed obtaining objective data of products and processes. Industry 2.0 involved the introduction of more advanced manufacturing processes such as the chain production. In order to increase productivity, more sophisticated measurement technologies were developed allowing a greater performance of the manufacturing processes. Industry 3.0 was "The revolution of automation" and the CMM machine concept emerged as an automated element that combines sensorics, electronics, mechanics and programmable logic. Now, Industry 4.0 offers digitization and virtualization of the manufacturing industry, through technologies such as digitized. The concept of Metrology has changed and will change much more. **We are living the beginning of a radical change in the way of capturing, analyzing and integrating product information and industrial manufacturing processes;** Metrology must be able to offer increasingly integrated solutions in the digital factory.

This transformation, that is taking place thanks to information and communication technologies in all areas of human activity is also crucial for the industry. Metrology products and solutions must be interconnectable and have a certain intelligent processing capacity. The key element is the standardization of digital components and exchange formats to ensure that any equipment is able to interoperate with the others. That's why Metromeet makes special emphasis on the dissemination of digital metrology standards and it is an area where the Conference will be growing.