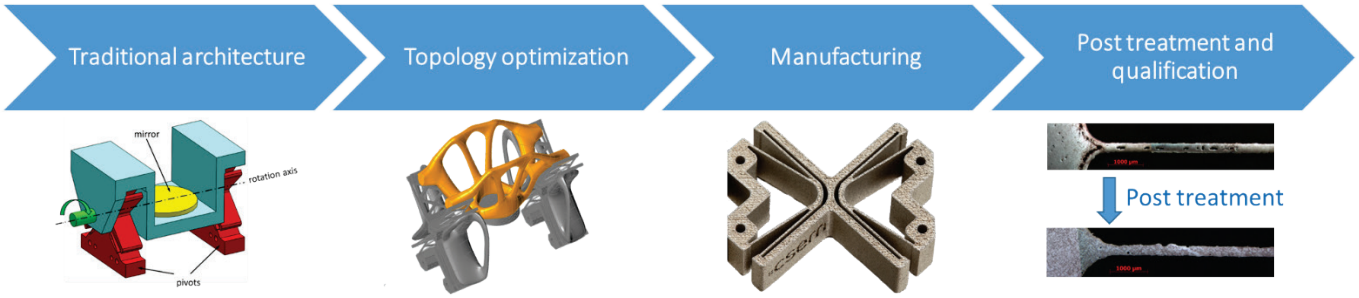
DIGITAL TECHNOLOGY **Additive Manufacturing: Take Advantage of Digital Production**



DESCRIPTION

Limited from more than two decades to rapid prototyping, additive manufacturing is now ready to produce reliable components. Directly connected to a computer, it is capable of manufacturing an object with an extreme level of freedom and complexity in materials like metals, polymer or ceramics. It is also allowing to produce and personalize on demand to customer request. At CSEM we can provide design AND manufacture complex mechanical structures at small dimensions; post-treatment allows surface improvement.

In opposition to machining, this technology is depositing one or more materials to fabricate an object. Software providers took advantage of this specificity by developing solutions to optimize the shape in function of the need. It is therefore possible to couple topology optimization with mechanical design to obtain structures with improved performances that can only be fabricated by additive manufacturing.

FUNCTIONALITIES & CHATACTERISTICS:

- Optimizing material consumption and reducing system weight.
- Improving reliability by reducing the number of assembly.
- Integration of functionality (cooling or electrical feedthrough).
- Personalization of systems upon customer request with no or low extra cost.
- Production on demand. No spare parts. Local production possible.
- One production tool for different products. Gain in flexibility.
- Gain in time to market. No specific tooling required.

EXAMPLE OF APPLICATIONS

- High precision mechanical parts.
- Aerospace parts for a reduction of mass weight without sacrificing performances or cost.
- Medical tools or implantable devices with patient customized shape.
- Personalized products for high end and luxury applications.

UNIQUENESS

- Full AM chain: starting from design and topology optimization, going through close loop of process optimization and finishing by properties evaluation.
- Re-think your component design to take advantage of additive manufacturing.
- Structures down to 100µm can be achieved with a material having properties similar to the bulk.