INITIAL
DESIGN & PRODUCTION
PRODWAYS

DESIGN PRODUCT
ENGINEERING

3D SCANNING
INSPECTION

PLASTIC
ADDITIVE MANUFACTURING

3D PRINTING

METAL
ADDITIVE MANUFACTURING

TOOLING / INJECTION MOLDING
THERMOPLASTIC

INITIAL

DESIGN & PRODUCTION

PRODWAYS

We are the leading company in France for product design and 3-D printed parts production, Additive Manufacturing and Thermoplastic Injection.

Our expertise in implementing these cutting-edge technologies is based on 25 years of experience. We offer a very wide variety of processed materials at our production sites.

You can count on our team of 80 professionals to give you personalised advice.

We are a steadfastly hi-tech oriented company, and are constantly looking for the most appropriate solutions to meet your needs.

INITIAL joined the Prodways group, a subsidiary of the Groupe Gorgé, in March 2015.

DESIGN PRODUCT ENGINEERING

Since it was set up in 1991, INITIAL's design department has become a reference for product development.

ENGINEERING SERVICES

Our team of engineers and design engineers have excellent expertise in designing products combined with an innovative approach.

From your specifications through to industrialisation, we offer you solutions to complete your project.

100/YEAR

PRODUCTS DEVELOPED

AREAS OF EXPERTISE

- Creation & Search for concept
- Design
- CAD Development
- FEA & Kinematics

Thanks to our internal production capacity, you are guaranteed to get quality prototypes to develop your proof-of-concept models.

More than 16,000 hours devoted to creativity, innovation, development and part sizing.

©INITIAL

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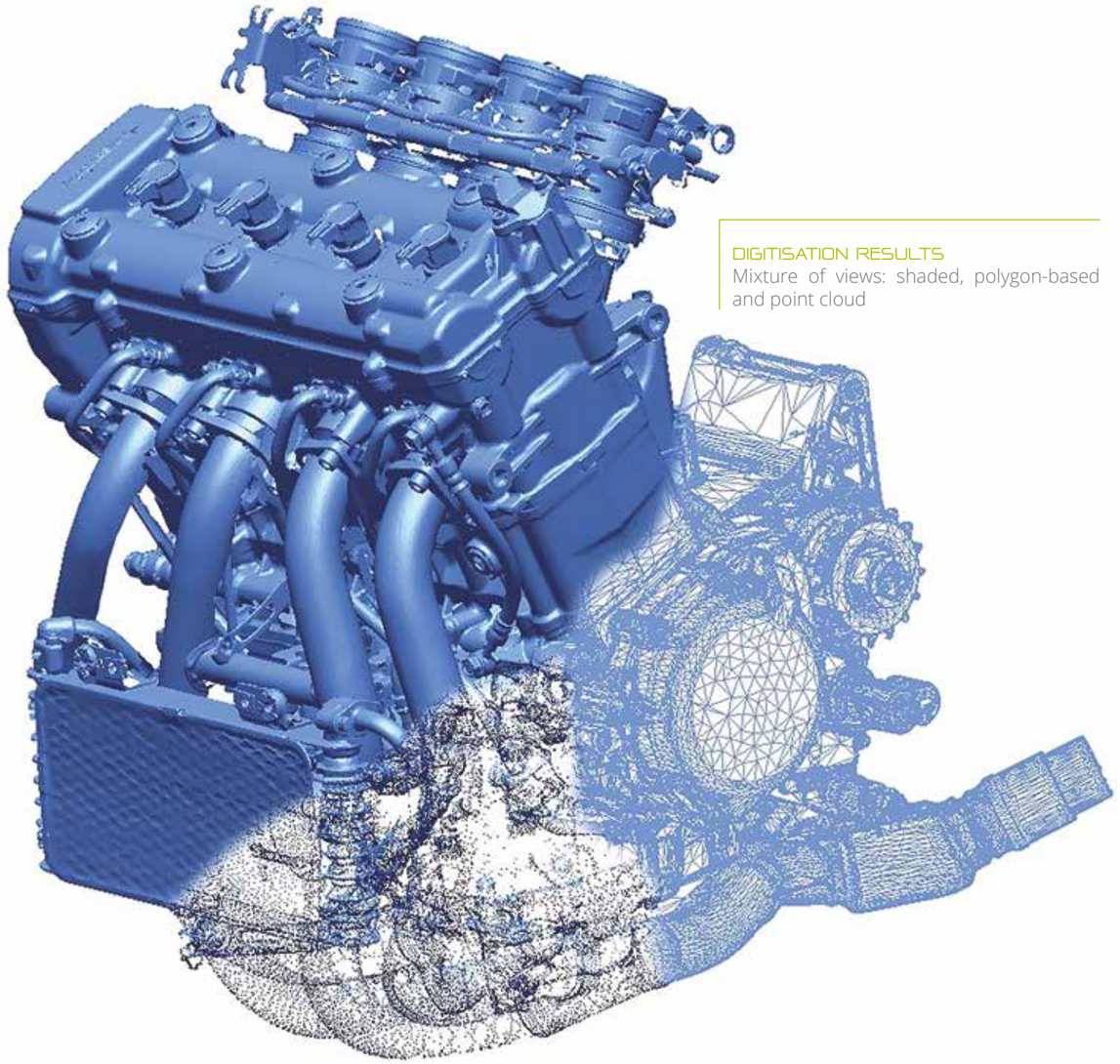
MULTI-SECTOR EXPERTISE

Our experience makes it possible to take your aesthetic, economic, marketing and technical constraints into account.

©SICT.CH PRODUCT



DIGITISATION RESULTS
Mixture of views: shaded, polygon-based and point cloud

3D SCANNING INSPECTION

For more than 25 years, Initial has been at the cutting edge of innovation. Our team uses optimal methods and tools adapted for high-precision measurements.

3D SCANNING

Thanks to our high-precision 3-D scanner, we capture the geometry of your objects and turn them into 3-D files.

We provide you with our professionalism and our skills for à la carte services.

INSPECTION

Thanks to the various inspection methods, you can analyse, check and approve your parts.
By target/actual comparison to a reference part.
With metrology - ideal for inspecting batches.
With tomography - to view what is invisible and the internal structure of a part, even a very small-sized one.

'Non-standard' projects: Scan of complete vehicles (old vehicles, mini-buses, racing cars).

OUR STOCK OF 30 MACHINES AND OUR PRODUCTION CAPACITY MAKE IT POSSIBLE TO GIVE A FAST TURNAROUND TIME.

©Hamilton De Oliveira

PLASTIC
ADDITIVE MANUFACTURING

Initial's plastic additive manufacturing expertise is unique in Europe. Our 25 years of expertise is based on a wide variety of technologies and materials used for your products.

EXPERTISE

We innovate to produce your products and we are constantly looking for the most appropriate solutions to meet your needs.

30 machines

HI-TECH

APPLICATIONS

We manufacture all of your parts:

- Model
- Prototype
- Pre-production
- Production

Our team advises you and guides you in choosing the technology best suited to your project.

3D PRINTING

POLYJET® – MULTI-MATERIALS

It is the ideal technology for approving multi-material designs, making a choice about hardness, or saving valuable time with product development.

ADVANTAGES

Thanks to this additive manufacturing process, you can now approve your over-moulded parts before launching production moulds in just a few days.

6100

PARTS PRODUCED IN 2016

APPLICATIONS

Prototype parts:

- flexible or bi-material
- two-colour, white, black, or shade of grey
- Seals, bellows, shock absorbers, shoe soles, over-moulded parts, etc.

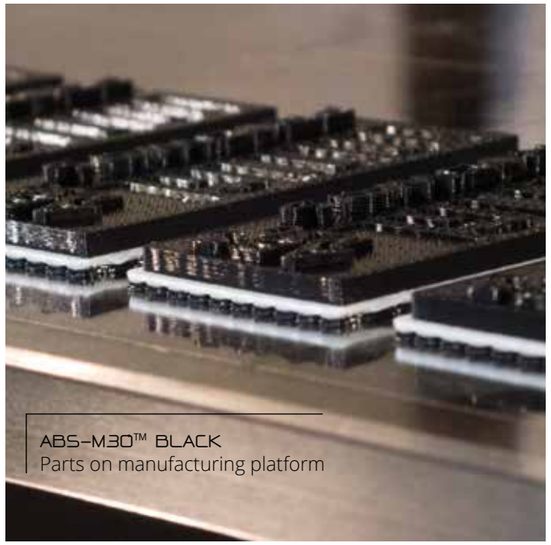
Your multi-material parts are made with multi-jet print heads which use 4 cartridges with different materials.

Flexible and rigid mixed materials are used for the same part.

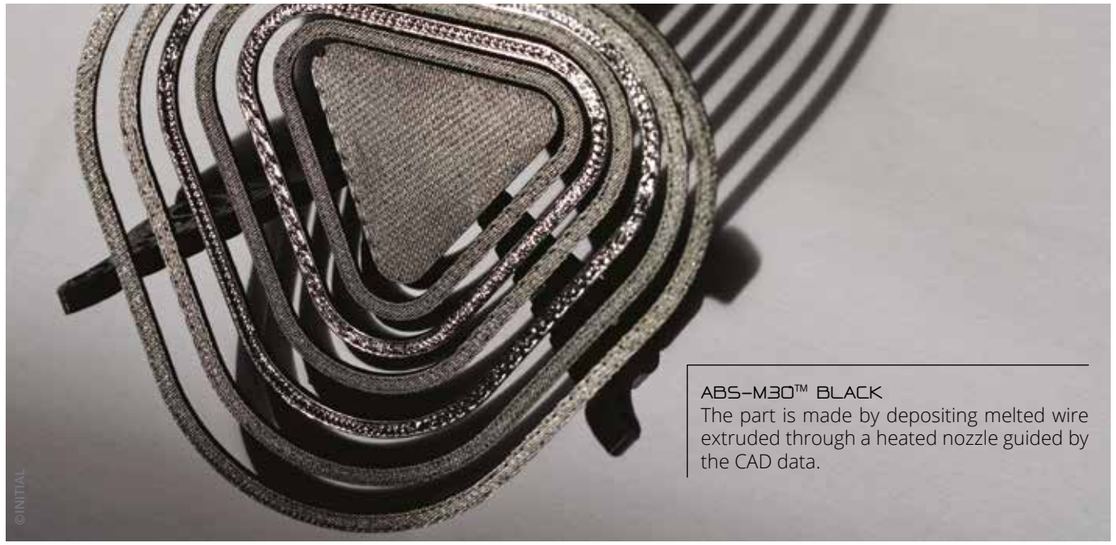
MULTI-MATERIAL PARTS

The possibility of making multi-material parts or assemblies in one piece, which cannot be done with other processes.

ULTEM® 9085
Certifications: UL 94 / V-0
Heat resistant



ABS–M30™ BLACK
Parts on manufacturing platform



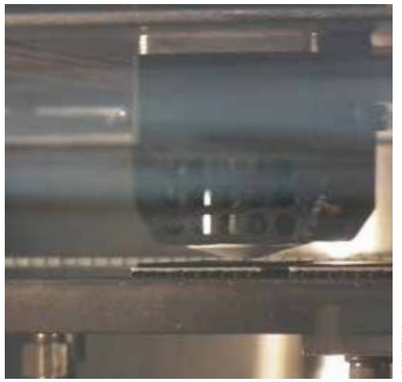
ABS–M30™ BLACK
The part is made by depositing melted wire extruded through a heated nozzle guided by the CAD data.

FUSED DEPOSITION MODELLING – FDM®

This technology is ideal for your large parts with stretched surfaces, which can be used for operational or aesthetic validation.

ADVANTAGES

Depositing wire or FDM® (Fused Deposition Modelling) produces parts with good geometric stability that can easily be prepared, painted or made metallic.



APPLICATIONS

- Test your prototypes
- Manufacture durable parts that have good stability
- Production-level material: ABS, PC, Ultem®

Polymer fused deposition modelling is mainly used for large-sized parts with few details, and makes it possible to rebuild a 3-D model from an STL file in successive layers.

Design differently, produce differently and get ahead of the competition.

STEREO

STEREOLITHOGRAPHY – SLA®

Stereolithography or SLA® is a 3-D printing process that makes it possible to obtain accurate models, with detailed features and a smooth surface appearance.

TECHNOLOGY

Stereolithography makes it possible to manufacture accurate prototypes and complex shapes using photoresists.

27200

parts produced in 2016

APPLICATIONS

- Design validation
- Ergonomic tests
- Marketing presentations
- Master-models for duplication with vacuum casting
- Wind tunnel model

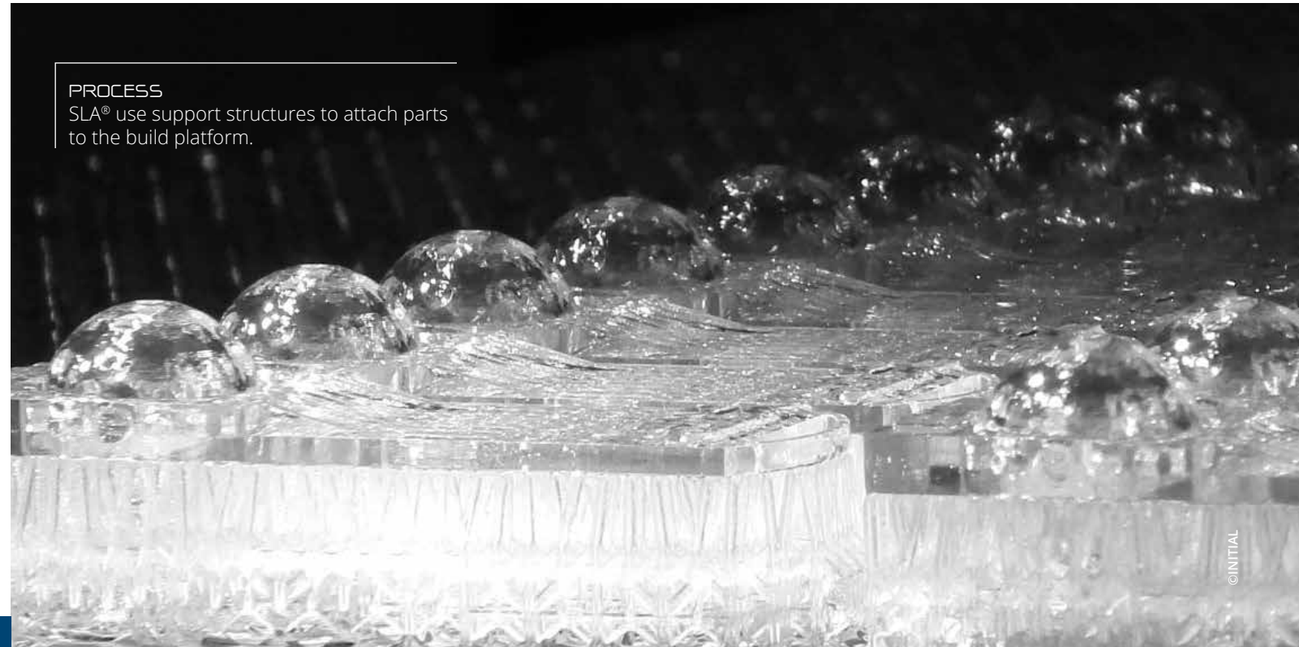
LASER PROCESS: the model is rebuilt with successive layers of epoxy-based photoresist using an ultraviolet laser.

MANUFACTURING CYCLE

- Polymerisation of the layer (the resin hardens)
- Moving the platform from a layer (e.g.: - 0.15mm) downwards
- Scraping = Uniform deposit of resin across the entire work surface
- Polymerisation

etc.

INITIAL «LES CREATIONS»
Production of design parts using stereolithography



PROCESS
SLA® use support structures to attach parts to the build platform.

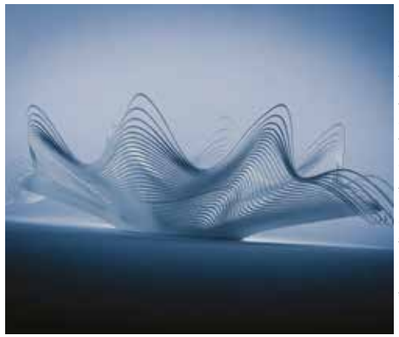
PA12-TYPE POLYAMIDE PART
The major advantage with this technology is the fact that it does not require any manufacturing materials, giving free rein to your creativity.

SELECTIVE
LASER SINTERING – SLS®

Over 10 years of experience in powder sintering combined with equipment at the cutting edge of technology, enables us to help you to get the most out of the benefits of polyamide powder 'sintering'.

MANUFACTURING PROCESS

This technology, which results from rapid prototyping, offers a competitive alternative to conventional manufacturing processes.
There is now a wide choice of materials that make designing freer.



©Hamilton De Oliveira - Vibration, design by Sylvie Loiseau.

OUR ASSETS

- **Range of our stock of machines**
- **Variety of powders**
- **High productivity**
- **Optimised costs and turnaround times**
- **Operating flexibility (possibility of creating a particular process on request)**
- **ISO 9001 certification**

111000
PARTS PRODUCED IN 2016

The prototypes produced offer excellent mechanical and thermal features.
This technology is ideal for your operational or assembly validations.

VACUUM CASTING

Vacuum casting ensures faithful reproduction of a model using a silicone mould. Using this technology, you quickly obtain small runs of functional parts at very competitive prices.

15 TO 30 PARTS

PER MOULD DEPENDING ON THE MATERIAL

APPLICATIONS

- Prototypes for mechanical, thermal or aesthetic validations
- Pre-production runs to test the market with your customers
- Small production runs for marketing
- Over-moulding of inserts

TECHNOLOGY

We produce your parts with almost production-level polyurethane thanks to gravity moulding in vacuum enclosures.

3 AREAS OF EXPERTISE

Mould : experience and technical expertise even with complex moulds.
Vacuum casting : delicate geometry to produce, positioning of inserts requiring high precision.
Post-process workshop : adjustment/assembly, technical and aesthetic finish.

Using this technology, you quickly obtain small runs of functional parts at very competitive prices.

MATERIALS

We offer a wide choice of materials to complete 3-D printing possibilities: rigid polyurethanes, bulk-dyed, transparent, elastomers, silicones, etc.

FINISHINGS & PAINTING

To enable you to see the finished version of your product, we offer various finishes depending on the process and the material used.

OUR EXPERTISE

Our qualified painters and our top-of-the-range products ensure you have quality finishes. Our dedicated workshops are fully equipped with a vacuum system. We offer a specific metallic treatment for your 3-D printed parts.

APPLICATIONS

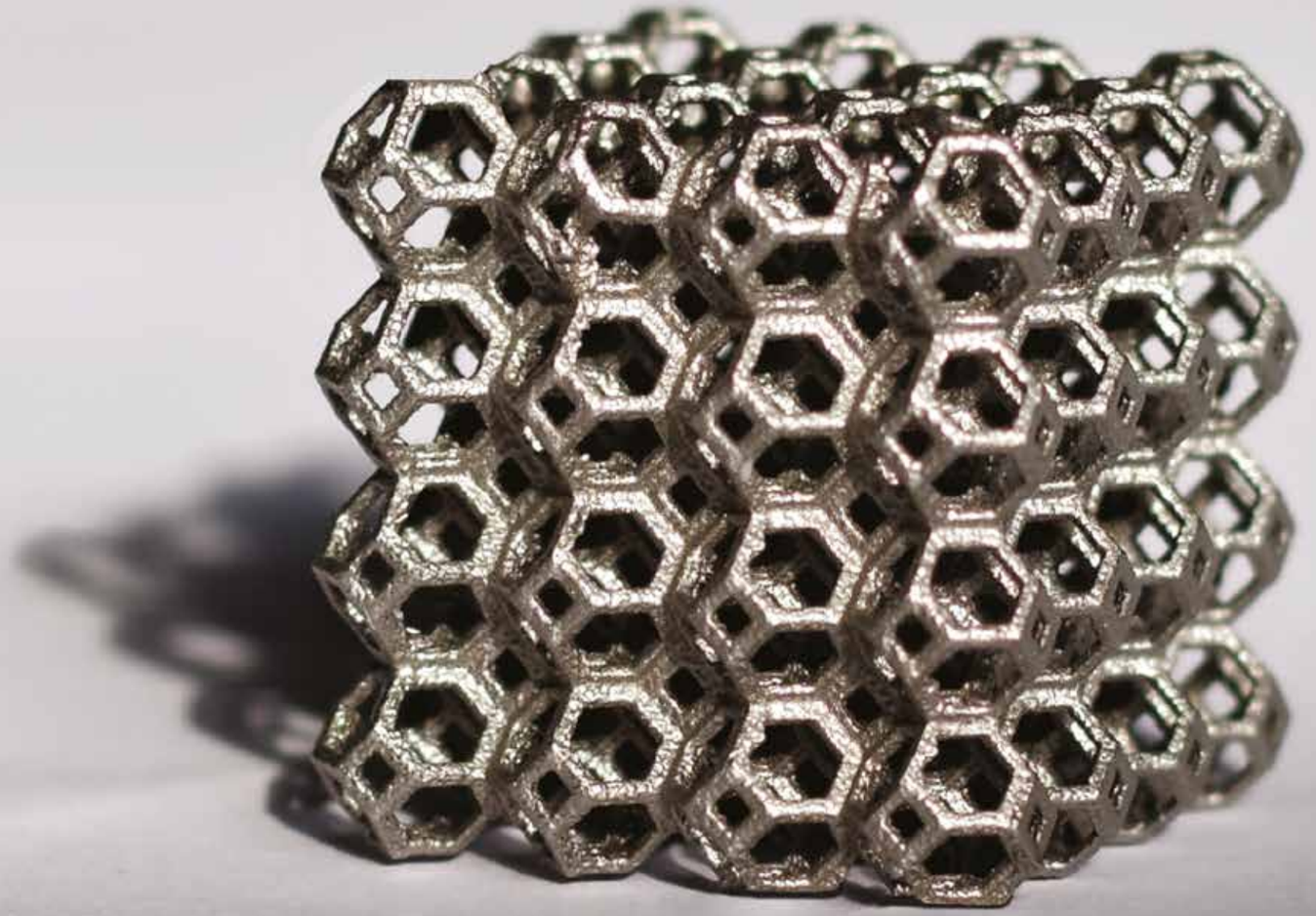
- Decorative parts for marketing presentation
- More mechanically resistant parts
- Electro-magnetic shielding
- Production parts
- Artistic finish
- Waterproof varnish, impregnation, colouring.

You can choose your colours and the surface appearance: glossy, matt, smooth, fine-grained, medium-grained, soft varnish, etc. Metallic paints are also possible (all car and motorcycle bodywork colours). We can do silkscreen printing on request.

Metal plating possible and a choice of different finishes:
High-gloss finishes: nickel, brushed nickel for a stainless steel appearance, copper.
Matt finishes: artistic or technical copper, nickel or technical black nickel.

METALLIC APPEARANCE
Metal plating with electroplating or thanks to a metallic paint.

DESIGN DIFFERENTLY, PRODUCE DIFFERENTLY, AND GET AHEAD OF THE COMPETITION.



METAL
ADDITIVE MANUFACTURING

Our stock of machines offers you one of the largest production capacities in Europe for made-to-order or mass production manufacturing of complex parts or mould inserts.

EXPERTISE

Unique technological know-how, based on 15 years of experience, to meet your objectives. .

Our expertise in this field is a decisive factor in the Aeronautics, Medical or even Automobile sectors.

MATERIALS

- **Steels (Maraging/Stainless steel)**
- **Chrome/Cobalt**
- **Inconel**
- **Aluminium**
- **Titanium**
- **Hastalloy X**

PRODUCTION FACILITY

HI–TECH

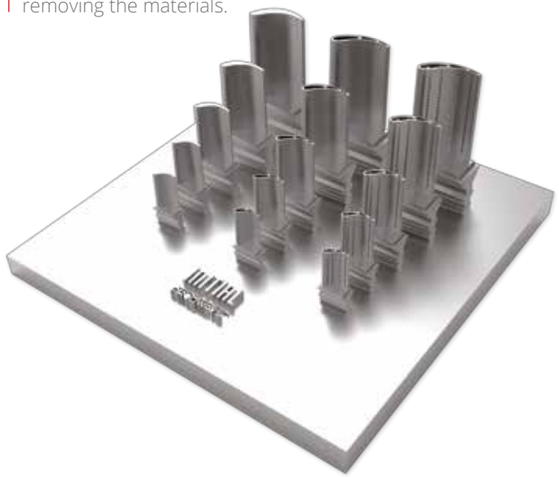
Metal additive manufacturing is ideal for made-to-order or mass production manufacturing of complex parts and is a distinct advantage for conquering new markets.

LASER ACTION

We reproduce your model directly from 3-D files by stacking layers of metal powder fused with a laser.

TURBINE BLADES

Example of a plate with titanium parts. Re-machining will make it possible to separate each part of the plate by removing the materials.



MATERIALS

Our large production facility use 7 systems and offers you several powders.

ADDITIVE LAYER MANUFACTURING

DMLS® – EBM

For the production of your metal parts, Initial uses two Metal Additive Manufacturing (or ALM Additive Layer Manufacturing) technologies: laser (DMLS®) and Electron Beam Melting (EBM).

OUR EXPERTISE

Unique technological know-how based on 15 years of experience to meet your objectives: reduce the time-to-market, and add features or lighten the structure of a part.

APPLICATIONS

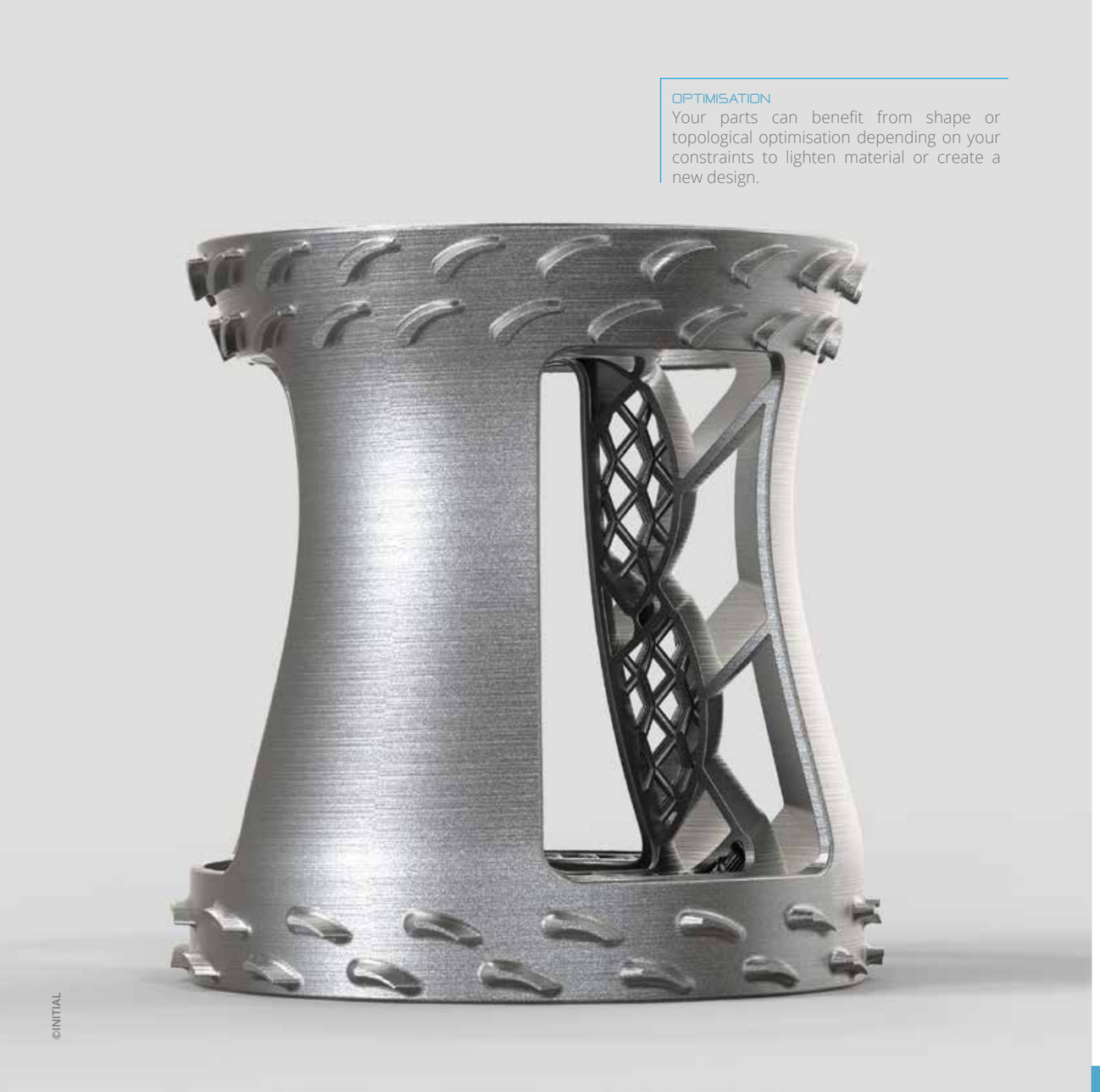
- Validation of shape before a production run
- Validation of the process
- Metallurgical tests
- Customised' made-to-order production
- Choice of high performance alloys for the technical implementation.

Our production facility offers you one of the largest production capacities in Europe for made-to-order or mass production manufacturing of complex parts or mould inserts.

An ideal technological solution for your complex metal parts: reduced weight and implementation of high-performance materials.

OPTIMISATION

Your parts can benefit from shape or topological optimisation depending on your constraints to lighten material or create a new design.



TOPOLOGY OPTIMISATION

Thanks to our skills and know-how, we have mastered all stages of the optimisation process, right up to completing the physical model.

PROCESS

This digital method makes it possible to delete the material on a reference/ basic model and just leave the absolute minimum volume required vis à vis the structural requirements.

PRINCIPLE

Topology optimisation is a new way of designing and sizing parts using the freedom in terms of shapes and geometries offered by 3-D printing technologies and in particular additive layer manufacturing (ALM).

Altair

The 'Altair' software suite enables us to implement these topology optimisation algorithms.

The optimisation algorithm is designed to minimise the strain energy while complying with one or more constraints. This way we get the best compromise between the object's mass and resistance.

POST-PROCESS WORKSHOP

Using your specifications, we can complete all post-treatment operations in our comprehensive workshop.

OUR EXPERTISE

To meet post-treatment requirements, we have equipped a workshop dedicated:

- to reworking materials: wire cutting machine, 3 and 5-axis CNC etc.
- to thermal treatment: ovens, autoclaves.
- to finishes: polishing material

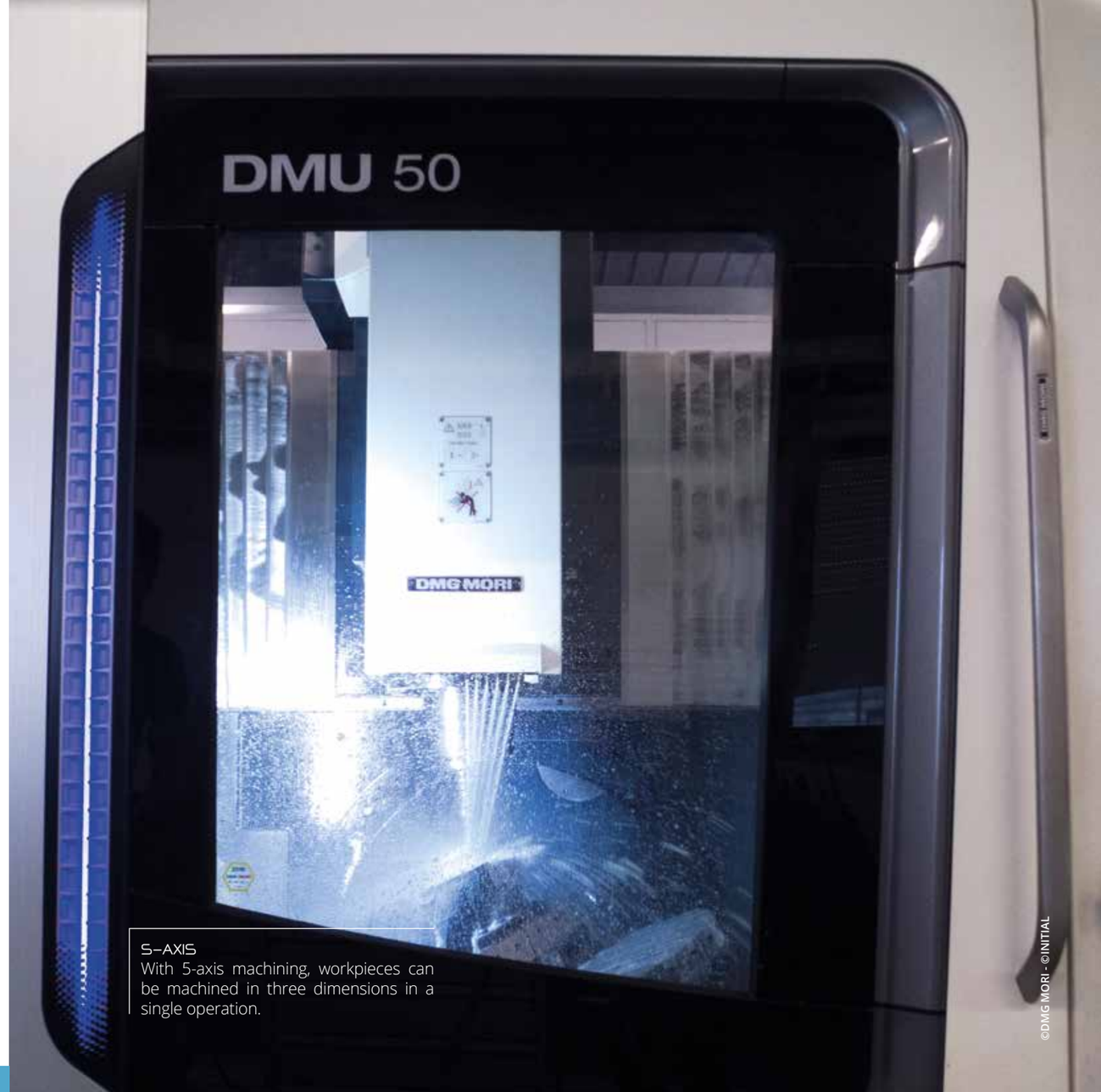
METHODOLOGY

- Remove parts from the plate: sawing, wire cutting
- Remove any material with machining
- Obtain a good surface condition with micro-bead blasting
- Obtain a brushed or polished finish (on request)
- Any possible tapping and reaming

POST-TREATMENT

Once any materials have been removed, the part can either be left 'untreated' or polished to give it a shiny and distinct appearance.

Parts produced by metal additive manufacturing can be machined or even assembled by welding.



5-AXIS

With 5-axis machining, workpieces can be machined in three dimensions in a single operation.

TOOLING & THERMOPLASTIC INJECTION MOLDING

We rely on experience of more than 15 years in the field of thermoplastic injection and offer you solutions suited to your prototype parts or production runs.

EXPERTISE

Our unit is comprehensive:

- Integrated tooling design department
- Mechanical workshop
- Injection workshop
- Quality control department

APPLICATIONS

- You have the prototype parts to produce prototypes with production-level material
- You want to carry out material tests
- You have the parts to produce small production runs
- You want to approve or optimise the injection process before producing the production mould.

For each job, you are in contact with a project leader who will be your point of contact.

1250 M²

SURFACE AREA AT OUR SITE EXCLUSIVELY DEDICATED TO THERMOPLASTIC INJECTION

TOOLING
PROTOTYPE/SERIES

We differentiate between prototype moulds and production run moulds (including pre-production or small production runs) by the amount of parts required or even the design of the mould (manual vs. Automatic).

OUR EXPERTISE

Using the 3-D file of your part, we design tools.

APPLICATIONS

- Tests and customer validation
- Production of a pre-production run to test a market
- Faster product development
- Makes it possible to test parts before a multi-cavity mould.
- Material tests
- Validation / optimisation of the injection process before producing a production mould.

To thermally optimise tools, we can, in some cases, offer to incorporate Conformal Cooling technology into production run moulds.

This involves producing mould parts with a laser layer by layer, in order to get complex control channels, coils, double or triple circuits, etc.

We offer reactivity in terms of developing the mould and the part thanks to our mechanical workshop adjoining the injection presses.

TOOLS
Steel mould mounted on a standard holding block

PART INJECTION
Texturing samples injected with PA66 GF30.

THERMOPLASTIC INJECTION MOLDING

An essential addition to our production of moulds is our adaptable and modular stock of machines, which is ideal for producing your small production runs.

EXPERTISE

- Validation or production of your part made with its final material
- Experience in the implementation of technical materials
- Guaranteed traceability, in particular by identification of batch number
- Production of over-moulding parts
- ISO 9001 Certification

The flexibility of our structure makes it possible to have short production runs and reduced turnaround times.

MATERIALS

PA filled and unfilled
PBT filled and unfilled
POM filled and unfilled
PC, ABS
PEEK, PEI, PESU, PPA, PPS
SEBS, TPE, TPU ...

860 000
PARTS INJECTED IN 2016

Increased flexibility thanks to our stock of machines made up of 50 T, 100 T and 150 T injection presses.

Increased flexibility thanks to our stock of machines made up of 50 T, 100 T and 150 T injection presses.

INITIAL

DESIGN & PRODUCTION

PRODWAYS

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