

# ADDITIVE MANUFACTURING 3D PRINTING METAL

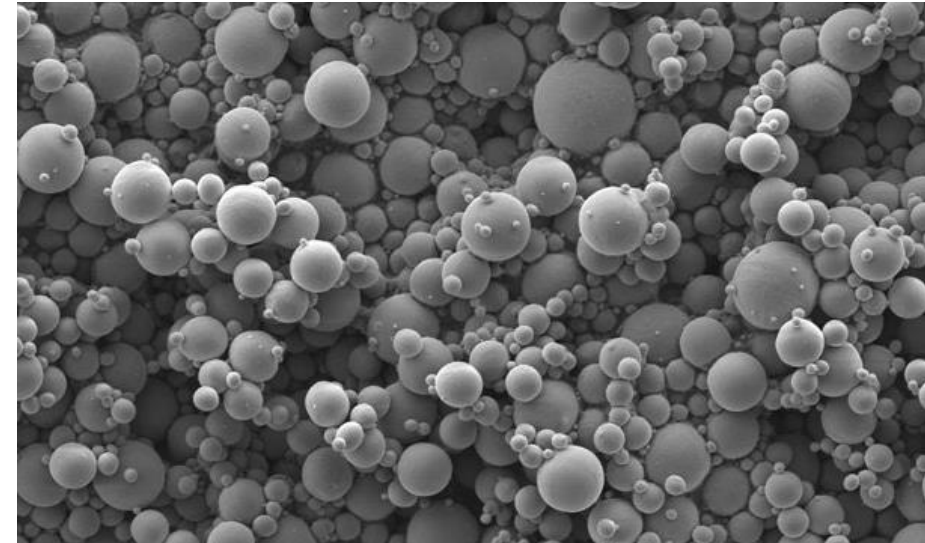
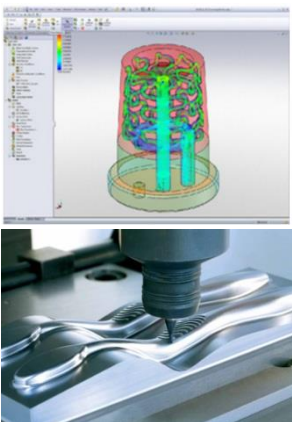
**3D PRECISION SA**

**Fabrication d'implants sur mesure: cas pratique**  
**Manufacturing of custom implants : practical case**

Dominique Beuchat  
CEO et fondateur/founder

## Competencies

- Additive manufacturing – from design up to finishing with our own facilities
- Experienced team – located in Delémont - Switzerland
- Well-known customers - multiple sectors (machines and measuring systems, medical, watches, ...)
- Quality management system  
ISO9001 and ISO13485



## Main alloys

- Titanium
- Aluminum
- Stainless steel
- Maraging steel
- Cobalt-chromium
- Copper and tungsten





## Production equipment

- CAD
- 3D scanner
- „Selective Laser Melting“ machines
- CNC milling machine
- 3D measuring system
- heat treatment furnace, microblasting and sandblasting, tribofinition, ultrasonic washing, ...

**Dominique Beuchat, CEO**

**www.3dprecision.ch**

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**CH-2800 Delémont**

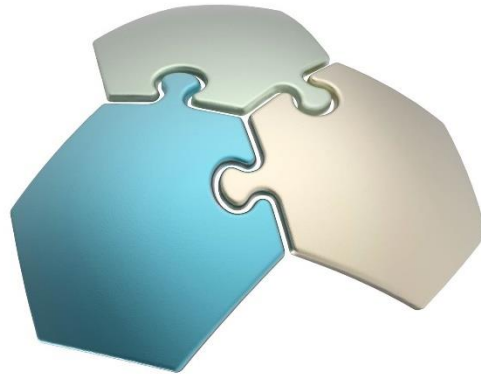
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**info@3dprecision.ch**



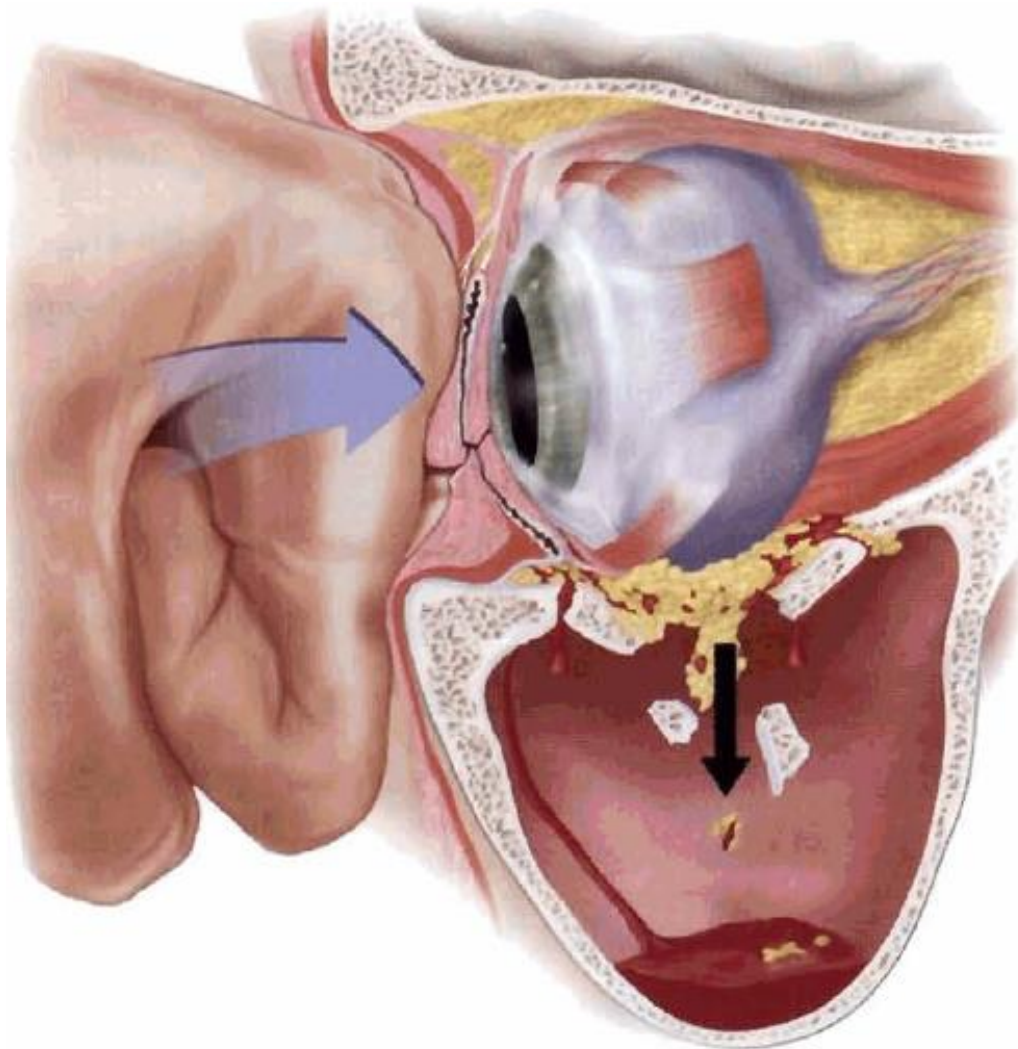
# CUSTOM IMPLANTS : THE PARTNERS

Ad Mirabiles  
*mesmerizing implants*



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## CUSTOM IMPLANTS : THE TRAUMA CASE



### **Mains causes :**

- Accidents (vehicles, bicycles, tennis..)
- Fist punch
- Fall
- Assault
- Other...

# **CUSTOM IMPLANTS : THE GOAL – STEPS AND TIMING**





# CUSTOM IMPLANTS : ENVIRONMENT



**ISO13485  
CERTIFIED  
ENVIRONMENT**

**RISK  
ANALYSIS AND  
MANAGEMENT  
OF THE RISKS**

**QUALITY  
CONTROL**

**SKILLED  
PEOPLE**

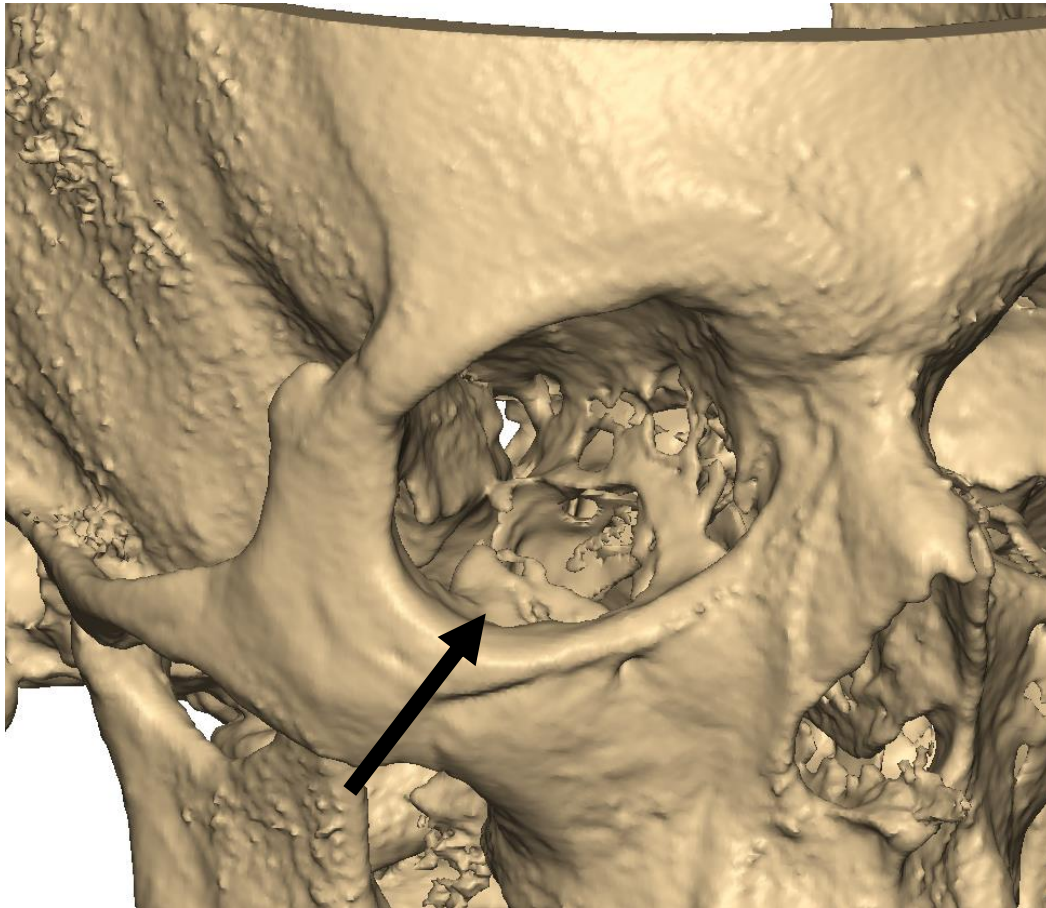


**IQ/OQ/PQ**

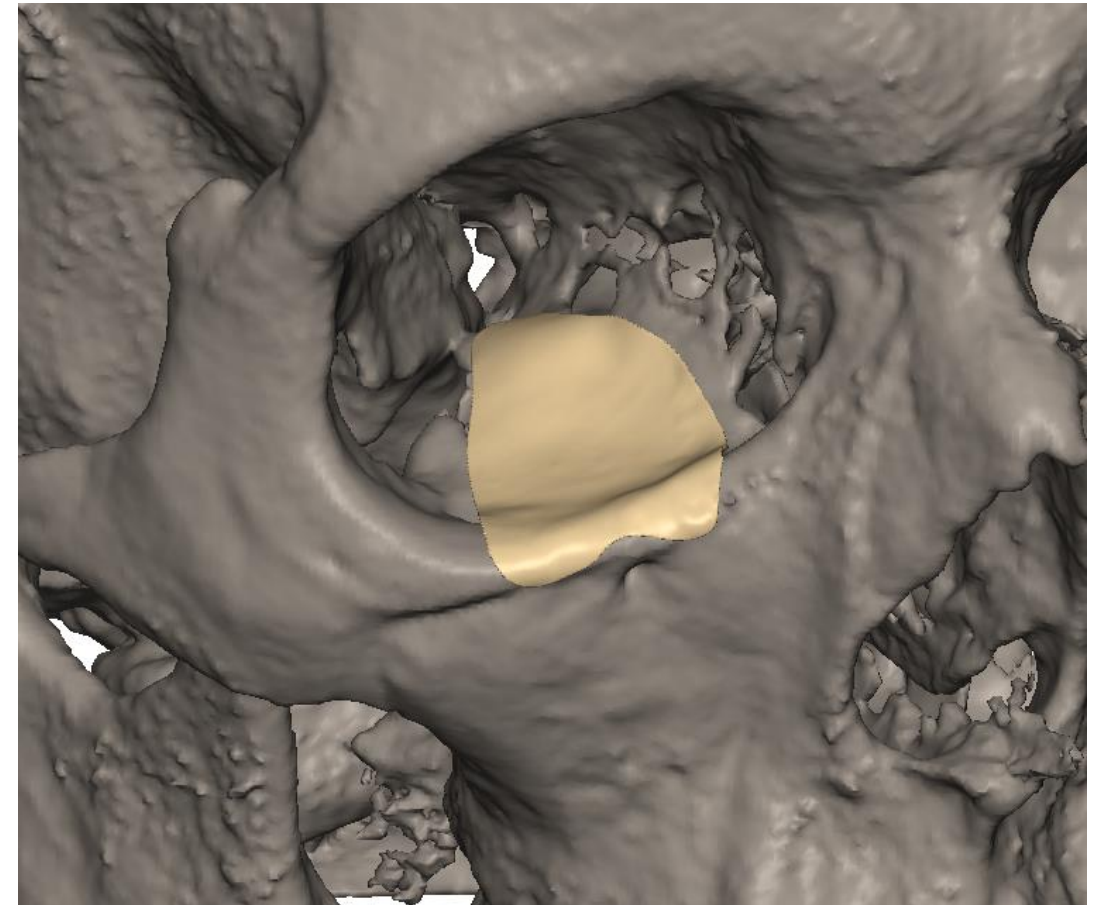
**SECURED  
PROCESS**

## **CUSTOM IMPLANTS : CT SCAN AND DESIGN**

**CT Scan – is situation  
(hospital)**



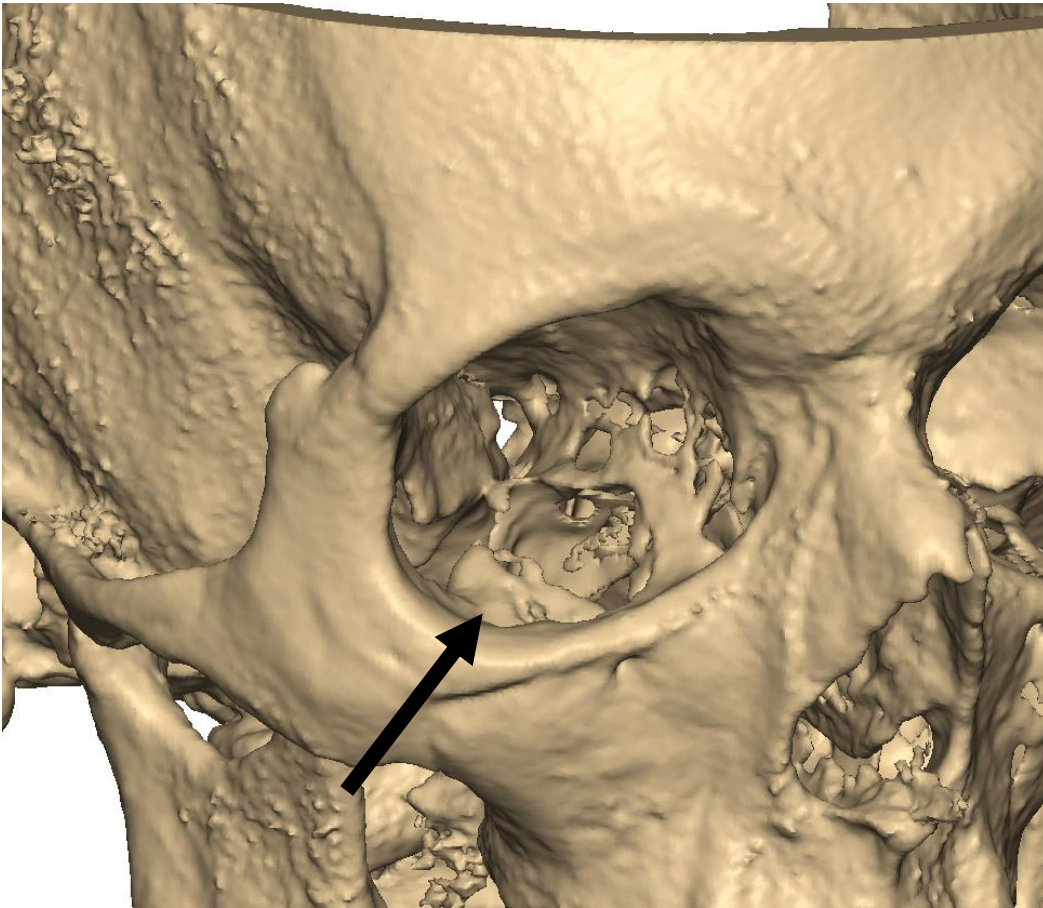
**Design of the implant  
(hospital or AdMirabiles)**



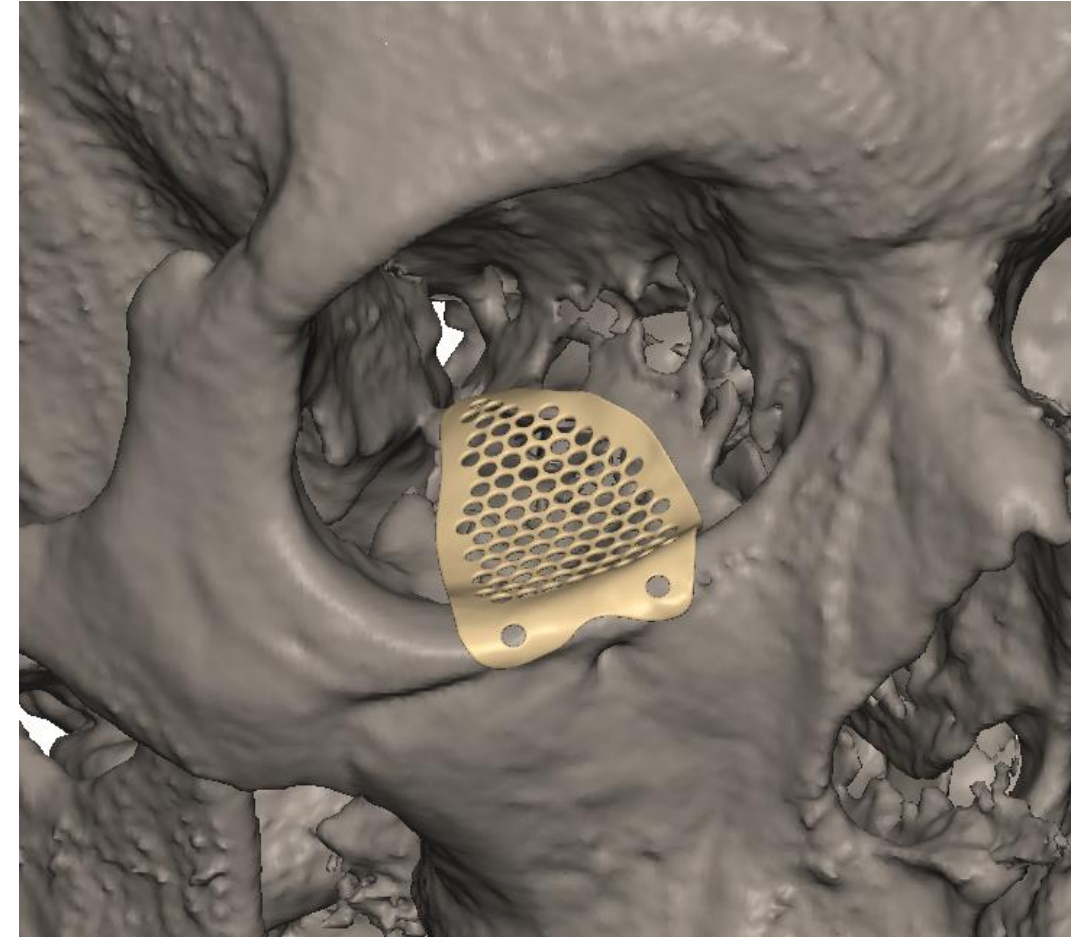


## **CUSTOM IMPLANTS : CT SCAN AND DESIGN**

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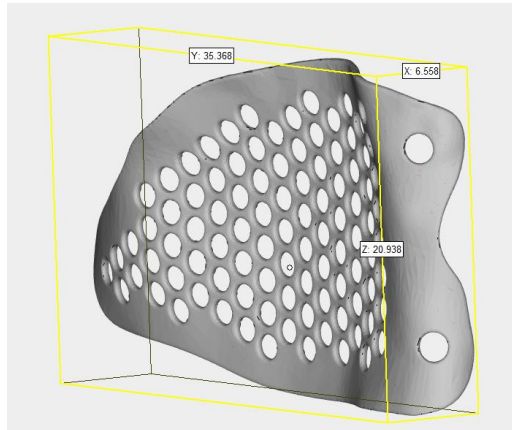


**Design of the implant  
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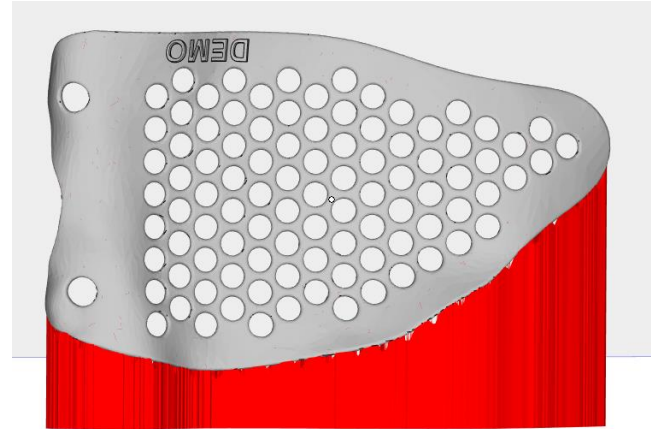


# CUSTOM IMPLANTS : PREPARATION AND MANUFACTURING

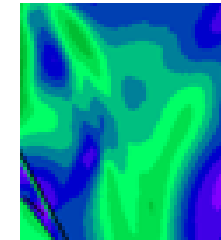
Designed implant



Preparation for the  
additive manufacturing



Deformation : simulation  
and pre-deformation

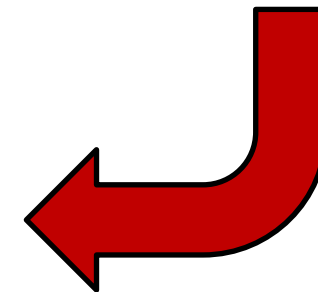


 **Amphyon** 



Manufacturing

- powder bed fusion
- Pure titanium



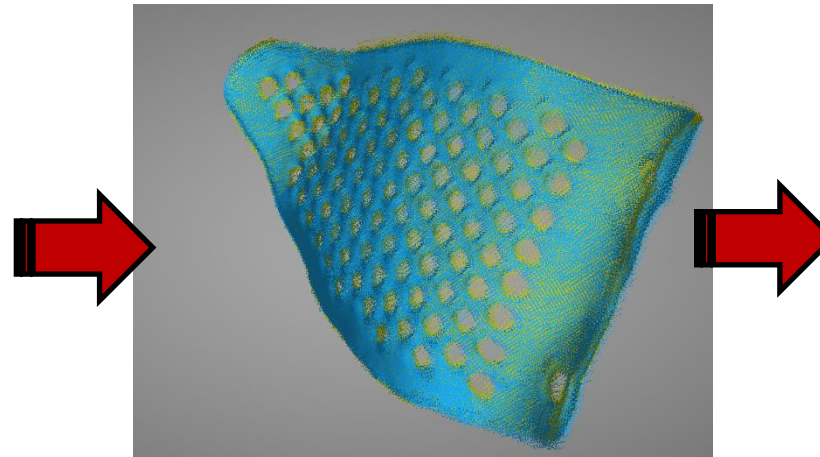


# CUSTOM IMPLANTS : FINISHING - TESTS – CONTROLS – POST-TREATMENT

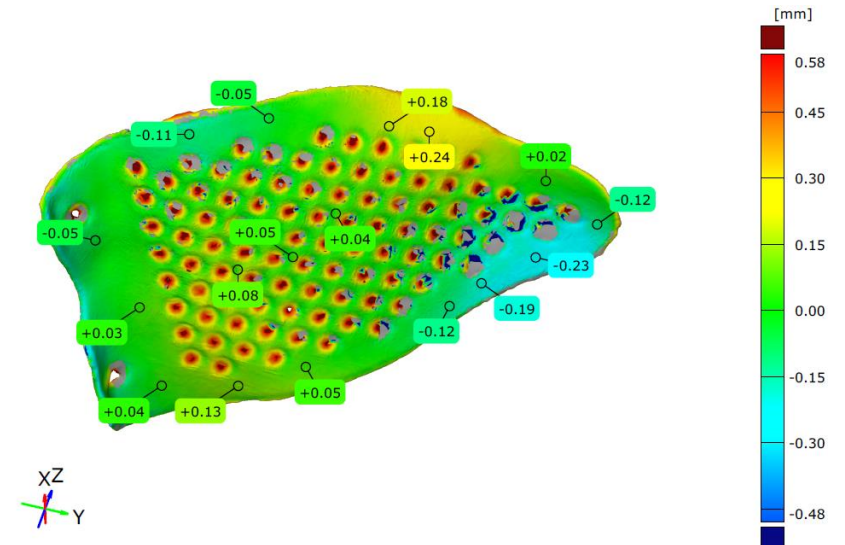
Raw implant



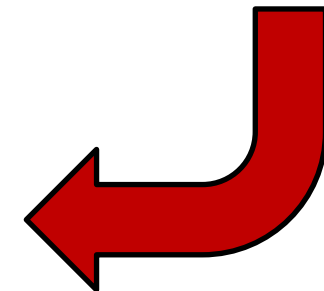
Scanning



Tests and dimensional control

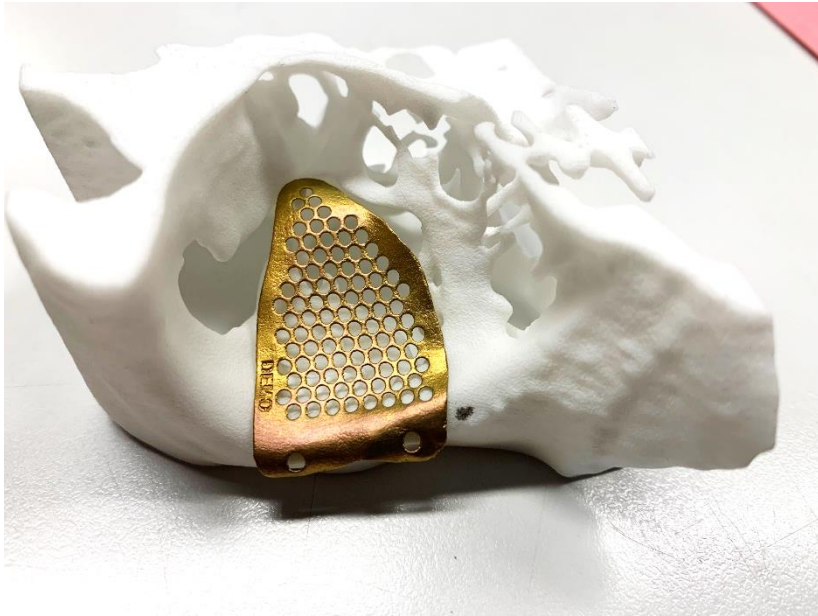


Washing, surface treatment,  
sterilization and  
packaging

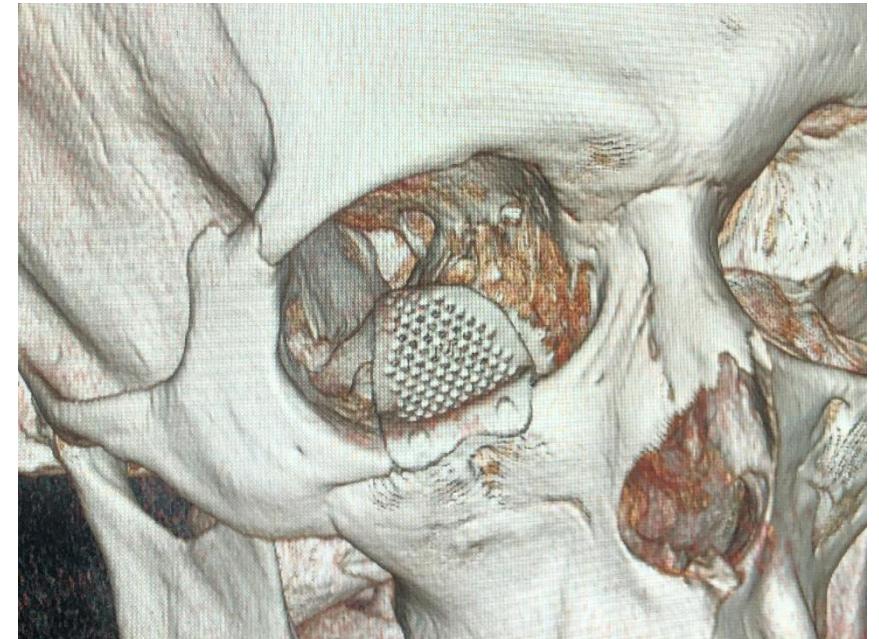


# CUSTOM IMPLANTS : OPERATION

**Implant before  
operation**



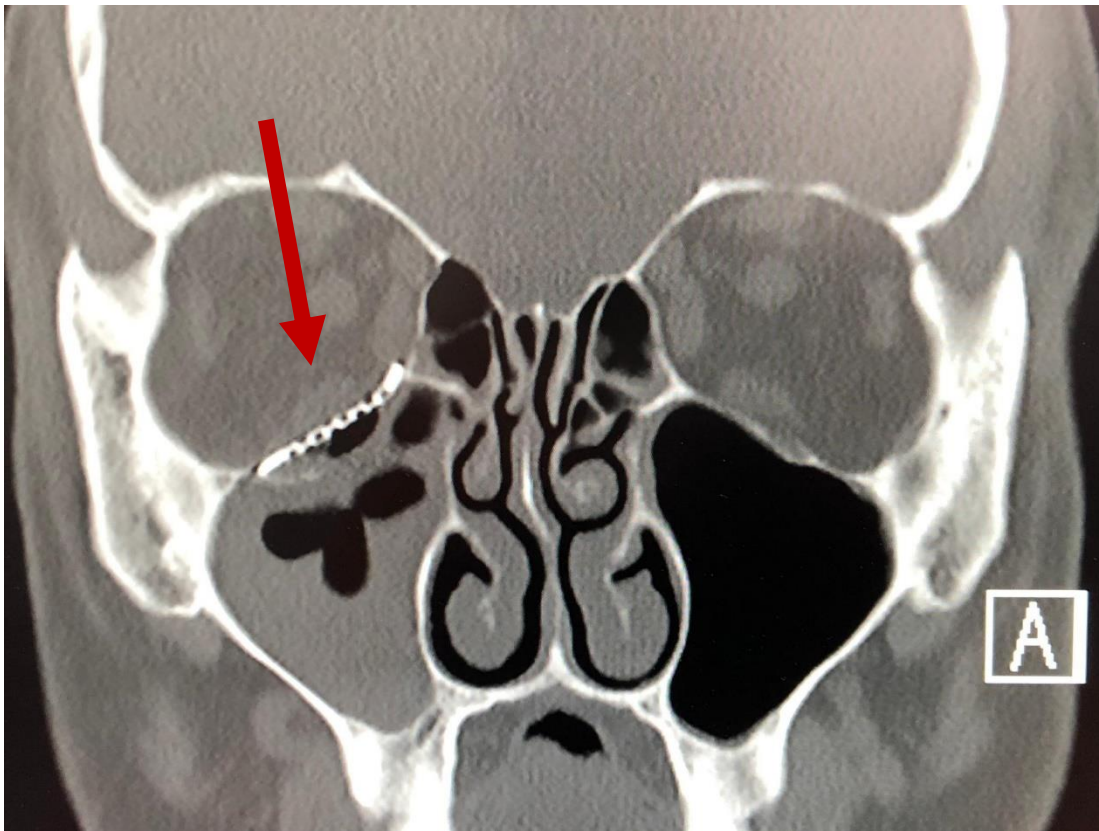
**Operation**





# CUSTOM IMPLANTS : PREPARATION AND MANUFACTURING

## Control post-operation





# CUSTOM IMPLANTS : BENEFITS

**THANK YOU FOR YOUR ATTENTION**



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