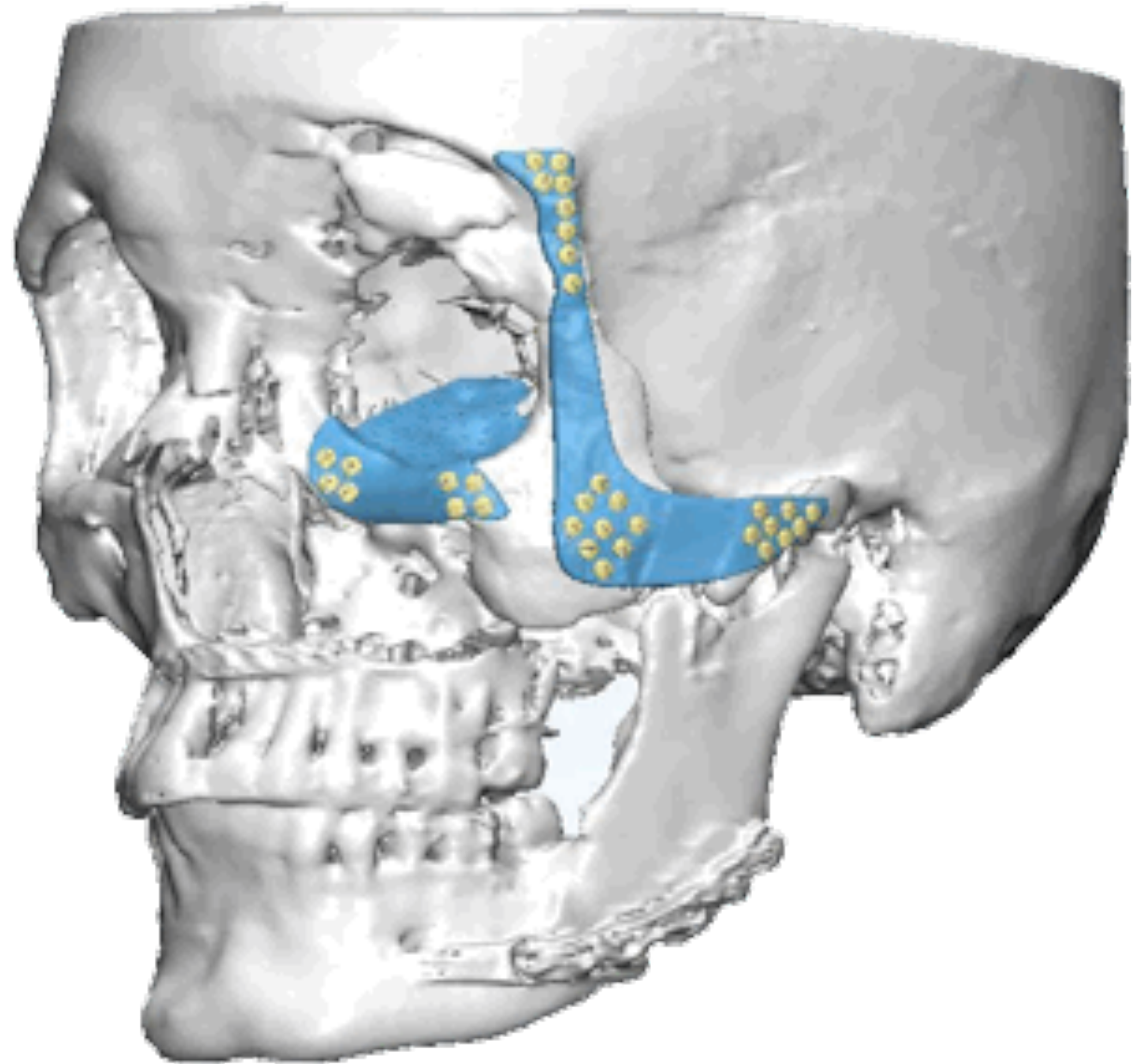


# PSI

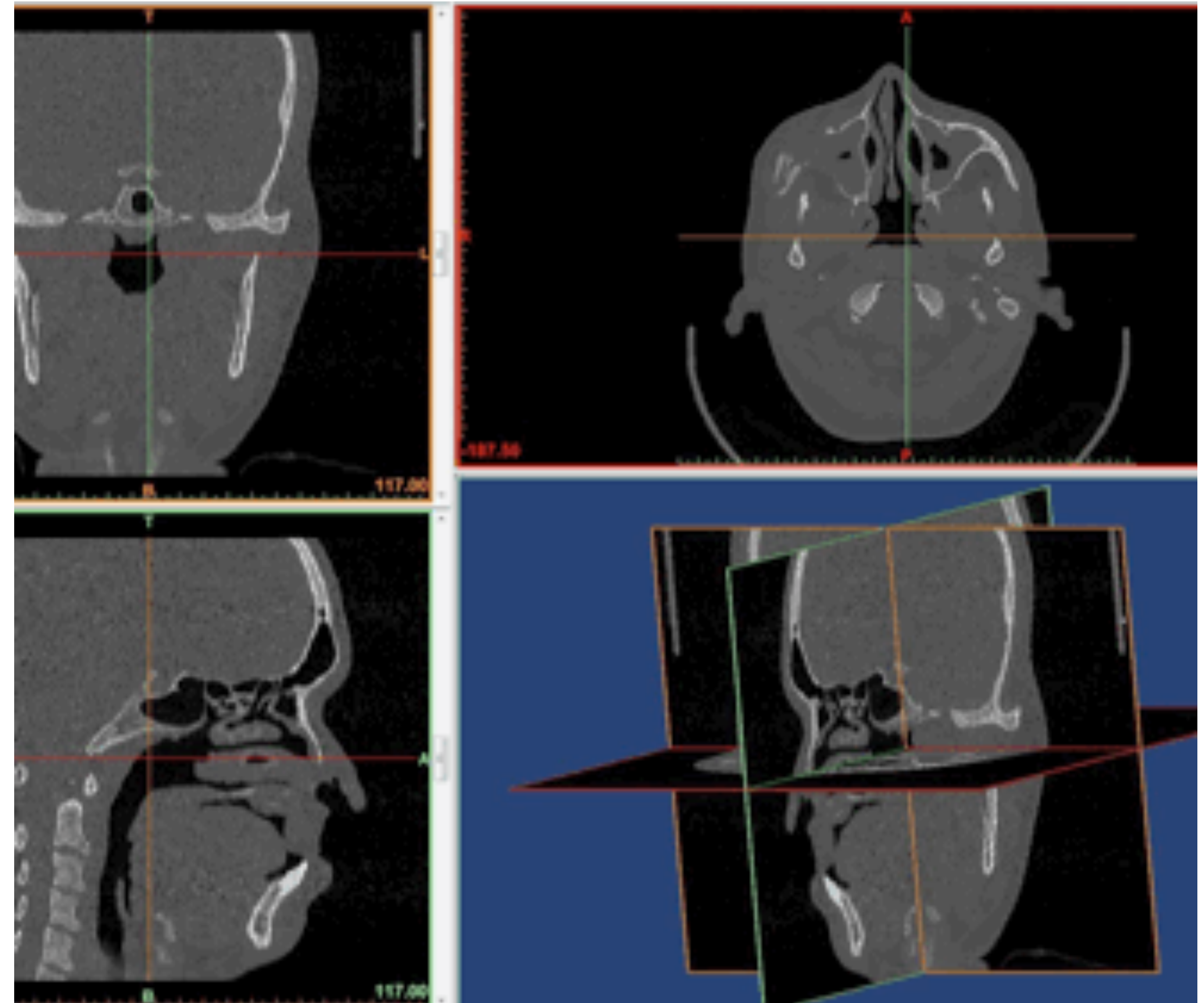
## PATIENT SPECIFIC IMPLANTS

- Better anatomic fit
- Reduced operation time
- Satisfying aesthetic needs
- Reduced complexity of surgery



# METHODOLOGY

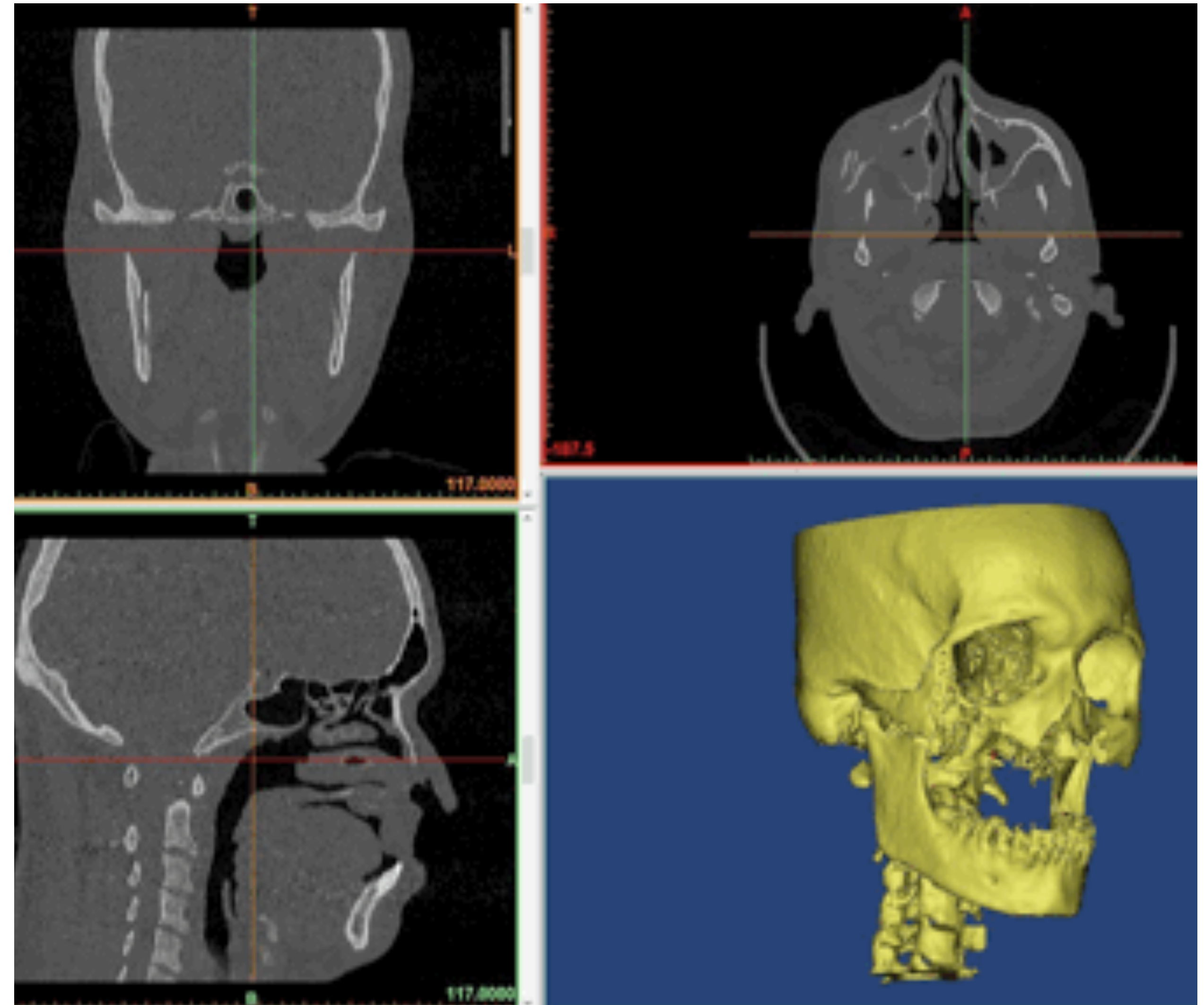
Auxein Patient Specific Implants are derived from 1mm slice DICOM CT data, which is obtained from the hospital radiology department.





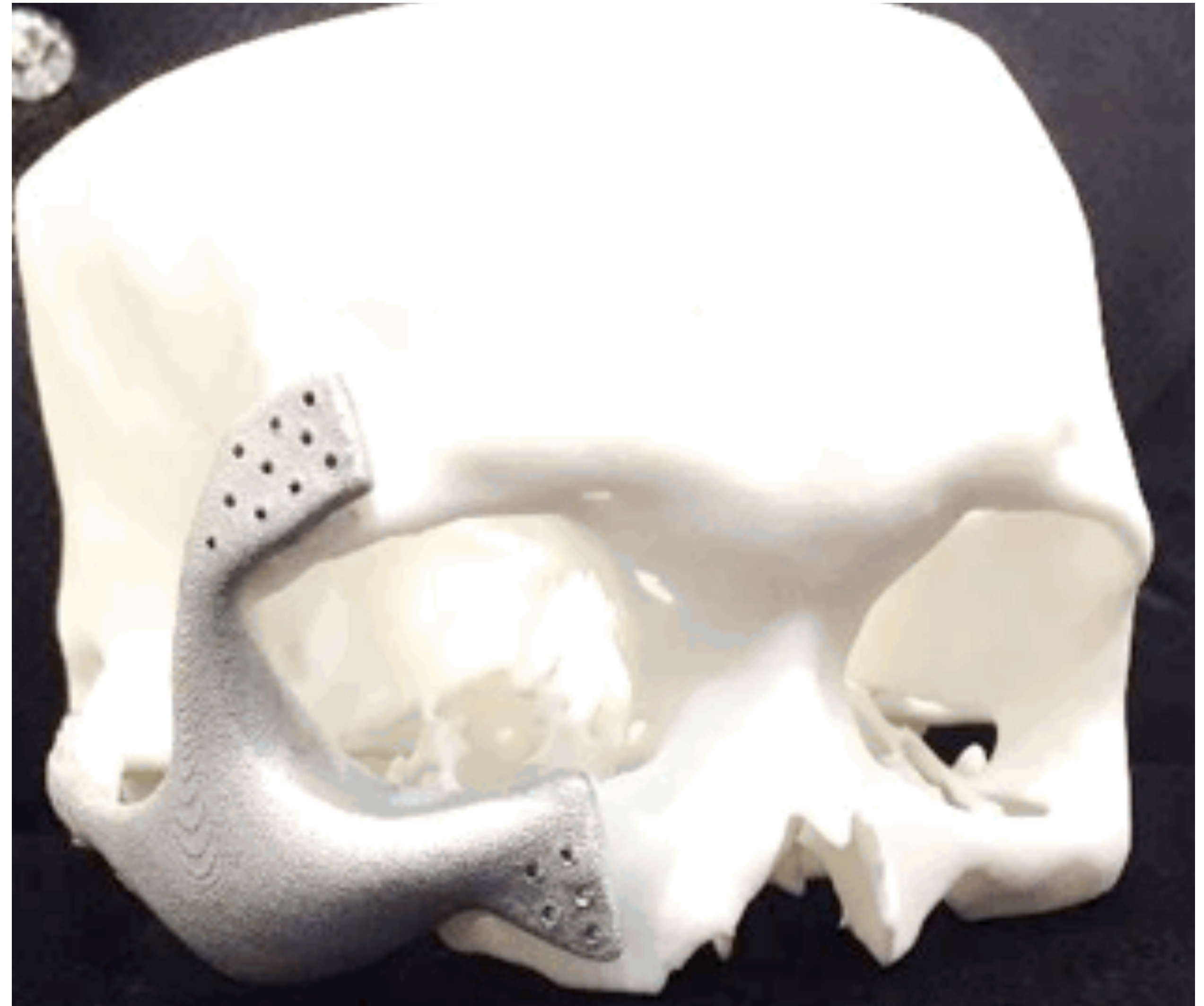
# SEGMENTATION

Medical imaging software is used to visualize the CT data and create an anatomically correct skull model and implant design.



# PROTOTYPING

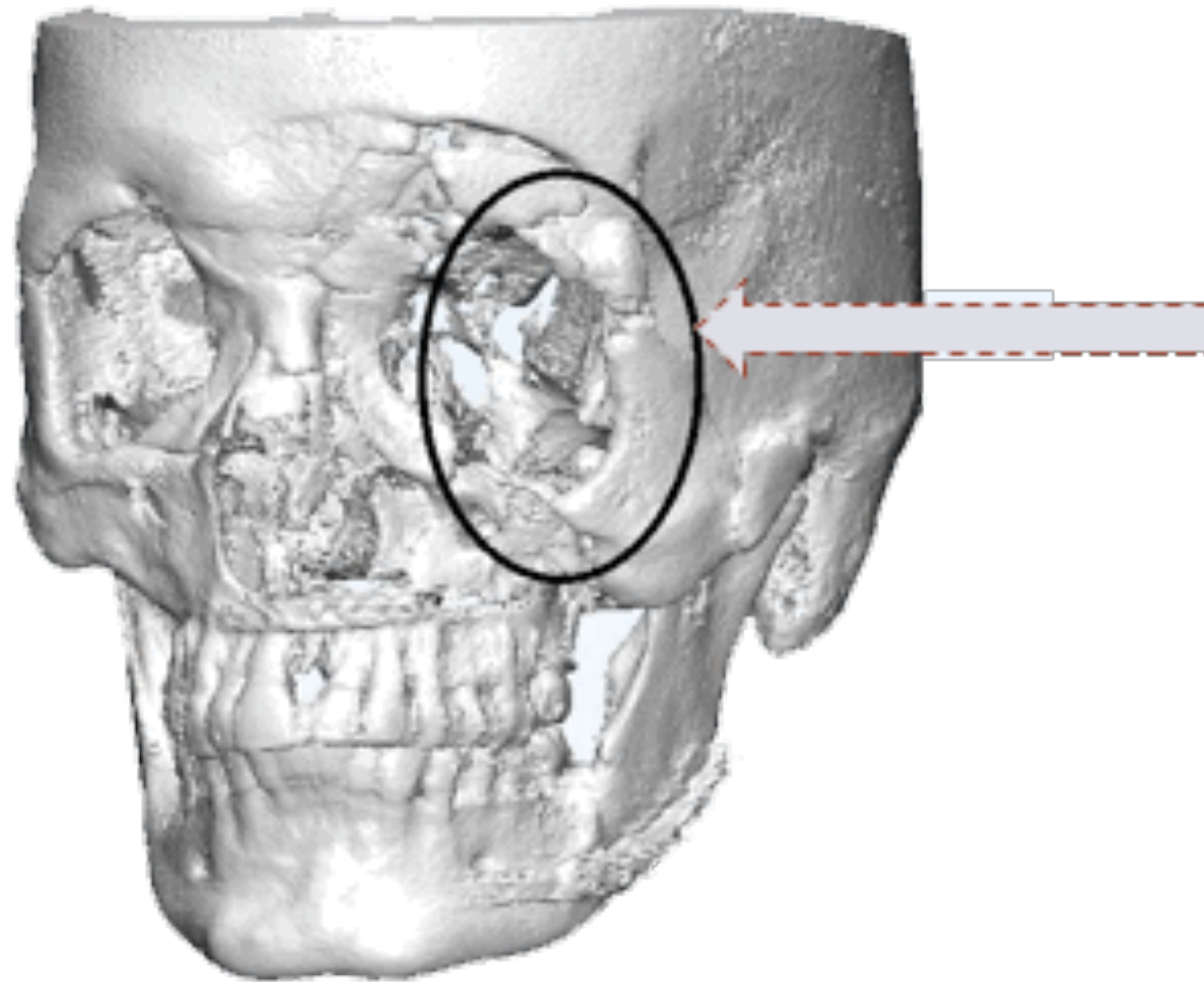
Prototyping using FDM process with plastic material can be done to reduce the surgery time.





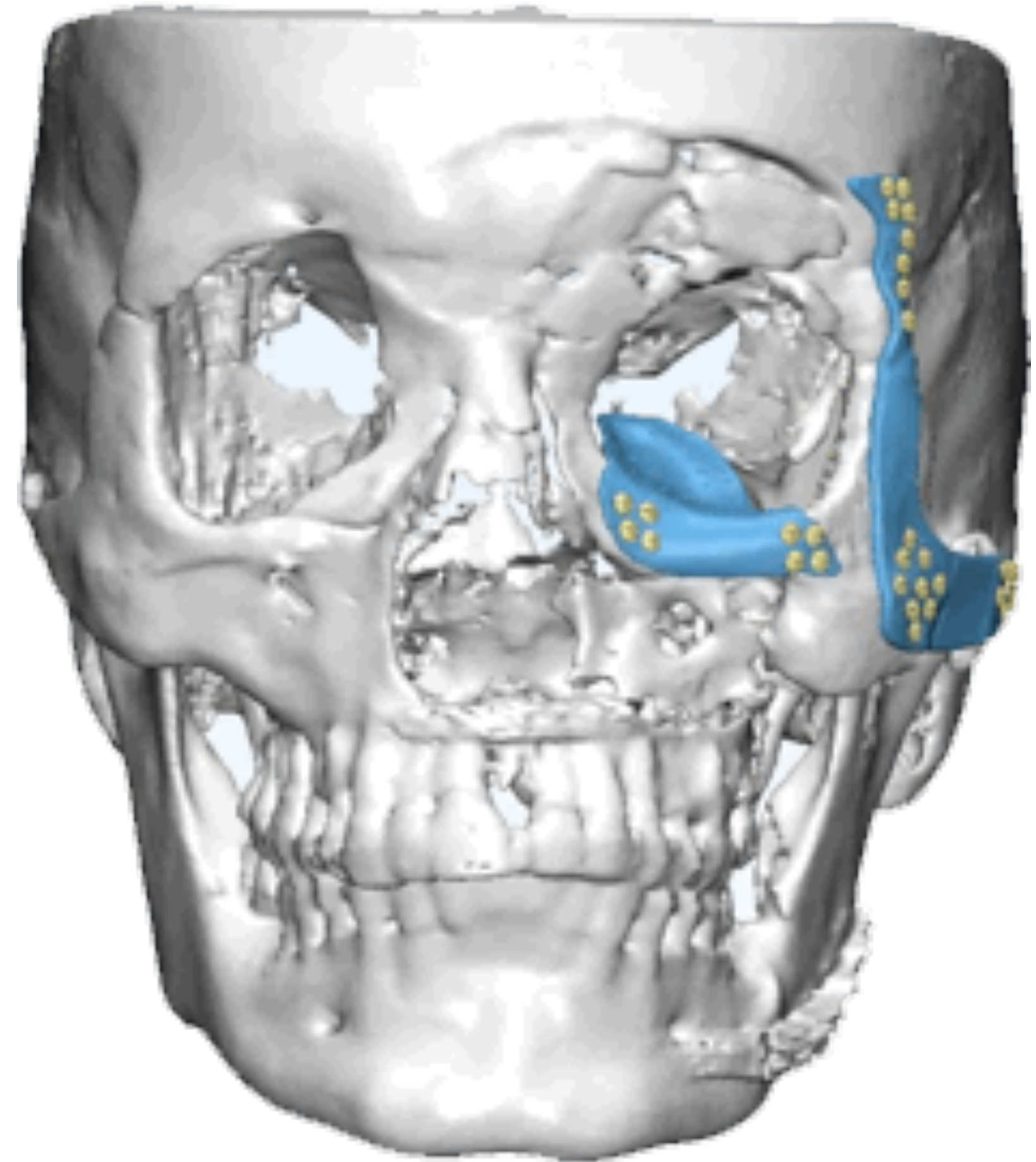
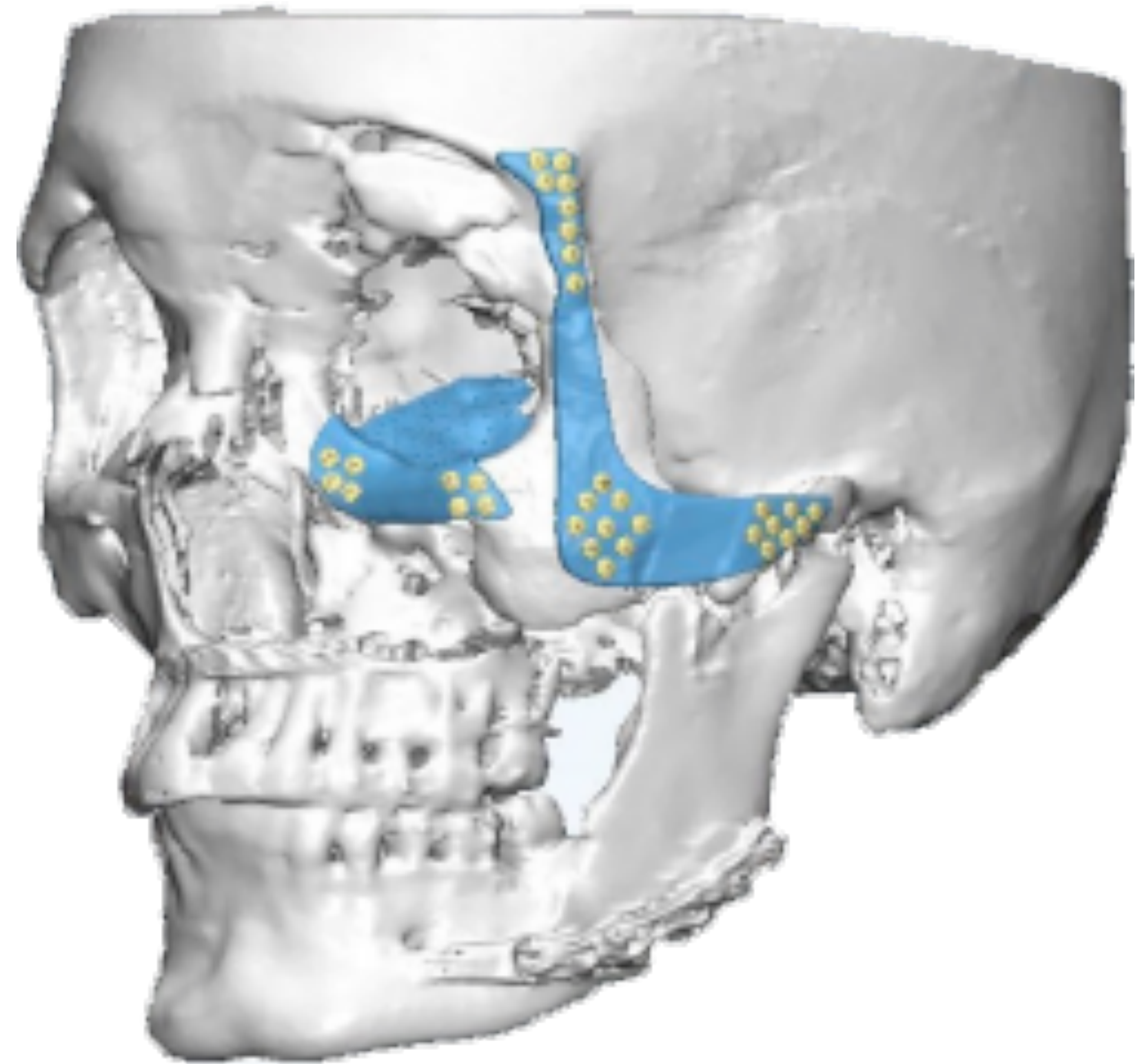
# CASE STUDY

Reconstruction of zygomatic area and orbital floor was required. The challenge was to reconstruct the damaged area considering aesthetics aspects of face.



**REGION TO BE  
RECONSTRUCTED**

# IMPLANT DESIGNED





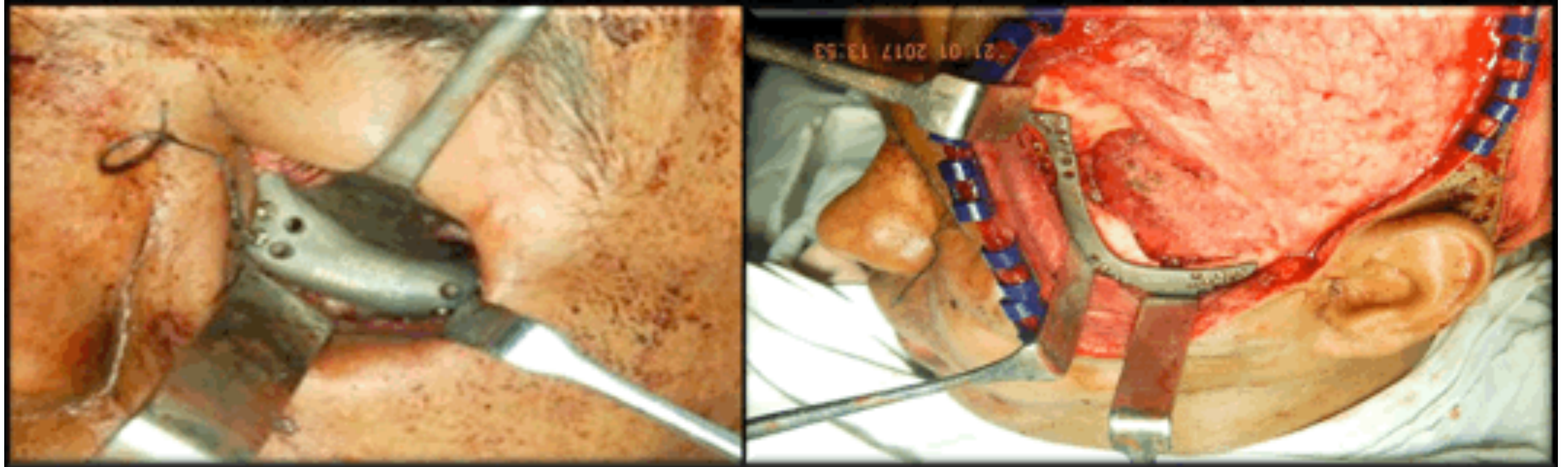
# IMPLANTS MANUFACTURED





# SURGERY

Implants implanted successfully.





# PRE AND POST SURGERY RESULTS



**Pre Surgery**



**Post Surgery**



# MATERIAL CHOICE

## TITANIUM ELI GRADE





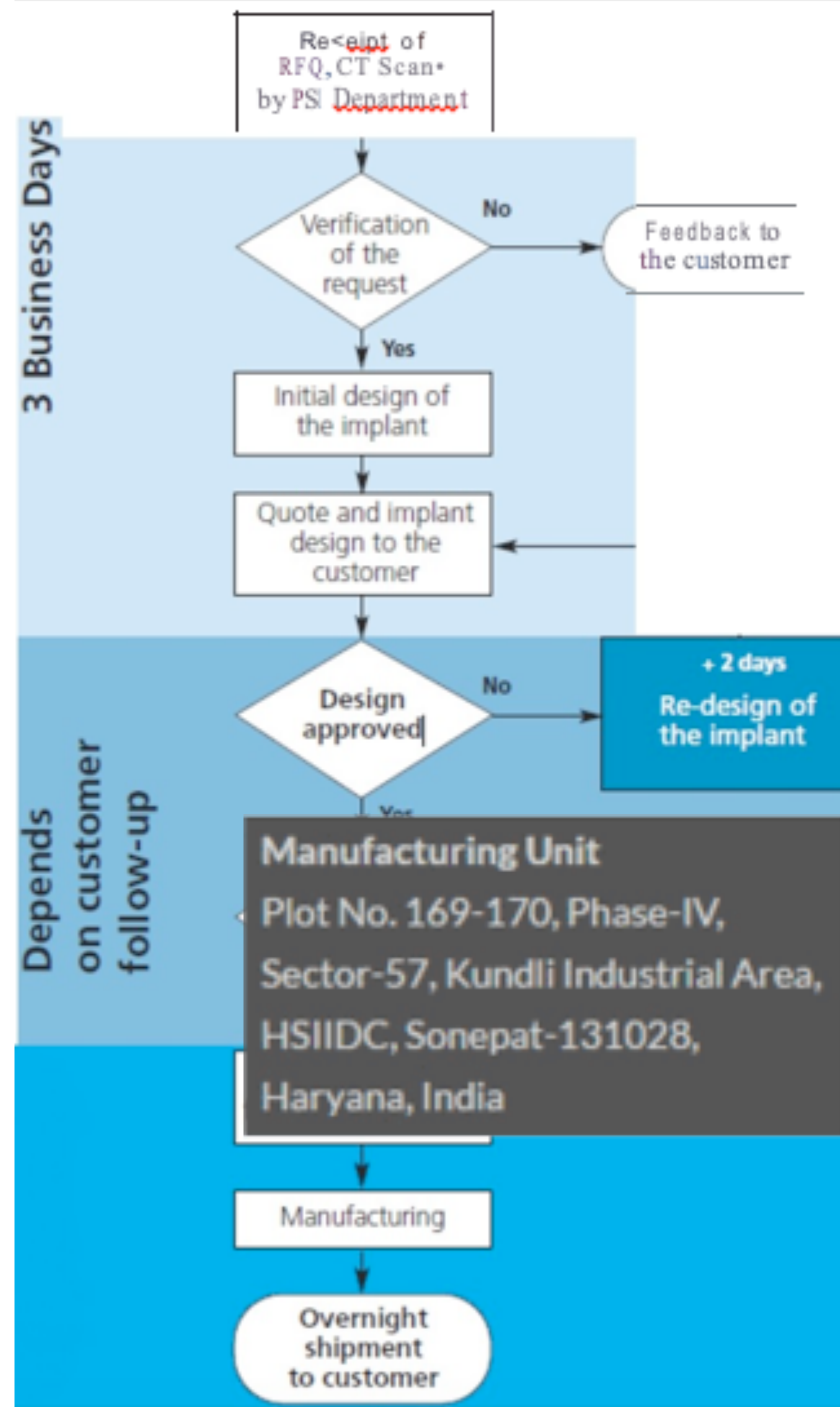
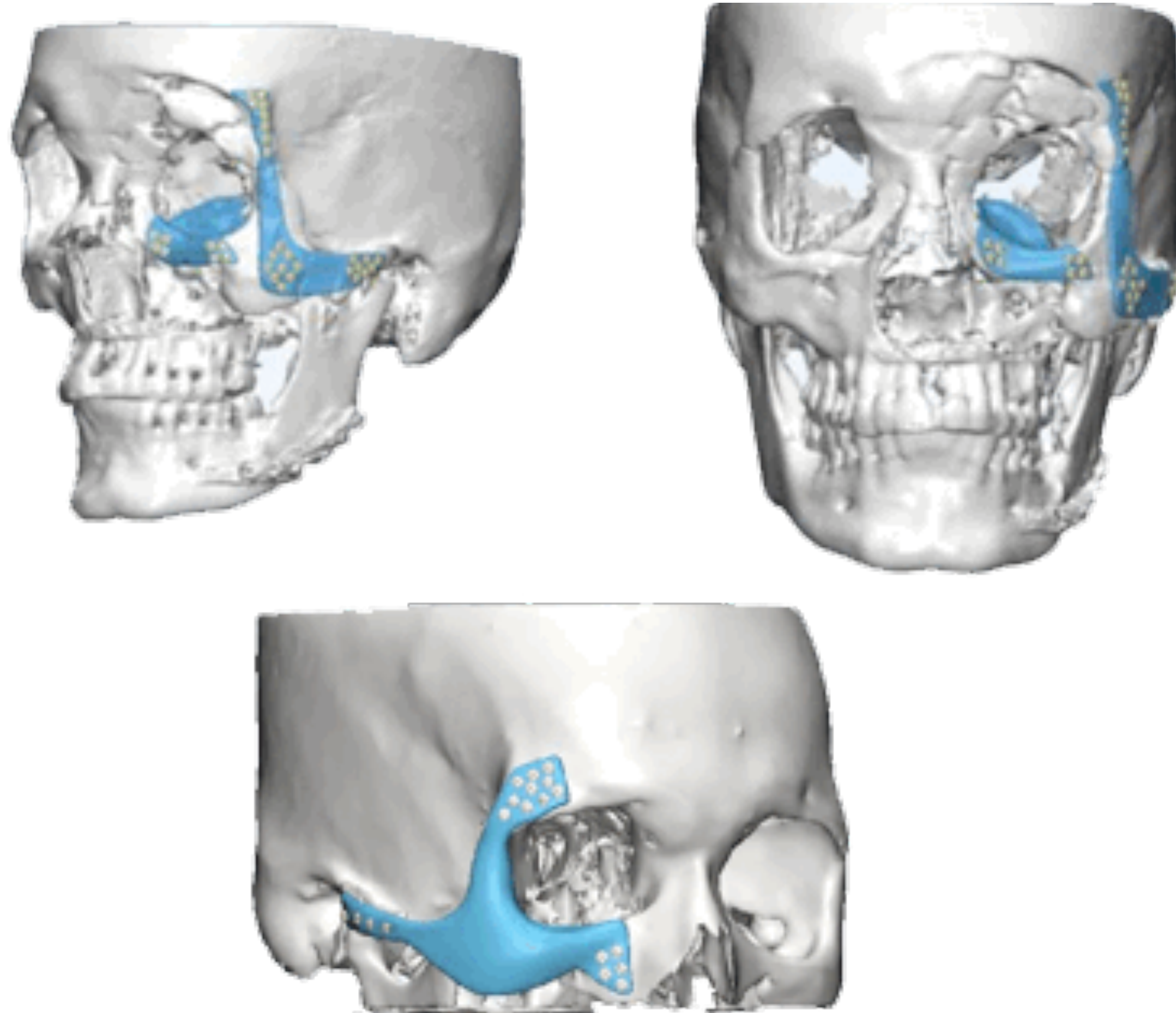
# MECHANICAL PROPERTIES

Titanium Mechanical Properties		
	Cortical Bone	Titanium
Modulus of Elasticity (stiffness) (GPa)	8-24	103
Yield Strength (MPa)	115	230 (minimum)

**Notes regarding the use of Titanium Patient Specific Implants:** *Titanium patient specific implants cannot be modified. If there are any minor fit modifications required, the surgeon must modify the patient's bone.*



# ORDERING PROCESS



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