

## ASX Announcement

### Completion of CSIRO AI Cranial Implant Project leads to clinical assessment study with Osteopore

- *CSIRO has developed an AI-based model for cranial implant design for Singular Health.*
- *The new cranial implant generation model now integrated into Singular Health's 3Dicom Surgical software & optimised AI models, adding to the previously integrated spinal labelling & segmentation AI model.*
- *Tests of this model by Singular Health have achieved segmentation of the cranium and generation of cranial implant in less than four minutes with 91 percent accuracy.*
- *New functionality in 3Dicom Surgical to segment anatomy using traditional methods and/or AI models which can be manually edited for 100 per cent accuracy.*
- *Functionality also allows for the export of segmented anatomy into 3D printable files within minutes.*
- *Previously announced collaboration with Osteopore to validate model with additional cranial scans & comparative testing ahead of planned regulatory submission to the FDA.*

**14 March 2022** – Singular Health Group Ltd (ASX: SHG) (“Singular Health”, or “the Company”) in collaboration with Australia’s national science agency, CSIRO, can today announce that they’ve successfully concluded the Cranial Implant Design project announced in October 2021. The project was made possible by CSIRO Kick-Start, an initiative that provides funding and support for innovative Australian start-ups and small businesses to access CSIRO’s research expertise and capabilities to help grow and develop their business.

Having developed and integrated an Artificial Intelligence (AI) model capable of automatically generating a cranial implant within 4 minutes with a 91% level of accuracy, the focus now turns to the collaboration with ASX-listed Osteopore to validate the model and seek US FDA and Australia TGA certification.

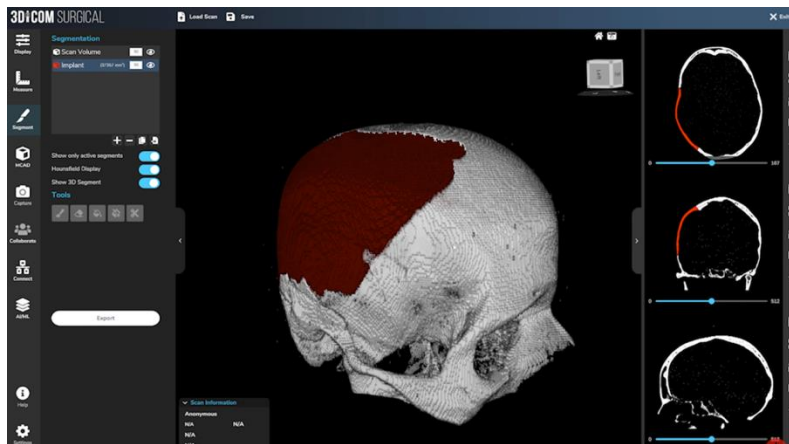


Figure 1: Generated Cranial Implant Overlaid on a Craniotomy Scan in 3Dicom Surgical

Since the initial announcement of the second Kick-Start project in October 2021 (SHG: CSIRO Collaboration for AI-based Tool, 19 October 2021), Singular Health’s research and innovation team has worked closely with CSIRO to use a publicly available dataset of craniotomy CT scans to train a Convolutional Neural Network (CNN) AI model to generate a cranial implant. Compared to models developed as part of the AutoImplant 2021 Grand Challenge, the SHG-CSIRO AI model surpasses all previous models with an accuracy of greater than 91 per cent and an inference time of less than four minutes.

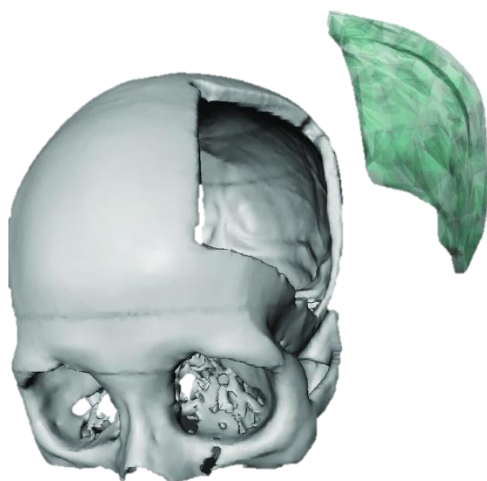


Figure 2: 3D Printed Cranial Implant Biomodel

Upon completion of the AI model, Singular Health’s internal development team have configured the model to use standard DICOM inputs to work across both Windows and MacOS hardware, and to output the generated cranial implant design into the Company’s 3Dicom Surgical software. Whilst in 3Dicom Surgical, the cranial implant can be edited in either the 2D or 3D views by a surgeon or bioengineer to make patient specific edits and increase the accuracy to near 100%.

Furthermore, recent developments to the 3Dicom Surgical software has added the ability to export manual or AI segmented anatomies or pathologies to 3D printable file formats such as .STL or .OBJ, completing the Scan to Surgery workflow.

### Comparative Study with Osteopore (ASX: OSX)

Singular Health will be receiving anonymised craniotomy CT scans from Osteopore for an initial validation of the AI model prior to securing FDA and TGA approved datasets. The AI model and 3Dicom Surgical workflow will then be compared to existing workflows and evaluated based on relative time and accuracy of the model. The main objective of this project is to collate empirical data to develop a pathway to full FDA approval for the AI model and deployment for use with Osteopore’s cutting-edge bioresorbable material.

**Thomas Hanly, Singular Health’s Chief Executive Officer, said:**

“I have to highly commend the innovative development and work ethic of the CSIRO team. This best-in-class model, compared to the 2021 AutoImplant Grand Challenge, really demonstrates the ability of AI to accelerate the manual processes in the Scan to Surgery workflow. I now look forward to working closely with Osteopore to develop a commercial outcome for both companies.”

**Khoon Seng Goh, Chief Executive Officer of Osteopore, said:**

“Having reviewed Singular Health’s new AI-driven cranial implant design tool and the 3Dicom Surgical, Osteopore are excited to begin this collaboration and to work towards a commercial outcome for the two companies.”

**Dadong Wang, Principal Research Scientist, CSIRO, said:**

“We understand a patient specific cranial implant is important for cranioplasty. The AI-based custom modelling of skulls can facilitate the design and 3D printing of such patient specific cranial implants and is a great example to show how AI can augment surgical decision-making.”

This announcement is authorised for release by the Board of Directors of the Company.

**Ends**

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**About Singular Health:**

Founded in 2017, Singular Health is a medical technology company that has developed and commercialised the proprietary Volumetric Rendering Platform (“VRP”) for the 3D & VR visualisation of anatomy using standard radiological imagery.

Singular Health is committed to developing technologies that provides patients and practitioners alike with access to personalised, enhanced medical data to inform better health decisions and is currently developing and deploying software products that are built upon the proprietary VRP on a global scale through a direct-to-consumer Software-as-a-Service (“SaaS”) model.

**About Scan to Surgery:**

Scan to Surgery<sup>®</sup> is a disruptive technology driven process that revolutionises the planning and execution of surgical procedures, reducing cost and improving patient outcomes. Built on the backbone of MFTP, incorporating 3D/VR scan review with virtual surgical planning software and utilising local additive manufacturing facilities, Scan to Surgery<sup>®</sup> aims to rapidly deliver patient-specific solutions.

**About Osteopore Limited:**

Osteopore Ltd, an Australian ASX listed company (OSX) with R&D and manufacturing in Singapore, is the global leader in the manufacture of innovative regenerative implants at commercial scale. By combining biomimetic tissue science with proprietary 3D printing and materials technology, Osteopore produces medical implants to meet the needs of both tissue and bone reconstruction as well as restoration. These bioresorbable implants provide a scaffold for bone regeneration, dissolving predictably over time to leave only natural bone tissue. In collaboration with clinicians and researchers, Osteopore develops and manufactures implants that address unmet clinical needs which improve patient outcomes, enhances lives, and potentially reduces healthcare costs. For more information, visit us at [www.osteopore.com](http://www.osteopore.com)