According to the announcement made by 3D Medical Limited (3DM) in the middle of May 2015, the Company is pleased to confirm that, in an Australian first, and working with a leading oral and maxillofacial surgeon, it has successfully developed a 3-D printable and customised titanium jaw joint for use in corrective jaw surgery.

A 32-year-old male patient underwent a groundbreaking five hour operation at the Epworth Freemasons Hospital in East Melbourne to correct a rare jaw deformity. The jaw deformity had left the patient with a skewed lower face and limited jaw opening, resulting from a missing left temporomandibular jaw joint and consequent lack of growth in the left side of the face. The patient’s severe deformity was an ideal case for 3-D printing application, enabling the corrective implant to be perfectly fitted to the complex geometry of the mandible. Working closely with leading oral and maxillofacial surgeon, Dr George Dimitroulis, and leveraging global expertise from Australia and abroad, 3DM developed a customised titanium jaw joint that was successfully implanted into the patient (Fig. 1).

The commercialisation process not only included the design and development of the implant but also extended to 3DM gaining necessary approvals with hospitals, clinicians, healthcare suppliers and the health insurer who paid for the cost of the procedure. Dr Nigel Finch, Chairman of 3DM said: ‘The successful outcome of this procedure not only achieves a fantastic result for the patient but it also serves to validate the end-to-end business model of 3DM in designing and developing custom implants’. Following the surgery, Dr George Dimitroulis commented: ‘We are at the cross-roads of an exciting era of customised medical devices that will become an integral part of healthcare in the 21st century’. Dr Finch also said: ‘3DM expects to see an increase in cases of this type as leading clinicians and hospitals seek to leverage the data-rich medical images used in patient diagnoses by harnessing computer-aided design and precise 3-D printing to more efficiently solve complex clinical problems’.

Fig. 1 X-ray of the patient’s jaw.