

Stable Cranial Mount

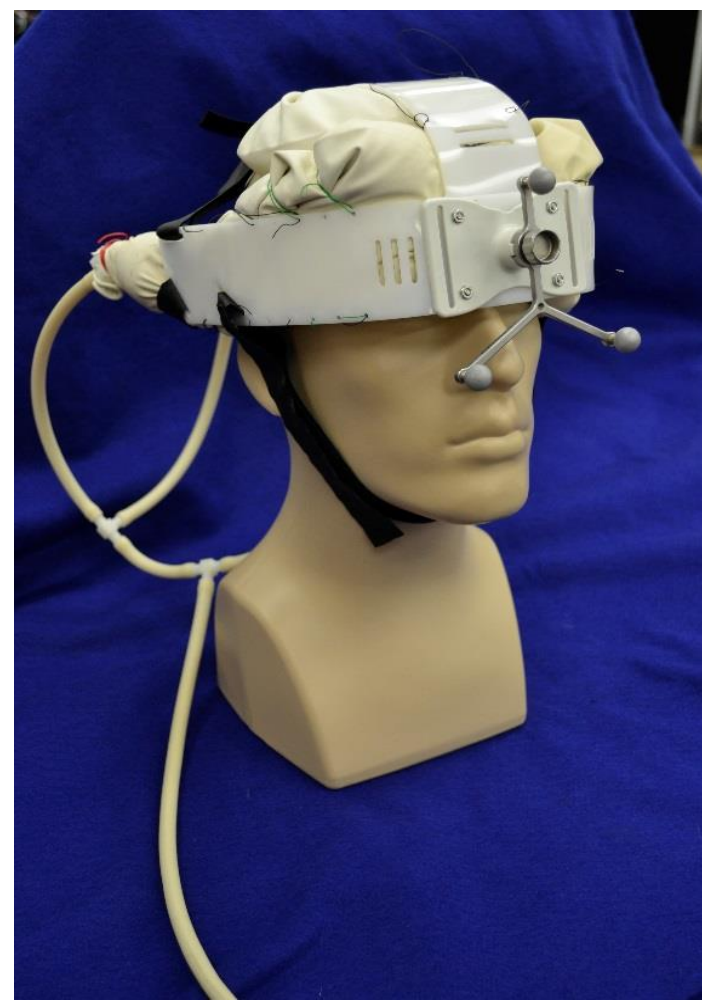
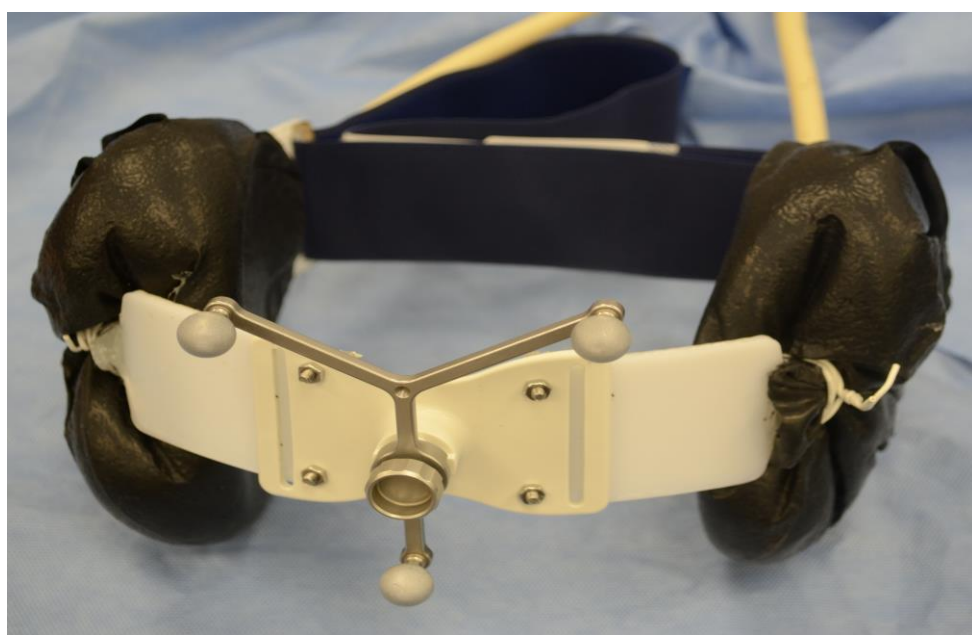


R.A. Lathrop, R.J. Webster III, H.B. Gilbert, and R.W. Gonzalez
 Department of Mechanical Engineering
 Vanderbilt University, Nashville, TN, USA



Description

- Inexpensive device to reduce errors in Image Guided Cranial (IGS) surgeries.
- Compatible with optical tracking systems.
- Obviates the need for surgical placement of optical markers.
- Applicable to procedures such as endonasal and cochlear surgeries.

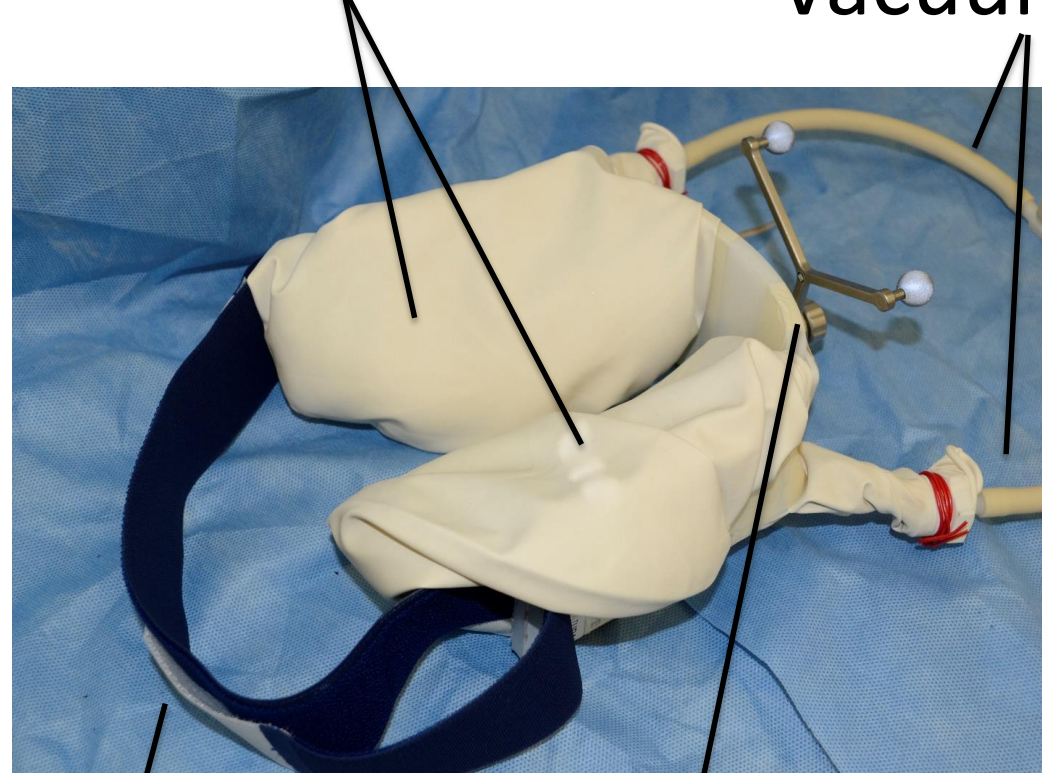


Problem and Solution

- Slippage of optical tracking units cause image registration errors.
- These errors can lead to serious negative patient outcomes (e.g. brain damage).
- Present device is an assembly of readily available components.
- Various configurations of product possible (e.g. helmet, headband, etc.)

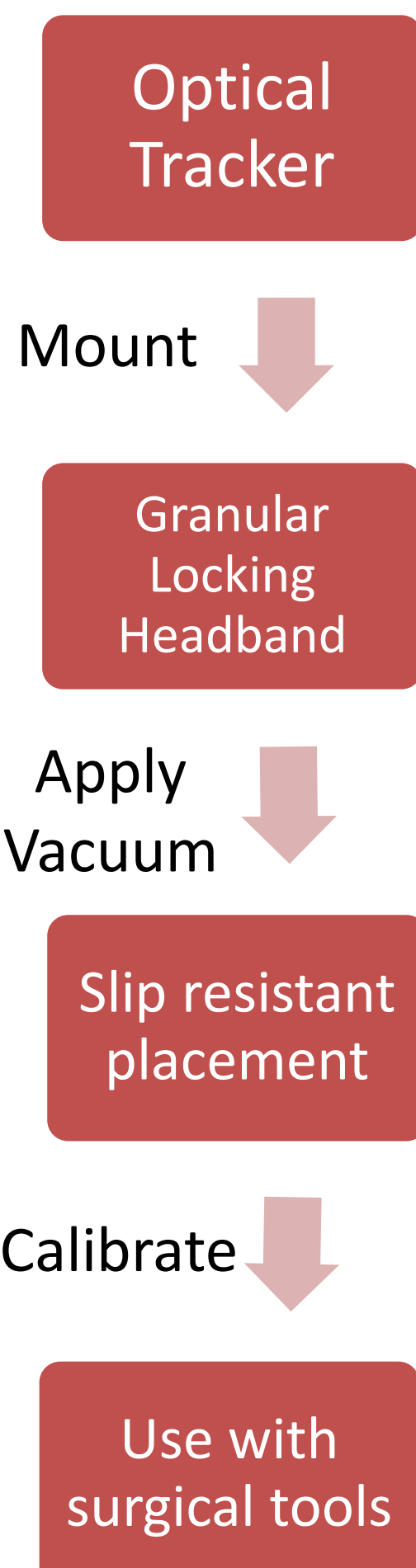
Granular Locking Device:

Granular Locking Pads Vacuum Tubes



Optical Tracker Mount

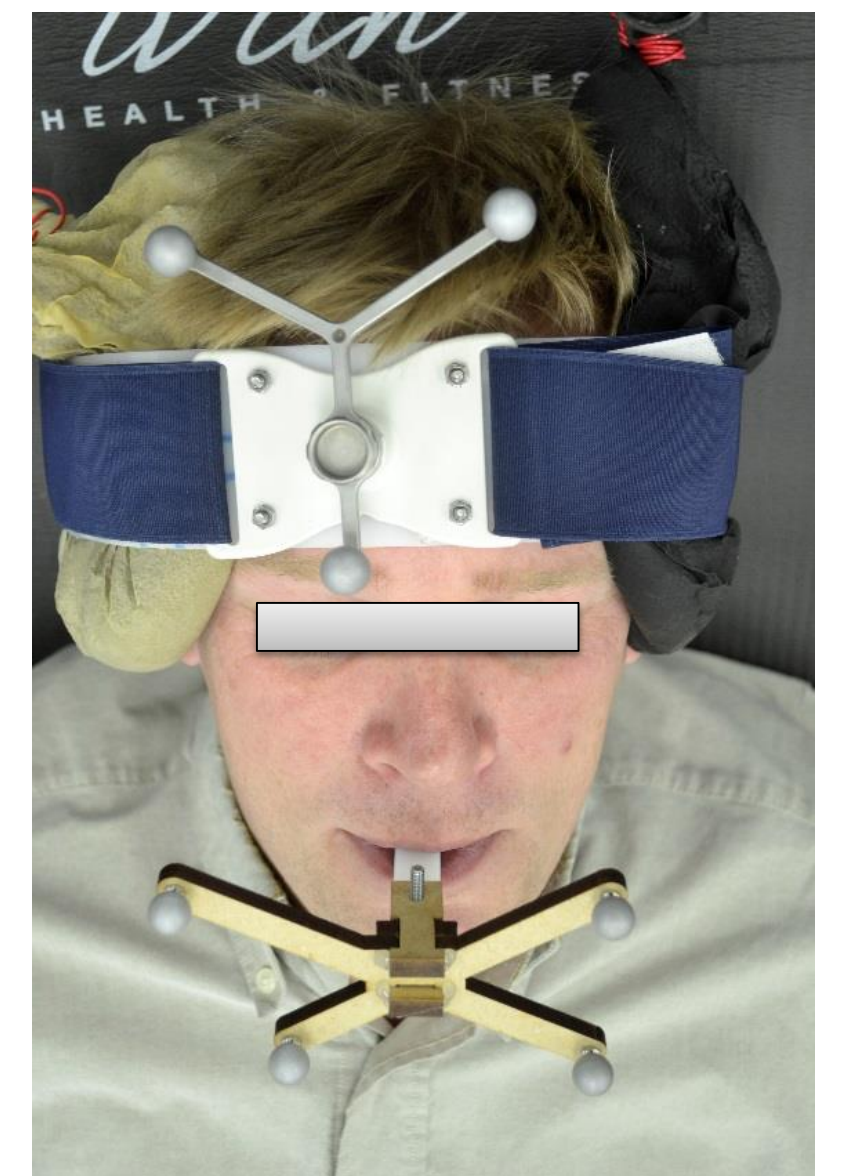
Elastic or Velcro Strap



Current Status

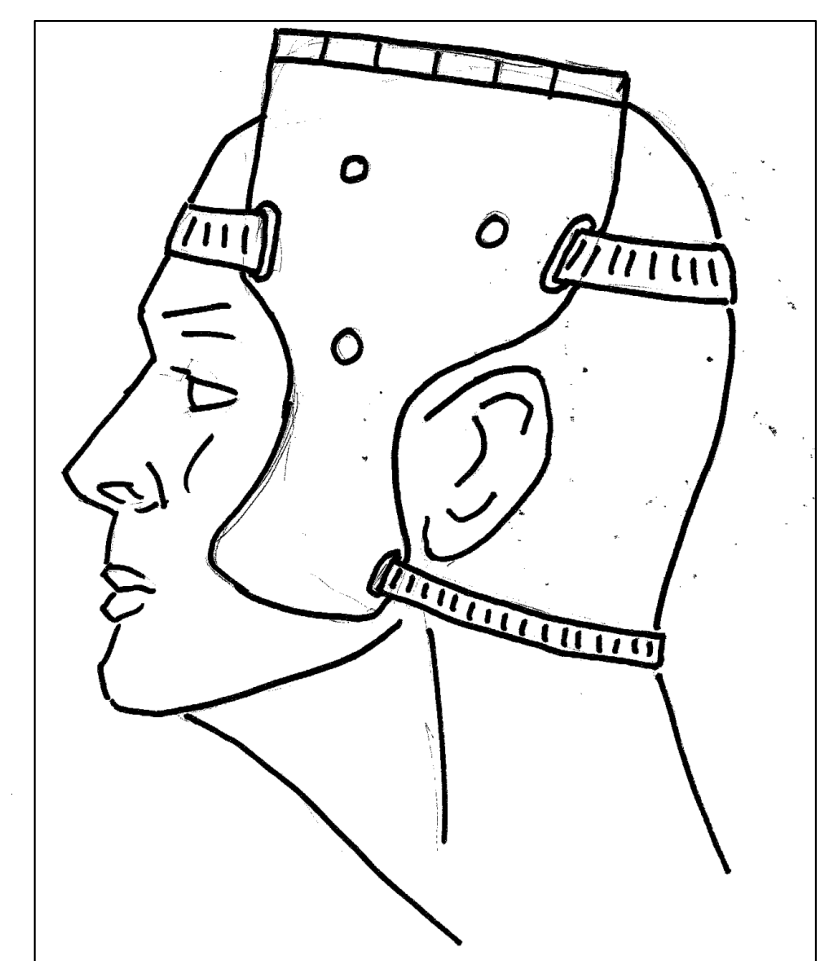
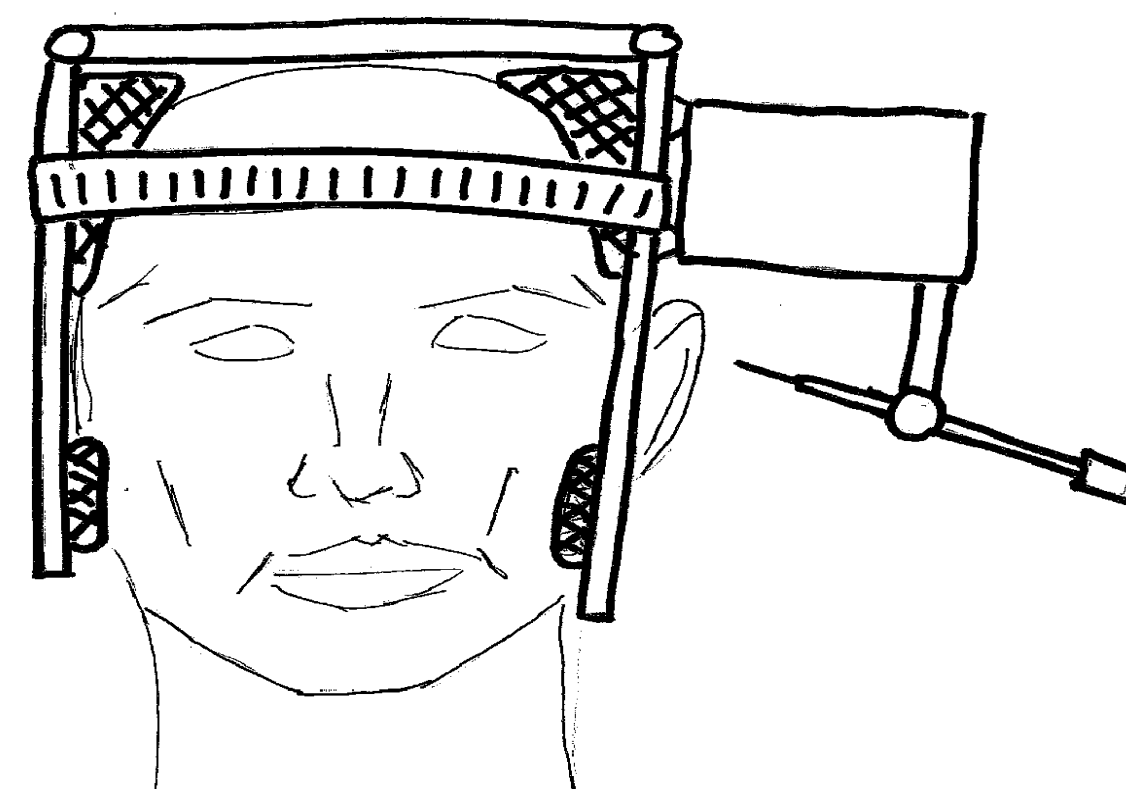


- 1st generation lab prototype constructed and tested.
- Early results show ~50% reduction in movement error.
- Generation 2 design and construction under development.



Ongoing Work

- Generation 2 system development
- Enhanced ease of placement on patient
- Improved look and feel



Intellectual Property Status

A patent application has been filed.