

## The AW (Albert Wong) Frame-A Malaysian Made Stereotactic Biopsy Frame

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### Introduction:

This frame was made with the funding from the Ministry of Science, Technology and Innovation (MOSTI). The project produced a new stereotactic frame based on a linear algorithm. A stereo-calculation formula was also designed. Both the frame design and the calculation algorithm are original ideas from Dr A Wong. The AW frame was made locally in Kuching.

### Methods:

It is used by Dr BL Lau for his research thesis in the Master of Surgery (Neurosurgery) University Sains Malaysia, Neurosurgery training programme. He designed the phantom for the accuracy testing comparing AW frame versus the CRW (Cosman-Robert-Wells) frame. Dr Lau thesis is supervised by Prof Zamzuri B Idris.

Forty two (21 for AW and 21 for CRW) laboratory testing were performed in 2017 at the Sarawak General Hospital to compare the accuracies of both frames in a consecutive manner.

### Results:

The phantom testing results showed a comparable accuracy between the AW and CRW frames of 0.6 mm versus 1 mm respectively.

### Discussions:

The components have all being positively tested to withstand autoclaving. A practice run to set up for a biopsy in the operating room using the AW frame onto a volunteer (without pinning) was performed in June 2018. This showed the ease of use was very similar to that of CRW frame.

The Malaysian Medical Ethics Committee (MREC) in the Ministry of Health Malaysia has approved it for clinical research in stereotactic brain biopsy for tumour in Sarawak, on 18/7/2018. The 3 hospitals are the Sarawak General Hospital, Sibuloh Hospital and Miri Hospital.

### Conclusion:

AW stereotactic biopsy frame is made locally in Malaysia. Testing with phantom targets showed an accuracy of 0.6 mm. This is equivalent to the CRW frame accuracy of 1mm. MREC has approved it for clinical research in stereotactic brain biopsy.