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HYPACK and HYSWEEP Training for MTCC, our Maldivian Customer

by Ivan Izaak

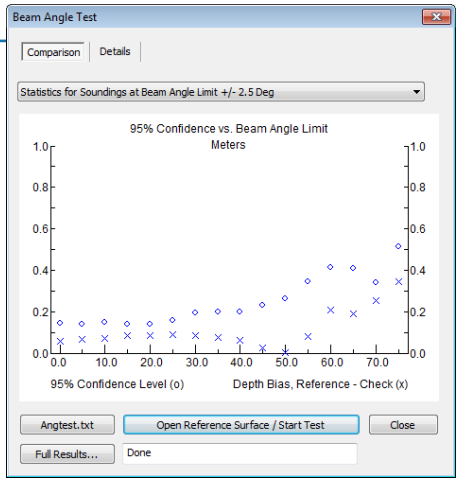
I had a chance to visit the Maldives last week for the 5-day HYPACK® and HYSWEEP® Training for MTCC (Maldives Transport and Contracting Company Plc). The training took place in Male, the capital city of the Maldives. MTCC has recently acquired the NORBIT MBES and VELODYNE LiDAR to perform the shallow water surveys. The primary focus was on the system calibration and performance testing procedures; the data processing; and final products including TIN Modeling, HYPLOT, and the ENC EDITOR.

All of the equipment was installed on a 15m speed boat that they hired for the training. It is a big disadvantage to mount a system just for a short period of time; the pole installation was a bit complicated since the boat is fiberglass, thus the mounting bracket did not seem quite stable.The MTCC plans to get a proper survey boat for the long-term, fixed installation.

FIGURE 1. *Mounting Bracket for the Norbit MBES*

All sensors were installed on the same vertical pole including the transducer, Applanix IMU and Velodyne laser. This gave us good and repeatable results for the Patch Test, but the Beam Angle Test results were a bit poor (Figure 2).

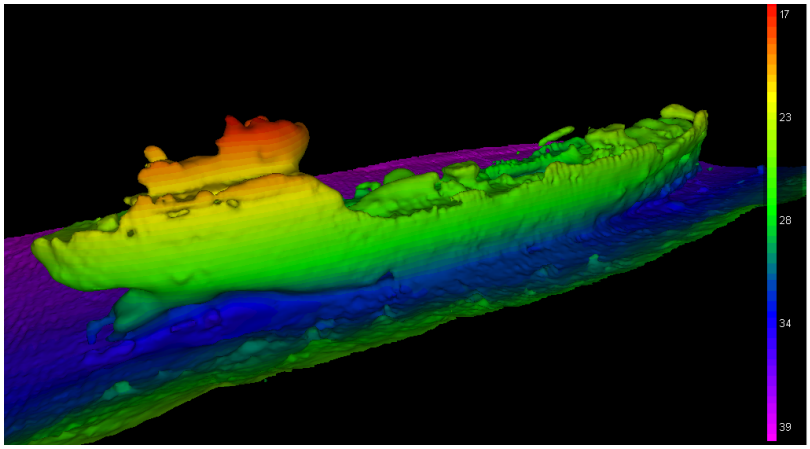
FIGURE 2. *Beam Angle Test Results*



The TVU was still fine for the IHO Special Order requirement – 0.45m at 50m depth range. I think the main reason for the high uncertainties and bias resulted from the bad mounting on the side of the boat. We often heard cracking sounds when underway, and once the bracket almost came off the board so we had to unmount and mount it again.

Nevertheless, we did a practical survey of the wreck:

FIGURE 3. *Wreck Survey with the NORBIT iWBMS Modeled in 3D MESH*



We also did a survey of a small area near Male city (Figure 4 and Figure 5)

FIGURE 4. *Bathymetric Chart of the Trial Survey Between Male and the Airport Islands.*

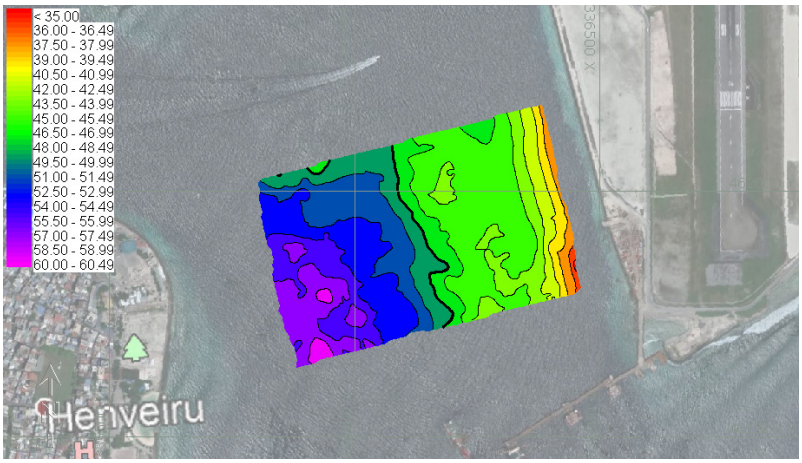
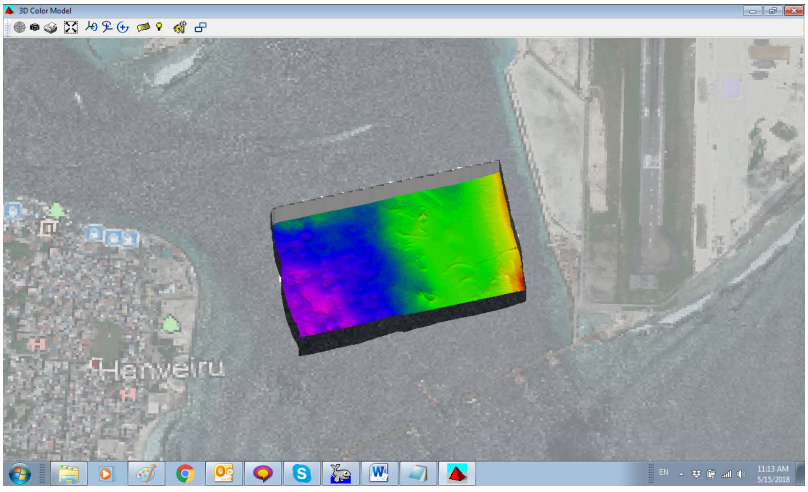


FIGURE 5. *3D Bathymetric Model of the Trial Survey*



The Velodyne LiDAR data was collected on the way to the harbor by Male city line. Figure 6 shows the Male city waterfront with the Airport Ferry Terminal Harbor in the foreground and the line of buildings in the background.

FIGURE 6. *Topographic Data Collected with the Velodyne LiDAR*

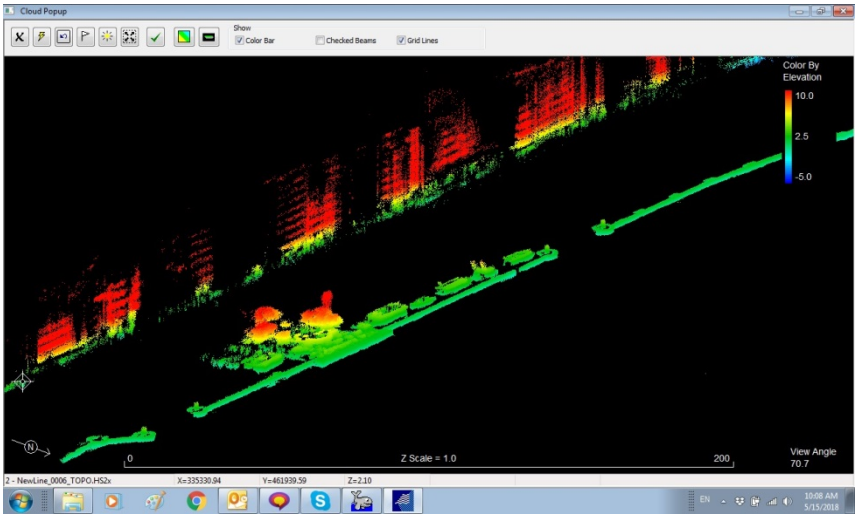


FIGURE 7. *Surveying Maldivian Style*

The HYPACK®/HYSWEEP® Certificates were given to the trainees (three MTCC engineers) after the course.

I am very thankful to the MTCC people who organized the event. Special thanks to Mr. Munah Ahmed who was in charge of the training.