

# North of England Evening Meeting:

## 3D Subsea Data Acquisitions with DeepOcean & Branch AGM



### Evening Meeting, Newcastle

Department of Marine Technology, Armstrong Building, Newcastle University

**Wednesday 21st November 2018**

*By Martin Bingham, Royal IHC Ltd*

SUT North of England's closing evening meeting of 2018 was held at Newcastle University. The event combined our AGM with a talk covering DeepOceans experience and developments in subsea 3D imaging.

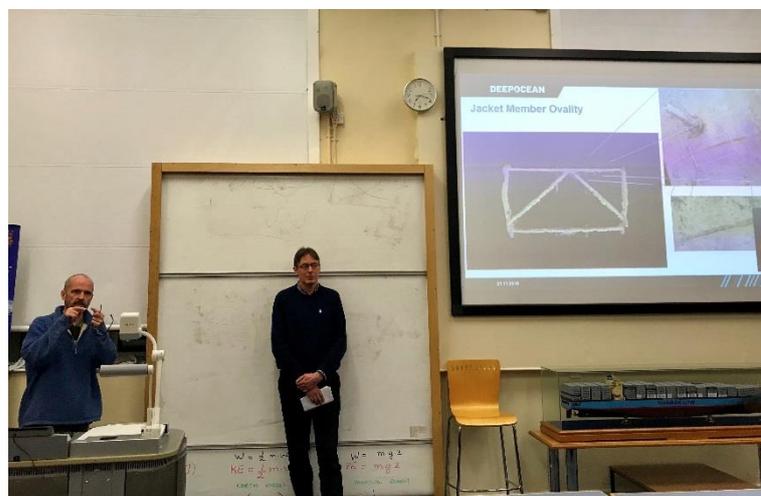
The evening was chaired by Andrew Pople of Wagtail Engineers, who started the evening by inviting North of England branch chairman Michael Williams, Managing Director of PDL Solutions, to provide a review of the branch activities over the last year.

Michael recounted how over the last year the branch has arranged 5 technical evening meetings and a tour of the Port of Blyth, presenting a range of technical topics to 330 attendees. The North of England SUT+ team have arranged a number of tours of local businesses and organised the annual student event, presenting the subsea industry as a potential future career through a mix of talks and activities to 75 students from local schools.

Michael was able to report that the branch had made a small surplus from these activities and thanked the local branch sponsors for their support during the year.

Andrew then introduced David Rattray from DeepOcean who had valiantly stepped in (or more accurately stepped off a plane) at the last minute to replace Mark Lawrence who was unable to be present.

David is a Senior Project Surveyor at DeepOcean with a background in Geography and Hydrographic Surveying and, as we were to find out, a deep knowledge of tonight's topic and photogrammetry in particular, as highlighted by his excellent answers to many probing questions at the end of the talk.



David set off by immersing us in some history of DeepOceans past experience in building 3D models through a variety of subsea sampling techniques. This started in 2014 with the use of acoustic scanning techniques to create a model of a seabed structure. He highlighted how many different scan locations were required to produce a relatively sparse model.

The company then moved onto using laser scanning techniques which gave better resolution than acoustic but required accurate positional information of the vehicle to produce accurate models. He showed a model from 2016 that was used to investigate PLET (Pipeline end terminations) movement and its impact on spool piece design. As impressive as this model was, there were more fascinating examples to come as he took us into the realms of Photogrammetry.

It was clear how rapid the changes in technique (acoustic, laser to photo) had developed and David highlighted how the large community of practitioners in other fields (surveying through to dentistry) was pushing the rapid development of photogrammetry techniques and tools.

In terms of DeepOceans path into photogrammetry David explained that the first instance was a by-product of a pipeline survey in 2017 when the company decided to see what sort of a model they could produce from the image data captured by the visual survey. This produced surprisingly good results and on showing these to the clients DeepOcean were asked to repeat this on a 500km pipeline survey.

David took us through an overview of the multistage process of producing these models and their potential uses. He also highlighted that no specialist non-standard equipment was required to be fitted to the ROV to capture the footage required. HD cameras were adequate (although 4k images were better for highly accurate work) with just a simple scale bar placed on the structure to help with the image processing and model scaling.

What followed was a dazzling show of projects and 3d models where sometimes it was hard to know if we were looking at ROV footage or flying around a computer model.

David's talk showed us just how much potential for crossover technologies there is within the subsea industry and how quickly change can be made if we keep our eyes and ears open to new ideas. Surely a lesson for us all, and in this case a very informative and enjoyable one.

As this was our AGM we were lucky enough to have Jacqui Adams SUT's ever supportive Events Manager and SUT Chairman Steve Hall attending. Andrew was able to call on Steve to say a few words about the wider SUT organisation in 2018.

Steve kept it brief (we knew there were pies waiting next door) and talked about how the SUT had seen expanding membership over the last year. He explained what a pleasure it was to visit the various branches and listen to such a wide variety of talks and topics and his excitement at some of the developments, certainly in instrumentation, that he had been presented with during such trips.

The audience then moved next door to continue talking about what we had just been presented. Suffice to say the pies, like the rest of the evening, were very enjoyable.