Netherlands Enterprise Agency

Webinar January 17, 2017
Metocean Measuring Campaign HKZ

Questions: from the audience
Answers given by: Arve Berg (Fugro), Hans Verhoef (ECN), Peter-Paul Lebbink (Fugro), Vegar Neshaug (Fugro), Jan Joost Schouten (Deltares), Ben de Sonneville (BLIX), Frank van Erp (Netherlands Enterprise Agency)

Question: What is the reason for two buoys so close to each other?
Answer: It is decided to increase redundancy in this measuring campaign. Therefore the Netherlands Enterprise Agency has decided to install two systems. The advice for the location of the two systems can be found at Recommended locations for floating LiDAR HKZ

Question: Is it correct that at offshorewind.rvo.nl and windopzee.net data up to August 2016 is available from the HKZ buoys?
Answer: That is correct. The months September, October and November 2016 will be issued in the beginning of February 2017. Please use the following link http://offshorewind.rvo.nl/windwaterzh.

Question: Where is the data available, also the 1 Hz data?
Answer: All the data for the Hollandse Kust (zuid) is available at http://offshorewind.rvo.nl/windwaterzh
If you want Borssele data please follow the following link http://offshorewind.rvo.nl/studiesborssele
Data and reports are uploaded on a monthly basis. For each month, you can download a zipfile with the raw data, a data report and a data validation report.

Question: Will the data from all different sources be combined in one dataset or will they all be stored separately?
Answer: All parameters are combined in one monthly dataset consisting of several files (raw data, a data report and a data validation report).

Question: Is it possible to say something about the quality or accuracy of the wind speed and turbulence intensity data obtained with the floating LIDAR at Borssele, compared to e.g. the fixed LIDAR on the IJmuiden Meetmast, or directly the meetmast data?
Answer: The accuracy and acceptance criteria for wind speed and direction are defined in the Offshore Wind Accelerator Roadmap. Turbulence intensity criteria are not defined and the validity of turbulence data measured by Lidar buoys is under debate by experts. However, DHI has found reasonable agreement for turbulence intensity in the metocean desk study (http://offshorewind.rvo.nl/file/view/48015482/metocean-study-report-dhi) with other sources.

Please also find an uncertainty assessment of the Metocean system at http://offshorewind.rvo.nl/file/view/45051462/uncertainty-assessment-ecofys.

Question: What is the duration of the HK campaign? Start/end date?
Answer: The start date for the measurement campaign HKZ is 5 June 2016. The campaign will run for 12 months. For those interested in the Offshore Wind Accelerator Roadmap for Floating Lidar please follow the following link: https://www.carbontrust.com/media/422195/ctc819-owa-roadmap-commercial-acceptance-floating-lidar-technologies.pdf

Question: Is this best practice methodology, Arve Berg is referring to in the webinar, documented somewhere?
Answer: The Carbon Trust roadmap can be found at;
https://www.carbontrust.com/media/422195/ctc819-owa-roadmap-commercial-acceptance-floating-lidar-technologies.pdf

Recommended practices from IEA can be found at: https://www.ieawindtask32.org/wp-content/uploads/2016/04/IEA-StateOfArtFloatingLIDAR-2Feb2016_v1.0.pdf

Question: Is the maximum measured Hs a 3-hours sea state?
Answer: No. The Hs in the dataset is based on 1024 samples at 1 Hz and is determined every 10 minutes.

Question: We often see that ADCP data from downward looking ADCP's on buoys contains noise. Have you done any validation of the measured currents?
Answer: With reference to the ADCP, to our knowledge there is no roadmap or guideline available on the accuracy of current measurements from floating measurement equipment. It is known that some noise is introduced when the direction of the current shifts. This shift usually occurs during the change in tide. The current is then close to zero. In the coming validation reports, Deltares will conduct an intercomparison of the two buoys as well as a comparison with validated numerical modelling. It is noted that this is only depth averaged, but the results show good agreement.

Question: Currently we only see the Borssele data (LOT 2) until 7-July-2016 on the website. When will the more recent data become available?
Answer: Lot 2 finished after reaching its target. The report which shows that the targets were met can be found at offshorewind.rvo.nl: http://offshorewind.rvo.nl/file/view/44561812/advice-on-metocean-campaign-bwfz-ecofys

Question: What was the main challenge that you have experienced related to the LIDAR buoys during the campaign?
Answer: There is not a simple answer for this. But for the Borssele campaign the issue with the corroded Lidar unit on/off switch, combined with a delayed backup system (summer pre-validation filling wind class bins), and the operational challenge of weather windows for performing work in the winter season, - combined posed challenges. For Hollandse Kust, we have had less technical issues, but depend on good planning for utilizing weather for planned servicing - this is in general a challenge with offshore systems, but something Fugro is used to. The service before winter went very smoothly.

Question: HKZ buoys: is there a document going to be published logging the periods the buoy(s) was not available due to failure or communication?
Answer: If there is data unavailable due to failure for a given month, it will be described in the data report for that month and flagged as NaN in the dataset.

Question: What was the cause of the buoy drift?
Answer: The exact cause is not known. A shackle failed for an unknown reason and caused the buoy to drift beginning of December 2016 for a 35h duration before it was recovered.

Question: Are buoys deployed in conjunction with navigational guard buoys?
Answer: The buoys are not deployed with additional guard buoys. The systems in place are reflective radar tapes and AIS on the buoys to warn trespassers.

Question: How much does a system like this cost?
Answer: Please contact Vegar Neshaug (Fugro) directly for this question, v.neshaug@fugro.com.

Question: Which are the best persons to contact when I would like to discuss the quality of the data for Borssele LIDARs?
Answer: The best persons are probably Jan Joost Schouten of Deltares (HKZ campaign) and Hans Verhoef from ECN (Borssele and HKZ campaign). Jan Joost and Hans are involved in the validation process of the campaigns. You can also contact Anthony Crockford (Ecofys) or Frank van Erp (RVO) regarding this matter.