C-CORE 1.5 Wind observations

Wind observations

Challenge

Challenge ID	C-CORE_OFF1.5
Title	**Wind observations**
Challenge originator:	
General Description	
What data/products do you use?	Real-time and near real-time surface-based observations of 10m wind speeds from ships and buoys are available from many sources including NOAA (NWSTG), NOAA (MADIS), NOAA (NDBC), UCAR, and numerous other data distribution centers. Operational 0-hour global and/or regional model analyses of 10m wind speeds are available via many global agencies such as NOAA, ECMWF, CMC, JMA, UKMET, and others.
When do you use this kind of dataset?	These data are used to monitor all day-to-day operations when drilling, surveying etc. To assess current conditions, nowcasting, assess the quality forecast models and plan ahead. Find windows of operability where thresholds apply etc. The aim is to manage risks related to winds, safeguarding lives, protecting assets, and conducting operations. Wind data are particularly important for work at height, during helicopter operations etc.
What are your actual limitations and do you have a work around?	There are spatial and temporal limitations of real-time and near real-time surface-based and remotely-sensed 10m wind observations. The observation heights and averaging periods of wind observations are variables that must be reconciled across all record sets prior to analyses. Which means: Data are often not on location. Sensors are too high, shielded, measurements averaged, in wrong formats etc. EO observations are have low resolution in time and space, are difficult to access and read, in difficult formats. Quality is often an issue and data are mostly used to get an overview more than treated as an accurate source of observations. Hence ground measurements are used instead. Updates at least hourly, spatial resolution min. 4 km, formats standardised, quality improved and documented.
Needs and expectations on EO data	EO is used for this today, but resolution, update frequency and quality is not always sufficient. Mostly used as assimilation into models. More severe situations (se hurricanes, squalls etc.) can be detected using these data real time, however the use for point forecasting is limited. Need: Observed time series of high quality (ground-truthed) and with high spatial resolution, especially for coastal areas and emerging O&G areas where demand for such data has been small or non-existent. Specific need: Additional surface-based and remotely sensed observations of 10m wind speeds (with 1-min, 10-min, 1-hour, and 3-second averaging periods).

Challenge classification	
Pre license	2
Exp.	4
Dev.	3
Prod.	4
Decom.	3
Geographic context/ restrictions	Applies to all six Areas of interest, except for the cautionary notes about tropical cyclones, which only applies to South China Sea, West of Ireland, and Myanmar. Seasonality: Applies to all seasons.
Topographic classification / Offshore classification	Ocean
Activity impacted /concerned	
Technology Urgency	Short term (2-5 years)
Information requirements	
Update frequency	Real-time and near real-time. Hourly or 10 min. Available today: Depends on source, some sources only 6 or 12 hr, most 3 hourly, few less than 1 hr.
Temporal resolution	Real-time and near real-time. Hourly or 10 min. Available: Surface-based observation: sub-hourly to less frequently Remotely-sensed satellite observation: sub-daily to less frequently
Spatial resolution	Observation on location or around 4 km Available: Surface-based observation: varies based on the locations of the ship/buoy observations Remotely-sensed satellite observation: varies based on platform scanning swath size and other parameters
Data quality	The selected sources in this document are selected because they are known to have sufficient quality (after some work arounds and adaptations). In general separate indepth verification studies has to be made for each source planned to be used for analysis, and the analysis has to be repeated for each geographical area (since sources might be of sufficient quality in one area but not another). In general, ground observations and modelled sourced are perceived to be of better quality/higher accuracy than EO.
Data Coverage and extent	Regional and as localised as possible.
Example format	Surface-bases observation: text, CSV and/or netCDF Remotely-sensed satellite observation: text
Timeliness	Real-time or near real-time. Forecasts are normally issued 2 to 4 times per day, but continuous monitoring of conditions is required.

Existing standards	Multiple paragraphs in DNV-RP-C205, OTO 2001/010, ISO-19001-1, NORSOK-N-003e2, and NORSOK-N-006u1 contain extensive references to the standard measures of the means of winds.

Relevant products

Content by label

There is no content with the specified labels