C-CORE 1.9 Historical Tropical Storm/Tropical Cyclone probability and tracks

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Challenge

Challenge ID	C-CORE_OFF1.9
Title	Historical Tropical Storm/Tropical Cyclone probability and tracks
Challenge originator:	
General Description	
What data/products do you use?	Historical observations of tropical cyclone positions, intensities, sizes and other quantitative measures are readily available in six hour intervals (and sometimes more frequently) from multiple global agencies via the best track archives that comprise IBTrACS.
When do you use this kind of dataset?	Historical observations of tropical cyclones data are used to great extent by the O&G industry in tropical storm prone areas for all phases throughout the O&G cycle, except strictly operational tasks. These data are extremely important to assess risk of operations in these areas, frequency of occurrence, most likely track etc. Also, many other data sources do not catch the extremes in the area without these data added to the time series for the point of interest, since data often are averaged and conditions often are mostly benign. The data set is used to assist in qualifying and quantifying the means and extremes of tropical cyclone in the area of interest. The data set is used to assess operability in the area, to reduce risk when designing structures and operations, to design strategies to avoid severe conditions.
What are your actual limitations and do you have a work around?	The averaging periods of the reported maximum wind speeds in tropical cyclones varies among global agencies and must be reconciled across all record sets prior to analyses.
Needs and expectations on EO data	EO is used for this today in combination with modeled data. Need to know the exact position, strength and accurate extent of the storms and wind speeds is important to assess impact of these storms and assess the future risks. Long time series of 10m wind speeds and directions, wave spectra data (e.g., heights, directions, and periods of wind waves and swell waves) and ocean current profiles.
Challenge classification	
Pre license	2
Exp.	4
Dev.	3
Prod.	4
Decom.	3

Geographic context/ restrictions	Applies to South China Sea, West of Ireland, and Myanmar. Seasonality: South China Sea -- Applies to all seasons. West of Ireland -- Applies primarily to September. Myanmar. Bimodal. Applies primarily to April/May and October/November.
Topographic classification / Offshore classification	Ocean
Activity impacted /concerned	
Technology Urgency	Short term (2-5 years)
Information requirements	
Update frequency	annually
Temporal resolution	1-3 hourly Available: Generally 6-hourly, but sometimes more or less frequently
Spatial resolution	10-4 km Available: Generally 0.1° for tropical cyclone center locations
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).
Data Coverage and extent	Regional or along track.
Example format	netCDF and CSV
Timeliness	Normally needed urgently, possibly before assessing, planning, or exploring a new field. Hence the data source used for analysis needs to be frequently updated to avoid unnecessary waiting. Daily, weekly or monthly updates of data sets are sufficient, depending on the analysis required.
Existing standards	DNV-RP-C205, ISO-19001-1, and DNV-OS-J001 contain cautionary notes regarding the treatment of winds and waves in areas that experience tropical cyclones, such as South China Sea, West of Ireland, and Myanmar.

Relevant products

Content by label

There is no content with the specified labels