OTM-055: Obtaining detailed terrain mapping for DEM construction

Obtaining detailed terrain mapping for DEM construction

Challenge

	Challenge ID	OTM:055				
1	Title	Obtaining detailed terrain mapping for DEM construction				
2	Theme ID	ON 2.4: Surface Geology Mapping - Terrain evaluation and Geo-morphology characterization				
3	Originator of Challenge	Onshore: OTM				
4	Challenge Reviewer / initiator	Ramani, Statoil, BP, Shell, Exxon, Tullow, Petronas, Chevron				
	General description	Overview of Challenge				
5	What is the nature of the challenge? (What is not adequately addressed at present?)	Having an accurate and reliable way to map terrain would lessen the need to deploy ground staff and allow their time on the ground to be more focussed. It would also allow us to evaluate multiple sites with consideration to logistical issues. Digital elevation models (DEMs) are currently constructed by overlapping imagery with e.g. LiDAR , terrain and geological information. It would be advantageous if we could do this more efficiently (cost/ time). They can be used to develop a risk assessment map.				
6	Thematic information requirements	1. Obtain detailed topographic information, 2. Obtain detailed terrain characterisation, 14. Obtain detailed imagery of the surface,				
7	Nature of the challenge - What effect does this challenge have on operations?	Deploying ground staff is costly and carries an associated safety risk to operatives. The requirement to deploy ground staff will not and should never be completely removed but if we could deploy them with a thorough and accurate understanding of the are				
8	What do you currently do to address this challenge?/ How is this challenge conventionally addressed?	Deploy ground staff				
9	What kind of solution do you envisage could address this challenge?	High resolution DEM that is affordable would be very valuable				
10	What is your view on the capability of technology to meet this need? – are you currently using EO tech? If not, why not?					
	Challenge classification					
11	Lifecycle stage	Pre license	Exp.	Dev.	Prod.	Decom.
	Score from impact quantification [1]	3	4	3	1	3
12	Climate classification	NOT CLIMATE SPECIFIC				
13	Geographic context/restrictions	Generic onshore (Unspecified)				
14	Topographic classification / Offshore classification	Generic onshore (Unspecified)				
15	Seasonal variations	Any season				
16	Impact Area	Operational cost reduction, environment, strategic decision enabler				
17	Technology Urgency (How quickly does the user need the solution)	Immediately (0-2 years)				
	Information requirements					
18	Update frequency	Snap shot requirement				
19	Data Currently used					
20	Spatial resolution					
21	Thematic accuracy	Vertical DEM accuracy is critical - down to a few cm Horizontal accuracy <1m				
22	Example formats					
23	Timeliness	Reference data - timeliness not important				
24	Geographic Extent	reservoir footprint				
25	Existing standards					

[1] Impact quantification scores: *4 – Critical/ enabling; 3 – Significant/ competitive advantage; 2 – Important but non-essential; 1 – Nice to have; 0 – No impact, need satisfied with existing technology*

Relevant products

Content by label

There is no content with the specified labels