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 gr operatives. T be completely accurate under	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 groun	d staff				
9	What kind of solution do you envisage could address this challenge?	High resolution	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	Challenge classification Lifecycle stage	Pre license	Exp.	Dev.	Prod.	Decom.	
11	Challenge classification Lifecycle stage Score from impact quantification [1]	Pre license 3	Exp. 4	Dev.	Prod. 1	Decom. 3	
11	Challenge classification Lifecycle stage Score from impact quantification [1]	Pre license 3	Exp. 4	Dev. 3	Prod. 1	Decom. 3	
11	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification	Pre license 3 NOT CLIMA	Exp. 4 TE SPECIFIC	Dev. 3	Prod. 1	Decom. 3	
11 12 13	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions	Pre license 3 NOT CLIMA Generic onsho	Exp. 4 TE SPECIFIC ore (Unspecifi	Dev. 3 ed)	Prod. 1	Decom. 3	
11 12 13 14	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification	Pre license 3 NOT CLIMA Generic onsho Generic onsho	Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi	Dev. 3 c ed) ed)	Prod. 1	Decom. 3	
11 12 13 14 15	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations	Pre license 3 NOT CLIMA Generic onsho Generic onsho Any season	Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi	Dev. 3 c ed) ed)	Prod. 1	Decom. 3	
11 12 13 14 15 16	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations Impact Area	Pre license 3 NOT CLIMA Generic onsho Generic onsho Any season Operational co	Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi orst reduction,	Dev. 3 c ed) ed) environment, s	Prod. 1	Decom. 3	
11 12 13 14 15 16 17	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations Impact Area Technology Urgency	Pre license 3 NOT CLIMA Generic onsho Generic onsho Any season Operational cc Immediately (Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi ost reduction, (0-2 years)	Dev. 3 ed) ed) environment, s	Prod. 1	Decom. 3	
11 12 13 14 15 16 17	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations Impact Area Technology Urgency (How quickly does the user need the solution)	Pre license 3 NOT CLIMA Generic onsho Generic onsho Any season Operational co Immediately (Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi ost reduction, 0-2 years)	Dev. 3 ed) ed) environment, s	Prod. 1	Decom. 3	
11 12 13 14 15 16 17	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations Impact Area Technology Urgency (How quickly does the user need the solution) Information requirements	Pre license 3 NOT CLIMA Generic onsho Generic onsho Any season Operational co Immediately (Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi ost reduction, 0-2 years)	Dev. 3 ed) ed) environment, s	Prod. 1	Decom. 3	
11 12 13 14 15 16 17 18	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations Impact Area Technology Urgency (How quickly does the user need the solution) Information requirements Update frequency Decedition	Pre license 3 NOT CLIMA Generic onsho Generic onsho Any season Operational co Immediately (Snap shot requ	Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi ost reduction, (0-2 years) uirement	Dev. 3 ed) ed) environment, s	Prod. 1	Decom. 3	
11 12 13 14 15 16 17 18 19 22	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations Impact Area Technology Urgency (How quickly does the user need the solution) Information requirements Update frequency Data Currently used	Pre license 3 NOT CLIMA Generic onsho Generic onsho Any season Operational co Immediately (Snap shot requ	Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi ost reduction, (0-2 years) uirement	Dev. 3 ced) ed) environment, s	Prod. 1	Decom. 3	
11 12 13 14 15 16 17 18 19 20 20	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations Impact Area Technology Urgency (How quickly does the user need the solution) Information requirements Update frequency Data Currently used Spatial resolution	Pre license 3 NOT CLIMA Generic onshe Generic onshe Any season Operational co Immediately (Snap shot requ	Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi ost reduction, 0-2 years) uirement	Dev. 3 ed) ed) environment, s	Prod. 1	Decom. 3	
11 12 13 14 15 16 17 18 19 20 21	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations Impact Area Technology Urgency (How quickly does the user need the solution) Information requirements Update frequency Data Currently used Spatial resolution Thematic accuracy	Pre license 3 NOT CLIMA Generic onsho Generic onsho Any season Operational co Immediately (Snap shot requ Vertical DEM	Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi ost reduction, 0-2 years) uirement	Dev. 3 ed) ed) environment, s	Prod. 1 strategic decision	Decom. 3	
11 12 13 14 15 16 17 18 19 20 21 22	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations Impact Area Technology Urgency (How quickly does the user need the solution) Information requirements Update frequency Data Currently used Spatial resolution Thematic accuracy	Pre license 3 NOT CLIMA Generic onsho Generic onsho Any season Operational co Immediately (Snap shot requ Vertical DEM Horizontal aco	Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi ost reduction, 0-2 years) uirement 1 accuracy is c curacy <1m	Dev. 3 ed) ed) environment, s	Prod. 1 strategic decision	Decom. 3	
11 12 13 14 15 16 17 18 19 20 21 22 22 22 22	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations Impact Area Technology Urgency (How quickly does the user need the solution) Information requirements Update frequency Data Currently used Spatial resolution Thematic accuracy Example formats Timpalinges	Pre license 3 NOT CLIMA Generic onsho Any season Operational cc Immediately (Snap shot requ Vertical DEM Horizontal acc	Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi ost reduction, 0-2 years) uirement I accuracy is c curacy <1m	Dev. 3 ed) ed) environment, s ritical - down t	Prod. 1 strategic decision	Decom. 3	
11 12 13 14 15 16 17 18 19 20 21 22 23 24	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations Impact Area Technology Urgency (How quickly does the user need the solution) Information requirements Update frequency Data Currently used Spatial resolution Thematic accuracy Example formats Timeliness Geographic Fixtent	Pre license 3 NOT CLIMA Generic onsho Any season Operational co Immediately (Snap shot requ Vertical DEM Horizontal aco Reference dat	Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi ost reduction, (0-2 years) uirement (accuracy is c curacy <1m a - timeliness	Dev. 3 ed) ed) environment, s ritical - down t	Prod. 1	Decom. 3	
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	Challenge classification Lifecycle stage Score from impact quantification [1] Climate classification Geographic context/restrictions Topographic classification / Offshore classification Seasonal variations Impact Area Technology Urgency (How quickly does the user need the solution) Information requirements Update frequency Data Currently used Spatial resolution Thematic accuracy Example formats Timeliness Geographic Extent Existing standards	Pre license 3 NOT CLIMA Generic onsho Any season Operational co Immediately (Snap shot requ Vertical DEM Horizontal aco Reference dat reservoir foot	Exp. 4 TE SPECIFIC ore (Unspecifi ore (Unspecifi ost reduction, (0-2 years) uirement (accuracy is c curacy <1m a - timeliness print	Dev. 3 ed) ed) environment, s ritical - down t not important	Prod. 1	Decom. 3	

[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