

OTM-060: Forecasting landslide locations

Forecasting landslide locations

Challenge

Challenge ID	OTM:060					
1 Title	Forecasting landslide locations					
2 Theme ID	ON 5.3: Logistics planning and operations - Facility siting, pipeline routing and roads development					
3 Originator of Challenge	Onshore: OTM					
4 Challenge Reviewer / initiator	BP, Statoil, Exxon					
General description						
Overview of Challenge						
5 What is the nature of the challenge? (What is not adequately addressed at present?)	Predicting the location of geohazards is an important consideration for pipeline routing and facility siting and this information is particularly critical in the planning phase when we have had little chance to install on-the-ground measurement devices that can give us high frequency and detailed data.					
6 Thematic information requirements	1. Obtain detailed topographic information, 11. Determine lithology, mineralogy and structural properties of the near surface, 13. Monitor ground movement,					
7 Nature of the challenge - What effect does this challenge have on operations?	If geohazards such as landslides or landslips are present and these threats are identified, appropriate mitigation can be arranged. This may be via re-routing or re-enforcement.					
8 What do you currently do to address this challenge?/ How is this challenge conventionally addressed?	Terrain mapping, if it exists					
9 What kind of solution do you envisage could address this challenge?	Satellite-derived information, capable of resolutions of a few centimetres or better, offers detailed monitoring of changes in the surface of the ground. Satellites can, therefore, assist in minimising and mitigating damage caused by landslides.					
10 What is your view on the capability of technology to meet this need? – are you currently using EO tech? If not, why not?	EO could be a useful complimentary technology					
Challenge classification						
11 Lifecycle stage	Pre license	Exp.	Dev.	Prod.	Decom.	
Score from impact quantification [1]	3	2	4	0	0	
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	Health and Safety, operational cost reduction, strategic decision maker					
17 Technology Urgency (How quickly does the user need the solution)	Immediately (0-2 years)					
Information requirements						
18 Update frequency	Varies, typically once per month over a period of years					
19 Data Currently used	Satellite imagery or aerial photography					
20 Spatial resolution	Satellite imagery or aerial photography					
21 Thematic accuracy	Varies					
22 Example formats						
23 Timeliness	Within a month					
24 Geographic Extent	District area					
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

- [Product Sheet: Reservoir Optimization](#)
- [Product Sheet: Slope stability](#)
- [Product Sheet: Surface Deformation](#)
- [Product Sheet: Surface Deformation Monitoring](#)