

OTM-010: Monitoring ground movement along pipelines

Monitoring ground movement along pipelines

Challenge

	Challenge ID	OTM:010				
1	Title	Monitoring ground movement along pipelines				
2	Theme ID	ON 3.2: Subsidence monitoring - Infrastructure monitoring				
3	Originator of Challenge	Onshore: OTM				
4	Challenge Reviewer / initiator	BP, PEMEX, Sasol, Exxon				
General description		Overview of Challenge				
5	What is the nature of the challenge? (What is not adequately addressed at present?)	Pipeline route planning needs to accommodate ground subsidence / movement considerations. Two phases: historical and ongoing. Ongoing: Ground movement can damage pipelines / threaten integrity of infrastructure. If ground movement likely to cause damage can be identified early, then mitigation can potentially both reduce impact of damage and potentially reduce costs of repair.				
6	Thematic information requirements	1. Obtain detailed topographic information, 9. Obtain detailed imagery of assets, 13. Monitor ground movement,				
7	Nature of the challenge - What effect does this challenge have on operations?	Monitoring and applying suitable intervention measures.				
8	What do you currently do to address this challenge?/ How is this challenge conventionally addressed?	Currently, pipelines are monitored by maintenance crews. However, this is a slow process, and the amount of pipeline that can be covered in a set period of time can be limited. A remote way of monitoring would be very useful and much more efficient.				
9	What kind of solution do you envisage could address this challenge?	Ongoing data to highlight ground movement which could lead to failure events				
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]	0	0	2	4	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	Infrastructure planning				
17	Technology Urgency (How quickly does the user need the solution)	Immediately (0-2 years)				
Information requirements						
18	Update frequency	Monthly - annually				
19	Data Currently used	Gas leakage data, after failure				
20	Spatial resolution	Gas leakage data, after failure				
21	Thematic accuracy					
22	Example formats	GIS Shape file				
23	Timeliness	Within a month				
24	Geographic Extent	Development area only				
25	Existing standards	No industry standards. TRE have their own internal INSAR 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