

# OTM-011: Surface infrastructure movement relative to sub-surface

## Surface infrastructure movement relative to sub-surface

### Challenge

	Challenge ID	OTM:011				
1	Title	Surface infrastructure movement relative to sub-surface				
2	Theme ID	ON 3.2: Subsidence monitoring - Infrastructure monitoring				
3	Originator of Challenge	Onshore: OTM				
4	Challenge Reviewer / initiator	BP, PEMEX, Statoil, Exxon				
General description		Overview of Challenge				
5	What is the nature of the challenge? (What is not adequately addressed at present?)	Infrastructure that has moved vertically or horizontally relative to the subsurface can lead to damage causing events. For example a well-head that moves relative to the subsurface could lead to dangerous damage or ultimate failure of the production string or the completion.				
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?	Lost production, avoidable interventions, environmental damage				
8	What do you currently do to address this challenge?/ How is this challenge conventionally addressed?	Physical markers at the site are used to track subsidence. However, these only track movement in specific areas, and if the wider site has moved then this will not be picked up. Furthermore, the site needs to be visited to see this activity - it can't b				
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?	Relative infrastructure movement on the surface can give inferred warning signals to catastrophic potential failure sub-surface.				
Challenge classification						
11	Lifecycle stage	Pre license	Exp.	Dev.	Prod.	Decom.
	Score from impact quantification [1]	0	1	2	3	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	Health and Safety and environmental impacts				
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	GPS?				
20	Spatial resolution	GPS?				
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