

OTM-005: Monitoring natural fault movement

Monitoring natural fault movement

Challenges

Challenge ID	OTM:005				
1 Title	Monitoring natural fault movement				
2 Theme ID	ON 3.1: Subsidence monitoring - Land motion relating to fault lines or other causes				
3 Originator of Challenge	Onshore: OTM				
4 Challenge Reviewer / initiator	Statoil, PetroSA, Petronas				
General description		Overview of Challenge			
5 What is the nature of the challenge? (What is not adequately addressed at present?)	Natural movement of faults can alter the validity of geomechanical models and reservoir management plans. These need to be well understood to ensure that reservoir management is appropriate to the changing reservoir.				
6 Thematic information requirements	1. Obtain detailed topographic information, movement,		13. Monitor ground		
7 Nature of the challenge - What effect does this challenge have on operations?	Production can decrease if fault line exposes alternative HC draw-down channels. Reservoir management strategy may need to adapt to ensure injection resources aren't wasted				
8 What do you currently do to address this challenge?/ How is this challenge conventionally addressed?	Seismics can see where faults are, but couldn't infer whether they had moved by a few mm's.				
9 What kind of solution do you envisage could address this challenge?	Ground movement satellite imagery could indicate where movement has occurred over known fault lines				
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	0	2	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	Increased production				
17 Technology Urgency (How quickly does the user need the solution)	Immediately (0-2 years)				
Information requirements					
18 Update frequency	daily / weekly /annually (application dependent)				
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	Reservoir footprint				
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 themes

Content by label



There is no content with the specified labels

