# OTM-001: Identifying effect of fault reactivation

## Identifying effect of fault reactivation

## Challenge

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|---|---|---|---|---|---|---|
| | Challenge ID | OTM:001 | | | | |
| 1 | Title | Identifying effect of fault reactivation | | | | |
| 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 | PEMEX, Statoil, Sasol | | | | |
| | General description | Overview of Challenge | | | | |
| 5 | What is the nature of the challenge? (What is not adequately addressed at present?) | Natural fault lines - Fault line reactivation can alter the draw down efficiency of reservoirs. This reactivation could be a help, or a hindrance. As a hindrance, for example, the hydrocarbons can escape along a newly exposed fault plane, the fault plane can result in the reservoir losing pressure or communication can be lost between reservoir compartments. Geologists need data to assess the extent of fault reactivation to better manage reservoirs, in hand with other data (such as seismic maps) | | | | |
| 6 | Thematic information requirements | 1. Obtain detailed topographic information, 13. Monitor ground movement, | | | | |
| 7 | Nature of the challenge - What effect does this challenge have on operations? | Reservoir management needs to be tailored to account for fault re-activation. Effects can be losses in production and wasted costs on pressure maintenance from injection wells. | | | | |
| 8 | What do you currently do to address this challenge?/ How is this challenge conventionally addressed? | Micro-seismics can indicate where fault lines lie, but do not give detailed information on fault movement | | | | |
| 9 | What kind of solution do you envisage could address this challenge? | Ground movement satellite imagery could indicate fault reactivation over known and unknown 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 | 3 | 2 |
| 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 | Monthly - annually | | | | |
| 19 | Data Currently used | seismics / micro-seismics complimentary data | | | | |
| 20 | Spatial resolution | seismics / micro-seismics complimentary data | | | | |
| 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 products

**Content by label**

There is no content with the specified labels