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|  | Challenge ID | OTM:036 |
| 1 | Title | Geohazard exposure analysis |
| 2 | Theme ID | ON 4.3: Environmental monitoring - Natural HazardRisk Analysis |
| 3 | Originator of Challenge | Onshore: OTM |
| 4 | Challenge Reviewer / initiator  | PEMEX, BP, Statoil, PetroSA, Sasol, Exxon |
|  | General description | Overview of Challenge |
| 5 | What is the nature of the challenge? (What is not adequately addressed at present?) | It can be challenging to obtain an adequate exposure analysis (highlighting which hazards endanger the site location), especially in remote areas. This situation is worsened where there has previously been little or no monitoring in the area. The identification of geohazards (landslips, seismic movements, etc.) is one element of this. |
| 6 | Thematic information requirements | 1. Obtain detailed topographic information, 2. Obtain detailed terrain characterisation, 3. Obtain detailed vegetation 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? | Being aware of this information i.e. what are the size and frequency of the different hazards? allows us to quantify the potential damage extent. Subsequently, this allows us to consider appropriate actions to mitigate these risks and ensure the safety |
| 8 | What do you currently do to address this challenge?/ How is this challenge conventionally addressed? | Existing mapping and recorded data, but this rarely is sufficient - it usually needs to be generated fresh by on the ground surveys. |
| 9 | What kind of solution do you envisage could address this challenge? | Very high to medium resolution exposure analysis based on EO data (impact of floods, impact of landslides, etc.)Resolution depends on covered area and size of analysis objective |
| 10 | What is your view on the capability of technology to meet this need? – are you currently using EO tech? If not, why not? | medium resolution exposure analysis (impact of floods, impact of landslides, etc.) |
|  | Challenge classification |  |
| 11 | Lifecycle stage | Pre license  | Exp. | Dev. | Prod. | Decom. |
| Score from impact quantification [[1]](#footnote-1) | 4 | 0 | 0 | 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 | operational cost reduction |
| 17 | Technology Urgency(How quickly does the user need the solution) | Immediately (0-2 years) |
|  | Information requirements |  |
| 18 | Update frequency | depending on sensor and application |
| 19 | Data Currently used  |  |
| 20 | Spatial resolution |  |
| 21 | Thematic accuracy | 80-90% |
| 22 | Example formats | Standardized geo-spatial formats (e.g. shapefile, geotiff or KML) |
| 23 | Timeliness | Reference data - timeliness not important |
| 24 | Geographic Extent |  |
| 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* [↑](#footnote-ref-1)