

OTM-022: Detecting hydrocarbon leaks

Detecting hydrocarbon leaks

Challenge

	Challenge ID	OTM:022				
1	Title	Detecting hydrocarbon leaks				
2	Theme ID	ON 4.2: Environmental monitoring - Continuous monitoring of changes throughout the lifecycle				
3	Originator of Challenge	Onshore: OTM				
4	Challenge Reviewer / initiator	PEMEX, PetroSA, Shell, Exxon, Chevron				
General description		Overview of Challenge				
5	What is the nature of the challenge? (What is not adequately addressed at present?)	Locating hydrocarbon leaks occurring from our operations can be challenging, especially if the leak source is under ground or from a long pipeline.				
6	Thematic information requirements	2. Obtain detailed terrain characterisation, 3. Obtain detailed vegetation information, 6. Identify inland water bodies and determine water quality, 7. Determine air quality, 11. Determine lithology, mineralogy and structural properties of the ne				
7	Nature of the challenge - What effect does this challenge have on operations?	Uncontrolled loss of hydrocarbon is damaging to the environment and carries a safety risk. If we can accurately identify where these leaks are occurring, we can quickly act to minimise and amend any damage caused.				
8	What do you currently do to address this challenge?/ How is this challenge conventionally addressed?	Leaks are identified from anomalies in production or transport volumes. Locating them can be very challenging, if there is no visible signature.				
9	What kind of solution do you envisage could address this challenge?	Hydrocarbons seeping from micro fractures typically result in surface anomalies manifested as changes in soil brightness and vegetation health. Certain portions of electro magnetic spectrum in the visible and infrared regions can be used to effectively id				
10	What is your view on the capability of technology to meet this need? – are you currently using EO tech? If not, why not?					
Challenge classification						
11	Lifecycle stage	Pre license	Exp.	Dev.	Prod.	Decom.
	Score from impact quantification [1]	0	0	1	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	Environmental and H&S				
17	Technology Urgency (How quickly does the user need the solution)	Immediately (0-2 years)				
Information requirements						
18	Update frequency	monthly				
19	Data Currently used					
20	Spatial resolution					
21	Thematic accuracy					
22	Example formats					
23	Timeliness	Within hours				
24	Geographic Extent	reservoir footprint				
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

Relevant products

Content by label

There is no content with the specified labels