Hatfield-3302: Assessing ground deformation to support enhanced recovery operations

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Challenge

Challenge ID:	HCP-3302	Originator:	Onshore: Hatfield
Title:	**Assessing ground deformation to support enhanced recovery operations.**		
Theme:	ON 3.3: Subsidence monitoring - Reservoir management		
Consortium Lead:	C-CORE	Interviewed Company:	C-CORE
Geography:	ON.REG.00 - Generic onshore		

Challenge Description	
What is not possible / not adequately addressed at present?	
In enhanced oil recovery operations, there is a need to understand the behaviour of the reservoir when there are injection wells and extraction wells. Long term monitoring is required over large areas and integrated with processes such as injection / extraction cycles.	
What effect does this challenge have on operations?	
Costs of operations.	
Thematic information requirements:	Surface motion (horizontal and vertical) Distribution and status of infrastructure Topographic information
What do you currently do to address this challenge? How is this challenge conventionally addressed?	
Limited InSAR. Reservoir models. Drill/well logs. Tilt meters, which are expensive.	
What kind of solutions do you envisage could address this challenge?	
InSAR, but timeliness is an issue – how quickly can get the product from an operational perspective to support sub-surface operations. Long term monitoring is required over large areas. Focused monitoring for short term processes such as injection. Looki	
What is your view on the capability of technology to meet this need? Are you currently using EO tech? If not, why not?	
InSAR can be a challenge at X- and C-band and L-band would help to address issues. Quality of correlation and product accuracy. Quantitative assessment of coherence of a product.	

Challenge Classification			
Impact on Lifecycle (0=none, 4=high):		Climate / Topography / Urgency:	
Pre-license:	0	Climate class:	Generic climate
Exploration:	1	Topographic class:	Not specific
Development:	1	Seasonal variations:	Any season
Production:	4	Impact area:	Environmental, Health and Safety
Decommissioning:	2	Technology urgency:	1 - Mid-Term (5-10 years)

Challenge Information Requirements	
Update frequency:	Daily
Data currently used:	LiDAR Air photos High resolution imagery InSAR

Spatial resolution:	Basin
Thematic accuracy:	Not specific
Required formats:	Not Specific
Timeliness (Vintage):	Within a week
Geographic extents:	License
Existing standards:	None

Relevant products

Content by label

There is no content with the specified labels