

# Hatfield-4301: Map and monitor induced seismic hazards

## Map and monitor induced seismic hazards

### Challenge

<b>Challenge ID:</b>	HCP-4301	<b>Originator:</b>	Onshore: Hatfield
<b>Title:</b>	<b>Map and monitor induced seismic hazards</b>		
<b>Theme:</b>	ON 4.3: Environmental monitoring - Natural Hazard Risk Analysis		
<b>Consortium Lead:</b>	Arup	<b>Interviewed Company:</b>	Arup
<b>Geography:</b>	ON.REG.00 - Generic onshore		
<b>Challenge Description</b>			
What is not possible / not adequately addressed at present?			
Fracking operations may cause induced seismicity, which should be monitored. There is a growing interest in understanding the risks associated with injection-induced earthquakes, especially in areas, before the presence of production, earthquakes large enough to be felt were rare.			
What effect does this challenge have on operations?			
Overall impact is on social license to operate, rather than a realistic potential risks to assets.			
<b>Thematic information requirements:</b>	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?			
A seismic hazard assessment is typically carried out and if there are longer term requirements, a seismic monitoring network is set up and activated (surface and borehole).			
What kind of solutions do you envisage could address this challenge?			
InSAR may be useful as a complementary method to help demonstrate lack of surface movement. Existing seismic networks could be monitored and integrated with existing land base information.			
What is your view on the capability of technology to meet this need? Are you currently using EO tech? If not, why not?			
InSAR processing is continually improving.			
<b>Challenge Classification</b>			
<b>Impact on Lifecycle (0=none, 4=high):</b>		<b>Climate / Topography / Urgency:</b>	
Pre-license:	2	Climate class:	Generic climate
Exploration:	3	Topographic class:	Not specific
Development:	3	Seasonal variations:	Any season
Production:	4	Impact area:	Environmental
Decommissioning:	2	Technology urgency:	3 - Immediately (0-2 years)
<b>Challenge Information Requirements</b>			
<b>Update frequency:</b>	Snapshot to semi-monthly		
<b>Data currently used:</b>	InSAR		
<b>Spatial resolution:</b>	License		
<b>Thematic accuracy:</b>	mm		
<b>Required formats:</b>	Not specific		
<b>Timeliness (Vintage):</b>	Within a month		
<b>Geographic extents:</b>	License		

Existing standards:	None
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## Relevant products

- [Product Sheet: Elevation](#)
- [Product Sheet: Fault Identification](#)
- [Product Sheet: Faults and discontinuities](#)
- [Product Sheet: Slope](#)
- [Product Sheet: Surface Deformation](#)
- [Product Sheet: Surface Deformation Monitoring](#)