Hatfield-2201: Identify geological structure through landform

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Challenge

Challenge ID:	HCP-2201	Originator:	Onshore: Hatfield
Title:	**Identify geological structure through landform.**		
Theme:	ON 2.2: Surface Geology Mapping - Structural interpretation		
Consortium Lead:	Arup	Interviewed Company:	Arup
Geography:	ON.REG.00 - Generic onshore		

Challenge Description

What is not possible / not adequately addressed at present?

Information is required to inform structural geological mapping of strata (dip-strike, fold structures). In arid regions, evaluation is more straightforward. In vegetated and tropical areas it is more challenging to acquire accurate classification data.

What effect does this challenge have on operations?

In arid regions the evaluation is straightforward. In vegetated and tropical areas, the vegetation means that the underlying surface cannot be observed, which can affect the accuracy of classification.

Thematic information requirements:	Topographic information Lithology, structural geology, surficial geology Land Cover

What do you currently do to address this challenge?
How is this challenge conventionally addressed?

Field mapping. Multispectral image analysis. LiDAR can be used In vegetated areas to identify landform and structural geology below the vegetation canopy. A spectral library of vegetation type (and seasonal variation) can be mapped with known soil-rock associations.

What kind of solutions do you envisage could address this challenge?

Radar-derived DEM
High resolution stereo optical DEM
Multispectral and hyperspectral images

What is your view on the capability of technology to meet this need?
Are you currently using EO tech? If not, why not?

Satellite imagery is already well suited, but new technologies coming on stream with increased spatial and spectral resolution (e.g. EnMAP) and new processing techniques will be of benefit.

Challenge Classification

Impact on Lifecycle (0=none, 4=high):		Climate / Topography / Urgency:	
Pre-license:	1	Climate class:	Generic climate
Exploration:	3	Topographic class:	Not specific
Development:	2	Seasonal variations:	Any season
Production:	1	Impact area:	
Decommissioning:	0	Technology urgency:	3 - Immediately (0-2 years)

Challenge Information Requirements

Update frequency:	Snapshot
Data currently used:	Air photo interpretation, DEM analysis (ASTER, SRTM, High res optical DEM), LiDAR, multispectral images

Spatial resolution:	Regional to License
Thematic accuracy:	Not specific
Required formats:	Not Specific
Timeliness (Vintage):	Reference data
Geographic extents:	Regional to License
Existing standards:	None

Relevant products

Content by label

There is no content with the specified labels