

OTM-074: Estimating ground bearing capacity

Estimating ground bearing capacity

Challenge

Challenge ID	OTM:074				
1 Title	Estimating ground bearing capacity				
2 Theme ID	ON 5.3: Logistics planning and operations - Facility siting, pipeline routing and roads development				
3 Originator of Challenge	Onshore: OTM				
4 Challenge Reviewer / initiator	DFID				
General description		Overview of Challenge			
5 What is the nature of the challenge? (What is not adequately addressed at present?)	In countries such as South Sudan, cost of developing infrastructure can be highly influenced by the need to excavate through soft ground. Black cotton soils (vertisols) are especially prevalent and the cost of developing through areas where they dominate can be very challenging.				
6 Thematic information requirements	11. Determine lithology, mineralogy and structural properties of the near surface,				
7 Nature of the challenge - What effect does this challenge have on operations?	Increased development costs, subsidence of infrastructure				
8 What do you currently do to address this challenge?/ How is this challenge conventionally addressed?	Extensive excavation, route planning to avoid these areas				
9 What kind of solution do you envisage could address this challenge?	Imagery to reduce time taken to identify these areas would be useful. Areas identified as historically subsiding can be identified where past data already exists.				
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]	3	2	3	1	1
12 Climate classification	Dry				
13 Geographic context/restrictions	Generic onshore (Unspecified)				
14 Topographic classification / Offshore classification	Generic onshore (Unspecified)				
15 Seasonal variations	Any season				
16 Impact Area	Development costs				
17 Technology Urgency (How quickly does the user need the solution)	Immediately (0-2 years)				
Information requirements					
18 Update frequency	Not important				
19 Data Currently used					
20 Spatial resolution					
21 Thematic accuracy					
22 Example formats					
23 Timeliness	Reference data - timeliness not important				
24 Geographic Extent	District area				
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

- Product Sheet: Engineering geology evaluation
- Product Sheet: Geomorphology map
- Product Sheet: Lithology and surficial geology mapping
- Product Sheet: Surface Soil Moisture