

# Hatfield-1101: Identify areas with soft sediments to avoid strong attenuation

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## Challenge

|                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                     |                                 |                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------|
| Challenge ID:                                                                                                                                                                                                                                                                                                                                                                                  | HCP-1101                                                                                            | Originator:                     | Onshore: Hatfield           |
| Title:                                                                                                                                                                                                                                                                                                                                                                                         | Identify areas with soft sediments to avoid strong attenuation.                                     |                                 |                             |
| Theme:                                                                                                                                                                                                                                                                                                                                                                                         | ON 1.1: Seismic Planning - Areas of poor coupling                                                   |                                 |                             |
| Consortium Lead:                                                                                                                                                                                                                                                                                                                                                                               | RPS Group                                                                                           | Interviewed Company:            | RPS Group                   |
| Geography:                                                                                                                                                                                                                                                                                                                                                                                     | ON.REG.00 - Generic onshore                                                                         |                                 |                             |
| Challenge Description                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                     |                                 |                             |
| What is not possible / not adequately addressed at present?                                                                                                                                                                                                                                                                                                                                    |                                                                                                     |                                 |                             |
| Poor attenuation may be experienced in areas of loose grained sand formations like dunes or the historic path of a river that’s changed course.                                                                                                                                                                                                                                                |                                                                                                     |                                 |                             |
| What effect does this challenge have on operations?                                                                                                                                                                                                                                                                                                                                            |                                                                                                     |                                 |                             |
| Poor data quality is experienced in areas where the source strength is easily dissipated.                                                                                                                                                                                                                                                                                                      |                                                                                                     |                                 |                             |
| Thematic information requirements:                                                                                                                                                                                                                                                                                                                                                             | Land cover<br>Terrain information<br>Topographic information<br>Water Quantity<br>Ortho base images |                                 |                             |
| What do you currently do to address this challenge?                                                                                                                                                                                                                                                                                                                                            |                                                                                                     |                                 |                             |
| How is this challenge conventionally addressed?                                                                                                                                                                                                                                                                                                                                                |                                                                                                     |                                 |                             |
| Current and historical topographic maps or satellite imagery to identify potential areas of change/hazard. SRTM and Google Earth on global basis for early planning.<br>Conduct seismic work over winter on frozen ground (reduced attenuation).<br>Use prior knowledge.<br>Areas identified as potentially prone to poor seismic response are monitored during acquisition (reactive system). |                                                                                                     |                                 |                             |
| What kind of solutions do you envisage could address this challenge?                                                                                                                                                                                                                                                                                                                           |                                                                                                     |                                 |                             |
| A more scientific approach to correlate land classification against seismic quality.                                                                                                                                                                                                                                                                                                           |                                                                                                     |                                 |                             |
| What is your view on the capability of technology to meet this need?                                                                                                                                                                                                                                                                                                                           |                                                                                                     |                                 |                             |
| Are you currently using EO tech? If not, why not?                                                                                                                                                                                                                                                                                                                                              |                                                                                                     |                                 |                             |
| Would consider improved data sources, e.g. elevation data resolution.                                                                                                                                                                                                                                                                                                                          |                                                                                                     |                                 |                             |
| 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:                    | Data Quality                |
| Decommissioning:                                                                                                                                                                                                                                                                                                                                                                               | 1                                                                                                   | Technology urgency:             | 3 - Immediately (0-2 years) |
| Challenge Information Requirements                                                                                                                                                                                                                                                                                                                                                             |                                                                                                     |                                 |                             |
| Update frequency:                                                                                                                                                                                                                                                                                                                                                                              | Snapshot                                                                                            |                                 |                             |
| Data currently used:                                                                                                                                                                                                                                                                                                                                                                           | Satellite imagery, Google Earth, SRTM                                                               |                                 |                             |
| Spatial resolution:                                                                                                                                                                                                                                                                                                                                                                            | Regional                                                                                            |                                 |                             |

|                       |                |
|-----------------------|----------------|
| Thematic accuracy:    | Not specific   |
| Required formats:     | Not Specific   |
| Timeliness (Vintage): | Reference data |
| Geographic extents:   | Regional       |
| Existing standards:   | None           |

## Relevant products

**Content by label**

There is no content with the specified labels