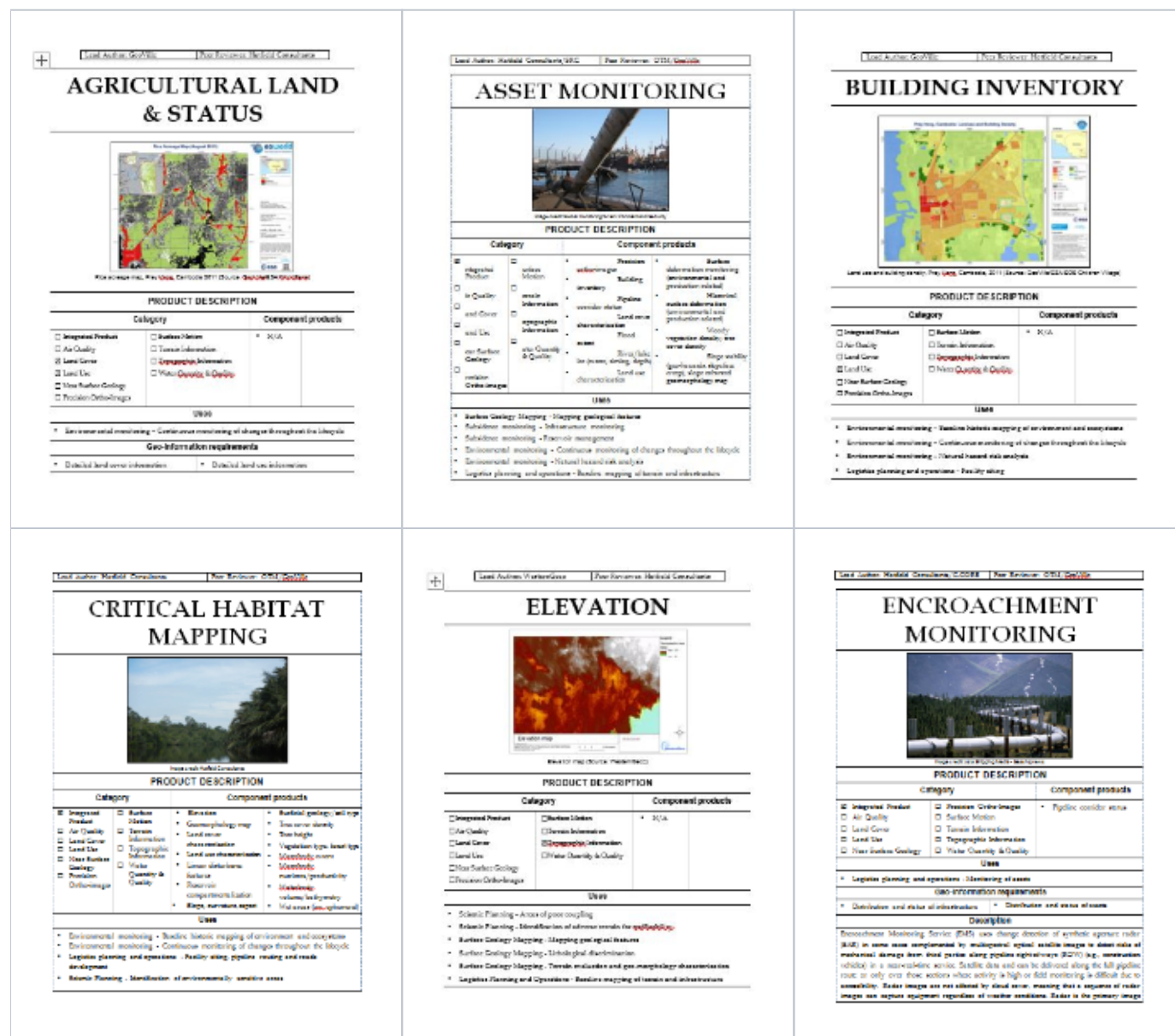


EO4OG Product Sheets On-Shore



Lead Author: Barbara Corns/Geog / Zoe Farnham: GIS/Geospatial

FAULTS AND DISCONTINUITIES

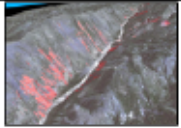


Image credit: British Geological Survey

PRODUCT DESCRIPTION		
Category	Component products	
☒ Integrated Product ☒ Air Quality ☒ Land Cover ☒ Land Use ☒ Near Surface Geology	☒ Precision Ortho-Images ☒ Surface Motion ☒ Terrain Information ☒ Topographic Information ☒ Water Quantity & Quality	N/A
Uses • Surface geology mapping - mapping geological features • Surface geology mapping - structural interpretation • Surface geology mapping - terrain evaluation and geomorphology characterisation • Subsidence monitoring - land motion relating to fault lines or other causes • Surface geology mapping - engineering geological evaluation • Legislative planning and operations - facility siting, pipeline routing and roads development		
Geo-information requirements • Terrain information • Topographic information • Lithology, geological and structural properties of the near surface		

Lead Author: MB / Zoe Farnham: MB/Geospatial

FAULT IDENTIFICATION AND REACTIVATION

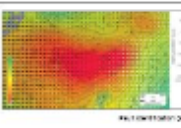


Image credit: British Geological Survey

PRODUCT DESCRIPTION		
Category	Component products	
☒ Integrated Product ☒ Air Quality ☒ Land Cover ☒ Land Use ☒ Near Surface Geology ☒ Precision Ortho-Images	☒ Surface Motion ☒ Terrain Information ☒ Topographic Information ☒ Water Quantity & Quality	N/A
Uses • Subsidence monitoring - Land motion relating to fault lines or other causes • Surface Geology Mapping - Structural interpretation		
Geo-information requirements • Terrain information • Surface and ground motion		
Description Facies, both natural and man-made, through extensive deposits, can be identified and quantified by integrating surface movement data with a predictive scenario. Maps of surface		

Lead Author: Barbara Corns/Geog / Zoe Farnham: GIS/Geospatial

FLOOD EXTENT



Image credit: British Geological Survey

PRODUCT DESCRIPTION		
Category	Component products	
☒ Integrated Product ☒ Air Quality ☒ Land Cover ☒ Land Use ☒ Near Surface Geology	☒ Precision Ortho-Images ☒ Surface Motion ☒ Terrain Information ☒ Topographic Information ☒ Water Quantity & Quality	N/A
Uses • Environmental monitoring - Natural hazard risk analysis		
Geo-information requirements • Water quantity information • Detailed land cover information • Terrain information • Distribution and status of infrastructure • Detailed land use information • Distribution and status of assets		
Description Flood extent products can be derived from the product layers such as the regional scale. A combination of water and spatial data for flood mapping is usually implemented as complementary information can improve the model prediction. Reliability analysis Water extent products are not affected by cloud cover, meaning that a sequence of water images can capture flood extent progression regardless of weather conditions. Flood extent products are		

Lead Author: Geo/MB / Zoe Farnham: MB/Geospatial

FOREST FIRE & RISK MAPPING



Image credit: British Geological Survey

PRODUCT DESCRIPTION		
Category	Component products	
☒ Integrated Product ☒ Air Quality ☒ Land Cover ☒ Land Use ☒ Near Surface Geology ☒ Precision Ortho-Images	☒ Surface Motion ☒ Terrain Information ☒ Topographic Information ☒ Water Quantity & Quality	N/A
Uses • Relative planning - areas of poor mapping • Relative planning - identification of extreme events for reliability • Surface geology mapping - mapping geological features • Surface geology mapping - structural interpretation • Surface geology mapping - lithological characterisation • Surface geology mapping - terrain evaluation and geomorphology characterisation • Surface geology mapping - engineering geological evaluation • Environmental monitoring - broader hazard mapping of environment and vegetation • Environmental monitoring - natural hazard risk analysis • Legislative planning and operations - facility siting, pipeline routing and roads development • Legislative planning and operations - monitoring of assets		
Geo-information requirements • Terrain information • Detailed land cover information • Topographic information • Lithology, geological and structural		

Lead Author: MB/Geospatial / Zoe Farnham: MB/Geospatial

GEOMORPHOLOGY MAP



Image credit: British Geological Survey

PRODUCT DESCRIPTION		
Category	Component products	
☒ Integrated Product ☒ Air Quality ☒ Land Cover ☒ Land Use ☒ Near Surface Geology	☒ Precision Ortho-Images ☒ Surface Motion ☒ Terrain Information ☒ Topographic Information ☒ Water Quantity & Quality	N/A
Uses • Relative planning - areas of poor mapping • Relative planning - identification of extreme events for reliability • Surface geology mapping - mapping geological features • Surface geology mapping - structural interpretation • Surface geology mapping - lithological characterisation • Surface geology mapping - terrain evaluation and geomorphology characterisation • Surface geology mapping - engineering geological evaluation • Environmental monitoring - broader hazard mapping of environment and vegetation • Environmental monitoring - natural hazard risk analysis • Legislative planning and operations - facility siting, pipeline routing and roads development • Legislative planning and operations - monitoring of assets		
Geo-information requirements • Terrain information • Detailed land cover information • Topographic information • Lithology, geological and structural		

Lead Author: MB / Zoe Farnham: MB/Geospatial

HISTORICAL SURFACE DEFORMATION

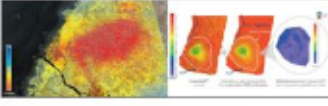


Image credit: British Geological Survey

PRODUCT DESCRIPTION		
Category	Component products	
☒ Integrated Product ☒ Air Quality ☒ Land Cover ☒ Land Use ☒ Near Surface Geology ☒ Precision Ortho-Images	☒ Surface Motion ☒ Terrain Information ☒ Topographic Information ☒ Water Quantity & Quality	N/A
Uses • Subsidence monitoring - Land motion relating to fault lines or other causes • Subsidence monitoring - Reservoir management • Subsidence monitoring - Infrastructure management • Surface Geology Mapping - Reservoir interpretation • Legislative planning and operations - facility siting, pipeline routing and roads development		

Lead Author: Geo/MB / Zoe Farnham: MB/Geospatial

INFRASTRUCTURE PLANNING & MONITORING



Image credit: British Geological Survey

PRODUCT DESCRIPTION		
Category	Component products	
☒ Integrated Product ☒ Air Quality ☒ Land Cover ☒ Land Use ☒ Near Surface Geology ☒ Precision	☒ Surface Motion ☒ Terrain Information ☒ Topographic Information ☒ Water Quantity & Quality	N/A
Uses • Land cover and land use characterisation • Topographic mapping and status • Pipeline monitoring • Urban area, infrastructure • Rail and road • Transport network • Surface and terrain motion		

Lead Author: MB / Zoe Farnham: MB/Geospatial

LAND COVER & LAND COVER CHANGE CHARACTERISATION



Image credit: British Geological Survey

PRODUCT DESCRIPTION		
Category	Component products	
☒ Integrated Product ☒ Air Quality ☒ Land Cover ☒ Land Use ☒ Near Surface Geology ☒ Precision Ortho-Images	☒ Surface Motion ☒ Terrain Information ☒ Topographic Information ☒ Water Quantity & Quality	N/A
Uses • Environmental monitoring - Broad scale mapping of environment and vegetation • Environmental monitoring - Land cover monitoring of change throughout the lifecycle		

Lead Author: Geo/MB / Zoe Farnham: MB/Geospatial

LAND USE & LAND USE CHANGE CHARACTERISATION

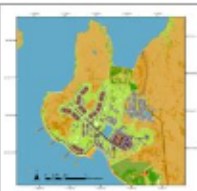
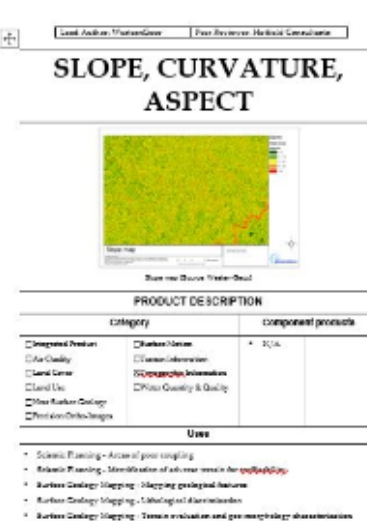
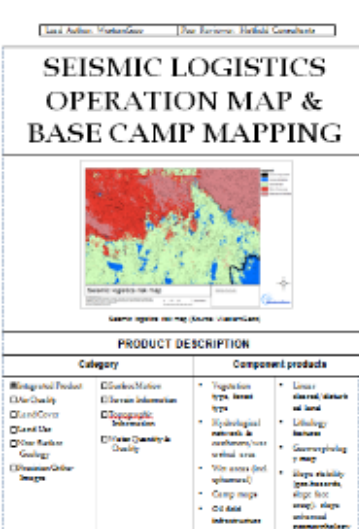
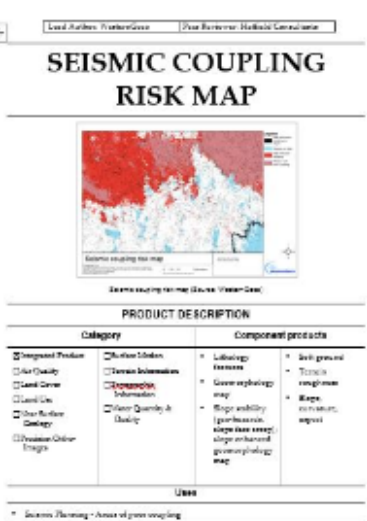
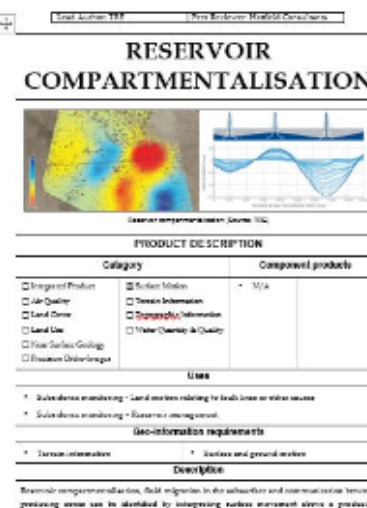
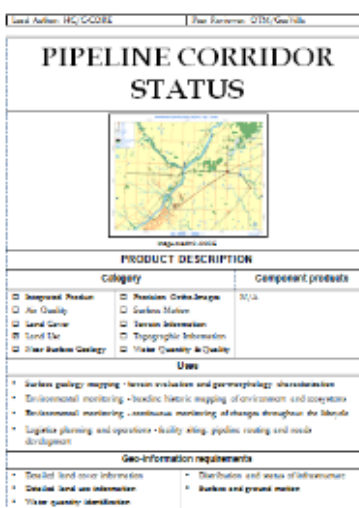
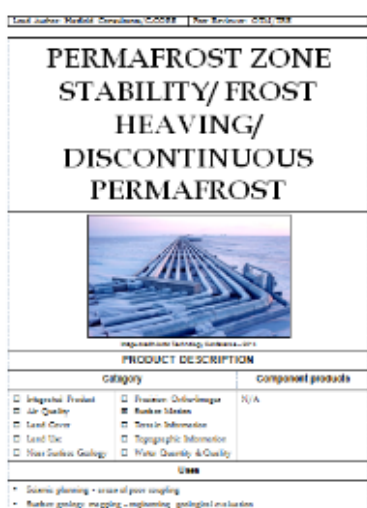
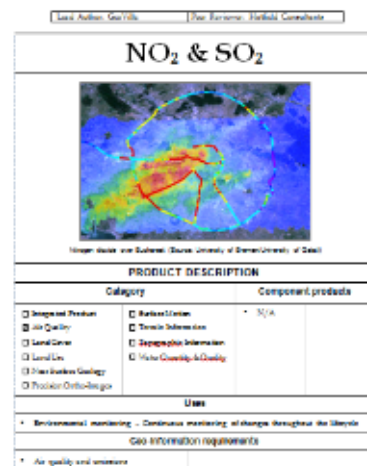
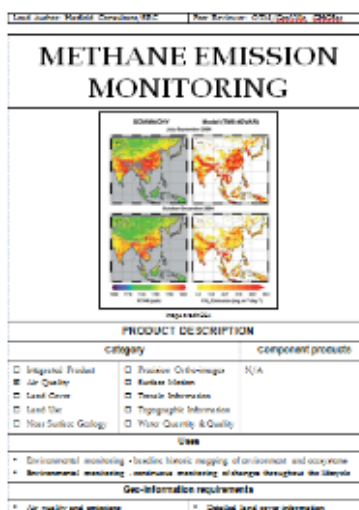
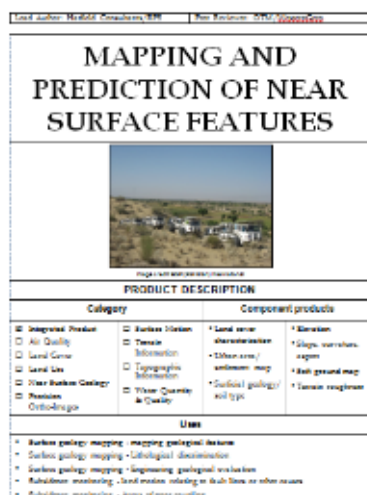


Image credit: British Geological Survey

PRODUCT DESCRIPTION		
Category	Component products	
☒ Integrated Product ☒ Air Quality	☒ Surface Motion ☒ Terrain Information	N/A



SOIL SEALING



(Iberian Peninsula map, source: Terey, 2012 (Source: GeoVista 2012))

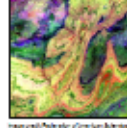
PRODUCT DESCRIPTION

Category	Component products
☐ Integrated Product ☐ Air Quality ☐ Land Cover ☐ Land Use ☐ Near Surface Geology ☐ Precision Ortho-Images	☐ Surface Urban ☐ Traffic Information ☐ Topographic Information ☐ Water Quantity & Quality

Uses

- Environmental monitoring - Baseline historic mapping of environment and ecosystems
- Environmental monitoring - Continuous monitoring of changes throughout the lifecycle
- Logistics planning and operations - Baseline mapping of terrain and infrastructure
- Logistics planning and operations - Facility siting, pipeline routing and roads development
- Logistics planning and operations - Monitoring of assets

STRUCTURAL GEOLOGY



(Structural Geology map, source: Hothold, Connectivity, Inc., 2012 (Source: GeoVista 2012))

PRODUCT DESCRIPTION

Category	Component products
☐ Integrated Product ☐ Air Quality ☐ Land Cover ☐ Land Use ☐ Near Surface Geology ☐ Precision Ortho-Images	☐ Surface Urban ☐ Traffic Information ☐ Topographic Information ☐ Water Quantity & Quality

Uses

- Surface geology mapping - mapping geological features
- Surface geology mapping - terrain evaluation and geomorphology characterization
- Environmental monitoring - baseline historic mapping of environment and ecosystems
- Environmental monitoring - Natural hazard risk analysis

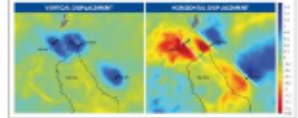
Geo-information requirements

- Topographic information
- Landcover, geological and structural properties of the area surface

Description

Information on structural geology can be obtained from a wide range of 3D sensors and with 3D analysis is frequently the best method to identify and map structural geological features on the surface/terrain. 3D analysis complemented by analysis of optical and

SURFACE DEFORMATION MONITORING (ENVIRONMENTAL AND PRODUCTION RELATED)



(Surface deformation map, source: QTR, 2012 (Source: GeoVista 2012))

PRODUCT DESCRIPTION

Category	Component products
☐ Integrated Product ☐ Air Quality ☐ Land Cover ☐ Land Use ☐ Near Surface Geology ☐ Precision Ortho-Images	☐ Surface Urban ☐ Traffic Information ☐ Topographic Information ☐ Water Quantity & Quality

Uses

- Environmental monitoring - Baseline historic mapping of environment and ecosystems
- Environmental monitoring - Continuous monitoring of changes throughout the lifecycle
- Logistics planning and operations - Facility siting, pipeline routing and roads development
- Logistics planning and operations - Monitoring of assets

TRANSPORT NETWORK & ROAD STATUS



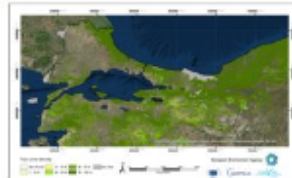
PRODUCT DESCRIPTION

Category	Component products
☐ Integrated Product ☐ Air Quality ☐ Land Cover ☐ Land Use ☐ Near Surface Geology ☐ Precision Ortho-Images	☐ Surface Urban ☐ Traffic Information ☐ Topographic Information ☐ Water Quantity & Quality

Uses

- Environmental monitoring - Baseline historic mapping of environment and ecosystems
- Environmental monitoring - Continuous monitoring of changes throughout the lifecycle
- Logistics planning and operations - Facility siting, pipeline routing and roads development
- Logistics planning and operations - Baseline mapping of terrain and infrastructure
- Logistics planning and operations - Monitoring of assets

TREE COVER DENSITY



(Tree cover density map, source: GeoVista, 2012 (Source: GeoVista 2012))

PRODUCT DESCRIPTION

Category	Component products
☐ Integrated Product ☐ Air Quality ☐ Land Cover ☐ Land Use ☐ Near Surface Geology ☐ Precision Ortho-Images	☐ Surface Urban ☐ Traffic Information ☐ Topographic Information ☐ Water Quantity & Quality

Uses

- Baseline Planning - Identification of adverse terrain for **spatially**
- Environmental monitoring - Baseline historic mapping of environment and ecosystems
- Environmental monitoring - Continuous monitoring of changes throughout the lifecycle
- Environmental monitoring - Natural hazard risk analysis

TREE HEIGHT



(Tree height map, source: GeoVista, 2012 (Source: GeoVista 2012))

PRODUCT DESCRIPTION

Category	Component products
☐ Integrated Product ☐ Air Quality ☐ Land Cover ☐ Land Use ☐ Near Surface Geology ☐ Precision Ortho-Images	☐ Surface Urban ☐ Traffic Information ☐ Topographic Information ☐ Water Quantity & Quality

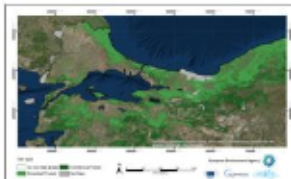
Uses

- Baseline Planning - Identification of adverse terrain for **spatially**
- Environmental monitoring - Baseline historic mapping of environment and ecosystems
- Environmental monitoring - Continuous monitoring of changes throughout the lifecycle
- Environmental monitoring - Natural hazard risk analysis

Geo-information requirements

- Detailed land cover information
- Topographic information (optional, although this is a 3D sensor)

VEGETATION/FOREST TYPE



(Vegetation/Forest type map, source: GeoVista, 2012 (Source: GeoVista 2012))

PRODUCT DESCRIPTION

Category	Component products
☐ Integrated Product ☐ Air Quality ☐ Land Cover ☐ Land Use ☐ Near Surface Geology ☐ Precision Ortho-Images	☐ Surface Urban ☐ Traffic Information ☐ Topographic Information ☐ Water Quantity & Quality

Uses

- Baseline Planning - Identification of adverse terrain for **spatially**
- Environmental monitoring - Baseline historic mapping of environment and ecosystems

VEGETATION STRESS AND DEGRADATION



(Vegetation stress and degradation map, source: GeoVista, 2012 (Source: GeoVista 2012))

PRODUCT DESCRIPTION

Category	Component products
☐ Integrated Product ☐ Air Quality ☐ Land Cover ☐ Land Use ☐ Near Surface Geology ☐ Precision Ortho-Images	☐ Surface Urban ☐ Traffic Information ☐ Topographic Information ☐ Water Quantity & Quality

Uses

- Environmental monitoring - Baseline historic mapping of environment and ecosystems
- Environmental monitoring - Continuous monitoring of changes throughout the lifecycle

WATER BODY EXTENT



(Water body extent map, source: QTR, GeoVista, 2012 (Source: GeoVista 2012))

PRODUCT DESCRIPTION

Category	Component products
☐ Integrated Product ☐ Air Quality ☐ Land Cover ☐ Land Use ☐ Near Surface Geology ☐ Precision Ortho-Images	☐ Surface Urban ☐ Traffic Information ☐ Topographic Information ☐ Water Quantity & Quality

Uses

- Environmental monitoring - continuous monitoring of changes throughout the lifecycle
- Environmental monitoring - natural hazard risk analysis
- Logistics planning and operations - facility siting, pipeline routing and roads development

Geo-information requirements

- Water quantity identification
- Detailed land cover information

Description

Mapping of permanent and ephemeral water bodies is needed to manage environmental impacts on exploration and development and reduce development impacts on aquatic habitats. Typically, this analysis will be applied to water bodies for resource management and to avoid impacts to water bodies from development. Monitoring impacts on water bodies and to change rate of water bodies following water use is a regulatory requirement in some countries.

Lead Author: Haidilong Consultants/USC

Peer Reviewer: QTS/GeoTide

WATERBODY VOLUME/BATHYMETRY

Example of water depth deliverable

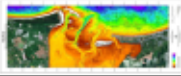


Image credit: Haidilong Consultants

PRODUCT DESCRIPTION		
Category		Component products
☐ Integrated Product ☐ Air Quality ☐ Land Cover ☐ Land Use ☐ River Bankline Geology	☐ Precision Orthorectified ☐ Bathymetry ☐ Terrain Information ☐ Topographic Information ☐ Water Quantity & Quality	N/A

UNMS

- Environmental monitoring - baseline historic mapping of environment and ecosystems
- Environmental monitoring - continuous monitoring of changes throughout the lifecycle
- Environmental monitoring - natural hazard risk analysis
- Riverbank geology mapping - mapping geological features

Geo information requirements

- Water quantity identification - Topographic information	Terrain information
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Description

This product is focused on understanding bathymetry for lakes or shallow coastal areas.

Lead Author: Haidilong Consultants/USC

Peer Reviewer: QTS/GeoTide

WET AREAS

Example of wet area deliverable

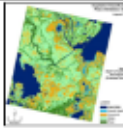


Image credit: Haidilong Consultants

PRODUCT DESCRIPTION		
Category		Component products
☐ Integrated Product ☐ Air Quality ☒ Land Cover ☐ Land Use ☐ River Bankline Geology	☐ Precision Orthorectified ☐ Bathymetry ☐ Terrain Information ☐ Topographic Information ☐ Water Quantity & Quality	N/A

UNMS

- Riverbank Geology Mapping - Terrain evaluation and geomorphology: **discontinuation**
- Basin Planning - Identification of extreme events for **pollution**
- Basin Planning - Areas of poor mapping
- Subsidence monitoring - Subsidence monitoring
- Environmental monitoring - Baseline historic mapping of environment and ecosystems
- Environmental monitoring - Continuous monitoring of changes throughout the lifecycle
- Environmental monitoring - Natural Hazard Risk Analysis
- Logistics planning and operations - Facility siting, pipeline routing and roads development
- Logistics planning and operations - Support to carrying crews for planning surveys and RMS