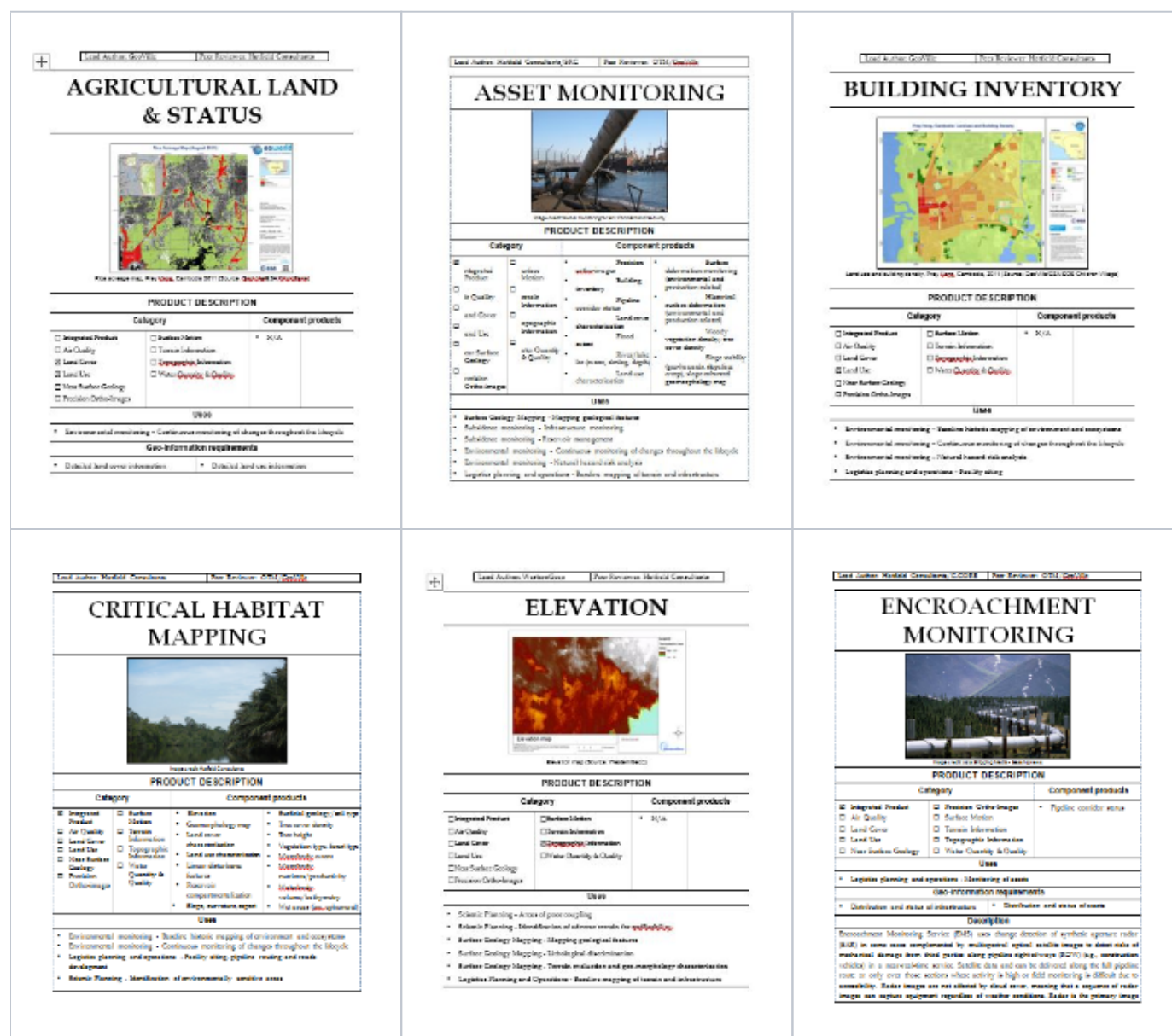


EO4OG Product Sheets On-Shore



Lead Author: Barbara Cornelis/Argo | Peer Reviewer: DTS/GeoData

FAULTS AND DISCONTINUITIES

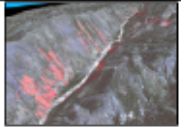


Image credit: GeoData/Argo

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: DTS | Peer Reviewer: MWD/GeoData

FAULT IDENTIFICATION AND REACTIVATION

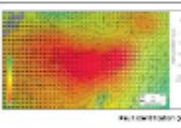


Image credit: DTS/GeoData

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

Derivation

Facies, both aerial and monitored through extensive digitisation, can be identified and quantified by integrating surface movement data with a predictive scenario. Maps of surface

Lead Author: Barbara Cornelis/Argo | Peer Reviewer: DTS/GeoData

FLOOD EXTENT



Image credit: GeoData/Argo

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	
☒ Terrain Information ☒ Surface Information ☒ Detailed land use information	☒ Detailed land cover information ☒ Distribution and status of infrastructure ☒ Distribution and status of assets

Derivation

Flood extent products can be derived from the product layers such as the regional scale. A combination of vector and spatial data for flood mapping is usually implemented as complementary information can improve the model prediction.

Derivation products

Vector images are not affected by cloud cover, meaning that a sequence of vector images can capture flood extent progression regardless of weather conditions. Flood extent products are

Lead Author: GeoData | Peer Reviewer: MWD/GeoData

FOREST FIRE & RISK MAPPING



Image credit: GeoData/Argo

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

- Forest fire mapping - mapping geological features
- Forest fire mapping - structural interpretation
- Forest fire 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: MWD/GeoData/Argo | Peer Reviewer: MWD/GeoData

GEOMORPHOLOGY MAP



Image credit: GeoData/Argo

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 adverse events for **rehabilitation**
- Surface geology mapping - mapping geological features
- Surface geology mapping - structural interpretation
- Surface geology mapping - terrain evaluation and geomorphology characterisation
- Surface geology mapping - terrain evaluation and geomorphology characterisation
- Surface geology mapping - engineering geological evaluation
- Environmental monitoring - broader terrain 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 ☒ Topographic Information	☒ Detailed land cover information ☒ Lithology, geological and structural properties of the near surface

Lead Author: DTS | Peer Reviewer: MWD/GeoData

HISTORICAL SURFACE DEFORMATION

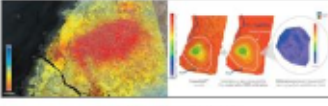


Image credit: GeoData/Argo

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 - Resource management
- Subsidence monitoring - Infrastructure management
- Surface Geology Mapping - Structural interpretation
- Legislative planning and operations - facility siting, pipeline routing and roads development

Lead Author: GeoData | Peer Reviewer: MWD/GeoData

INFRASTRUCTURE PLANNING & MONITORING



Image credit: GeoData/Argo

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 monitoring
- Road mapping
- Transport network
- Surface and terrain motion

Lead Author: DTS | Peer Reviewer: MWD/GeoData

LAND COVER & LAND COVER CHANGE CHARACTERISATION



Image credit: GeoData/Argo

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 terrain mapping of environment and vegetation
- Environmental monitoring - Land cover monitoring of change throughout the lifecycle

Lead Author: GeoData | Peer Reviewer: MWD/GeoData

LAND USE & LAND USE CHANGE CHARACTERISATION

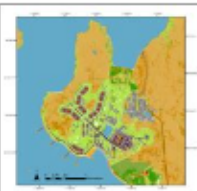
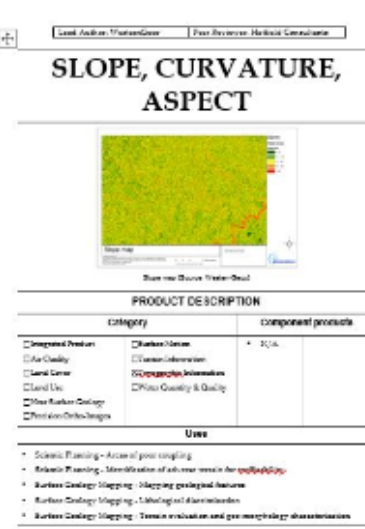
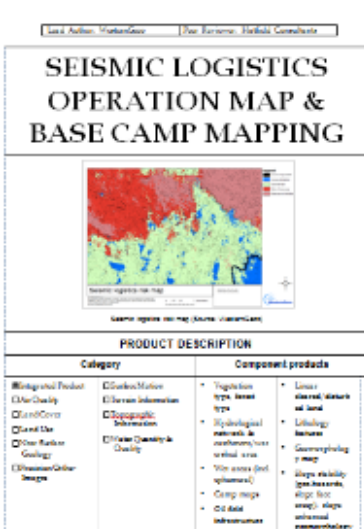
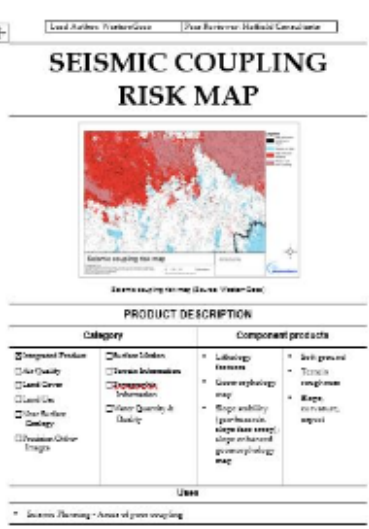
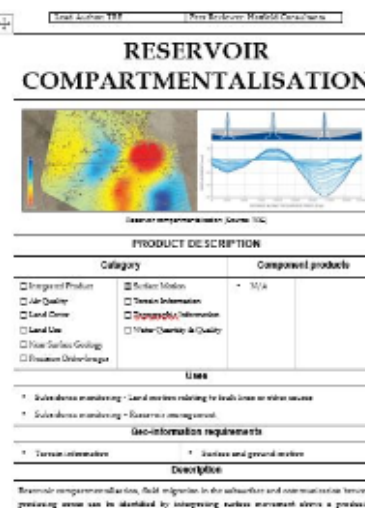
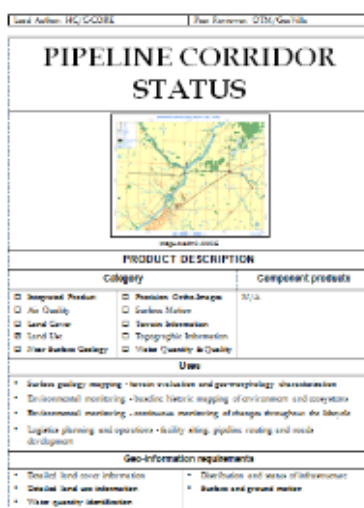
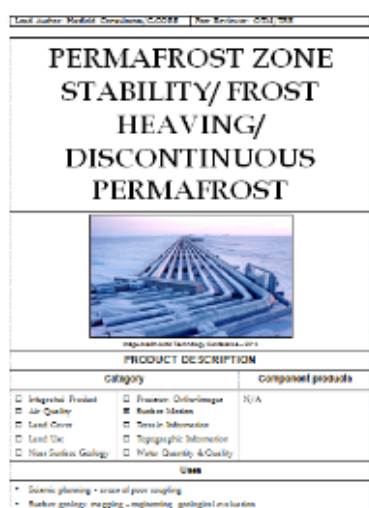
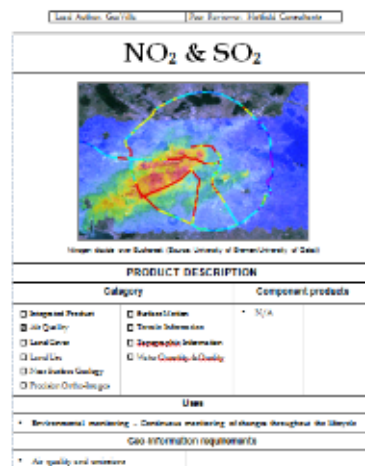
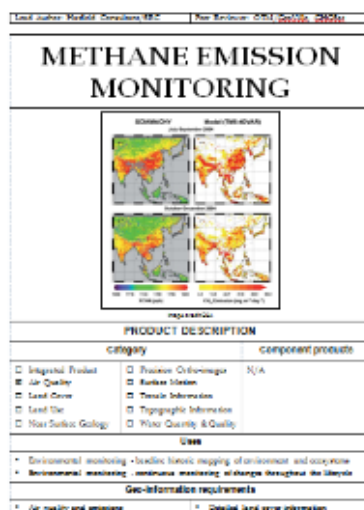
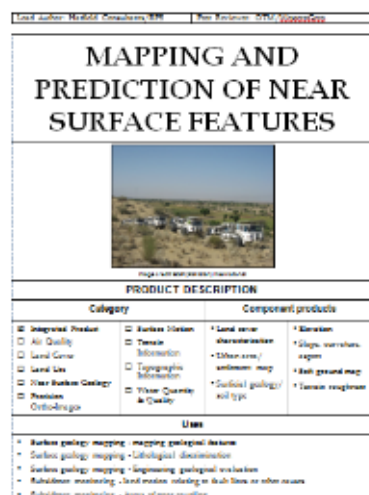


Image credit: GeoData/Argo

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



Lead Author: GeoVista | Peer Reviewer: Medical Consultants

SOIL SEALING



(Iberian Peninsula map, January 2012) (Source: GeoVista 2012)

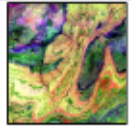
PRODUCT DESCRIPTION	
Category	Component products
☐ Integrated Product ☐ Air Quality ☐ Land Cover ☐ Land Use ☐ Near Surface Geology ☐ Precision Ortho-Images	☐ Surface Motion ☐ Terrain Information ☐ Topographic Information ☐ Water Quantity & Quality

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

Lead Author: Hothold, Connectivity, Inc. | Peer Reviewer: GIS, GeoVista

STRUCTURAL GEOLOGY



(Iberian Peninsula map, January 2012) (Source: GeoVista 2012)

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

Uses

- Surface geology mapping - mapping geological features
- Surface geology mapping - structural interpretation
- 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

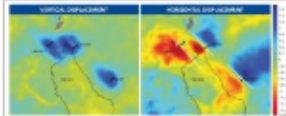
- Terrain Information
- Topographic Information
- Labels: geological and structural properties of the near surface

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. Visualization 3D analysis complemented by analysis of optical and

Lead Author: ISG | Peer Reviewer: Medical Consultants

SURFACE DEFORMATION MONITORING (ENVIRONMENTAL AND PRODUCTION RELATED)



(Iberian Peninsula map, January 2012) (Source: ISG 2012)

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

Lead Author: GeoVista | Peer Reviewer: Medical Consultants

TRANSPORT NETWORK & ROAD STATUS



(Iberian Peninsula map, January 2012) (Source: GeoVista 2012)

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

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

Lead Author: GeoVista | Peer Reviewer: Medical Consultants

TREE COVER DENSITY



(Iberian Peninsula map, January 2012) (Source: GeoVista 2012)

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

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

Lead Author: GeoVista | Peer Reviewer: Medical Consultants

TREE HEIGHT



(Iberian Peninsula map, January 2012) (Source: GeoVista 2012)

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

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)

Lead Author: GeoVista | Peer Reviewer: Medical Consultants

VEGETATION/FOREST TYPE



(Iberian Peninsula map, January 2012) (Source: GeoVista 2012)

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

Uses

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

Lead Author: GeoVista | Peer Reviewer: Medical Consultants

VEGETATION STRESS AND DEGRADATION



(Iberian Peninsula map, January 2012) (Source: GeoVista 2012)

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

Uses

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

Lead Author: ISG, ISG | Peer Reviewer: GIS, GeoVista

WATER BODY EXTENT



(Iberian Peninsula map, January 2012) (Source: ISG 2012)

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

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: QJ35/GuoYida

WATERBODY VOLUME/BATHYMETRY

Example of water depth deliverable

Source: US Army Corps of Engineers (USACE)

Image credit: USACE

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

UNMS

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

Geo information requirements	
Water quantity identification	Terrain information
☐ Topographic information	☐ Terrain information

Description

This product is based on well-understood bathymetry for lakes or shallow coastal areas.

Lead Author: MS-BRC

Peer Reviewer: QJ35/GuoYida

WET AREAS

Image credit: Haidilong Consultants

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

UNMS

- River Geology Mapping - Terrain evaluation and geomorphology: **discontinuity**
- 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