



European Technology Platform
on Sustainable Mineral Resources

EO-MINERS



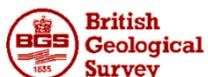
Work Package 4

EO Information & Products

Progress

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Council for Geoscience



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Contents of WP4

4.1 EO Products (BGS)

4.2 Models for Forecasts/Simulations (BRGM)

4.3 Environmental Observation Systems (BGS)

4.4 EO-MINERS and GEO (BGS)

**BGS, BRGM, TAU, DLR, WI, GeoZS,
Miro, CGS, & CzechGS**

57 months effort from Month 6 month 36

No WP4 deliverables were due by Month 12





Objectives of WP4

- Translate WP3 EO datasets into integrated EO products that address WP1 indicators
- Integrate these products into mining and environmental management systems, so supporting the “trialogue” running in WP5
- Organise products so they contribute to the [Global Earth Observing System of Systems](#)





Deliverables of WP4

D 4.4: GEO Minerals Workshop (M18)

D 4.5: GEO Minerals Workshop Proceedings (M21)

D 4.1: EO Product Review (M24)

D 4.2: Mine Site Simulation Platform (M36)

D 4.3: Mining and Environmental EO Systems Report (M36)

D 4.6: EO-MINERS to GEOSS Mapping Database/Report (M36)





Progress of WP4

- Tasks 4.1, 4.2 and 4.3 have not started yet
 - Minor delay as we await the EO data to start
- Most effort has been put into GEO Task 4.4
 - Presentation & Poster, GEPW-4, Athens, Apr 2010
 - Presentation, GEO & Geology Workshop, Jul 2010
 - Poster, GEO Ministerial Exhibition, Beijing, Nov 2010
 - Presentation, GEO/GMES GRSG Session, Dec 2010
 - Presentation and Poster, GEPW-5, London, Feb 2011
- Key objective: advocacy of inclusion of Minerals Tasks within the next GEO Work Plan, 2012-15



2011 Focus, Task 4.4

- Preparation of EO-MINERS products for longer term delivery as part of GEOSS, through definition of new GEO Tasks for inclusion in future annual updates of the GEO Work Plan...
- Review the existing GEO Tasks covering 9 societal benefit and 5 transverse areas in the GEO work plan 2007-2009
- Identify synergies or gaps between EO-MINERS and GEO
 - map mining and environmental observation systems into 9 SBAs
 - identify EO-MINERS contributions to existing GEOSS targets
 - define new, EO-MINERS activities in support of GEOSS
- Maintain a dialogue with GEO through:
 - the EU GEO Projects Workshops
 - membership of GEO Committees, especially Science & Tech
 - participation in GEO Task Symposia and other methods...



Deliverable 4.4 GEO & Minerals Workshop

- AEGOS organised a “GEO & Geology” Workshop in London
 - Successful 2 day workshop July 2010
 - AEGOS, GEO & GRSG attendees
 - A dozen AEGOS participants from:

BGS	UK
BRGM	France
CGS	RSA
Deltares	Netherlands
IRD	France
GSD	Ghana
PGI	Poland
 - Proposed GEO Work Plan revision
 - Generated 10 new Task proposals
 - Selected, and further developed, 3
 - Also discussed observing systems



Now do this for Minerals



2011 Focus, Task 4.1

- Explore the integration of spaceborne, airborne and ground-based EO datasets into mature, EO products
 - e.g. InSAR integration with GPS and levelling data, to give absolute measurements of ground motion, delivered a format engineers are happy to use...
 - e.g. Hyperspectral mineral mapping integrated with field-based spectroscopy and geochemistry to give pollution measurements that meet industry needs...
 - e.g. Exploit potential synergy between spaceborne EO, higher resolution airborne EO and the targeted installation of ground-based systems like ALERT





2011 Focus, Task 4.2

- Development of forecast and simulation models using EO products that describe various stages of the mining life cycle
- The IS@TEM system for model forecast and simulation to be developed as a demonstrator... a simulation platform, linked to a GIS for importing data and exporting results, enabling:
 - Dynamic display of the evolution of a given area, either in real time (simulation) or in offline time (post simulation)
 - Scenario management used for understanding evolution of interaction between social & environmental dynamics
 - Prospective simulation to help decision-makers evaluate & identify actions for sustainable resources management
- This will be tested using a pilot scale model; to be identified



2011 Focus, Task 4.3

- Development of mining & environmental observation systems through application of the EO products within the appropriate models and existing environmental and geoscience workflows
- Global Earth observation systems are typically characterised by well-integrated EO data that are then combined with well-calibrated models; the classic examples include:
 - Global Climate Observing System
 - Global Ocean Observing System
 - Global Terrestrial Observing System
- There is no such Observing System for the subsurface
- This Task will integrate the modelling component developed in Task 4.2, with the EO products from Task 4.1, in order to identify the main elements of a subsurface observing system that would be of wide use in the minerals sector

