



EPM

- Enhanced Pollution Monitoring -



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Co-funded by the European Space Agency under the Integrated Applications Promotion Programme (<https://artes-apps.esa.int/>)

From prospecting to exploration, mine development and operation, to the rehabilitation of mine sites – services for the whole mining cycle – plus the monitoring of artisanal mining

Recent developments in remote sensing technologies open up opportunities for fast, accurate and cost-effective monitoring of mining operations, such as mapping and analysis of sites, monitoring of ground movements and critical infrastructure and integrated communication products explaining environmental risks.

About

EPM is a Swiss consortium specializing in the use of Earth observations of mining operations to assist in the systematic and regular monitoring of mining sites. Our monitoring services lower the cost for data collection while delivering faster and more accurate results compared to traditional methods. These services extend to remote mines that are otherwise inaccessible, unsafe, or too expensive for onsite monitoring.

We deploy state-of-the-art remote sensing technology and transform the information we collect into meaningful analysis. Our products improve environmental risk assessments and enable clients to report data in compliance with regulatory requirements.

EPM also produces environmental reports with engaging data visualizations and excellent communication materials that facilitate in-house decision-making and catalyze the public participation processes that are crucial for successful mine development.

Value



Cost effective site monitoring at high resolution and frequency.



Improved information availability for improved risk assessment at all stages of the mining cycle.

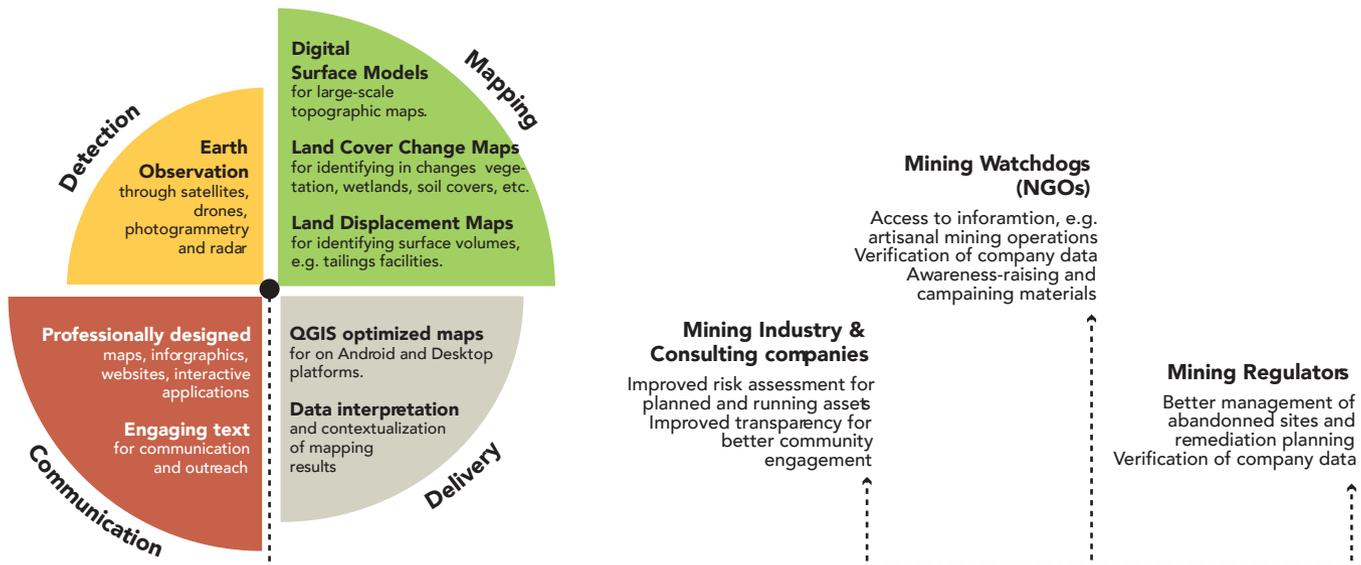


Plain language products combining all available information for effective communication and outreach.



Increased community participation for risk reduction and environmental and social responsibility.

Service overview



Products

Mapping of mining sites

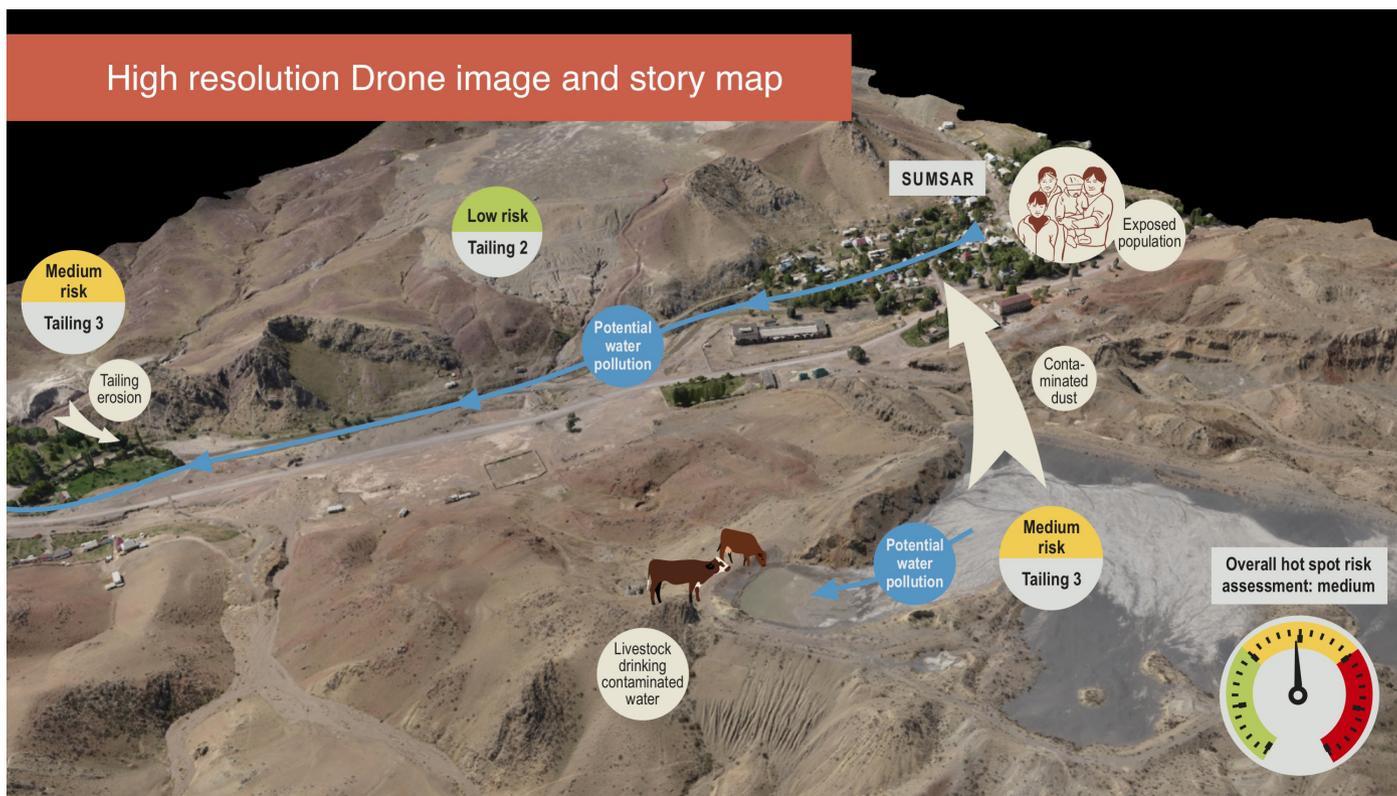
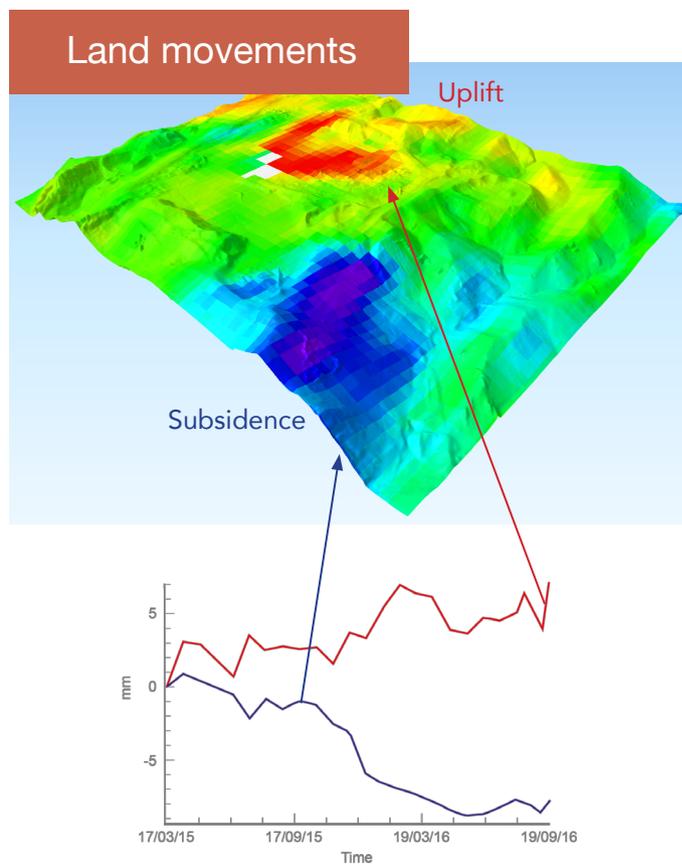
Using high-resolution satellite images, EPM produces large scale topographic and land cover maps presenting the characteristics of the mining site and infrastructure. Such information is essential as a baseline for any work related to the site, such as comparing pre/post mining situations, defining rehabilitation standards or for communicating risks.

Monitoring of land movements and critical infrastructure

Using spaceborne radar data available in regular time intervals, land movements, slope and tailing dam stability are monitored systematically and cost-effectively. The detection of unexpected changes allows taking action for preventing risks.

Integrated communication products

Information from various sources is integrated in a visual and narrative manner into products, such as story maps, interactive video, web-content to explain and communicate complex situations and risks to non-specialists.



The illustrations shown are from the Sumsar, Kyrgyzstan site

Expertise

EPM is consortium founded by three well-established Swiss entities with local offices in Geneva and Purasca. We bring together experienced geographers specializing in the application of space technology, mining engineers, environmental scientists, and cartographers in order to produce accurate and striking results at an affordable cost.

Crosstech SA is a Swiss company based in Geneva and active in environmental consulting and remediation since 2006. Crosstech SA has implemented projects in DR Congo, Malaysia, Libya, the Philippines and elsewhere. It is a subsidiary of the Swiss Foundation for Mine Action (FSD) with consolidated annual turnover of CHF 7 million and 200 full-time employees in Switzerland and abroad. The company's main partners are the European Commission, the US State Department, UN agencies, governments and foundations.

www.crosstech.cc

Sarmap SA, a Swiss company founded in 1998, is active in the development of algorithms and operational applications for the generation of remote sensing products based on spaceborne and airborne Synthetic Aperture Radar as well as spaceborne and drone stereo optical data. The company offers training courses and workshops for technical and institutional staff and for decision makers to extend the understanding of the uses for remote sensing data, products and services, and to demonstrate the economic benefits and technical advantages of the technology.

www.sarmap.ch

Zoï Environment Network is a Swiss non-profit organization that helps build sustainable societies through informed analysis and smart and innovative design. Located in Geneva, Zoï Environment Network supports the work of the United Nations, the government of Switzerland, the European Union and many other public institutions. The organization was founded in 2009, has an annual turnover of CHF 1.3 million, and employs eight full-time staff. Zoï is widely known for the production of contextual and risk maps and efficient information products for decision makers and the public. Zoï is also experienced in facilitating projects on responsible mining. In this consortium, Zoï provides communication and design of the results of the analyses.

www.zoïnet.org

Clients

Through EPM, mine operators, governments, and NGOs can access highly efficient environmental monitoring systems that increase accountability, reliability, and transparency of mining operations. We have a longstanding track record in working with the United Nations, the governments of various mining countries and civil society organizations engaged in mining and environmental issues. Public institutions and NGOs use EPM information to inventory and monitor abandoned sites, to verify company monitoring data, and to control small-scale artisanal mining activities.

Contact

With three pilot projects underway, EPM is ready to carry out any of the services outlined above, and is eager to discuss specific objectives and appropriate technologies with interested parties.

EPM

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