



## **Certifying best practices in mineral exploration: a step towards an enhanced reputation**

Leila Ajjabou (1), Moritz Kirsch (1), Richard Gloaguen (1), Jon Russil (2), and the INFACT Consortium

(1) Helmholtz-Zentrum Dresden-Rossendorf, Helmholtz Institute Freiberg for Resource Technology, Freiberg, Germany (l.ajjabou@hzdr.de), (2) SRK Exploration Services, Cardiff, UK

There is a growing demand for mineral resources worldwide, and yet industry is facing increasing obstacles in obtaining public acceptance for new exploration and mining projects. Numerous recent citizen protests highlight the public perception of ‘dirty’ mining projects and increase the reluctance of investors to finance exploration. These difficulties will certainly increase as sensitive areas such as the Arctic or deep-sea environments are now considered.

We argue that a paradigm shift is needed to improve the reputation of the industry and increase the acceptance of exploration and mining. Non-invasive exploration techniques can be defined as energy efficient, low-impact technologies. They assist in the detection and mapping of mineral deposits and improve exploration targeting with minimal environmental impact, while demonstrating that industry cares about reducing disturbance to the communities and environment in which they operate. Until recently, these criteria have generally not figured significantly in mineral exploration design and planning in Europe. However, it is increasingly understood that non-invasive technologies can help to maintain the social licence to operate and consequently lower the investment risk of exploration.

To demonstrate this premise, we established an EU-funded research project called INFACT (Innovative, Non-Invasive and Fully Acceptable Exploration Technologies), which supports the development of innovative exploration and stakeholder engagement approaches. Our project will establish a set of permanent, accessible reference sites to trial and assess the technological and social performance of existing and emerging innovative, non-invasive exploration techniques (e.g., SQUID magnetics, muon tomography, gravity gradiometry, passive seismics, airborne long-wave hyperspectral imaging, UAV magnetics). The reference sites have a rich and diverse exploration portfolio including extensive drillhole databases and cover a broad range of geological, social and climatic conditions to cater for a wide variety of future users. We will assess both the technical merits of the methods and the opinions of local stakeholders.

Ultimately, INFACT will result in a credible certification scheme for best practice mineral exploration which, it is hoped, will provide comfort and confidence to exploration decision makers, investors and civil society. Such schemes for the metal and mining industries are just emerging but will help to establish new approaches in reducing environmental impact and increasing social acceptance, thus boosting the sector in Europe.