

Design of an open source mineral resource management system

Safi Ur Rehman and Muhammad Mansoor Khan

Department of Mining Engineering, University of Engineering and Technology Peshawar,
Pakistan

The breadth or domain of mineral sector includes, but is not limited to, mineral resource mapping, mineral resource modeling and visualization, mine planning and design, mine management, mineral and mining cadastre system. Although, there are many software solutions for various aspects related to mineral sector, but a comprehensive and coherent solution, seizes to exist. These are 1) cover and integrate the entire and diverse domain of mineral sector, and 2) provide a platform that would accommodate the requirements of the stakeholders of the mineral sector. Therefore, an integrated open source software mineral resource management system (MRMS) is needed to be designed and developed such as 1) open source software (OSS) solutions purview almost all conceivable domains, and 2) contemporary OSS's have the characteristics and capabilities needed for an integrated software solution for the mineral sector. This paper envisions the design of an open source MRMS. The proposed MRMS is based on the characteristics and capabilities of integration, customization and binding of various open source geospatial softwares including open source libraries, services, applications, spatial database management systems, and an open source ERP. Core architecture of MRMS will not only provide the common capabilities for the independent islands of mineral resource mapping, geo-data management, mineral and mining cadastre, mineral resource modelling, mineral resource visualization, mine planning, mine design, and mine management, but will also link the entire domain of mineral sector as an integrated system.