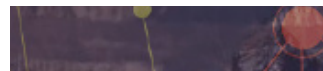# TS-eMining

Geological & Mineral Resources Planning

TS-eMining stands as an encompassing and cohesive solution crafted by NIC, Telangana, specifically tailored for the Department of Mines and Geology under the Government of Telangana. The Department plays a pivotal role in the advancement of mineral resources, encompassing tasks such as the exploration of mineral deposits, regulation of mineral activities within the state, and the collection of mineral revenue.

This initiative introduces a robust and streamlined approach to mineral resources planning and management through a series of online modules. These modules, integrated into the department's web portal at https://mines.telangana.gov.in, are designed to enhance the ease of conducting business while ensuring effectiveness and transparency in operations.

The system caters to various stakeholders within the mining sector, including mining and quarry lease holders, mineral dealers, temporary

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TS-eMining application has digitized and streamlined mineral resource management processes in Telangana. It facilitates transparent governance, efficient concession management, and sustainable mining practices through real-time data access and integrated systems, fostering economic growth and environmental stewardship in the sector.

permit holders, entrepreneurs, and chief-engineering divisions of government departments. By offering a user-friendly interface and comprehensive features, eMining aims to modernize operations, simplify processes, and foster a conducive environment for all involved parties.

Objectives

The key objectives of integrated Mines & Mineral Resources Planning System are as follows:
- To support major functions of the Department include Promotion, Regulatory & Mineral Revenue Collections by maintaining the data of all stakeholders and their activities
- Development of Standard Operating Procedure & End to end tracking of mineral extraction to consumption
- Simplify mineral administration, effective realization of revenue & curb leakages
- Decision Support System for Managerial level staff and transactional details for Operational staff
- To collect District Mineral Fund (DMF) online

from the leaseholders and maintain all development activities using DMF funds for the interest, benefit and sustainable development of areas affected by mining or mining related operations
- Collecting State Mineral Exploration Fund (SMET) from the leaseholders for geological investigation, mapping, exploration and development of mineral resources in the State
- Disseminating geological and mineral information of the mineral resources to promote mineral based industries and overall development of mineral sector in the State
- Auto Approval of online ePermits, Online Transfer & Renewal of Lease Applications

Implementation

The scope of the eMining Project is to design, develop, test and to implement all the activities related to mines and mineral resources planning. The software comprises all major functionalities to address the ICT requirements of the Department of Mines and Geology. The Department is determined to go for a full-fledged e-Governance Solution aiming for total 'paperless' mineral administration in the State of Telangana. eMining provides users with real-time access to mineral service information, introducing transparency and efficiency to the department, ultimately benefiting citizens and stakeholders alike.

To achieve the same following web application modules are being implemented:
- Grant of Minor Mineral Concessions (Quarry Leases) through Auction through Telangana State eAuction Platform
- Online Mineral e-Payment & e-Permit System.
  - Online payment of statutory amounts
  - Issue of e-permits (now Auto Approval)
  - Mineral Revenue Assessments etc.
- Online grant of Transit Passes generation Transit Forms for Lease Holders. (Printing on Secured Stationery)
- Online issue of Temporary Permits for Minor Minerals
- Grant of Quarry Leases in case of QL Applications wherein Letter of Intent (LoI) has been issued
- Online Filing, Receipt, Processing and Approval of Renewal Mineral Concession Applications
- Online Filing, Receipt, Processing and Approval of Transfer Mineral Concession Applications

- Online Filing, Receipt, Processing and Approval of Quarry Lease for Minor Minerals in Patta Land
- Appeals – Online Filing, Processing & Disposal of Appeal Applications
- Zero Permits for Government Works
- Show-Cause Notice/Determination of QL Module – In case of breach of lease conditions, online issue of Show Cause Notice and for non-rectification of the breach, online Determination of Quarry Lease
- Implementation of eOffice – Processing and disposal of files through NIC eOffice Platform
- Online filing of Application for Registration of Brick Manufacturing Kiln and Mangalore Tiles
- Online filing of Application for Renewal of existing Mineral Dealer License
- Registration of Mineral Transporting Vehicles in the State
- MIS Reports: Various MIS & Data verification reports are developed and implemented for dealing hands, concerned authorities and Assistant Directors at district, regional and state level for regular day-to-day monitoring of various activities being undertaken at respective levels which includes:
  - Mineral Revenue Report
  - Permit-wise Revenue Reports
  - Daily Permit Reports
  - Daily Passes Reports
  - Bank Transactions Reports
  - Income Tax Reports
  - MDL Permit Report
  - NMET (National Mineral Exploration Trust) Report
  - SMET (State Mineral Exploration Trust) Report
  - DMF (District Mineral Fund) Report

TS-eMining Mobile App

TS-eMining MobileApp is a robust and dynamic in nature, being enriched continuously with new functionalities that empowered by latest technology and standard practices. This Mobile App is an effective and integrated mineral transport solution that provides access to all the stake holders related to mineral transport services. It facilitates online verification of transit form, transit pass, road inspection etc. The Mobile App provides a platform that empowers inspection teams to perform inspection of minerals during transportation by vehicles.
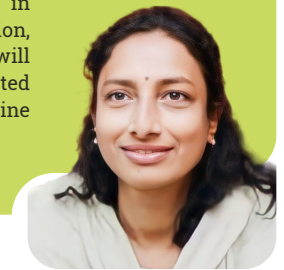
- TS-eMining Mobile App serves the field officers at District level (Assistant Director's, Assistant Geologist's Royalty Inspector's Technical Assistant's,) to verify the validity of the transit forms/passes, sand way bills, brick transportation etc. issued by the Department
- The Mobile App facilitates auto calculation of statutory payments based on the quantity, type and variety of mineral, in case of detection of unauthorized mineral transportation. An online payment link shall be sent through SMS to the owner of the vehicle to pay penalty online
- It provides online payment facility for the penalty imposed due to non-availability of passes or excess quantity that being transported
- Owners/defaulters shall be communicated through SMS to avoid manual interface including handling of cash by the officers in the field.
- Online Receipts and Reports shall be generated by the concerned authorities

The TS-eMining Mobile App was ceremoniously launched on September 30, 2023, at B.R. Ambedkar Telangana State Secretariat. Leading the inauguration were distinguished figures including Shri P. Mahender Reddy, Hon'ble Minister

Department of Mines & Geology, Telangana designed TS-eMining software which is developed by NIC eMining Team, and being implemented for 'ease-of-doing-business' under G2G, G2B & G2C.

Facilitated mineral concessions through auction, online payments, permit system, mineral dealer registration & transit passes for dispatch of finished mineral, appeals etc. in online mode with accountability & transparency in the form of SLAs (Service Level Agreement) and intimation (SMS) all levels of approvals.

TS-eMining Mobile APP implemented to check Mineral Transporting Vehicles, and in case violation, the penalty will be collected through online process.

P. Katyayani Devi, IAS
Director of Mines & Geology
Telangana State

for Mines & Geology and Information and Public Relations (I&PR); Smt. A. Santhi Kumari, IAS, Chief Secretary to the Government of Telangana; Smt. P. Katyayani Devi, IAS, Director of Mines & Geology; and the dedicated eMining Team of NIC Telangana. This significant event marked a milestone in

▼ Fig 10.1 : Launching the TS-eMining Mobile App by Shri P. Mahender Reddy, Hon'ble Minister for Mines & Geology and Information and Public Relations (I&PR) at BR Ambedkar Telangana State Secretariat on September 30, 2023

▲ **Fig 10.2 : TS-eMining Mobile APP screens**

advancing technology for efficient management and oversight of mining activities in the region.

Technologies Used

- Front-end: HTML, CSS, JS, and Bootstrap
- Back-end: Microsoft.NET with ASP .NET and C#
- Database: Microsoft SQL Server
- Mobile App: Android

Innovations Applied

The ICT solution implemented for the Department of Mines & Geology in Telangana, accessible through the 'https://mines.telangana.gov.in' web portal, represents a significant stride towards governance modernization. Its robust architecture provides a comprehensive repository of information pertaining to mineral resources, administration, policies, regulations, revenue, and production.

Functioning as a centralized resource hub, the portal plays a pivotal role in facilitating streamlined access to mining-related data for stakeholders, entrepreneurs, and the general public alike. From initial application to final disposal, the management of mineral concessions is seamlessly handled online, bolstered by Service Level Agreements (SLAs) and SMS notifications that ensure transparency throughout the process.

Through the elimination of redundancies and the enhancement of data integrity, the portal simplifies information gathering by employing standardised proformas. Moreover, it optimises the frequency of data collection and empowers decision-makers through the provision of Management Information Systems (MIS) and analysis reports.

The integration of mining activities and databases within the portal creates a cohesive user experience, standardised processes, and prioritises user-friendliness, thereby promoting hassle-free operations. This comprehensive approach not only enhances efficiency but also fosters a culture of transparency and accountability within the mining sector in Telangana.

Benefits

The Telangana state government has established district offices (32 in total) to streamline mineral administration, ensuring accessibility for mining entrepreneurs down to the micro-level. Oversight is provided by three regional offices dedicated to regulating mineral activities. Under the e-Governance policy, the department is implementing Information & Communication Technology (ICT) solutions to enhance service delivery, communication, and integration across government functions. This initiative aims to benefit government entities, citizens, and stakeholders by facilitating transparent, efficient, and convenient mineral services. The complete rollout of the eMining software was achieved through collaborative efforts, involving stakeholders in discussions, design, and development to mitigate initial resistance. Customized training modules were deployed at multiple levels, and employees were engaged step by step in the rollout process to identify and address challenges promptly. Software performance was rigorously evaluated post-implementation to ensure effectiveness.

Awards

At the 8th National Digital Transformation Conclave and Awards-2022, held on December 9, 2022, in Guwahati, Assam, the TS-eMining Project team from NIC Hyderabad, Telangana, and the Mines and Geology Department, Government of Telangana, received the Digital Transformation Award in the Government Initiative in IT category. This recognition by GovConnect highlights the Centre's dedication to nurturing a strong Digital Transformation ecosystem.

Target Ahead

All major activities of mineral administration are digitized. Emerging technologies like AI, ML and Big Data are yet to be explored in mineral administration, regulation to optimize production, exploration processes, improve supply chain, logistics and increase sustainability, with emphasis on environmental friendly mining and conservation.

As the huge amount of data available to process, the digital tools, such as advanced process control, AI, Big Data, digital twins, augmented reality, and IoT may come into play and may facilitates to take better decisions. The department is planning to launch Mining Tenement System (MTS) in tune with the guidelines of Ministry of Mines, Government of India, which would primarily involve automating the entire mineral concession life-cycle, starting from identification of area and ending with closure of the mine, and connecting various stakeholders, for real time transfer of electronic files and exchange of date. This may enable effective management of mineral concession regime and transparency in mining operations, transportation of ore with the help of online electronic weighbridges.

The department also taking steps to implement Mining Surveillance System (MSS) in tune with the guidelines of Ministry of Mines, Government of India for geo-referencing of mining and quarry leases and mineral bearing areas in the State. The MSS enable to detect and curb illegal mining and transportation activities.

▲ **Fig 10.3 : Department of Mines & Geology officials, along with the NIC team, honored at the 8th National Digital Transformation Conclave and Awards-2022 on December 9, 2022**

Contact for more details

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