

Vol. 8 | No. 4
November-December, 2011

e-Governance of Mineral Administration (Commissionerate of Geology & Mining)

eGovernance of Mineral Administration

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The Commissioner of Geology and Mining is working under the Industries and Mines Department Government of Gujarat. It is a well reputed and one of the best organizations in the country. It comprises a core team of Geo-scientists, Scientists in the Chemical Laboratory and Mining Engineers etc.

Geology and Mining Department has to provide various services like signed treasury challan, stamping and issuance of royalty pass book, verification of mineral royalty pass and monthly return forms, scrutiny of lease application for approval/ renewal/transfer etc to its stake holders like Lease holders, mineral stockist, weigh bridge owner on daily/weekly/monthly basis. All these required to have a lot of human interaction and old traditional manual physical processes.

The main function of Commissioner of Geology and Mining are:

- **Search and exploration of mineral wealth** of the State by adopting State-of-the-art exploration techniques
- **Increase States' Mineral Revenue** through higher production of minerals & their scientific development
- Encourage **value addition of minerals usage** through promotion of mineral based industries in the State
- **Provide infrastructures facilities** viz. road, electricity etc. to mines and quarries

Objectives:

- Process Re-engineering of current Quarry / Mining business processes for automation quick response and transparency
- Introduction of ICT based services for stake holders of Geology and Mining for automation of Govt. Processes
- Real time accounting of e-payment, royalty pass, mineral transportation etc.
- Reduction in illegal mining through automated system
- Effective and Hassle free mineral administration
- Transparency and accountability in mineral administration

Overview of eGovernance System

Commissionerate of Geology & Mining (CGM), Government of Gujarat had appointed M/s. (n)Code Solutions, a division of GNFC as the Total Solution Provider. M/s. (n)Code has offered integrated software development and portal application modules such as e-payment, e-Royalty pass, e-return, Demand Register and other related modules covering in one single portal for stakeholders of Geology & Mining in Gujarat State. Integrated Web Portal <http://geomining.gujarat.gov.in/> was developed. The primary aim was to replace the traditional manual processes by a web-based application which is faster and more efficient than former. Certain business processes have been reengineered to be suited in a virtual atmosphere where they are quick and transparent to everyone. The project has played crucial role in reduction of malpractices such as royalty theft and illegal mining.

The Mining/Quarry business intelligence components have produced:

- (1) **Centralized Data:** Centralized Data of royalty collection, royalty pass issuance information, production, dispatch, sale price etc is used to make the decision making process faster. It helps to integrate data from different sources to facilitate reporting and analysis.
- (2) **Business Analytics:** The mining Business reporting tool analyzes the data stored in central repository and is used for various kinds of analysis, decision trees etc at a central level.
- (3) **Enhancement of Business Performance:** The project has drastically reduced the instances of illegal mining and increased the State Government's revenue collected as royalty.
- (4) **Process Reengineering:** Smoother processes are being followed. The Process reengineering has benefitted the stakeholders and empowered the Government to make the Mineral/Mines administration better.
- (5) **Integrated System for Data Integrity:** The integrated system facilitates streamlining of complex data and provides reliable data.

This project has empowered the department to leverage ICT to discharge its duties more effectively. The transaction time has reduced and Decision Support System is possible for the Government officials.

The former process of issuing royalty pass to leaseholders was manual. The leaseholders had to get physical challans, get them signed from district geologist office, stand in queue to deposit in Govt. Bank and wait for the day of week decided by district office for allotment of royalty pass booklet and get each triplicate passes stamped. To overcome a big challenge in mineral administration, CGM has concentrated on e-Solution and decided to provide the genuine e-Services to leaseholders and other stakeholders of Geology & Mining.

(n)Code has developed a system through which a leaseholder can generate the royalty pass online once the payment is reflected in his virtual account. The system has created the centralized database containing the information related to leaseholders, payment transactions, updated mineral rate, royalty pass issuance, demand register information and weighbridges, mineral stockist for better automation. The system has reduced the scope of illegal issuance of Royalty Passes and has also made monitoring and tracking royalty a convenient and accountable system.

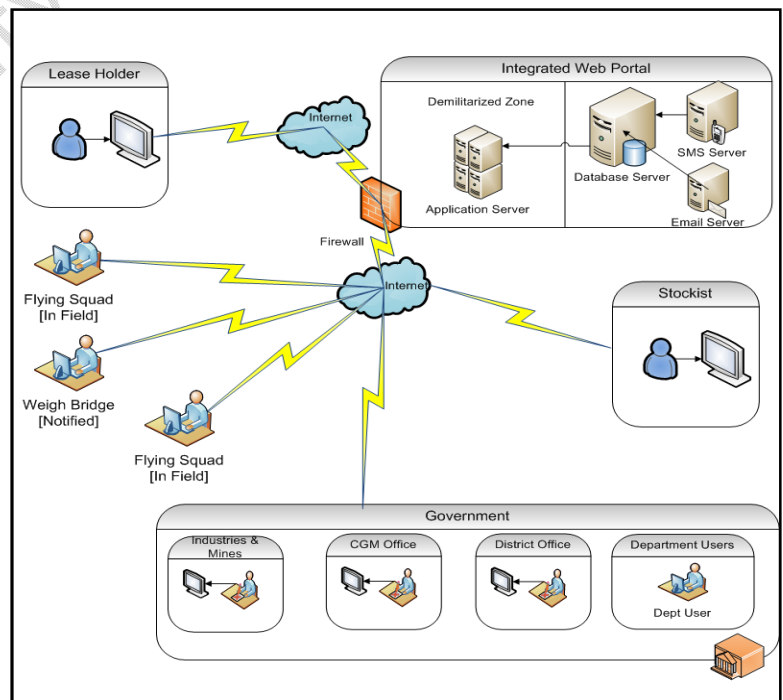
The challenge was to cover the approximate 7000 leaseholders in entire state. (n)Code, in conjunction with CGM drew a systematic plan for adequacy of system. To educate the leaseholders about the benefits of e-System, various training sessions were organized at micro level, operational manuals were designed, and demo cases were prepared and presented to stakeholders.

Technology:

A web based solution is developed to serve the e-services at the door step of stake holders in an integrated manner to enhance the core business of mineral based industry in Gujarat.

The new system developed on turnkey basis including application development, hosting, implementation, training and central support for uniformity. The Microsoft .net and share point development environment is chosen. The project has been built on 3-tier architecture. There is a presentation tier, which provides the front end for the site. There's a business logic tier, which handles several tasks including authentication, authorization and workflow management. Lastly, there is a database tier, which is used to read and write the data from its database. The business logic has been kept separate from the presentation logic by design. This makes the system more scalable allowing new departments to be incorporated into the system. All workflow and navigation code have been abstracted from the user interface for achieving this.

- **Disaster Recovery & service continuity and its compliance;**
- **Maintenance Model:** A proactive approach is taken at various stages of application lifecycle. Four approaches; Preventive, Perfective, Adaptive, Corrective are used to ensure an efficient and all-encompassing maintenance model.
- **Compliance to NeGP Standards**
 - Open Standards
 - Localization Standards
 - Digital Signatures and Interoperability



Solution Architecture

Services - currently being delivered using ICT:

+ Government to Citizen (G2C)

- **Information dissemination:** To provide for information dissemination associated with various minerals, mines, leases, operations, policies and guidelines as well as other related details required to be made publically available or available to a selected set of stakeholders based on access rights.
- **Any-Time Royalty Pass System:** A web-based interface for leaseholders to issue royalty passes having a unique barcode based id and having certain mineral transport parameters such as mineral weight, duration of journey, destination details etc to enable effective monitoring of the process of royalty pass issuance with respect to the lease and the leaseholder information.
- **E-Return:** All leaseholders have to fill up the applicable Mineral Return Form configured by system on monthly basis in the prescribed format by GMMCR / MCDR act describing the production, dispatch, labour and employment details, royalty paid, mineral consumption, sale in domestic/export market etc with specific reason within the prescribed time limit decided by online system.
- **Online Application for New Mineral Lease/Permit:** To provide leaseholder with a facility to file an application for mining lease, quarry lease, quarry permit and work permit through an online software module as well as facilities to renew, transfer and surrender a lease.
- **GIS based Mineral Atlas:** To provide a GIS-enabled solution to the users to view and search information based on pre-defined parameters along with layered GIS maps.
- **E-Payment System:** Interface the existing funds management system to act in an integrated manner with other modules of the web portal. Facility to transfer 9 types of payments through RTGS/NEFT from leaseholder's Bank account into CGM's Virtual Account.

+ Government to Business(G2B)

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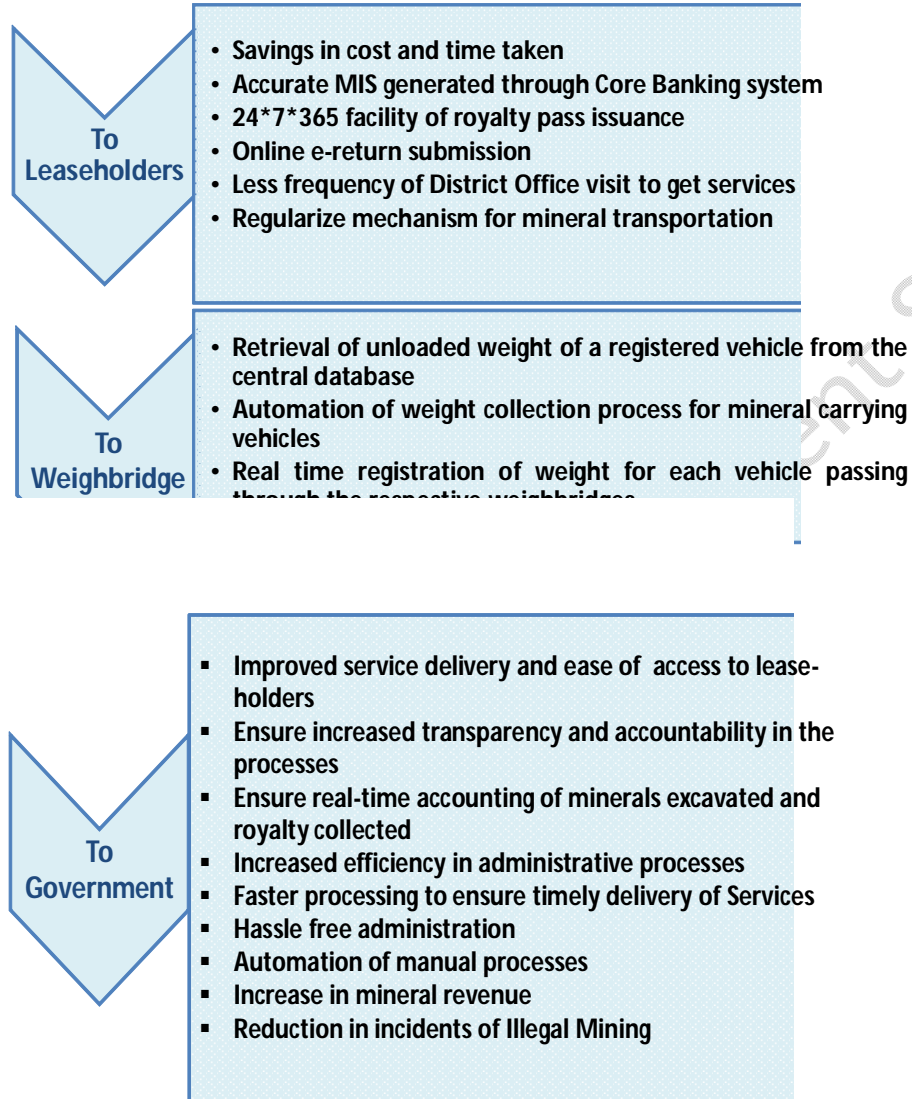
+ Government to Government (G2G)

- **Demand register:** Provision of online/offline information transaction recording framework to maintain leaseholder's account details of production, dispatch and payments etc as per rules of GMMCR 2010.
- **Mobile / System based Royalty pass tracking:** Provide facility to authorized users to review and track an online royalty pass using mobile devices

IT Initiatives VIS-À-VIS Established Processes

MANUAL PROCESS as Drawbacks	IT ENABLED PROCESS
<u>CHALLAN SIGN</u> <ul style="list-style-type: none"> • Lessee have to get Challan from District Office • Get Signature and Stamp on the Challan • Pay the Royalty/Other amount to designated Bank 	<u>E-PAYMENT</u> <ul style="list-style-type: none"> • Money Transfer through RTGS / NEFT / Internet Banking Procedure through ones own bank • Confirmation through Internet • Accurate MIS is generated for all the Transaction
<u>ROYALTY PASS STAMPING</u> <ul style="list-style-type: none"> • Present the Paid Challan / Note down the Challan details in manual register • Issue the Royalty pass - serial number wise • Stamping on each page of Royalty Pass Book 	<u>ALL TIME ROYALTY PASS</u> <ul style="list-style-type: none"> • Real Time issuance of Royalty Pass • Optimize cost and time saving • Effective report mechanism for royalty pass issued • Integration with Weigh Bridge/Stockist
<u>MONTHLY RETURN</u> <ul style="list-style-type: none"> • Monthly forms (J,F9,F3,F8) submitted on simple paper (typed or handwritten) 	<u>E-RETURN</u> <ul style="list-style-type: none"> • Timely Submission of on-Line e-Return by lease holder as per GMMCR and MCDR Act. • Integration with Demand Register • Statistical Report Generation
<u>DEMAND REGISTER</u> <ul style="list-style-type: none"> • Manual entry of various information • Difficult to calculate the interest / royalty difference, adjustment of various dues etc. into manual demand register • Tough task to carry forward all entries / calculations month-wise for each lease holder 	<u>E-DEMAND REGISTER</u> <ul style="list-style-type: none"> • Automatic fetching of various Royalty / rent paid • Mineral production / dispatch information on demand from e-return • Easy to calculate over due amount, interest calculation etc
<u>DELIVERY CHALLAN STAMPING:</u> <ul style="list-style-type: none"> • Manual Reconciliation of Royalty passes used • Physical application processing for Delivery challan pass book • Stamping on each page of Delivery challan book 	<u>E-DELIVERY CHALLAN</u> <ul style="list-style-type: none"> • Automatic reconciliation of Royalty pass and Quantity of mineral used • Online application processing for Issuance of CD pass • Enables stockist to generate the DC pass against approved quantity of mineral used.
<u>NEW LEASE APPLICATION</u> <ul style="list-style-type: none"> • Manual Submission of New Quarry/Mining Lease Application • Tracking/Status of Application is Manual process 	<u>WEB BASED NEW APPLICATION</u> <ul style="list-style-type: none"> • Online Submission of New Application • Availability of Online Status of New Quarry/Mining Lease Application
<u>MINERAL WEIGHMENT</u> <ul style="list-style-type: none"> • Individual weighment loaded / unloaded weight of the vehicle • Only single weighment slip is generated • Reconciliation of excess mineral weight with physical passes issued 	<u>MINERAL WEIGHMENT THROUGH WEIGHBRIDGE INTEGRATION</u> <ul style="list-style-type: none"> • Automatic capturing and calculation of the weight of the vehicle • Deduction of excess mineral royalty amount from leaseholder's virtual account

SOLUTION BENEFITS

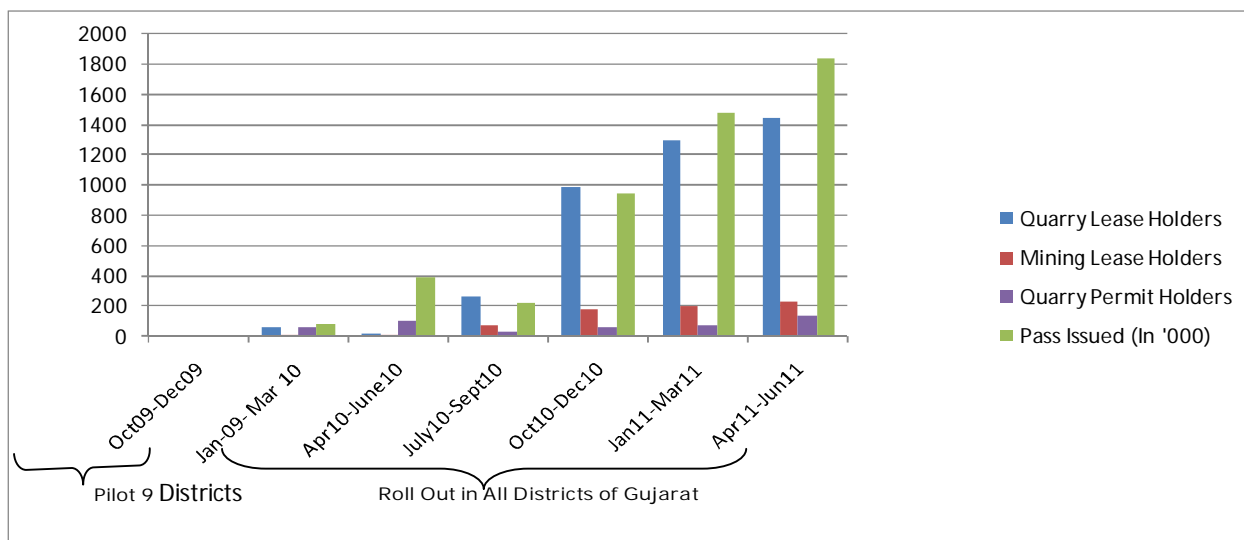


a. Services that are enhanced / functionally extended during the year 2010-11:

Following manual and traditional Govt. services are converted into electronic mode to provide ease of use to CGM's stakeholders:

- Royalty & Other mineral concession collection
- Issuance of TPS (Triplicate Pass System)
- Return on mineral
- Semi Auto frame work for Demand Register transactions recording system
- Online new lease application for QL/ML/QP/PL/RP
- Monthly Progress Report
- Mineral Atlas information dissemination
- Registration of Mineral stockist / Weighbridges
- Delivery Challan establishment

b. Implementation coverage till date and during the year:



Results Achieved

Module	Details	Remarks
Stake Holders' presence (Till Sep 2011)	6110 Quarry Lease 830 Mining Lease 3935 Quarry Leaseholders using ATR 344 Mining Leaseholders using ATR 343 Quarry Permit holders using ATR	One Time registration and allocation of lease code
E-Payment (Till 24 th Oct 2011)	More than 91179 Online Transactions Received	Centralized Bank receives the transactions
E-Royalty Pass (Till 24 th Oct 2011)	More than 6361204 Passes Generated	Per Day approx. 20000 - 30000 transactions are recorded
E-Return System (Till 24 th Oct 2011)	More than 25000 Returns submitted	Every month approx. 1500 Lease holders are submitting
Stockists (Till 24 th Oct 2011)	More than 2228 Mineral Stockists	Registered into system
Weighbridges(Till 24 th Oct 2011)	More than 819 Notified Weighbridges	Registered into system

Achievement:

eINDIA 2011 Awards:

eGovernance of Mineral Administration (Geology and Mining), Commissionerate of Geology and Mining, had received Best Government to Business Initiative of the Year-Public Choice Award



CSI-Nihilent eGovernance Awards 2010-11:

eGovernance of Mineral Administration (Geology & Mining), Department of Industries & Mining Department, Government of Gujarat had received Award of Excellence in Projects G2B Category

Future Plans:

CGM plans to implement "M-Pass" system, where unique Royalty Pass number shall be sent to mobile of the vehicle driver through SMS. This "M-Pass" shall be used in lieu of paper based royalty pass. CGM also plans to have a command and control center for monitoring mining activities for Gujarat State.

- M-Governance (Mobile based m-Pass delivery)
- GPS co-ordinates (latitudes / longitudes) applicability for issuance of royalty pass
- GIS based Lease Administration and Mappings of Mineral map
- GPS integration for mineral carrying vehicles
- Digital Signature inclusion at Lease Holder level
- Command and Control Room as a central monitoring mechanism

e Governance News

Workshop on Implementation of IPv6 Project in the State

The Department of Telecommunications, Govt. of India had released the **National IPv6 Deployment Roadmap** in July 2010 according to which all Government departments have to use IPv6 services by March 2012. To implement IPv6 project in State, a GR No. GOI/10/2009/518709/IT dated 06/07/2011 issued by Department of Science and Technology, Govt. of Gujarat regarding the formation of the IPv6 Task force and IPv6 Policy Implementation thereof-Action to be taken by the Departments. Gujarat Informatics Ltd. had organized a Workshop on Implementation of IPv6 project on 22nd November, 2011 at Gandhinagar. The BSNL experts had been called from BSNL, Regional Telecom Training Centre, Ahmedabad for the technical session during the workshop. Nodal Officers from various GoG Departments, state nodal agency and officials from National Informatics Centre, Gujarat had participated in the workshop.



eGovernance Awards received by Government of Gujarat

Sr. No.	Award Name	Details of the function in which the award was given	Details of the achievement for which award was given?
1.	eINDIA 2011 Awards	Award presented ceremony was held at Mahatma Mandir, Gandhinagar, Gujarat on 15 th December, 2011	OASIS (On-line Application & Scrutiny of Inter-State Transactions) project of Commissioner, Commercial Tax, Government of Gujarat had received Best Government to Business Initiative of the Year- Jury Choice Award
2.			eGovernance of Mineral Administration (Geology and Mining) , Commissionerate of Geology and Mining, Department of Industries and Mines, Government of Gujarat had received Best Government to Business Initiative of the Year-Public Choice Award
3.			eGov Strategies and ICT enabled Initiatives at Chief Minister's Office , Gujarat had received Best Government to Citizens Initiative of the Year-Public Choice Award
4.			Online Voting System , State Election Commission, Gujarat had received Best Urban ICT Initiative of the Year-Public Choice Award
5.	CSI- National Young IT Professional Awards-2011	Award presented ceremony was held at Hotel Intercontinental, The Lalit, Mumbai on 12 th December, 2011	Gujarat Informatics Ltd. had received Special Mention Jury Award for Development of Khel Mahakumbh Web Application
6.	CSI - Regional Young IT Professional Award 2011	Award presented ceremony was held as part of the CSI 46 th Annual National Convention at	Gujarat Informatics Ltd. had received 1 st Runner Up-Regional Young IT Professional award for western region for Development Khel Mahakumbh Web Application
7.	CSI-Nihilent eGovernance Awards 2010-11	Ahmedabad Management Association, Ahmedabad, Gujarat on 3 rd December 2011	e-Governance at Chief Minister's Office , Government of Gujarat had received Award of Excellence in Department Category
8.			e-Governance of Mineral Administration (Geology & Mining) , Department of Industries & Mining Department, Government of Gujarat had received Award of Excellence in Projects G2B Category

9.			e-Dhara, Revenue Department , Government of Gujarat had received Award of Appreciation-Sustainability Award Category
10.	10 th India-Tech Excellence Awards India-Tech Foundation	Award ceremony was held at Bombay Exhibition Centre, Western Express Highway, Goregaon (E), Mumbai and award distributed by Union Power Minister, Hon'ble Shri Sushil Kumar Shinde on 10 th November, 2011	Gujarat State had won ICT India Excellence Award - Progress of Development of IT in State

Photo Gallery:





Web Corer

<http://geomining.gujarat.gov.in>

<http://www.cgm.ncode.in>

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