

Informatics

National Transport Register



Vibrant ICT activities in Puducherry

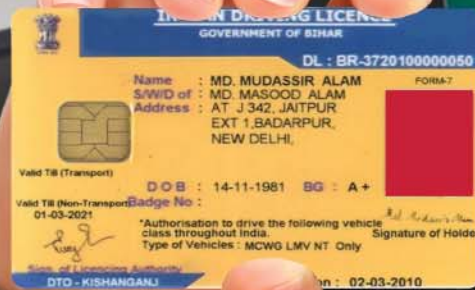
Secure Socket Layer

e-Governance in Bihar

ICT in Districts:
Anuppur, Raigarh, Leh, Hisar

Multidimensional Data Modelling
Concepts

I-MAS



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Editorial



Ministry of Road Transport & Highways had envisioned a Mission Mode Project for computerization and interlinking of about 975 RTOs/DTOs across the country. The Ministry in consultation with National Informatics Centre (NIC) implemented the National Transport Project integrating information from all the RTOs/DTOs across the country. Recently launched National Transport Register is a major accomplishment of the Project. Transport Register is a central pool of all driving licenses (DLs) issued and vehicles registered across India. Detection of fake driving licenses and tracking stolen vehicles has become very convenient with the launch of this Register. It can also be accessed for a quick verification by all states and road transport offices round the country. It will cater to the information needs of the transport departments, police departments and automobile dealers across India and may serve many more purposes in time to come... Our Lead story gives you an insight into this highly successful project.

Spatial Information System for the Rajiv Vidya Mission in Andhra Pradesh, BHOOMI Project in Karnataka, Computerization in District Judiciary in Gujarat, and Integrated Missions Accounting System are the highlights of our Products & Services Section. While Technology Update section this time, discusses Multidimensional Data Modeling Concepts and Secure your Server through SSL.

In the 'From the States/UTs Section', we have covered the ICT initiatives in Puducherry and Bihar. Various ICT projects and initiatives in Anuppur district of Madhya Pradesh, Raigarh district of Chhattisgarh, Leh district of Jammu & Kashmir, and Hisar district of Haryana have also been talked about in this issue.

All our regular sections viz., International e-Gov Updates, Cyber Governance, In the News etc. are there to serve your need to know what's happening in the e-Gov domain around us. Few laurels received by NIC recently have also been covered in the new section Awards & Recognitions.

Enjoy Reading...

We would like you to contribute to Informatics. You can send your contributions to our State Correspondents or can also send directly to us at the following address.

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Over the past decade or so there has been an island of e-Governance initiatives by state transport authority of different States in the country. The experience with the IT initiatives, have been very good and is extremely beneficial in making transport department services accessible to the common man in his locality through various service delivery outlets. It also ensures efficiency, transparency & reliability of such services at affordable costs to realize the basic needs of the common man.



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NATIONAL TRANSPORT REGISTER

"Without data that is consistent, accurate and reliable across the enterprise an organization can easily reach misleading, faulty and potentially harmful conclusions".



Hon'ble Union Minister for Road Transport & Highways Dr. C.P Joshi inaugurated the National Register and National Transport Portal on 20th July 2011

MINISTRY of Road Transport & Highways (MoRTH) had envisaged National Transport Project for computerization and interlinking of about 975 RTOs/DTOs across the country. Ministry in consultation with National Informatics Centre (NIC) implemented the National Transport Project at all the RTOs/DTOs across the country.

This is one of the Mission Mode Projects under National e-Governance Plan. The RTOs (Regional Transport Offices) in vari-

ous States and UTs across the country are responsible for granting the Driving License, registration of motor vehicles and also providing various other services to the citizens. Off late, it was observed that these offices are working in isolation due to which information availability was limited and access to data from their offices was not available. Complaints were received in case of inter State transfer of vehicles. To do-away with the manual process so as to ensure uniformity and standardized process throughout the country, the Central Government had made provisions in the Central Motor Vehicles Rules-1989 for issuance of smart card based Driving License (DL) &

**"SARATHI"**

A one-stop solution to driving licensing (DL).

(<http://sarathi.nic.in>)

**"VAHAN"**

A one stop solution for vehicle registration (RC)

(<http://vahan.nic.in>)

Registration Certificate (RC). On these lines- The Ministry of Road Transport & Highways has envisaged National Transport Project to develop standardized software in consultation with the NIC and to make it available to all the States.

On those lines, NIC has developed the standardized software; Vahan & Sarathi and the software is made available to all the States. NIC has also customized it to suite the requirement of the State. The aim of the National Transport Project was to computerize the RTOs, develop and implement standardized software for the DL & RC, smart card enablement, establish State Register and National Register and subsequent State-wide roll out. The software has been successfully customized and implemented in 33 States/UTs and 97% States have been computerized. The smart card is being issued for 24 States/UTs. The project has reached a sustenance phase wherein now it has capability for preventive maintenance, high availability & scalability through robust technological architecture. The project was awarded SKOCH ICT and SKOCH Challenger Award 2010 for its exemplary contribution to the transport sector.

The focus of the article is to present the scope of National Register (NR), its benefits and technology utilized for the Business Intelligence (BI) by interlinking all the RTOs/DTOs. The National Register has the capability to provide time critical information through a structured managerial reporting. The



Dr C. P. Joshi
Union Minister of Road Transport and Highways
Government of India

I convey my heartiest congratulations to the officials of Ministry of Road Transport & Highways (MoRT&H) & National Informatics Centre (NIC) for successfully launching the National Register and National Register Portal. Several years of sustained hard work from the officers of MoRT&H and NIC has been realised. This initiative aims at introduction of Information and Communication Technology (ICT) in road transport sector on a large scale.

Ministry of Road Transport and Highways has been leveraging strengths of ICT and with excellent support from NIC it has automated lots of its citizen service related processes and succeeded in carrying out its functions with greater transparency and efficiency.

National Register which has been created from State Register under Transport project is today acting as a central repository for all crucial information related to Registration Certificate & Driving Licence. I hope that this initiative will enable & empower the stakeholders in terms of improved quality of services, improved law abidance and reduced turnaround time for various G2G, G2C and G2B services.

I also take this opportunity to congratulate the Central Government Departments, the State Governments and all those responsible for facilitating Road Transport on the successful launch of the "National Transport Register portal".

National Register can provide reports at different levels: operational, tactical & strategic for informed decision making. It provides the ability to intelligently select and apportion data for query analysis and quick information at the click of a mouse. Meaningfulness and correctness of information is a key interest of the department such that not only the transport department but also other government departments, citizens and businesses can be benefited from it.

Further, the vision is to integrate National Register with other departmental databases for ready information availability to anyone desired. Example; Bihar State government extensively utilizes the NR-SR services for providing information to the citizens under the Right to Services (RTS) Act. The concept of National Register centrally aligns to the Right to Information (RTI) hence ensuring transparency of the information received from the citizens and distributed centrally anywhere, anytime. As said by Einstein "We cannot solve the problem by using the same kind of thinking when we created them". The NR initiative is gradually evolving into a world-class National level business intelligence system, with ideas like information access through SMS based services, integration with banks for financial services, web based applications, UID integration, cloud comput-

The Ministry of Road Transport and Highways (MoRTH) has about 1000 RTOs spread across the country. Establishing State Register and a National Register by the process of data integration is the NIC's solution to the exploding requirements for information from disparate, heterogeneous systems to make sound decisions and comply with the Central Motor Vehicles Act (CMVA)-1988, throughout the country. This has made the services of issuance of Driving License and Vehicle Registration to the citizens simple, fast and transparent.

ing, payment gateways, smart card based applications (SCOSTA) and many more. The initiative is in fact an initiation to powerful ideas that the department is planning to develop, design and launch. The technological revolution has met the information gap and the transport department is pursuing actively to utilize every bit of it. The gamut of citizen services offered through the National Register is discussed in the subsequent sections. The article is structured with the information necessary to help understand the details and the services offered through the National Register.

FINDING THE RIGHT SOLUTION

The RTOs across the country remained isolated and completely disconnected and ran with heterogeneous operational system. The department lacked of mechanism & infrastructure for combining data residing at different sources and providing a unified view of these data to itself for its business needs and also to other stakeholders like police, crime bureau, etc.

Apart from this, the Ministry of Transport & Highways had constraints to handle rapid data growth and provide 24x7 data service to G2G, G2C and G2B. It also required information reporting at the National

level for the departmental decision and policy making.

What needed was a robust solution to provide integration between the isolated RTOs across the States through a world-class integration technology tool.

To enable the complex data integration, light weight Oracle Data Integrator (ODI) is used. The ODI (Figure 1) enables data extraction from heterogeneous sources and transforms it suitably as per the business process that consolidates the data into SR-NR (Figure 2).

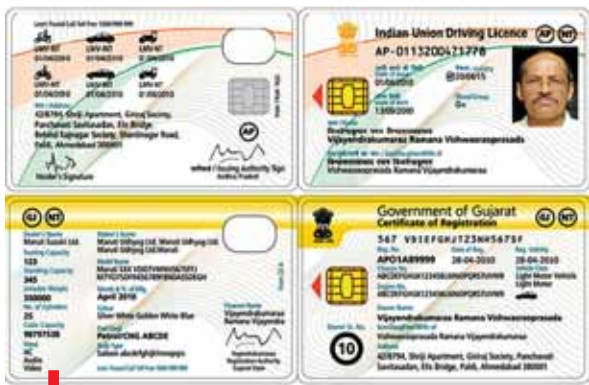
Oracle Data Integrator Features

- An Extract Transform & Load (ETL) & Business Intelligence (BI) Middleware Tool.
- Support heterogeneous sources and targets
- Packaged/Interfaces
- Changed Data Capture (CDC)
- Import/Export data facility
- Multiple repositories
- Agent load balancing/scheduler
- Oracle data quality integration
- Repository explorer
- Security/Profiles

ESTABLISHMENT OF STATE REGISTER (SR)

State level data repository called State Register (SR) has been established at every State. All the information being captured at RTOs/DTOs level will entirely go in to SR, so as to avoid any dependency of introducing new services on the level of information available

Uniform design of Smart Card based Driving Licence & Registration Certificate unveiled and proposed to be used by all the States



Sample Uniform Look & Feel of DL & RC

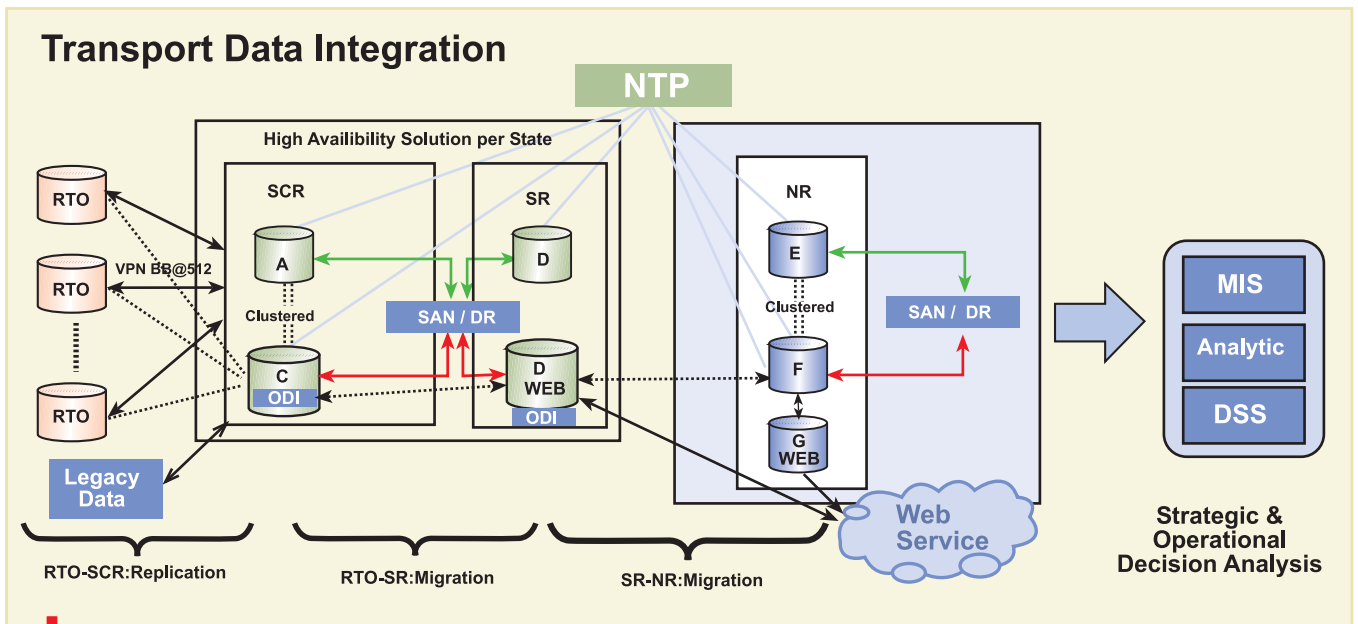


Figure 1: High availability architecture for Transport-data Integration

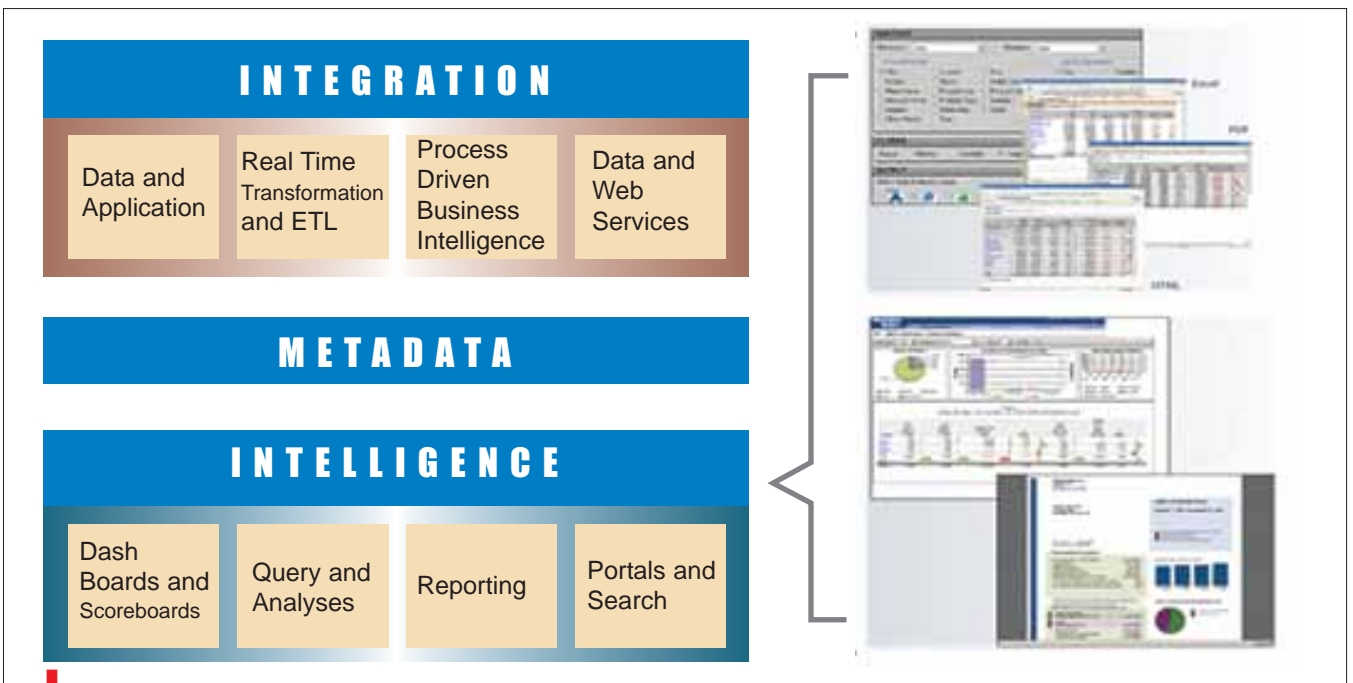


Figure 2: A single platform for Business Intelligence for Operational, Tactical and Strategic Reporting (National Transport Register)

at the State level. The collected data at the State level provides information for operational and tactical decision making.

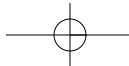
SR is connected to all RTOs/DTOs through Leased Line/VPN@BB connectivity. This supports the data consolidation for RTOs/DTOs to SR and vice

versa. SR will provide real time information to State transport department, RTOs/DTOs, police department and other G2C, G2B services.

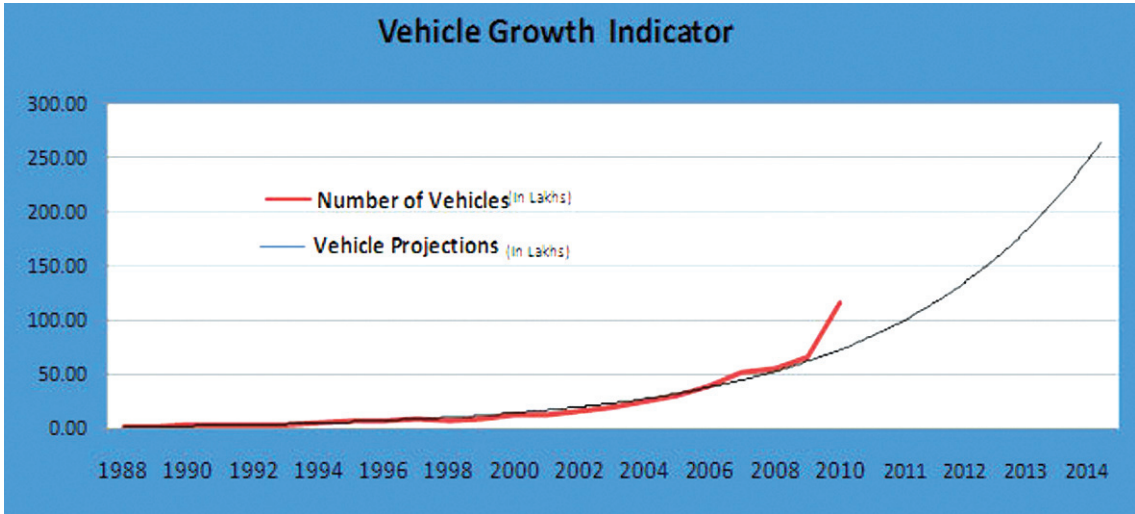
NATIONAL REGISTER (NR)

A Centralized database for Driving License and Registration Certificate

has been created from SR and is located at NIC Data Centre, Hyderabad. Its architecture has been designed for high availability, reliability and scalability. SR-NR is connected through high availability network supports the real time data replication from SR to NR.



Lead Story



other Government departments, tracking of stolen vehicles and detection of malpractices, e-payment of taxes, fees etc.

The entire Transport data from all the remote RTOs' operational servers can be accessed by the departments spread across the country at National, State, Regional, District etc. This

STATUS OF THE PROJECT

- **Computerization:** The computerization of the RTOs has been achieved for most of the States except for few RTOs in J&K and Punjab. This is expected to be completed in the current financial year.
- **State Consolidation Register (SCR)**- The SCR activities are completed to 99% for Vahan and 85% for Sarathi
- **State Register (SR)** is completed to 98% for Vahan and 67% for Sarathi database
- **National Register (NR)** is completed to 95% for Vahan databases and 59% for Sarathi database

- **NR-SR Web Services** formally launched on July, 2011 (<http://parivahan.nic.in>)
- **Operations:** Support is provided to sustain the continuity of the services offered by NR-SR

VALUE PREPOSITION

The successful launch of National Transport Register has improved the quality & availability of services to all the stakeholders- Ministry, Citizens and Businesses. Reducing turn-around time of various G2G, G2C, G2B services and increased law abidance. The services provided by the National Register like availability of intelligent MIS for decision making, quick and easy availability of information to

important information can also be shared with other agencies like Insurance and Police, and other law enforcement agencies. The quality and online availability of services to the citizens has been significantly improved. Premium services can be started from NR. Data can be mined from business intelligence purpose. It is also ready to join National Grid (NATGRID).

The National Transport Register provides consistent, accurate, and reliable information to G2G, G2C, and G2B. It would not be an exaggeration to say that the e-Gov ICT objective of the Government of India is largely met through the National Transport Register.

Fraud Detection- Mumbai ATS

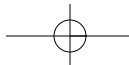
Post the Mumbai blast, police had a tough task to identify and track the terrorist involved in the serial blasts. To identify the criminals the Mumbai ATS approached the transport department for assistance and quick information search on the vehicle owners and the details. Due to the availability and information readiness with the National Register (NR) it was possible to access the details required.

SARATHI Services

- **DRIVING LICENSES**
New Driving License
Learning License
Renewal of Old Driving License
Change of Address etc.
Endorsements
Issue of Duplicate License
- **ENDORSEMENT MANAGEMENT**
Revocation
Notifications
Disqualification
Cancellation
- **ISSUE ENDORSEMENT FEE LICENSE**

VAHAN Services

- **VEHICLE REGISTRATION**
New Vehicle Registration
Renewal of Registration
Transfer of Ownership
Change of Address etc.
- **PERMIT & TAXES**
Issue of National & Interstate Permit
Renewal of Permit
State-wise tax calculation & Payment
- **FITNESS**
Issue of Fitness Certificate
Renewal of Fitness Certificate
- **ENFORCEMENT**
Issue of Challan
Settlement of Penalty Amount



Spatial Information System for the Rajiv Vidya Mission

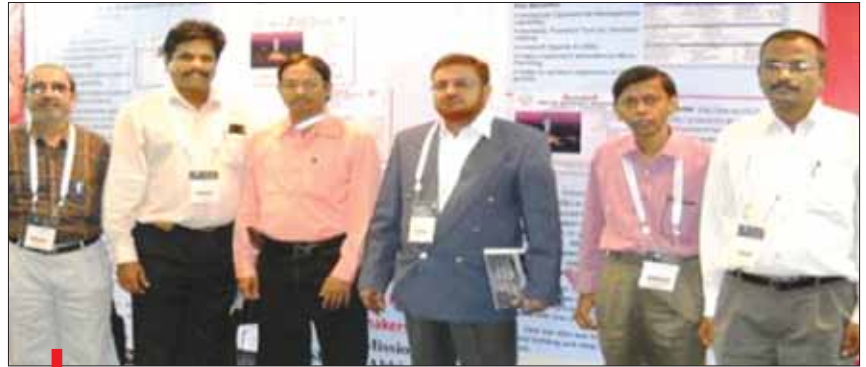
A Spatial Information System for the 'Rajiv Vidya Mission', covering all the schools of Andhra Pradesh will be very effective in terms of planning and monitoring of the schools for the access, enrollment, retention, quality and monitoring aspects viz., integration of school infrastructure, facilities, budget & expenditure, child information, teacher information, attendance, mid-day-meal particulars, results, school complexes along with required visuals.



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NIC team with Project Director and MIS team of SSA, A.P. at Map World Forum 2011

It has been formally inaugurated in November 2010 by Hon'ble Minister for Secondary Education, A.P. and has been showcased in several State level workshops organized by SSA and also at Map World Forum 2011 held at Hyderabad in January 2011.

Edited by **R. Gayatri**

Sarva Shiksha Abiyan- SSA (Rajiv Vidya Mission as it is called in A.P.) is an effort to universalize elementary education by community-ownership of the existing Schooling system, which is a response to the demand for Quality based education all over the country. In order to achieve the objectives of the mission, proper planning, implementation and monitoring of activities and facilities are essential. Implementation of a Web GIS application enabled the Mission authorities to plan for the access, enrolment, retention, quality and monitoring aspects, integration of school infrastructure, facilities, budget & expenditure, child & teacher information, attendance, mid-day-meal program, results, school complexes along with required visuals, integrating the District Information System for Education (DISE). Using this applica-

tion, budget allocation to these schools can be planned and executed very well. The authorities also can ascertain the situations about the infrastructure, funds and utilization, in such a way that they can take decisions as to which schools are to be updated, upgraded or which schools can be given additional class rooms, water or electricity facility if not available so on and so forth.

NIC Andhra Pradesh State Centre has developed a Desktop GIS application on school information for Mulakalapalli Mandal in Khammam



It is successfully conceived, developed and implemented in a record time of 10 months, which I attribute to the dedicated team work by NIC, Hyderabad and SSA

Dr. Mohd. Ali Rafath, IAS,
Project Director, Rajiv Vidya Mission,
Govt. of A.P

district & also for Hyderabad district. A GPS survey has been done for all schools in Khammam for Mulakalapalli Mandal and for the entire Hyderabad. The schools are mapped and the available DISE database integrated. The application has been widely appreciated by the Director, School Education with a team from World Bank and the State Project Director, SSA. Seeing the potentiality of the application, the State Project Director, SSA has requested NIC to develop a web based Spatial Analysis System for entire state, covering all the 1 lakh Schools.



District Profile at a glance

METHODOLOGY & MAJOR TASKS

A series of trainings have been given to MRPs (Mandal Resource Persons, who are also teachers), Rajiv Vidya Mission on the usage of GPS instruments and Digital cameras, enabling them to capture the school locations and visuals of the infrastructure. The GPS codes and Photograph codes are mapped to the school codes and the size of the photographs is optimised without loss of quality of the image. The data has been validated and the DISE data is mapped to the school locations for further analysis.

Mandal and Village boundaries (1:50000) data is segregated district wise and have been codified with the corresponding codes in DISE data. GPS data received from the mandals have also been validated. Validating more than 1 lakh school locations and attaching the school codes with optimizing more than 5 lakh photographs

was a gigantic task. The success of the data collection has to be attributed to the sincere efforts of the Mandal Resource Persons, who have completed the survey within 4 months for the entire state with the technical assistance from NIC, Hyderabad.

The application has been developed in a record time using ASpMAP which is very economical and cost effective compared to the other existing GIS solutions. Security audit of the application has been successfully completed and then hosted. ISRO has launched its own edition of a mapping application (Bhuvan) similar to Google Earth. Bhuvan is added as a back ground layer to the application. Bhuvan uses multi-layer information and the images are upgraded every year. The advantages of Bhuvan using as a back ground layer is to know the ground reality and natural barriers.

MAJOR FEATURES & FUNCTIONALITIES OF THE APPLICATION

- At any point of time, user can click on any school to know about the school information, Teachers information, Child information, Budget information and visuals of the schools. Based on the visuals and other information, the planners can find out the status of the school building, class rooms, water facilities, Toilet facilities
- User can locate a school by selecting his/her Mandal and village
- All basic GIS functionalities (like Zoom In, Zoom Out, PAN) can be used any time
- Using Check boxes, user can make the visibility on /off of any layer
- Buffer method to find out the number of schools lying within a specified radius of the habitation
- Distance can be measured between schools or habitations by selecting two schools
- Query builder to find out solution for complex queries
- Online Thematic Mapping (District and Mandal wise)

- Generation of Dynamic Thematic maps
- Proximity analysis helps to meet the norms of the government in establishing new schools and/or upgrading the existing schools wherever required
- Bhuvan as a back ground layer
- Various MIS reports



School Information with visuals

Being web-enabled, it will be helpful for collaboration and data sharing among specialists, planning agencies etc. This can be effectively used in identifying the polling stations, examination centres, rehabilitation centres and so on.

The application has been demonstrated to the Hon'ble Minister of HRD and Minister of State of HRD, Minister for Primary Education, SSA & Minorities, A.P., and Principal Secretaries of various departments and other top officials who appreciated the application as a first of its kind. It has become a role model for SSA in other states and it is going to be implemented throughout the Country.

For further information

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Initiatives Under BHOOMI Project in Karnataka Revenue Department

BHOOMI, the Land Records Management System is one of the first e-Governance projects successfully implemented for the benefit of the common man, jointly by the Government of Karnataka & NIC, Karnataka. It has been providing service to more than 70 lakh farmers of Karnataka since last 10 years. BHOOMI has become the model for replication in many other States.



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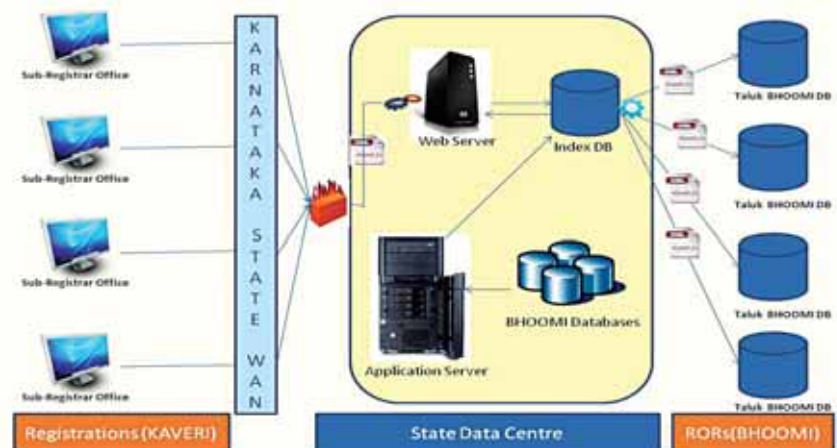
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Edited by **R. Gayatri**

BHOOMI is an online mutation management software for updation, maintenance and dissemination of Record of Rights (ROR) in Karnataka. BHOOMI is a finest example of an evolving e-Governance application. Over the years functionalities and facilities in BHOOMI have grown multi-fold. Started as a small vanilla application to manage online mutation in 1999 and further rolled out across the state in 2000-2001, now BHOOMI has wide spread scope in terms of bringing orderliness, accountability and transparency in the mutation management using bio-metrics for user authentication, FIFO techniques for approvals, invalidating manual records, creating the data centre to store and disseminate RORs through WEB, making the status of transaction available on WEB. Public Key Infra-structure (PKI) has been enabled on BHOOMI to make it adhere to IT Act 2000. Village level

functionaries like Village Accountants and Revenue Inspectors have been provided with Digital Signature Cards to approve the mutations and sign RORs as digital documents using DSC issued from NIC Certifying Authority. Survey activities have been appropriately merged with BHOOMI to achieve the much required synchronisation of textual and spatial data in the field of land records. Electronic integration of BHOOMI with BHOOSWADEENA an automated land acquisition system has resulted in updated land records by reducing human discretion. Pilot implementation of electronic integration of BHOOMI with Banks and financial institutions has been completed and state-wide role out is in progress.

KAVERI: KAVERI is a client-server application designed and developed by C-DAC (Centre for Development of Advanced Computing) to cater to the needs of the Registration Department. This software takes care of registration activity along with scanning and preserving of



BHOOMI- KAVERI Architecture



Sh. A Venkatesan, DDG & SIO along with then Hon'ble Revenue Minister Sh.G Karunakara Reddy and other dignitaries inaugurating the 10th Anniversary celebrations of BHOOMI

deeds executed during registration process. KAVERI application takes care of registration under all the articles mentioned in transfer of properties act and marriage registrations with respect to Hindu Marriage Act and Special Marriage Act.

ONLINE INTEGRATION OF BHOOMI AND KAVERI SOFTWARE

The online integration of BHOOMI and KAVERI software helps the farmers of the state in reducing their hardship and land related litigations. The registration of a sale deed will be strictly done by using the BHOOMI database. The sale transactions will take place only if the land is identified with specific survey number and name of the seller being available in the database and also the proposed extent of transaction available with the farmer in the database. This will ensure that there are no fraudulent transactions in future. This integration will also not allow the transactions on lands granted to Scheduled Castes and Scheduled Tribes upholding/adhering to non alienation conditions as per PTCL provisions. If there are any other Government restrictions for sale on any property such lands also will not be allowed to be sold. Objectives of integration of BHOOMI and KAVERI:

- Facilitates in bringing synchronization between KAVERI and BHOOMI by reducing time lag between registration and initiation of muta-

tion process.

- Facilitates in avoiding duplication of data entry work that is being done at KAVERI and BHOOMI reducing workload.
- Facilitates in reducing or removing the data entry mistakes resulting in rejection of J-slips.
- Facilitates in reducing rejection of mutations in BHOOMI due to wrong data entry.
- Facilitates in reflecting registration events on record of rights with minimum time lag owner wise.
- Facilitates in maintenance of electronically retrievable encumbrance certificates because identities used for a land parcel would be same in both the systems.

Most interesting aspect of this integration is two heterogeneous systems with respect to both administrative setup and technical support provider are integrated to deliver the best to the citizen.

SMS ALERTS ON MUTATION STATUS

The information of all the stages of mutation process will be alerted to the farmers through SMS service. From the day the process starts, till the disposal of mutation, SMS service will be available for the farmers both in English and Kannada. Another value added service is registration of mobile numbers against a survey number. An SMS alert will be sent to the owner whenever there is a transaction initiat-

ed on that survey number. These services are providing the transparency in the system.

FELICITATION OF NIC OFFICERS

On the occasion of successful completion of 10 years of BHOOMI project, Sh. Samartharam, Principal System Analyst was felicitated. A team of officers from NIC, Karnataka State Unit under the leadership of Sh. A. Venkatesan, SIO has been working on this project for the last 10 years continuously and relentlessly putting in its best efforts to improve the software as and when required. The Revenue department has also been given sug-



Sh. N R Samartharam, PSA, BHOOMI Project Coordinator, NIC Bangalore being felicitated by the then Hon'ble Revenue Minister Sh. G Karunakara Reddy

gestions on critical Business Process Reengineering required for betterment of BHOOMI project. On this occasion, Sh. G.Karunakara Reddy, then Honourable Revenue Minister, Government of Karnataka has inaugurated new initiatives under BHOOMI project in the Revenue Department on 24/6/2011, at Tumkur, Karnataka.

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ICT- An Enabler In Gujarat Judiciary

With the goal of timely yet qualitative justice to the citizens at grass root level, in 2005, the Supreme Court of India decided to bring all the courts into the National data grid. With a vision of technological advancement in the administration of Justice Delivery System and uniformity in procedure and proceedings, the e-Committee was set up to explore possible way of rebuilding the Indian Judiciary with the aid of Information and Communication Technology, and thus began the journey of implementing the objectives of e-Court Mission Mode Project.



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THE objective of Computerisation of District Judiciary, Gujarat is to enhance judicial productivity both qualitatively and quantitatively as also to make the justice delivery system affordable, accessible, cost effective, transparent and accountable with a telescopic view to reach at the litigants' door steps up to village level by bringing the Indian Judiciary under one umbrella.

Edited by

Vivek Verma

COMPUTERIZATION IN DISTRICT JUDICIARY

It began in a phase-wise manner in 1996-97 with an in-house software application developed by NIC-High Court of Gujarat in FoxBASE running on SCO UnixWare (1.1) and connected to dumb clients through Line Terminal Server with Gujarati ISFOC Character support. The application was successfully running at all 24 Appellate Side Courts as well as City Courts of Ahmedabad.

Embracing Open Source Technology

Over a period of time, there was a necessity to upgrade the existing Hardware as well as application Software.

Free and Open Source Software (FOSS)

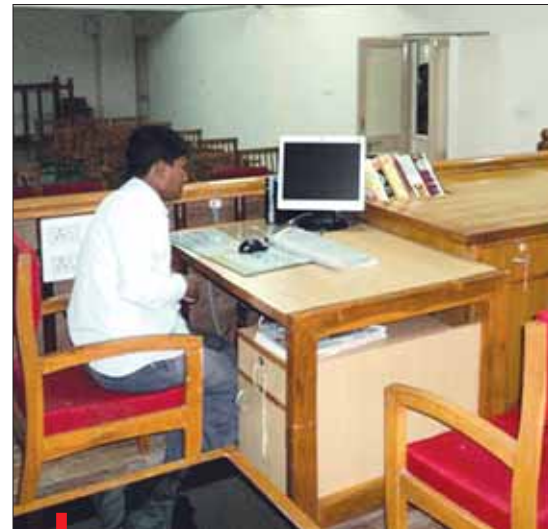
was adopted in Computerization of District Judiciary. Linux based clients with Open Office as Office Application Suite was provided to clients. The main features of new Development Platform are -

- **Developed on Open Source:** All applications were developed on LAMP Stack (Linux as server OS,

Apache as web server, MySQL as Database and PHP as programming language).

■ Reduced Total Cost of Ownership (TCO):

TCO reduced considerably due to adaptation of FOSS, as costs towards Office Suite and Antivirus Solution were saved.



Court Room Of Principal District Judge, Patan

Characteristics of Court Case Information System (CCIS)

- **Unique Case Code:** A unique 15 digit case code, across all the districts, is assigned to all the cases. This is the key used by all the available channels of case inquiry.
- **Common Masters:** In order to bring the Gujarat Judiciary under single grid, standard templates are used for cases, advocates, Judges, Police stations, etc., which helps in retrieval and synchronization, and is also manageable.
- **Advocate Identification:** Registration Code, assigned and periodically sourced by the Bar Council of Gujarat, is used for identifying an advocate, helping

to check advocate credentials with Registration Number provided in Vakalatnama.

- **Three level classification code** is used for classification of cases. Each provision of law has been given 3 Level Classification Code, by assigning ACT, CHAPTER and SECTION Codes in respective levels.
- **Role and time based user permission**
- Application supports full title entry in English and Gujarati language.
- **Legacy Data Entry:** There is a provision to enter Backlog cases.
- **Legal Heirs:** Scope for adding multiple generations of legal heirs in a case by maintaining its chronological order.
- **Linking of cases** is possible. Same is reflected in Court/Advocate Boards.
- **Provisions for copying previously entered data and creating & managing groups** are provided, which minimizes clerical works in case of bulk filing.
- **Multiple Advocates:** A party can have multiple advocates for which provision have been made available.
- **Caveat matching** either by party name or by Lower court details.
- **Case Transfer:** Single as well as Bulk case transfer is possible. Transfer between different establishments is also possible, if the establishments are running in the same system.
- **Daily Case Proceedings:** Provision to enter daily proceedings viz., adjournments, Advocate present, interim orders etc.,
- **Notice Generation:** Auto generation of various types of Notice, Summons and Warrant can be made.
- **Board Generation:** Judge-wise/advocate-wise boards are generated, by showing Names of all advocates and litigants in the boards. Classified boards can also be generated with police station details.

- **Any Board Any Time:** Can generate any board of any future date any time.
- Software for creating and maintaining history of orders/judgements.
- Predefined templates, both in English and Gujarati, for entering order/judgements helping users to enter only order portion.
- Online Inquiry Counter
- **Web Interface:** There are two different types of interfaces - one for uploading data of a particular establishment and another for public to search and view uploaded data.
- **Case Status Search:** is facilitated by name of litigant or advocate and case number.
- Decision support system is being planned for all which won't require case number to be typed every time to see the status.
- **Backlog data entry:** There is a sub-system to work as standalone data entry module where server infrastructure is not ready. Here all live cases of a court can be entered, from which ad-hoc reports can be generated. Established routines to import data to main system are also available.
- Personal computer with printer and legal databases viz. AIR, GLR, and GLH has been provided to all District Courts and Family Courts.

IMPLEMENTATION

The software implementation started at various levels, viz.

- Level-1:** Migration of data from Legacy version (FoxBASE) to CCIS Version (2.0)
- Level-2:** Migration of data from CCIS Version (1.0) to Version (2.0)
- Level-3:** Migration of data from standalone backlog data entry module to Version (2.0)
- Level-4:** Migration of data from MS Access to CCIS Version (2.0)

Now, under E-Courts Mission Mode Project, CCIS (Ver. 2.0) has been rolled



Inquiry counter at Patan District Court

out successfully in all the 45 Appellate Side Courts and 114 taluka courts.

ROAD MAP AHEAD

- Online Judgements/orders and statistical reports regarding filing, disposal and pendency of cases
- Case inquiry through KIOSK
- Single SMS Key Word to know case status
- Display of Ongoing Case Status
- Electronic issuance of Notice/process using digital signature
- Multipoint Video Conferencing

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Integrated Missions Accounting System

Right now every activity of accounts sections in the missions is fully computerised through I-MAS. However it was prior to I-MAS era that missions were using the manual or semi-automatic procedures. In fact through I-MAS we have tried to cater the very complex accounting procedure of the missions in quite a simple way, at the same time following the standard accounting procedure adopted by Govt. of India.



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Missions and posts of India in different parts of world deal with multiple currencies, complying with diverse financial regulations, prevailing various local labor and banking laws and bilateral relations with India. Need of a standard accounting procedure was long felt in the Ministry of External Affairs for a uniform package based on standard accounting principles, with intuitive, user friendly and self documented interface so that a layman sitting thousands of miles away in isolated conditions could use a standard software package to incur expenditure, receive revenue, print various reports and send the monthly cash account in electronic format to MEA HQ.

Integrated Missions Accounting System (I-MAS), developed by NIC provides solution to all financial transactions of the missions through a single interface. There are two different versions of I-MAS - stand alone and client/server version. I-MAS is running successfully in all 173 missions as on August 1, 2011. All the data entry screens and reports are in standard format approved by CGA and CAG.

OBJECTIVE OF I-MAS

- Provide an on site accounting solution for all financial transactions in the missions.
- Have a standard input and output format according to the accounting standards of Government of India.
- Provide master codes directory specified by Ministry of Finance and at flexibility to suit to mission requirements.
- Generate a unique voucher for

each and every financial transaction and automatically reflect it in various reports instantaneously.

- Provide the cash account data in the electronic format instantaneously at MEA HQ for consolidation and financial reporting purposes.



The I-MAS team analyzed and defined process logic and field edits and developed policies from a functional perspective, ensuring that standard accounting procedure is followed. I-MAS simplifies the complex accounting procedure of the missions in the simple user friendly manner. Proper online documentation help and validations on data at every level.

I-MAS ensures that the transactions made by the accountant should be in proper order and reflected in all the concerned reports. The greatest benefit of I-MAS is to simplify the accounting procedure of the missions, provide them hundreds of reports just only by the generation of a voucher and at the same time reduce their work pressure to 30%.

ISSUES RESOLVED BY I-MAS:

- Missions and posts make payments and receipts in the foreign currencies apart from Indian Rupee. Revenue received or expenditure incurred is calculated in equivalent Indian Rupees at

official rate of exchange for accounting requirements. Every individual mission/post functions as a DDO. Mission generates all types of payment and receipt vouchers through I-MAS. The only thing a mission has to is generate a voucher. Rest all calculations like cash balance, budget control, progressive reports are generated by the software.

- Official rate of exchange changes every month, which causes difference in equivalent Indian Rupees on the foreign currency deposits and cash-in-hand available with the

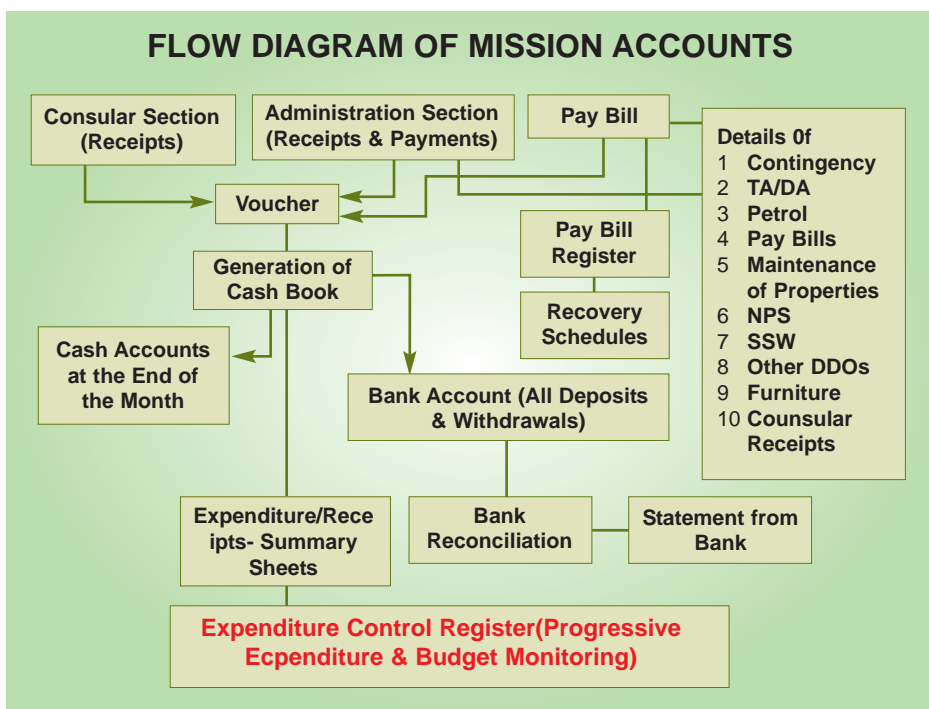
exchange as equivalent Indian Rupees paid may not be equal to Indian Rupees received.

- There are employees posted in the mission from India, whose salary structure may be quite complicated and all together different from the employees belonging to MEA with provision of GPF, CPF and Employee Pension Contribution. The software should accommodate all the pay structures.
- In various countries like Australia salaries to local employees are disbursed twice a month. I-MAS has adequate provision for this.

All the missions are going green as I-MAS has also reduced paper work by 50%. All the queries and reports required by the missions and MEA HQ are available online and no need to keep the physical record of those reports or writing various reports/registers.

Monthly cash account is received in the MEA HQ generated through I-MAS in the form of a MS Access data file in zip format as a mail attachment. This has eliminated delay in Financial Reporting of the monthly cash account received from the missions. Before I-MAS, voluminous monthly cash accounts were physically sent by the missions through diplomatic bags. Later on compilation sections in the office of Principal Chief Controller of Accounts, had to enter all payment and receipt vouchers in order to compile the missions' monthly cash accounts and prepare financial reporting. Monthly cash account data is compiled, incorporated and consolidated in COMPACT PAO 2000 in the office of Principal Chief Controller of Accounts with a few mouse clicks using a compile module developed by I-MAS team. Direct compilation of the missions' cash accounts has eliminated the delay in financial reporting as well as duplication of data entry work. Previous month's cash account figures are thereby made available to MEA, M/o Finance and Planning Commission within the first week of subsequent month. Direct compilation of monthly cash account into PAO 2000 is saving at least 6000 man hours every month in MEA HQ. GPF Credits of the MEA employees are also getting posted in the employees' GPF account through I-MAS generated modules.

FLOW DIAGRAM OF MISSION ACCOUNTS



mission. Change in official rate of exchange causes gain/loss by exchange In terms of equivalent INRs.

- Missions have to convert a universal currency amount into local currency for their day to day requirements, as they receive remittance from India in a universal currency. Foreign banks make this conversion of amount at commercial rate of exchange. Commercial rate of exchange being quite different from official exchange rate, conversion of amount causes gain/loss by

- In Nepal, there are also various development projects running aided by Govt. of India. I-MAS is running in E/I Kathmandu, keeps track of all such payments. Pension and scholarship are paid in various countries.
- Provision of proper bank reconciliation statements in order to tally the monthly cash accounts with the cash balance available.

BENEFITS:

I-MAS has reduced workload of the accounts section in the mission by 70%.

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Puducherry: Spreading ICT through the French Colonial Heritage

The Union Territory of Puducherry is a unique place and it is a blend of spiritual aura, French colonial heritage, Tamil culture and the cosmopolitan flair of many nationalities in a small but varied town. The inherent ambience of “Pondy”, as it is fondly called, becomes most evident in the oldest part of the town which flanks the seashore Boulevard. Puducherry has Colonial buildings, some of which trace back to the 18th century, lined along a grid of straight clean streets and house the French institutions, private homes and businesses.



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Sh. Rangaswamy, Hon'ble Chief Minister of Puducherry using VATSoft

Edited by **R. Gayatri**

THE National Informatics Centre, Puducherry was established way back in 1989. Since then, NIC is instrumental in bringing about the IT culture in Puducherry government through its constant efforts and with introduction of latest cutting edge technologies.

VIBRANT COMPUTERISATION ACTIVITIES AT PUDUCHERRY Network and Hardware Infrastructure: NIC Puducherry has a sound infrastructure having an array of 16 rack mount servers and 6 TB SAN capacity support. It has 2 redundant 45 MBps links to NIC HQrs from RAILTEL and BSNL along

with 1GBps link up to Bangalore. All the Three Districts are connected through 34 Mbps Links with NIC Puducherry. NIC is the implementing agency for Pondicherry State Wide Area Network (PSWAN) providing 12 vertical and 326 horizontal links.

VATSoft: VATSoft is an online, user-friendly system developed for commercial tax Department, Puducherry to cater to its back office workflow needs and online service delivery based on Karnataka model. It is a workflow based application incorporated with the prevailing business rules in the Puducherry VAT act and rules. It is a single window system for returns processing, e-Payment of sales tax, registration processing, statutory forms for submission and cancellation, acknowledgement, MIS

reports, audit selection assignment processing, inspection processing, penalty collection, etc.

VATSoft system has conspicuously changed the functionality of the Department by way of improved tax administration resulting in increased revenue collection. It is implemented in all the four regions and has brought transparency in the VAT administration.

PDS for Civil Supplies and Consumer Affairs: The ration cards of Puducherry UT are digitized and the issue of PDS commodities are monitored through web enabled system. The complete list of ration cards, its member details and the related services are also available online. Smartcard based ration card is in the pipeline and to achieve this objective, the ration card data is handed over to a system integrator for verifying and capturing biometrics and photo through enrollment camps. The complete PDS chain comprising of allocation, distribution and consumption are updated in an online system.

Assembly Elections-2011: NIC Puducherry had designed online system to collect the employee details from all government Departments as per the guidelines of CEC for pre-poll activities. The randomization process of polling personnel allocation as well as EVMs for booths are the two major activities. Allocation of polling personnel to polling stations is as per the norms defined by CEC. All validation checks for both processes are done as per the schedule of Election Department, Puducherry. Necessary appointment orders for individuals and all other reports required are generated through the system.

The system helps in the collection and dissemination of time wise votes polled, booth wise votes polled, constituency wise and region wise voting turn out. On the counting day, the booth wise votes secured by each candidate after consolidation is dissemi-

nated round wise, constituency wise and party wise positions.

Public were able to get the round wise lead positions, party wise tally and results including Karaikal, Mahe and Yanam online.

CIPA for Police Department: CIPA is a MMP designed by NIC for the computerization of police station activities. It is implemented fully across the UT covering 38 Police Stations. Nearly 150 police personnel are trained to use CIPA at various levels. A web based MIS on CIPA data is available.



CIPA user accessing the National Register from a Police Station

e-Pathiram: e-Pathiram is a workflow based automated system covering the entire registration process at the Sub Registrar offices. It provides transparency in valuation of property and ensures accurate calculation of stamp duty and registration fees to be paid to the Government. It has the facility to capture and store the biometrics of executants and claimant. The registered documents are scanned and archived thereby eliminating the manual process of writing index registers and maintaining the document copies. A website is also available for getting the Guideline Registration value (GLR).

The documents are tagged by a registration number facilitating easy encumbrance search. The Department is able to return the registered document on the same day itself.

Transparency in Transport Department: SARATHI and VAHAN are the major mission mode projects of Govt. of India being implemented in all RTO offices across the country. In Puducherry, the SARATHI and VAHAN is implemented with local customization in the two RTO offices and two unit offices. The complete RTO related activities are automated with

the implementation of SARATHI and VAHAN. The biometrics of the applicant is captured and stored through SARATHI and is printed on the Driving Licence.

The State Register and National Register created from the RTO databases is used widely by the Transport Department and the Police Department for searching vehicles based on specific criteria.

Birth and Death Information System (BDIS) for Local bodies: BDIS software help the local bodies to register the births and deaths in the



SARATHI user capturing the Biometrics of the applicant

respective commune panchayats /municipalities. The certificates are issued across the counter in less than two minutes eliminating the inordinate delay. The MIS related reports are generated through the system.

A 40 digit security code is printed at the bottom of birth and death certificates to ensure authenticity. A web application developed by NIC is used to check the genuineness of the birth/death certificates issued through Puducherry Municipality from anywhere.

Property / House Tax assessment and Collection details monitoring System : This is a web enabled online system for the accurate assessment of property. It acts as a channel of dissemination for the property assessment particulars, demand details and tax payment particulars to the public. The Department can view the demand, collection and balance till date for any municipality or commune Panchayat. It is automated for a drill-down analysis up to an individual assessment. The computerized receipt of payment is issued to the public.

It has reduced the manual preparation and compilation time drastically

and has brought the transparency in the demand generation and tax collection process. The delivery of services to public by the Department has been speeded up.

Old Age Pension Payment monitoring System: This system is for maintaining the payment particulars of nearly 90000 Old Age / Widow and Destitute Pension for Women and Child Department. It provides the pivotal information about the pensioner's detail, payment details and other stoppage details to the Department.

It has reduced the manual entry time drastically and has brought in transparency in the pension payment process. It facilitates instant information delivery to public by the Department.

Differently Aabled Persons Pension Payment monitoring System: This system is for maintaining the payment particulars of approximately 19000 differently abled persons Pension for Social Welfare Department. It provides the information about the pensioner's detail, payment details and other stoppage details to the Department.

Acquittance for beneficiaries and

other MIS reports to the Department are generated every month.

Finance Portal of Govt. of Puducherry: The finance outlay and expenditure are monitored online with the help of this portal. By linking Treasuries with Budget and Planning, Sector/Scheme/Department wise outlay vs. expenditure is seen online. Also, Letter of Credit (LOC) projects like PWD and Port are updating the data directly in the portal.

At any point of time the Government can ascertain the performance of expenditures. The reports are used in plan review meetings, around 100 graphical analysis and 25 reports are generated from the system.

eSalary - Online Centralized PayRoll system : Directorate of Treasury (DAT) and 400 DDOs of Govt. of Puducherry are using this online Payroll accounting System from its 4 regions and salary for nearly 20000 employees is being prepared through this software every month. It facilitates the online payroll process viz. preparation of pay bills, schedules etc. Non official recoveries are also taken care by the package while preparing the acquittance and Pay slips by the cashiers.

It also has functionalities for DA arrear processing, bonus processing, IT calculation and related reports etc. Individual employee can see his/her personal details, GPF and pay particulars over the net. It supports Electronic Clearance System (ECS) for payment of individual salary, DA arrear, bonus payments etc.

Modernization of Prisons: As a part of modernization of prisons, the roster management system for randomizing the posting of warders at different locations is taken care by the system. A visitor management system is also developed to capture the visitor's information with photograph. A web enabled prisoner's monitoring system to capture the details of



Birth/Death Certificates issued across the counter in minutes

inmates is also implemented. Video conferencing setup is established to connect the courts and the prisons to avoid the movement of prisoners for producing to remand extension. The visitors are monitored through the system.

Centralized Admission for Hr. Secondary Course: The centralized admission software facilitate Education Department to admit students of higher secondary course in Government Schools, based on the marks obtained in 10th std. The allotment of students in each School as per the availability of seats and student's merit in each category (GEN, OBC, MBC, SC) including special Categories like Ex-Servicemen, Physically Handicapped, Sports, Freedom Fighters is done by the system.

Allotment order to individual student and other MIS reports for Department are generated. Vacancy position display modules provides the parents and students the latest group wise vacancy positions available in schools.

Recruitment Software for Govt. of Puducherry: This software was developed for pre and post recruitment examination activities. All the government recruitment process at Puducherry makes use of this software with few modifications as per the selection criteria. A web site has been designed to publish the results to bring transparency in the examination process.

ReALCraft : The project Registration And Licensing of Fishing Craft for Fisheries Department is implemented by Department of Animal Husbandry, Dairying & Fisheries through National Informatics Centre (NIC) on a turn-key basis.

Hub for Hardware testing activities: Another major activity being carried out at NIC, Puducherry is the acceptance testing of computer systems and peripherals for various purchase orders placed by NIC and NICS, New Delhi with vendors viz. ACER, LENOVO, HCL, and WIPRO housed at Puducherry.

PSWAN - THE NETWORK BACKBONE OF PUDUCHERRY

State Wide Area Network (SWAN) has been identified as an element of the core infrastructure for supporting the e-Governance initiatives. Puducherry has four regions which are geographically far off. So PSWAN is a boon which inter connects these remote areas to the main hub thereby helping the government in it's e-governance initiatives.

NIC is the implementing agency for this prestigious project of establishment of PSWAN Network as DIT, Puducherry has opted for NIC Model. PSWAN consists of 12 Vertical PoP s and 326 Horizontal Offices.

SHQ - 1 No. at Chief Secretariat Puducherry

DHQ - 3 Nos. each at Karaikal, Mahe and Yanam

BHQ - Puducherry (5 Nos.) - Saram Complex, Villanur, Ariyankuppam, Madagadipet, Bahour
Karaikal (3 Nos.) - Tirunallar, Kottucherry& T.R.Pattinam



Hon'ble Chief Minister of Puducherry along with Hon'ble IT Minister during the inauguration of PSWAN

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Contribution of NIC to Government of Bihar in the field of ICT

National Informatics Centre has its wide presence in Bihar besides the 38 districts of the State. These centres have been instrumental in accelerating the pace of e-Governance with ICT-led initiatives and developments using the infrastructure of NIC e.g. NICNET, Data Centre, Video-Conferencing, etc. Regular technical support is being provided for the implementation of various National and State Government ICT initiatives and support including strategic control of the applications and services.



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Hon'ble CM of Bihar, Sh. Nitish Kumar, along with Senior Officials during inauguration of Smart-Card based Driving License at DTO, Patna

THE successful joint venture of NIC and State Government departments have been in socio-economic sectors like Rural Development, Urban Development, Property Registration, Land Records, Surface Transport, General Administration, Social Welfare, Human Resources Development, Health, Agriculture & Animal Husbandry, Panchayati Raj, CGHS Wellness Centre, Lokayukta office etc.

NICNET SERVICES IN BIHAR

The NICNET Last Mile Connectivity (LMC) in Bihar has reached to 78 in numbers besides the 38 NIC district Centres of Bihar. Various Central and State government departments are utilizing the NICNET facilities to leverage ICT tools in delivering their services and conducts of their functioning, which includes DoPT, Patna

High Court, Secretariat, CGHS Dispensaries, Directorate of Economics & Statistics, Directorate of Census, Regional Passport Office, DGFT, ICMR, Emigration Centre at Gaya etc. They are connected with NIC Bihar State Centre, having redundant connectivity to NIC (HQ) through NICNET. The NICNET connectivity up to the districts is being upgraded to 34 Mbps with STM/CPE technology.

E-GOVERNANCE INITIATIVES

A number of ICT led projects recently initiated and implemented under the technical guidance and support of NIC Team in Bihar are Nagrik Seva Kendra, i-BhuGoal, Vahan & Sarathi, e-Registration, Chanakya, e-Procurement, MUDRA, e-Gazette etc. Moreover, ELECON, RACE, Bhu-Abhilekh, Courts Computerization, GPF, Office of Lokayukta, Regional Passport Office, Custom Office (EDI) and Application software for Panchayati Raj Department have also

been operational and are being utilized by the departments.

NAGARIK SEVA KENDRA

Most recently Nagrik Seva Kendra project has been initiated to converge various government services in delivery of citizen centric services in a stipulated timeframe under Right to Public Services Act (RTPS).



Nagarik Seva Kendra website

Nagarik Seva Kendra project envisages enabling the back end computerization and also using the SWAN for connectivity and CSCs for service delivery. The aim is to provide G2C services comprising of issue of certificates, applications for various govt. schemes, grievances etc. from the Nagarik Seva Kendra.

NATIONAL KNOWLEDGE NETWORK

NKN connectivity, multi-gigabit pan-India network for providing a unified high speed network backbone for all knowledge related institutions in the country, has been extended to IGIMS-

Patna and NIT-Patna besides IIT-Patna and ICAR-Patna. The services of Data Centre and Video Conferencing are also leveraging the NICNET for implementation of various programmes of the government. Video-Conferencing service in Bihar is successfully utilizing QoS for review, monitoring and capacity building programmes. In last five years, more than 10,000 hours have been utilized for more than 4000 session of video conferencing facilities of NIC in Bihar.

I-BHUGOAL

Geomatics Oriented Application Model, i-BhuGoal, has been initiated for Bihar infrastructure mapping for efficient and transparent decision making process.

This Project envisages establishment of Bihar State Spatial Data Infrastructure for Multi-Layer GIS by leveraging the existing & available data and ICT infrastructure resources at NIC Hq as well as State Level, involving various stakeholders in State of Bihar. It is meant to visualize MIS data spatially through thematic maps. A GIS/GPS/Remote Sensing based project for Bihar Infrastructure Mapping of educational facilities has been initiated to cover through a project GPS based data collection for GIS enabled school mapping for approx 75000 schools, 80000 Anganwadi Kendra, ITIs, Polytechnics, Engineering Colleges, Colleges and Universities of Bihar.

COMPUTERIZATION OF HON'BLE PATNA HIGH COURT

Patna High Court is one of the leading

High courts in India to Computerize Cause List Management System. As of now LAN with FO backbone has been established. Daily Cause lists are published on <http://causelists.nic.in>. Statistical reports are generated. Judgment Writing Information Management System (JWIMS) facilitates Secretaries/PA's to create, update & pronounce orders/judgments. Judgment & Order Retrieval System (JOARS) are accessed through Case No., Party Name etc. Reception cum Information Counter (RIC) disseminates information to advocates, Litigants & others Citizens. Advocate-on-Record Information System (AoR) contains database of all registered advocates. Judicial Officers Activities Monitoring System helps to monitor the various activities of each Judicial Officers. These activities are captured online. Also Judicial Officers Service Record Information System helps different committees of the Patna High Court.

e-MAIL SERVICE

e-Mail service of NIC has been widely used by government officials in the state. Websites of various departments and organizations that are accessible through Govt. of Bihar website (<http://gov.bih.nic.in>) are helping common citizen at large in getting information and services. Several websites have incorporated multilingual technology to benefit the common masses. To promote IT culture in Bihar, NIC also imparts training on ICT tools and e-Governance projects to the state government and central



Citizen goes to any CSCs for various services under Right to Service Act



Hon'ble CM of Bihar, Sh. Nitish Kumar, inaugurating Rashtriya Swasthya Bima Yojna (RSBY) using Video Conferencing

e-REGISTRATION

Under e-Registration project of Registration department, recently an exclusive Data Centre has been established to centralize database of deed from year 1996 onward. Around 1.2 crore records are expected to be captured using SCORE and scanning & indexing of old deeds. Registry offices have been connected through VPN for daily transmission of records. A web based query system has been designed to enable citizen to access information for transactions related to Property Registration in public domain. The project in its earlier version has been the recipient of Prime Minister Award for Excellence in Public Administration for the year 2007-08.

CHANAKYA

Chanakya is a Workflow based solution for automation of university business process related to Registration and Examination module. Registration Module includes Registration Form Data Entry, Registration Form Verification in workflow, Registration Number Allotment and Generation of Registration Cards and Index Registers. The Examination Module includes Examination Form Processing and Issuance of Examination Admit Card, Examination Form Entry,

Examination Form Verification, Roll Number Allotment, Generation and Printing of Admit Card including Examination Schedule, Generation of Attendance Sheet and Report for Examination Centres, Interface for filling Absent/Expelled Information Sheets, Marks Processing and Tabulation Register preparation, Interface for Marks-foil Entry, Verification Interface for Tabulator, Tabulation Register Printing facility, Mark-sheet Printing facility and Certificate printing facility etc.

VAHAN & SARATHI

VAHAN & SARATHI has been implementing in all 38 districts in Bihar. The project was launched by Sh. Nitish Kumar, Chief Minister, Bihar on 27th May 2008. The application has been extended in the following areas:

- Smart-Card based Registration Certificate of Vehicles
- Smart-Card based Driving license
- Dealer-point-Registration
- Computerized Tax Token
- National Permit Authorization (NPA)

RURAL DEVELOPMENT

NREGASOFT has been implemented in 534 Blocks of 38 districts in Bihar. This covers various processes of

MNREGA such as issue of Job cards, Scheme details, Muster Roll, Fund Transfers, Bills and other expenditure. E-Certificate software for issuing Caste, Income, Residential, Land Ownership certificate has also been implemented in Blocks through Block Informatics centre. A central database of entire locations of Bihar has been created for standardization and interoperability of applications.

Government Financial Accounting System (G-FACTS) is being extensively used at 534 Blocks x 2 i.e. BDO and PO Offices, and 38 DRDAs of Rural development Department for preparing Accounts, Cash Books and other analysis reports required for day-to-day financial Management. This is a web based application hosted at <http://gfacts.bih.nic.in>.

BHU-ABHILEKH

The computerization of Land Records in Bihar has an estimated number of 2.5 crores land holders spread across 19,949 revenue villages in 534 circles in 38 districts. Bhu-Abhilekh is window based Unicode compliant application software with Indian Language interface for maintaining land records information, issuing computerized RoR and work flow based mutation of land. As of now Land Records in 147 circles in the State are ready for G2C services.

PANCHAYATI RAJ DEPARTMENT

Under e-Panchayat Mission Mode (MMP), NIC in Bihar is striving to implement a suite of applications called Panchayat Enterprise Suite (PES) and Enterprise Resource Planning (ERP) - a solution for the Panchayats developed by NIC HQ. PlanPlus has already been rolled out in Bihar. National Panchayat Portal (dynamic website of Panchayat) is operational. PRIASoft (Financial Management & Accounting of Panchayati Raj Institutions (PRIs) has also been recently initiated for implementation after State Level Training Programmes.

e-PROCUREMENT

Government e-Procurement (GePNIC) System has been successfully implemented in Rural Works Department (RWD). The modules have been implemented - Registration, Tender Management, Bid Opening & Bid Evaluation, Award of contract. As of now more than 1800 tenders have been published through the e-Procurement system. More than 600 officials from user departments have been trained and 1200 contractors have been registered.

MUNICIPAL CORPORATION DIGITAL REVENUE ADMINISTRATION (MUDRA)

The system MUDRA - a web enabled application software has been deployed at 43 ULBs out of 49 ULBs. The system helps the Holding owners, Tax collectors, officials at headquarter levels and Circle levels. The features include functioning activities of Holding owners, Tax Collectors, Computerized Bill generation, Demand note generation, Online tax collection, Receipt generation, Makan database, etc.

e-GAZETTE

e-Gazette (<http://egazette.bih.nic.in>) is a Web based application in workflow to render services to departments /employees of Bihar Government as well citizen of Bihar. The E-Gazette application starts from receiving of the notifications from different departments and to publish the Gazettes. The system facilitates for online advanced searching, viewing, downloading and printing of Gazettes.

COMPDDO & E-SAMARTH

All accounting functions related to employees of NIC in Bihar have been computerized and accessibility has been provided through e-Samarth.

MOTHER CHILD TRACKING SYSTEM (MCTS)

This application software of NIC has been utilized by State Health Society in Bihar. It is a prestigious project for

State Government. Data is captured through health facility centres e.g. Health Sub Centre, PHC etc. More than 7.5 lakhs mothers and 1.62 lakhs children have been enrolled so far.

NIC CELL AT RAJ BHAWAN

The Cell extends its technical support to the office during VVIP visits at Raj Bhawan. Other technical activities include University Correspondence Monitoring System, Automation of Accounts, Website (<http://governor.bih.nic.in>) maintenance on regular basis, Public Grievance Monitoring System, Monitoring of Letters under RTI and NICNET support.

COMPUTERIZED LOKAYUKTA INFORMATION MANAGEMENT SYSTEM (CLAIMS)

CLAIMS is a bilingual citizen centric web enabled software for monitoring of complaints related to this office. Case status and Email based Complaint filing system for Lokayukta, Bihar has been put on the website <http://lokeyukta.bih.nic.in>.

CUSTOMS COMPUTERIZATION PROJECT THROUGH EDI

EDI operations at Land Customs Station Raxaul have been implemented and the application caters to the needs of Customs officials at Land Customs Station Raxaul and Service centre operators.

NATIONAL ANIMAL DISEASE REPORTING SYSTEM (NADRS)

This project is being implemented by NIC for the department of Animal Husbandry, Dairying and Fisheries. 574 locations in Bihar have been identified to access the information from blocks.

BIOMETRIC-BASED ATTENDANCE SYSTEM

Attendance Monitoring System software has been implemented in two Government Women's Colleges in Bihar i.e. Government Women's

College, Gardanibagh and Government Women's College, Gulzarbag. Under this project attendance of Staffs and Students are being captured using Biometric device and regularly uploaded on <http://ams.bih.nic.in>.

WEB BASED APPLICATION FOR PATNA DIVISION

The web based application (<http://patnadivision.bih.nic.in>) has the features like online Court case monitoring, Public Transport Facility Management e.g. Bus Routes, Time Table, Route Permit, online booking status of S K Memorial Hall, Monthly Progress Report for 25 different social development schemes, Publishing of Tenders etc.

DISTINGUISHED AWARDS

- **Prime Minister Award** for Excellence in Public Administration for the year 2007-08 [e-Registration in Bihar]
- **11th National e-Governance Award** (Silver Medal) in the year 2008 [ELECON - Election Confidential]
- **National award** for e-Governance (Excellence in Government Process Re-engineering) in year 2007 [e-Khazana: Computerization of Budget, Treasury and State Provident Fund]
- **Microsoft e-Governance Award** 2006 [COIN: Co-operative Banking in Place]
- **Oracle e-Governance Excellence Award** - IT against odds [VICTORY: VAT Information Computerization To Optimize Revenue Yields]

For further information

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Multidimensional Data Modelling Concepts

Multidimensional data modelling is used for the designing Data warehouse, which will help in surround facts with as much relevant context dimensions. Multidimensionality is a design technique that separates the relational data into facts and dimensions. Multidimensional model present information to the end-user in a way that corresponds to his normal understanding of his business, key figures or facts from the different perspectives that influence them.



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Data Warehouse is a subject-oriented, integrated, time variant and non-volatile collection of data in support of management's decision making process.

Business Intelligence are the tools and processes that enable users to query, report, analyze, monitor, and mine integrated information to make decisions, develop plans, or take action.

Why we need a separate DW?

DW involves the computation of large groups of data at summarized levels and may require the use of special data organization, access and implementation methods based on multi-dimensional views. The separation of operational database from DW is based on the different structures, contents and uses of the data.

MULTIDIMENSIONAL DATA MODEL

Dimensional modelling has two basic concepts - Facts & Dimension.

Facts: A business performance measurement, typically numeric or additive that is stored in a fact table. Fact table is a table with numeric performance measurements characterized by a composite key, each of whose elements is a foreign key drawn from a dimension table.

Fact Types are:

- **Additive Fact:** Measurements in a fact table excluding ratios and unit prices can be added across all the dimensions.

- **Semi-Additive Fact:** Numeric facts that can be added along some dimensions in a fact table.
- **Non-Additive Fact:** A fact that cannot logically be added between rows. May be numeric and therefore usually must be combined in a computation with other facts before being added across rows.

Dimension: An independent entity in a dimensional model that serves as an entry point or as a mechanism for slicing and dicing the additive measures located in the fact table of the dimension.

Dimension table: A table in dimensional model with a single -part primary key and descriptive attribute columns.

Slowly Changing Dimensions (SCD): is the tendency of dimension rows to change gradually or occasionally over time. There are three types of SCD such as:

- A type1 SCD is a dimension whose attributes are over written when the value of attribute changes.
- A type2 SCD is a dimension, a new row is created when the values of an attribute changes with new surrogate key.
- A type3 SCD is a dimension, an alternate old column is created. When an attribute changes a new column is added to dimension table to capture the change.

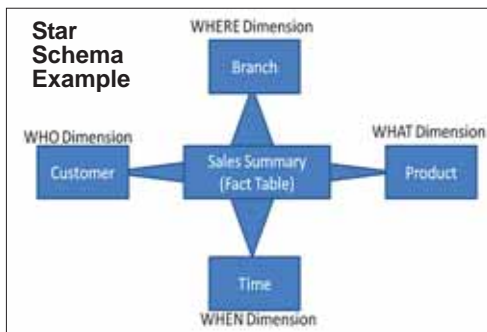
Surrogate Key: is an Integer key that are sequentially assigned. It is required in many data warehouse situations to handle Slowly Changing Dimension & missing or inapplicable data.

Data warehouse and OLAP tools are based on multidimensional data

model. This model view data in the form of data cube. It is defined by dimension and facts. Dimensions are the perspectives or entities with respect to which organizations want to keep records. A data warehouse requires a concise, subject oriented schema that facilitates on-line data analysis.

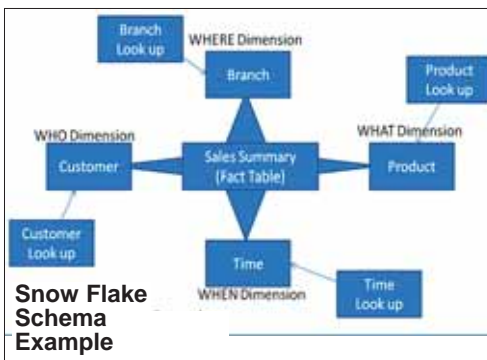
Types of multidimensional model:

- **Star Schema:** The most common modelling design is star Schema in which the data warehouse contains
 - A large central table (fact table) containing bulk of data with no redundancy.
 - A set of smaller attendant tables (dimension table) for each dimension.
 - The Schema resembles a star burst with dimension table display in a radi-



al pattern around the central fact table.

- **Snow Flake Schema:** is a variant of star schema model where some dimension tables are normalized, splitting the dimensional table into additional tables resulting schema graph forms a shape similar to a snowflake.
- **Fact Constellation:** some applica-



tion may require multiple fact tables to share dimension tables. This kind of schema can be viewed as a collection of stars, hence called galaxy schema or fact constellation.

Measures Categorization: A data cube measure is a numerical function that can be evaluated at each point in the data cube space. It's value is computed for given point by aggregating the data corresponding to the respective dimension-value pairs defining the giving point.

Concept Hierarchies: A concept hierarchy defines a sequence of mappings from a set of low-level concepts to higher-level concepts. It exists in dimension table.

OLAP operations in the multidimensional data model: 1.Roll-Up/Drill-Up 2.Drill down 3.Slice and Dice 4. Pivot (rotate) 5. Drill-across 6. Drill-through.

DATA WAREHOUSE/BI ASSESSMENT

Data Warehouse Assessment is the latter one that has been the biggest driving force. Within the organization, all departments and entities need to access information from a central repository that has integrated data. It is not a question of whether we need the data warehouse or not, but rather how efficiently can we build it. So, it is a good idea to assess the organization's readiness, expectations and acceptance criteria before you start building your data warehouse application. The goals and objectives for an assessment/strategy project include:

- **Assessment of Organization Reporting Strategy and Business Requirements:** Collect business needs for a data warehouse, enterprise goals, vision and initiatives define the benefits a data warehouse application will provide to the company.
- **Assessment of Data Warehouse Roadmap:** defines how organization requirements will be implemented and how legacy data will be

converted to information and subsequently to knowledge.

- **Assessment of Technical Architecture:** looks into existing legacy systems, database servers, scalability, database sizing, performance, web servers, job schedulers, and backup and recovery management. Identify type of Process and data flow, Initial and incremental data loads and Changed data capture.
- **Assessment of Databases and Tools:** determines the type of application needs to be implemented to meet the reporting requirement. The assessment of the tools concludes tools for extracting, transporting, and loading the data, building reports and queries, and accessing the reports.
- **Assessment of Data Availability, Data Access and Reports:** defines what data sources will be used and what will be the data acquisition strategy, types of reports will be generated Report will be Ad-hoc, Operational, or analytical and How users will access these reports.

GOVERNMENT AGENCY EXAMPLE

Government Agency is an organization that faces substantial business challenges over the next decade, due largely to projected demand increases, expected staff retirements, heightened service expectations on the part of the citizens served, and a tight Federal budget climate. Accordingly, the Agency is challenged, like many government organizations, to "do more with less" while maintaining or improving service delivery.

- The Agency funded a comprehensive project to ensure strategic alignment between its strategies, goals, and objectives, its key service delivery processes, and the BI applications required for making those processes more productive while improving service.
- The Agency has a record of continu-

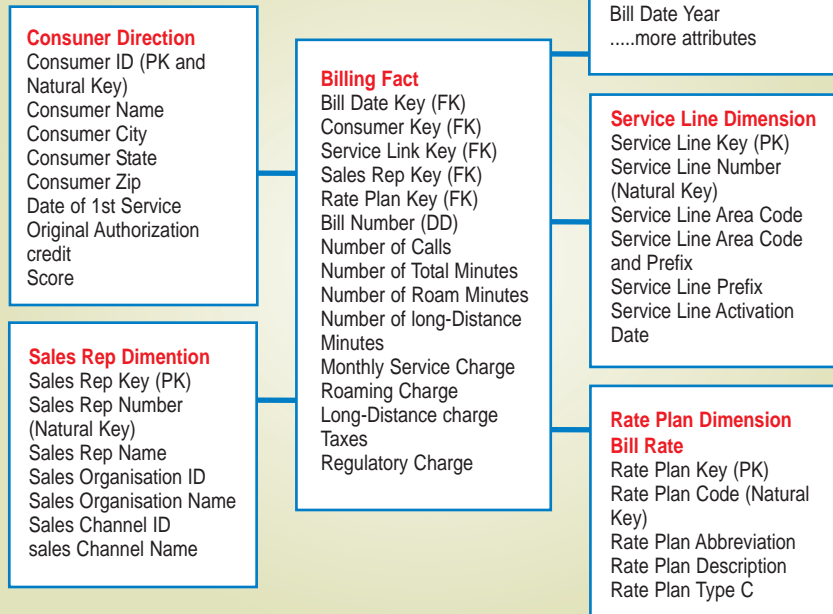
ous process improvement and a culture that supports the goal of operational excellence. The company has come to realize the business value of business intelligence, and has budgeted funds for business process reengineering to capitalize on its BI investments.

- The Agency recognizes the need to change the culture within its operating units & embrace the use of enhanced information, modern analytical tools & advanced optimization models.
- The Agency is in the process of formally assessing its BI and DW technical readiness so that it can take the necessary steps to enhance its overall capabilities to acquire, cleanse, integrate, store, and deliver high quality information to feed the full spectrum of BI applications that will be required to run the agency productively and with high levels of service to citizens.
- The Agency employs effective IT governance mechanisms that promote an effective business/IT partnership, including executive level and working level steering committees, regular off site planning meetings, and web-based program communication mechanisms.

PILOT PROJECT TELECOMMUNICATIONS

Management now wants to analyze monthly usage and billing metrics (*revenue*) by customer, sales organization, and rate plan to perform sales rep and channel performance analysis and the rate plan analysis. Each month, the operational billing system generates a bill for each phone number, is called *service line*. Each service line is associated with a single customer. However, a customer can have multiple wireless service lines, which appear as separate line items on the same bill; each service line has its own set of billing metrics, such as the number of minutes used and monthly service charge. There is a single rate plan associated with each service line on a given bill; this plan can change

SCHEMA FOLLOWING THE DESIGN REVIEW



as customers' usage habits evolve. Lastly, a sales rep is associated with each service line in order to evaluate the ongoing billing revenue stream generated by each rep and channel partner.

GENERAL DESIGN CONSIDERATIONS

Fact Granularity: In an effort to improve performance or reduce query complexity, aggregated facts totals sometimes sneak into the fact row. These types of fact totals are dangerous because they are not perfectly additive. While these types of facts reduces the complexity and run time of a few specific queries, having it in the fact table invites a query to double count.

Dimension Granularity: If we design the snow-flaking or normalization of dimension tables, the demerit is query performance will be degraded.

Design Exercise: In our case service line has its own set of billing metrics; grain declaration would be one row per service line per bill. Move the service line key into the fact table as a foreign key to the service line dimension. Now every time a bill row is loaded into the fact table, a row also would be loaded

into the bill number dimension table. Define the bill number as a degenerate dimension in fact table. Define bill date dimension table and move the bill date into the fact table and join it to date dimension, which plays the role of a bill date in this schema. If you define Sales rep and Sales organization as separate dimensions then there will be a double joins on the sales rep organization dimension table. To avoid double joins including the sales rep organization and channel identifiers as additional attributes in the sales rep dimension table and define sales rep foreign key in the fact table. The other dimensions are Customer dimension, & Rate plan Dimension. Implement surrogate keys for the entire dimension as primary keys in dimensional table and as foreign keys in fact table.

Data warehousing and Data Mining can be implemented in areas such as data mining for Financial Data Analysis, Retail Industry, Biological Data Analysis, Telecommunication Industry, Scientific Applications and Intrusion Detection.

Secure Your Server Through SSL

In the recent times, we have been using the Internet for many of our online transactions such as Online Ticket reservation, online banking etc. We also observe that at times the data / information are being hacked without the knowledge of the user. However, technology can be used to minimize the risk of such untoward incidents and ensure that the data is transmitted in a secure and safe way. This article focuses on the basics of Secured Socket Layer (SSL) and the implementation of the same.



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SECURED Socket Layer (SSL) is a protocol designed by Netscape Communications to enable encrypted, authenticated communications across the Internet. SSL is the standard security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and client remains private and integral. SSL is an industry standard and is used by millions of websites for protecting online transactions with their customers. Various Versions of SSL are in place and the Current SSL Version is 3.

To be able to create an SSL connection a web server requires an SSL Certificate. When you choose to activate SSL on your web server you will be prompted to answer a number of questions about the identity of your website and the business or company. The web server then creates two cryptographic keys - a Private Key and a Public Key.

The Public Key need not be kept secret and is placed into a Certificate Signing Request (CSR) - a data file also containing these details. The CSR is to be submitted. During the SSL Certificate application process, the Certification Authority will validate the given details and issue an SSL Certificate containing the validated details and allowing the user to use the SSL. The web server will match the issued SSL Certificate to your Private Key. The web server will then be able to establish an encrypted link between the website and the customer's web browser.

SSL uses a cryptographic system

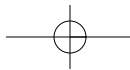
that uses two keys to encrypt data. The encryption using a private key/public key pair ensures that the data can be encrypted by public key but can only be decrypted by the other key pair, private key. By convention, URLs that require an SSL connection start with https (HTTP on SSL) instead of http (Hyper Text Transfer Protocol).

BENEFITS

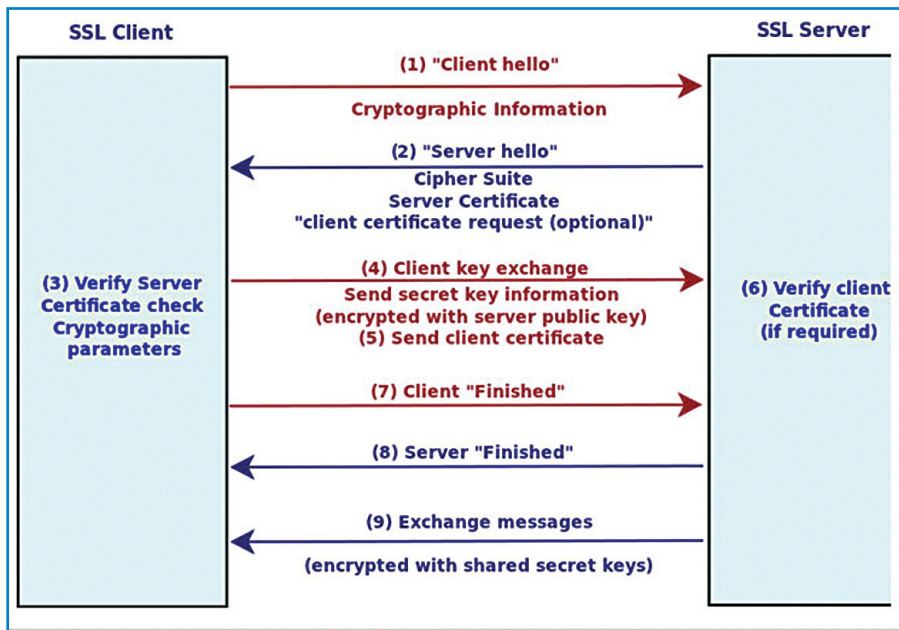
- Higher security: it ensures the security of data transmitted over the network.
- Support for various application layer protocols: SSL resides between the transport layer and the application layer, it provides security service for any application layer protocol that employs TCP connections. SSL runs above TCP/IP and below HTTP, LDAP, IMAP, NNTP, and other high-level network protocols.
- Simple to deploy: SSL has become a global standard for identity authentication between the client and server. It has been integrated into most browsers, such as IE, Netscape, Opera and Firefox. This means that almost every computer with a browser supports SSL connection, without requiring any extra client software.
- Identity authentication: SSL, supports certificate-based identity authentication of the server and client by using the Digital Certificates, with the authentication of the client being optional.
- Message integrity verification: SSL uses Message Authentication Code (MAC) algorithms to verify message integrity.

HOW IT WORKS

- A browser requests a secure page (usually https://).



Technology Update



- The web server sends its public key with its Digital Certificate.
- The browser checks that the certificate was issued by a trusted party (usually a trusted root CA), that the certificate is still valid and that the certificate is related to the site contacted.
- The browser generates a random symmetric encryption key which is to be used for encrypting data sent through the SSL channel. This key is encrypted using the public key of the server and sent to the server along with the https request.
- After exchanging the session key the client and the server exchange data by encrypting using the session key.
- The web server sends back the requested html document and http data encrypted with the symmetric

- key.
- The browser decrypts the http data and html document using the symmetric key and displays the information.

To enforce security uniformly, various standards have been enforced from time to time and following section describes the most relevant standards for encryption algorithms of the data.

SECURE HASH SIGNATURE STANDARD (SHS)

National Institute of Standards and Technology (NIST) has defined standards (Secure Hash Signature Standards - SHS) for making uniformity in hashing and encryption methods of data files or messages. This Standard specifies a Secure Hash Algorithm, SHA-1, for computing a condensed representation of a mes-

sage or a data file. When a message of any length < 264 bits is input, the SHA-1 produces a 160-bit output called a message digest. The message digest can then be input to the Digital Signature Algorithm (DSA) which generates or verifies the signature for the message. Signing the message digest rather than the message often improves the efficiency of the process because the message digest is usually much smaller in size than the message. The same hash algorithm must be used by the verifier of a digital signature as was used by the creator of the digital signature.

Secure Hash Signature Standard (SHS) specifies four secure hash algorithms, SHA-1, SHA-256, SHA-384, and SHA-512 for computing a condensed representation of electronic data (message). When a message of any length < 264 bits (for SHA-1 and SHA-256) or < 2128 bits (for SHA-384 and SHA-512) is input to an algorithm, the result is an output called a message digest. The message digests range in length from 160 to 512 bits, depending on the algorithm. Secure hash algorithms are typically used with other cryptographic algorithms, such as digital signature algorithms and keyed-hash message authentication codes, or in the generation of random numbers (bits).


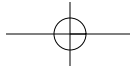
The **SHA** is one of a number of cryptographic hash functions published by the National Institute of Standards and Technology as a U.S. Federal Information Processing Standard.

contd. on next page

Salute to Sh. Mahendra Singh, DIO, NIC Kutch for Saving Two Young Lives !!

On 22nd September, 2011 evening around 7.15 pm, Sh. Mahendra Singh, DIO, NIC Kutch, Gujarat was passing near Hamirsar Lake in the heart of Bhuj city with his daughter Jahnavi. There was a huge crowd near the lake. Curiously, approaching there he saw two boys aged 13 and 15 drowning in the deep water and crying for help. Without any hesitation, Sh. Singh jumped into the lake and made utmost efforts to save the lives of the boys. After great effort, he saved the boys.

All NICians are very proud of him !!

SHA 1: A 160-bit hash function which resembles the earlier MD5 algorithm. This was designed by the National Security Agency (NSA) to be part of the Digital Signature Algorithm.

SHA 2: A family of two similar hash functions, with different block sizes, known as SHA-256 and SHA-512. They differ in the word size; SHA-256 uses 32-byte (256 bits) words whereas SHA-512 uses 64-byte (512 bits) words. SHA-2 includes a significant number of changes from its predecessor, SHA-1. SHA-2 consists of a set of four hash functions with digests that are 224, 256, 384 or 512 bits. The following table lists various parameters associated with different SHA algorithms.

CIPHER

A cipher (or cypher) is an algorithm for performing encryption or decryption, a series of well-defined steps that can be followed as a procedure. An alternative term is encipherment.

When using a cipher the original information is known as plaintext, and the encrypted form as ciphertext. The cipher-text message contains all the information of the plain-text message, but is not in a format readable by a human or computer without the proper mechanism to decrypt it.

Types of Ciphers: Ciphers can be classified by two criteria- by type of key used, and by type of input data.

By type of key used ciphers are divided into:

- **Symmetric key algorithms (Private-key cryptography),** where the same key is used for encryption and decryption, i.e., in the symmetric key algorithm (e.g., DES and AES), the sender and receiver must have a shared key set up in advance and kept secret from all other parties; the sender uses

this key for encryption, and the receiver uses the same key for decryption.

- **Asymmetric key algorithms (Public-key cryptography),** where two different keys are used for encryption and decryption, i.e., in the asymmetric key algorithm (e.g., RSA), there are two separate keys: a public key is published and enables any sender to perform encryption, while a private key is kept secret by the receiver and enables only the receiver to perform correct decryption.

By the type of input data are divided into:

- **Block ciphers** - which encrypt block of data of fixed size, and
- **Stream ciphers** - which encrypt continuous streams of data

The strength of a cipher is graded as Anonymous, Weak and Strong based on the number of bits used for encrypting the data.

The web servers such as Apache, Apache-Tomcat, IIS facilitate the use of SSL through the configuration files. By default, the web servers allow all the ciphers.

Strengthening Ciphers /

Disabling weak ciphers: In order to strengthen the data that is encrypted, ciphers such as anonymous, weak and null ciphers have to be disabled. Ciphers with 128 bit encryption and higher should be allowed. This will ensure that the weak ciphers are blocked and only strong ciphers are enforced during the data encryption during transmission.

DIGITAL SIGNATURE CERTIFICATE

SSL Certificate: The SSL certificate gives confidence to the user that the user is working in the correct site and not on a spoofed site.

SSL certificate is a unique credential identifying the certificate owner. An SSL certificate contains

information about the owner of the certificate, like e-Mail address, Owner's name, Certificate Usage, duration of validity, resource location or Distinguished Name (DN) which includes the Common Name (CN) (Name of the person / Web site address) and the certificate ID of the person who certifies (signs) this information. A certificate Authority such as NIC-CA under CCA, India authenticates the identity of the certificate owner before it is issued.

The certificate contains the reference to the issuer, the public key of the owner of this certificate, the date of validity of this certificate and the signature of the certificate to ensure this certificate hasn't been tampered with. The certificate does not contain the private keys as it should never be transmitted in any format.

X.509 Standard: X.509 is a standard in public key infrastructure (PKI). X.509 specifies standard formats for public key certificates, certificate revocation lists, attribute certificates, and a certification path validation algorithm.

In the X.509 system, a certification authority issues a certificate binding a public key to a particular distinguished name or to an alternative name such as an e-mail address or a DNS-entry.

Certificate formats: Digital Signature Certificates are available in various formats say PEM, DER, P7B and PFX.

- **PEM format:** The PEM format is the most common format that Certificate Authorities issue certificates in this format. ".PEM" certificates usually have extensions such as .pem, .crt, .cer and .key. They are Base 64 encoded ASCII files and contain "-----BEGIN CERTIFICATE-----" and "-----END CERTIFICATE-----" statements. Server certificates, intermediate certificates, and private keys can all be

put into the PEM format.

- **DER format:** The Distinguished Encoding Rules (DER) format is simply a binary form of a certificate instead of the ASCII PEM format. All types of certificates and private keys can be encoded in DER format. DER is typically used with Java platforms.
- **P7B format:** The PKCS#7 or P7B format is usually stored in Base64 ASCII format and has a file extension of .p7b or .p7c. P7B certificates contain "-----BEGIN PKCS7-----" and "-----END PKCS7-----" statements. A P7B file only contains certificates and chain certificates, not the private key.
- **PKCS12/PFX:** The PKCS#12 or PFX format is a binary format for storing the server certificate, any intermediate certificates, and the private key in one encrypt-able file. PFX files usually have extensions such as .pfx and .p12.

Certificate Trust Chain: A Certificate Authority (say NIC-CA) can issue multiple certificates in the form of a tree structure. A root certificate is the top-most certificate of the tree, the private key of which is used to "sign" other certificates. The top most Certifying Authority in India is the Controller of Certifying Authority (<http://cca.gov.in>). All certificates immediately below the root certificate inherit the trustworthiness of the root certificate - a signature by a root certificate.

The Chain of Trust of a Certificate Chain is an ordered list of certificates, containing an end user subscriber certificate, intermediate certificates and then the CA certificate that enables the receiver to verify that the sender and all intermediates certificates are trustworthy.

Certificate Revocation List (CRL): The Certificate Revocation List (CRL) is a periodically issued list of digital signature certificates that have been suspended or revoked prior to their

expiration dates due to loss or damage or theft of private key associated with the Digital Signature Certificates.

The CRL is exactly what its name implies: A list of subscribers paired with digital certificate status. The list enumerates the serial number of the revoked certificates along with the reason(s) for revocation. The dates of certificate issue, and the entities that issued them, are also included. In addition, each list contains a proposed date for the next release. When a potential user attempts to access a server, the server allows or denies access based on the CRL entry for that particular user.

CONFIGURING SSL IN TOMCAT

In order to strengthen the data during transmission, the certificate has to be generated locally in the server using a tool and the generated certificate will be submitted to CA for authorization. The CA signed server certificate is used for configuring http over SSL. One of the common tools to generate server certificate is OpenSSL.

OpenSSL: The OpenSSL program is a command line tool for using the various cryptography function of OpenSSL's crypto library. This is automatically bundled in all the latest version of Linux. It can be used for

- Creation and management of private keys, public keys and parameters
- Public key cryptographic operations
- Creation of X.509 certificates, CSR and CRL's
- Calculations of Message Digests
- SSL/TLS client and server tests
- Handling of S/MIME signed or encrypted mail

Generation of Key pairs: A key pair is generated normally using OpenSSL or similar programs and the same is stored in a key file.

Generation of Certificate Signing Request (CSR): The generated certificate is trusted after it is validated by the CA. Hence the Certificate request should be generated and sent to the Certifying Authority.

Sending Certificate request to Certifying Authority (CA): The generated certificate should be sent to the Certifying Authority which will be digitally signed and sent back to the user in .cer format.

Convert .cer file to PKCS#12 format: The .cer file is transferred to the concerned server, and converted into PKCS#12 format.

Installing the certificate in the Tomcat server: This file can be customized in Tomcat and after restarting the tomcat, the server can render the pages in SSL mode.

EMERGING STANDARDS

SSL has recently been succeeded by Transport Layer Security (TLS) which is based on SSL. SSL uses a program layer located between the Internet's HTTP and TCP layers. TLS and SSL are not interoperable. However, a message sent with TLS can be handled by a client that handles SSL but not TLS. The current version of TLS is 1.2.

TLS has a variety of security measures.

The major ones are listed below:

- Protection against a downgrade of the protocol to a previous (less secure) version or a weaker cipher suite.
- Numbering subsequent Application records with a sequence number and using this sequence number in the message authentication codes (MACs).
- Using a message digest enhanced with a key (so only a key-holder can check the MAC).
- TLS uses an enhanced HMAC over SSL hash-based MAC.

Anuppur: Serving Administration and People with ICT

Situated in the north eastern part of Madhya Pradesh, Anuppur shares its geographical boundaries with Shahdol and Dindori districts of Madhya Pradesh and Bilaspur and Korias districts of Chattisgarh. The district was formed in the year 2003 and is popular among tourist for 'Amarkantak', the originating point of river Narmada.



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NIC, Anuppur is a relatively new setup, coming into existence in the year 2009. However, it has taken giant strides in spreading IT in the district and inculcating eGovernance culture in this tribal dominated district. The ICT based activities started in the district way back in 2005 with the commissioning of video conferencing setup in the collectorate and provision of email facilities to the district officials. Since 2009 many more IT based projects have been rolled out to improve the functioning of district administration and delivery of government services to the citizens.

VIDEO CONFERENCE IN BLOCKS

A major step towards improving the functioning of district administration has been establishment of video conferencing infrastructure in all the blocks of the district and interconnecting them with the VC studio in collectorate. NIC, Anuppur took the lead and was the first district to implement this in Madhya Pradesh. The system is successfully operational since January 2010 and more than 200 VC sessions have already been conducted.

The setup has enabled all the district level officials including the district collector to interact with the block level officers through video conferencing with ease and without travelling. The VC setup has been declared as the official medium for all departmental meetings and monitoring of various government schemes by the district collector.

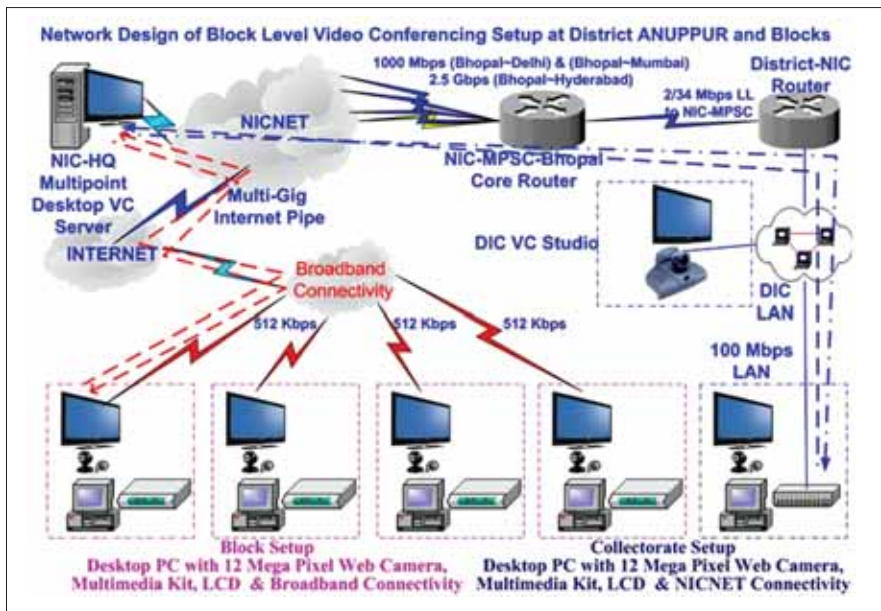
JANSUNVAI ONLINE COMPLAINTS MONITORING SYSTEM

The Jansunvai Online Complaint Monitoring System has been developed and implemented to automate the applications which are received by the district collector and other designated district officers on every Tuesdays during "Jansunvai - Public Grievances Programme". This online monitoring system allows the authorized users to capture application/complaints into the system. Once the applications/complaints are entered into the system, acknowledgement receipts are generated and issued to the applicant. Subsequently, all the applications/complaints are forwarded to the respective department for resolution. User accounts have been provided to all the departments to access the system.

The departments periodically login to the system and check applications/complaints pending with them. They enter their feedbacks or replies related with the application/complaint in the Jansunvai online system. The administrator at the collectorate can generate various reports on the applications/complaints as per the require-



Chief Secretary, Madhya Pradesh, interacting with Block level officials through VC setup



SH. KAVINDRA KIYAWAT
IAS, Collector,
Anuppur (MP)

The block level Video Conference system has enabled us to conduct meetings with block and Gram Panchayat level employees and it has greatly changed the style of district administration thus improving overall efficiency of the administration by way of constant guidance and monitoring.

ment. So far more than 4000 application /complaints have been registered in the system.

HELLO ANUPPUR - CALL CENTER MANAGEMENT SYSTEM

'Hello Anuppur' is a Call Centre Management System developed and implemented by NIC, Anuppur where the complaints/grievances can be lodged telephonically. The complaints received are entered into the call center management system and forwarded to the concerned department. The system generates various reports like department wise statistics of complaints, call center operator attendance, date wise complaint statistics etc. This software also has contact details of all the government employees posted in the district.

MALNUTRITION MONITORING SYSTEM

This is an online monitoring system to track the malnourished children in the district. The Women and Child Development department identifies and collects the basic data pertaining to the malnourished children such as their height, weight, family background, etc that is entered into the system. Subsequently, the children are screened

by sub health centres and if necessary provided treatment in Malnutrition Rehabilitation Centres. The screening details together with the health progress of the child are entered into the malnutrition tracking system to track the progress of the child.

NIC, Anuppur is also providing technical support to many other eGovernance initiatives of the state government & district administration to facilitate the common man. 'Dil Se - Chalo Gaon ki ore' is one such programme where district level officials spend a couple of nights in a village once every month to gather the welfare parameters of the villages. The "Dilse" software captures these details and generates various reports for the administration. NREGA Monitoring System & Election Software for Zila Panchayat Poll were developed and implemented to facilitate the district administration in these two important activities of the government. Crop Insurance system, E-Khanij, Agmarknet, BRISC, IDSP, Minor Irrigation Census, CMMIS, BPL Survey, SGSY are some of the national level projects which have been successfully implemented in the District by NIC, Anuppur.

The eGovernance initiatives of District Anuppur have not only benefitted the tribal population of the dis-

trict but have also provided IT based tools to the district administration for proper monitoring and control of various schemes launched by them. These efforts have taken Anuppur ahead from many of the older districts in terms of eGovernance.

NIC, Anuppur is also providing technical support to many other eGovernance initiatives in the district benefitting the common man and the district administration.

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Raigarh: Extending IT to Masses

The cultural capital of Chhattisgarh, having a glorious historical background, Raigarh is the land of a music legend 'King Chakradhar Singh' who was a maestro of Tabla and Kathak and is the founder of famous Raigarh Gharana of Kathak. The district is rich in minerals like coal, quartz and dolomite. It is fast changing into an industrial hub with Steel, Power and Sponge iron plants. Raigarh is also known for Kosa (a type of fine silk).



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SINCE its establishment in 1988, NIC District Centre, Raigarh has played a major role in IT spread across the district. It has provided technical support in field of IT and eGovernance to various departments in the district and has extensively contributed towards project development, implementation of various National and State level IT projects and capacity building. Over the years, NIC has become synonymous to IT for the district administration and other departments. The district administration has shown its appreciation by awarding NIC Officials on numerous occasions. Some of the major projects implemented by NIC Raigarh include

Computerization of Paddy Procurement

(<http://www.cg.nic.in/khadya/>): This award winning project of the state government was successfully implemented in the district Raigarh. The application helps the Food, Civil Supplies & Consumer Protection Department in monitoring paddy procurement, public distribution system, ration card database, fair price shop database etc. There is an online module for registration of mills and provides a direct interface to the farmers to interact with the government. The data is uploaded from the district through a web enabled program on regular basis and the farmers are issued computer generated cheques for their produce

Treasury Computerization

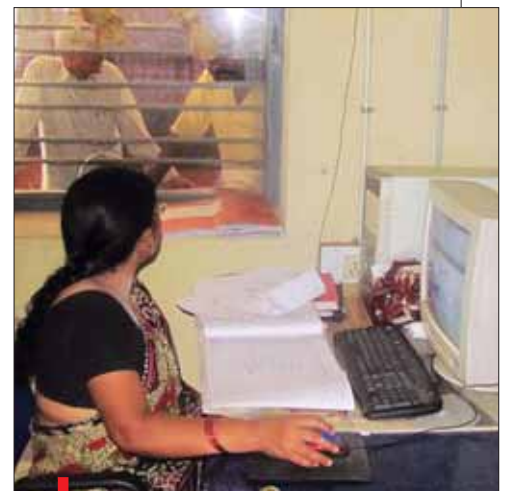
(<http://cg.nic.in/ekosh/>): e-Kosh is another important project

implemented successfully in the district. The district has four sub-treasuries apart from district treasury. The main feature of the project is online bill passing through the central server, kept at directorate of treasuries. The other features are payments, printing of cheques, receipts, deposit accounts, work accounts, printed cash book, budget allotment, electronic record keeping of previous years etc.

e-Payroll

(<http://cg.nic.in/ePayroll/>):

The project was recently implemented in the district especially to speed up the disbursement of salaries of government employees within the district. The database of all the employees, in service, has been created and all Drawing & Disbursing Officers are electronically submitting their pay bills to treasury via a web enabled application. The treasury officer transfers employees' salaries electronically to their bank account. This has reduced the cheque collection and deposit time to a great extent facilitating the officials.



Treasury employee at work using e-Kosh

RTO Computerization: The vehicle registration project VAHAN and Driver's license project SARATHI have been implemented successfully in Raigarh. Besides easing out the Registration and Licensing process the data is regularly transmitted to State and National level through VPN over Broadband connectivity.

Land Record Computerization
(<http://cg.nic.in/cglrc/>):

This project named BHUIYAN is to facilitate land owners to get computer generated neat and clean Record-of-Rights (RoR). Implemented in all tehsil offices, the project has accelerated the RoR generation, mutation process, preparation of Khasra (P-ii), Khatauni (B-1) village level reports. The complete land records data of the district data is available online, allowing the citizens and land owners to view ownership information through a web enabled software. The feedback option of the web application provides facility to the citizen to register their suggestions/complaints regarding correctness of data and getting solutions from the concerned officials.

NATIONAL LEVEL PROJECTS

e-Panchayat: The ePanchayat project has been implemented in all the blocks of the district including district panchayat. The three important modules PRIASOFT, Plan Plus & MGNREGA have been implemented.

AGMARKNET
(<http://agmarknet.nic.in/>) -

The agriculture marketing network software is in effective use in the district. There are 5 Krishi Upaj Mandis in the district using the software and transmitting the price and quantity data of different commodities to AGMARKNET portal.

CONFONET
(<http://confonet.nic.in/>) -

The project is implemented in District Consumer Forum. The project facilitates all the functions such as case fil-

ing, cause list generation, upload cause list on national portal, pending and disposal status of consumer cases, judgment filing and judgment search etc. With continuous support of NIC Raigarh the staff is now fully trained to use the software.

TECHNICAL AND INFRASTRUCTURE SUPPORT

Support during Elections - NIC Raigarh has been providing best IT support during general assembly and local elections. The activities include polling party formation, randomized booth allocation, counting party formation, generation of different counting proformas, and transmission of data to ECI, State Election Commission and Doordarshan.

2011 Census - Recently the Census work was supported by NIC district centre. Whole district census data has been compiled at district level. A workshop was organized for all officers and data entry operators engaged in census work. After necessary compilation the data was transmitted timely to state and national census offices. The district secured second position in the state for fast and accurate compilation and transmission of data.

Networking: Realizing that success of any project lies mostly on the availability of reliable Network connectivity, NIC Raigarh has established LAN comprising forty nodes connecting important offices within the collectorate. Apart from 34 Mbps leased line, it has also provided VSAT based connectivity to all the blocks, treasury and sub treasuries. Video conferencing is another important facility provided by NIC in the district through which pub-



Staff at RTO capturing Biometrics for issuance of licenses

lic grievances are being redressed by General Administration Department of the state. Monthly meetings of various departments are also conducted everyday through Video conferencing.

NIC Raigarh has been putting its best efforts to extend the benefits of ICT to the common people living across the district. It is trying hard to live up to the expectations of the people as well as the district administration. With its continued dedication and efforts it has become an invaluable partner of the district administration as far as bridging the gap between Citizen and the Government is concerned. NIC, Raigarh's team is fully prepared to meet the new challenges both in terms of technology and management and is committed to serve the people of the district through IT.

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e-Governance Initiatives in Leh District: A Way Forward

Leh with an area of 45110 Sq Km and part of Ladakh region is one of the largest districts in the country. With Pakistan occupied Kashmir in the West and China in the north, it is also known as the Hermit Kingdom due to its remoteness and inaccessibility. Road connectivity to Leh is cut off during winters for 7 months.

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NIC District Centre was established in 1990 thus ushering the area into ICT revolution. Video Conferencing facility has also been established which was the only mode of communications with outside world during recent cloud-burst/flash floods. In 2004 a major initiative of establishing Community Information Centre at each block of Leh was taken, which extended the reach of ICT to the remotest areas of Leh.

edited by
Vivek Verma

Ministry for New & Renewable Energy GOI has sanctioned solar Power Plants for NIC District Centre and one each at five blocks HQ for CIC Centres to provide uninterrupted power. NIC District Centre Leh provides 24x7 uninterrupted internet connectivity using 2Mbps lease line connectivity backed up by VSAT based links.

SUCCESSFULLY RUNNING PROJECTS

- **Computerisation of GPF accounts** - GPF data of all employees since 2005 has been computerized and is available on the department's website, which



Applicant photo being captured for driving License



10Kwp Solar Power Plant installed at NIC Leh (IT Enclave)

can be accessed by any employee.

- **Computerisation of ARTO office** - SARATHI (for issuance of Learner and Permanent Driving License) and VAHAN (for registration of vehicles) have been implemented at ARTO office Leh. The data is uploaded to the State Register and National Register.

- **Integrated Disease Surveillance Project** - The software to check the spread of diseases and helpful in collecting important statistical data. The rapid flow of information from district to state headquarter, where it is available on portal, is facilitated by NIC-NET.

- **E-Literacy** - Under this project NIC conducts training programme for all the Government Officers & Officials through all the Block CIC Centres LAHDC provides funds for conducting training programme. During the year 2009-10 total 500 employees have been given basic Computer training and Internet exposure



Training Session at CIC Centre Kharu Block

- **Common Integrated Police Applications-** Implemented in Leh Police Station, it facilitates the duty officer in registering cases by capturing details, records the events of case progress by Investigating Officer, also capturing the criminal's record etc.
- **E-court** - Computerization of court is a Mission Mode Project being implemented by the NIC and monitored by the Apex Committee constituted at National as well as State level.
- **Election** - Electoral Rolls has been fully computerized in Leh. The software has been designed and developed by the NIC J&K State Centre. The data entry is done in Urdu, while the electoral rolls are generated in Urdu, Hindi and English using transliteration. The software supports regular and continuous updation of electors data and generation of final electoral Rolls in pdf format.

Services provided during Lok Sabha, State Assembly and LAHDC election are: deployment of Polling Staff duty, Transport Plan, Randomization of EVM, Report generation, GENSYS, etc.

- **Ladakh Autonomous Hill Development Council (LAHDC) Wi-Fi Extended Project** - LAHDC

has sponsored this project and executed by the NIC Leh for establishing Wi-Fi to cover the whole Leh town so that all the Government Departments would be brought under Wi-Fi connectivity for providing online information in respect of the Central Sponsored Schemes being implemented in Leh district. Solar unit provides uninterrupted power supply and essential security measures ensure restriction to unauthorized persons.

- **National Animal Disease Reporting System (NADRS)** - A central project in which 6 Block Animal Husbandry Offices have been taken and hardware is being installed. Online transmission of Animal Diseases information would be through Broadband/NIC-NET. Training of officials shall be through NIIT in Jammu/Srinagar, for which schedules are being prepared.
- **Mother & Child Tracking System (MCTS) Project:** MCTNS has been recognized as a priority area for providing effective health-care services. It is name based pregnant mother and child tracking system which provides a management tool to reduce MMR/IMR/TFR and track the health service delivery at the individual level.
- **Official Website:** <http://leh.nic.in> is the official website of the Ladakh Autonomous Hill Development Council. In view of its popularity, the site is being given a complete facelift and information is being collected from different departments. Information of interest to general public include Festivals, Tenders, Elections & Recruitments.
- **National e-Governance Plan (NeGP)** - Under project JKSWAN (JK State Wide Area Network), the only District PoP site is functional

for the last 2 years. Block PoPs and CSC are under implementation by the executing agency identified by state government.

- **LAHDC Portal** - A Portal has been designed for Ladakh Autonomous Hill Development Council through which all online applications would be made available. Some of the applications are -
 - **Protected Area Permit Online.** Some areas of Leh require Protected Area Permit, procuring which can be very inconvenient due to sheer number of tourists, estimated around 80,000 during peak season. An online application facilitates convenience for the visiting tourists and helps the department to plan and manage better.
 - **Online Grievance Redressal** - An initiative to sort the problems being faced by citizens by lodging their complaints online. The complaints are then forwarded to the CEC-LAHDC and the concerned head of the department for redressal. Unattended complaints are accorded high priority until some measures are taken. Complainant can track the status of their complaints and even enter a comment, thus increasing the effectiveness of the system.
 - **LAHDC Funds Compilation Project** - The project to make LAHDC Funds Accounts online is under development. In October, 2010, one month of trial compilation was submitted and examined by the Principal AG Office.

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Hisar: Innovative e-Governance Initiatives

Hisar, one of the important cities of North India, situated 164 kilometers west of Delhi on the National Highway number ten, was founded by a Muslim ruler, Firozshah Tughlaq in 1354 A.D. Many prestigious research and educational institutes like Central Institute for Research on Buffaloes , National Research Center on Equines , Central Sheep Breeding farm, Center state farm , Regional station for Forage productions and Demonstration, Northern Region Farm Machinery and Tractor Training, etc. are there.



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NIC-District Center - It was established in 1988 and is now a pivotal & integral office for spear-heading e-Governance initiatives in the district. Equipped with state of the art infrastructure, dedicated 34mbps Leased Line connectivity and Nationwide Video Conferencing facility, the centre is hub for implementation of various e-governance projects so as to improve the public delivery system. An e-Disha Center is an exemplary G2C serving center for the convenience of citizens.

edited by
Vivek Verma

District website (<http://hisar.gov.in>) - It is highly informative where all information relevant to the citizens is nicely placed. Apart from district administration related information, other details provided are latest news and updates, places of interest, history, important portals, etc.

INNOVATIVE E-GOVERNANCE INITIATIVES

With a mission of delivering effective e-governance services in a transparent manner so as to bring accountability, many value additions have been done. SARATHI (Driving Licenses) and VAHAN (Registration of vehicle) have been implemented in totality and supplemented with following services -

- **SMS (Push)** service to applicants informing them about the fee details, allocation of number, approval status, details of objections (if any), etc.
- **SMS (Pull)** service so that applicants can track the status of their

application from their registered mobiles.

- **Dynamic Queue Management System issues e-Tokens** for managing queues at the counters.
- **Biometrics based attendance monitoring system** to ensure timely presence of the staff.
- Learner License test module to test the awareness of traffic rules/warnings.
- Replication of vehicles registration data and driving license data using **broadband over VPN** to state Data center for making state as well as national register.
- Using the bar-code reader, speed-post details and tracking numbers are sent through SMS to the applicants.

OTHER E-GOVERNANCE APPLICATIONS

HARIS #HALRIS Bridge: It is an integrated workflow application running in all the tehsils and sub-tehsils. Manual revenue related work has been replaced with an authentic automated system. It has enabled single window interface for Property Registration, Mutations, Jamabandi and copy of Record-of-Right. Online incorporation of mutations by revenue officials has facilitated the preparation of new Jamabandi. To ensure security and authenticity, bio-





DR. AMIT AGRAWAL
Deputy Commissioner
Hisar (Haryana)

National Informatics Centre, District Unit, Hisar has been working very close with the District Administration and other government associated functionaries in promoting and implementing various informatics & communication technology (ICT) enabled projects in the District. Significant transparency and accountability have been introduced in the government processes and public delivery system by inclusion of such technology. The whole system has been more strengthening by inclusion of SMS based services. I appreciate for the remarkable contribution by Sh. M P Kulshreshtha, DIO and Sh Akhilesh Kumar, DIA to make e-Governance a true success in the district.

metrics devices have been interfaced with each of the intermediate processes which are used by revenue officials.

e-District Administration - Various modules are :

- HARSAMADHAN - Web based public grievances and redressal system, enabling the public to lodge a complaint and track it's status.
- Payroll, Budget preparation and expenditure
- Civil & Revenue court cases monitoring system
- Monitoring of surplus land

e-Meetings: Web enabled application to manage meetings where meeting notices are automatically sent through SMS and E-mail. The system maintains the Agenda, Proceedings, participant details of all the meetings. Query based MIS reports can also be generated.

Document Management System : A system to maintain repository of Office documents, which are scanned and kept in pdf format for future use and references. The documents are grouped on certain categories and accordingly indexed thus making their retrieval fast and easy.

Preserving Shart-Wazib ul-araz : Rare documents: Shart-Wazib ul-Araz documents covering the traditions and customs of the villages decided during consolidation of the villages were originally in Urdu. Subsequently it was translated in Hindi. With the help of software, both the records (Urdu and Hindi) are being maintained under the village directory of Haryana and can be simultaneously retrieved.

e- Resources: It is a Web enabled application to maintain details and existing status of ICT infrastructure, suites/rooms in guest house and physical and financial progress of ongoing schemes. Since the information is always current and centrally available, it is of great use to district administration.



DLeDC (G2C centre), Hisar



Sh. Amardeep Jain, HCS (SDM, Hisar) demonstrating the use of biometric to revenue officials

On-line Entrance Test: The on-line entrance test for the various courses like MCA, B-Pharma and B-Tech (Literal) of Guru Jambheshwar University of Science & Technology have been successfully conducted. The test is based on the random selection of multiple-choice questions fetched from question bank. The results are instantly compiled on the completion of examination.

NATIONAL LEVEL PROJECTS

NADRS, NLRMP, AGMARKNET, web-sites of premier institutes are some of the projects.

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Finland Launches Service Map of Public Service Locations

In an approach to provide citizens easy accessibility to the service centers, the new service map launched by Finland for public services locations brings citizens closer to genuine one-stop service of public administration eServices. The map contains information from organisations providing a data set of service locations that cover the entire country. All authorities with uniform, nationwide data on service locations can be found on the map.

The service map displays the location and contact information for the offices and service points of the various authorities. Information on the following national office locations is currently available: offices of the Social Insurance Institution of Finland (Kela); municipal and city offices; district survey offices; local register offices; legal aid offices; police departments and stations; and others.

A map search for service point information can be made by entering the municipality and service type. The municipality and type of service can also be searched for separately. In this way, all available services in one municipality, or all service locations for one type of service throughout the



country, can be obtained.

The locations of the service points are shown in the map window with more detailed information to the side of the map. Information on the service points contains e.g. visiting address, telephone number, email and website addresses, as well as opening times. Citizens are also provided with a link to the authorities' eServices and forms on the portal.

For information: <http://www.suomi.fi>



In Southeast Asia Hong Kong has been at the front in providing eServices to its citizens. In this connection, the Transport Department of Hong Kong has added one more easy friendly service named "Hong Kong eTransport" a smartphone application and mobile website services. The public can now enjoy one-stop, point-to-point public transport enquiry services anytime, anywhere for free.

As the use of mobile phones for internet access has become very popular today, to help travelers search for suitable public transport routes while on the move anytime, anywhere, the Transport Department and the Office of the Government Chief Information Officer (OGCIO) have developed this smartphone application and mobile website.

Hong Kong Transport Dept. Launches eTransport Services

Hong Kong eTransport signifies the convenience of using this service to plan one's journey anytime, anywhere, making "Traffic Information at Finger Tips, Useful for Deciding Trips" possible. "Hong Kong eTransport" enables the travelers to search for possible public transport routes based on individual preference, such as number of transfers, fare, estimated journey time and transport modes, with search results displayed in table form and on a map. Users may set their current location and destination by making use of the smartphone's global positioning system (GPS) function so as to facilitate route and information searching. They may also enquire the service details of different modes of public transport. The mobile website is suitable for use on all mobile phones with an internet access function.

The department has also launched the mobile website of another online service, the "Driving Route Search Service (DRSS)". Drivers can now search for a driving route suitable for their use via mobile phones with an internet access function. The DRSS provides more useful road information and enhanced search power.

For information: <http://hkctransport.gov.hk/>

Canada Launches Social Media Site for Global Public Sector

In order to facilitate the flow of ideas and best practices across all orders of government and areas of public services Institute of Public Administration of Canada (IPAC) has launched a new and exciting service for the public sector around the world called Public Service Without Borders (PSWB).

The secure, cloud-enabled collaboration and social media site based on OpenText's Social Workplace software, connects all levels of public service employees to one another in order to network, share ideas, impart valuable lessons learned in such areas as governance, healthcare, technology, environment and other issues that are prevalent in the society.

Whether via the Internet or through mobile devices, participants are able to connect, network, plan and deliver exciting new partnerships and initiatives at anytime from anywhere in the world. Whether one is a Canadian, American, South African, Brazilian, British, Chinese or Indian public-sector employee, one can now connect to PSWB and engage with colleagues in a safe and secure fashion;



ion; whether to exchange policies, compare programs, or simply network.

OpenText Social Workplace is used as the social workplace forum for world leaders, diplomats and policy makers. The software helps organizations create a foundation for social collaboration, creating a real-time, community-based network where people can share content and ideas, and work more effectively on projects.

For information: <https://pswb-spsf.ca>



Local Governments have been playing crucial role in providing citizen centric services to the common mass in Philippines in particular and the world in general. In a move to evaluate the performance of the Local Government, the Department of Interior and Local Government (DILG) has teamed up with the Department of Health (DOH) and the Department of Tourism (DOT) for the implementation of the newest version of its Local Governance Performance Management System (LGPMS) project that is being used to determine the level of performance and development of local governments.

Philippines Starts eScorecard for Local Government

Managed by the DILG's Bureau of Local Government Supervision, LGPMS is an online self-assessment; management development tool that enables Local Government Units to determine their capabilities in public service delivery.

The LGPMS now serves as a common platform of national government agencies to generate information about how local governments perform in specific areas. The Scorecard is being used to determine which Local Government units need interventions to uplift the quality of their services, while the local tourism statistics helps focusing on developing the local tourism industry in Philippines as well.

LGPMS has proved very useful for government planners and policy makers as it serves as a benchmark for development planning, program performance review and administrative guidance. In fact, it is proving to be a great tool for policy research and development for making citizen services smooth and effective. LGPMS reports serve as feedback mechanisms to determine what resources are needed by the Local Government Units and where they are needed.

For information: <http://blgs.gov.ph/lgpmsv2/cmshome/>

NPI chosen Best e-Gov Portal at eWorld Forum 2011



National Portal of India Core Team being honored by Minister of State for Commerce & Industry, Jyotiraditya Madhavrao Scindia.

THE prized web entity of every Indian, <http://india.gov.in>, was recently decorated with the top public choice award for the Best e-Governance Portal by the e-World Forum at a glittering function in New Delhi.

Voted as the Best e-Gov Portal by the public,

<http://india.gov.in> scored high owing to its unique position as the Single-Window Access to over 7000 portals and web-sites associated with the Government of India.

NPI hosts a slew of services from various states/ministries/ departments which are all packaged under the 'How Do I' section of the portal. It is also a central repository for Government forms, documents, acts, rules, schemes and policies.

Over and above it all, the portal has proved itself to be an effective medium for the participation of common citizens in the process of governance, who are encouraged to voice their opinion through various feedback options available on the site.

With approximately over 78,000 registered users availing regular services and over 13 lakh visitors per month, the portal receives a staggering 24 lakh hits per day and has to its credit the honor of being the first government website designed to be accessible to all users irrespective of device in use, technology or ability.

With a whole new set of aims, <http://india.gov.in> is aggressively pursuing excellence and innovation in the field of eGovernance, while gathering glittering accolades on its way towards the same.

Alka Misra, NIC HQ

LRC (Appna Khata) Wins Award, Rajasthan

RECENTLY LRC Apna Khata, NIC Rajasthan bagged the prestigious SKOCH Digital Inclusion Award 2011 under the e-Governance category. The award was received by team NIC comprising of Sh. K.L. Jawaria STD, Anju Mittal SSA, Amit Mathur SSA and Chandan Sen TD & DIO Bundi from Sh. R. Chandrasekhar Secretary Department of Information Technology & Communications and in the presence of a host of other dignitaries including Sh. Montek Singh Ahluwalia Dy. Chairman Planning Commission. Similarly other projects titled SUGAM Single Window, Pregnancy and Child Tracking System, GPNIC (Rural Connectivity) and LRC Apna Khata which were shortlisted also received the Merit Certificates on the occasion.

Earlier, NIC Rajasthan also won two prestigious Awards at e-World Forum 2011. The team from NIC Rajasthan led by SIO Smt. Indu Gupta along with Sh. Tarun Toshniwal, STD NIC Jaipur, Sh. H.S. Gehlot, DIO Jodhpur, Sh. Chandan Sen, DIO Bundi, Sh. Amit Agarwal, PSA NIC Jaipur and Sh. Ankur Goel, DIO Ajmer received the Best Public Choice Awards for eDistrict Initiative for the project Sugam Single Window System and the Best Public Choice Award for Rural Governance Initiative for the project Rural Connectivity (GPNIC) for Panchayat from Secretary IT & C, Government



Team NIC Receiving the Award

of India, Sh. R. Chandrasekhar and other dignitaries. Sugam single window is being implemented in all the 33 districts of Rajasthan and GPNIC is being implemented in 10 pilot gram panchayats of the Ajmer district.

Chandan Sen, Rajasthan

Internet Data Centre (IDC) Receives Skoch Digital Inclusion Award 2011

INTERNET Data Centre (IDC) NIC Delhi has recently bagged the prestigious Skoch Digital Inclusion Award of year 2011 under the "e-Governance" category.

The Award was received by IDC team comprising of Sh. Shyam Sundar (Technical Director) and Sh. Vijay Kumar Vishwakarma (Technical Director) from Sh. R Chandrashekhar, Secretary, Department of Information Technology & Communications in the presence of other dignitaries including Sh. Montek Singh Ahluwalia Hon'able Dy. Chairman, Planning Commission in the function held at Hotel Shangri-La, Ashok Road, New Delhi on 1st Sep'11.

Internet Data Centre (IDC) is at the heart of e-Governance infrastructure. Over 5,000 government por-



Sh. Vijay Kumar Vishwakarma (Technical Director) and Sh. Shyam Sundar (Technical Director) receiving the award from Sh. R Chandrashekhar, Secretary, Department of Information Technology & Communications.

tals and websites are hosted at the IDC. It also runs the entire government communications system through e-mails. Besides, large number of e-governance applications & services are also delivered through this data Centre. Some of the notable ones are passport, visa, transport, land records, postal services, agriculture market prices and national rural employment guarantee scheme.

Vijay Kumar Vishwakarma, NIC HQ

GePNIC - e-Procurement product of National Informatics Centre bagged e-World 2011 award at New Delhi. The award was conferred for outstanding implementation of e-Procurement in Mahanadi Coal Fields Limited (MCL), Sambalpur, Odisha, which brought immense transparency and Good will in Government and in Public Procurement System. The award was received in G2B category (Government to Business). e-Tendering is such an area where it needed maximum transparency and other sensitive Governance issues.

Sh. Ashok Kumar Singh, Director- Technical (Project & Planning), Sh. Kulamani Samal, Director - Finance and Sh. S.K.Bhanja, Project Manager (e-Procurement) received the award from Union Minister of State of Commerce & Industries Sh. Jyotiraditya Sindhia on 2nd August 2011. e-Procurement System of MCL developed and implemented by NIC with unique Technical Evaluation Module which eliminates the subjective analysis while selecting or rejecting a bidder and the concept has been widely accepted and eulogized.

A. K. Hota, Orissa

e-World Award -2011 for GePNIC



Happy team receiving the Award

Lokayukta, Jharkhand

<http://lokayuktajharkhand.nic.in>

The official website of the Lokayukta is launched in an attempt to make the existing Jharkhand Lokayukta Act more stringent. This website is an effort to provide clean, transparent and accountable government to the people of the state. The website complies with World Wide Web Consortium Web Content Accessibility Guidelines 2.0 level AA. This will enable people with visual impairments access the website using assistive technologies, such as screen readers. The main objective of website is to make the common man aware about the existence of the office of Lokayukta so that they can utilize this office for redressal of their grievance and complaints regarding inaction, maladministration, power abuse and corruption against the state Government machinery and accordingly avail the facilities offered by the institution of Lokayukta.



Punjab Police

<http://punjabpolice.gov.in/>

The newly launched Punjab police website has been made live as per the directives of Punjab Police. This visually appealing website which is available in English and Punjabi is a continued endeavor of the Punjab Police to reach out to the citizens for presenting basic facts about its organizational goals, mission and structure; providing interface for grievance redressal increased transparency in police working; and, efficient delivery of police services. The website highlights implementation of rules, laws and regulations of Punjab Police. One of the best features of this site is, it is acting as a platform for the public to communicate with the police through e-Complaint service. Apart from it, the website is updated regularly on various initiatives taken by Punjab police and generates news on their work progress. The website will definitely stand firmly to provide safe and secure atmosphere within the state through cyber governance.



Haryana Seeds Development Corporation Limited

<http://haryanaseeds.gov.in>

The Haryana Seeds Development Corporation Limited is a leading seed development and processing organization in India. The corporation hit the cyber world with the launch of their highly informative website. The aesthetically designed website delivers general information regarding activities of the corporation. The easily navigable website caters to all the information related to production of certified seeds, marketing of these seeds and processing, storage and quality control of seeds for agricultural improvement in India. The site is very useful for farmers to gain necessary information on various field crops and vegetables. Besides the website publishes downloadable corporation's tenders and updates it according to its norms and workflow.



Reviewed by: LOKESH JOSHI, NIC HQ

Inauguration of 11 Project Arrow Offices through NIC VC by Sh. Sachin Pilot, MoS at Shimla

RECENTLY, The Hon'ble Minister of State for Information Technology, visited Shimla to inaugurate the 11 Project Arrow Post offices through NIC Video Conferencing by connecting to all 11 Post offices at various locations spread over 4 Lok Sabha constituencies in Himachal Pradesh from General Post Office, Shimla. The event was highly successful as the quality of VC was excellent and the MoS interacted with two Members of Parliaments, Sh. Virender Kashyap, Shimla LS and Sh. Rajant Sushant, Kangra LS, who were present at Nahan and Palampur Post offices, respectively. The MoS appreciated the NIC VC considering the importance of VC in view of the difficult geographical conditions of the State.

Earlier, on 24th July, the MoS reviewed the functioning of the various Departments under his preview, in which the SIO, NIC Himachal Pradesh also presented the details of infrastructure, services and major



Sh. Sachin Pilot inaugurating the Project Arrow Post offices through NIC VC at GPO, Shimla

Software projects of NIC Himachal Pradesh. While appreciating the efforts of NIC State Centre, the MoS advised to develop more SW applications in Hindi so that the rural people benefit the most. He also assured to provide full assistance from his Department, in case of requirement.

Ajay Singh Chahal, Himachal Pradesh

Launching of Mobile Money Transfer Service, Punjab



Hon'ble Minister of State Sh. Gurdas Kamat during the launch of service

SH. Gurudas Kamat Hon'ble Minister of State for Home, Communication and IT launched Mobile Money Transfer Service of Department of Post at Chandigarh on 1st June 2011. CPMG Patna, Bihar also participated through Video Conferencing. NIC, Punjab and VC, Division NIC-Hq extended support to Department of Post, Punjab Circle, Chandigarh for conducting Video Conferencing from the premises of the launch. During the launch, the Mobile Money Transfer was confirmed by CPMG, Patna through VC to the Hon'ble Minister. Hon' able Minister of State lauded the efforts of NIC, Punjab for arranging the VC facility and making the event a success.

Sarbjjeet Singh, Punjab



In the photo from left to right: 1) Sh. Milind D. Talnikar NIC Silvassa 2) Sh. Narendra Kumar, Administrator, DNH & DD UT 3) Sh. P. S. Kannan NIC Gandhinagar.

A Computerised Document Registration Services launched at Sub-Registrar Office, Silvassa

IN the state function on 2nd August 2011, the auspicious occasion of Liberation Day celebration, Hon. Administrator of Dadra & Nagar Haveli UT Sh. Narendra Kumar has launched computerised document registration services titled "BHOO PAN-JIKARAN" at Sub-Registrar Office, Silvassa, Dadra & Nagar UT.

The Revenue Department of Dadra & Nagar Haveli

In the News

UT Administration has adopted "Garvi" application software developed & customized by NIC (GSU) Gandhinagar as "BHOO PANJIKARAN". The coordination and implementation support is being provided by NIC Collectorate, Silvassa.

S.A. Khuba, Dadra & Nagar Haveli UT

National Workshop on National Land Records Modernization Programme



Smt. Anita Chaudhary, Secretary, Department of Land Resources addressing the workshop

A 2-days National Workshop on NLRMP-MIS and emerging technologies was held at NIC (Hqrs), New Delhi on 23-24th June 2011. The workshop was attended by 95 officers including Commissioners/Director Land Records and Revenue and Inspector General of Registration (IGRs) of the States & NIC Coordinators for

Land Records and Property Registration. The workshop was inaugurated by Hon'ble Director General Dr.B.K Gairola , NIC who stressed the need of standardization of processes and technologies. Sh.D.C.Misra, Sr.TD/HoG-NIC, Rural Informatics, highlighted that Record of Rights (RoR) are already digitized and placed on the public domain for public to view their ownership details and Department of Land Resources (DoLR) has sanctioned remaining components like digitization of cadastral maps, survey/resurvey using modern technologies and setting up of cyber records rooms in around 250 districts under NLRMP which was launched in Aug, 2008. Standardized directory of Land Records attributes, NLRMP system Security Policy and NLRMP technical guidelines have been kept on the website <http://dolr.nic.in> . The workshop was also attended by Smt. Anita Chaudhary, Secretary, Department of Land Resources along with Sh.Chinmay Basu, Special Secretary, Department of Land Resources, Sh.Charanjit Singh, Director (Land Reforms) and his team of Deputy Secretary and Under Secretary. Sh. Vinay Thakur summarized 2 days proceedings and highlighted the issues raised by the states.

D.S.Venkatesh, NIC HQ

LOUCHA PATHAP has been implemented in Manipur since July 2004 for computerization of Land Records. In addition to Land Records computerization, CORD SW is also implemented in Manipur since June 2007 for property registration. Both sw have been implemented successfully. Now it is felt the need for integration of Loucha Pathap and CORD. At the initiation of Revenue Department Govt. of Manipur NIC Manipur has integrated both the sw and shown a presentation on 3rd September 2011 at the Video Conference Room of NIC Imphal East District in the presence of Deputy Commissioners of Imphal West and Imphal East districts. All the concerned SDCs and Sub Registrar also were in the demonstration.

SIO NIC Manipur mentioned the features available in the integrated system and advantages given by the integration. All the SDCs and Sub Registrars agreed that the Integration Software shall be a helpful tool executing their daily activities. Deputy Commissioners also gave their views suggestions in the Integration Software.

SIO Manipur announced that the Integration Software shall be implemented at the office of the SDC Porompat and Sub-Registrar Porompat of Imphal East District from 2nd October 2011.

M.Budhimala Devi, Manipur

Demonstration on Integration of LOUCHA PATHAP and CORD software



Demonstration on LOUCHA PATHAP and CORD software is going on



In the News



Participants in the workshop

THE workshop on e-Scholarship (Post Matric) Project for SC, ST, OBC, SEBC, Minority category was held recently at DRDA Conference Hall of Angul District, Orissa.

Sensitization Workshop on "e-Scholarship" at Angul, Odisha

Sh. Siba Prasad Misra, IAS, Collector & DM, Angul inaugurated the workshop.

Addressing the participants, Collector wished that this project would help to streamline the process for providing scholarship to the students of backward and minority community.

Sh. C. Pradhan, DWO delivered the welcome address and requested the participants to actively participate & make the project a success. Sh. S. K. Chatterjee, Technical Director & DIO, NIC Angul District Unit explaining the process flow of the e-Scholarship project presented detailed online demonstration.

As educational institutions are the important stakeholders of e-Scholarship project, institutions need to register over the portal in order to enable students to apply online for scholarship. The Principals and Nodal Officers from about 90 institutions of the district attended the workshop.

A. K. Hota, Orissa

Training for Haryana Agriculture Department at NIC Karnal

TRAINING for Agriculture Department on Extension Reforms (ATMA) scheme, organized at NIC Karnal, Haryana was conducted on 8th September 2011 through VC from NIC-HQ, New Delhi.

This is a web-enabled Monitoring System for Monthly Progress Report (MPR) under ATMA Programme. Through this software, reports like yearly budget allocation, year targets, monthly achievements etc. may be generated.

39 officials from Agriculture department of all districts of Haryana have attended the training at NIC Karnal. All the participants were very enthusiastic and attended the training even in standing position, due to shortage of space & seating arrangements. After VC, participants also practiced on computers.

Smt. Rajeshwari and Sh Sanjay Agnihotri from NIC-HQ



Officials attending the training program

demonstrated the software through VC. DIO-Karnal, Sh. Tarun Goel and DIA-Karnal, Sh. Mahipal have coordinated the VC and facilitate the participants in practice session.

Poonam, Haryana

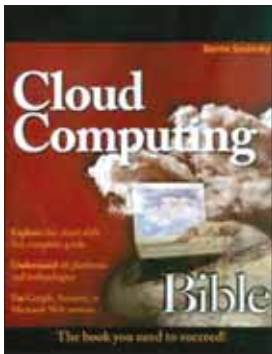
National Consumer Call Preference Registry

Hon'ble Union Minister of Communications and IT Sh. Kapil Sibal and Hon'ble MoS(C & IT) Sh. Sachin Pilot and Sh. Milind Deora launched the National Consumer Call Preference Registry (NCCPR) designed and developed by

National Informatics Centre (NIC) for Telecom Regulatory Authority of India (TRAI) on 27/09/2011. NIC's role has been applauded during the launching ceremony.

I.P.S. Sethi, NIC HQ





Title: Cloud Computing Bible
Author: Barrie Sosinsky
Publisher: John Wiley & Sons

Barrie Sosinsky, a veteran writer, specializes in network systems, databases, design, development & testing, has written many technical books related to Networking, Operating Systems, web topics, storage and application software besides contributing equally large number of articles for various computer magazines and web sites.



PRASHANT BELWARIAR
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Cloud Computing Bible

LATELY, we've been hearing more and more about "cloud computing." The book "Cloud Computing Bible" by Barrie Sosinsky is a complete reference guide to the latest technology. Cloud computing offers significant cost savings by eliminating upfront expenses for hardware and software.

If you use Google Docs, Evernote, Dropbox, or web-based email, you're using cloud computing. It has the potential to lower IT costs thus makes it a major force for both IT vendors and users. Because cloud computing involves various technologies, protocols, platforms, and infrastructure elements. This comprehensive reference will be useful in implementing cloud computing.

The book helps define what cloud computing is and thoroughly explores the technologies, protocols, platforms and infrastructure that make it so desirable. Also covers mobile cloud computing, a significant area due to ever-increasing cell phone and smart phone use focuses on the platforms and technologies essential to cloud computing

Sosinsky goes into great detail explaining what cloud computing is and why it may or may not benefit a particular business. He discusses the architecture of building a cloud, how to address security, storage issues, and managing the cloud. In addition to these, and other topics, Cloud Computing Bible contains large number of diagrams, tables, screenshots, and web links to further explain points.

The book Cloud Computing Bible is divided into five parts:

- Examining the Value Proposition,
- Using Platforms,
- Exploring Cloud Infrastructures,
- Understanding Services and Applications,
- Using the Mobile Cloud.

The first part "Examining the Value Proposition" - defines cloud computing and deployment models along with benefits and disadvantages of cloud computing, assess value proposition i.e economics of cloud computing. Cloud architec-

ture and the services and applications by type have been dealt in separate chapters. Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS) and Identity as a Service (IDaaS) are all covered nicely.

The second part - "Using Platforms" explains abstraction and virtualization technologies, load balancing, capacity planning, and explores Platform as a Service in general. Google web services, Amazon web services and Microsoft cloud services are covered separately. The windows Azure platform, Azure service, Azure AppFabric and SQL Azure gives an insight into overall Microsoft new platform.

The third part - "Exploring Cloud Infrastructure" is covered in two chapters - 'Managing the Cloud' - deals Lifecycle management, Cloud management products and cloud management standards while 'Understanding Cloud Security' - explains securing the cloud, data and establishing identity and presence.

The fourth part - "Understanding Services & Applications" has been dealt in great detail by the author. Sosinsky has devoted a full chapter on SOA, moving applications to the cloud and all about working with cloud based storage and productivity software. Communicating with cloud and using web mail services and media & streaming are also covered.

The fifth and final part - "Using The Mobile Cloud" covers two chapters on 'Working with Mobile Devices' and 'Mobile Web Services' wherein the author has covered mobile market, using smart phones with the cloud along with mobile interoperability and context aware and push services.

Overall the book is a must read especially for those involved either in establishing cloud computing infrastructure or wanting to know more about this technology - which is a buzz word at present. Someone with experience in programming or information technology (IT) would better appreciate everything Cloud Computing Bible has to offer .