Informatics

Current issue: April 1998

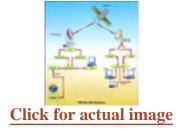# VSAT Technologies at NIC : the New Paradigms

The Internet technology has grown tremendously over the past few years and consequently, a dire need for high speed access mechanisms has arisen . Being a pioneer in India in the field of VSAT technologies , NIC has kept pace with the latest by acquiring three new VSATs recently.

In order to meet its networking requirements, NIC has been operating the 850 - node CDMA network and the 20-node SCPC network, which have already been discussed in a previous issue of Informatics (October '94). To fulfill the growing demand of the NICNET users for a direct Internet access from their premises (eliminating the last-mile problem) and to support a number of value-added services, NIC has recently introduced three new types of VSATs namely, FTDMA, DirecPC and IP Advantage.

FTDMA

The FTDMA VSAT system is a private communication network designed for bi-directional traffic that includes interactive transactions, batch file transfers, data broadcast and voice communications. Broadcast of audio and video can also be included as add-on options.

The FTDMA features a unique and patented two-dimensional satellite access scheme which combines the TDMA slotted ALOHA and FDMA techniques.

Click for actual image

The star topology of a FTDMA network is well suited for use in configurations where corporate headquarters or data centres communicate with hundreds or thousands of geographically dispersed locations. The System supports a variety of data protocols and applications as well as voice, providing central 'host-to-remote terminal' and remote terminal-to-remote terminal connectivity.

A FTDMA network consists of the following components :

- A Master Earth Station and a control facility or Hub.
- A number of VSATs located at the customers' remote sites.

- Ku-band satellite channels which provide the transmission medium interconnecting the Hub and the VSATs.

In a typical FTDMA network, many remote locations with end-user terminals and optional voice equipment can be connected through VSATs to a centralized processing centre (hub) or to the other remote locations through the hub. The hub is connected to the customer's host computer and voice systems either directly or through dedicated communication links. The central location may have several host computers and voice systems, each assigned to specific regions or applications of the network.

The FTDMA network supports multiple outbounds (256kbps) and multiple inbounds (76.8 kbps). The modular hub design allows each customer's network to be sized cost-effectively to meet the existing and future needs. It also permits an easy incorporation of new features as well as independent sizing of host ports and in-bound and out-bound bandwidths.

Components of the FTDMA VSAT

- A small outdoor antenna (1.2/1.8/2.4 metres)
- A low power Out Door Unit (ODU)
- An In Door Unit (IDU)

The VSAT supports TCP/IP, X.25 and X.28 protocols. The IDU provides the following interfaces for connecting the user's machines :

- LAN port with UTP (RJ45) interface.
- Four Serial ports which could be configured for X.25 or X.28.
- Voice port with RJ11 interface (optional)

The system utilizes a "Television Receive Only" technology by using mass produced Low Noise Blocks (LNBs) on the VSAT receipt channel.

The various applications supported on the FTDMA network include :

Corporate communication

E-mail

EDI

Internet/Intranet Solutions

 Web enabled database access

 Point-to-Point voice communication

 Databroadcast

 Multimedia Broadcast

DirecPC

DirecPC is a high speed satellite broadcast system featuring a PC plug-in card satellite receiver. In order to receive the DirecPC broadcast carrier, a PC should be equipped with an ISA adapter card and a 1.2/1.8/2.4 -m antenna.

The System provides a 12 Mbps broadcast channel from a single uplink earth station called Network Operations Centre (NOC). Data Encryption Standard (DES) encryption-based conditional access ensures that a receiver PC may only access that data which it is authorized to receive.

The DirecPC system primarily offers the following three kinds of services to Intel x86 PC servers and workstations :

Click for actual image

 Digital Package Delivery : This is a service that uses the broadcast nature of DirecPC's satellite communication technology to provide an efficient mechanism to transfer any collection of PC files (called a Package) to widely distributed multiple receiving PCs. Packages are stored-and-forwarded through the DirecPC NOC.

As such, Package Delivery is not a real- time service. DirecPC package takes advantage of the broadcast nature of satellite communication in greatly reducing the cost of transferring relatively large packages such as those occupying more than 100 MB , to multiple locations by having a

single broadcast received in parallel by all addressed sites. The service is typically used with a selective retransmission technique to ensure error free delivery to each location.

Multimedia Service : DirecPC's multimedia service provides IP multicast transport via the DirecPC service. The NOC relays a configurable set of IP multicast addresses across the space link. The information provider passes IP multicast packets to the NOC via an Ethernet link or by any wide area network connection. Remote DirecPC adapter card accesses the IP multicast through the standard Winsock API allowing many off-the-shelf applications to operate with no modification.

Turbo Internet Access : This allows a PC high-speed (upto 400kbps) access to the Internet. At the remote host, an NDIS device driver operates with the native TCP/IP stack for Win95. Reception from the Internet takes place via the DirecPC. Transmission into the Internet takes place via a dial-up Serial Line Internet Protocol (SLIP) or Point-to-Point Protocol (PPP) connection into an Internet access provider.The DirecPC architecture is open, thus allowing the information provider, complete control over their content and the user interface with it.

IP Advantage

The IP Advantage VSAT comprises of ISBN (Integrated Satellite Business Network) and DirecPC. ISBN is a two-way transmission system for data traffic between a HUB and many remote locations or Personal Earth Stations (PES). All ISBN traffic is carried digitally between the HUB and remote PES via one or more transponders aboard a Geostationary Satellite.

A single large sophisticated HUB station supports many small PES stations. The HUB-to-PES direction of transmission is termed as "outroute", while the PES-to-HUB transmission is termed as "inroute".

Since the remote stations have small antenna and low transmit power levels, the inroute signals are relatively weak. The HUB, with its high power amplifier, transmits a sufficiently strong signal for reception by the small remote stations ; and the large HUB antenna with its large receive gain compensates for the weak signals transmitted by the remote stations.

The Time Division Multiplexed Outbound is a 512kbps continuous bit stream, consisting of concatenated(i.e. linked together) variable length packets. The ISBN inbound, from the remote station to the Hub, consists of multiple independent Time Division Multiple Access of 64kbps bit streams. The inroute data is packetized and transmitted as bursts. The assignment of time slots in which each user is permitted to transmit its burst of traffic is centrally controlled at the Hub and can be tailored to the needs of each user.

The IP Advantage network supports multiple outbounds (512kbps) and multiple inbounds (64kbps). The modular hub design allows each customer's network to be sized cost-effectively to meet the existing and the future needs. It also permits easy incorporation of new features as well as

independent sizing of host ports and inbound and outbound bandwidths.

Components of IP Advantage VSAT

- A small outdoor antenna (1.2/1.8/2.4 metres)
- A low power outdoor unit (ODU)
- An indoor unit (IDU)

The VSAT supports TCP/IP X.25 and X.28 protocols.The IDU provides the following interfaces for connecting the user's machines :

- LAN Port with BNC (10base2) or UTP (RJ45)
- Two serial ports which can be configured for X.25 or X.28.
- TVRO out which is used to connect to DirecPC adapter card installed in the PC.

The System utilizes a television receive only (TVRO) technology by using mass produced Low Noise Blocks (LNBs) on the VSAT receipt channel.

The applications supported on the IP Advantage network include :

- Corporate communication

- E-mail

- EDI

- Internet/Intranet Solutions

- Web enabled database access

- Data and Video Broadcast

- Multimedia Broadcast

- Package Delivery

Each of the VSATs described above, have been carefully designed to meet the user specific requirements. The Hub equipment corresponding to all the three VSATs is already operational and all of them have been seamlessly integrated with the existing network for smooth interoperability.

In order to derive full advantage of DirecPC and to extend the Internet access to the District Centres of NIC, the DirecPC VSAT has been integrated with the already working C-200 VSAT. **With this, the entire NICNET has been fully converted to TCP/IP based network.** An advanced Object-oriented Network Management System (NMS) has also been installed for an efficient management of the entire network.

For further details, please contact :

Satcom Division, NIC Headquarters
A-Block, CGO Complex, Lodhi Road, N. Delhi
Ph.No. 91-11-4361609 ; Fax : 91-11-4362489
Email : satcom@nicnet.nic.in
www : http://satcom.nic.in

.

COMPUTER FESTIVAL AT GANJAM

Ganjam: A Computer Festival was recently organised by the NIC District Unit, Ganjam, Orissa with the help of the District Administration in the Town Hall of Chatarpur.

The festival was inaugurated by Mr.Santosh Kumar Satapathy IAS , Collector and D.M. Ganjam. Mr. Ashok Kumar Meena IAS, Project Director, DRDA, Ganjam gave the keynote address.

The main objective of the Festival was to create computer awareness among the general public. Leading Computer Organisations such as TULEC, Hardcore, Software Garden and SCSS participated in the event.

Computer Festival at Ganjam District

.

NINTHPLAN DRAFT ON THE NET

Delhi : The Ninth Five Year Plan (1997-2002) draft was recently placed on the Internet by NIC for the Planning Commission. Besides the two volumes of the complete draft document running into around 1600 pages, the site also contains the Executive Summary and the observations made by the Deputy Chairman of the Planning Commission.

URL : **http://www.nic.in/ninthplan**

.

MADHYA PRADESH ON THE NET

Bhopal: A web site has been recently developed and hosted by the National Informatics Centre for the State of Madhya Pradesh.

The Home Page comprises of general information about the State, information on Tourism, Industry, Profile of Districts and details of various Ministers and Secretaries in the State.

The Web Site can be accessed at :
http://www.nic.in/madhyapradesh

.

VIDEO CONFERENCE HELD

Delhi : A Video Conference, first of its kind, was held in the Ministry of Rural Areas and Employment at Krishi Bhawan, New Delhi on 30 December, 1997. The Conference was facilitated by NIC through NICNET Info Highway. During the Conference, the Secretaries in-charge of Rural Development and Poverty Alleviation in the Southern States reported the financial and physical performance in implementing the centre-sponsored schemes to the then Union Minister of Rural Areas and Employment Mr. K.Yerrannaidu, who, in his inaugural remarks complimented NIC on this important technological breakthrough.

.

WEB SITE OF MINISTRY OF ENVIRONMENT AND FORESTS

Delhi: Information about the Ministry of Environment and Forests is now available on the Internet. Some of the main attractions of the website include :

- White Paper on Pollution in Delhi with an action plan.

- Ecomark scheme of India.

- National Ambient Air Quality Data

- National River Water Quality Data

- National Forests Statistics

- Wastelands Information of India

- Afforestation under 20-points programme

- Environmental and Forest Clearance Letters

- Procedures for recognition of Zoos in India and Species information

- Environmental Information System (ENVIS) of the Ministry

The web site of the ministry also contains information about its organisational set-up and functions of the various divisions, auxilary bodies, associated offices and autonomous agencies located all across the Country.

Besides the above, a quarterly newsletter of the Ministry on Environment and Forest Policies, Programmes and Activities called **ENVIRO NEWS** has also been put on the net simultaneously with its print version.

The Site can be accessed at the
URL: **http://www.nic.in/envfor**

.
MULTIMEDIA IN HARYANA

Chandigarh: In an effort to explore the use of latest Multimedia technology, the NIC Haryana State Unit recently developed a multimedia presentation in Hindi on 'the schemes for the benefit of handicapped people in Haryana'. The presentation was made before the Governor, the Chief Minister and important Government officials who greatly appreciated the effort.

.
INTERNET FACILITY AT PONDICHERRY

Pondicherry: Internet Facility at Pondicherry Secretariat was recently inagurated by the Social Welfare Minister Mr. R. Viswanathan. The facility, made available through NICNET has been established for the use of territorial and central government departments, government undertakings and autonomous bodies in the Union Territory of Pondicherry.

.

COMPUTERIZATION OF THE ELECTORAL PROCESS

Sikkim: It is for the first time that the Electoral Process for the State of Sikkim has been computerized by the NIC Sikkim State Unit.

The Project, completed within a time frame of three months included the designing of a Database and Forms for data entry as well as retreival of the data by the Users. The data from the electoral rolls from the last Assembly Elections formed the basis of the current database. The existing data was reprocessed and additional data was entered at the lowest Panchayat level.

A separate Database comprising of the reservation distribution listing (Panchayatwise,Zilla Panchayat wise, Districtwise and State wise) was also provided to the State Election Commission. The Database was succesfully used at the Sikkim State Panchayat Elections held recently. The existing data can be easily upgraded and used in the next elections as well as by the other Government Departments as per the requirements.

.

NICNET TRANSMISSION FOR ELECTIONS'98

Delhi : The Trends Transmission of the 1998 Lok Sabha Elections was the most challenging of all the election transmissions projects handled by NIC so far. The simultaneous challenges were to :

- Bring up the application on the C-Band network for which a transponder on INSAT 1-D was made available to NIC on January 24, just three weeks before the first date of voting.
- Develop the Elections system on a modern LAN platform to replace the NEC mainframe.
- Collect more information about elections rather than just trends. In the past, only trends were collected through the Elect Program on NEC, but now, the candidate list, turnout, exit poll and counting centre status were also collected under the same umbrella interface.
- The central database machine had to be shielded from having to handle direct logins and

interaction with the database was connectionless.
- A web site on Intranet was used to train and manage the variety of DIO activities required in the one-month run upto the elections.

As the existing C-200 VSATs at the District Centres use X.25 protocol, the above design specifications were met by running the LYNX Internet browser on a X.25 login host. This login host had an X.25 port for DIO connectivity as well as an IP port for local LAN connection to the main database machine.

On getting a X.25 connection to a login host, the DIO had to run LYNX, get the appropriate empty data entry HTML forms from the database and transmit the completed forms back to the database machine in a connectionless way.

In future, as the District Centres acquire Internet browsers and high speed communication links, they would be able to contact the database directly from their local browser, bypassing the LYNX component. The rest of the system would be unchanged.

Finally, through the KU-Band network via INSAT-2C, the Elections data was transmitted to the server set up at Doordarshan.

The C-Band Monitoring Station worked hard to make sure that the whole transmission was smooth and also communicated detailed instructions regarding the use of new procedures to the District Informatics Officers using the interactive chat facility.

The contribution of the NICMAIL-400 system to the 'message handling' part of the entire procedure was absolutely vital. More than four thousand electionrelated mails were processed. The fact that all NICMAIL-400 boxes reside on the same machine meant that the District NIC officials could interact with the Head-quarters within fifteen minutes of a mail-request.

For further information, contact
ssarkar@sansad.nic.in

Click for actual image

Products/Services

- **Software for Agriculture Sector in MP**
- **Computerization of Educational Statistics**
- **Applications Under BasisPlus**

Software for Agriculture Sector in MP

Agriculture is the mainstay of Madhya Pradesh's economy with more than three-fourth of the State's population dependent on it for their livelihood.With this view, the following three software packages have been developed by the NIC Madhya Pradesh State Unit for the computerization of the Agriculture sector :

Weekly Progress Monitoring System of Rabi and Kharif : This software has been designed for the State Department of Agriculture to monitor, on weekly basis, the progress of different activities during RABI and KHARIF seasons on a divisional level.The various parametres monitored by the software include the rainfall position, sowing position of crops, seed distribution, plant protection details etc. The software has provision for initialization, data entry and modification, report generation and text file creation for transmission.

Court Cases Monitoring System : This software has been especially developed for monitoring the progress of the court cases related to the agriculture department which are pending against the government. The information covered by the software includes details of the cases (number, date, subject, court etc.), details of the court hearings and the action taken in specific cases.

The Software has been designed in two modules, one for the pending cases and the other for the cases where court decision has been made. Hence, each stage of the case can be carefully monitored.

Departmental Enquiry Monitoring System : The development of a computerized system for monitoring of departmental enquiry cases of the Agriculture Department is under progress. The system includes the following categories:

- Departmental Enquiry - having details of the accused as well as the enquiry officer.
- Disciplinary Actions - containing details about the charge, current status of the case and the final decision taken.
- Prosecution Cases - having information about the cases reported by the 'Lokayukt' to the

department of agriculture.
- Pending Appeal Cases - comprising of details about the appeals made by the employees to the competent authority and the pending status of such appeals.

Computerization of Educational Statistics

Education of children has been a priority task for every Indian State since Independence. Such a task assumes paramount importance in a State like Bihar, comprising of 65,000 schools, 200,000 teachers and more than 1,000,0000 children at primary and middle level of education. Such figures speak volumes about the amount of data that needs to be processed every year.

Statistical Report Release Function at Bihar

In this backdrop, the Department of HRD , Govt. of Bihar, in association with Bihar State Unit of NIC has developed a computerized database of an entire range of resources involved in providing education to the children. For the development of the Database, a core group called Education Group was formed comprising of the experts from NIC, Bihar Education Project (BEP) and Department of HRD. Outside assistance in the form of funds and resources was provided by UNICEF.

In a time span of eight months, the group developed a Statistical Report which includes an infrastructural layout of educational facilities across the State and gives a detailed picture on the 200,000 teachers in the State. This type of Teacher's MIS has helped the government in generating the teachers gradation list based on various rules.

By the application of various software tools, the analytical portions have also been presented in a graphical manner in this report, wherever felt necessary. This has helped in making the report easier to understand by a large audience.

The key topics covered by the Report include :

- Important Statistics

- Classification of teachers based on :

  - Social Categories
  - Training , Qualification
  - Language, Appointment etc.

- Manpower Planning of teachers

- Students Enrolment Details

- Spread-up of schools

- Student/Teacher Ratio

- Infrastructural Details

- Management Type etc.

The Statistical Report was recently released formally by Smt. Rabri Devi, Chief Minister , Bihar at a specially organised function, attended by many dignitaries. NIC's role in developing the database was explicitly recognised and it was re-iterated that the use of Information Technology in sectors such as education can make it possible to perform error free analysis of millions of records in a very short time frame.

Applications Under BasisPlus

The NIC-Haryana State Unit has developed the following text-based applications under the BasisPlus environment.

- *Services/Pension Rules Retrieval System :* This system, developed as a perfect text-based application contains a compilation of all the service rules of the Haryana Government such as GPF, Pension etc. BasisPlus application provides a lot of flexibility in the retreival of these rules by exploiting the basic characteristics of the application.
- *Budget Plan Schemes Retreival System :* This is the second application developed under BasisPlus in which all the Plan Schemes of the Haryana Government have been entered and are ready for instant access at any time.
- *Meeting Decisions Monitoring System :* This system aims at recording the details of the

various meetings such as the important decisions taken on different issues and the follow-up actions etc.

These applications have been succesfully installed at the BasisPlus Division at the NIC Headquarters at Delhi.

Projects

- [**Web Based Information System**](#)
- [**Information System for Charity Trusts**](#)
- [**CRISP at Arunachal**](#)
- [**Finance Sector Computerized in UP**](#)

Web Based Information System

A web-based Information System, the first of its kind at NIC, has been developed which provides information on the agricultural and processed food products being exported from India. The System has been developed for the Agricultural & Processed Food Export Development Authority (APEDA), an organization under the Ministry of Commerce.

This Information System primarily has three components :

The first component provides information **about the overall agricultural scenario in the Country, the state of the processed food industry in India and the role played by APEDA,** in a blend of graphical and textual fashion.

The second component is a searchable database which can be accessed through a browser from anywhere . It gives information on the various product groups categorised as :

- Animal Products
- Cereals
- Floriculture and Seeds
- Fruits and Vegetables
- Processed Fruits and Vegetables
- Other Processed Foods

On each of the products, information has been provided about **the varieties, seasons, areas of production, production statistics, major destinations, export figures, major exporters and international trade.**

The third component provides **a directory of Indian producers/exporters** which are APEDA members.The same can be searched using key-words like city, company name etc.

The System has been implemented on the Windows NT based Internet Information Server (IIS) and the data is obtained from the database using the Open Database Connectivity (ODBC) technology. Javascript has been used to display the retrieved information.

Another distinguishing feature of the System is the use of **Java Applets** in graphically representing the Product statistics in the form of animated charts and diagrams. It also contains a dynamic map generated and filled using a Java Applet at run time showing the specific areas of production of various commodities.

For further information, please contact :
email : mmapd@www.nic.in

Information System for Charity Trusts

There are around one million Charitable Trusts / Socities in India. In order to render effective and timely support during calamities such as Earth Quake, Cyclone, Flood etc., it was decided to computerize the entire information about these organizations.

The responsibility of the Project was entrusted to NIC. To begin with, the NIC Western Region Unit was chosen to be the stepping stone.

There are in all, about two lakh trusts in Maharashtra. These trusts are registered

categorywise such as Health, Reserch, Education/Training, Religion, Society etc. The database for Pune (17,000 trusts) and Mumbai (42,000 trusts) is already complete and the Design and Development work is being extended to other State Units of NIC such as NIC-Gujarat and NIC-Madhya Pradesh.

It is proposed to extend the database all over the Country and also make it available on the Internet.

For further information, please contact :
email : deo@mah.nic.in

CRISP at Arunachal

The District Rural Development Agency (DRDA) in Arunachal Pradesh has an active role to play in the poverty alleviation programmes of the State . It was often felt that due to the hostile terrain in

the State, the conventional communication set-up between the various DRDAs, State Departments and the Ministry of Rural Areas and Employment was insufficient and led to time overrun.

To overcome this problem, in June '97, the State Rural Development Directorate, along with NIC decided to adopt NIC's software called CRISP (Computerised Rural Informatics Systems) for computerization of DRDAs in the State and extend NICNET connectivity to DRDAs.

In the first phase, DRDAs of Upper Subansiri, Tawang, Papumpare and Changlan Districts were computerized by 15 August, 1997. Subsequently, an MoU was signed between the State RD Department and NIC Arunachal State Unit in October,1997 in order to implement CRISP in all the 13 Districts and a week long training programme on the same was conducted by the experts from CRISP Group, NIC Headquarters which was attended by various State officials.

Finance Sector Computerized in UP

Modernisation of the Revenue Sector being a top priority of the UP Government, NIC UP State Unit took up the challenge of computerising the Treasuries of all the State Districts and the Budget Directorate.

The major objective of the Project was to bring transparency between the money allocation to the departments and the actual receipts and payments. In addition, NIC also envisaged an accurate and speedy accounting pattern, proper budgeting, timely reporting etc.

The Project has been taken up in a phased manner and the main components include :

State Annual Budget : One of the major achievements of the Project has been the preparation of the Annual Budget (97-98) in a record time frame of 25 days, against a schedule time of 90 days. The budget document, consisting of around 4500 pages, was prepared using computers for the first time.

Contingency Fund Monitoring System : Monitoring of the contingeny fund, which is spent through out the year for emergency expenditures was computerised.

Budget Release and Expenditure System : A software has been developed to monitor the budget release, once it is approved by the assembly, and the monthly expenditure by the Department.

Monitoring of Loans and Guarantees : This system has been implemented for monitoring of different loans and guarantees given by the State and Central Governments to different

Corporations, Boards etc.

Treasury Information System of NIC (TISNIC):
This user-friendly sofware having a modular approach has been developed with the objective of preparing accounts upto the standard object level, to help the management with timely data for monitoring of expenditures on schemes and also to secure itemised control on expenditure.

Budget Control System : Till now, treasuries have been maintaining only grant-wise budget sanctions released from the departments. This leads to a pooling of the grants allowed to the District Developement Offices for various schemes and it becomes difficult for the treasury to maintain the expenditure record in a particular scheme. Hence, the Budget Control System has been developed to overcome this problem and help the treasury in maintaining accurate records. The System is currently in the implementation phase.

NIC Badgam: Setting an Example

From our Jammu & Kashmir Correspondent

Badgam, a centrally located District in the North Indian State of Jammu and Kashmir came into existence in July, 1979. Having a topography of both plain and mountainous areas, the District covers 1371 square kilometres and supports a population of around 4.97 lakhs. Besides being culturally enriched and having some of the best orchards and handicrafts in the Country, the Badgam District has also gained importance because of the presence of the famous Charar-i-Sharief Shrine.

A Tough Beginning

The NIC Badgam District Centre first became operational in 1989, but it had to be closed down due to the unfortunate eruption of militancy in the State. The Centre once again became functional in 1995. It had to struggle hard to make the Government and the people aware of the utility of Informatics. The initial emphasis was thus on Promotional activities whereby extensive training programmes were organised for the District Officials. The intense efforts soon bore fruits and the Badgam District Centre got off to a flying start.

On the Way to Success

Ever since its rejuvenation, the District Centre has successfully undertaken milestone projects which have gone a long way in helping it to establish a firm footing. Some of the highlighting achievements of the Centre include :

- *Computerization of the Integrated Social Security Scheme (ISSS)* - where the individual records of 4000 beneficiaries of social welfare schemes was computerised.
- *Relief Distribution System for Militancy Victims* - where an up-to-date computerised record of the relief distributed to militancy victims from 1989 to 1997 was maintained.
- *District Plan Computeriza-tion* - involving the computerization and monitoring of the District Plan 1996-97 comprising of various Plan Schemes approved by the District Planning and Development Board.
- *Public Distribution System Computerization* - where the PDS records in the District were computerized village-wise in order to provide a smooth running and accurate monitoring system.

- *Teacher Recruitment Package* - where a candidate list was generated Tehsil-wise, qualification-wise, category-wise etc. and applications were screened accordingly.

During Elections

The extensive work done by the NIC Badgam District Centre during the Lok Sabha and the last Assembly Elections in J&K was highly appreciated by the District and State Authorities. Exhibiting a commendable dedication to duty, the District Centre Staff performed round the clock and participated in the collection of latest election data, Exit Polls and Elections Results Analysis.

NICNET Utilization

NICNET is widely used in the District Centre and has assumed an important status because of the remoteness of the District and the underdevelopment of the other means of communication. Departments such as Civil Supplies, Planning, Industries, Agriculture, Social Welfare, Health, Education and the District Treasury send and receive data from their Head Quarters using NICNET on a regular basis. Other Departments resort to data transmission on a weekly or monthly basis. NICNET is also utilized for message transmission between State Secretariat and the District Headquarters on one hand and between the State and the Central Administration on the other.

The NIC Badgam District Centre, J&K

Training

Realizing that training is an essential factor for any computerization effort, NIC Badgam District Centre has been organizing a variety of training programmes. Broadly two types of training programmes are being conducted namely Training for computer awareness and Training in data entry operation. Almost all the important Government Departments and officials of the District have been included in one or the other training programmes. The sustained efforts by the District Unit have resulted in the growth of a new culture of Informatics in the District.

Informatics has a special role to play in Districts such as Badgam where development and security go hand- in- hand. The NIC Badgam District Centre, with its rather embryonic inception has moved meritoriously with its objectives, towards the accomplishment of its mission. But all that has been achieved is only the tip of the iceberg. The work does not end here and there are miles to go yet. The Unit has, in a very short span of time emerged as an integral part of the District Administration.