

# Hospital Information & Management System (HIMS)

## About GTI & HIMS Solution Overview



**GTI Infotel Pvt. Ltd.**

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<http://www.gtiinfotel.com>

- About GTI Infotel
- GTI Health IT Products/Services & Major Implementations:
  - Hospital Information Management Solution (HIMS)
  - Electronic Health Record (EHR)
  - Central Patient Portal
  - Telemedicine Solution
  - AI based CDSS (Clinical Decision Support System)
- Major Implementations
  - Indian Army
  - Government of Delhi
  - Government of Uttar Pradesh (UP)
  - All India Institute of Medical Sciences (AIIMS)
- Technical Solution Overview
- GTI's Related Experience: ERP & GIS/GPS Products & Services

# About GTI Infotel Pvt. Ltd., India & GTI Infotel, Inc., USA

## GTI's Partners & Ventures:



## About Us:

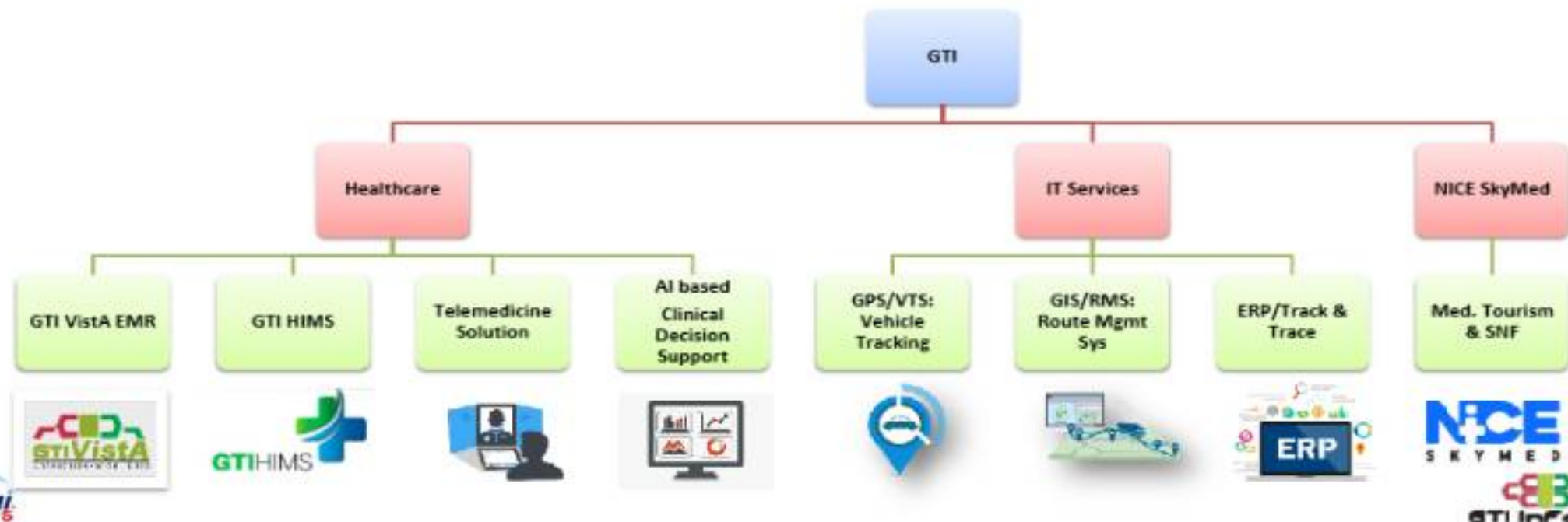
- Established in 2008
- A CMM L5 & ISO 9001:2015 Co.
- HQ in Noida/Delhi
- Subsidiary GTI Infotel, Inc. in the US
- 200 employees worldwide

## Recognition & Awards:

- **Paper Presentations:** Vista Community Meet, Fairfax, VA & Sacramento, CA, HIMSS, AIIMS, IJHMR & others
- **Awards:** OSEHRA, eIndia 2010, eIndia 2011, eHealth Expo 2011, mBillionth South Asia 2010 & IETE Gadadhar Memorial

## Technology Expertise:

- **DB:** SQL, PostgreSQL, GT.M, Cache & Oracle
- **Tech:** Java, JavaScript, PHP, C#, C++, .Net
- **OS:** Windows & Linux
- **Mobile:** Android & iOS
- **AI:** IBM Watson



# GTI Healthcare IT: Products & Services



## GTI's Telemedicine Solution caters to:

- Population of over 220,000,000 in the state of UP
- Implemented for NHM (National Health Mission)
- Project includes
  - Teleconsultancy: Medical Call Center
  - Electronic Medical Record (EMR)
  - Central Patient Portal (CPP)



## Products: GTI HIMS: Engineered for Hospitals, By Doctors



The **GTI Hospital Information & Management System (HIMS)** is a **flexible, affordable and intuitive software solution** developed collaboratively with healthcare professionals including physicians, nurses and pharmacists and designed to empower them to make better decision and enhance patient care and safety, while minimizing costs, resource expenditure and loss of revenue.

**GTI HIMS is an integrated and scalable web-native platform that optimizes clinical, financial and operational outcomes.** Its modular capability supports simple integration with additional clinical and ancillary solutions to support the continuum of care. Developed using healthcare industry standards. GTI HIMS also allow seamless integration with third-party IT solutions.

### Quality for the Clinicians

- On-demand access to patient data
- Improve outcome
- Error Reduction
- Clinical Research
- ICD, HL-7, HIPAA & DICOM Compliant
- Evidence based Clinical Practice

### Management efficiency for the Directors

- Maximize revenue & ROI
- Minimize disruptions & exposure
- Improve staff efficiency & productivity
- Lower administrative cost
- Lower Lab/Radiology rework
- Constants updates on Open Source

### Care for the Patient

- Improved Patient Safety
- Improved quality of care
- Information availability
- Assured of professional treatment
- Transparency for Patients

### Efficiency for Technologists

- Prioritize based on data
- Application Integration & expansion
- Quality Certifications
- Standardized templating
- Information Security
- Vendor Neutral



It's EHR is powered by one of the world's best [VistA EHR](#), fully supported by GTI & Medsphere.

# GTIVista EHR: HIMS incorporates Open Source Vista EHR



## Most Recognized & awarded EHR worldwide

GTI has expertise in development, customization, and deployment of Vista EMR across several hospitals. It has been instrumental in developing and giving back to the Open Source Vista community.

"The Vista system will take about **\$4 billion** to develop", according to Roger Baker, the Assistant Secretary for IT at the VA. This quote does not include implementation costs.

## Implementation around the world

Besides being implemented at hundreds of Government & non-Government Hospitals in the USA, Vista has been implemented in several hospitals at WHO, Mexico, Samoa, Finland, Germany, Jordan, Kenya, Nigeria, Egypt, Malaysia, Brazil, Pakistan, Denmark, etc. In India it has been implemented at JPNATC, AIIMS, Max Hospital, Rajiv Gandhi Cancer Institute & others.

### SURVEY OVERVIEW:

### 30 EHR systems ranked on 17 dimensions

The rankings in this table are based on the percentage of respondents for each system who agree or strongly agree with the survey statements represented in bold font across the top. For each statement, rank goes from 1 (best) to 30 (worst). For each statement, the first four rankings are color-coded green and the last worst average. Systems are listed in order of the sum of their rankings.

EHR systems	Abbreviated survey statements																
	Creating lab tests	Developing teaching modules	Creating reports	Look for health maintenance	Track for disease management	Patient engagement tools	Decision making	Finding and reviewing information	Presenting	Forecasting and analyzing the cycle	Research use	Training and support	Higher quality than other products	Customization to the user base	Easy and intuitive to use	Highly secure	Readily upgrade
Medical CHS (N = 116)	7	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Amgen CHS (N = 96)	10	10	3	2	4	9	2	1	4	2	3	3	4	2	1	1	1
U-MICH (N = 100)	2	4	9	4	2	1	4	1	4	4	4	2	2	4	4	4	4
Quest (N = 25)	15	14	12	1	2	8	3	2	23	6	2	1	2	4	6	3	2
<b>#5 Epic Care Revolution (N = 292)</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>6</b>	<b>4</b>	<b>10</b>	<b>10</b>	<b>7</b>	<b>9</b>	<b>7</b>	<b>3</b>	<b>19</b>	<b>4</b>	<b>11</b>	<b>10</b>	<b>7</b>
<b>#6 Vista (N = 18)</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>15</b>	<b>4</b>	<b>7</b>	<b>18</b>	<b>15</b>	<b>13</b>	<b>11</b>	<b>25</b>	<b>8</b>	<b>8</b>	<b>4</b>
Quest and Cerner (N = 18)	4	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
atheneo (N = 28)	6	7	1	2	5	12	13	9	18	18	10	4	13	10	6	8	5
Allscripts enterprise (N = 100)	9	19	13	15	15	7	14	4	1	1	8	12	14	1	1	1	1
UVA Health (N = 11)	11	12	13	14	14	4	4	4	4	4	4	4	4	4	4	4	4
UConn Health (N = 10)	8	8	7	17	18	16	12	12	3	11	4	11	12	7	10	11	11
Geisinger (N = 210)	11	11	11	2	4	14	15	15	18	14	11	11	11	11	11	11	11
Florida (N = 20)	14	11	10	13	16	10	9	10	22	12	14	10	19	11	13	12	10
Truist Health (N = 120)	20	16	16	11	18	13	11	11	19	14	11	14	14	9	13	14	15
Truist Health (N = 17)	20	20	14	24	24	21	4	4	18	23	17	2	2	14	4	7	4



INSTITUTE OF MEDICINE  
OF THE NATIONAL ACADEMIES





## PATIENT REGISTRATION MODULES

- Out Patient Department (OPD), IPD & Emergency Registration.
- Online appointment system.
- Queue management system.
- Emergency/Admission Registration.
- Registration for Admissions.
- Issue of All India ID Pass.
- Issue of All India ID Pass.



## LABORATORY MODULE

- Laboratory orders registration.
- Bar coded specimens and traceability to results and patients.
- Templates for normal and abnormal results.
- Billing, integrated with payable patients.
- Integration to patient records.
- Integration of Laboratory Equipments (Biochem & with LIS).
- Integration of LIS with HIMS, Inventory, Lab Reagents, etc.



## BLOOD BANKING MODULE

- Inventory with blood component type, ID numbers, date of collection, date of testing, source of blood (partner covered) expiry date, volume and blood group.
- Bar coding and trail of all requests pertaining to blood grouping.
- Donor details and result updation.
- All communication as per NABL norms.
- Information regarding emergency cross matched bags/issue ready bags/partially used bags.
- Various reports including XFNs, Transfusion record receipt.



## PHARMACY

- Allow entries for drugs dispensed through OPD/IPD pharmacy.
- Support various dispense patterns by drug or group, stock position etc.
- System generates instructions for use to patients attending pharmacy counter.
- Module enables provision to enter drug prescribed but not available in the inventory for assessing needs and prescription priorities of the prescribers.
- Drug entry and shipping of all the drugs.
- GTI's manpower also maintain upkeep of the drug/pharmacy inventory.
- Provide audit trails on per NABL standards.



## FINANCIAL MGMT MODULE

- Budget judgment notes to be provided by all relevant stakeholders to patient departments under various heads.
- Provide hospital insights to the planned and approved expenditures and expenditure under various heads.
- Provide insight to the assets and provide assets balance.
- History of the records for asset clearance according to the lower period or date as specified.
- Generate reports such as: Balance pursuing, fixed assets turnover at different levels, store, origin, gross, account, cost centre and expense account.



## BILLING MODULE

- HIMS Billing module is provided for the private ward (Room rent, Diet charges, laboratory tests, drugs and consumables, procedure etc.) and inpatient charges based for ultrasonography (USG) and CT scan and MRI charges.
- Provides charges based per patient expenditure reports under various head described above under this section.



## RADIOLOGY INFO. MGMT SYSTEM

- Patient Registration and scheduling, Patient Unit Management.
- Interface with modalities Work List.
- Radio logy Department workflow management, Resource and equipment tracking, Resulting history, Reporting and format.
- Integration with PACS.
- Integration of HIMS with CR system.
- Provision of tagging images with reports for viewing on HIMS.
- Provision to develop entire teaching library.



## STORE & PROCUREMENT

- Deal with Hospital Equipment/Material Inventory Purchase and Supply to different department.
- Item, Vendor, Area, report to create.
- Supply Order & Checkin Detail Entry (with copy) of bill and batch no. with inspection of items.
- Raising orders from various Area stores.
- Issue of items from the Central Store & Area Stores.
- Material return / recall details.
- Generation and printing of purchase orders/Supply Orders.
- Gate Pass And Entry Pass.
- Take contracts details.



## MATERIALS MGMT & FACILITY MGMT

- Module includes equipment procurement details, warranty, AMC, installation, maintenance schedule and records, calibration records with due dates, part replacement details, maintenance records.
- Maintenance breakdown and the vendor's preventive maintenance contracts, callations.
- Equipment tag generation (includes time duration calculations should be included).
- Generation for delivery register, from inventory and other records.
- Equipment tag is available for machines integrated to HIMS system.
- Audit form for monitoring vendor requirements as per NABL standards.



## DIGITIZATION OF MED. RECORDS DPMT

- Electronic records of all the patients are maintained.
- Patient Discharge Details and case sheets are digitally scanned with certain additional government.
- Capture of every endoscopy diagnosis for all inpatient patients as per ICD codes.
- Retrieve the history of the patient including OPD/ Emergency/Inpatient as for the entire duration.
- System is capable of storing x-ray image records received from radiology department, assistant of



## LIBRARY

- Real time online system for the books and journals inventory to the hospital staff.
- Online process of book/journal issuance and overdue SMS.
- The module facilitates on the procurement of books and journals.
- Generate unique barcode identifiers for each item in the library.



## MIS MODULE

- Statistical, analytical & MIS reports generation and printing is done across centers and format for each report. The dashboard for various indicators and data with transparency for data is available for Patient management details and is capable to integrate CIS or equivalent software, reports under different modules are listed below.
- Laboratory Module
- Medical Record Department
- Stores & Purchase Department
- Pharmacy

- **Improved Access:** GTI telemedicine has been used to bring healthcare services to patients in distant locations.
- **Cost Efficiencies:** GTI Telemedicine has been shown to reduce the cost of healthcare and increase efficiency through better management of chronic diseases, shared health professional staffing, reduced travel times, and fewer or shorter hospital stays.
- **Improved Quality & Education:** The quality of healthcare services delivered via GTI telemedicine are as good those given in traditional in-person consultations.
- **Physician Outreach:** OPD counter manned by Physician are equipped with peripheral equipment and diagnostic tools for live video consultancy & recording
- **Post-op support:** Remote center equipped to handle post-op patients as well
- **Specialist Access:** Physician & patient can connect with specialist at Hospital at prescribed time



- Desktop computer + GTI Telemed software
- PTZ Pro cam up to 1080p
- Sennheiser Conference Unit
- Selected set of medical peripherals

- Medical Cart with Integrated computer + GTI software
- PTZ Pro cam up to 1080p
- Sennheiser Conference Unit
- Selected set of medical peripherals



	Dermoscope	Exam Cam	Stetho	Ultrasound	Spirometer	Vital signs	AND MORE...
Peripheral Devices (Add-on items / Peripherals)							
Device Types	PC	Mac	Android	iOS	Hub Secure	Cloud-based Telepresence	Cloud-based or other cloud solutions

## A TOOL TO ASSIST PHYSICIANS MAKE PERSONALIZED TREATMENT DECISION

GTI has developed and is constantly upgrading an AI based CDSS that is helping physicians achieve evidence based medication thus increasing the success of treatment and life expectancy.

- **Analyze the patient's medical record**

Ability to analyze the meaning and context of structured and unstructured data in clinical notes and reports, easily assimilating key patient information written in plain English that may be critical to selecting a treatment pathway.

- **Identify potential evidence-based treatment options**

By combining attributes from the patient's file with clinical expertise, external research, and data, will identify potential treatment plans for a patient.

- **Find and provides supporting evidence from a wide variety of sources**

Rank identified treatment options and provides links to supporting evidence for each option to help Physicians as they consider treatment options for their patient. Will draws from an impressive corpus of information, including

- Existing and old patient data
- 290 medical journals
- Over 200 textbooks
- 12 million pages of text



## HIMMS & EMR/EHR

- HIMMS Implementation at Army, DHS, Pvt. Hospitals
- Handling over 1,00,00,000 patients per year

## ERP

- Largest ERP project of Indian Oil integrated with SAP, CRM
- Handling over 10,00,00,000 retail products

## Telemedicine & Customer Support Centre

- NHM, UP project handled over 220,000,000
- DJB Customer Support handling over 20,000,000 pop.

## Citizen Portal (CPP)

- NHM, UP Teleconsultancy project
- Handling Citizen Portal for access across the State

## GIS/Population health

- Several GIS projects from IOC, GAIL, Indane, Police.
- Handling lakhs of assets along with mapping & locations

## Community Services & Govt. Schemes

- NHM, UP Teleconsultancy project
- Handled several community services

## Inclusions

### HIMS SW

- Supply, Design, Development, Customization, Configuration, integration & implementation

### Cloud Hosting

- MeitY Empanelled CSP including DC, DR, SW component

### Video Conf.

- HIMS config over Cloud & Webinar

### O&M

- IT Helpdesk for entire solution, Cloud Service for 4-5 years

### Training

- And Capacity Building for users

### Version Control

- Version Mgmt & Security

## HIMS SW includes

### HMS

- Hospital Mgmt System (non-clinical)

### EMR

- Electronic Medical Record (Clinical)

### ERP

- HR, Finance, Supply Chain, etc.

### Community Services

- ASHA, ANM, NIRANTAR, etc.

### Govt. Schemes

- State & Central Govt.

### Citizen Portal

- Web based Patient Info System

### Telemedicine

- Tele & Video Consultancy

### GIS & Population health

- Geographical Info System mapping & Population health management

## Other Deliverables

### Manpower

- For operating the system & data entries

### Hardware

- At the end points like Hospitals, Poly Clinics, Mohalla Clinics, etc.

### Local Networking

- At the end points like Hospitals, Poly Clinics, Mohalla Clinics, etc.



### Skilled Nursing Facility(SNF)

A skilled nursing facility (SNF) is an in-patient rehabilitation center staffed with trained medical professionals. Nice's SNF caters to Medical Tourism Patients coming to India for treatment.

[Read More >](#)



### Senior Care @ Home(SC@H)

NICE provides meticulous care to elderly people whose children are living abroad due to the dynamicity of schedules or for better prospects in life and cannot be with their parents to look after their medical needs.

[Read More >](#)



### Telemedicine

Telemedicine is the distribution of health-related services and information via electronic information and telecommunication technologies.

[Read More >](#)

# NICE SkyMed: Medical Tourism in tie up with leading hospitals

MEDICAL

Avail the best in-class medical treatment at a reasonable cost away from your home country. We make your travel easy by facilitating each step – Right at the step of deciding to travel abroad to avail any medical service to help you getting a medical visa.

On your arrival here, we are always present by your side to help you guide through your entire stay by first arranging a safe, hygienic, comfortable place of stay and helping you choose the top hospital, best doctor. We also provide you on-call transportation service to help you commute to places.

We provide the services for the treatment of the following diseases:



Oncology

[Know More >](#)



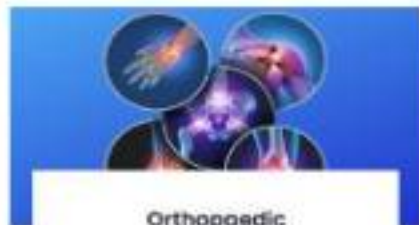
Cardiology

[Know More >](#)



Neuro & Spine

[Know More >](#)



Orthopaedic

[Know More >](#)



Transplants

[Know More >](#)



Cosmetic

[Know More >](#)

 Aakash Healthcare New Society Hospital 10000000000	NICE signed the Agreement with Aakash Healthcare, Delhi January 12, 2019	 Apollo Hospitals	NICE signed the Agreement with Apollo Hospital - PWD India January 12, 2019
 Fortis	NICE signed the Agreement with Fortis Hospital - PAN INDIA March 19, 2019	 BLK Apurva Health	NICE signed the Agreement with BLK Hospital, Delhi May 22, 2019
 sarvodaya HOSPITALS	NICE signed the Agreement with Sarvodaya Hospital, Delhi April 25, 2019	 MS HOSPITALS	NICE signed the Agreement with MS, Delhi May 14, 2019
 asian	NICE signed the Agreement with Asian Hospital, Delhi March 2019	 QRG Health City	NICE signed the Agreement with QRG Hospital, Delhi May 14, 2019
 NAYATI HOSPITALS	NICE signed the Agreement with Nayati Hospital, Delhi May 14, 2019	 NICE SKYMED	

## GTI Healthcare IT Major Implementation:

- Indian Army, Director General of Medical Services
- Govt. of Delhi, Directorate of Health Services, : Healthcare & HIMS Services
- Government of UP: Telemedicine Services, National Health Mission
- All India Institute of Medical Sciences



**GTI HIMS**

**GTI's Hospital Information & Management System (HIMS) caters to:**

- Over 10,000,000 patients
- Over 5,000 hospital beds
- Across several hospitals and Healthcare providers

# Indian Army: One of the Largest implementation in the country with HL7 v3 & other Compliances



Army Medical Corps intended to implement a fully integrated Hospital Management Information System at its healthcare facilities Pan India. The deployment of a Hospital Information Management System (HIMS) in an Army hospital is a strategic initiative aimed at enhancing the efficiency, accuracy, and security of patient data management.

After a very careful selection process, GTI was chosen by the Indian Army for this prestigious project. The HIMS is build on HL7 v3 & FHIR incorporating:

## HL7 V3 Complaint:

- CDA R2 (Clinical Document Architecture)
- C-CDA (Consolidated Clinical Document Dictionary)
- CCD (Continuity of Care Document)
- CCOW (Clinical Contract Object Workgroup)
- GS-1 & CIMS
- HL7 – RIS – PACS integration
- Controlled vocabularies such as SNOMED-CT, CTP-4, RxNorm, ICD-10 LOINC, etc.

## Modules (1/2)

- ADT
- EMR
- Medical Stores/Dispensary/Wards
- Laboratory Information System (LIS)
- Radiology Information System (RIS)
- Picture Archival & Comm. System (PACS)
- Nursing Care
- Dietary Services
- Central Sterile Supplies Dept. (CSSD)

## Modules (2/2)

- PA Check up
- Operation Theatre
- Blood Bank
- Labor Room
- Billing/Financial Management
- Disaster Management & offline system
- Data Center
- Health Information Exchange (HIE)
- Clinical Decision Support System (CDSS)

# Key Features & Core Requirements



## Key features

The HIMs is designed to address the specific needs of an Army hospital, focusing on enhancing operational efficiency, data integrity, and patient care:

### Electronic Health Records (EHR)

- **Comprehensive Patient Records:** Maintain a single, comprehensive electronic record for each patient, including medical history, treatment plans, and diagnostic results
- **Interoperability:** Seamless integration with external healthcare systems and standards-based data exchange

### Clinical Decision Support

- **Alerts and Reminders:** Automated alerts for critical lab results, medication interactions, and preventive care reminders.
- **Evidence-Based Recommendations:** Integration with clinical guidelines and best practices to support decision-making.

### Administrative and Financial Management

- **Billing and Invoicing:** Automated billing processes, insurance claims management, and financial reporting.
- **Resource Management:** Tools for scheduling, resource allocation, and inventory management.

### Reporting and Analytics

- **Dashboards and Reports:** Customizable dashboards for real-time data visualization and reporting.
- **Predictive Analytics:** Use of advanced analytics to predict patient outcomes, optimize resource use, and identify trends.

## Core Requirements

The functional requirements ensure that the system meets its objectives and integrates seamlessly with existing processes and technologies.

### Functional Requirements

- **Patient Registration and Management:**
- Maintain medical records for each patient, retrievable by unique identifiers such as Health ID (HID), name, personal number, and disease groups.
- Facility for bar-coding with photo ID integration
- Capture and store patient demographics, medical history, and visit details.

### Clinical Document Management

- Scanning capabilities for documents up to A3 size.
- Conversion of scanned documents into Clinical Documents of CDA level 1 or 2 with appropriate metadata.
- Merging level 3 and level 1/2 Clinical Documents for electronic patient record.

### Data Exchange and Interoperability

- Conformance to HL7 V3 CDA R2 and Consolidated CDA standards.
- Integration with Health Information Exchange (HIE) for sharing clinical documents and DICOM files.

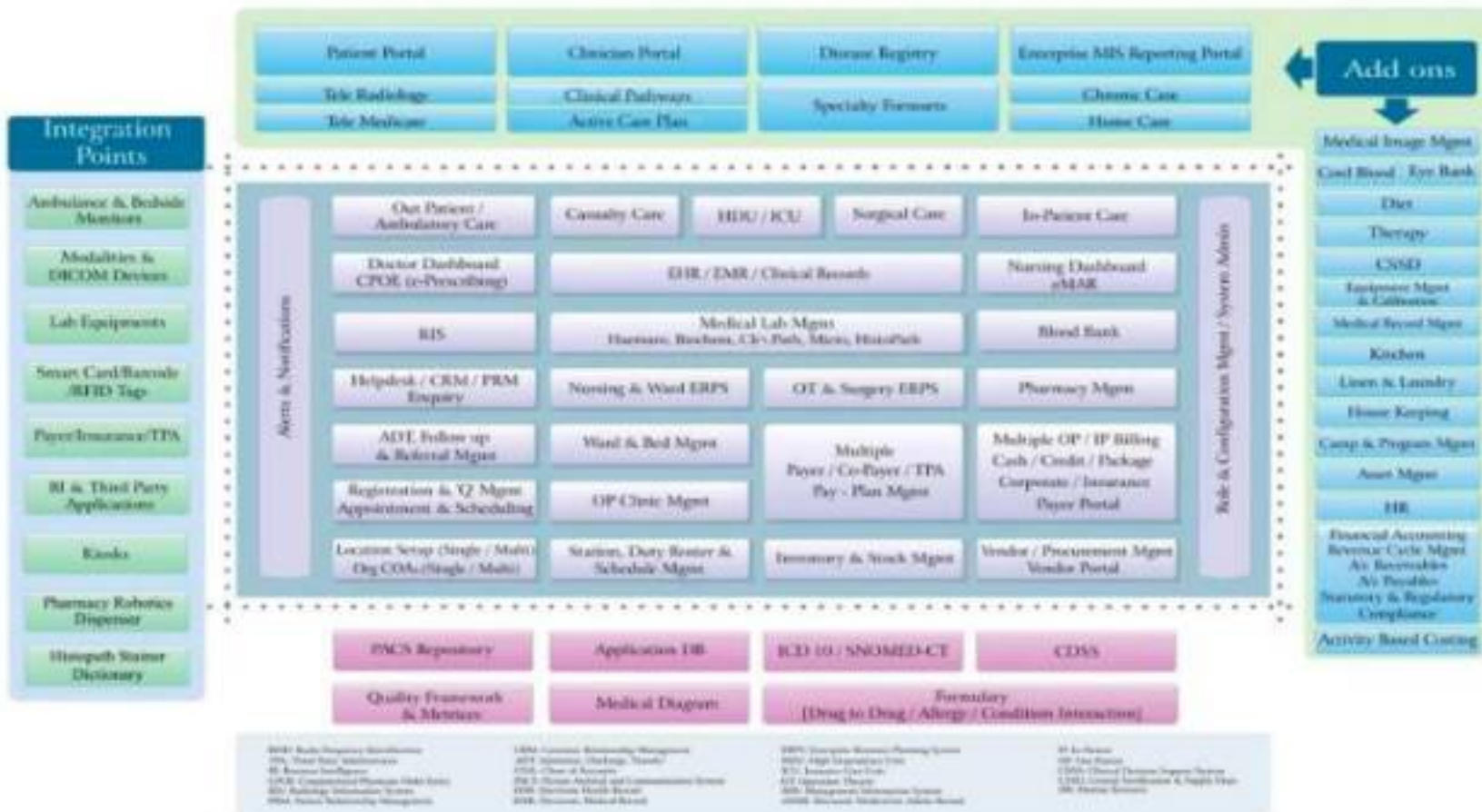
### Medical Reporting and Analytics:

- Generation of various reports including medical certificates, statistical reports, and disease coding in conformity with the Annual Health Report issued by the Army.
- Business Intelligence (BI) tools for hospital statistics, public health data & registries.

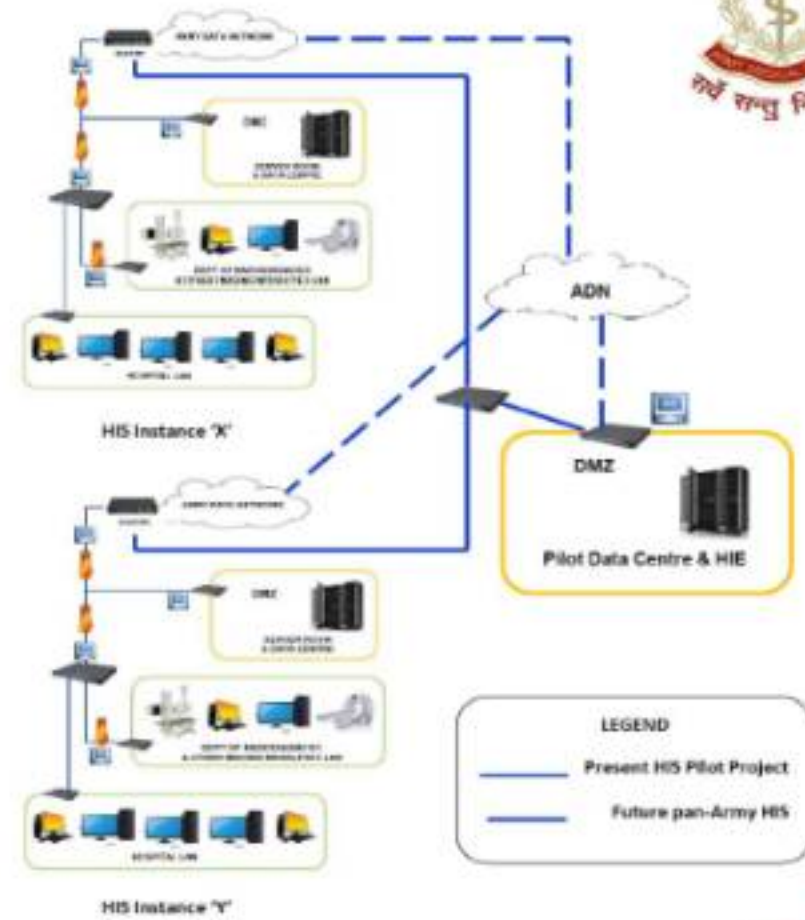
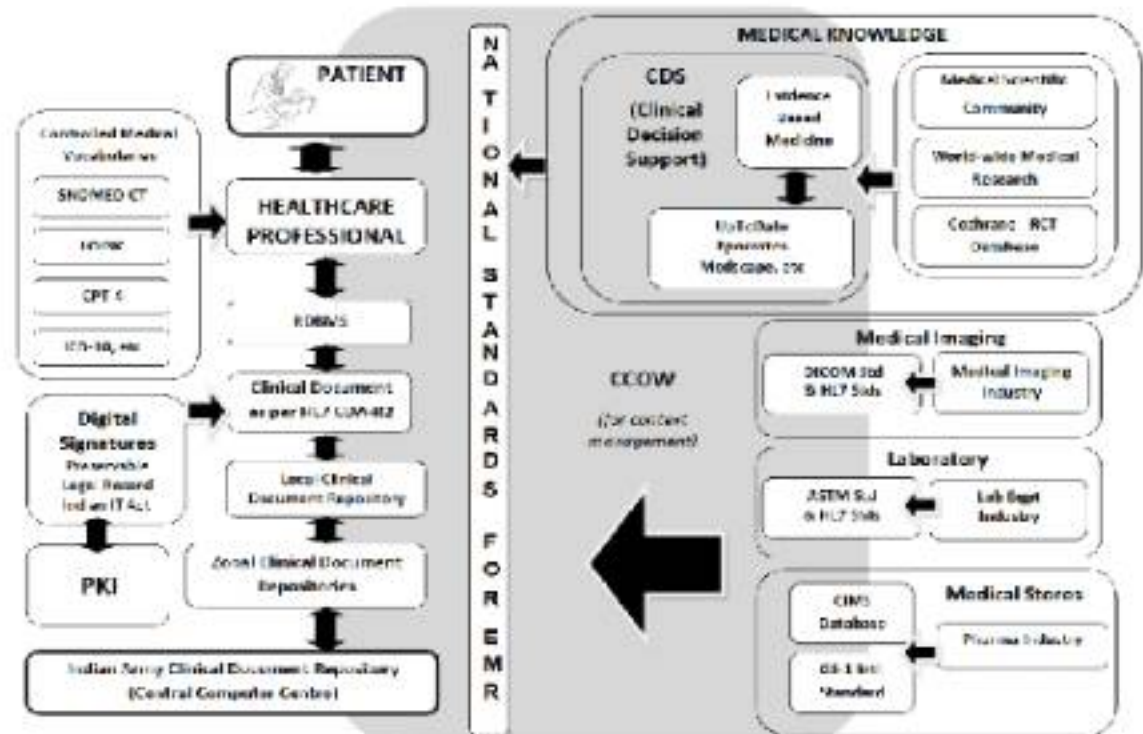
### User Access and Security:

- Role-based access control to ensure data security and privacy.
- Logging and auditing of all access and modifications to patient records.

# HIMS: Delivery Platform at the Army

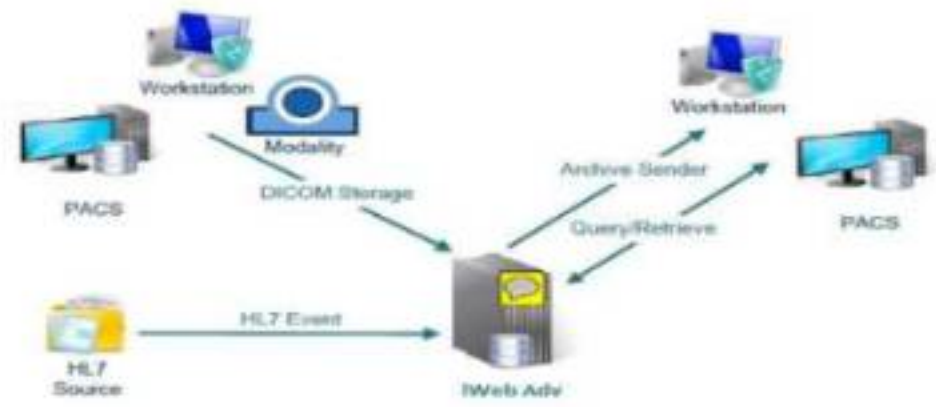
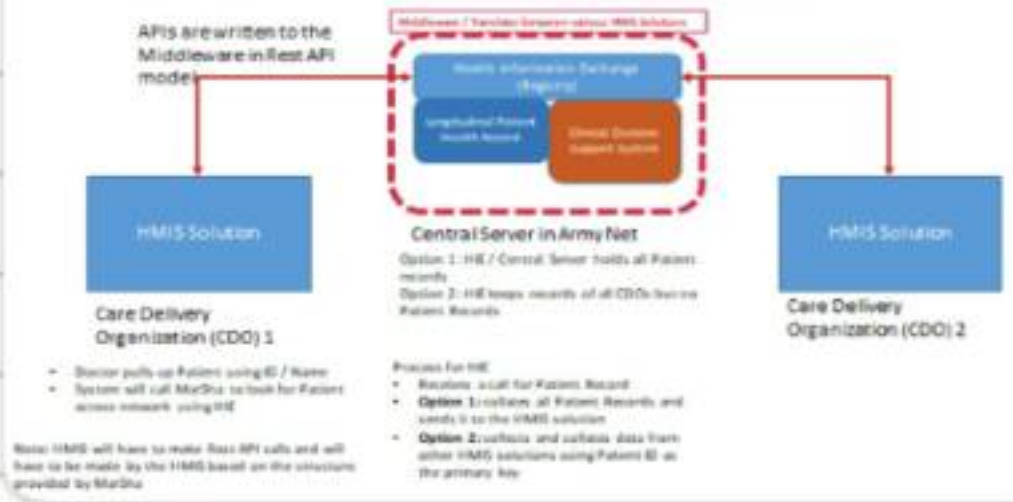


# Indian Army: Overall Architecture & Network Diagram





## HIE Functionality



Directorate of Health Services (DHS) of Government NCT of Delhi provides health care facilities at primary and secondary level to the citizens of Delhi through various types of health outlets. GTI's Solution caters to:

- 12 Hospitals under DHS with over 3500 beds
- Over 1,00,00,000 (one crore) patients/year for over four (4) years: **one of the largest such solution deployed in the country**
- HIMS solution deployed across hospital, Mohalla Clinics and Poly clinics
- Turnkey solution including HIMS software, hardware, network, manpower, service and O&M
- Govt. of Delhi Health Analytics

#	HOSPITAL NAME	# of Beds	# OF PATIENTS AS OF 2020			
			OPD NEW REGNS.	SPECIAL CLINIC REGNS	CASUALTY REGNS.	NO OF IPD REGNS
1	Guru Teg Bahadur Hospital	1,500	1,361,687	162,176	237,737	78,065
2	Babu Jagjiwan Ram Hospital	100	503,340	28,612	137,465	12,250
3	Baba Saheb Ambedkar Hospital	500	1,009,198		128,171	47,809
4	Deep Chand Bandhu Hospital	100				
5	Dr. Headgeware Hospital	200	189,707		423,921	18,060
6	Dr. NC Joshi Hospital	30	167,000		14	
7	Jag Parvesh Chandra Hospital	300	629,435		75,224	11,422
8	Kanti Nagar Mother & Child	100	49,568			256
9	Lal Bahadur Shastri Hospital	100	657,121	12,774	190,438	18,723
10	Maharishi Valmiki Hospital	150	322,831	6,011	92,142	9,179
11	Sanjay Gandhi Hospital	376	697,772	10,123	112,955	27,228
12	SRHC Hospital	200	475,691		23,765	8,031
	TOTAL	3,656	6,063,350	219,696	1,421,832	231,023

## UP Tele Consultancy across the state of UP serving population of 220 million



Project awarded by the Government of UP & implemented across the state of UP catering to a population of 220 million. The services was been envisaged and designed by National Health Mission. GTI gave the following solutions:

- **Medical Call Center (Dial 104) with Doctors, Consular and ANM/GNM:** GTI has developed and operates the Medical Call Centres through toll free health helpline which provides medical advice and health related information to users who connect by dialling 104 in the state of UP. The Medical Call Centres, includes Paramedics, Counsellors, AU Doctors & MBBS Doctors for providing the Services.
- **Central Patient Portal:** To give access to the patient and control over their medical record
- **Electronic Medical Record:** To store EMR of patients and their consultation history



## TECHNOLOGY DEVELOPED

### & DEPLOYED



#### ELECTRONIC MEDICAL RECORD (EMR)

GTI has developed an EMR especially for Tele-Consultation. The EMR is integrated with Central Patient Portal. The EMR registers a patient, record medical history and any other detail as be required. The EMR is developed in compliance with Electronic Health Record guidelines issued by Ministry of Health and Family Welfare, Government of India. It has the following major functionalities:

- Generate & Maintain Aadhaar number based Unique Health Identifier (UHID) and in the absence of Aadhaar, mobile number or Ration card number shall be used.
- Progress note digitally signed at the end of every consultation by the



#### CENTRAL PATIENT PORTAL

GTI has also developed a Central Patient Portal that shall store electronic medical records ("EMR") of all patients, maintain a record of consultations carried out as a part of telemedicine project, maintain a record of availability and utilisation of manpower deployed as a part of telemedicine project and execute other operations. It has the following major functionalities:

- Registration details of the patient.
- Schedule of consultations for the next two days at every Patient Node.
- Utilization of specialists/doctors/paramedic/ counsellors and other manpower deployed as a part of telemedicine project.



#### AI BASED ALGORITHMS & CDSS

GTI is developing an AI based Algorithm & Clinical Decision Support System (CDSS) for a Tele-Medicine Medical Consultant to improve their online treatment and reduce the time spent with each patient. It will have the following functionalities:

- Standardized and validated algorithms
- Disease summaries that cover major prevalent diseases in India, for use by the staff while providing the Services.
- Understand the population, geographical, disease and weather related parameter for each patient call.
- Understand the patient demographic & Symptom.



#### MEDICAL CALL CENTER

The Medical Cell center solution deployed by GTI provides the interface to the users and helpdesk operators for logging, tracking, resolution & closing of calls. The services and information will be provided in Hindi or English language. An administrator to receive call, transfer to appropriate agent/doctor, record call, enter patient information, such as name, age, as per authority's demand etc. That information is then stored, and shared with other users as appropriate. It shall also alert the medical staff when a patient that requires different treatment is admitted, such as some with an infectious disease. The Solution consists of:



## HEALTH SERVICES



### MEDICAL ADVICE

- Information on disease conditions, health facilities available in the particular regions, advice on local epidemics and prevention etc. and suggestive medication.
- Basic health advice that does not require any advanced medical suggestion through paramedics.
- Medical doctors (MBBS)/ AU doctors provide advice on medical conditions. All such advices shall be issued on e-prescription digitally signed by the doctor issuing the prescription. The e-prescription shall be shared with patients and with nearest Public Healthcare



### COUNSELLING & INFORMATION

- Family Planning - advice to eligible couple as per defined protocols.
- Rehabilitation counselling (Alcohol, Drugs, Smoking);
- Psychological counselling (Anxiety, Depression, suicidal tendencies, chronic diseases like cancer etc.);
- Stigmatized diseases (HIV, AIDS, Leprosy).
- Non-communicable diseases - Prevalent lifestyle diseases conditions, its symptoms, precaution and prevention.
- Nutrition and hygiene related Information.
- Women and child care information.



### REFERRALS & INFORMATION DIRECTORY

- Health care services / facilities.
- Hospitals, Pharmacies and Diagnostic centers;
- Rehabilitation centers.
- Referrals to Public Healthcare Facilities.



### MEDICAL EMERGENCIES

Assist Authority in taking faster action during medical emergencies such as disaster/epidemic breakout by sharing health information etc.



All India Institute Of Medical Sciences



INDRAPRASTHA CANCER SOCIETY  
& RESEARCH CENTRE



## Medical Call Center & EHR

- Implemented India's first medical call center catering to Calls from several stake holders including
  - Patients
  - Physicians
  - Roster Management
  - Equipment Management
  - O&M
  - Appointments
- GTI VistA EHR Implementation
  - Several EMR modules Implemented
  - Machine Integrations
  - eMLC
  - CPRS
  - Vitals
  - Intake/Output
  - Manpower to handle the Clinical Operations

## VistA EHR based BMS

- North India's leading 600 bed Cancer Hospital
- GUI based Bed Management System deployed across Clinicians, Registration, Finance, Accounts integrated with VistA EHR
- GUI displayed on Video Wall for information to Staff at various locations .
- View availability of the beds graphically incorporating all the blocks & wards where the Administrator is be able to view the complete hospital including all the Blocks & Wards.
- Mirth Integration Engine used
- Integration with existing HIS systems

## HIMS

- Chacha Nehru Bal Chikitsalaya
- Largest Children Hospital in NCT, Delhi with 215 beds
- Complete HIMS implementation including
  - Registration: ADT (Admission, Discharge & Transfer)
  - Radiology
  - Lab
  - Pharmacy
  - Inventory
  - Cloud based
  - Portal Access
  - Manpower to handle the Clinical Operations

# GTI Related Experience: ERP & GIS Products & Services



# GTI Related Experience: ERP & GIS Products & Services



# Enterprise Resource Planning (ERP) and Track & Trace Modules

MEDICAL



## PRODUCTION MGMT

Improve production scheduling with visibility into products, parts, components and assembly to avoid delays and inventory levels.



## INVENTORY MGMT

Early identify finished goods, components, and raw materials associated with arrival by lot number and location, and other alerts when they are out of stock or down the supply chain.



## TRANSIT MGMT

Enable track visibility - stock status across the storage location and transit stock status visibility.



## DISTRIBUTION MGMT

Enables acquisition of inward and outward stock position at the distributor end. Handling sales returns as well as returns to vendors.



## CUSTOMER MGMT

Enable customer to verify the authenticity of the product. This module is available on mobile and access platforms.



## LOYALTY PROGRAM

Provide CRM based system featuring analysis of Geo mapping, authorization & return notes.



## ANTI-COUNTERFEIT

Feed back on the unauthenticated orders. The LID that is not available in the database will create a RED-flag when scanned.



## ANALYTICS

Enables various Production process to get all metrics, stock aging report, In Stock report, claims, shipment report, FIFO & LIFO report, user activity report & much more.



## MERCHANDISING

- Track complete Product Life cycle right from sourcing to end delivery.
- Open Catalog, Budgets, MRP Alerts.
- Track Product Development
- Support Supplier Catalog and vendor transactions.



## REQUIREMENT

- Create Purchase orders for each purchase order for all work orders.
- Track inventory.
- Track purchase and delivery.
- Perform Warehousing as well as transportation of a Purchase order between different locations.



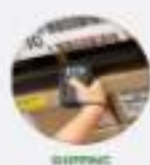
## BOM

- Configure Purchase order management.
- Configure user, Job orders and work orders.
- Configure BOMs for each part with its variants.
- Connect User Center to track employee costs for each department.



## PRODUCTION PLANNING

- Cloud based planning tool for setup, demand and control system for a factory of various.
- Virtual based Production planning.
- Ideal for any manufacturing unit by capturing the raw data and resources of all units.
- Get Planned vs. Actual Data.



## BILLING

- Invoice and Billing by lot for each lot.
- User can add post process discounts.
- Back to Back, Invoice and freight tracking.



## FINANCIAL ACCOUNTING

- All aspects of financial systems such as GL, AP, AR, P&L, etc. are integrated with purchase and production data to generate a full view of financial operations.
- Real Currency.



## PRESENTATION

- Track production right from each lot size from its raw data to finished goods the system.
- Material Quality and production control.
- Track customer and vendor production.
- Material Planned by lot of product to control quality, verify an inventory.



## MOBILE APP

- Get reports and performance metrics on the mobile and web browser.
- Production Line.
- Inventory and production of purchase orders, shipping etc.
- Get "Smart" based notifications such as when a confirmation is received or when a delivery is expected.





## ADMIN MANAGEMENT MODULE

In Admin management module you will be creating your company account. All the details about your company like General details, Registration details and Other details of the branch or division of your company could be entered through this form.



## OPERATION MANAGEMENT MODULE

Operation management module in GTI ERP for fleet management provides a collaborative environment for performing day-to-day tasks. Operation Management module covers Daily Vehicle Transactions. This module helps track the vehicle and availability.



## TYRE INVENTORY MANAGEMENT MODULE

Inventory of Tyre in GTI ERP for fleet management is maintained through tyre inventory management module section. Here every details of new tyre is captured along with manufacturer name, tyre number, branch where it is received etc.



## BATTERY MANAGEMENT MODULE

Battery Management Module gives you clear visibility to the integrated effect of current and future supply and demand, thereby enabling you to make better decision about purchase and reduce excess and obsolete inventories.



## CONTRACT MANAGEMENT MODULE

Contract Management module in GTI ERP for fleet management is a transportation contract management tool designed to boost business power by cutting down on manual workload. It is user-friendly transport contract management tool and can easily be integrated with your business systems.



## STORE MANAGEMENT MODULE

Stores management module provides a powerful and flexible set of features to help you manage and report your inventory information. Inventory Management in GTI ERP for fleet management facilitates processes of maintaining the appropriate level of stock in a warehouse.



## PURCHASE MANAGEMENT

Purchase management module in GTI ERP for fleet management streamlines procurement of required Vehicle spare parts and other Non Inventory Materials. Purchase module is tightly integrated with the inventory control and production planning modules.

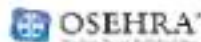


## FUELING MANAGEMENT MODULE

Average fuel consumption from destination to destination for different kind and type of vehicles are captured in the master file. Facility for defining the tolerance limit of fuel consumption from destination to destination is also defined in the master.



# Other Client/Partners/Press release/Awards List (Excellent execution certificates from all clients)



hindustantimes

## Live stats on Aiiims trauma centre site

TRANSP. HINDUSTAN TIMES, NEW DELHI  
TUESDAY, APRIL 20, 2010

By Anil Kumar

NEW DELHI: A major breakthrough in the use of mobile phones for patient information at the All India Institute of Medical Sciences (AIIMS) trauma centre has been achieved. The centre will now be able to provide real-time information on the status of patients in the trauma centre to the hospital's website.

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## Now, patient info in tablets at AIIMS centre

TRAUMA CENTRE Instead of issuing handwritten OPD cards, info will be stored in tablets and provided to patients via mobile phones

By Anil Kumar

NEW DELHI: Trauma centre at All India Institute of Medical Sciences (AIIMS) has achieved a major breakthrough in the use of mobile phones for patient information. The centre will now be able to provide real-time information on the status of patients in the trauma centre to the hospital's website.

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04 | metro | hindustantimes



## Life-saving tips a phone call away

By Anil Kumar

NEW DELHI: The trauma centre at AIIMS is to get a major upgrade. The centre will now be able to provide real-time information on the status of patients in the trauma centre to the hospital's website.

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Confidenti



# Thank You!

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