https://informatics.nic.in

Vol. 34, No. 3 January 2026

Informatics

ISSN 0971-3409

स्वच्छ भारत एक कदम स्वच्छता की ओर | Digital India Power To Empower | MeitY Government of India | NIC एनआईसी National Informatics Centre

An eGovernance Publication from National Informatics Centre

Animal Husbandry Milk Incentive Scheme 24

MedLEaPR 26

mini-U 28

Gov.in Secure 31

Digital Trust 34

Dyslexia Friendly UI / UX 36

MCP 2.0 40

इस प्रकाशन को हिन्दी में पढ़ें

Informatics
Volume 34 No. 3, January 2026

PATRON
ABHISHEK SINGH, IAS

ADVISORY PANEL
Ajay Singh Chahal
Suchitra Pyarelal
C.J. Antony
Manie Khaneja
Alok Tiwari

EDITOR-IN-CHIEF
Mohan Das Viswam

ZONAL EDITORS
Sushma Mishra
Nissy George
Vinod Kumar Garg

CONTENT SUPPORT
Archana Sharma
Hemendra Kumar Saini

DESIGN SUPPORT
Mukesh Bharti
Rohit Maurya

WEB & E-BOOK
Sunil Kumar
Amit Kumar Lodhi
Mohd. Pintu

PRINT & COORDINATION
UXDT Division

PUBLISHED BY
National Informatics Centre
Ministry of Electronics & IT
Government of India

CONTACT ADDRESS
INFORMATICS
379, A4B4, Floor-3, NIC
A-Block, CGO Complex, Lodhi Road
New Delhi-110003, INDIA
Phone: 011 -24305363/65
Email: editor.info@nic.in

Editorial

India's digital governance journey is entering a profound new phase. For over a decade, the focus was on building infrastructure and scaling systems, a monumental effort that established a world-class foundation. Today, our core digital platforms support services used daily by millions.

In 2026, the vital question is no longer what to build, but how to ensure that what we have built works as one. As our digital landscape matures, the focus must shift from expansion to integration. Systems can no longer operate in silos; their true value now lies in their ability to function as a coherent, interconnected ecosystem.

Interoperability and shared standards are the new mandates for effective governance. When systems communicate seamlessly, service delivery becomes faster, more consistent and, most importantly, easier for the citizen to navigate.

Simultaneously, the definition of 'scale' is evolving. It is no longer just about the volume of users, but the depth of reliability and fairness across every region. This places a premium on resilience, cybersecurity, and active data governance. As we explore in this issue's discussion on Digital Trust, maintaining the public's confidence is not an implicit byproduct of technology; it must be a deliberate design choice.

As we extend these systems into healthcare, agriculture, and welfare, our impact will depend on clearly defined use cases. We must apply advanced tools like AI and analytics where they solve genuine problems, avoiding complexity for its own sake. True foresight now means anticipating how systems might fail or be misused in an interconnected web, ensuring technology remains an ethical servant of public policy.

A human-centric approach remains our North Star. Inclusivity means designing for diverse cognitive and physical needs, as highlighted in our focus on Dyslexia-Friendly UI/UX. Digital services must work not only for the most connected but also for those at the margins.

The success of digital governance will now be judged not by what we build, but by how well everything works together.

Wishing our readers a very Happy New Year! May your vision for the future always find a perfect interface with reality.

-Editor-In-Chief

Contents

Editorial	**02**
Contents	**03**
DG Message	**05**
From the States	
Bihar	**06**
Ladakh	**12**
District Informatics	
Gir Somnath, Gujarat	**18**
Kangra, Himachal Pradesh	**20**
West Siang, Arunachal Pradesh	**22**
e-Gov Products & Services	
AHMIS	**24**
MedLEaPR	**26**
mini-U	**28**
Gov.in Secure Intranet	**31**
Technology Update	
Digital Trust	**34**
Dyslexia-Friendly UI/UX	**36**
MCP 2.0	**40**
Appscape	**42**
International eGov	**44**
In the News	**46**

Disclaimer

The views expressed in the articles published in this Publication are those of the authors, and do not reflect the views of its editors or the National Informatics Centre. Further, the responsibility for accuracy of statements and information contained in the articles rests with the authors.

NIC Strengthens Global Digital Cooperation through ICD Engagements with Cuba and Kenya

The National Informatics Centre (NIC), through its International Cooperation Division (ICD) under the Ministry of Electronics and Information Technology (MeitY), continues to play a key role in advancing India's digital diplomacy. By sharing India's Digital Public Infrastructure (DPI) with partner nations, NIC supports inclusive, efficient, and technology-driven governance—particularly across countries of the Global South.

India's DPI model, built on scalable, open, and citizen-centric platforms, has attracted global interest for its ability to deliver public services at population scale. Through ICD, NIC facilitates international cooperation by offering technology solutions, technical expertise, and capacity-building support to countries seeking to strengthen their digital governance ecosystems.

The International Cooperation Division of NIC serves as the nodal unit for engaging with foreign governments, international organizations, and multilateral institutions on digital governance. Its mandate includes sharing India's proven e-Governance platforms, supporting customization for local contexts, providing technical assistance, and enabling knowledge exchange through training and collaborative projects.

Cuba : ICD Engagement

A high-level Cuban delegation led by H.E. Juan Carlos Marsan visited NIC Headquarters on 18 November 2025. The delegation held discussions with Shri Abhishek Singh, Additional Secretary, MeitY and Director General, NIC, along with senior officials of the International Cooperation Division.

The discussions focused on digital governance, healthcare digitalization, and technology-enabled public services. NIC showcased several of India's DPI platforms, including eHospital, eOffice, and AI-enabled governance solutions.

The Cuban delegation expressed strong interest in adopting these platforms, particularly for improving healthcare access and administrative efficiency. Both sides discussed possibilities of pilot implementations, technical consultations, and capacity-building support for Cuban officials and IT teams.

Kenya : ICD Engagement

A Kenyan delegation led by H.E. Mercy Wanjau visited NIC on 21 November 2025 and held strategic discussions with Dr. R.K. Pathak, DDG and HoG (ICD), NIC. The focus was on strengthening ICT-enabled public service delivery and integrated governance. NIC demonstrated key platforms including ICJS, eOffice, and eHospital.

The Kenyan delegation showed keen interest in integrated governance platforms, especially ICJS, for improving coordination, transparency, and service efficiency. Discussions also covered possible technical collaboration, system customization, and phased implementation strategies.

▲ A Cuban delegation led by H.E. Juan Carlos Marsan visited NIC HQ for discussions with Shri Abhishek Singh, Addl. Secretary, MeitY & DG, NIC to explore deeper collaboration in the digital and technology domain

Capacity Building and Customization

NIC's international cooperation focuses on capacity building through training, workshops, localized platforms, and continuous technical support—ensuring technology transfer builds lasting digital capability, not just software.

Way Forward

The engagements with Cuba and Kenya led to a shared understanding on exploring pilot projects for selected DPI platforms, setting up technical consultations for system adaptation, developing training and knowledge-exchange programmes, and strengthening institutional cooperation through structured follow-up mechanisms. These discussions lay a strong foundation for deeper and sustained collaboration in digital governance.

▼ Kenya's delegation, led by H.E. Mercy Wanjau, visited NIC for strategic discussions with Dr. RK Pathak, DDG and HOG (ICD), NIC to explore deeper collaboration in ICT-enabled public service delivery

सत्यमेव जयते

Abhishek Singh, IAS
Director General

Government of India
Ministry of Electronics
& Information Technology
National Informatics Centre

Dear Readers,

The dawn of a new year presents a profound opportunity to reflect upon the digital transformation that continues to redefine the landscape of e-governance in India. The National Informatics Centre stands as a foundational architect of this journey, serving as a silent yet formidable force in our nation-building narrative. From the furthest district outposts to the highest institutions of the Union and State Governments, NIC's mission has evolved into a cornerstone of a modern, transparent, and inclusive state, ensuring that the benefits of technology reach every citizen with equity and efficiency.

In an increasingly complex global environment, the resilience and reliability of government digital systems have become synonymous with national security and digital sovereignty. NIC takes immense pride in sustaining the core digital lifelines—including the secure government email ecosystem, e-Office, e-Procurement platforms, and GIS applications—that facilitate the daily business of governance. These are not merely technological projects; they are foundational pillars that support the integrity of our administrative framework. The depth of NIC's capability is further evidenced by its management of mission-critical initiatives such as IVFRT and NATGRID, which demonstrate a unique institutional capacity to handle national-scale datasets with the precision and security required by the highest levels of the state.

As we navigate an evolving landscape, the expectations placed upon government technology are undergoing a paradigm shift. We recognize that functional robustness must now be matched by excellence in user experience, scalability, and next-generation design. Concurrent with this shift, NIC is thoughtfully embedding emerging technologies—ranging from Artificial Intelligence and Blockchain to Advanced Data Analytics—into the heart of governance. This proactive adoption ensures that the government remains agile and future-ready, setting new benchmarks for excellence in the global GovTech arena.

Ultimately, as India marches toward the vision of a Viksit Bharat, the role of robust digital systems becomes even more critical. These systems are the catalysts that will accelerate economic growth, enhance institutional capacity, and strengthen our collective digital resilience. Every professional within the NIC ecosystem, serving at the district, state, and national levels, contributes directly to this vital mission. Their dedication ensures that NIC remains a trusted technology partner for the entire government apparatus and a beacon of innovation for the international community.

Let us move forward into this New Year with a shared pride in our legacy and an unswerving commitment to a digital future that is secure, inclusive, and world-class.

Wishing all the readers of "Informatics" a prosperous and transformative New Year, 2026.

Warm regards,
Abhishek Singh

Bihar State

Powering Digital Governance at Scale

Edited by **VINOD KUMAR GARG**

Established in 1988, NIC Bihar has been at the forefront of Bihar's digital governance journey, acting as the key technology partner for the State Government. Working closely with almost all major departments, NIC Bihar has enabled the transition from manual, fragmented processes to integrated, transparent, and citizen-centric e-Governance systems. With a strong presence through the State Unit at Patna and district units across all 38 districts, NIC Bihar has institutionalized the use of ICT as a core enabler of governance, service delivery, and administrative reform.

ICT Initiatives in the State

BiharBhumi

https://biharbhumi.bihar.gov.in/

Under the Digital India Land Records Modernization Programme (DILRMP), NIC Bihar has been implementing a comprehensive Integrated Land Records Management System through sustained ICT interventions. These efforts have enabled the automation of key revenue administration and land management processes. Core services—including Mutation, Lagan Payment, Jamabandi, Revenue Court Cases, Land Possession Certificate (LPC), Record of Rights (RoR), and Chalu Khatiyan—are now available online through secure, internet-based applications.

This transformation has significantly reduced reliance on manual processes and registers, replacing them with robust, secure ICT solutions for mutation (including government land), LPC, Lagan, Khatiyan, Jamabandi Register (Register-II), Government Land Register, and Revenue Court management.

Since 2017, approximately 15 software applications have been operational, managing over 40 million Jamabandi records along with hundreds of thousands of supporting legal documents in digital form.

NIC Bihar has emerged as a key driver of digital governance in the state by designing and implementing mission-critical ICT platforms across diverse sectors including land records, justice delivery, mining, forests, infrastructure, welfare, agriculture, education, elections, local governance, and citizen services. Supported by robust networks such as NICNET and NKN, these initiatives have strengthened transparency, efficiency, and service reach through DBT, mobile governance, GIS integration, and paperless administration, earning NIC Bihar national recognition for its technological excellence.

S. No.	Application
1	BiharBhumi & MIS
2	e-Mutation
3	e-LPC
4	Online Lagan Payment
5	Online Jamabandi & RoR in all 22 Indian Languages
6	e-Jamabandi
7	Suo Motu Mutation
8	Government Land Mutation
9	Revenue Court Case Management System
10	ParimarjanPlus
11	Jan Shikayat
12	Integration Services
13	Bhu-Naksha [ULPIN]
14	Mobile Applications
15	Credentials Management System

Court Case Monitoring System (CCMS)

https://ccms.bihar.gov.in

Monitoring and responding to the Court Cases filed against the State has always been a problem area for the state government and it has significant implication on the delivery of justice system and public at large. Many a times, there is delay in response from state government departments,

Ajay Kumar
Sr. Technical Director & SIO
kumar.a@nic.in

Syed Mumtaz Husain
Sr. Technical Director & ASIO
sm.husain@nic.in

which results in judgement/orders delivered against the State. There are many factors such as absence of a Centralized Database for Court Cases, a well-defined monitoring system and Lack of communication among stakeholders and limited access to the information, which leads to this situation. To address these challenges Court Case Monitoring System has been designed and developed fulfiling the vision of Department of Education and Information Technology Department of Government of Bihar.

Salient features of CCMS

- Role-based users
- NJDG NAPIX platform integration
- Case Management
- Complete case history
- Query Builder
- Real-time updates
- Letter Communication
- Disposed Case Compliance tracking
- Daily Case Board
- Interim Orders and Final Judgements

Key Implementations

- Advocate General Office
- Additional Solicitor General
- All departments/ offices of GoB across the state
- Chhattisgarh State

Khanansoft

https://khanansoft.bihar.gov.in/

KhananSoft is an integrated digital platform for managing and monitoring mining activities in Bihar, supporting G2G, G2B, C2G, and B2B services for seamless stakeholder coordination. The system offers 24×7×365 technical support, an on-demand slotting mechanism to reduce congestion and law-and-order issues, and real-time vehicle validation through Vahan integration. It enforces weighbridge integration to prevent overloading and mandates GPS-based, geo-fenced challan generation, ensuring challans are issued only for verified vehicles at authorized mining locations.

Impact

- Strengthening of mineral administration
- Decline in illegal mining and overloading of vehicles
- Real-time, IT-enabled monitoring of mining operations
- Proper control mechanism of Challan Generation
- Elimination of fake challans for unregistered vehicles
- GPS-based monitoring of transporters
- Improved transparency & Administration

RCD Online

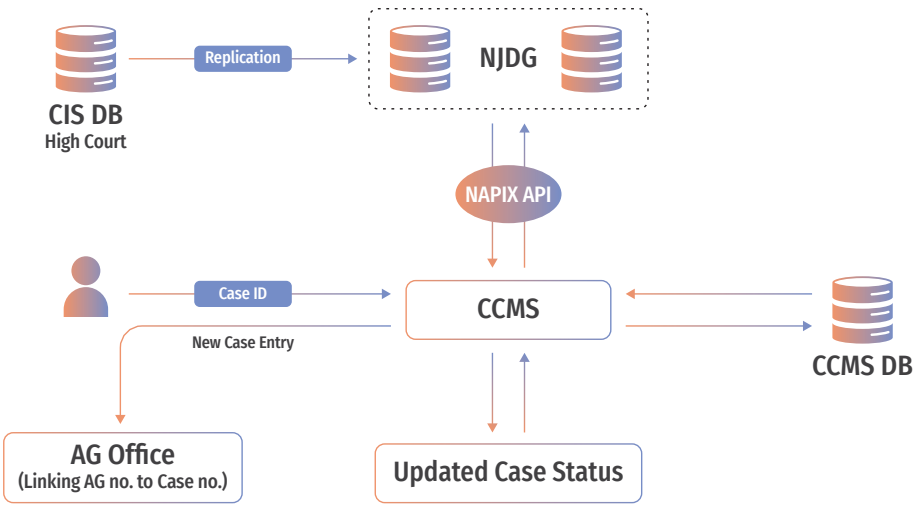
http://rcdonline.bihar.gov.in

The Road Construction Department (RCD), Government of Bihar, has implemented an integrated Project Management Information System (PMIS) with GIS for online monitoring of road and bridge projects. The system enables real-time physical and financial progress tracking of works executed by RCD, BRPNNL, and BSRDC. The GIS component supports thematic mapping of road assets and cross-drainage structures, contributing to planning under the PM Gati Shakti initiative. Integration of GIS with PMIS allows map-based visualization of project progress, improving transparency, coordination, and data-driven decision-making.

e-Office

https://eoffice.bihar.gov.in/

The NIC eOffice system has been implemented to digitize file movement and official correspondence through eFiles, eReceipts, and knowledge management modules, enabling faster decision-making, greater transparency, and reduced paper usage. Officers and staff have been trained to ensure effective adoption.



▲ Fig 2.1 CCMS Process Flow

The Government of Bihar, in partnership with the National Informatics Centre (NIC), has strengthened ICT-enabled governance to improve transparency, efficiency, and citizen service delivery.

Through initiatives like the State Data Centre, BSWAN, BiharONE, cybersecurity frameworks, digital learning programs, and the Bihar AI Mission, the State has built a strong and future-ready digital ecosystem. NIC, Bihar has played a pivotal role in key e-Governance initiatives such as e-PDS, Bihar-Bhumi, VAHAN–SARTHI, DBT systems, and administrative dashboards. This continued collaboration with NIC remains central to Bihar's digital transformation and inclusive development.

Shri Abhay Kumar Singh, IAS
Secretary, Dept. of Information Technology
Government of Bihar

The Government of Bihar has widely deployed eOffice across departments, directorates, and districts, promoting paperless governance, standardized workflows, and integration with digital signatures in line with State e-Governance initiatives and the Digital India Programme.

eOffice has also been adopted by AIIMS Patna, as per the directives of the Ministry of Health & Family Welfare, Government of India, and by institutions such as Dr. Rajendra Prasad Central Agricultural University (RPCAU), Pusa, and the Ganga Flood Control Commission (GFCC), Ministry of Jal Shakti, to streamline administration, improve inter-departmental coordination, and enable a fully paperless working environment.

Jan Vitran Ann

https://rconline.bihar.gov.in

Jan Vitran Ann (JVA) is a secure, scalable digital platform approved by the Food & Consumer Protection Department, Government of Bihar, and has been managing the state's Ration Card Management System since 2017. Designed as a citizen-centric solution, it provides end-to-end online services—from application and tracking to approval and issuance of ration cards.

JVA currently manages data for ~2.07 crore families and 8.35 crore members, making it one of Bihar's largest welfare delivery platforms. Integrated with IMPDS, it has enabled the One Nation One Ration Card (ONORC) scheme since 2020, significantly benefiting migrant workers by ensuring inter-state portability of food grains.

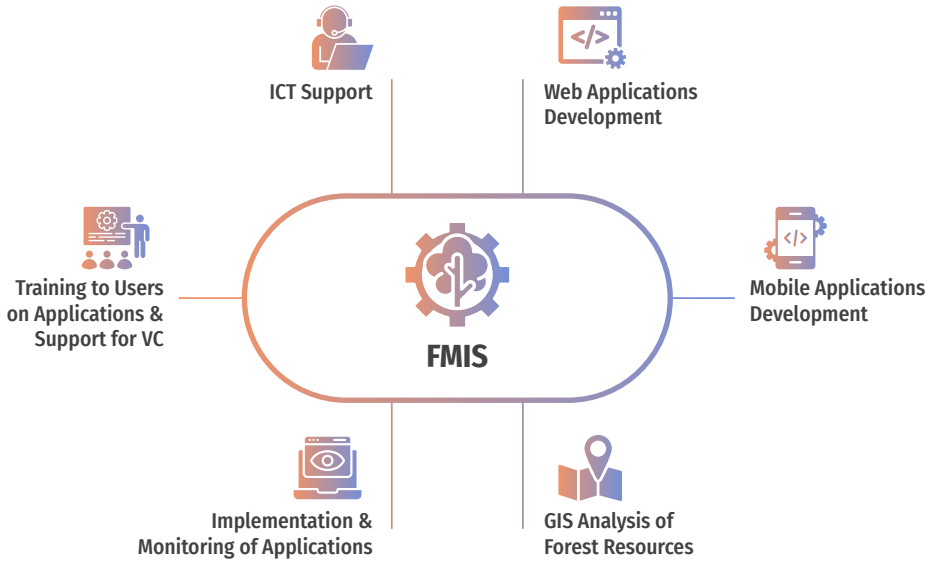


Fig 2.2 Overview of FMIS

The platform is integrated with the AePDS central server for real-time, transparent distribution through ePOS devices and supports complete Fair Price Shop (FPS) management across ~54,000 FPS statewide. JVA is also integrated with DigiLocker (making Bihar the sixth state to offer digital ration cards) and Ayushman Bharat for family status validation. During the COVID-19 pandemic, JVA played a critical role in food security by facilitating food grain distribution to over 40 lakh ration cards.

Key Features

- Fully role-based, online system operational across all districts
- End-to-end citizen services for ration card application, modification, and tracking
- Secure handling of large-scale beneficiary data
- Nationwide portability through ONORC (IMPDS integration)
- Seamless food grain distribution via ePOS machines
- Comprehensive FPS management for ~54,000 shops
- DigiLocker integration for digital ration cards
- Ayushman Bharat linkage for active family validation
- Proven scalability during COVID-19 emergency operations

Integrated Digital Systems for Election Management

https://elecon.bihar.gov.in

The Bihar Assembly Election 2025 witnessed the successful deployment of multiple large-scale, technology-driven platforms developed and implemented by NIC Bihar to ensure transparency, efficiency, accuracy, and compliance with the guidelines of the Election Commission of India (ECI). These systems collectively covered the entire election lifecycle, from personnel management and force deployment to vote counting and real-time field tracking.

FMIS

https://forestonline.bihar.gov.in/

FMIS (Forest management Information System) is a micro-level approach of managing information pertaining to forest plantations, nurseries, Joint Forest Management, forest offences, wildlife activities, Human Resource Management System and Eco-Tourism activities in the state through ICT use of integrated web, GIS and mobile. The project implementation covers all 4 Regions, 8 Circles, 28 Divisions, 110 Ranges, 416 Beats & 1547 Sub-Beats offices of the department.

Election Personnel Management Information System (EPMIS)

EPMIS is a comprehensive web-based solution designed to digitize and streamline the management of polling and counting personnel.

Key Features

- End-to-end personnel lifecycle management: registration, verification, training, duty allocation, attendance, and communication
- Automated data validation to eliminate errors such as:
  - Name–gender mismatches
  - Duplicate mobile numbers
  - Duplicate bank accounts
- Rule-based randomization ensuring neutrality and compliance with ECI norms:
  - AC separation and office diversity for male personnel
  - Same AC deployment with minimum female representation for female parties
- Automated party formation, AC/Booth/Table allotment
- Generation of deputation orders and statutory reports
- SMS-based real-time communication
- Inter-district personnel transfer to address manpower shortages
- Seamless integration with Force Randomization modules

Force Deployment System

The Force Deployment System is a highly scalable, decision-support platform for managing police and security forces during elections across Bihar.

Core Functions

- Planning and tracking of force movement across election phases Deployment of: State Police, Home Guards, CAPF/CPMF
- Automated party formation and randomized deployment
- Inter-district force transfers based on real-time demand
- SMS alerts and live dashboards for monitoring

EleTraces – Election Duty Tracking System

https://eletraces.bihar.gov.in

EleTraces is a GPS-enabled mobile and web-based platform for real-time tracking of election officials.

Features

- GPS-based task and route tracking (active-task based)
- Incident reporting and map-based monitoring
- Web dashboards for live supervision
- SMS communication and consolidated reporting

Common DBT Portal

https://dbt.bihar.gov.in/wp/Default.aspx

The Common DBT (Direct Benefit Transfer) Portal desiged and developed by NIC, Bihar is used to manage and monitor the transfer of benefits directly to beneficiaries, without intermediaries. The portal ensures that government welfare benefits reach the right beneficiary, at the right time, into the right bank account. It covers approx. 135 schemes of 21 departments of Bihar.

Salient Features of Common DBT Portal

- Unified portal for entire state beneficiary Payment along with Vendors Payment (REAT).
- Beneficiary Identification and approval at Field level
- Integrated with PFMS, UIDAI, NPCI and other portal.
- Verification of beneficiary through PFMS before fund transfer
- Bulk fund transfer and no dependency of bank branches.
- Actual fund transfer status to beneficiary through portal/SMS
- Fund transfer cycle reduced to fortnight/month

Impact of Common DBT portal

Since 2017 till June 2025, more than ₹1,27,800 crores have been disbursed through common DBT Portal.

S. No.	Department Name	Amount	Total Transaction
1	BC & EBC Welfare	19,82,97,2974	79,44,398
2	Minority Welfare	19,67,24,88,28	7,32,746
3	Health	2,15,43,22,93,81	1,62,79,878
4	Minor water Resource Department	14,99,58,7396	49,767
5	Social Welfare	43,05,58,47,4749	60,67,38,121
6	Rural Development	32,02,22,69,3188	7,81,20,037
7	Disaster Management Department	9,17,04,56,1299	8,50,71,906
8	SC & ST Welfare	11,19,50,13,15	41,21,462
9	Urban Development	40,14,42,7403	55,27,209
10	Home	14,72,31,9000	96,425
11	Education	3,17,80,94,38,115	30,87,77,736
12	Labour Resource Department	27,27,57,9008	64,87,656
13	Department of Agriculture, Cooperation and Farmers Welfare	51,62,98,69,34	1,60,41,355
14	Planning	9,08,62,67,000	3,11,70,790
15	Cooperative	20,66,41,00,536	56,64,825
	Total	**12,78,00,22,97,126**	**1,17,28,24,311**

Cane Care Portal (CCS Portal)

https://ccs.bihar.gov.in

Agriculture is the backbone of Bihar's economy, and sugarcane remains one of its most important cash crops. The Sugarcane Industries Department of Bihar demonstrates its strong commitment to the growth and sustainability of the sugarcane sector through the Cane Care System (CCS) Portal, developed by NIC.

The portal enables the department to effectively support farmers, streamline services, and drive the industry toward a prosperous and sustainable future. By prioritizing innovation, digital empowerment, and the adoption of progressive farming techniques, the department aims to enhance farmer welfare and productivity. Through these initiatives, Bihar aspires to emerge as a leading hub for sugarcane cultivation in the country.

CCS is unified portal for Sugarcane industries department where many schemes like MGVY, Gur-Khadsari, Sugarcane Mechanization scheme, ZDC Scheme etc. of sugarcane department has been made online. This portal also covers application processing of all the schemes. Some recent activities of the department are:

MedhaSoft

https://medhasoft.bihar.gov.in

MedhaSoft is a centralized, web-based application developed for the Education Department, Government of Bihar. The platform is designed to manage end-to-end student information, administer scholarship and incentive schemes, and enable Direct Benefit Transfer (DBT) to eligible beneficiaries. By integrating data collection, verification, and payment workflows, MedhaSoft supports transparency, accuracy, and timely delivery of educational benefits across the state.

Key Objectives

- To create and maintain a centralized, authentic database of students
- To support the implementation and administration of scholarship and incentive schemes
- To identify and eliminate duplicate, fake, or ineligible student records
- To ensure seamless, transparent, and timely DBT payments
- To provide real-time monitoring, analytics, and reporting for departmental decision-making

Schemes Covered

MedhaSoft supports the implementation of the following schemes:

- Mukhyamantri Balak Poshak Yojana (APL), Classes 1–8
- Mukhyamantri Balika Poshak Yojana, Classes 1–8
- Mukhyamantri Balak Poshak Yojana (SC/ST/BPL), Classes 1–8
- Mukhyamantri Balika Poshak Yojana, Classes 9–12
- Mukhyamantri Balika Cycle Yojana, Classes 9–12
- Mukhyamantri Balak Cycle Yojana, Classes 9–12
- Kishori Swasthya Yojana
- Scholarship – General Category, Classes 1–8

CHANAKYA

https://buhs.ac.in/buhschanakya/

CHANAKYA (University Registration & Examination Management System) is a web-enabled, role-based, and workflow-driven ICT solution developed by the National Informatics Centre (NIC), Bihar for universities and educational institutions. It provides an integrated platform where all functional modules operate on a single, centralized database, eliminating the need for complex interfaces and ensuring real-time data integration with high accuracy and reliability. This unified architecture minimizes errors, improves transparency, and supports seamless coordination across the Registration and Examination branches of universities. As part of the digital transformation journey toward becoming a "Centre of Excellence", CHANAKYA serves as a powerful enabling tool, strengthening governance, streamlining academic administration, and delivering faster, error-free services to students and stakeholders.

ePanchayat - Bihar

https://epanchayat.bihar.gov.in/

ePanchayat Bihar is a web-based accounting and governance platform developed to streamline the implementation, payment processing, and monitoring of government schemes across Bihar, promoting transparency, efficiency, and effective service delivery at the Panchayat level.

Key Features of the ePanchayat - Bihar

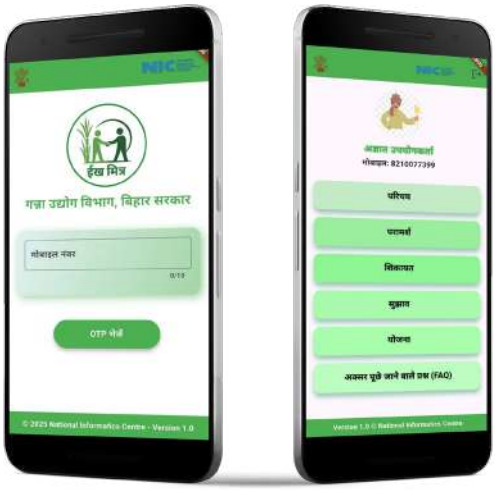
- Payment through Digital Signature for secure and authenticated transactions
- Integration with PFMS REAT module to facilitate seamless fund transfers
- Integration with Nodal Banks for efficient payment processing
- SMS and Email Alerts to keep stakeholders informed in real-time
- Mobile-based Inspection and Geo-tagging for on-site monitoring and verification
- Online GSTIN Verification to ensure compliance and validity of vendor registrations

Achievements:

- Schemes Registered – 3,43,356
- Voucher Created – 9,44,322
- Vender Registered – 13,693
- Labour Registered – 4,34,511
- Payment Done – 51,78,81,68,662 (5000Cr. Approx)

'Ikh Mitra' Mobile Application

A mobile application named "Ikh Mitra" has been developed to provide sugarcane farmers with facilities for grievance redressal, advisory



▲ Fig 2.3 : Ikh Mitra Mobile Application

services, and consultation with sugarcane experts. The acive user is around 9800. The application is available on the Google Play Store. The link is as follows :

https://play.google.com/store/apps/details?id=com.bihnic.eekhmitra&hl=en

Sugarcane Mechanisation

https://sugarcanemech.bihar.gov.in/

Sugarcane mechanisation is a key initiative of the Sugarcane Industries Department, Government of Bihar, aimed at enhancing productivity, reducing cultivation costs, and addressing labour shortages in sugarcane farming. Under this initiative, modern agricultural machinery and equipment are promoted to support farmers at various stages of sugarcane cultivation, including land preparation, planting, intercultural operations, irrigation, and harvesting.

By promoting mechanisation, the department seeks to modernize sugarcane cultivation, ensure sustainable agricultural practices, and improve the overall efficiency of the sugarcane sector in Bihar.

BBOSE

https://bboseonline.bihar.gov.in/

BBOSE (Bihar Board of Open Schooling and Examination) enables inclusive education in Bihar through open and distance learning, with a focus on marginalized communities. It promotes skill development by upskilling unskilled and semi-skilled youth into a market-ready workforce, in collaboration with industry partners, through diverse academic and vocational programs.

The BBOSE web application is designed to digitize and streamline key academic and administrative processes, including student registration, examination forms, fee payments, and result processing. The platform ensures transparency, efficiency, accurate data management, and timely service delivery, while improving access to educational opportunities for students, study centres, and administrators across the state.

e-District

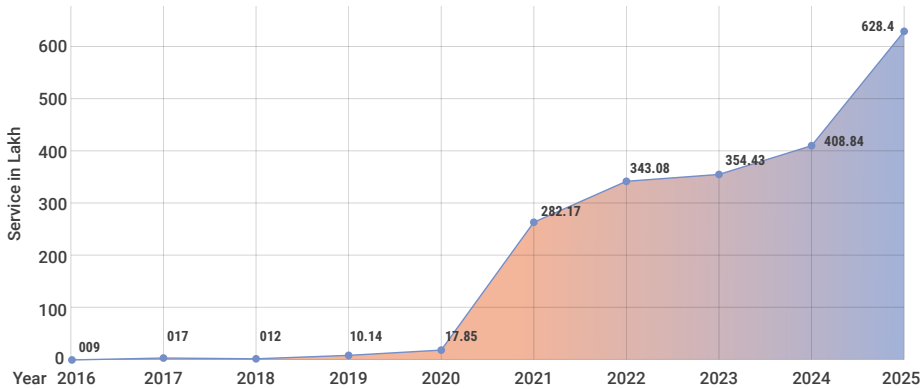
https://serviceonline.bihar.gov.in

The Bihar e-District Mission Mode Project is a flagship ICT initiative of the Government of Bihar, implemented under the Digital India Program with technical support from the National Informatics Centre (NIC). The project aims to deliver high-volume, citizen-centric government services electronically across districts, subdivisions, blocks, circles and Gram Panchayats through a single, unified digital platform called ServicePlus.

In Bihar, 67 services from multiple departments—including General Administration, Labour Resources, Home, Planning and Development, Tourism, Environment, Forest & Climate Change, and Law—are already live on the portal (https://serviceonline.bihar.gov.in).

Additionally, 12 new services from the Department of Science, Technology and Technical Education are under implementation. Key services include issuance of caste, income, residence, EWS and non-creamy layer certificates, birth and death registration, character certificates, labour-related services, and department-specific citizen services.

▼ Fig 2.4 : ServicePlus Services Delivered Year Wise (Exponential growth from 2021 onwards)



OFMAS: Transforming Agricultural Subsidy Distribution in Bihar

https://farmech.bihar.gov.in

The Online Farm Mechanization Application Software (OFMAS) is a digital platform developed to streamline the distribution of subsidized farm implements to farmers in Bihar. It ensures transparency and efficiency in interactions among farmers, dealers, and manufacturers, enabling fair and timely subsidy disbursement while minimizing delays and malpractices.

Farmers submit applications online, which are verified through a multi-level workflow within the Agriculture Department—at the Panchayat, Block, and District levels. After successful verification, permits are issued by the district authorities, allowing farmers to purchase approved implements at subsidized rates.

OFMAS caters to individual farmers and farmer groups, including Self-Help Groups and Jeevika, under various schemes covering: Single Implements, Groups of Implements and Agricultural Drones.

e-Sahkari

https://esahkari.bihar.gov.in/

The Department of Co-operation, Government of Bihar has undertaken comprehensive reforms to strengthen departmental operations, particularly food grain procurement through PACS, addressing issues such as process inefficiencies and delayed farmer payments. These reforms are supported through the Bihar Rajya Fasal Sahayata Yojana (BRFSY) and related initiatives.

The integrated project digitizes the end-to-end workflow covering farmer registration, paddy procurement, and timely payments. It also manages crop damage assessment for paddy and other Kharif crops through Crop Cutting Experiments and enables compensation payments via DBT. Based on crop damage and land area, ₹1,000–₹20,000 is transferred directly to farmers' bank accounts through the Aadhaar Payment Bridge.

The platform further supports farmers by managing subsidies for agricultural machinery to enhance farm inputs and mechanization. A dedicated module monitors the procurement of subsidized agricultural equipment.

Key Modules

- BRFSY (Bihar Rajya Fasal Sahayta Yojana)
- Procurement
- MPPY (Mukhyamantri PACS Protsahan Yojana)
- AMS (Asset Management System)

▲ Fig 2.5 : Visit of Secretary, Ministry of Electronics and Information Technology (MeitY), Government of India Shri S. Krishnan, IAS at NIC, Bihar

- MHKSY (Mukhyamantri Harit Krishi Sanyantra Yojana)
- COTS (Cooperative Officers Tracking System)
- Society Registration
- Cooperative Court Information System

ICT Infrastructure & Network Services

NICNET

NICNET is the dedicated e-Governance network backbone providing high-speed, secure connectivity from the Bihar State headquarters to all 38 districts. Built on a redundant 10 Gbps architecture, it ensures high availability and reliability. The network interconnects Central and State Government offices, district administrations, and field offices through leased links ranging from 34 Mbps to 1 Gbps, enabling seamless access to applications and data centres.

NICNET supports government email, web services, secure online applications, and large-scale VVIP video conferencing, ensuring uninterrupted delivery of critical digital services. 24×7 support is provided through the State Network Operations Centre (0612-2547906) and the NIC Service Desk (https://servicedesk.nic.in | 1800 111 555).

By enabling fast and reliable access to core e-Governance applications, NICNET improves service delivery, transparency, and data-driven decision-making. Integrated video conferencing and collaboration tools enhance coordination across Centre, State, District, Block, and Panchayat levels, significantly reducing travel time and costs.

National Knowledge Network

The National Knowledge Network (NKN) in Bihar provides a high-speed, multi-gigabit digital backbone connecting universities, research institutions, and government bodies through the State PoP at Patna. Integrated with NICNET, it enables seamless access to internet, intranet, video conferencing, and e-Governance applications across all districts.

As part of the pan-India NKN initiative, Bihar's NKN creates a common digital platform for institutions in education, research, healthcare, agriculture, and governance, supporting collaboration, data sharing, innovation, and participation in national and global research programs.

The Patna State PoP serves as the core hub, extending connectivity through around 100 NKN links to district headquarters and institutions such as universities, medical colleges, hospitals, engineering and management institutes, research and training centres, judiciary sites, and government offices. A multi-TSP architecture (BSNL, RailTel, PGCIL) with a 10G backbone ensures redundancy, high availability, and reliable services.

▼ Fig 2.6 : Launching of Court Case Monitoring System (CCMS) Mobile App by Hon'ble Chief Justice of Patna High Court

NKN-connected institutions benefit from services including internet and intranet access, email, web hosting, VoIP, VPN, DNS, and multipoint video conferencing, along with advanced offerings like virtual classrooms, virtual labs, digital libraries, collaborative research platforms, and cloud services.

The Bihar NKN PoP team oversees monitoring, reporting, onboarding of new links, and SLA management, making NKN a robust backbone for higher education, research, and e-Governance in the state.

Important Events Organized

- Visit of Secretary, Ministry of Electronics and Information Technology (MeitY), Government of India Shri S. Krishnan, IAS at NIC, Bihar
- Launching of Court Case Monitoring System (CCMS) Mobile App by Hon'ble The Chief Justice of Patna High Court

Accolades

NIC Bihar has earned national recognition for its excellence in e-Governance through multiple prestigious awards. Its initiatives have been honoured with

- CSI Nihilent Award
- CSI SiG e-Governance Award
- Digital India Award

Additionally, NIC Bihar received the National Award for Highest DBT Transaction, reflecting its robust, scalable, and reliable technology systems that have enabled large-scale, transparent, and timely direct benefit transfers across the state.

Way Forward

Going ahead, NIC Bihar can further consolidate its leadership in e-Governance by focusing on next-generation digital transformation. Key priorities include deeper adoption of emerging technologies such as AI/ML for predictive analytics and decision support, expanded use of GIS and satellite data for planning and monitoring, and strengthened cybersecurity and data governance frameworks for large-scale citizen data.

There is also scope to enhance interoperability across platforms, promote data-driven policymaking, and expand mobile-first and multilingual citizen services to ensure inclusivity. Strengthening capacity-building initiatives for government officials, accelerating cloud adoption, and aligning state systems with national digital public infrastructure (DPI) frameworks will further improve scalability and resilience. With its strong institutional base and proven track record, NIC Bihar is well positioned to drive the next phase of smart, transparent, and citizen-centric governance in the state.

Contact for more details

State Informatics Officer
NIC Bihar State Centre
3rd Floor, NIC Bhawan, Soochana Bahawan Campus
Nehru Path, Patna, Bihar - 800015
Email: sio-bih@nic.in, Phone: 0612-4567890

Ladakh UT

Empowering Ladakh through Digital Innovation driven by Technology

Edited by **VINOD KUMAR GARG**

NIC Ladakh serves as the central technical authority and digital backbone for the Union Territory of Ladakh, enabling the design, deployment, and operation of mission-critical ICT systems for governance. Established in the aftermath of Ladakh's formation as a Union Territory, the centre is responsible for building and managing a secure, scalable, and resilient technology ecosystem tailored to the region's unique geographical, climatic, and administrative challenges.

NIC Ladakh plays a pivotal role in implementing national e-Governance platforms, developing UT-specific applications, and maintaining core ICT infrastructure including networks, data services, secure communication systems, and video conferencing facilities. The centre provides end-to-end technical support covering application development, system integration, cybersecurity, data management, and operational continuity for government departments across Leh and Kargil.

By leveraging modern web technologies, workflow-based systems, cloud-enabled services, and interoperable platforms, NIC Ladakh enables automation of government processes, real-time service delivery, and data-driven decision-making. Its technology-led approach ensures high availability of services, compliance with national digital standards, and secure handling of sensitive government and citizen data. Through continuous innovation and infrastructure strengthening,

Ladakh, India's northernmost and newest Union Territory, blends cultural richness with technological progress. Since its bi-furcation from the state of Jammu & Kashmir in 2019, NIC Ladakh has driven digital transformation, offering over 100+ e-services. It has played an important role in setting up the key ICT infrastructure to bridge the gap between citizens and government. The services by NIC Ladakh include user requirement analysis, system design, development, implementation, training, network and technical support.

NIC Ladakh UT Centre acts as the cornerstone of Ladakh's digital governance framework, driving efficiency, transparency, and technology-enabled public service delivery.

Sunil Kaul
Sr. Technical Director & SIO
sunil.koul@nic.in

Punchok Paldan
Sr. Technical Director & ASIO
punchok.paldan@nic.in

ICT Initiatives in the State

OBPOS

https://obps.ladakh.gov.in

On the occasion of the Union Territory Foundation Day on 31 October 2025, the Hon'ble Lieutenant Governor of Ladakh unveiled the Online Building Permission and Occupancy System (OBPOS), an end-to-end digital platform designed and developed by the National Informatics Centre (NIC) Ladakh UT Centre. The system has been implemented to modernize, standardize, and expedite the issuance of Building Construction Permits and Occupancy Certificates for the Municipal Committees of Leh and Kargil.

OBPOS is a workflow-driven e-Governance solution that replaces manual, paper-based processes with a transparent, accountable, and time-bound digital mechanism. It enables seamless coordination among citizens, architects, municipal officials, and approving authorities through a single online interface. By digitizing the entire approval lifecycle—from application submission to issuance of digitally signed certificates—the platform significantly reduces processing time, minimizes manual intervention, and enhances transparency in municipal administration.

Designed in alignment with prescribed service timelines and regulatory frameworks, OBPOS offers real-time application tracking, automated notifications, secure online payments, and analytical dashboards for effective administrative monitoring and decision-making. The platform strengthens predictable service delivery and builds greater trust between citizens and municipal authorities.

Key Features

- End-to-end workflow-based digital processing
- Role-Based Access Control (RBAC) for secure and accountable access
- Real-time application tracking through user dashboards
- Automated SMS and e-mail notifications at each stage
- Secure online fee payment integration
- Time-bound service delivery with monitoring and escalation
- Management dashboards and MIS analytics
- Issuance of digitally signed, legally valid certificates

Through OBPOS, NIC Ladakh has delivered a scalable, secure, and citizen-centric digital solution, setting a benchmark for municipal e-services in the Union Territory.

NIC has been instrumental in transforming digital governance in the Union Territory of Ladakh. Their efforts in implementation of e-Office, web portals and online services like SMART-PDS, LIFMS, OBPS, LSSSSB Portal, e-Seva, NGDRS, Online Consent Management and Monitoring System, Vahan, Sarathi, NIC/NKN network connectivity and video conferencing services have enhanced the operational efficiency of our e-Governance initiatives aimed at enhancing public service delivery, ensuring transparency, and promote digital inclusivity.

Dr. Pawan Kotwal, IAS
Chief Secretary, Union Territory of Ladakh

e-Office Ladakh

https://eoffice.ladakh.gov.in

The e-Office system has been successfully implemented across the Union Territory of Ladakh, marking a major transition from manual, paper-based file handling to a fully digital and automated office workflow. The initiative aims to enhance efficiency, transparency, accountability, and inter-departmental coordination in government functioning.

The rollout of e-Office spans UT Secretariat, District Offices, Sub-Divisions, and Block-level offices, enabling seamless electronic file movement, decision-making, and record management across departments. The system has been implemented through close collaboration between the Information Technology Department and NIC.

Implementation Highlights

- Number of Departments/Offices Onboarded: 50
- Total e-Office Users: 1,862
- Total e-Files Created: 36,992

The adoption of e-Office has significantly reduced file processing time, minimized physical movement of documents, improved traceability of decisions, and strengthened institutional memory through secure digital records.

NextGen e-Hospital

https://nextgen.ehospital.gov.in

The NextGen e-Hospital Health Management Information System (HMIS) has been implemented in all 35 hospitals and health centres across the Union Territory of Ladakh under the Digital India initiative. The system has transformed healthcare delivery by digitizing core hospital operations and creating a unified digital platform for patient and hospital management.

Key hospital services such as patient registration, appointment scheduling, electronic medical records (EMR), and report management have been fully digitized, significantly improving service efficiency and patient experience.

Advanced Integrations

- **Laboratory Information System (LIS):** Enables seamless handling of laboratory investigations and report generation
- **Scan & Share Module:** Facilitates secure remote sharing of diagnostic images, supporting faster and more accurate clinical decisions

The integrated digital ecosystem has enhanced accessibility, transparency, and continuity of care, especially critical in Ladakh's geographically dispersed and remote healthcare settings.

SMART-PDS

https://ld.smartpds.nic.in

The Scheme for Modernization and Reform through Technology in Public Distribution System (SMART-PDS) is being implemented in Ladakh to digitally strengthen the Public Distribution System. The initiative leverages technology to improve transparency, efficiency, and accountability in the distribution of essential commodities.

By reducing manual intervention and automating beneficiary authentication and transaction processes, SMART-PDS ensures timely, accurate, and leak-proof delivery of food grains and other essentials.

Impact

- Beneficiaries Covered: Over 2.15 lakh residents of Ladakh
- Improved operational efficiency and real-time monitoring
- Enhanced trust and service reliability for citizens

RTI Online Portal

https://rtionline.ladakh.gov.in

The Right to Information (RTI) Online Portal provides a digital interface for citizens to submit RTI applications, track request status, and receive information electronically. The platform promotes transparency, reduces paperwork, and streamlines the handling of RTI requests by public authorities.

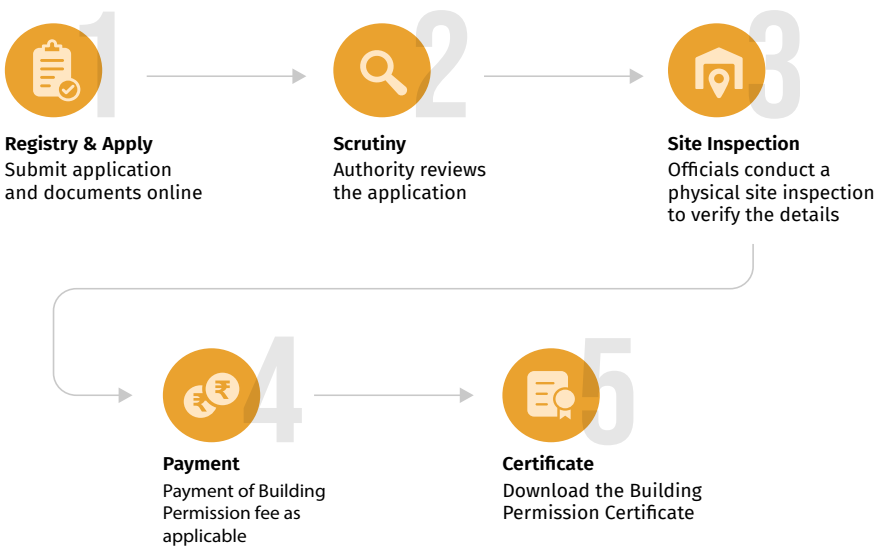
The Hon'ble Lieutenant Governor of Ladakh lauded the initiative, stating that the portal represents a robust and efficient mechanism for managing RTI applications and reflects the administration's commitment to open and accountable governance.

e-SEVA Portal

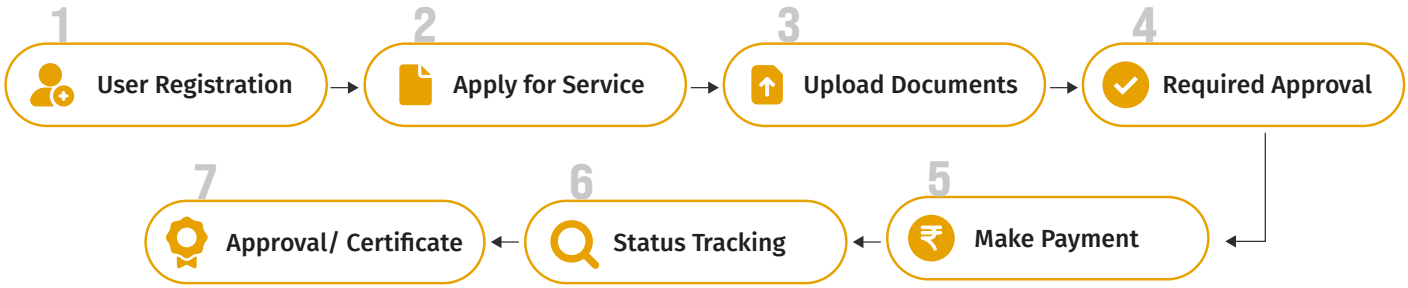
https://eseva.ladakh.gov.in

e-SEVA Portal is a unified, citizen-centric digital service delivery platform launched by the Hon'ble Lieutenant Governor of Ladakh and developed by the National Informatics Centre (NIC) Ladakh UT Centre. Conceived as a single digital gateway, the portal streamlines and standardizes government service delivery across the Union Territory through transparent, paperless, and time-bound workflows.

e-SEVA integrates multiple departmental services on a secure and scalable platform, significantly reducing physical visits and manual processes. The first service onboarded is the Online Water Connection Service of the Public Health Engineering (PHE) Department for both domestic and commercial users, enabling online application submission, document upload, fee payment, real-time tracking, and digital approvals. Built on a modular architecture, the portal supports phased onboarding of additional services, ensur-



▲ Fig 3.1 Workflow of OBPOS



▲ Fig 3.2 Workflow of e-Seva service platform

ing long-term scalability.

By enforcing defined workflows and timelines, e-SEVA enhances accessibility, accountability, and efficiency, bringing governance closer to citizens.

Key Features

- **Single Sign-On:** One-time registration enabling citizens to access multiple departmental services through a single user account
- **End-to-End Online Processing:** Complete digital lifecycle of services including application submission, scrutiny, approvals, and service delivery
- **Secure Online Fee Payment:** Integrated digital payment mechanisms ensuring safe and convenient transactions
- **Real-Time Application Tracking:** User dashboards provide visibility into application status at every stage of processing
- **Automated SMS Notifications:** System-generated alerts to keep applicants informed of application progress, queries, and final decisions
- **Transparent and Time-Bound Service Delivery:** Workflow-driven processing with defined timelines to ensure accountability and timely service delivery

The e-SEVA Portal serves as a foundational digital platform for the Union Territory, enabling integrated service delivery, improving administrative efficiency, and reinforcing the commitment of the Ladakh UT Administration towards citizen-first, technology-driven governance.

LSSSSB Portal

https://lssssb.ladakh.gov.in

The Ladakh Subordinate Services Staff Selection Board (LSSSSB) Portal is a comprehensive, end-to-end digital recruitment platform designed and developed to automate and manage the entire lifecycle of recruitment for subordinate services in the Union Territory of Ladakh. The portal has been developed by NIC Ladakh with the objective of ensuring transparency, efficiency, accuracy, and standardization in the recruitment process.

The system replaces manual and fragmented recruitment procedures with a fully online, workflow-driven mechanism covering all stages—from advertisement to final result declaration. It provides a seamless interface for both candidates and the recruiting authority, significantly reducing administrative overhead, processing time, and scope for human error.

For candidates, the portal enables online registration, submission of applications for one or multiple posts, uploading of documents, and secure online fee payment. It supports automated allocation of roll numbers and examination centres, generation and download of admit cards, and online publication of results. Candidates receive timely system-generated notifications, ensuring clarity and predictability throughout the recruitment cycle.

From an administrative and examination management perspective, the portal digitizes all critical internal processes, including creation of posts, publication of advertisements, online scrutiny and validation of applications, roll number generation, and examination centre allocation. It also supports exam-day logistics management, such as seating plan generation and centre-wise candidate mapping, enabling smooth and well-coordinated conduct of examinations.

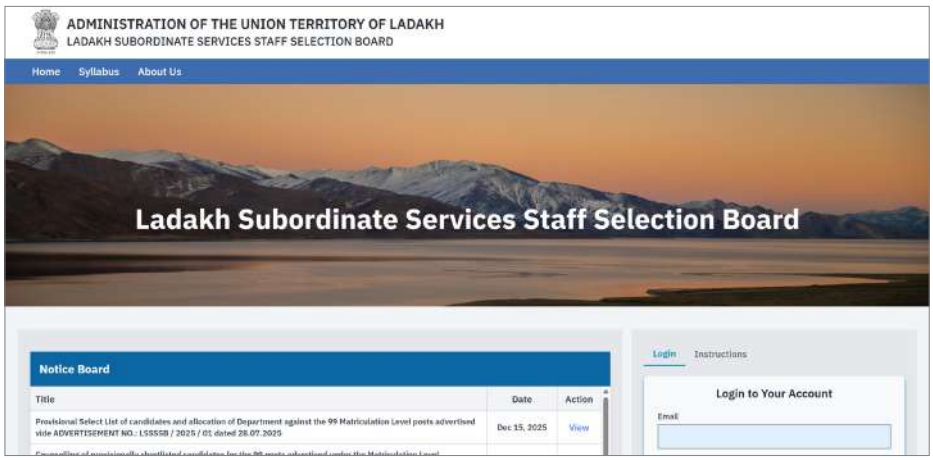
To further strengthen examination integrity and identity verification, a dedicated mobile application for LSSSSB Exam Day Photo Verification and Capture has been developed. The mobile app is used at examination centres to:

- Verify the candidate's photograph against the application data
- Capture a live photograph of the candidate on the day of examination
- Create a secure, time-stamped digital record for post-exam verification and audit

The LSSSSB Portal and its integrated mobile application together form a robust, secure, and scalable digital recruitment ecosystem. By leveraging technology to ensure fairness, transparency, and operational efficiency, the platform significantly enhances the credibility and effectiveness of recruitment processes in the Union Territory.

- **Candidates Registered -** 15265
- **Post advertised -** 22
- **Applications received -** 47705
- **Exam Centres -** 19
- **Candidates appeared for Exam -** 4364
- **MobileApp Photo verification -** 100%

▼ Fig 3.3 : LSSSSB Portal Home Page



Ladakh Employee Transfer Portal

https://transferportal.ladakh.gov.in

The Ladakh Employee Transfer Portal is an integrated, web-based application designed and developed by NIC to digitize and streamline the internal employee transfer process within key departments of the Union Territory of Ladakh. The portal has been implemented for the Health & Medical Education Department, Public Works Department (PWD), and Public Health Engineering (PHE) Department.

The system replaces manual, paper-based transfer procedures with a transparent, rule-based, and user-friendly digital workflow. It enables employees to submit transfer applications online and track their status in real time, thereby

improving accessibility, reducing administrative delays, and ensuring consistency in transfer processing across departments.

Key Features

- **One-Time Employee Registration:** Healthcare workers, doctors, and engineers can register on the portal using a single profile. Based on eligibility criteria defined by departmental transfer policies, employees can apply for inter-district or intra-district transfers.
- **Vacancy Visibility and Preference Selection:** Employees can view post-wise and location-wise vacancy details and submit transfer applications by selecting up to three preferred locations.
- **Transparent Application Tracking:** Applicants can monitor the status of their transfer requests at each stage through the online dashboard.
- **Policy-Based Administrative Processing:** Department administrators have access to a consolidated view of all transfer applications and can process requests in accordance with prescribed policies, considering factors such as employee preferences, tenure at current and previous postings, and vacancy position.

The Ladakh Employee Transfer Portal ensures a fair, data-driven, and transparent transfer mechanism, reduces manual intervention, and supports efficient human resource management across critical departments of the Union Territory.

REWA Portal

https://socialwelfare.ladakh.gov.in/rewa

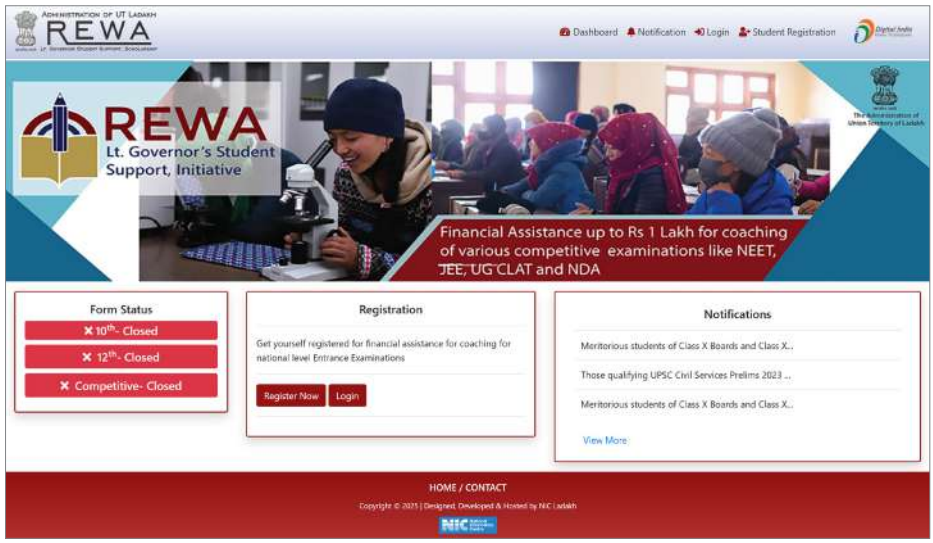
The REWA Portal is a web-based application designed and developed by NIC for the Social & Tribal Welfare Department of the Union Territory of Ladakh. The portal supports the implementation of REWA (Lt. Governor's Initiative), a flagship scheme aimed at providing financial assistance of up to ₹1.00 lakh to meritorious and aspiring students of Ladakh for pursuing coaching for various national-level competitive examinations such as JEE, NEET, UG-CLAT, and NDA.

The REWA Portal enables eligible students to register online, submit applications, upload required documents, and track their application status through a transparent and streamlined digital process. By eliminating manual procedures, the system ensures fair selection, efficient processing, and timely disbursement of benefits. To date, 189 students from Ladakh have benefited from financial assistance under the REWA scheme, reflecting the portal's role in promoting equitable access to quality educational opportunities for the youth of the Union Territory.

Senior Citizen Card Portal

https://socialwelfare.ladakh.gov.in/senircitizen-card

The Senior Citizen Card Portal is a dedicated digital platform developed and implemented by NIC for the Social Welfare Department, Ladakh, to facilitate online registration and issuance of Senior Citizen Cards for eligible residents of the Union Territory. The portal is designed to provide senior citizens with a simple, accessible, and paperless mechanism to apply for and obtain their identity cards without the need for repeated physical visits to government offices.



▲ Fig 3.4 : Rewa Portal Home Page

Key Features

- **Citizen-Friendly Interface:** A simple and intuitive registration process tailored specifically for senior citizens, enabling remote access to services.
- **Eligibility and Document Validation:** Applicants must be 60 years of age or above and possess a valid Ladakh Resident Certificate. Required documents include age proof (such as birth certificate or voter ID), address proof (such as Aadhaar), and recent photographs.
- **Digital and Physical Card Issuance:** Approved applicants can collect physical cards through District Social Welfare Offices (DSWOs) or designated camps, while digitally signed cards are also made available for online download.

The REWA Portal and the Senior Citizen Card Portal together strengthen the delivery of welfare services in Ladakh by ensuring transparency, inclusivity, and ease of access through technology-driven solutions.

Online Fire and Rescue Service NOC Portal

https://fireservice.ladakh.gov.in

The Online Fire NOC Portal is a workflow-driven, role-based digital platform for applying and issuing Fire No Objection Certificates (NOCs). The system allows applicants to submit applications and building plans online, eliminating the need for physical visits.

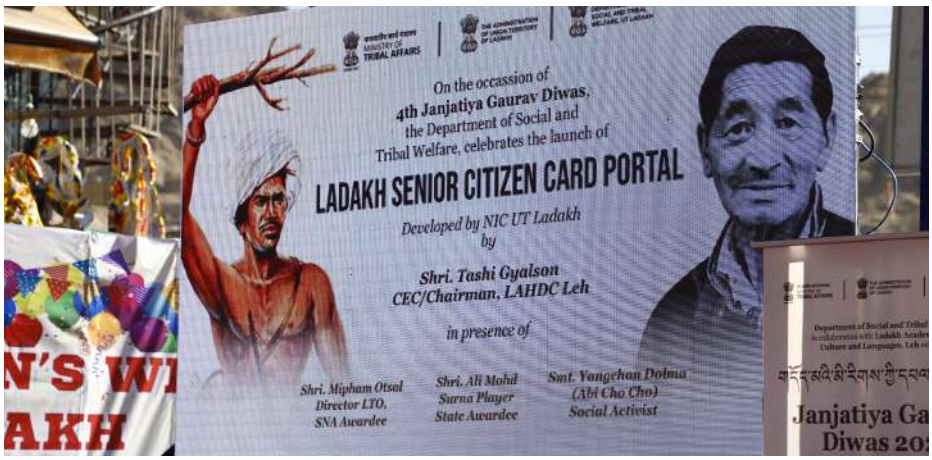
Automated workflows, defined timelines, and SMS notifications at every stage ensure faster processing, transparency, and predictable service delivery, benefiting both citizens and departmental officials.

Ladakh e-Procurement Portal

https://tenders.ladakh.gov.in

The e-Procurement Portal of UT Administration, Ladakh enables end-to-end digital tendering, allowing bidders to download tender documents

▼ Fig 3.5 : Launch of Ladakh Senior Citizen Card



free of cost and submit bids online in a secure and transparent manner.

Key Statistics

- Organizations Onboarded: 31
- Government Officers/Officials: ~500
- Registered Bidders: 4,695+
- Tenders Published: 39,715
- Cumulative Tender Value: ₹25,64,547.57 lakh

The portal has significantly enhanced transparency, competition, and efficiency in public procurement across the Union Territory.

MedLEaPR

https://medleapr.ladakh.gov.in

The MedLEaPR application has been rolled out in Ladakh in compliance with the New Criminal Laws and is integrated with CCTNS under the Inter-Operable Criminal Justice System (ICJS). The system enables seamless digital exchange of medico-legal and post-mortem information among hospitals, forensic laboratories, police, and judiciary.

Key Features

- Graphical and pictorial representation of findings
- Integrated e-Sign for authenticated digital reports
- Real-time data sharing across ICJS pillars
- Faster submission of medico-legal and post-mortem reports

MedLEaPR significantly accelerates investigation processes while ensuring accuracy, integrity, and legal validity of medical documentation.

NGDRS

https://ngdrs.ladakh.gov.in

In the Union Territory of Ladakh, the registration of revenue and property-related documents was traditionally handled by judicial officers. To strengthen institutional capacity and improve service delivery, the UT Administration constituted a dedicated Registration Department under the administrative control of the Revenue Department, thereby separating judicial and executive functions in document registration.

To support this transition, the National Generic Document Registration System (NGDRS)—a standardized e-Governance solution developed by NIC, Pune—has been implemented across Ladakh. NGDRS enables a shift from a manual, paper-based registration process to a fully digital platform, significantly enhancing transparency, efficiency, accessibility, and regulatory compliance in property and revenue transactions.

The system facilitates online appointment booking, document registration, fee calculation, and real-time tracking of registration processes. Integration with the e-Stamping system eliminates the use of physical stamp papers, reducing fraud, preventing revenue leakage, and ensuring statutory compliance.

Implementation Snapshot

- Number of Sub-Registrar Offices (SROs): 14
- Total Appointments Booked: 3,981
- Documents Registered: 3,636
- Revenue Collected: ₹1,449.97 lakh

NGDRS has streamlined citizen interaction with registration offices, reduced processing time, and strengthened trust in property registration services across the Union Territory.

LIFMS

https://lifms.ladakh.gov.in

The Ladakh Integrated Financial Management System (LIFMS) is a comprehensive, web-based financial application developed to support online budgeting, fund authorization, and real-time expenditure monitoring across the UT Administration. The system enables end-to-end digitization of the budgeting lifecycle—from preparation and approval of budgets to continuous monitoring of expenditure.

LIFMS streamlines online budget distribution from the Finance Department to Administrative Departments, and further from Heads of Departments (HoDs) to Drawing and Disbursing Officers (DDOs). By providing real-time financial visibility, the system strengthens fiscal discipline, improves financial planning, and enhances transparency in public fund management.

▼ Fig 3.6 : Dr. Pawan Kowal, Chief Secretary, inaugurating the MedLEaPR

Ladakh e-Gazette

https://egazette.ladakh.gov.in

The Ladakh e-Gazette is a digital platform developed by NIC for the publication of official government notifications, statutory orders, rules, and legal documents. The system has been adopted by the UT Administration to replace traditional print-based gazette publication.

The platform ensures timely dissemination, easy public access, authenticity, and permanent archival of Gazette notifications. By enabling online publication and searchability, the e-Gazette enhances transparency, reduces publication delays, and supports open governance.

Lok Niwas, Ladakh Website

https://lokniwas.ladakh.gov.in

On the occasion of Union Territory Foundation Day on 31 October 2025, the Hon'ble Lieutenant Governor of UT of Ladakh, Kavinder Gupta, inaugurated the official Lok Niwas, Ladakh website. The website represents a significant milestone in digital transparency and public engagement at the highest constitutional office in the UT.

The platform is built on a robust Content Management System (CMS) and provides a modern, responsive, and secure digital presence for Lok Niwas, enabling efficient information dissemination and content management.

Key Features

- **Modern, User-Friendly Interface:** Clean and responsive design ensuring seamless access across desktops, tablets, and mobile devices
- **Fully Managed CMS:** Empowers authorized users to manage website content independently without technical expertise
- **Dynamic Content Management:** Text, images, announcements, and updates can be added or modified in real time through the CMS
- **Photo Gallery Management:** Dedicated modules for uploading and updating event photo galleries directly from the admin panel

The Lok Niwas website strengthens institutional transparency, improves public outreach, and reinforces the UT Administration's commitment to digital-first governance.

ICT Infrastructure in Ladakh

With the formation of Ladakh as a new Union Territory, the establishment of a robust and scalable ICT infrastructure has been a critical prerequisite for enabling effective digital governance. NIC Ladakh is systematically developing and strengthening ICT infrastructure to support the UT Administration's e-Governance initiatives, ensuring seamless communication, secure data management, and reliable digital service delivery to citizens and government departments.

NIC/ NKN Network Infrastructure

NIC Ladakh has established a comprehensive Local Area Network (LAN) and connectivity frame-

work linking key government offices to facilitate secure and efficient data exchange. The network extends across UT Secretariat offices, district administrations, the University of Ladakh, police establishments, and other government institutions, forming the backbone of inter-departmental digital communication.

Through the District Headquarters (DHQ), NIC Ladakh is provisioned with dual 1 Gbps core links (2 × 1 Gbps) from two separate Telecom Service Providers (TSPs). This dual-homing architecture enhances network resilience, ensures high availability, and delivers reliable, high-speed, and cost-effective connectivity across the Union Territory.

VC Infrastructure

NIC Ladakh provides centralized Video Conferencing (VC) services at the Lieutenant Governor's Secretariat, UT Secretariat, and two District Centres. These facilities enable real-time interaction between UT Administration, district authorities, and Central Ministries, significantly reducing the need for physical travel in a geographically challenging region.

- Total VC Sessions Conducted: 4,500+
- Total Participants: 160,500+

The VC infrastructure has become a critical enabler for governance reviews, trainings, inter-governmental coordination, and public engagements.

Government E-mail and Messaging Services

NIC Ladakh delivers secure, reliable, and policy-compliant government e-mail and messaging services to UT Administration officials and staff. Currently, more than:

- 2,500 users are active under the @ladakh.gov.in domain, and
- 2,400 users are active under the @police.ladakh.gov.in domain

These services support official communication across departments while ensuring data security, authenticity, and continuity of government operations.

▲ Fig 3.8 : Shri Kavinder Gupta, Hon'ble Lieutenant Governor, Ladakh launching several e-Gov services

Through continuous expansion and modernization of its ICT infrastructure, NIC Ladakh UT Centre plays a foundational role in enabling efficient administration, resilient digital services, and technology-driven governance in the Union Territory.

Important Events Organised

On the occasion of the Foundation Day of the Union Territory of Ladakh on 31 October 2025, the Hon'ble Lieutenant Governor of Ladakh, Kavinder Gupta, formally launched a series of key e-Governance initiatives developed and implemented by NIC Ladakh. These included the Website of Lok Niwas, Ladakh, the Online Building Permission & Occupancy System (OBPOS), and the onboarding of Lok Niwas on the Swagatam Portal. Collectively, these initiatives marked a significant step towards strengthening transparency, accountability, and administrative efficiency, while expanding citizen access to digital government services.

In another major milestone, the Medico Legal Examination and Post-Mortem Reporting System (MedLEaPR) was inaugurated on 8 April 2025 by the Chief Secretary of the Union Territory of Ladakh. The launch of MedLEaPR represented a critical advancement in the digital integration of healthcare and justice systems, enabling secure, standardized, and time-bound medico-legal reporting in alignment with the new criminal laws and the Inter-Operable Criminal Justice System (ICJS).

NIC Ladakh also played a pivotal operational role during the Khelo India Winter Games held in Leh, where it was entrusted with the responsibility of ICT and Games Management System (GMS) as a designated functional area. NIC Ladakh provided comprehensive technical support and coordination for the conduct of the National Winter Games, ensuring reliable digital infrastructure, system availability, and seamless technology-enabled event management.

Way Forward

NIC Ladakh envisions a future where emerging and transformative technologies form the backbone of smarter, more responsive, and inclusive governance. The strategic focus is on expanding citizen-centric digital platforms, enabling real-time service delivery, and enhancing user experience through intuitive, accessible applications. Strengthening cybersecurity frameworks remains a priority to safeguard sensitive government and citizen data.

Special emphasis is being placed on digital inclusion, ensuring that citizens in remote and geographically challenging areas of Ladakh can access government services through reliable, secure, and easy-to-use digital interfaces. Capacity building, system scalability, and interoperability across platforms will continue to guide future initiatives.

With a strong foundation of robust ICT infrastructure and proven e-Governance solutions, NIC Ladakh is well-positioned to deliver scalable, secure, and citizen-focused digital systems. The centre remains committed to supporting the UT

▼ Fig 3.7 : Khelo India Winter Games in Ladakh

Contact for more details

State Informatics Officer
NIC Ladakh UT Centre
2nd floor, UT Secretariat
Leh, Ladakh - 194101
Email: sio-ldk@nic.in , Phone: 01982-251010

Gir Somnath, Gujarat

Driving Transparent, Efficient, and Citizen-Centric e-Governance

Edited by **SUSHMA MISHRA**

Gir Somnath district was carved out of Junagadh district in August 2013. Since its inception, NIC Gir Somnath has played a central role in supporting the district administration by providing end-to-end ICT services and acting as a trusted e-Governance advisor.

Over the years, NIC Gir Somnath has evolved from being a technical support unit to becoming a strategic digital partner for the district administration. By aligning technology with administrative needs, the unit has consistently enabled timely, transparent, and efficient delivery of public services.

NIC Gir Somnath works in close coordination with the District Collectorate and line departments to identify governance challenges and design practical, scalable ICT solutions. The focus has been on replacing manual, error-prone processes with secure, reliable, and easy-to-use digital systems, while ensuring minimal dependency on proprietary software through the adoption of Free and Open Source Software (FOSS).

Key ICT Initiatives

Randomizer Application

During the Gujarat Legislative Assembly Elections, 2022, NIC Gir Somnath developed a FOSS-based utility named Randomizer for the randomization of Micro Observers. The application addressed limitations of legacy macro-based spreadsheet tools that were prone to deadlocks and manual intervention.

Following its successful deployment, the application was further refined and adopted by other districts during the 2024 General Elections.

Governance Impact:

- Ensured transparent and tamper-proof randomization
- Reduced manual dependency and operational delays
- Enabled offline execution at secured counting locations
- Improved administrative confidence during high-stakes electoral processes

Visitor Pass System

To overcome challenges in maintaining daily visitor records through spreadsheets, NIC Gir Somnath developed Visitor Pass, a FOSS-based utility for issuing visitor slips and managing visitor data.

Key Outcomes

- Single-window system for visitor entry and slip generation
- Structured tracking of grievances and resolution status
- Assignment of grievances to concerned branches or offices
- Generation of comprehensive analytical and summary reports

The system has significantly improved accuracy, accountability, and efficiency in managing public interactions at district offices.

Gir Somnath District Website

girsomnath.nic.in

The Gir Somnath district website serves as the official digital gateway of the district administration, providing citizens with easy access to essential information, notices, and services. Developed on the S3WAAS platform, the bilingual website (English and Gujarati) offers comprehensive details on district administration, departments, public utilities, tourism, helplines, and citizen services, along with links to key government portals. With over 3.44 lakh visits, the website reflects growing citizen reliance on digital channels and plays a significant role in enhancing transparency, accessibility, and public communication.

Since its formation in 2013, NIC Gir Somnath has emerged as a key enabler of e-Governance in the district by providing comprehensive ICT support and acting as a trusted technology advisor to the district administration. The unit has successfully designed and deployed FOSS-based solutions such as Randomizer, which strengthened transparency and efficiency in election-related processes, and Visitor Pass, which streamlined visitor management and grievance tracking at district offices. NIC Gir Somnath also manages the bilingual district website, ensuring timely dissemination of official information to citizens. In addition, it provides continuous support to major state and national platforms including Digital Gujarat, SWAGAT, eDHARA/iORA, and PDS. Its reliable ICT support during high-profile administrative and public events has further reinforced effective and responsive governance delivery.

Adnan Ahmed
Scientist - B & DIO
adnan.ahmed52@nic.in

Support to Major Applications

NIC Gir Somnath provides continuous ICT support for several flagship applications that underpin service delivery and governance transparency:

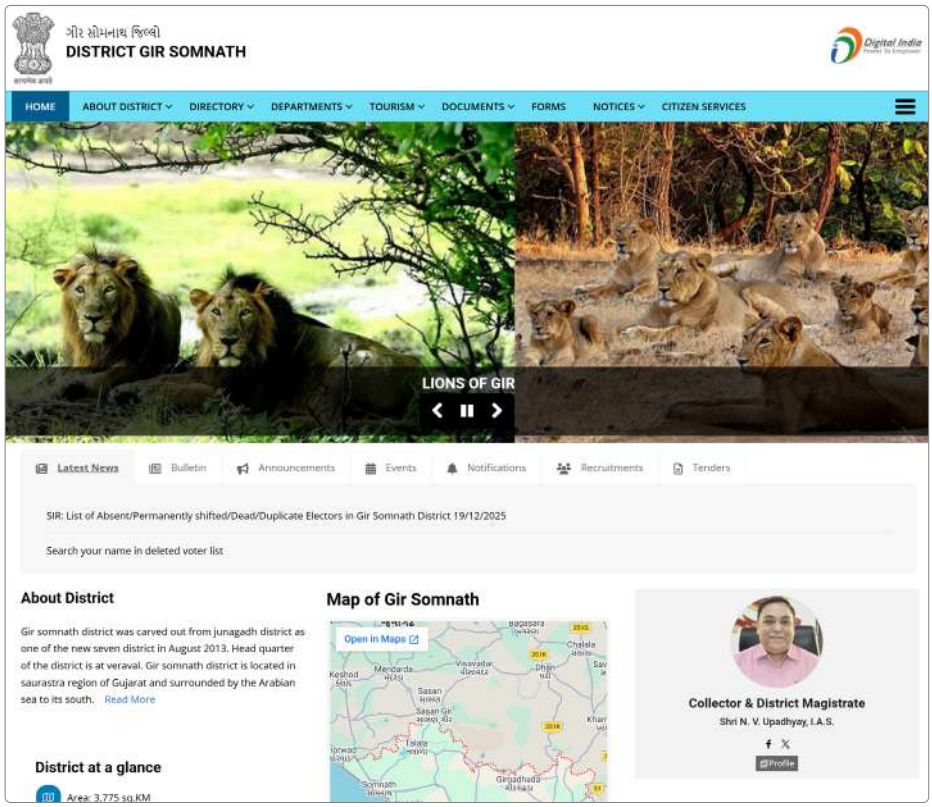
- **Digital Gujarat:** A single-window platform enabling citizens to access certificates, scholarships, pensions, and welfare services
- **SWAGAT:** State-level grievance redressal system ensuring time-bound resolution with a defined escalation framework
- **eDHARA / iORA:** Digital land record systems handling mutation, ownership, and revenue services, improving transparency and efficiency
- **PDS / FPS:** Technology-enabled Public Distribution System ensuring accountability in ration distribution and supply chain management

Through these platforms, NIC Gir Somnath supports both administrators and citizens in delivering and accessing services efficiently.

ICT Support for Major Events

NIC Gir Somnath has consistently demonstrated strong operational capability in delivering reliable and secure ICT support for high-profile district, state, and national-level events. The unit has played a crucial role in planning, deploying, and managing technological infrastructure under strict timelines and high-security environments.

Key engagements include end-to-end ICT support during the three-day State-level Chintan Shibir, ensuring uninterrupted digital connectivity and system availability throughout the event. NIC Gir Somnath also managed comprehensive ICT arrangements during visits of the Hon'ble Prime Minister and the Hon'ble President to the Somnath Temple, supporting administrative coordination and secure communications.



▲ Fig 4.2 : Gir Somnath District Website Home Page

Additionally, the unit enabled two-way digital communication during the Saurashtra–Tamil Sangam, facilitated technical operations for the Ahmedpur–Mandvi Beach Festival, and provided ICT support for multiple flagship initiatives and official engagements, including PM-JANMAN, Parliamentary Committee visits, PM-AY, PM-SURAJ, PM-SVAMITVA, and the Somnath Beach Festival.

These engagements underline NIC Gir Somnath's preparedness, reliability, and ability to deliver mission-critical ICT services in time-bound and high-stakes governance scenarios.

Way Forward

NIC Gir Somnath aims to further strengthen district-level e-Governance through the systematic expansion of FOSS-based utilities across various departments. Priority will be given to enhancing data-driven decision-support systems that enable timely, informed, and evidence-based administrative decision-making, thereby improving efficiency and transparency in governance processes.

In parallel, focused efforts will be undertaken to improve citizen-facing digital platforms by making them more accessible, responsive, and user-friendly. With a continued emphasis on reliability, security, scalability, and usability, NIC remains firmly committed to supporting the district administration in effectively addressing emerging governance needs and adapting to evolving service delivery and technological challenges.

▼ Fig 4.1 : Smt. M. Muchhaar, District Panchayat President, Gir Somnath Presenting letter of appreciation to Shri Adnan Ahmed, DIO, Gir Somnath on 26 January 2025 during the three-day State-level Chintan Shibir

Contact for more details

District Informatics Officer
NIC Gir Somnath District Centre
Jilla Seva Sadan, 131 – Ground floor
Talala Road, Near Inaj Village
Gir Somnath, Veraval, Gujrat – 362269
Email: dio-grs@nic.in, Phone: 8989613275

Kangra (at Dharmshala) Himachal Pradesh

Digital Pathways for Empowered Governance

Edited by **SUSHMA MISHRA**

Located in the western part of Himachal Pradesh, Kangra is one of the most vibrant and historical District. Nestled in the lap of the majestic Dhauladhar range, District is renowned for its scenic landscapes, lush green tea gardens, ancient temples, rich cultural heritage and pleasant climate. It is also home of His Holiness, the Dalai Lama, making it an important spiritual and tourist destination. It is also famous for the world-renowned Kangra miniature paintings and paragliding sites. Since establishment, the NIC District Centre Kangra is delivering vital ICT services to the District Administration and other Central and State Government Departments.

ICT Initiatives in the District

Various Central, State and District initiated ICT projects have been implemented across all the levels to provide G2G, G2E and G2C services in an online and transparent mode. The key initiatives include:

e-Himbhhoomi

e-himboomi is a flagship Land Records Management System to maintain and update Record of Rights (RoR), Jamabandi, Mutations and Girdawari. It empowers the citizens, Revenue Officials, and District Administration through a centrally managed, secure, and user-friendly platform.

RoR – Copy of the Record of Rights

It provides online access to Land Records using multiple interfaces, digitally signed RoR copies and seamless integration with multiple applications.

Akshay Mehta
Sr. Technical Director & DIO
akshay.mehta@nic.in

Sarvjeet Kumar
Scientist - C & ADIO
sarvjeet.kumar@nic.in

District Kangra, with Dharamshala as its administrative hub, is steadily transforming into a model of digitally empowered governance in Himachal Pradesh. Through the strategic deployment of e-Governance applications, NIC District Centre Kangra has been instrumental in enabling transparent, efficient, and citizen-friendly administration across sectors ranging from health and education to revenue, transport, and disaster management.

National Generic Document Registration System (NGDRS)

NGDRS is an online platform to streamline and modernize the property registration process. It enables citizens to prepare documents, calculate stamp duty, book appointment slots, and submit registration requests online. The system incorporates secure digital signatures for document authentication, ensuring a legally valid, tamper-proof, and transparent registration process.

Pong Dam Oustees MIS

The Pong Dam, constructed on the Beas River in Himachal Pradesh, led to the displacement of thousands of families in HP. For rehabilitation of approximately 16,352 Pong Dam displaced (Oustee) families, this dedicated portal is developed for the allotment of "Murabba" land, enabling faster, transparent and more efficient disposal of the cases.

Integrated Financial Management System

HimKosh (IFMS) is a comprehensive platform for the management of budgeting, accounting, treasury operations, and revenue collection. It has replaced fragmented processes with a unified, auditable workflow system linking Departments, DDOs, Treasuries and the Finance Department.

> NIC Kangra has consistently provided exemplary support to the District Administration, playing a pivotal role in promoting ICT and advancing multiple e-Governance initiatives across the District. I sincerely acknowledge and appreciate the dedication, professionalism, and technical expertise of the NIC Officers in the successful implementation of numerous IT projects.
>
> I also place on record my special commendation for NIC Team who worked tirelessly to ensure seamless technical support and services during the elections. I am confident that NIC will continue to uphold these high standards, delivering innovative solutions and technical expertise to successfully implement ICT initiatives for the benefit of our citizens.

Shri Hemraj Bairwa, IAS
Dy. Commissioner, Kangra (at Dharamshala)

Schemes Monitoring Information System

Schemes MIS is an online system that enables the management, monitoring and tracking of the developmental schemes. It allows the District Planning Offices to record details of sanctioned

schemes under different heads and provides tools for geo tagging, generating reports, monitoring and facilitating social audit & feedback by the citizens.

e-Kalyan

eKalyan is an online Welfare Pension system to streamline the delivery of social security pensions to eligible beneficiaries under various Central and State Pension Schemes. It helps the Department to manage large volumes of pensioner records efficiently and transparently.

Rajpatra (e-Gazette)

The Rajpatra (eGazette) is a paperless, end-to-end system to manage and publish the digitally signed Gazette in the State.

CM Office & Vidhan Sabha Support

NIC Kangra plays a critical role in ensuring smooth ICT operations of the CM Camp Office and Vidhan Sabha during the Winter Session in Dharamshala.

Manav Sampada (eHRMS)

Manav Sampada is a generic landmark initiative aimed at standardizing and digitizing human resource management across all the Government Departments.

Transport Software (Vahan, Sarathi)

For the seamless delivery of the transport services, Vahan, Sarathi, iRAD/DAR, e-Detection applications have been implemented at RTO and all the R&LAs in the District.

NDAL-ALIS

The Arms License software is implemented to streamline and modernize the entire process of issuing, renewing and managing Arms Licenses in the District.

Other Key Initiatives in the District

Other key ICT initiatives implemented in the District are:

▲ Fig 5.2 : Dr. Nipun Jindal, the then Deputy Commissioner receiving the award from Hon'ble President of India

▲ Fig 5.3 : Hon'ble Prime Minister Shri Narendra Modi taking a high-level review meeting

- e-Procurement
- e-Office - a flagship digital workplace solution for Government Offices
- Aadhaar Enabled Biometric Attendance System
- e-Rozgar - Employment Exchange MIS
- Loan Application system for Himachal Backward Classes Finance & Development Corporation
- Video Conferencing, Network and eMail Services

ICT Support for VVIP Events

To review the damages caused by heavy rains & floods during the Monsoon Season, Hon'ble Prime Minister Shri Narendra Modi chaired a high-level review meeting at Kangra Airport. NIC Kangra provided the support for establishing the Prime Minister's Office and for the seamless conduct of presentations.

Awards and Recognitions

e-KATCH (Kangra Application for Tracking Chunav) web application developed by NIC Kangra received the Best Electoral Practice Award for IT Initiatives from Hon'ble President of India.

Conclusion

NIC District Centre Kangra is driving digital governance in the District by modernizing and enhancing the service delivery. By strengthening the public service delivery and access to online platforms, NIC Kangra is creating a seamless, inclusive, and citizen-centric digital ecosystem across the district.

▼ Fig 5.1 : National Generic Document Registration System (NGDRS) Website

Contact for more details

District Informatics Officer
NIC Kangra District Centre
723, Second Floor, DC Office
Kangra, Dharamshala
Himachal Pradesh - 176215
Email: dio-kng@nic.in, Phone: 01892-222358

District Informatics

West Siang, Arunachal Pradesh

Bridging Distance with Digital Governance

Edited by **SUSHMA MISHRA**

Since its inception, NIC West Siang has functioned as the digital backbone of the District Administration, steadily bridging the gap between governance and the people through technology-driven services. Operating in remote and challenging terrain, the District Centre has successfully implemented numerous State and Central projects, ensuring that distance and difficulty do not become barriers to service delivery.

From imparting basic computer training such as MS Word to providing end-to-end technical support during Parliamentary and Assembly Elections, Informatics has remained present at every critical administrative touchpoint.

During the COVID-19 period, its role became even more vital. The District Unit supported the administration by creating databases of stranded citizens outside the state, disseminating online help information, and conducting awareness and training programs on the Aarogya Setu App—helping technology serve both governance and care when it was needed the most.

Key Digital Initiatives in the District

Several state and national projects are currently implemented and supported by NIC West Siang, forming the operational core of district-level e-Governance:

Sarathi–Vahan

The Sarathi–Vahan system has been successfully implemented in the Department of Transport for end-to-end digital services related to issuance and renewal of Driving Licences, registration of new vehicles, collection of road tax, and other transport-related services. The system has significantly streamlined citizen-facing transport services while ensuring transparency and efficiency.

Kunzang Chenni Wangmo
Scientist - D & DIO
kc.wangmo@nic.in

NIC West Siang functions as the quiet digital backbone of the District Administration, enabling seamless governance through reliable e-Governance platforms, ICT support, election management, and capacity building. Operating in a challenging terrain, it ensures that technology bridges the gap between the administration and the people—consistently, securely, and without disruption.

Arms License (ALIS)

ALIS has been implemented for the issuance, renewal, and digital record management of arms licenses. The system enables systematic maintenance of licensee and weapon details, strengthening regulatory oversight and administrative control.

TreasuryNET

This application supports the complete computerization of treasury operations. NIC West Siang provides continuous technical support to the District Treasury for monitoring financial transactions, supervising budgetary activities, and ensuring smooth day-to-day functioning of treasury services.

e-Services/ Jan Suvidha

This framework is used for providing essential citizen services. Through e-Services and Jan Suvidha Centres, certificates such as ST, PRC, and TRC are issued digitally, reducing processing time and improving accessibility for citizens in remote areas.

Payroll Software

Payroll software has been implemented across the Accounts Section of the District Administration, hospitals, and various departments. The system ensures accurate and timely preparation of salaries, bringing uniformity, transparency, and efficiency to payroll management.

> NIC, West Siang has played a pivotal role in bringing the Digital transformation in the district. It has been instrumental in successfully implementing and delivering many e-governance services. This shifting of work culture to digital technology has significantly increased the efficiency of the service delivery system in the district.

Shri Techu Aran, APCS (AG)
Deputy Commissioner, West Siang District

e-DAR

The project has been successfully implemented to improve road safety management. It has enabled structured collection and analysis of road accident data and is actively used by the Police, Transport, and Highway departments for coordinated action and reporting.

e-Prosecution

NIC West Siang provides necessary technical assistance and training support to Assistant Public Prosecutors and the Office of the Deputy Director of Prosecution. The initiative aims to strengthen digital adoption and efficiency within the prosecution system.

e-GRAS

Training and hands-on support are provided to various departments for processing online

challans and facilitating payment of government receipts through the e-GRAS portal. Citizens and officials are assisted to ensure smooth and secure online transactions.

IVFRT (Form C)

Training on Form C under the Immigration, Visa, Foreigners Registration and Tracking (IVFRT) system has been provided to hotel owners and lodging establishments. This ensures systematic collection of data related to foreign nationals entering the district, supporting administrative monitoring and national security requirements.

CPGRAMS

District officials are trained to effectively use the Centralized Public Grievance Redress and Monitoring System (CPGRAMS) for timely and structured resolution of public grievances, strengthening accountability and citizen trust.

District Website

The official district website (https://westsiang.nic.in) serves as a comprehensive information portal, hosting details related to government schemes, ongoing projects, events, tourist destinations, and important public notices. The website is regularly updated to ensure citizens have access to accurate and current information.

▲ Fig 6.2 : West Siang District Website Homepage

Infrastructure, Network and Web Services

General Election Support (2024)

During the simultaneous Parliamentary and Assembly Elections 2024, NIC West Siang provided comprehensive technical support for all critical online election-related activities. This included support for systems such as ENCORE for filing, scrutiny, and withdrawal of nomination papers; polling party management software; ETPBS; C-VIGIL; and other election applications, ensuring smooth and transparent conduct of the electoral process.

ICT Training and Capacity Enhancement

To improve work efficiency and digital proficiency, regular ICT training programs are conducted for officials of the District Administration. In addition to physical training sessions, NIC also facilitates and assists departments in participating in various online training programs, strengthening overall digital capacity within the district.

Safer Internet Day Awareness Programme

As part of the Safer Internet Day celebration, an awareness session was organised for approximately 100 college students. The programme focused on promoting responsible online behaviour, cyber safety, and awareness about digital risks, reinforcing the importance of safe internet practices among young users.

Internet and Email Services

NIC West Siang District provides reliable internet connectivity to the District Administration and other line departments, ensuring uninterrupted digital operations. Technical support is extended for the creation and maintenance of official Government email IDs used for secure communication. Support is also provided for key platforms such as SPARROW and e-Office, enabling smooth adoption of digital workflows and official correspondence across departments.

Video Conferencing Services

NIC West Siang provides end-to-end Video Conferencing support to the District Administration and line departments for official meetings, reviews, and training programmes. VC facilities are extensively used for high-level administrative interactions, including election reviews of Returning Officers and Assistant Returning Officers with the Chief Election Officer, Arunachal Pradesh. Key VC sessions coordinated by NIC West Siang include

- e-PRAGATI meetings chaired by the Hon'ble Chief Minister
- review meetings led by the Chief Secretary on matters such as urban safety, NCORD, Swachhata Hi Seva, and environmental monitoring
- VC during Parliamentary and Assembly Elections; preparedness meetings for APCS/APSSB examinations; Panchayat Election coordination meetings; and refresher training programmes on transgender persons
- and VC sessions related to the National Award for e-Governance organised by DARPG, Government of India

▼ Fig 6.1 : DIO, West Siang, conducting a Safer Internet Day awareness session on responsible and safe internet usage

Way Forward

Across systems, services, and situations—routine administration, elections, emergencies, and public outreach—NIC West Siang District functions as a silent enabler of governance. Often working in the background, it ensures that technology remains dependable, secure, and accessible, allowing the administration to focus on service delivery and decision-making. In a district marked by geographical challenges, NIC's consistent support has transformed digital infrastructure into an instrument of trust, continuity, and connection between the government and the people.

Contact for more details

District Informatics Officer
NIC West Siang District Centre
DC Office Building Complex, Aalo
West Siang District, Arunachal Pradesh - 791101
Email: kc.wangmo@nic.in, Phone: 03783-223158

eGov Products & Services

Animal Husbandry Milk Incentive Scheme

When Technology Learns to Listen to the Farmer

Edited by **VINOD KUMAR GARG**

AHMIS is a comprehensive online system developed by NIC Himachal Pradesh for the Department of Animal Husbandry, Government of Himachal Pradesh, with the objective of ensuring Minimum Support Price (MSP) for cow and buffalo milk supplied by dairy farmers to eligible non-government milk societies. The system digitizes the entire incentive lifecycle—from milk supply recording to final payment—bringing transparency and predictability to dairy income.

Verified milk supply details are entered into the portal by the respective milk societies and processed through a defined, role-based workflow within the Department. Based on this verified data, milk incentives are calculated and credited directly to the farmers' bank accounts on a monthly basis through Direct Benefit Transfer. In parallel, freight subsidy for milk transportation is transferred directly to the bank accounts of the milk societies, ensuring timely reimbursement without intermediaries.

The system keeps farmers informed at every step. Instant SMS alerts confirm credit of incentives to their registered bank accounts. Using secure OTP-based login, farmers can access the portal to view milk supply records, incentive payments, and any deductions made by the milk societies, along with the incentive released by the Government—placing information and transparency directly in their hands.

Designed as a role-based, paperless platform, AHMIS provides dedicated interfaces for the Department of Animal Husbandry, Milk Societies, Treasuries, Banks, and Dairy Farmers. The application is seamlessly integrated with the State Budget and e-Bills systems, enabling automated bill generation, online submission to the Treasury, and fund transfer through banks. This integration ensures that no manual intervention is required at any stage, strengthening efficiency, accountability, and audit readiness.

Sanjay Kumar
Sr. Technical Director
sanjay.kmr@nic.in

Mangal Singh
Scientist – D
s.mangal@nic.in

In Himachal Pradesh, dairy farming is not just an occupation; it is a way of life, sustained largely by women. AHMIS is built on a simple principle: support must reach the farmer directly, on time, and without discretion. Developed by NIC Himachal Pradesh for the Department of Animal Husbandry, AHMIS is a paperless, end-to-end digital platform that enables transparent and timely transfer of milk incentives to dairy farmers, along with freight subsidies to milk societies. By replacing files and follow-ups with verified data and automated workflows, the system brings certainty, accountability, and trust to the entire process.

Key Stakeholders

- **Department of Animal Husbandry, GoHP:** Responsible for processing and disbursing milk incentives and freight subsidies
- **Dairy Farmers:** Beneficiaries who supply milk to registered milk societies and receive incentives directly in their bank accounts
- **Milk Societies:** Responsible for recording and verifying milk supply data and managing freight-related details
- **Treasuries and Banks:** Treasuries handle bill processing and fund authorization, while banks verify beneficiary accounts and execute DBT transfers

AHMIS is a gender sensitive software application as milk production is primarily a women-oriented enterprise and it has directly empowered the women milk farmers of the District. Now, the Dairy Cooperatives are also receiving more milk from the milk producers residing in the adjoining Districts. It has resulted in a win-win situation for all the stakeholders.

Dr. Vivek Lamba
Deputy Director (AH/B), District Solan

Key Features of the Product

AHMIS ensures transparent verification, timely disbursement, and direct benefit transfer through an integrated, end-to-end online mechanism, eliminating manual intervention and strengthening accountability. Its key features are:

- End-to-end, workflow-based online system for processing milk incentives and freight subsidy in a structured and transparent manner
- Paperless and fully automated solution ensuring digital processing at every stage, with zero manual intervention from data entry to payment disbursement
- Online entry and verification of milk supply data by the respective Milk Societies, forming the basis for accurate incentive calculation
- Built-in Maker–Checker mechanism to ensure correctness, validation, and reliability of milk supply data before further processing

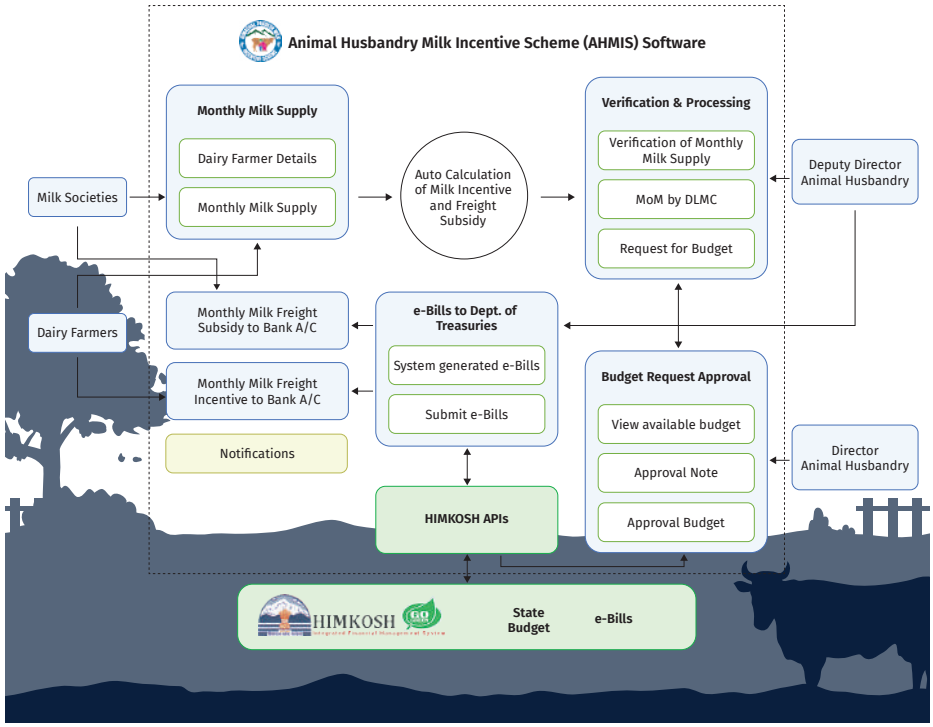
- Provision for DBT of milk incentives directly into the farmers' bank accounts
- Monthly automated payment processing to ensure timely, consistent, and predictable disbursement of incentives
- Automated SMS alerts to farmers confirming the credit of milk incentives to their registered bank accounts
- Secure OTP-based login facility for farmers to view supply details, payments, and deductions made by the respective Milk Societies
- Direct online transfer of freight subsidy to the bank accounts of Milk Societies, eliminating intermediaries and delays
- Role-based access control with dedicated interfaces for the Department of Animal Husbandry, Banks, Treasuries, Milk Societies, and Dairy Farmers
- Seamless integration with State Budget and e-Bills systems for automated bill generation, online submission to the Treasury, and electronic fund transfer through banks, ensuring a transparent and auditable workflow

Technology Stack

AHMIS software has been developed using Microsoft .NET technology with C# as the core programming language and MS SQL Server as the backend database. Leveraging the robustness, scalability, and security features of Microsoft technologies, the application is designed ensuring high performance and reliability for large-scale transactional processing.

For security and usability, farmers access the portal through a secure SMS-based OTP authentication mechanism, ensuring safe and easy login without the need for complex credentials. The workflow-driven and role-based architecture of the application ensures accountability, transparency, smooth processing, and an intuitive operational flow for all the stakeholders.

The software follows a modular approach allowing independent yet interconnected components for data management, authentication, payments, notifications and reporting. End-to-end automation supported by API-based integration with State Budget and e-Bills platforms enables real-time fund processing and Direct Benefit Transfer without any manual intervention.



▲ Fig 7.1 **AHMIS Overview**

▲ Fig 7.2 : Annual Animal Husbandry Department Website Homepage

Benefits and Impact

AHMIS delivers impact where it matters most—on the ground. It:

- Ensures paperless, transparent, timely and secure Direct Benefit Transfer (DBT) of milk incentives and freight subsidies
- Boosts milk production and provides financial stability by assuring Minimum Support Price
- Reduces administrative overheads and delivers a scalable, reliable and auditable solution with improved efficiency, accuracy and trust among all the stakeholders
- Empowers Dairy Farmers and Milk Societies with real-time visibility and SMS alerts

Way Forward

Built on a robust, transparent and scalable foundation, the AHMIS aims to further enhance service delivery by strengthening real-time analytics, advanced dashboards and data-driven insights for policy making. Future enhancements will include API based integration with Him Parivaar Register, Cow Sanctuaries/Gaushalas and 'Provision of Pregnancy Ration to Cows and Buffaloes Scheme' of the State.

AHMIS software, launched by Hon'ble Chief Minister of Himachal Pradesh, has been developed by NIC HP. It has given boost to dairy farming by providing employment and financial security through Minimum Support Price of milk. It has a very useful role-based dashboard and the software is very practical, paperless and facilitates verification, budget demands, bills preparation & online submission to Treasury for transfer of incentive to the beneficiaries through banks.

Dr. Vinod Kumar Kundi
Deputy Director (AH/B), District Bilaspur

Contact for more details

State Informatics Officer
NIC HP State Centre
6th Floor, Armsdale Building
HP Secretariat, Shimla, Himachal Pradesh - 171002
Email: sio-hp@nic.in, Phone: 0177-2624045

eGov Products & Services

MedLEaPR

Transforming India's Medico-Legal Ecosystem

Edited by **NISSY GEORGE**

The medico-legal ecosystem in India sits at the crossroads of some of the most sensitive and consequential domains of governance—public health, law enforcement, forensic science, judiciary, and public administration. Every injury report, post-mortem examination, or medico-legal certificate is not merely a medical document; it is a legal instrument that can influence investigations, trials, and justice delivery.

For decades, this ecosystem functioned largely through manual, paper-based processes. Handwritten reports, physical file transfers, fragmented approvals, and delayed communication between hospitals and police departments were the norm. These methods were slow, error-prone, difficult to audit, and vulnerable to loss, tampering, or misinterpretation.

MedLEaPR (Medico Legal Examination and Post Mortem Reporting) has emerged as a transformational digital response to these long-standing challenges. Designed and implemented as a mission-critical e-governance platform, MedLEaPR modernizes medico-legal workflows by introducing speed, transparency, accountability, and nationwide standardization .

What Is MedLEaPR?

MedLEaPR is a secure, workflow-based medico-legal management system that digitally connects all key stakeholders involved in medico-legal processes. These include:

- Government hospitals and medical officers
- Police departments
- Forensic laboratories
- Judicial and administrative authorities

Sarbjeet Singh
Dy. Director General & SIO
singh.sarbjeet@nic.in

Rahul Jain
Sr. Technical Director
rahul.jain@nic.in

MedLEaPR is a national digital platform that streamlines medico-legal processes by securely connecting hospitals, police, forensic units, and the judiciary. Integrated with CCTNS, it enables paperless, standardized, and traceable medico-legal reporting, improving transparency, accountability, and the reliability of evidence for timely justice delivery.

The platform supports a wide range of standardized medico-legal forms and procedures, covering injury reports, post-mortem reports, and other medico-legal documentation.

One of MedLEaPR's most significant strengths is its integration with the CCTNS (Crime and Criminal Tracking Network & Systems) portal. Through this integration, police departments can raise medico-legal case requests directly from CCTNS. These requests are instantly transmitted to the concerned hospitals through MedLEaPR, eliminating manual coordination and delays.

Doctors receive the requests digitally, prepare medico-legal reports using standardized templates, and submit them back through the same secure pipeline. This closed-loop system ensures seamless, traceable, and tamper-proof communication between departments.

Scale and Nationwide Adoption

MedLEaPR is not a pilot or a limited deployment—it is one of the largest operational medico-legal digital platforms in the country.

- 26 States and 8 Union Territories have adopted MedLEaPR
- Over 34 lakh medico-legal reports have been generated
- 60,000+ doctors actively use the platform
- 16,000+ hospitals are integrated

This scale reflects not only technical robustness but also institutional trust. MedLEaPR operates as a 24×7 mission-critical system, supporting continuous medico-legal operations across diverse geographies, hospital capacities, and administrative structures.

Solving Long-Standing Medico-Legal Challenges

Traditional handwritten medico-legal reports posed multiple challenges for investigators and the judiciary:

- Poor legibility and inconsistent handwriting
- Non-uniform formats across states and hospitals
- Difficulty in verifying authenticity
- High dependence on physical document movement

MedLEaPR directly addresses these issues through standardized, legally compliant digital formats. Reports are clear, uniform, and easily readable, significantly improving their usability in courts of law.

The platform also offers pictorial representation of injuries, allowing doctors to mark injury locations visually. This reduces ambiguity and improves evidentiary clarity. Additionally, e-signature facilities ensure secure and legally valid authentication of reports.

All records are securely stored and maintained by the government, ensuring long-term availability, audit readiness, and transparency for future reference.

Key Features

MedLEaPR offers a comprehensive set of features designed around real-world medico-legal workflows:

- End-to-end digital case management from request to final report submission
- Standardized templates for injury reports, post-mortems, and medico-legal certificates
- Workflow-based approvals with freeze and unfreeze mechanisms to maintain data integrity

- Role-based access controls for doctors, police officers, forensic experts, and administrators
- Real-time dashboards and analytics for monitoring case status and institutional performance
- Integrated pictorial injury marking and e-signing for clarity and security

Together, these features ensure that medico-legal processes are faster, more reliable, and fully auditable.

Technology Stack and System Architecture

MedLEaPR is built on a modern, scalable, and resilient technology stack designed to handle large volumes of sensitive data without performance degradation.

Core Technology Stack

- **Backend:** Spring Boot-based microservices with asynchronous processing
- **Frontend:** React JS with Material UI for responsive and user-friendly interfaces
- **Database:** PostgreSQL with optimized indexing and partitioning
- **Caching:** Redis for high-speed access
- **Messaging:** Kafka for event-driven workflows and notifications

Software Architecture

The system runs on a distributed, multi-server cluster, featuring:

- Nginx reverse proxy for traffic management
- Load balancers for even distribution of user requests
- Horizontal scaling to handle peak, state-wide traffic
- Distributed file storage for secure document handling

This architecture ensures high availability, fault tolerance, and zero-downtime operations, even during periods of heavy usage.

Security by Design

Given the legal sensitivity of medico-legal records, security is foundational to MedLEaPR's design.

The platform follows a multi-layered security architecture, including:

- End-to-end SSL/TLS encryption
- Zero-trust API access controls
- Tamper-proof audit logs
- Database encryption at rest
- File hashing to ensure evidence integrity

These safeguards ensure that medico-legal records remain authentic, confidential, and legally admissible at every stage.

Role-Based Authentication and Accountability

MedLEaPR implements a granular Role-Based Access Control (RBAC) framework to ensure that users can access only what they are authorized to.

- Each role—doctor, nodal officer, forensic expert, administrator—has clearly defined permissions
- JWT-based authentication ensures secure session management
- Every action is time-stamped and logged for audit compliance

This approach significantly reduces unauthorized access while strengthening accountability across departments.

MedLEaPR has been designed with long-term scalability and adaptability in mind.

- It supports state-level as well as national-level deployments
- It allows seamless integration with healthcare, policing, forensic, and judicial systems
- Its modular architecture enables easy expansion for new medico-legal modules, AI-driven analytics, and automation workflows

As India's governance ecosystem evolves, MedLEaPR is well-positioned to serve as a foundational digital infrastructure for medico-legal services.

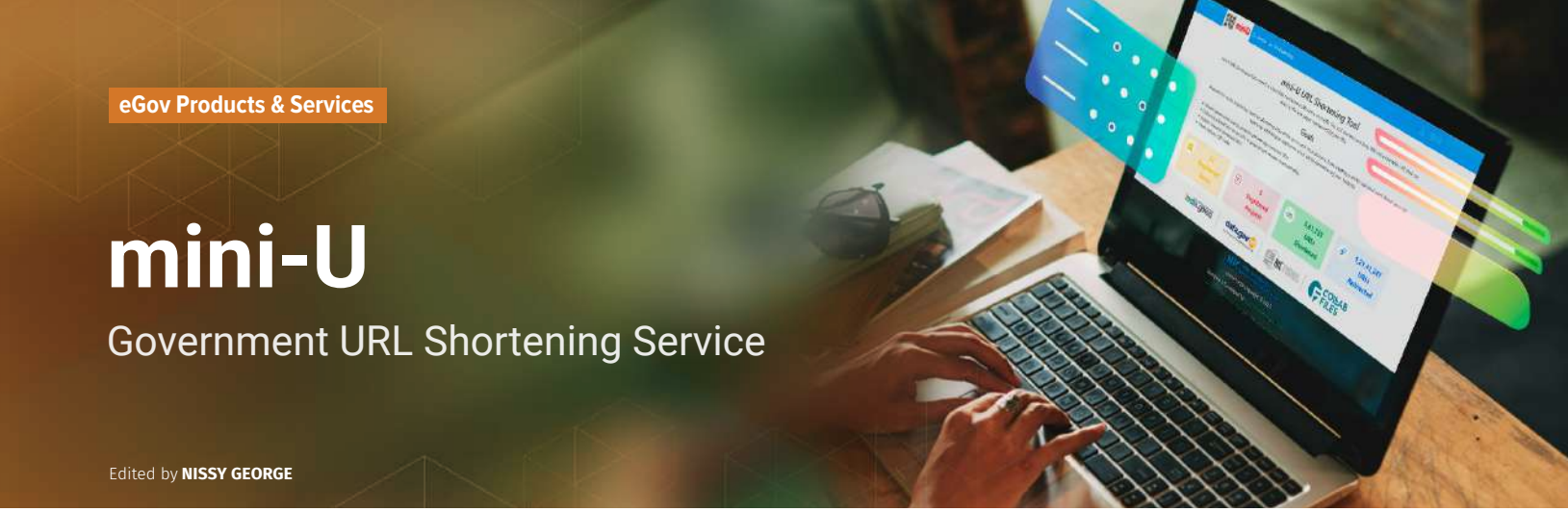
Conclusion

MedLEaPR represents more than a technological upgrade—it is a structural reform of India's medico-legal processes. By replacing fragmented, manual workflows with a unified, secure, and transparent digital system, MedLEaPR strengthens the reliability of medico-legal evidence and, by extension, the justice delivery system itself.

In a domain where accuracy, timeliness, and integrity are non-negotiable, MedLEaPR stands as a powerful example of how thoughtfully designed digital governance can transform outcomes at a national scale.

Contact for more details

State Informatics Officer
NIC Haryana State Centre, MeitY
Ground Floor, Room No. 04
Sector 17, Chandigarh - 160017
Email: support-medleapr@nic.in, Phone: 0172-2711642



mini-U

Government URL Shortening Service

Edited by **NISSY GEORGE**

Large-scale e-Governance applications routinely disseminate information through SMS to citizens and businesses—covering application status updates, service notifications, advisories, and public announcements. These SMS messages frequently contain URLs that direct recipients to government portals for detailed information.

However, long URLs increase message length, inflate SMS costs, reduce readability, and lead to dense QR codes when used in printed materials.

mini-U is a secure, government-owned URL shortening service developed by NIC, Madhya Pradesh, to address these challenges. It converts long official government URLs into short, shareable links while ensuring trust, security, and centralized governance. The service is already operational and successfully implemented across multiple government portals.

Why mini-U Matters for Digital Governance

Government departments send millions of SMS messages every year. Since SMS billing is directly linked to character count, even a small reduction in message length can result in significant recurring public savings.

mini-U addresses this systemic inefficiency by providing:

- Cost optimization at scale
- Improved citizen experience

Rahul Chatterjee
Sr. Technical Director
shod3-mp@nic.in

Ambuj R. Jain
Scientist - D
jain.ambuj@nic.in

mini-U is a secure, government-approved URL shortening service developed by NIC, Madhya Pradesh, to support large-scale e-Governance communication. It converts long official government URLs into compact, shareable links, helping reduce SMS costs, improve message readability, and enable efficient use of dynamic, scanner-friendly QR codes. Integrated with JanParichay for secure authentication and offering REST APIs for seamless system integration, mini-U provides a reliable, cost-effective, and scalable solution for government portals and applications that communicate with citizens at scale.

- Secure and standardized URL shortening
- Better support for QR-based information delivery

It demonstrates how a focused digital utility can deliver outsized impact across governance systems.

Objective

The primary objectives of mini-U are to:

- Reduce SMS costs for government applications
- Improve clarity and readability of messages
- Enable dynamic, durable, and scanner-friendly QR codes
- Provide a trusted alternative to public URL shorteners
- Ensure URLs originate only from verified government domains

To maintain authenticity and security, mini-U supports URL shortening exclusively for:

- .gov.in
- .sansad.in
- .nic.in

How mini-U Is Useful

1. Cost Savings in SMS Communication

Government SMS gateways charge based on message length. Long URLs often push messages into multiple SMS units, multiplying costs.

By replacing long URLs with short mini-U links, applications can frequently reduce a two-SMS message to one.

Illustration: SMS Optimization

Original SMS

(214 characters → 2 SMS units)

Tune in to 108th Episode of Mann Ki Baat by Prime Minister Narendra Modi on 31st December 2023 at

https://www.mygov.in/talk/tune-108th-episode-mann-ki-baat-prime-minister-narendra-modi-31st-december-2023/-MyGov

SMS with mini-U Short URL

(133 characters → 1 SMS unit)

Tune in to 108th Episode of Mann Ki Baat by Prime Minister Narendra Modi on 31st December 2023 at

https://miniu.nic.in/MyGov-mju22jn

Note: Links are for illustration purposes only.

URL Transformation Example

Original URL : https://nicforms.nic.in/en-RhYmxlNjg3OGQwYzEzMGJlZTIwMjUwNzE3MzY2

Shortened URL : https://miniu.nic.in/OJRMUx

2. Cleaner and More Reliable QR Codes

QR codes are widely used on banners, pamphlets, signboards, forms, and public notices. The length of the embedded URL directly af-

fects QR code density and scannability.

Short URLs generated by mini-U result in sparse QR codes that are easier to scan and more durable.

Static vs Dynamic QR Codes

- **Static QR Code:** Destination URL cannot be changed once printed
- **Dynamic QR Code (via mini-U):** Destination URL can be updated without changing the printed QR

Advantages of Using mini-U for QR Codes

- One printed QR code can point to updated content over time
- Less dense QR codes improve scan success
- No need for high-definition printing
- Better readability even if faded, folded, or damaged
- Ideal for outdoor and mass-printed materials

Security and Trust Framework

Unlike commercial URL shorteners, mini-U is designed specifically for government use.

Key security and governance features include:

- URL shortening restricted to verified government domains only
- Centralized ownership and management by NIC
- Protection against malicious redirection and phishing
- Controlled issuance of API keys
- Auditability and accountability for all integrations

This ensures citizen trust and safeguards official communication channels.

Common Use Cases

mini-U can be effectively used across multiple governance scenarios, including:

- Application status updates (certificates, pensions, scholarships)
- Election-related notifications and advisories
- Health, disaster, and public safety alerts
- QR codes on hospitals, offices, forms, and signboards
- Government campaigns, hoardings, and advertisements
- Digital forms and acknowledgements

How mini-U Works (High-Level Flow)

- **URL Submission:** A government application submits a long, official URL to mini-U
- **Short Link Generation:** mini-U creates a secure, unique short URL mapped to the original link
- **Multi-Channel Distribution:** The short URL is embedded in SMS, notifications, emails, and QR codes
- **Citizen Access:** Citizens click the link or scan the QR code
- **Secure Redirection:** mini-U validates the request and instantly redirects users to the original government page

Technology Stack

It is built using modern, scalable technologies:

- **Backend:** .NET Core
- **Frontend:** Angular
- **Database:** MySQL
- **Caching & Performance:** Redis
- **Authentication:** JanParichay (Single Sign-On)

User Authentication & Onboarding

mini-U follows a secure, standardized, and government-approved onboarding process to ensure that only authorized users and official initiatives can access its services. Authentication and access control are implemented through JanParichay, the Government of India's Single Sign-On (SSO) platform.

Individual Government Users

Individual officers and employees of government organizations can directly access

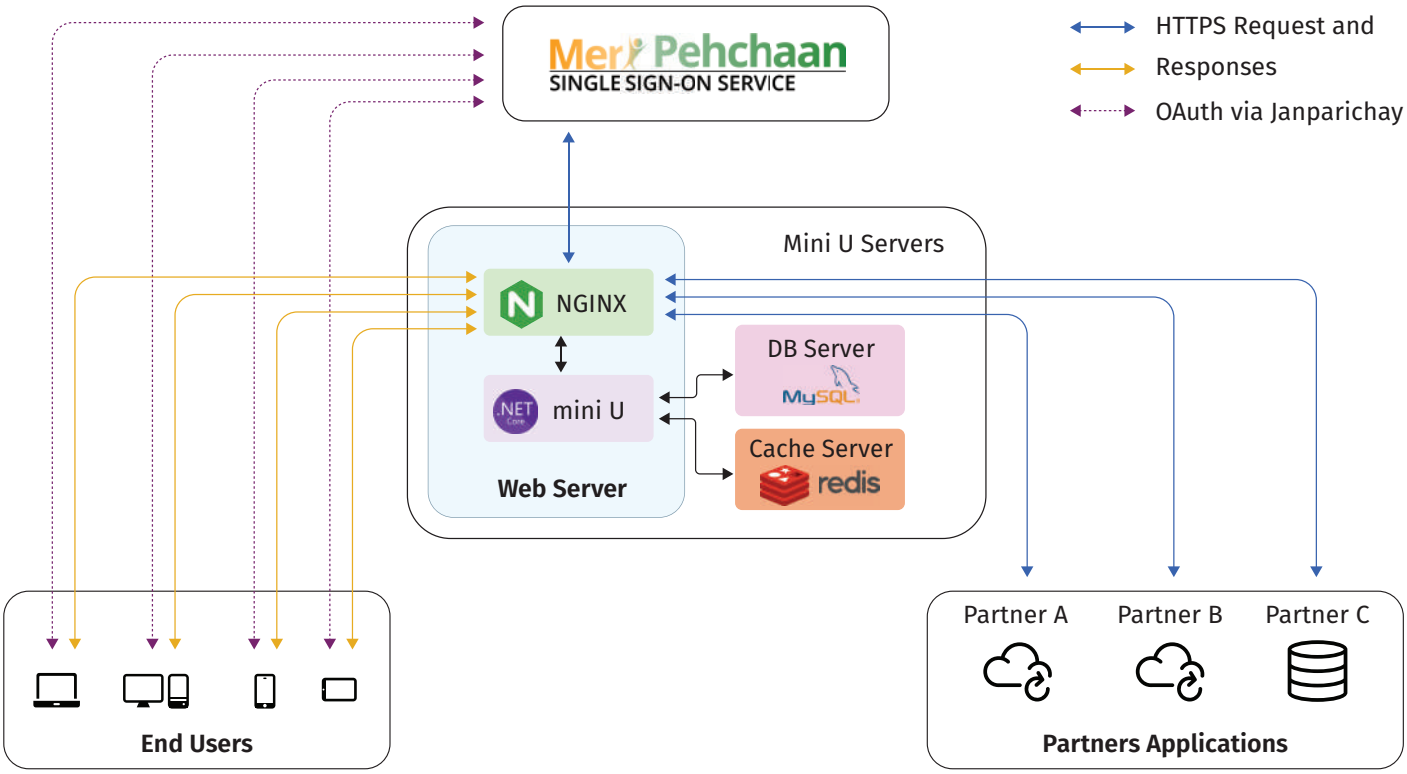


Fig 8.1 mini-U Application Architecture

Long URL

https://www.my.gov.in/group-issue/inviting-ideas-mann-ki-baat-prime-minister-narendra-modi-29th-march-2026/?target=inapp&type=group_issue&nid=366805

Short URL

http://miniu.nic.in/MannKiBaat

Note: Links are for illustration purposes only.

the mini-U portal for manual URL shortening through a secure login process.

Authentication Mechanism

- Authentication is provided exclusively through JanParichay Single Sign-On (SSO)
- Users must already be registered on JanParichay using an official government email ID

Eligible Email Domains

Access is restricted to users with verified government domains, including:

- @gov.in
- @nic.in
- @xx.gov.in (State and departmental domains)

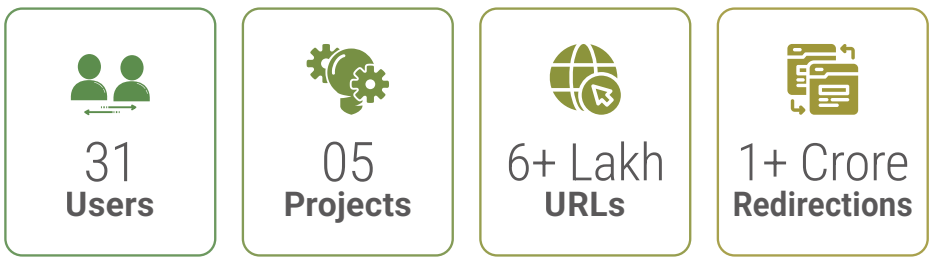
Government Projects / Portals

For large-scale, automated, or system-level usage, mini-U provides API-based access to government projects and portals through a formal onboarding process.

Onboarding Process

- **Designation of Representative:** Each project or portal nominates an official representative. The representative must be registered on JanParichay using an eligible government email ID
- **Portal Registration:** The representative signs up on the mini-U portal using JanParichay credentials
- **Submission of Onboarding Form:** The prescribed onboarding form is filled with project details, intended usage, and technical requirements
- **Formal Request Submission:** The completed form is emailed to: nicgrc-dev@mp.gov.in
- **Approval and Access Provisioning:** The mini-U team seeks approval from the competent authority. Upon approval, the project is issued:
  - Secure API access keys
  - Detailed API documentation
  - Integration guidelines and usage terms
- **Onboarding Portal**
  https://miniu.nic.in/onboard

▼ Fig 8.2 **mini-U in Action**



Key Benefits of this Approach

- Ensures only authenticated government users can access the service
- Maintains security, accountability, and auditability
- Prevents misuse or unauthorized URL generation
- Enables seamless scaling from individual use to enterprise-level integration

In essence, mini-U's onboarding framework balances ease of access for government users with strict security controls, making it suitable for both individual officers and mission-critical government portals.

REST API Integration

mini-U provides REST APIs for large-scale, automated use by government applications.

API Benefits

- Industry-standard REST architecture
- Secure access via API keys
- Seamless integration with SMS gateways and notification engines
- Automated, high-volume URL generation
- Improved performance through caching

Who Can Use mini-U

mini-U is designed as a shared national digital utility and can be adopted by a wide range of government stakeholders involved in citizen communication, service delivery, and public information dissemination. Its scope spans across administrative levels and functional domains, ensuring uniformity and efficiency in official digital communication.

- Central Ministries and Departments
- State Governments
- District Administrations
- NIC-developed portals and services
- Government missions and campaigns

Conclusion

mini-U exemplifies how small, well-governed digital utilities can deliver large-scale impact in e-Governance. By reducing communication costs, improving citizen experience, enabling durable QR codes, and ensuring secure URL management, mini-U strengthens the efficiency, trust, and scalability of government digital services. For any government initiative communicating at scale, mini-U is a simple solution with strategic value.

Contact for more details

State Informatics Officer
NIC Madhya Pradesh State Centre
'C' & 'D' Wing, First Floor, Satpura Bhawan
Bhopal, Madhya Pradesh – 462004
Email: sio-mp@nic.in, Phone: 0755-2551447/ 0755-2551265

Gov.in Secure Intranet

An AI-Powered Secure Digital Platform for Government

Edited by **MOHAN DAS VISWAM**

The increasing scale and complexity of government operations require digital platforms that are not only secure but also capable of actively supporting administrative decision-making. Gov.in Secure Intranet is a Government-to-Government (G2G) digital platform developed by NIC under MeitY to address this need.

Conceived as a secure single gateway, the platform enables authenticated government officials to access multiple applications required for daily administrative operations through a unified interface. By embedding advanced AI capabilities—particularly agentic AI—Gov.in Secure Intranet represents a transition from traditional e-government portals to intelligent digital workspaces that actively assist officials in executing tasks and achieving outcomes.

Dr. Rajesh Kumar Pathak
Dy. Director General & HoG
rkpathak@nic.in

Dr. Om Pradyumana Gupta
Technical Director & HoD
op.gupta@nic.in

Dr. Ritesh Kumar Dwivedi
Scientist - D
ritesh.dwivedi@nic.in

Misha Kapoor
Scientist - D
misha.kapoor@nic.in

Gov.in Secure Intranet is a G2G digital platform developed by NIC under MeitY to support day-to-day governance through a unified, role-based interface. Integrated with Parichay SSO, it enables access to multiple applications, task and meeting management, automated governance artifacts, and executive dashboards. Powered by agentic AI, the platform proactively assists officials in scheduling, documentation, analytics, and decision-making, enhancing efficiency, accountability, and outcomes in administrative workflows.

Platform Overview & Adoption

Access to Gov.in Secure Intranet (https://govintranet.gov.in/) is strictly controlled through Parichay Single Sign-On (SSO), ensuring secure, role-based, and auditable access across devices.

As of date, the platform has achieved substantial operational scale, with:

- Over 38,000 users onboarded
- Adoption across 22 Ministries and Departments
- 42,156 meetings, 8,155 tasks, 2,567 communications, and 447 goals managed through the platform

These metrics indicate that the platform is not a pilot or auxiliary system but is actively embedded in routine governance workflows.

Core Functional Capabilities

Integrated Calendar, Meetings, and Task Management

Gov.in Secure Intranet provides integrated tools that allow officials to:

- Plan meetings, events, tours, and assignments
- Automatically generate virtual meeting links across approved platforms (BharatVC, Google Meet, Webex, CDOTmeet, MS Teams, etc.)
- Delegate and track tasks with defined timelines and accountability
- Receive meeting invitations, notifications, and reminders via email, SMS, and SANDES

> Gov.in Secure Intranet has transformed the way we handle day-to-day government operations by bringing multiple services, tasks, and collaboration tools onto a single secure platform. The seamless access to applications, structured task tracking, and built-in coordination features help officials stay organized, accountable, and responsive. By reducing dependency on multiple logins and scattered systems, this NIC developed platform, saves valuable time and supports faster, more informed decision-making. Overall, it is a reliable and productivity-enhancing digital workspace for government officials.

Shri Sanket S Bhondve, IAS
Joint Secretary, MeitY

The engagement management module ensures proactive coordination, reducing reliance on manual follow-ups and fragmented communication channels.

Automated Governance Artifacts

The platform automatically generates key

administrative artifacts, including:

- Virtual meeting links
- Minutes of Meeting with digital signatures
- Action points linked to tasks
- Visitor passes through Swagatam for external participants

By converting administrative intent into authenticated, traceable outputs, the platform shortens the cycle from deliberation to execution.

Unified Executive Dashboard

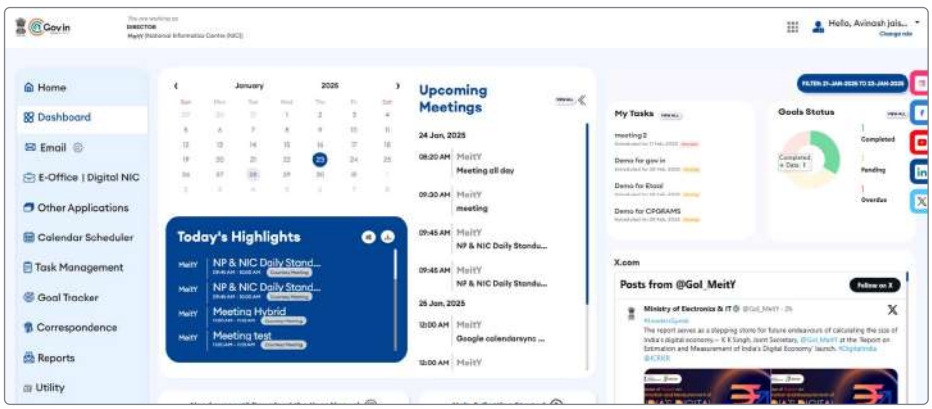
Gov.in Secure Intranet includes a unified executive dashboard that consolidates real-time pendency and status information from key government systems, including: CPGRAMS, RTI Portal, LIMBS, VIP References, APMS, 10% GBS of MDoNER through Web API.

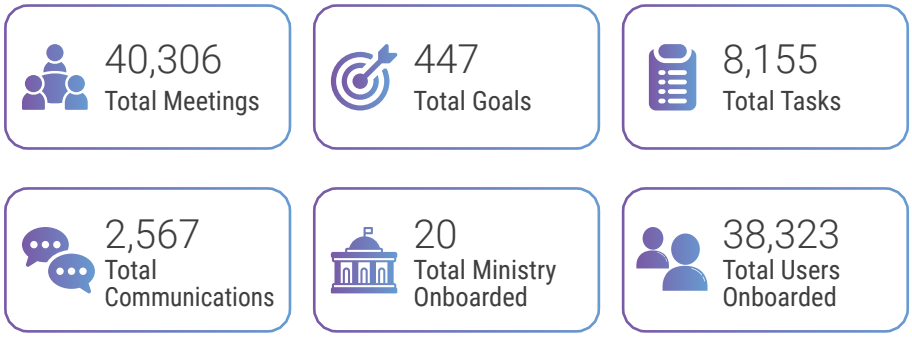
> The task management features in 'Gov.in Secure Intranet' is an useful tool to help MOT officials to be focused and take action as per the target assigned. Innovative feature to improve the productivity and allows MOT officials to manage the delegated tasks with ease.

Shri Ajay Gupta
Joint Secretary, Ministry of Textiles

In addition to operational metrics, the dashboard incorporates analytical features such as media sentiment monitoring, enabling departments to assess the volume and tone of public and media references in near real time. This enhances situational awareness and supports informed decision-making at senior levels.

▼ Fig 9.1 : Gov.in Dashboard





▲ Fig 9.2 Gov.in Secure Intranet Stats

Agentic AI in Gov.in Secure Intranet

From Automation to Agentic AI

Traditional automation systems execute predefined tasks when triggered. Gov.in Secure Intranet introduces agentic AI, where AI systems act proactively on behalf of users to execute goal-oriented workflows rather than isolated actions.

Agentic AI within the platform is characterized by:

- Understanding user intent
- Coordinating multiple actions autonomously
- Operating within institutional rules and security boundaries
- Maintaining transparency and human oversight

This approach reduces cognitive and administrative load while preserving accountability.

Characteristics of Agentic AI in the Platform

The agentic AI capabilities within Gov.in Secure Intranet exhibit the following characteristics:

- **Goal Awareness:** The system understands high-level user intent (e.g., "schedule a meeting") rather than requiring step-by-step instructions
- **Multi-Step Execution:** Once intent is established, the AI coordinates several actions—such as checking availability, creating meeting links, and sending invitations
- **Context Sensitivity:** Actions are performed in the context of participants, timelines, and approved platforms
- **Transparency and Control:** AI-assisted actions are clearly marked, ensuring traceability and human-in-the-loop governance

This approach allows AI to enhance efficiency while preserving administrative accountability.

Gov AI Assistant (Smart Scheduler)

The Gov AI Assistant, also referred to as the Smart Scheduler, exemplifies agentic AI in practice. When a user initiates a meeting request, the assistant:

- Evaluates participant availability
- Suggests optimal time slots
- Automatically creates virtual meeting links
- Sends invitations to participants

By executing multiple coordinated actions to achieve a single objective, the Smart Scheduler demonstrates autonomous, goal-driven behavior. Importantly, AI-assisted actions within the calendar are explicitly identified, ensuring transparency.

Automated Minutes of Meeting as an Agent-Supported Workflow

Gov.in Secure Intranet supports automated generation of Minutes of Meeting (MoM), further extending agentic assistance beyond scheduling. The system:

- Converts meeting audio or notes into text
- Produces concise summaries
- Highlights key discussions, decisions, and action points

This capability reduces post-meeting documentation effort while ensuring consistency and accuracy in official records. It also shortens the time between discussion and action, strengthening administrative follow-through.

Intelligent Document and Knowledge Management

Document Intelligence and Advanced Search

Gov.in Secure Intranet provides AI-based document summarization and discovery through:

- Semantic search
- Phonetic search resilient to spelling variations
- PDF and image content search
- Word-cloud-based content insights

These capabilities enable faster retrieval and comprehension of information across large repositories of official documents.

Multilingual Translation & Transcription

Through secure API-based integration with Bhashini, the Government of India's language technology platform, Gov.in Secure Intranet enables:

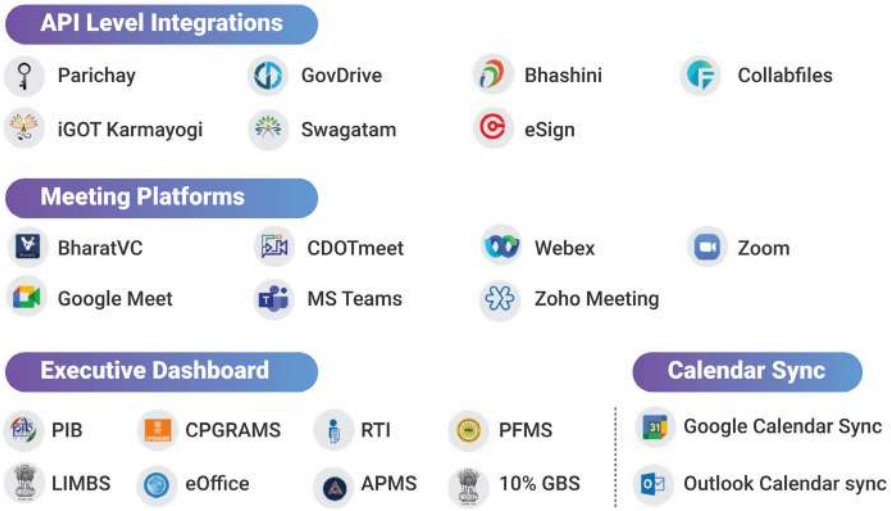
- Multilingual translation
- Transcription across Indian languages

This ensures effective communication and accessibility in a linguistically diverse administrative environment.

ML and AI Techniques Supporting the Platform

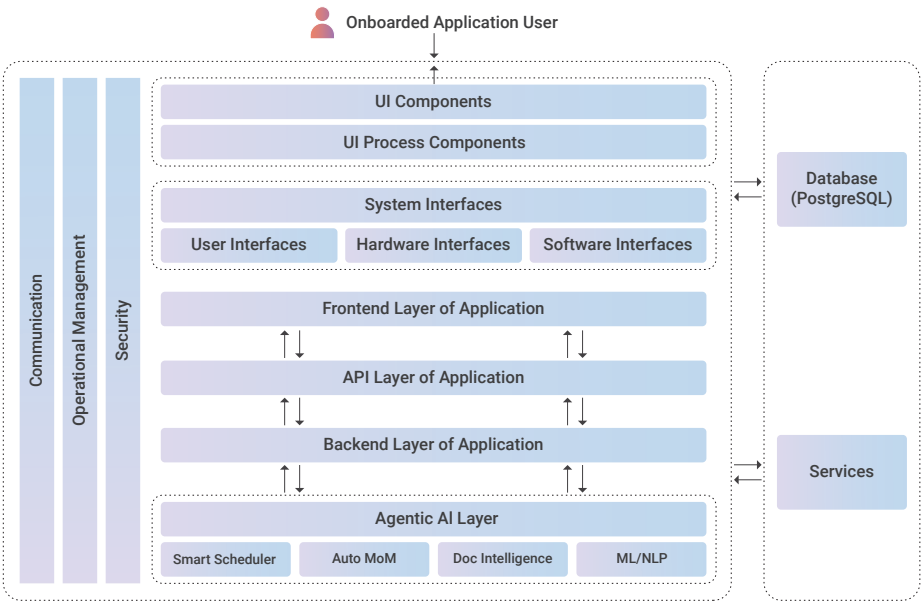
The intelligent features of Gov.in Secure Intranet are powered by modern machine learning (ML) and natural language processing (NLP) techniques.

- **Document and Meeting Summarization:** AI models identify key points and generate concise abstracts from long documents and meeting transcripts, allowing officials to grasp essential information efficiently
- **Semantic and Phonetic Search:** Semantic similarity matching combined with phonetic techniques ensures relevant results even when queries contain spelling differences or linguistic variations
- **Speech-to-Text Processing:** Speech recognition technology converts spoken discussions into text, which is then processed for summarization and action item extraction
- **Sentiment Analysis:** The executive dashboard incorporates sentiment analysis of media content, helping decision-makers understand public and media perception of policies and initiatives



▲ Fig 9.4 : Gov.in Secure Intranet Integrations

▼ Fig 9.3 **Gov.in Secure Intranet Architecture**



Governance Impact & Outcomes

The scale of meetings, tasks, communications, and goals managed through Gov.in Secure Intranet highlights a shift in how governance workflows are executed:

- Meetings are increasingly linked to tasks and outcomes
- Communication noise is reduced through structured artifacts
- Senior leadership gains real-time situational awareness
- AI augments execution without displacing human authority

At this scale, agentic AI support is not a convenience feature but a necessity for managing administrative complexity.

Conclusion

Gov.in Secure Intranet represents a significant evolution in internal digital governance. By integrating secure infrastructure with AI-enabled, agentic capabilities, the platform moves beyond static portals and rule-based automation toward goal-driven digital assistance.

Rather than merely presenting information, the system actively processes inputs, supports decisions, and executes tasks under human oversight. In doing so, Gov.in Secure Intranet positions itself as a foundational pillar of India's next-generation digital governance ecosystem—enhancing efficiency, responsiveness, and administrative outcomes.

Contact for more details

Head of Department
MeitY Projects Division
International Cooperation (IC) Division
NIC HQ, A-Block, CGO Complex
Lodhi Road, New Delhi - 110003
Email: hod-icd@nic.in, Phone: 011-24305524

Digital Trust

The Cornerstone of Secure and Inclusive e-Governance

Edited by **MOHAN DAS VISWAM**

In a country as vast and diverse as India, trust has always been the invisible bridge between people and institutions. In the digital age, that bridge has a new name—digital trust.

It is no longer a by-product of efficient governance; it is the foundation on which all digital interactions stand. Without trust, even the most advanced platforms struggle to connect with citizens. With it, a simple click becomes an act of confidence—a silent vote in favour of governance that listens, protects, and delivers.

Digital trust is what allows a villager in Bundelkhand to open a DigiLocker account without fear, a student in Kashmir to apply for scholarships online, and a patient in Pune to share medical records securely with a doctor miles away. It is the quiet assurance that technology will act not merely as a tool, but as a guardian of one's rights.

e-Governance: The Journey from Access to Assurance

e-Governance in India began with a promise—to make governance efficient, accountable, and accessible. Over the past decade, that promise has evolved into a practice through the Digital India initiative, launched in 2015.

Platforms such as Aadhaar, UMANG, DigiLocker, e-Courts, and MyGov have redefined public service delivery. The e-Kranti mission, with its mobile-first and cloud-first approach, has brought government services to the citizen's fingertips. Initiatives like BHIM and UPI have made digital payments a part of daily life, empowering millions and advancing financial inclusion.

India today ranks among the world's top nations in the UN e-Government Development Index—proof that digital governance has moved beyond convenience to become a catalyst for social equity. Yet challenges remain: cyber threats, limited digital literacy, and connectivity gaps in remote regions. The solution to these challenges does not lie in technology alone—it lies in trust. Trust that systems are secure, data is respected, and every citizen is seen.

Savita Bhatnagar
Sr. Technical Director
savita.bhatnagar@nic.in

Digital trust is the foundation of India's e-Governance revolution. It ensures that every digital interaction—whether in healthcare, finance, or land management—is secure, transparent, and ethical. By integrating strong cybersecurity, privacy protection, and accountability frameworks, the government builds confidence among citizens and institutions alike. As emerging technologies like AI and blockchain reshape governance, trust will remain the true measure of progress. A future-ready digital India will not be defined by the speed of its systems, but by the faith its citizens place in them—the quiet assurance that technology serves with integrity.

Defining Digital Trust

The World Economic Forum defines digital trust as the expectation that digital technologies and service providers will act responsibly, protect stakeholders' interests, and uphold societal values. In simpler words, it is the belief that the digital world will not betray its users.

Standards such as ISO/IEC 38505 advocate for ethical and accountable data management, while frameworks like India's Digital Personal Data Protection Act (DPDP), 2023, strengthen the governance of personal information.

For institutions, digital trust means more than compliance—it means character. For citizens, it means assurance that their identity, information, and dignity are protected.

Pillars of Digital Trust

Security

The foundation of trust begins with protection. Strong encryption, secure storage, and multi-factor authentication ensure that citizen data remains untouchable. Continuous monitoring and real-time threat response form the government's digital shield against breaches.

Data Protection

Citizens must have confidence that their data is handled with care and consent. Responsible data retention and transparent policies prevent misuse, turning privacy from a privilege into a right.

Reliability

A citizen's trust grows when services do not fail. Reliable systems—those that do not crash under load, that deliver certificates, payments, and reports on time—build belief in governance itself.

Fair User Interaction

Digital services must be fair, unbiased, and inclusive. As artificial intelligence takes greater roles in decision-making, the algorithms that serve governance must remain accountable to human ethics.

Transparency

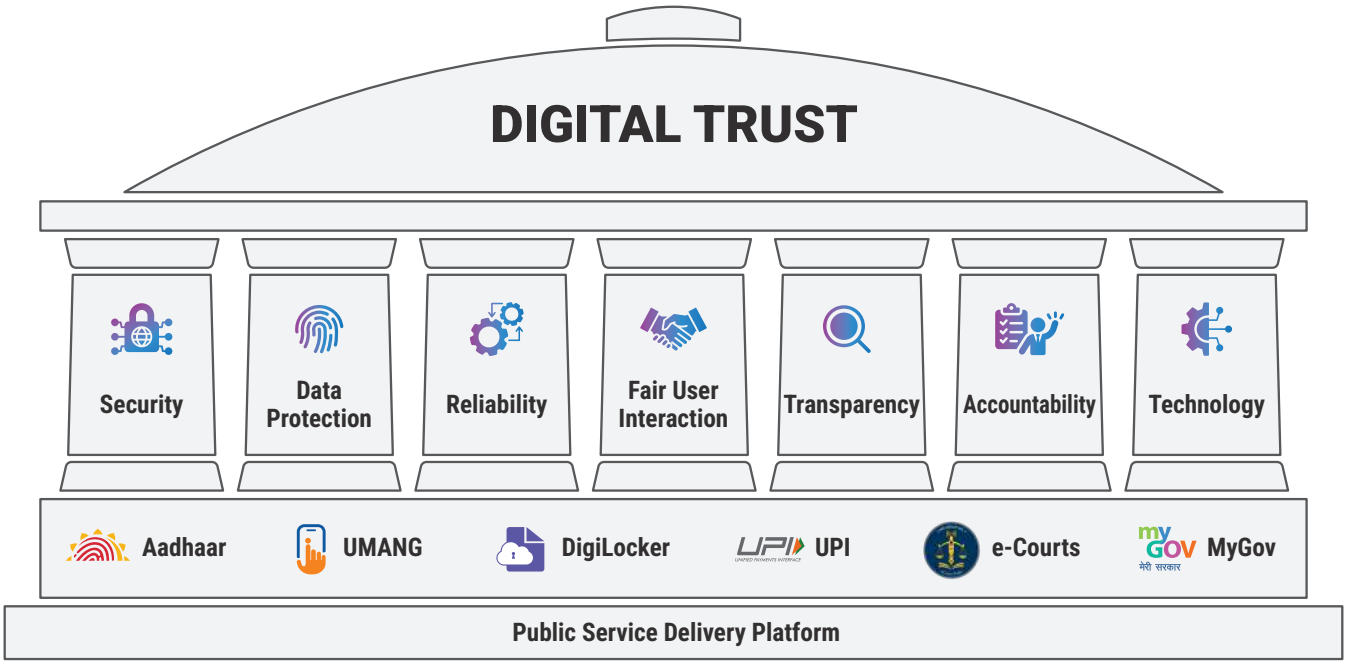
When citizens understand how their data is used, mistrust fades. Open dashboards, transparent policies, and clear communication transform skepticism into confidence.

Accountability

A trusted digital government owns its errors as much as its successes. Defined accountability, honest reporting, and ethical remediation fortify the credibility of institutions.

Technology

Emerging technologies—blockchain, zero-trust security, AI-driven threat detection, and decentralized identity—are shaping the future of governance. Tomorrow's citizens will not just use digital systems; they will trust them because those systems are verifiable, explainable, and secure by design.



Policy & Institutional Enablers

India's policy landscape is steadily aligning with the ethics of digital trust. The DPDP Act (2023) gives citizens control over personal data. The National Informatics Centre (NIC), through its secure data centres and cloud services, upholds the integrity of millions of digital transactions each day.

What is needed now is a Digital Trust Charter—an institutional commitment across ministries to ensure that every government service, from healthcare to education, is built on principles of privacy, transparency, and inclusivity. This charter would signal not just technological progress, but moral maturity in governance.

Trust in Action: Use Cases

Healthcare: Where Data Meets Dignity

In healthcare, digital trust is not just about security—it is about dignity. Encrypted health records, blockchain-based e-consent systems, and zero-trust architectures ensure that every patient's information remains confidential, traceable, and tamper-proof. Integrated platforms like DigiLocker and the Ayushman Bharat Digital Mission give citizens control over their medical data—allowing them to decide what to share, when to share, and with whom.

When a patient uploads a report or retrieves an e-prescription, it is more than a digital act—it is a gesture of faith in the system. Ethical AI diagnostics and secure telemedicine networks extend care to remote corners of the country while upholding privacy and consent. Together, these systems create a patient-centric ecosystem where technology safeguards both health and humanity, proving that trust can heal as powerfully as medicine itself.

Land Records Management: Trust Rooted in Transparency

For millions of Indians, land ownership has long carried both pride and peril. Blockchain registries and tamper-proof digital ledgers are now rewriting this story—bringing transparency, permanence, and fairness to property records. Linked with GIS mapping, AI-based verification, and secure cloud storage, these systems prevent fraud, reduce disputes, and restore confidence in land governance.

Today, a farmer in Bihar or a buyer in Bengaluru can verify ownership with a single click—free from middlemen, opacity, and manipulation. Each verified record becomes a promise kept. By anchoring every transaction in verifiable truth, digital trust is turning land administration into a transparent, accessible, and corruption-free system—a foundation where citizens no longer just own land, but believe in the integrity of ownership itself.

Way Forward

The next decade of e-Governance will not be defined by how fast services are delivered, but by how deeply they are trusted. Speed is technical. Trust is human.

A trusted digital government will deliver faster, more personalized services while respecting privacy and ethics. It will transform governance from a system of control to a culture of confidence.

As custodians of this transformation, we—technologists, policymakers, and citizens—must remember: digital trust is not built once; it is built every day.

Each secure login, each transparent process, each honest response—these are the small acts that will define India's digital democracy. And when trust becomes the default setting of governance, technology will not merely serve people—it will belong to them.

Contact for more details

Savita Bhatnagar
Sr. Technical Director
Software Development Unit, NIC Pune
114, Ganeshkhind Rd, ICS Colony, Ashok Nagar
Pune, Maharashtra 411007
Email: savita.bhatnagar@nic.in, Phone: 011-243038576

Dyslexia-Friendly UI/UX

Design Standards and Engineering Guidance for Inclusive Digital Governance

Edited by **C. J. ANTONY**

About 5–15% of the global population experiences dyslexia, a neurodevelopmental difference affecting the processing of written language. Although not linked to intelligence or comprehension deficits, dyslexia is associated with differences in orthographic decoding, working memory, and visual attention. In text-intensive digital environments, these differences can translate into increased reading effort, slower processing, and greater susceptibility to error under visually dense or structurally unstable conditions.

As public services migrate to digital platforms, the impact of such design barriers becomes systemic. Government portals, benefit systems, and transactional forms are often cognitively demanding. Even modest increases in reading difficulty can lead to higher error rates, repeated submissions, and reduced service access at scale.

While standards such as WCAG 2.1 address technical accessibility requirements, compliance alone does not guarantee cognitive usability for dyslexic users. Interfaces may meet formal criteria yet still impose excessive decoding effort or memory dependence.

To address this gap, this article introduces the Cognitive Friction Model, a systems-level framework that conceptualizes dyslexia-related interface barriers as accumulative sources of cognitive strain. By translating findings from cognitive science into operational UI/UX standards, the model provides a structured approach to reducing reading-related friction in large-scale digital systems.

Technical and design standards for dyslexia-friendly UI/UX in digital government services are presented, grounded in cognitive science and aligned with WCAG 2.1 AA. Emphasis is placed on typography, layout, color, and interaction design choices that reduce cognitive load and improve readability. The guidance extends beyond visual design to implementation, content authoring, and user testing, ensuring long-term accessibility, consistency across platforms, and resilience against accessibility regressions as systems scale. Dyslexia-inclusive design is positioned as a core requirement for effective, equitable, and trustworthy digital governance.

Conceptual Framework: The Cognitive Friction Model

Dyslexia-inclusive UI/UX design can be understood through the lens of cognitive friction—the cumulative mental effort required to decode, interpret, and act upon written information within a digital interface. While all users experience some level of cognitive load, users with dyslexia encounter disproportionate friction when visual, structural, and interactional demands exceed their processing comfort threshold.

The Cognitive Friction Model proposes that task difficulty in digital systems is not determined solely by content complexity, but by the interaction between four interdependent variables:

Cognitive Friction = Visual Crowding + Memory Demand + Layout Instability + Interaction Ambiguity

Each variable contributes independently and multiplicatively to decoding effort.

Visual Crowding

Visual crowding refers to the difficulty in identifying individual letters or words when spacing, contrast, or typographic clarity is insufficient. Research in visual perception demonstrates that closely packed visual stimuli impair letter recognition, particularly in peripheral vision. In digital interfaces, crowding is amplified by:

- Tight line spacing
- Narrow letter spacing
- Long line lengths
- Justified text with irregular spacing
- Overuse of visual emphasis

Reducing crowding through controlled spacing, moderate line lengths, and stable typography directly lowers perceptual strain.

Memory Demand

Memory demand arises when users must retain instructions, eligibility criteria, or previous inputs while performing subsequent tasks. Dyslexia is frequently associated with reduced working-memory efficiency for verbal information, increasing the likelihood of task breakdown when interfaces rely on recall rather than recognition.

Memory demand increases when:

- Instructions are separated from input fields
- Multi-step forms lack visible progress markers
- Error messages require interpretation without guidance
- Users must re-enter information after submission failures

Design strategies that favor recognition over recall—such as inline hints, persistent labels, and step indicators—reduce memory-dependent friction.

Mohan Das Viswam
Dy. Director General & HoG
mohandas@nic.in

Layout Instability

Layout instability occurs when visual structure shifts unpredictably across screens or interaction states. Changes in heading styles, button placement, alignment, or spacing require users to recalibrate their visual scanning patterns.

For dyslexic users, repeated recalibration increases orientation errors and rereading frequency. Stable layout templates, consistent navigation zones, and standardized component systems reduce this instability.

Interaction Ambiguity

Interaction ambiguity emerges when system feedback, instructions, or control behavior is unclear. Ambiguous error messages, unclear required fields, and inconsistent affordances create uncertainty, increasing cognitive effort and emotional stress.

Clear, immediate, and actionable feedback reduces ambiguity and strengthens user confidence during task execution.

Friction Accumulation and Threshold Effects

Importantly, cognitive friction is cumulative. A system may meet accessibility guidelines in isolation (e.g., compliant contrast ratios) while still generating high friction when multiple minor stressors coexist. For example:

- Slightly dense text
- Moderate memory reliance
- Mild layout inconsistency
- Generic error messaging

Individually manageable, these factors together may push dyslexic users beyond a functional threshold, resulting in task abandonment.

Thus, dyslexia-inclusive design requires systemic optimization rather than isolated compliance adjustments.

Design Implications

The Cognitive Friction Model reframes dyslexia-inclusive design as a problem of friction minimization rather than accommodation. Effective UI/UX engineering must:

- Reduce visual crowding
- Minimize memory dependence
- Ensure structural stability
- Eliminate interaction ambiguity

By treating cognitive friction as a measurable systems variable, institutions can evaluate digital platforms not merely for compliance, but for operational readability and task resilience.

Cognitive Load Reduction

Digital interfaces impose cognitive load through visual complexity, information density, and memory dependence. Users with dyslexia are disproportionately affected when interfaces require sustained decoding effort or simultaneous processing of multiple textual elements. Reducing cognitive load through controlled spacing, clear hierarchy, consistent patterns, and linear task flows directly improves comprehension and task accuracy.

From an engineering perspective, cognitive load reduction is not a subjective design preference but a measurable usability objective. Interfaces that minimize unnecessary decoding effort reduce error frequency, task abandonment, and reliance on external assistance—outcomes that are critical for high-volume public service platforms.

Perceptual Stability and Predictability

For users with dyslexia, perceptual stability—the consistency and predictability of visual patterns over time—is essential for effective reading and task execution. Frequent changes in layout, typography, spacing, or visual emphasis increase decoding effort and cognitive fatigue by forcing continuous reorientation.

Predictable interfaces reduce the need for repeated visual recalibration. When headings, navigation, controls, and content structures behave consistently across screens, users can rely on learned patterns rather than reinterpreting information at each step. This is especially critical in transactional government services involving multi-step workflows and time or stress constraints.

From an engineering perspective, perceptual stability is achieved through consistent layout templates, standardized typographic scales, and uniform interaction patterns. These practices support dyslexic users while also improving system learnability and reducing user error across the broader population.

Typography: Precision Over Aesthetics

Typography is the primary interface through which users engage with written content. For individuals with dyslexia, typographic decisions directly affect reading speed, comprehension accuracy, and cognitive fatigue. In contrast to brand- or aesthetics-driven approaches, dyslexia-friendly typography prioritizes perceptual clarity, consistency, and symbol differentiation.

Every typographic parameter—font family, size, spacing, and emphasis—must be selected to minimize visual ambiguity and decoding effort. In transactional and information-dense public services, typographic clarity is a functional requirement and must not be treated as a stylistic preference.

Font Selection

- **Font family:** Use clear, widely supported sans-serif fonts such as Arial, Open Sans, Verdana, or Helvetica to ensure consistency across devices and operating systems
- **Glyph differentiation:** Letterforms must clearly distinguish commonly confused characters (e.g., b/d, p/q, I/l/1, O/0). Fonts with uniform stroke widths and open counters are preferred
- **Avoid:** Decorative, cursive, script, condensed, or italicized fonts for body text, as they introduce unnecessary visual complexity

Fonts selected for dyslexia-friendly interfaces should prioritize functional clarity over stylistic variation, reducing the likelihood of letter misidentification and rereading.

Font Size and Scaling

- **Minimum body text size:** 16–18 px for desktop and responsive web interfaces
- **Responsive scaling:** Text size must scale proportionally across viewports without truncation, overlap, or loss of hierarchy
- **Zoom compliance:** Content must remain readable, usable, and layout-stable up to 200% zoom, in accordance with WCAG 1.4.4

The Cognitive Friction Formula

Task difficulty (symbol) is not merely content complexity, but a function of cumulative environmental stressors:

$$\text{Cognitive Friction} = V_c + M_d + L_i + I_a$$

Where:

- V_c: Visual Crowding (Typographic density)
- M_d: Memory Demand (Recall vs. Recognition)
- L_i: Layout Instability (Structural shifts)
- I_a: Interaction Ambiguity (Unclear feedback)

Technical Checklist for Engineering Teams

(For quick reference during Sprint reviews)

Category	Engineering Standard
Typography	Min 16px; Sans-serif; No forced Justification
Spacing	Line height ≥ 1.5; Paragraph spacing 2.0
Forms	Persistent labels (no disappearing placeholders)
Navigation	Sticky/Predictable locations; no layout shifts (CLS)
Color	Contrast ≥ 4.5:1; avoid pure #000 on #FFF

Appropriate sizing and robust scaling behavior reduce visual crowding, support sustained reading, and prevent users from losing context when magnifying content.

Spacing Parameters

- **Line height:** Minimum 1.5 × the font size to prevent line collision and tracking errors
- **Letter spacing:** Approximately +0.05 em to improve character separation without disrupting word recognition
- **Word spacing:** 30–40% greater than default to enhance word boundary detection

Adequate spacing reduces visual interference, supports smoother eye movement, and improves reading fluency, particularly in longer text passages.

Typographic Governance

Typography used for body text in transactional or informational services must not be overridden by brand typefaces if they compromise legibility or spacing requirements. Brand expression should be limited to headings, logos, and non-critical interface elements.

From a governance perspective, typographic standards should be centrally defined and consistently enforced across platforms to prevent accessibility regressions during redesigns or vendor-led implementations.

Text Emphasis and Highlighting

Text emphasis must be used sparingly and consistently to avoid visual overload. For users with dyslexia, excessive or inconsistent emphasis increases visual noise and disrupts reading flow.

- **Preferred emphasis:** Use bold text to highlight key terms, labels, or critical information
- **Avoid:** Italics for emphasis in body text, as slanted letterforms reduce character recognition
- **Underlining:** Reserve exclusively for hyperlinks; do not use for emphasis
- **Capitalization**: Avoid all-caps text for sentences or paragraphs; it reduces word-shape recognition and slows reading

When highlighting important information, emphasis should be applied at the word or short-phrase level, not across full sentences or blocks of text. Consistent emphasis rules support visual stability, improve scanability, and reduce cognitive fatigue.

Layout and Structural Hierarchy

Beyond individual typographic choices, the spatial organization of content plays a decisive role in readability and task efficiency. Users with dyslexia benefit from layouts that are linear, predictable, and visually calm. Dense text blocks, inconsistent alignment, or weak structural cues increase orientation errors, rereading, and cognitive fatigue.

A disciplined layout strategy enables users to scan, locate, and process information with minimal effort. In large-scale digital governance systems, consistent structural hierarchy is essential for reducing user errors and ensuring reliable service completion.

Text Alignment and Line Length

- **Alignment:** Left-aligned (ragged right) text for all body content.
- **Line length:** Optimal range of 50–60 characters per line; maximum 80 characters.

Justified text creates irregular spacing patterns ("rivers of white space") that interfere with eye tracking and disrupt reading flow, particularly for users with dyslexia.

Information Chunking and Content Segmentation

- Use short paragraphs (ideally 3–5 lines; avoid exceeding 7 lines)
- Prefer bullet points and numbered lists over dense paragraphs
- Break complex instructions or workflows into discrete, clearly labeled steps
- Chunking supports sequential processing, reduces memory load, and improves navigability, aligning with WCAG 2.4 (Navigable)

Hierarchical Headings and Visual Structure

- Enforce consistent use of heading levels (H1, H2, H3) without skipping levels
- Maintain uniform visual treatment for headings of the same level, including size, weight, spacing, and alignment
- Ensure headings accurately describe the content that follows

A clear and consistent heading hierarchy allows users to scan efficiently, build a mental map of the content, and return to sections without losing context.

Layout Predictability and Reuse

Layouts should follow consistent structural patterns across pages and modules. Navigation placement, content ordering, and control positioning must remain stable wherever possible.

From an engineering and governance perspective, layout predictability is achieved through reusable templates and standardized components. These practices reduce user disorientation, shorten learning curves, and lower the risk of interaction errors—benefiting dyslexic users and the wider population alike.

Color and Contrast: Ensuring Visual Stability

Color and contrast decisions influence not only aesthetic quality but also perceptual comfort and reading stability. For many users with dyslexia, extreme contrast, glare, or visually noisy backgrounds can cause text to appear unstable, shimmering, or difficult to sustain focus on over extended periods.

Effective color systems must therefore balance accessibility compliance with visual comfort, ensuring sufficient contrast for readability without introducing visual strain.

Contrast Standards

- **Minimum requirement:** WCAG 2.1 AA — 4.5:1 contrast ratio for normal text and 3:1 for large text
- **Recommended for critical content:** WCAG AAA — 7:1 contrast ratio for essential transactional or instructional text
- **Non-text elements:** Interactive components and focus indicators must meet minimum contrast requirements under WCAG 1.4.11

Higher contrast beyond accessibility thresholds does not necessarily improve readability and may reduce visual comfort. The objective is clarity, not intensity.

Recommended Color Combinations

- **Text:** Dark grey, charcoal, or deep navy (e.g., #212121, #1A1A1A, #1F2A44)
- **Background:** Off-white, cream, or light neutral tones (e.g., #F8F8F8, #FEFAF0, #F5F5F5)
- **Interactive states:** Use color combined with underline, iconography, or shape changes—never color alone

Slightly softened foreground and background combinations reduce glare while maintaining readability.

Background and Visual Noise Avoidance

- Avoid patterned, textured, gradient, or image-based backgrounds behind text
- Do not place body text over photographs or moving visual elements
- Avoid rapidly flashing or animated color transitions

Stable, uniform backgrounds support sustained attention and reduce perceptual interference during reading.

Redundant Visual Coding

Color must not be the sole means of conveying meaning. Error states, warnings, confirmations, and required fields must combine:

- Text labels
- Iconography or symbols
- Color differentiation

Redundant coding ensures comprehension even when color perception, screen quality, or environmental lighting conditions are suboptimal. This aligns with WCAG 1.4.1 (Use of Color).

Interaction Design and UX Engineering

While visual presentation governs readability, interaction design determines task completion and service reliability. Users with dyslexia are more vulnerable to breakdowns in text-heavy forms, ambiguous instructions, memory-dependent workflows, and unclear feedback states.

UX engineering must therefore minimize memory burden, prevent avoidable errors, and provide explicit guidance at each stage of user interaction. In high-volume public platforms, interaction clarity directly affects service completion rates, grievance load, and administrative efficiency.

Form and Input Design

- Minimize reliance on free-text input wherever structured alternatives are feasible
- Prefer radio buttons, checkboxes, dropdown menus, and auto-complete fields
- Provide inline hints, examples, and formatting guidance before submission
- Clearly label required and optional fields

Structured inputs reduce spelling-related errors, improve completion speed, and decrease task abandonment.

Error Handling and Feedback

Error messages must be:

- **Immediate** — displayed adjacent to the relevant field
- **Specific** — clearly explain what is incorrect and how to correct it
- **Actionable** — provide corrective examples where appropriate.
- Redundantly coded — combine text, color, and iconography

Avoid generic system messages such as "Invalid input" or "Submission failed."

Clear error communication reduces frustration, repeat attempts, and escalation to offline support channels. (Aligned with WCAG 3.3.1 and 3.3.3)

Sequential Task Flow and Progress Indication

- Break complex services into clearly defined, sequential steps
- Provide visible progress indicators (e.g., Step 2 of 5)
- Allow users to review and edit prior steps before final submission

Sequential structuring reduces disorientation and perceived task complexity, especially in multi-page government forms or eligibility workflows.

Instructional Clarity and Microcopy

- Use concise, direct language
- Avoid bureaucratic phrasing or compound sentences
- Present one instruction per sentence wherever possible

Instructional clarity reduces rereading and misinterpretation, improving task efficiency across literacy levels.

Alternative Access Modes

- Offer a built-in Dyslexia-Friendly Mode with adjusted spacing and simplified layout options where feasible
- Integrate high-quality text-to-speech (TTS) functionality for content-heavy sections
- Ensure compatibility with screen readers and assistive technologies

Multimodal access supports comprehension, reduces fatigue, and broadens equitable participation in digital governance systems.

Broader Impact and Public Value

Dyslexia-friendly UI/UX design delivers benefits that extend beyond regulatory compliance. By improving clarity, predictability, and error tolerance, these principles enhance the overall reliability and effectiveness of digital public services.

In large-scale governance systems, small usability barriers can produce disproportionate operational consequences—higher form rejection rates, repeated submissions, increased helpdesk dependency, and citizen frustration. Designing for dyslexia mitigates these risks by reducing cognitive friction at critical interaction points.

From a public administration perspective, inclusive design strengthens:

- Equitable access to essential services
- Service completion rates in transactional workflows
- Trust and perceived fairness in digital systems
- Operational efficiency through reduced support escalation

Importantly, the design measures outlined in this document benefit a broad user base, including individuals with low literacy, temporary cognitive stress, aging-related changes in processing speed, and situational constraints such as mobile use in low-visibility environments.

Inclusive design should therefore be treated as a strategic infrastructure decision, not a discretionary enhancement. Systems that are readable, predictable, and error-tolerant are more resilient, scalable, and trusted by the populations they serve.

Conclusion

Designing for dyslexia requires disciplined typography, structured layouts, perceptual stability, and interaction clarity grounded in cognitive principles. These measures are not stylistic adjustments but engineering decisions that directly influence readability, task accuracy, and service reliability.

Digital systems that reduce decoding effort and cognitive friction perform better for all users. By embedding dyslexia-inclusive standards into design systems, development practices, and governance frameworks, institutions strengthen accessibility, operational efficiency, and public trust.

Dyslexia-friendly UI/UX is not a niche accommodation—it is a marker of engineering maturity and responsible digital governance.

Contact for more details

Head of Group
User Experience Design & Technology Division
NIC HQ, 379, A-Block, CGO Complex
Lodhi Road, New Delhi - 110003
Email: hog-uxdt@nic.in, Phone: 011-24305365

Technology Update

MCP 2.0

Transforming DQL-Ready Data into AI-Ready Systems

Edited by **MOHAN DAS VISWAM**

Artificial Intelligence (AI) systems—particularly Large Language Models (LLMs)—have made remarkable advances in understanding, interpreting, and generating human language. These models are now widely deployed across domains for tasks such as information retrieval, document summarization, decision support, content generation, and conversational user interfaces. Their ability to reason over vast amounts of text and respond in natural language has significantly enhanced productivity and accessibility in both consumer and professional settings.

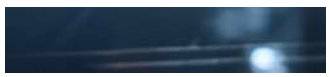
However, despite these advances, LLMs fundamentally operate as isolated computational systems. By design, they lack a native, standardized, and secure mechanism to interact directly with external tools, live databases, enterprise applications, APIs, or operational workflows. As a result, while LLMs can recommend or describe actions, they cannot reliably execute them within real-world systems without extensive external scaffolding.

This limitation severely constrains the practical deployment of AI in real-world and enterprise environments, where access to real-time data, controlled system actions, and compliance with organizational policies are critical. Existing integration approaches typically rely on custom-built connectors, bespoke middleware, or tightly coupled interfaces. These solutions are often brittle, difficult to scale across multiple models or tools, expensive to maintain, and introduce significant risks related to security, access control, auditing, and long-term governance.

Niladri Bihari Mohanty
Scientist – D
niladri.mohanty@nic.in

Nikhil Kumar
Scientific Officer/ Engineer - SB
nikhil.kumar27@nic.in

MCP is an open standard that allows AI models to securely connect with external tools, data, and systems. By replacing complex, custom integrations with a unified client–server architecture, MCP enables safe, scalable, and governed AI interactions. It transforms AI from a standalone language model into a reliable, action-capable system suitable for enterprise and mission-critical use.



The Model Context Protocol (MCP) addresses these challenges by introducing an open, standardized communication framework that enables AI models to interact with external systems in a secure, governed, and interoperable manner. By serving as a common interface between AI models and real-world tools, data sources, and workflows, MCP eliminates the need for ad-hoc integrations and enforces a clear separation between AI reasoning and system execution. This architectural approach allows AI systems to move beyond passive language understanding and evolve into reliable, action-oriented applications—capable of operating within enterprise-grade constraints while maintaining trust, security, and scalability.

The Core Problem

Understanding the N × M Problem

Before MCP, integrating AI systems with external tools suffered from a major scalability issue known as the N* × M* problem:

**N: Number of AI models (e.g., GPT, Claude, Gemini)*
**M: Number of tools or data sources (e.g., APIs, databases, CRMs, file systems)*

Each AI model required a custom integration for every external tool.

Example:

- 3 AI models × 5 tools = 15 separate integrations
- High maintenance overhead
- Increased cost
- Greater risk of errors
- Significant security exposure

MCP's Architectural Solution

MCP replaces this complexity with a 1 × M or N × 1 architecture:

- Tools implement MCP once
- Any MCP-compatible AI model can immediately use them

This approach dramatically simplifies integration, improves maintainability, and strengthens security.

What is the MCP?

MCP is an open, standardized communication protocol that enables AI models to securely interact with external systems, tools, and data sources. Built on JSON-RPC 2.0, MCP defines a consistent client–server framework through which AI applications can discover and invoke external capabilities in a controlled manner.

MCP provides a unified way to expose tools, data resources, and structured prompts to AI models, while maintaining a clear separation between AI reasoning and system execution. AI models do not directly access infrastructure or APIs; instead, all interactions are mediated through MCP servers that validate and govern each request.

By connecting AI models to authoritative, real-time data and controlled actions, MCP helps reduce unreliable outputs and enables dependable, task-oriented AI behavior. This makes MCP particularly suitable for enterprise and government environments where security, auditability, and scalability are essential.

MCP Architecture Overview

MCP Client

The MCP Client represents the AI-facing component of the Model Context Protocol. It is typically embedded within an AI application, agent framework, or LLM runtime and is responsible for managing interactions between the AI model and external systems.

Using a standardized JSON-RPC 2.0 interface, the MCP Client sends structured requests to MCP Servers to access tools, retrieve data, or execute predefined actions. It supports dynamic discovery of available capabilities, allowing the AI application to adapt at runtime without relying on hard-coded integrations.

Importantly, the MCP Client does not directly interact with infrastructure or external APIs. All real-world actions are delegated to MCP Servers, ensuring a strict separation between AI reasoning and system execution.

MCP Server

The MCP Server acts as the secure and authoritative gateway between AI models and real-world systems. It exposes well-defined and discoverable capabilities while preventing direct access to underlying infrastructure.

The server is responsible for validating requests, enforcing permissions, and executing approved actions initiated by AI models. It can encapsulate a wide range of backend systems, including APIs, databases, file systems, business logic, and internal services, and present them in a standardized, AI-ready form.

By centralizing control and execution, the MCP Server enables organizations to integrate AI into existing architectures without redesigning systems, while maintaining strong security, governance, and auditability.

Communication Layer

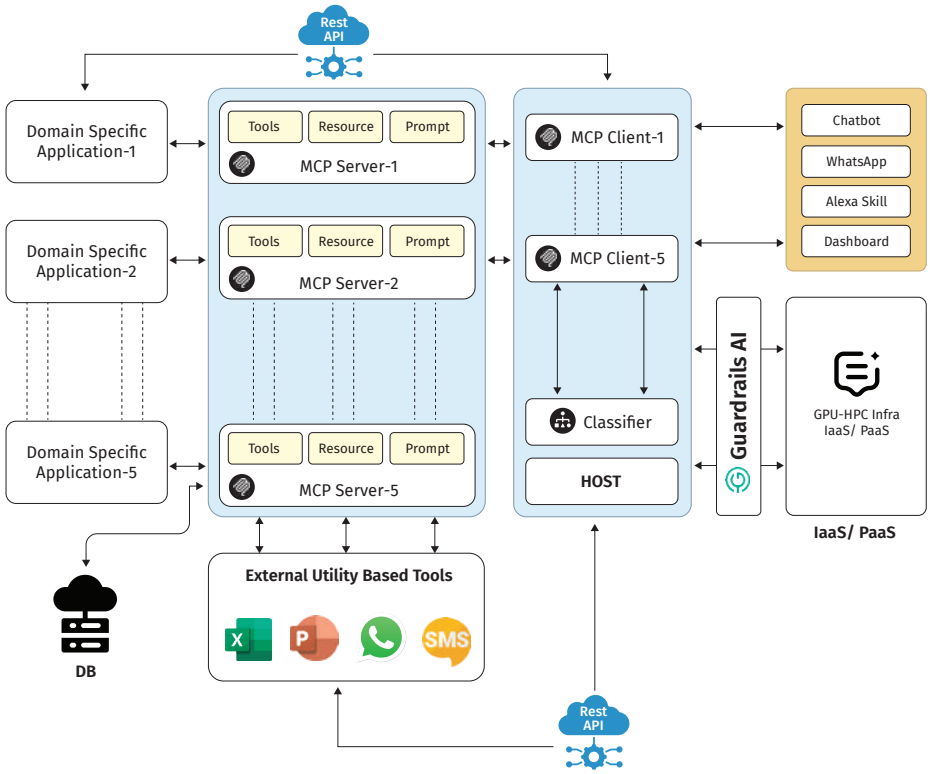
The Communication Layer forms the foundation of the Model Context Protocol and is built on JSON-RPC 2.0, a lightweight and widely adopted standard for structured communication.

This layer enables reliable, bidirectional communication between MCP Clients and Servers in a language-agnostic manner, allowing implementations across diverse platforms and programming environments. It introduces only minimal abstractions for tools, resources, and prompts, ensuring simplicity and ease of adoption.

Through its standardized and extensible design, the communication layer ensures interoperability, scalability, and long-term stability for AI-system interactions.

Security and Governance in MCP

Security is a first-class principle in the Model Context Protocol. Its key features are:



▲ Fig 11.1 **MCP Architecture Overview**

- Role-Based Access Control (RBAC)
- Capability scoping
- No direct system access by LLMs
- Server-side validation of all actions
- Auditable execution trails

At no point does the AI model directly interact with infrastructure. All access is mediated through controlled MCP interfaces, ensuring compliance and trust.

The Future of MCP

The Model Context Protocol (MCP) is emerging as a foundational infrastructure layer for next-generation AI systems, enabling the development of autonomous agents that can plan, reason, and execute tasks across multiple steps. By providing a standardized and governed interface to external tools and systems, MCP allows AI models to operate reliably within real-world environments rather than responding to isolated prompts.

MCP also enables robust multi-step reasoning, allowing AI systems to iteratively interact with data, tools, and workflows while maintaining a strict separation between reasoning and execution. This structured approach ensures controlled access to authoritative data and predictable system behavior.

At the enterprise level, MCP serves as a core building block for scalable, secure, and interoperable AI platforms. By replacing fragmented integrations with a unified protocol, it allows organizations to deploy AI across systems and vendors without compromising governance or compliance. As AI evolves from conversational chatbots to action-oriented "do-bots," MCP provides the essential infrastructure to safely connect intelligence with execution—transforming AI into a trusted, action-capable participant in real-world workflows.

Way Forward

MCP represents a decisive shift in how artificial intelligence systems engage with the real world. By resolving long-standing challenges related to integration complexity, security governance, and scalability, it establishes the foundational infrastructure needed to move beyond isolated language models. MCP elevates AI from a passive source of insight to a secure, reliable, and action-capable agent, capable of interacting with live systems, data, and workflows under well-defined controls. As AI adoption expands into mission-critical domains, MCP stands out as a key enabling standard—allowing intelligence to operate with trust, precision, and real-world impact.

Contact for more details

State Informatics Officer
NIC Odisha State Centre
Unit-IV, Sachivalaya Marg
Bhubaneswar, Odisha-751001
Email: sio-ori@nic.in

Appscape

Mobile technology has emerged as a primary tool for governments to serve their citizens. It has bypassed the need of traditional physical networks for communications and collaborations. It is also much more affordable and accessible, thus strengthening the nation through better citizen-government interaction. To further nourish this interactivity, NIC has created a repository of more than 730 mobile apps available through both the Android and iOS platforms. This issue of Appscape covers some of the more popular mobile apps launched recently. These apps belong to different sectors such as Administration, Development, Finance, Public Distribution, Health and Education.

NMBA App

The Nasha Mukt Bharat Abhiyaan (NMBA) mobile application, developed under the Ministry of Social Justice and Empowerment, is a comprehensive digital platform that strengthens India's fight against substance abuse through technology and data-driven governance. The app enables Master Volunteers across all districts to efficiently record and report real-time data on awareness campaigns, outreach programs, and community-based activities organized under the Abhiyaan. It provides an intuitive interface for uploading event details, participant counts, images, and location-specific updates, ensuring transparent, verifiable, and measurable progress tracking across the country.

Equipped with district-level dashboards and analytics, the NMBA app empowers District Administrations to monitor the scope, reach, and impact of campaigns while identifying regions that need additional focus and resources. The system fosters coordination, accountability, and scalability by connecting volunteers, local authorities, and policymakers on a unified digital network. By harnessing the power of technology for social transformation, the NMBA app converts grassroots efforts into actionable insights, promoting informed decision-making.

Prashant Kumar Mittal (hog-sje@nic.in)

For NIC apps related query, please contact

Android
Sandeep Sood
Email: sood.sandeep@nic.in | Phone: 0177-2880890

iOS
Roy Joseph
Email: roy.joseph@nic.in | Phone: 9447722682

UDISE+ GIS App

The UDISE+ GIS & Image Capture Mobile Application is an integral component of the UDISE+ ecosystem, developed by the Department of School Education and Literacy, Ministry of Education, Government of India. This application facilitates the collection of precise GIS coordinates and photographic data of all schools registered under the UDISE+ system across the country.

Designed with a user-friendly interface, the app enables schools, block, district, and state-level education officials to capture accurate location data and upload school images directly from the field. This ensures the creation of a verified, visual, and geographic database of schools nationwide.

Registered users of UDISE+ can seamlessly log in using their existing credentials, eliminating the need for a separate registration process. Once the location and images are captured by school or block users, they undergo a district-level approval process to ensure data accuracy and authenticity.

The approved GIS data and images are then published for state and national-level review, supporting decision-making, transparency, and integration with various public utility and navigation platforms, ultimately improving access to reliable information about schools across India.

Shashi Bhushan (hog-epd@nic.in)

Him Kavach

Him Kavach is a comprehensive mobile application developed as a digital companion and guide for individual house builders in Himachal Pradesh who wish to construct safe, disaster-resilient homes. Situated in the seismically active and environmentally sensitive Himalayan region, Himachal often faces earthquakes, landslides, and floods, which can severely damage houses not built with proper safety standards.

The app provides a step-by-step roadmap that empowers users to make informed choices at every stage of home construction — from selecting a safe site to understanding design principles, materials, and construction techniques required for a durable, cost-effective, and comfortable dwelling. It clearly explains the dos and don'ts to follow during each phase of construction, helping families build houses that are not only strong and adaptable but also compliant with disaster safety norms.

Additionally, Him Kavach encourages the use of locally available materials in an environmentally sustainable manner and guides builders to retain Himachal's traditional art, aesthetics, and architectural identity. By blending modern engineering knowledge with local wisdom, the app ensures that homes remain safe, sustainable, culturally rooted, and capable of withstanding the test of time and nature.

Ajay Singh Chahal (sio-hp@nic.in)

Poll Manager

Poll Manager is an intelligent and secure mobile application developed to simplify, digitize, and strengthen the election management process. Designed for use by election officers and administrators, the app enables quick response to election-related queries and ensures efficient management of polling station activities through real-time updates and monitoring.

Poll Manager employs JWT token-based authentication along with AES-GCM encryption to safeguard all data transactions. This advanced encryption ensures that sensitive voter and election data remain confidential and tamper-proof throughout the polling process.

Through its intuitive interface, election officers can record voter information, submit reports, upload polling updates, and communicate seamlessly with control rooms. Administrators can, in turn, monitor multiple polling stations in real time, identify potential issues instantly, and take timely corrective actions, ensuring smooth operations on the ground across regions with improved coordination, accountability, transparency, efficiency, and operational reliability.

With its blend of technology and transparency, PollManager empowers election teams to conduct organized, efficient, and credible elections across all levels.

Dr. Suchitra Pyarelal (sio-ker@nic.in)

BSA

The Beneficiary Satyapan App (BSA) is an Aadhaar-enabled eKYC authentication platform developed to simplify and secure the verification of beneficiaries under various Central and State Government schemes. Designed exclusively for use in India, the app ensures accurate identification and aliveness verification through Aadhaar-based biometric authentication, including face, fingerprint, and iris recognition. The application serves as a unified digital platform for Government Ministries and Departments, allowing them to authenticate beneficiaries online before delivering benefits or services under different schemes and initiatives.

Through BSA, beneficiaries can conveniently perform e-KYC verification from anywhere — even from home — using FaceRD or Biometric RD Service devices. This makes the process faster, transparent, and citizen-friendly. To use the app, users need internet connectivity and the corresponding Aadhaar FaceRD service or Biometric Device's RD service, which can be downloaded from the Google Play Store.

By integrating advanced biometric technologies with Aadhaar authentication, BSA enhances the efficiency, security, and reliability of beneficiary verification, ensuring that government benefits reach the right individuals promptly and transparently.

Sanjay Kumar Pandey (hog-asd@nic.in)

MIWB Census

The Minor Irrigation and Water Bodies Census Mobile App has been developed by the Department of Water Resources, River Development, and Ganga Rejuvenation, under the Ministry of Jal Shakti, to support the 7th Minor Irrigation and 2nd Water Bodies Census. The census is being conducted through State appointed Enumerators and Supervisors at the Block, District, and State levels.

The app enables users to efficiently collect, manage, and synchronize data on Ground Water Schemes, Surface Water Schemes, and Water Bodies at the village or ward level. It supports both online and offline data entry, ensuring that enumerators can work seamlessly even in remote regions with limited connectivity. Once the device reconnects to the internet, all data is automatically synchronized.

The mobile app also captures geo-coordinates and images of each water body or scheme using reverse GIS technology, which verifies that the enumerator is within the correct village boundary. If the enumerator is outside the boundary, the app prompts for GPS re-capture to ensure data accuracy. Additionally, the app prepopulates previous census data where LGD and census codes match, enabling smooth, accurate, and time-efficient data collection.

Seemantinee Sengupta (hog-mojs@nic.in)

Van App

The Van App has been developed by the Forest Department, Government of Bihar, as a digital solution to enhance efficiency and transparency in forest management operations. Designed specifically for departmental officials, the app serves as a comprehensive field-support tool, providing a range of services and real-time information to assist in day-to-day forestry activities.

One of the app's key features is its ability to display real-time data on the availability of various plant species, helping officials make informed decisions related to plantation, afforestation, and conservation programs.

To ensure uninterrupted usability, the Van App includes a robust offline functionality, allowing officers and staff to continue data collection and monitoring tasks even in remote forest areas with limited or no internet connectivity.

The app also offers customizable filters—such as work type, financial year, and location—to streamline data capture from the field and improve accuracy in reporting. By integrating these advanced features, the Van App empowers forest officials to record, analyze, and manage ecological data efficiently.

Ajay Kumar (sio-bih@nic.in)

Strategic Alliance to Fast-Track India's Next-Gen Defence Technologies

In a major step towards advancing self-reliance in defence technologies, the Indian Institute of Technology Madras (IIT Madras) has signed a strategic collaboration with the Indian Navy and Apollo Micro Systems Limited to accelerate the indigenous development of next-generation defence systems.

A Joint Development Memorandum of Understanding (MoU) was exchanged in the presence of Hon'ble Raksha Mantri Shri Rajnath Singh during the Indian Navy's 'Swavalamban 2025' event held in New Delhi on 25th November 2025.

This tri-partite alliance brings together the R&D expertise of IIT Madras, the operational insights of the Indian Navy, and the industrial and manufacturing capabilities of Apollo Micro Systems, establishing an integrated innovation ecosystem aligned with the 'Aatmanirbhar Bharat' vision.

Highlighting the objectives of the collaboration, Prof. P.A. Ramakrishna, Department of Aerospace Engineering, IIT Madras, said that the partnership aims to "jointly address current and emerging technological challenges of the Armed Forces" and to accelerate the transition of laboratory innovations into deployment-ready solutions tailored for national defence needs.

The collaboration will focus on key domains including advanced electronic warfare, precision guidance and navigation systems, high-energy armament systems, and emerging multi-domain technologies.

As the Research Anchor, IIT Madras will lead concept development, prototyping, and intellectual property (IP) generation in critical areas. The Directorate General of Naval Armament Inspection (DGNAI) of the Indian Navy will provide mission-critical operational inputs, define user requirements, and conduct validation and testing to ensure adherence to naval standards.

Apollo Micro Systems Limited will serve as the Technology Development and Manufacturing Partner, leveraging over four decades of experience to translate research outcomes into rugged, production-scale defence systems. The company will focus on rapid engineering, system integration, and large-scale manufacturing for operational induction.

Commenting on the collaboration, Shri Karunakar Reddy, Managing Director, Apollo Micro Systems Limited, stated, "The synergy between IIT Madras' research excellence, our manufacturing capability, and DGNAI's operational expertise creates a powerful ecosystem for defence indigenisation."

The partnership is expected to strengthen India's defence innovation landscape, contributing to the Ministry of Defence's self-reliance goals and reinforcing India's position as a global hub for indigenous defence technology and innovation.

Source- IIT Madras

AI/ML-Based Applications Set to Transform India's Power Sector

Artificial Intelligence (AI) and Machine Learning (ML) based applications will play a pivotal role in transforming India's power distribution systems into intelligent, consumer-centric, and self-optimising networks, Hon'ble Union Minister of Power, Shri Manohar Lal said at the Two-day National Conference on the Use of AI/ML Technologies in Power Distribution held at Bharat Mandapam, New Delhi.

Addressing delegates at the event, the Hon'ble Union Minister highlighted how advanced AI/ML solutions—such as smart meter analytics, digital twins, predictive maintenance, theft detection, appliance-level consumer insights, automated outage prediction and Generative AI-based decision support systems—can enhance both consumer experience and operational efficiency across the power distribution sector.

Shri Manohar Lal noted that these technologies will empower households to better manage electricity consumption, prevent outages before they occur and protect honest consumers from the financial burden of power theft, while also enabling Distribution Companies (DISCOMs) to reduce losses, optimise power purchase costs and reinvest in grid infrastructure, thereby positioning India as a global leader in digital electricity reform and future-ready grid governance.

In his remarks, the Hon'ble Union Minister also called for active collaboration with industry stakeholders, technology partners and consumers to

accelerate the adoption of AI/ML-driven innovations and remove misinformation that could impede technology acceptance.

The event was attended by senior officials from the Ministry of Power, including Shri Pankaj Agarwal, Secretary, along with representatives from DISCOMs, Advanced Metering Infrastructure Service Providers, Technology Solution Providers and academia. Participants showcased cutting-edge use cases demonstrating how AI/ML can drive smart, efficient and sustainable power distribution nationwide.

Source- Press Information Bureau

Passport Verification Record Now Available on DigiLocker for Citizens' Ease and Security

The National e-Governance Division (NeGD) under the Ministry of Electronics and Information Technology (MeitY), in collaboration with the Ministry of External Affairs (MEA), has enabled access to the Passport Verification Record (PVR) on the DigiLocker platform. This integration marks a major milestone in enhancing citizen convenience, transparency, and digital trust under the Digital India programme.

DigiLocker is a secure, cloud-based platform that enables the issuance, storage, sharing, and verification of digital documents. With the addition of the Passport Verification Record, citizens can now securely access, store, and share their verified passport records digitally, eliminating the need for physical copies and manual paperwork.

Once verification is complete, the PVR will be available in the "Issued Documents" section of the citizen's DigiLocker account, accessible via the web portal or mobile application.

This initiative offers multiple benefits:

- **Convenience and anytime access:** Citizens can retrieve PVRs anytime, anywhere, without carrying paper records.
- **Faster processes and reduced paperwork:** Digital verification will streamline processes in travel, employment, and compliance.
- **Authenticity and security:** PVRs are issued directly from authorised government systems, ensuring integrity and protection against tampering.

- **Easy digital sharing:** Citizens can share records with authorised entities through consent-based digital access.
- **Paperless governance:** The move supports the Government's commitment to sustainable, resource-efficient administration.

The collaboration between MEA and NeGD, MeitY reflects a whole-of-government approach to improving public service delivery through secure and citizen-friendly digital platforms. It is expected to benefit millions of passport applicants and holders, reinforcing India's position as a leader in trusted, paperless digital governance.

Source- Press Information Bureau

Government Democratizes Chip Design Access Across Indian Universities

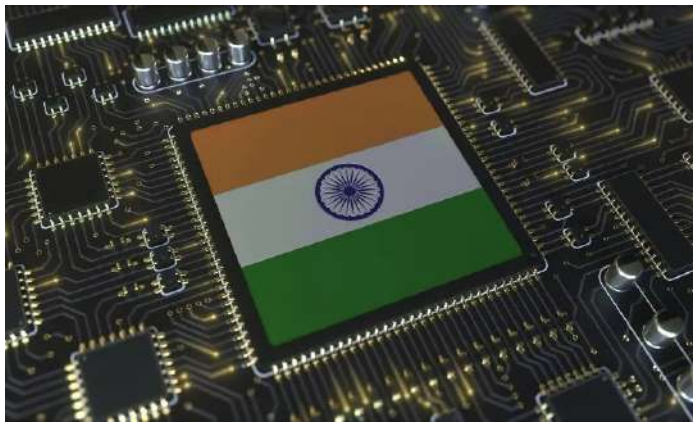
The Government of India is accelerating the democratization of semiconductor design and innovation by enabling Indian universities and start-ups to access industry-grade Electronic Design Automation (EDA) tools and Multi-Project Wafer (MPW) fabrication services through the ChipIN Centre and Semiconductor Laboratory (SCL), Mohali.

Under the Chips to Start-up (C2S) Programme, 122 design tapeouts have been achieved by 46 institutions across the country in five MPW shuttles conducted over the past year. The initiative has witnessed more than 175 lakh hours of EDA tool usage by over 380 academic and start-up organizations, positioning India as one of the world's largest collaborative chip design ecosystems.

During his visit to SCL Mohali on 28th November 2025, Hon'ble Union Minister for Electronics & Information Technology, Shri Ashwini Vaishnaw, handed over 28 student-designed chips fabricated under the C2S Programme. Commending the achievement, the Hon'ble Minister said, "India is rapidly emerging as a distinctive leader in the global semiconductor landscape. The large-scale semiconductor development ecosystem being created in India is unique to our nation."

The ChipIN Centre, established at C-DAC Bengaluru, provides access to advanced design workflows, IP cores, compute infrastructure, and mentorship for academic institutions. It aggregates student chip designs from across India and coordinates fabrication at SCL Mohali using 180 nm technology. Each MPW shuttle combines multiple verified designs on a single wafer, reducing cost and turnaround time.

Over the last year, the ChipIN Centre has supported over one lakh



students and 90 start-ups, significantly expanding India's semiconductor design capacity. Acting as a national value chain aggregator, it is also preparing to support future advanced node design and fabrication requirements.

Shri Vaishnaw emphasised that this initiative aligns with the Hon'ble Prime Minister's vision of building India's strategic self-reliance in critical technologies. He noted that SCL Mohali will play a central role in ensuring indigenous chip production for national needs and in advancing India's aspiration to become a global semiconductor hub.

Source- Press Information Bureau

Hon'ble Union Minister Shri Hardeep Singh Puri Launches NHIMS

Shri Hardeep Singh Puri, Hon'ble Union Minister for Petroleum & Natural Gas, inaugurating the NHIMS

Hon'ble Union Minister for Petroleum & Natural Gas, Shri Hardeep Singh Puri, today launched the National Hydrocarbons Infrastructure Monitoring System (NHIMS)—a pioneering digital platform developed by the National Informatics Centre (NIC) for the Petroleum and Natural Gas Regulatory Board (PNGRB).

The NHIMS platform marks a significant leap in India's energy infrastructure management, offering a unified, data-driven interface for real-time visualization and monitoring of oil and gas assets across the country. It integrates spatial and operational data from diverse sources, empowering policymakers, regulators, and industry stakeholders with actionable insights for better decision-making.

Speaking at the launch, Shri Puri emphasized the importance of technology-driven governance in achieving India's energy security goals. He noted that the NHIMS would "enhance transparency, efficiency, and strategic planning" in the hydrocarbon sector, while strengthening coordination among central and state agencies.

The system provides interactive GIS-based mapping, performance dashboards, and analytics tools for tracking pipelines, city gas distribution networks, refineries, terminals, and other key infrastructure components. Developed by NIC in close collaboration with PNGRB, the platform is designed to support evidence-based regulatory oversight and optimize resource utilization.

Chairperson of PNGRB, along with senior officials from the Ministry of Petroleum & Natural Gas and NIC, were present during the launch. The initiative is aligned with the Government of India's broader vision of "Digital India" and "Energy Atmanirbharta", leveraging technology to ensure sustainable and secure energy access for all.

With the launch of NHIMS, India takes a decisive step toward building a digitally integrated, transparent, and resilient energy ecosystem, setting new benchmarks for infrastructure governance in the hydrocarbon sector.

- Archana Sharma, NIC-HQ

21st Installment of PM-KISAN Released for Flood-Affected Jammu & Kashmir

Hon'ble Union Minister for Agriculture and Farmers Welfare, Shri Shivraj Singh Chouhan, released the 21st installment of the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) to farmers of flood-affected Jammu & Kashmir through video conferencing on 26th September 2025.

Under this installment, over ₹170 crore has been directly transferred to the bank accounts of more than 8.5 lakh farmers in the Union Territory, reaffirming the Government's unwavering commitment to farmer welfare, resilience, and financial inclusion.

A key enabler behind this seamless transfer of funds was the National Informatics Centre (NIC), whose robust digital platforms and secure ICT infrastructure ensured real-time, transparent, and error-free disbursal of benefits under the PM-KISAN scheme. NIC's technology backbone—ranging from data integration and beneficiary verification to secure payment processing—played a crucial role in delivering support swiftly to every eligible farmer, even in remote and flood-affected regions.

Addressing the event, Shri Chouhan lauded the resilience of J&K's farmers and appreciated the use of digital governance tools developed by NIC, which make it possible for government schemes like PM-KISAN to reach beneficiaries directly without middlemen. He noted that such technology-led initiatives exemplify the Prime Minister's vision of Digital India and Atmanirbhar Krishi.

Hon'ble Union Minister Shri Shivraj Singh Chouhan releasing the 21st PM-KISAN installment for flood-affected farmers of J&K through VC

Senior officials from the Ministry of Agriculture & Farmers Welfare, the Government of Jammu & Kashmir, and NIC participated in the event. The release of this installment marks yet another milestone in the Government's mission to empower farmers, strengthen rural economies, and ensure transparency through technology-driven governance.

- Anil Kumar Sharma, Jammu & Kashmir

Hon'ble CM Shri Vishnu Deo Sai Virtually Inaugurates 51 Mahatari Sadans Across Chhattisgarh

On September 23, 2025, Hon'ble Chief Minister Shri Vishnu Deo Sai virtually inaugurated 51 Mahatari Sadans across Chhattisgarh from Village Kareli (Badi), Magarlod Tehsil, Dhamtari District. The initiative aims to empower women's self-help groups by providing dedicated facilities for skill development, employment generation, and social upliftment.

During the event, the Chief Minister also launched the Gram Sampada App, a Citizen Information Board with QR code–based MGNREGA data, and released the Lakhpati Didi/ Mahatari Sadan booklet and Maa Abhiyan publication.

Prominent dignitaries including Deputy CM Shri Vijay Sharma, Revenue Minister Shri Tankaram Verma, MP Smt. Rupkumari Choudhary, and MLA Shri Ajay Chandrakar attended the program. Shri Sai interacted virtually with women's groups from Jashpur, Bemetara, Mungeli, and Durg, extending his greetings for Navratri and reaffirming that women's empowerment remains the government's top priority.

He also highlighted state flagship schemes such as Ramlala Darshan Yojana, Mukhyamantri Tirth Yatra Yojana, and Mahatari Vandan Yojana, and reiterated the state's resolve to make Chhattisgarh Naxalism-free by March 2026.

Earlier, the Chief Minister visited departmental exhibitions and announced development works worth over ₹83 crore for the district. Over two lakh women from self-help groups joined the event virtually.

Hon'ble Chief Minister of Chhattisgarh Shri Vishnudev Sai Virtually Inaugurated 51 Mahatari Sadans Across Chhattisgarh

The National Informatics Centre (NIC) provided end-to-end ICT support, ensuring seamless two-way communication and successful coordination of the statewide virtual inauguration.

- Satyesh Kumar Sharma, Chhattisgarh

Assam sets national benchmark as Sewa Setu achieves 100% Integration of State eServices on DigiLocker

Assam has set a new benchmark in digital governance, emerging as one of India's top-performing states under the Digital India Mission by achieving complete integration of all state e-services on the Sewa Setu platform with DigiLocker.

DigiLocker, the flagship initiative of the Ministry of Electronics and Information Technology (MeitY), recognized the Government of Assam in October 2025 as the state with the highest number of integrated e-services. The achievement, widely lauded by DigiLocker across social media platforms, commended the entire team and the citizens for embracing digital transformation and making paperless governance a reality.

This milestone was made possible through Sewa Setu, the Government of Assam's comprehensive citizen service delivery platform, implemented under the technical guidance of the National Informatics Centre (NIC), Assam State Unit. The platform facilitated seamless integration with DigiLocker, strengthening the state's digital ecosystem and accelerating Assam's journey toward complete digital empowerment.

The platform was initially integrated with 505 services, and an additional 57 were later added, bringing the total to 562 services. This milestone enables citizens to securely access essential documents and certificates in a fully paperless manner, further enhancing efficiency, transparency, and trust in public service delivery.

At the National Conference on DigiLocker, organized by the National e-Governance Division (NeGD) and MeitY on 4th November, 2025 in New Delhi, Assam was honoured with the 'Integration Excellence' recognition for its large-scale implementation of DigiLocker across various services for enhanced security and transparency.

DigiLocker has lauded Assam as a top performer in the Digital India journey

This recognition underscores Assam's leadership in adopting advanced digital solutions and driving transformative change in public service delivery. It stands as a testament to the visionary leadership of the Government of Assam, the collaborative efforts of its digital governance teams, and the pivotal role of the Sewa Setu team under the technical guidance of NIC Assam in enabling large-scale e-service integration for citizen empowerment.

– Maitreyee Sarma, Assam

Hon'ble Minister of Finance Punjab Launches Pensioner Sewa Portal to Streamline Pension Services

In a major step toward digital governance and citizen-centric service delivery, the Hon'ble Finance Minister of Punjab, Shri Harpal Singh Cheema, launched the Pensioner Sewa Portal (PSP) on November 3, 2025. It is a comprehensive online platform designed to simplify and streamline pension-related services for pensioners and family pensioners across the state.

Describing the portal as a "one-stop digital solution", Shri Cheema highlighted that the initiative aims to automate the workflow of pension disbursal case processing, minimize manual intervention, and ensure timely, transparent service delivery. The Pensioner Sewa Portal, developed and implemented by the National Informatics Centre (NIC), Punjab, represents a key milestone in the State Government's mission to enhance administrative efficiency through digital innovation.

Initially, the portal will offer six major services:

- Submission of Digital Life Certificates via the Jeevan Pramaan mobile app
- Conversion of Pension to Family Pension through the succession module
- Leave Travel Concession (LTC) application facility
- Submission of Pension-Related Grievances through an integrated grievance module
- Profile Updation for personal details
- Access to services through multiple channels, including mobile phones, PCs, laptops, Sewa Kendras, pension disbursing banks, and district treasury offices

Pensioners can register on the portal using Aadhaar-based e-KYC authentication, allowing secure and convenient access to services from the comfort of their homes.

The launch event was attended by Director, Treasury and Accounts, Shri Arvind Kumar MK, IAS, along with senior officials from the Government of Punjab. Representing NIC Punjab were Smt. Usha Rai, ASIO (State); Shri Anoop Kumar Jalali, Scientist-F & HoD; and Shri Anil Katiyar, Joint Director (IT), who also served as the Team Lead for the Pensioner Sewa Portal project.

Hon'ble Finance Minister of Punjab, Shri Harpal Singh Cheema, launching the Pensioner Sewa Portal (PSP) to streamline pension services across the state

Commending the NIC Punjab team for their dedication and timely execution, Shri Cheema said, "The Pensioner Sewa Portal embodies our government's commitment to citizen-centric governance and digital empowerment. It ensures that senior citizens and pensioners—who have served the state with dedication—receive efficient, transparent, and hassle-free services."

The Pensioner Sewa Portal marks a major stride in Punjab's digital transformation journey, reinforcing the government's vision of accessible, technology-driven governance for every citizen.

– Parminder Kaur, Punjab

The Director General (NIC), released the "Informatics" publication's first complete Hindi edition

Shri Abhishek Singh IAS, Director General (NIC) released the first complete Hindi edition of Informatics publication today. The Hindi edition marks the publications compliance with the requirements of the Rajbhasha Abhiyan (Official Language Programme). This significant milestone achievement is attributed to the keen interest and resolute encouragement of the Director General, who is also the Patron of the publication.

Informatics is the quarterly e-Governance publication (Print & Web) from NIC, featuring the latest articles on digital Initiatives, e-Governance Services, Projects, Products and Platforms developed and supported by NIC.

Informatics Hindi edition can be accessed online at https://informatics.nic.in/news-in-hindi/files/websites/october-2025/index.php

Shri Abhishek Singh, DG (NIC) & Patron (Informatics Publication) releasing the first complete Hindi edition of 'Informatics'. The Hindi edition marks the publication's compliance with the requirements of the Official Language Programme (Rajbhasha Abhiyan) of the government. Present during the occasion was Shri Mohan Das Viswam, DDG(NIC) & Editor-in-Chief (Informatics Publication).

Shri Abhishek Singh, Director General (NIC), along with Shri Mohan Das Viswam, DDG (UXDT), released the first full Hindi edition of Informatics

- Hemendra Kumar Saini, NIC-HQ