e डिजिटालय ™
DIGITĀLAYA
Electronic Records Management & Archival System

...where DIGITAL INDIA stands steadfast on the bedrock of well-preserved, trustworthy and accessible digital resources...

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Need

The Indian digital universe is one of the fasted growing, as per the Digital Universe Report 2014 by the International Data Corporation. As a result of e-governance, computerization and digitization initiatives, the Indian digital universe is estimated to reach the size of 2.8 Zettabytes by 2020. Every government organization produces various types of borne digital records like word processing documents, spread sheets and graphs, post script documents like reports and research papers, digitally signed documents, e-mails, XML Documents, slide presentations, text files and so on. A variety of paper records are also digitized such as office orders, MoUs, agreements, proposals, acts, policy guidelines and official correspondence. Such digitization efforts offer us instant benefits of information and communication technologies. However, have you ever wondered whether these digital resources will remain accessible and readable after a long period of 10 or 25 years? In future, it is entirely possible to lose an alarming portion of such digital resources and the ability to interpret it meaningfully. The digital records can be lost forever or fall victim to

- Obsolescence of storage media or
- Media failure or
- Rapidly changing technologies or
- Obsolescence of file formats and software or
- Data corruption or physical disasters or even
- Vendor lockin of data due to use of proprietary solutions

Therefore, as part of the National Digital Preservation Programme initiated by MeitY, the Centre of Excellence for Digital Preservation at C-DAC, Pune has designed and developed Digitālaya, an Open Archival Information System, which mainly focuses on -

- Electronic records management
- Long term archival and preservation
- Digital repository development and
- Controlled access to digital resources

Digitālaya has been designed to help in complying with the requirements specified in Central Secretariat e-Manual Procedure and Record Retention Schedule by DARPG, RTI Act, IT Act and Public Records Act. Refer the benefits of preserving digital records using Digitālaya on page 4 of this document.

Electronic Records Management & Archival System

Salient Features

Digital Archive Administration

- User ID, password and fingerprint authentication for information security
- User roles like Director, Archive Administrator, Record Officer/Archivist, Record Depositor
- User wise graphical dashboards with alerts
- User accounts management
- Fonds / sub-fonds creation
- Fonds wise storage allocation and management
- Support for a variety of document file formats with customizable preservation strategies
- Management of rendering software repository

Client-server Architecture

Projects

Finance

Legal

Human Resource

Admin
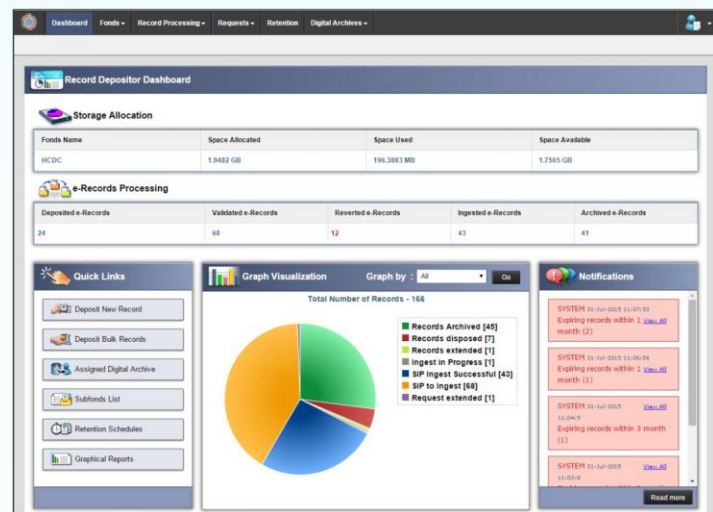
Digital Archive Development

- Support for archival of word processing documents, spread sheets, post script documents, e-mails, images, presentations in a variety of file formats
- Fonds and sub-fonds wise storing of e-records
- Bulk deposit and batch deposit of records
- Rigorous ingest process with format validation, text extraction, migration, automatic technical metadata extraction
- Archival strategy as per the retention period
- Classification of records in terms of record types, categories, public or private disclosure condition
- Department wise archive
- Institutional digital repository

eGOV-PID Preservation Metadata

Model implementation of eGOV-PID preservation metadata standard notified by Ministry of Electronics and Information Technology, Government of India, which includes the following -

- Cataloging Information
- Enclosure Information
- Provenance Information
- Representation Information
- Digital Signature Information
- Access Rights Information
- Automatic capturing of major portion of metadata
- Validation of inputs
- Copy and paste metadata from a similar e-record

Electronic Record Retention Schedule

3 Years   5 Years   10 Years   25 Years   PERMANENT

Integrity and Authenticity of e-Records

- Calculate e-Record fixity
- Selected or periodic integrity check
- Maintains digital migration history
- Capture technical metadata of e-Record
- Record officer can approve and digitally sign the record of digital migration process
- Digital evidence capture for authenticity assurance
- Consolidated report for corroborating all digital evidences

Preservation of electronic records can be your legal shield against the threat of digital obsolescence.

Electronic Records Management (ERM)

- Assign unique record identifiers to e-Records
- Auto-detect same e-Records during deposition
- e-Record review and extension of retention duration
- Retention period, fonds and sub-fonds wise packaging of e-Records for backup
- e-Records disposal or transfer to National Archives of India
- User defined classification system, categories and record types with organization specific record retention periods

Searchable Database of Record Retention Schedules

- In-built searchable database of Record Retention Schedules with over 2000 types of records
  It includes record retention policies by
  - Department of Administrative Reforms and Public Grievances (DARPG)
  - Central Vigilance Commission (CVC)
  - General Financial Rules (GFR)
  - Union Public Service Commission (UPSC)
  - Ministry of Labor and Employment (MLE)
  - Companies Act (MCA)
  - Records Retention Schedules for Banks

Access Rights Management

- User category wise access rights definition in terms of right to print, discover, display, review, extract, duplicate, delete, and other user defined rights
- Encryption of confidential / private records which can be decrypted by concerned Record Depositor and Director only
- Configurable access rights management in Intranet Portal

System Visibility

- Informative dashboards with graphs and alerts
- Work reports and status updates

Access Rights Control

Constrained Access
Selected Records
Read only
Time Bound
Selected Pages

Confidential / Secret Records

Content Reuse

Access Denied

Discover
Metadata only

Download / Print

The paperless office can be a short-lived initiative without long term preservation of digital resources!

Intranet Portal

- In-built intranet portal module for providing access to digital repository within organization
- Search and retrieval
- Filters like record types, categories, language, formats and many other parameters
- Controlled access to registered users / guest users
- Discover the records without download
- Time-bound access to selected e-Records
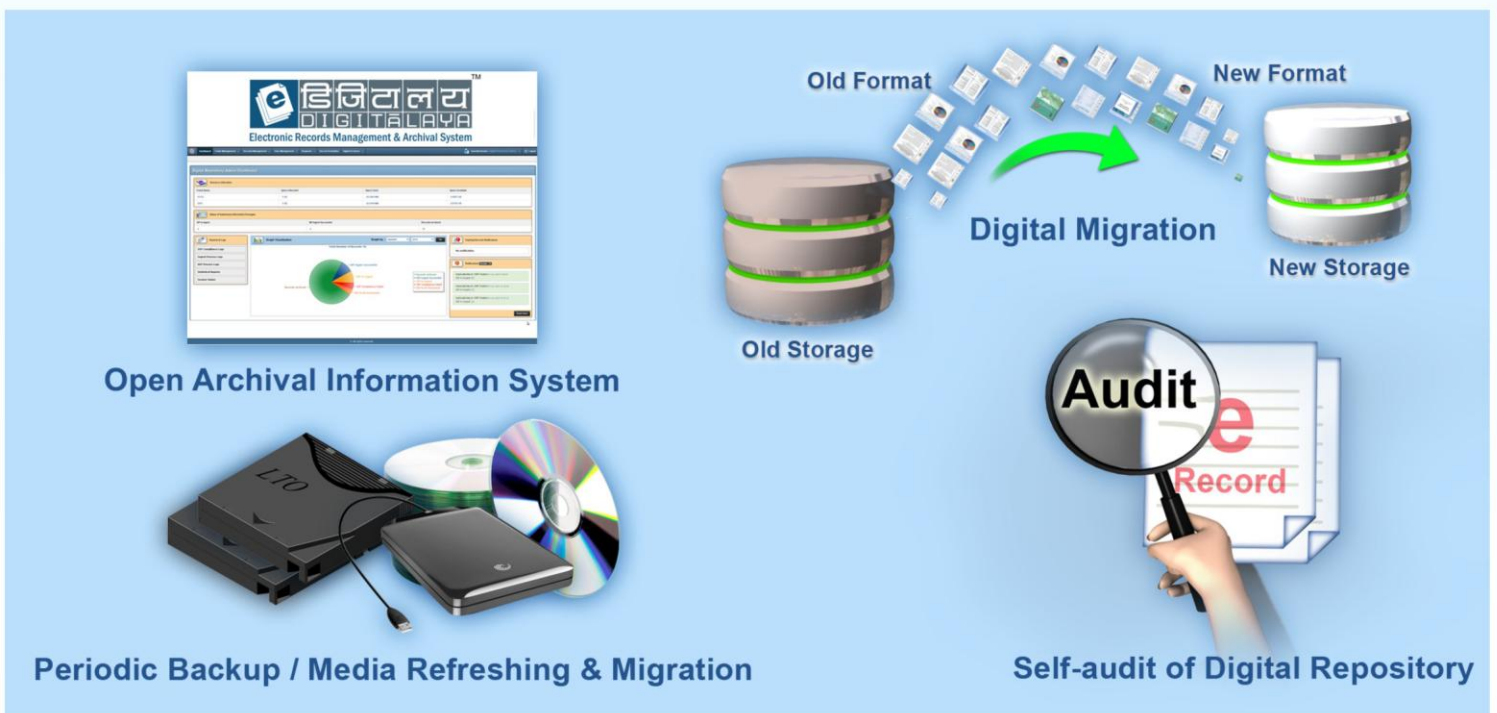- Access to selected pages of a digital document
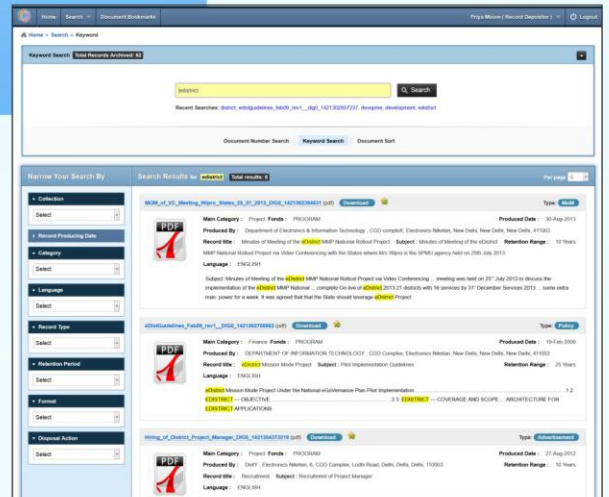
Compliance

Digitālaya complies with relevant legal requirements as specified in the Information Technology Act and following standards

- eGOV-PID Digital Preservation Standard and Guidelines, Notification No. 1(2)/2010-EG-II dated December 13, 2013
- IFEG Standard Version 1.0, 2012 by Ministry of Electronics and Information Technology (MeitY), Government of India
- ISO 14721:2012 Open Archival Information System
- ISO 16363 Audit and Certification of Trusted Digital Repository
- ISO 15489-1:2001 Records Management

Digitālaya setup combined with timely backups, file format and storage level migration, information security and digital repository audit can preserve the digital resources of an organization for all posterity. This digital preservation initiative stands at the crux where it is crucial to fill up the gap between the national e-governance initiative and challenges posed by rampant technological obsolescence, to make Digital India a truly sustainable vision.

Open Archival Information System

Old Format

New Format

Digital Migration

Old Storage

New Storage

Audit
Record

Periodic Backup / Media Refreshing & Migration

Self-audit of Digital Repository

Benefits of Digital Preservation

- **Administrative continuity**

  Helps in clear identification, preservation and protection of the valuable digital resources of an organization. Administrative continuity can be ensured by transcending the hurdles of digital obsolescence and rapidly changing technologies.

- **Protection of digital intellectual assets**

  The wealth of knowledge and intellectual assets of an organization are increasingly encoded in digital formats which requires to be retained and protected. Such digital information represents intellectual property which is produced with considerable amount of time, effort and money.

- **Reuse**

  Repositories of e-records and the tools to mine, analyze and re-purpose them represent a society's intellectual capital. Digital preservation helps in immediate, near term as well as long term usability of digital information beyond its primary users.

- **Long term view**

  Access to e-records from the past and digital continuity is critical for planning, trend analysis, decision making and research.

- **Legal obligations**

  Digital preservation helps in fulfilling the legal obligations of record retention and protecting the evidentiary value of e-records.
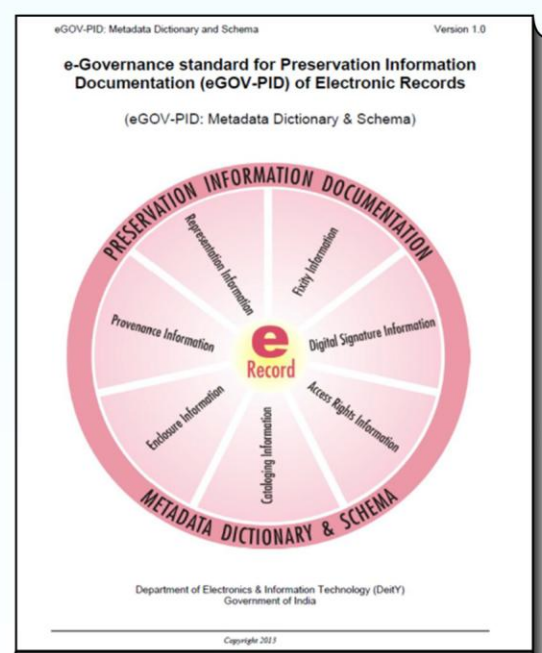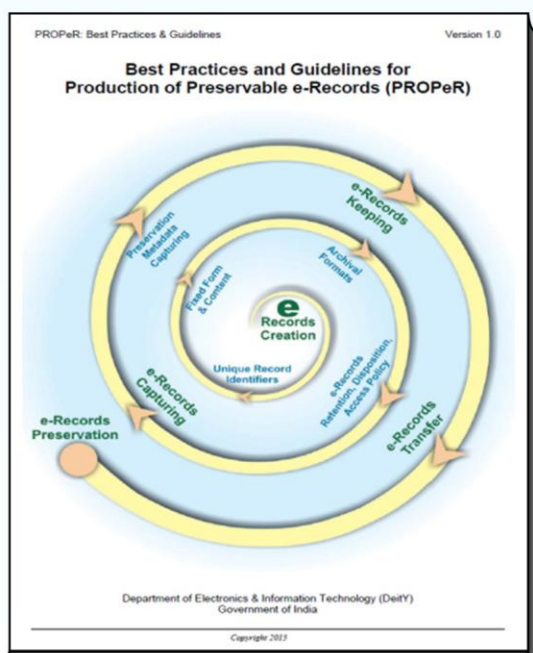
- **Protection from litigation**

  Careful implementation of digital preservation best practices ensures availability of electronic records in a legally admissible manner, especially while complying with RTI and IT Act requirements.

- **Digital heritage for future generations**

  The information, knowledge, cultural and historical artefacts in the modern digital age are being created, encoded and stored through digital means which forms the digital heritage for future generations.

Digital Preservation Standard & Guidelines

Available at https://egovstandards.gov.in

PROPeR: Best Practices & Guidelines — Version 1.0

Best Practices and Guidelines for Production of Preservable e-Records (PROPeR)

Department of Electronics & Information Technology (DeitY) Government of India

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eGOV-PID: Metadata Dictionary and Schema — Version 1.0

e-Governance standard for Preservation Information Documentation (eGOV-PID) of Electronic Records

(eGOV-PID: Metadata Dictionary & Schema)

Department of Electronics & Information Technology (DeitY) Government of India

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Notified by Ministry of Electronics and Information Technology, Government of India vide Notification No. 1(2)/2010-EG-II dated December 13, 2013 applicable for all e-governance applications in India

Centre of Excellence for Digital Preservation

The Centre of Excellence for Digital Preservation is a flagship project under the National Digital Preservation Programme (NDPP), sponsored and initiated by R & D in IT Group, Ministry of Electronics and Information Technology, Government of India. The CoE is entrusted with Human-Centred Design & Computing Group, C-DAC, Pune with the following objectives -

- Conduct research and development in digital preservation to produce the tools, technologies, solutions and infrastructures to ensure that the digital information remains discoverable, accessible, readable, usable, reliable, authentic and trustworthy on long term basis.

- Develop the digital preservation repositories and provide help in nurturing the network of Trustworthy Digital Repositories (national digital preservation infrastructure) as a long-term goal.

- Define the digital preservation standards by involving the experts from stakeholder organizations, consolidate and disseminate the best practices generated through various digital preservation projects implemented across India.

- Build the technical competencies necessary for the audit and certification of trustworthy digital repositories, curriculum design and training for data managers, e-records keepers and archivists.

- Spread awareness about the potential threats and risks due to digital obsolescence, the digital preservation best practices and maintain technology watch on continuing basis.

Human-Centred Design and Computing Group

HCDC Group at C-DAC, Pune is the designated Centre of Excellence for Digital Preservation, by the Ministry of Electronics and Information Technology (MeitY), Government of India. The group has been entrusted the key agenda to provide inputs for the roadmap of national digital preservation programme in the country and the development of requisite technological infrastructure, tools, standards, guidelines and policies therein. Under this project, the group has established international alliances and built the capabilities and skill sets to design, develop and deploy a range of digital preservation and archival solutions across domains. The group inherits its core skills from developing interactive games, 3D modelling, virtual museums and multimedia learning and specializes in designing highly usable interfaces for solutions and services delivered through PC, mobile devices, Kiosk, Web, Interactive TV and emerging technological media.