**[University Grants Commission (UGC)](https://innovate.mygov.in/challenge-category/university-grants-commission-ugc/)**

University Grants Commission (UGC) of India is a statutory body set up under Ministry of Human Resource Development, and is charged with coordination, determination and maintenance of standards of higher education. It provides recognition to universities in India, and disburses funds to such recognized universities and colleges. They are participating the Smart India Hackathon 2017 seeking real time digital solutions to 20 issues faced by them

## Mapping College Neighbourhood and Social Possibilities

There are many locally relevant problems which come across to UGC where the nearby educational institution can play a vital role. Bringing such problems into the notice of nearby educational institution can be thought of as an open-source innovation /crowd-sourced solution. For example, managing traffic or reducing accident rates by the initiative/involvement of an institution in the vicinity. Or, sharing an innovation on water harvesting (an MRP or a Project) and impacting the real saving of water may be mapped. Many student projects can be well aligned to local social problems. Can we have a digital tool for such project based collaborations with real impact. Can we map such colleges and link it with the digital platform to share innovations (as mentioned in problem statement 3). This can directly impact the curriculum with the real regional requirement, a way to ensure relevance of learning.

An example: A district has very unfavourable number of old-young ratio of citizens. This clearly indicates the possibility for having a course in geriatrics or assistive healthcare in the colleges in that district.

Sample data required: No

**Continuous monitoring of the programmes**

We are funding a large number of high budget projects with potential for positive outcomes. Though we ask the PIs to submit progress reports periodically, continuous monitoring of the projects is a problem in the absence of a proper mechanism.

Sample data required: No

## Identification of Fake Universities.

The fake Universities or even the regular Universities running unauthorized programmes through distance or regular mode need to be tracked. Action required to stop them can be taken through effective monitoring.

Sample data required: No

## Monitoring the combined data of IUCs/MCs/NFCs to ensure timely action/disposal.

IUC Bureau deals with 34 institutions and deals with their administrative issues. A combined data set-up/collection is required to avoid the delay.

Appropriate software may lead to greater efficiency.

Sample Data required: No.

## Immediate response by IUCs/MCs/NFCs.

At present, we used to send a communication to Centres and then wait for long for a response to come. This gives rise to distraction as two different issues come at same time.

A specific authority person may be delegated to keep a watch on all such communication form UGC for a time bound disposal of papers leading to time saving & enhanced productivity at both ends.

Sample data required: No

## To have a common repository of data

We have a main office and six regional offices. There are a number of schemes which are run by the main office as well as by the regional offices. Moreover, a large number of employees are involved from initiating a scheme till final implementation. So, very often, the process becomes very cumbersome while collecting and maintaining the datas. Moreover, at times, there are duplications of datas and datas remain incomplete and inauthentic. So, it is necessary to have a single point where all the datas can be maintained accurately.

Sample data required: No

## To make the system responsive

In order to make the administrative system responsive to the needs of the clients and the stakeholders, we need to have a mechanism through which we can receive feedback, and the clients can track the status of their requests.

Sample data required: No

**Replacing the costly and time-consuming method of evaluation**

We invite subject experts for evaluation of the proposals. It results in heavy expenditure since the expenses related to the travel of the experts need to be borne by the office. Moreover, the experts lose their valuable time while travelling and attending a meeting.

We need a system which enables us to evaluate the proposals in a very cost-effective way without compromising with transparency and fairness.

Sample data required: No

## Online receipt of applications/proposals

Currently, we do not have any dedicated online portal to receive proposals for various schemes/programmes. Hence, we have been receiving hard copies of the proposals. It leads to problems like piling of papers, wastage of papers, storing problem due to paucity of space, and at times, misplacing or non-receipt of proposals.

We need a mechanism which is cost-effective, and can be maintained with limited skilled human resources.

Sample data required: No

## How to Check the duplicity of Research Projects submitted to various funding agencies.

UGC allots a number of research projects, over a period of time, many of which may be duplicate or similar. How to avoid this? Also how to make better use of the project reports which are currently stored as hard copies.

Sample data required: No

## Creating college dashboards for UGC

UGC uses a variety of data points for important grant-related and policy related activities and decisions. NAAC accreditation status, 2(f)/12()B) status, student strength, proportion of minority students, utilisation of previous grants, complaints and grievance from the stakeholders etc are some of them.

For each data point /information on colleges as given above, we depend on different information sources and manually collate it in the physical file. A dashboard for each college in the country, which can visually depict this key information points is not available. Such a dashboard, if we are able to create, will be very useful especially at top level management of UGC. This can not only reduce the dependence on chain of employees for each and every data, but also enhance the speed of functioning of the system.

Sample data required: No

**Digital platform on facilities and resources on different disciplines across the country**

UGC maintains many facilities in STEM by way of inter-university centres, centre for excellence etc. Some of such centres share the resources effectively with other stakeholders. They encourage usage rate, for example lab facilities of IUCAA, Pune is visited and used by thousands per year. There are other facilities too coming directly under MHRD or in institutions of national importance which can be utilised by a wider academic audience.

Currently word-of-mouth and respective websites are the sources of sharing such information. The information on such facilities is not available on disciplinary basis. If someone wants to know what are the best facilities available in brain-mapping in India, the only way is to depend on word-of-mouth or sporadic/independent websites or go by the opinion of professors, if accessible. For each discipline if we can create a single platform for top facilities, it can be of much use to researchers and policy makers alike.

For example, in the area of astronomy, the new digital platform can tell us which are the top astronomy museums, top libraries in astronomy where access to public is permitted, important resource centres, annual events, historically significant institutions and places in the study of astronomy in India, think tanks etc at once.  These resources can be paced as per the level of expertise required to use it. Beginner resources (meant for general public and primary school students), intermediate and advanced (meant for researchers, mainly lab facilities). This will be a great push for encouraging STEM  from school level to research level in a single venture.

Sample data required: No

## Documenting novel solutions and innovations in Education- An App

UGC encourages Educational Innovation implicitly by way of different schemes and explicitly in guidelines. For example, there is a separate head “Educational Innovation” under the scheme GDA.

Though we know at different scales, formally and informally, innovations happen in many colleges, there is no platform to document it at a national level. What are the innovations happening is available only on sporadic and incomplete sources. An app where colleges can upload innovations in specified format, which in turn aggregates many such innovations, may be inspiring move for other colleges too. Can we have an app for this which can be embedded in our websites? This can showcase how different colleges/students/teachers address and solved the educational challenge in innovative ways.

Sample data required: No

## Making the Internal database of UGC Bureau/offices adaptable to the Payment Gateway (PFMS)

Public Financial Management System (PFMS) is the single payment gateway for all payments from UGC from this financial year onwards. To make use of the reporting capabilities of PFMS, it should be compatible to the internal data management mechanism. Currently, most UGC Regional Offices depend on old versions of MS-Office and d-base. The internal data management of bureau are not uniform.

Lack of uniformity among different offices/bureau on data management practices has at least three limitations. Firstly, it duplicates most works on the grant-giving aspect in the office. Secondly, capabilities of PFMS as payment gateway and e-office as office management tool remain underutilised. Thirdly, the work becomes more error-prone as many records are duplicates. For example, Grant-in-aid bill and PPA advice are duplicates. By aligning internal database with the payment gateway, we will be able to meet the information requirements of internal stakeholders (Ministry, Parliament, Our own offices etc) more effectively and efficiently. We will be able to give more inputs for policy making.

Sample data required: No

## Integrating different digital platforms providing information on Higher Education to the public

Following are the five official information sources of UGC/MHRD regarding higher education institutions in the country. 1) UGC websites, 2) AISHE web-portal (All India Survey on Higher Education, 3) NAAC Database (for Accreditation Information), 4) NIRF (Ranking Framework by MHRD), 5) Websites of AICTE and other regulatory bodies.

These portals operate on stand-alone mode now. Citizens will not get a complete picture on recognitions, course-portfolio, accreditation, scholarships etc from single source. Integrating these portals (while maintaining separate sites itself) as done in many apps and aggregators can serve as the one-stop information source for public. Future database like National Depository of Certificate can also be integrated. By doing so, the real requirements of thousands of enquiries, RTIs and information requirements can be effectively solved.

Sample data required: No

**Internal Research Management Systems for institutions**

The UGC is supporting large number of institutions, deemed to be universities and state / central universities to undertake research work and achieve ranking in world class institutions. There are many new universities have been set-up having recruited young faculty members with innovative ideas but despite of much recourse theses are not able to win patents / good projects, publish in high-impact research journals, develop socially applied  products, and get cited for internationally recognized language and cultural research for acquiring good ranks among world institutions. It is generally felt that the research work, in Indian institutions, left mostly at preliminary level and the researchers have to handle all the allied work themselves which thwart the advanced research in potential areas with potential ideas. An Internal Research Management Systems (IRMS) may be developed for research support to the academic researchers. The IRMS may enable interface with facilitative tools for researchers and university administration to sort out the potential ideas and applied support to qualified ideas through a team of statistician, patent experts, data analyzers, market experts and network of UGC specialized Inter University Centres, possibly in following manner:

1. *Researchers may log-in to share confidential research ideas at any level with institutional research support team on IRMS.*
2. *The potential ideas may be sorted out based on the survey of literature about published work / products available in the market / patents etc with integrated online secured data analyzer.*
3. *Sorted out ideas may be available to the Research Director / Vice-Chancellor Log-in for discussion with seed idea of  concerned faculty / researcher.*
4. *The qualified ideas may be formulated to a research proposal for financial support, or internal research for possible  patenting, or as industrial project as the case may be with institutional research support a team of statistician, patent  experts, data analyzers, market experts who may be the faculty members of different departments of the University or might have been appointed specifically for the purpose.*
5. *The IRMS should identify the research facilities available for sophisticated instrumentation with UGC – IUCs and other  scientific institutions based on the research methodology entered / modified by the researcher / research director.*
6. *The IRMS to have integrated tool for literature survey / patent search / call for projects and market data in the thrust areas identified by the institution.*
7. *It should have dedicated and secured work platform for each member of institutional research support team, say statistician, experimental toxicologist, advocate, patent experts, data analyzers, market experts etc.*
8. *It should generate reports on :\* Thrust area wise ongoing research projects*

*– Total external funding secured by the institution – area wise, year wise*

*– Plots and reports of research outcomes, PhD produced, patents, publications with statistical reports on H index, Cumulative Impact Factor, Total Citations, External Citations and Country wise Citations etc.*

*– Department wise and faculty wise research data*

*-Artistic and literary copyrights secured by faculty.*

*-Availability of faculty / academic teams(s) for undertaking Govt projects under Extension activities with available support  resources in related field reflecting capability to operationalize.*

Sample data required: No

## UGC Digital Curation Platform for Research Outcomes

The UGC provides funding to faculty members / Research students and institutions for undertaking research and development (R&D) activities in wide spectrum of subject areas including applied sciences, technology, pharma, traditional knowledge and such other fields. The research outcomes for the UGC supported R&D activities remain not rigorously monitored as desired due to the fact that the outcomes of major / minor research projects, research awards and institutional research are submitted as bound book and further exploitation of this valuable research for possible innovation or technological advancement and scale-up left unattended. A digital platform with objective inputs on approved research area needs to be developed for research data management on the similar line it is provided for patent application so that the data, after due deliberation, may be shared with organizations like NRDC / NIF for further support to potential institutions for possible applied R&D /patents or scientific advancements of value for national economy.

Sample data required: No

**UGC Schemes Outcomes Analyzer**

The UGC provided funding to eligible institutions/faculty and students under number of schemes in higher education sector. Every scheme has its identified objectives and outcome parameters under which the success of the schemes is viewed at the time of review. It is in the interest of UGC as well as Ministry to have clear picture of the performance of a particular scheme being implemented with specific goals. It become difficult for the section staff to collect the relevant date from grantee institutions / beneficiaries and to project the outcomes in proper and desired manner which is very much required to focus our institutional performance and achievements. Scheme wise outcome analyzer may help the bureau to present the physical financial status and output with respect to set goals at various time points for state / sector / community, gender and overall nation.

Such Outcome Analyzer for Skill Development Schemes *viz.* CC, B.Voc and KAUSHAL may be developed which should be enabled for three way inputs from UGC, approved institutions as well as from enrolled students / learners to provide the one click status of funding with respect to the following:

1. *State wise, trade wise and level wise approved intake in skill based vocational courses.*
2. *State wise, institution wise, trade wise student’s enrolment for General/ SC / ST / OBC / Minority and Women.*

1. *Integrated auto calculation for data submitted by the institutions through their interface on above parameters to generate reports about state wise, trade wise, level wise, category wise and Country Report for students enrolment in skill based courses.*
2. *Similar reports for students exit, RPL, lateral entry and employment of the pass-outs.*
3. *Integrated learner’s profile tracer to track their employment / career advancement / salary and related information for outcome data like % of learners employed, correlation the skills levels and salary structures, impact of training on career advancement / salary of learners etc.*

Sample data required: No

## Academic Time-Table Management Tool under CBCS

The universities and colleges have adopted Choice Based Credit System in most of their courses which involves Core Courses, Foundation Courses (FC), Electives (generic / discipline specific / open), Skill Enhancement Courses (SEC), Ability Enhancement Courses (AEC), and Ability Enhancement Compulsory Courses (AECC) *etc.*  These courses are to be pursued across the various departments of the institution and sometimes across the institutions which have MoU under the provisions of CBCS. One of the critical problems that institutions are facing is to manage the academic Time-Table for various courses enabling the option for students to take-up electives, FC, SEC, AEC and AECC which may be available through from departments / institutions other than where he/she enrolled for core subject. If, such software with matrix based algorithm may be developed as digital tool for operational management of academic time table, it may serve for the best use of academic infrastructure and human recourses in our academic institutions with greater facilitation to the students under CBCS.

Sample data required: No

**Institutional Funding Operational Management Solution**

The University Grants Commission is funding a large number of institutions under various developmental schemes, say Community Colleges, B.Voc, DDU KAUSHAL *etc.,* and institutional support schemes. The disbursement of grants takes place in instalments with noting of UC after first instalment. It is a felt need to have a possible digital solution to for operational management of institutional funding, which with staff friendly inputs, may provide the one click status of funding with respect to the following,

1. State wise, institution wise approved funds under the scheme
2. Institution wise status of grants release against the approval
3. Status of UC noted / to be noted against the disbursed grants
4. Reports for total & state wise, component wise (Capital / Recurring), Plan / Non-Paln, Salaray /Non-Salary for the funds allocated and released.

Sample data required: No

##  [Ministry of Steel](https://innovate.mygov.in/challenge-category/ministry-of-steel/)

Ministry of Steel coordinates policies for and facilitates the growth and development of the iron and steel industries. They have nominated MECON to represent their ministry in the Smart India Hackathon 2017. They have identified 31 problem statements for this initiative.

31 Problem Statement

## Transfer of employees HR data from one SAIL Plant to other SAIL plant

On transfer of employee from one Plant/Unit to another plant/Unit in SAIL, relevant personal data to be made available at new Plant/Unit online. Separate ERP system (SAP)/In-house software are available in different units of SAIL plants.

Sample data required: No

## Application for monitoring deployment of manpower by contractors

Monitoring agency has the responsibility of ensuring manpower deployment by contactors. However tracking of manpower actually deployed by the contractors in a industrial / residential/ government project becomes very difficult in absence of a proper monitoring system and mainly one has to depend on contractor’s manpower reports, which may not be factual or accurate.

Hence it is necessary to have a system for counting / tracking of manpower actually deployed by the contractors in a project, with provision of categorized deployment reports like – skilled / semi-skilled / unskilled / helpers, etc. Additional employment information like permanent / contract / casual will also be helpful for making labour payments.

Sample data required: No

## Application to restrict conversion of Pdf/tiff drawings in other formats

Majority of the clients  demand drawings in  AutoCAD  or  pdf  format , after  successful  completion  of  the   each  project . For successive  Expansion  of  the  Projects, there are chances that expansion projects may be carried out using  same   drawings , which are obtained from  MECON during initial stages . Though, there is MECON’s “copy right “clause printed on each of MECON’s drawings, still MECON is not in a position to curb this unethical practice, which is a big financial burden on MECON.

Some system / app development may be thought off in the upcoming Smart India Hackathon 2017 to prevent conversion of pdf or tiff format to editable format.

Sample data required: No

## Software to calculate area, volume etc. of a geometric shape and to provide a 3D AutoCAD compatible drawing

A software program that will calculate the surface area, volume, and tare weight and gross weight of a given geometric shape and also is able to give the shape as an output in a 3D AutoCAD compatible format.

The inputs in the front end software could be in the form of dimensions, bulk density, plate density, angle of repose etc. The output shape of say a steel bunker should also include the stiffeners the spacing & sizes of which are given as input in the front end page.

Sample data required: No

## Bank Reconciliation Problem for multiple types of statement generated by different banks

Bank reconciliation in ISP Burnpur involves comparing a bank statement to internal accounting records in order to explain differences between the two and examine discrepancies. But manual cash reconciliations are tedious, costly, labour intensive and error-prone. While automation is an obvious conclusion, it is not a simple one. The key to successfully automating the bank reconciliation process involves facilitating communication between multiple diverse systems (with various banking systems to our accounting system). All banking systems follow their own formats to generate bank statements of the customer. In absence of any common bank statement formats, it is a problem to develop an automated bank reconciliation system that would do 100% of automatic bank reconciliation process.A solution to the problem is sought.

Sample data required: No

## System to provide information of Software /OS installed in computers

To find out available software installed in Steel Plant, with versions/patches licenses etc. across a defined network of servers / PCs and communicate their latest versions. Solutions may be in the form of easy-to-operate Apps/system on central server, NMS or client machines.

Sample data required: No

## Mobile apps to monitor office network

MECON is looking for mobile app/other software solution for  discovering  & monitoring IT assets in a local area network.

Sample data required: No

## Migration from IPv4 to IPv6

Problems may likely to come in course of the same which require to be rectified beforehand to counter it at the right moment without loosing much time. A mobile apps which will work as aid for conversion from IPv4 to IPv6 system like generation of IPv6 address from IPv4 address, giving IPv6 gateway address etc.

Sample data required: No

## Hacking of Website

HSCL official website www.hscl.co.in was being hacked couple of times in past few years. For avoiding such incident some site locking features introduced which had resulted in decrease of such problem. However a solutions to this is total protection of the website.

Sample data required: No

## Email Hacking and identity compromise

If somehow email-id’s are compromised, the hackers copy our identity and use our email ID to send junks mails to different domains worldwide. It appears in outside world as if our domain is sending these junk/spam mails and thus our IP’s becomes blacklisted. A solution is sought for the same.

Sample data required: No

## Email Spam Problem

Mailing servers of ISP Burnpur, are required to send and accept emails and in the process server accepts spam mails. This problem of spamming can be reduced by applying some spam filters in mailing servers. But the spam filters can be applied only after knowing the spam sources. However, it is also not possible to know the entire spam sources in advance. Solution of the problem is sought so that spams can be blocked or filtered before arriving to user’s mailboxes.

Sample data required: No

## Identifying phishing emails and not responding/clicking of any unwanted link or attachment

We SAIL-RSP, gets lot of emails with lot of offers like winning a lottery/prize and they ask us to send our details. Now a day’s viruses are sent as attachments and once clicked on these attachment, PC gets compromised and in some cases, files in the PC gets encrypted. Files can only be decrypted by paying a ransom to hacker and hence called ransomware. A solution is sought for the same.

Sample data required: No

## Identifying Phishing and fraud sites

At SAIL-RSP, when different sites are browsed on internet for example a banking site, the hackers replace the original site with a similar looking site and we enter our user id and password which gets compromised. A solution is sought for the same.

Sample data required: No

## Accessing server data without storing in local devices

Users of FSNL shall be able to access the data on any server they are authorized to access, but will not be able to store data on the mobile/computer device through which they are accessing the server.

Sample data required: No

## Common Communication Platform for Ministry to PSU’s and PSU’s to PSU’s

Common Web & mobile base portal for communication between Ministry to their PSU’s and PSU’s to PSU’s where each user can share their experience/achievement related to his work/project and problems.

Sample data required: No

## Common feedback System for vendors, customers & general public

Common Feedback system is required for customers/vendors/general public where each user can share their experience/views with FSNL.

Sample data required: No

**Electronic Document Management System**

MECON is an engineering consultancy organisation under Ministry of Steel, GoI. As part of our everyday work, MECON creates, receives & transmits numerous documents. As these documents are our most valuable asset, MECON would like to preserve documents in a systematic manner for use in future projects.

Hence, a smart web application based Electronic Document Management System is required. The software must have the following features as a minimum:

* Store, segregate and index the documents in a database on a central server, Search facility using keywords.
* Auto-generate a unique number which may be used to locate, know the present status/ version, trace the work flow of the document.
* Auto generate the document index pertaining to a certain project, Controlled access to documents
* Provision for flow of documents for purpose of assignment to multiple users. May have features of attaching a file, approval, comment, rejection, remarks etc. The user who receives any assignment, should receive a notification/ flash message etc.
* Web access to vendors for submitting and knowing status for their submitted documents

Secure distribution of documents, Scalable to increased no. of users.

Sample data required: No

**Mobile apps for project monitoring**

MECON is an engineering consultancy organisation under Ministry of Steel, GoI.  As part of our everyday work, we manage various projects for our clients. There is no mobile based application for project management and monitoring which can have following features:

* Should be compatible with IOS, Windows and android platforms.
* Should have user friendly graphical user interface
* Should display the critical milestones of the project
* Should send mobile alerts whenever a milestone date is approaching and warn in case it has already failed
* Should provide controlled access to the projects
* Should display data in graphical/ chart forms
* Should display real time S-curves to show project progress
* Should monitor actual progress against scheduled progress
* Customizable to add new project

Sample data required: No

## Solar Panel for all tall buildings

Solar panel to be installed at all existing and upcoming high rise commercial, educational, corporate buildings throughout the country for electricity/energy conversion. The progress to be monitored centrally by computer.

It can be assumed that central server contains details of all building including roof top area of a particular locality. Mobile apps shall have the provision of capturing the area of a roof covered by solar panels in a building. Data once captured by the application shall be transmitted to the central server. Mobile apps shall also be able to give the percentage area of roof top covered by solar panel using data of central server of that locality.

Sample data required: No

## Automatic System to Power-off Street light in day time/ Powering off alternate street lights at Mid Night

Streets lights are lighten in day light also. System for turning off street lights in day time is sought.

System shall also include turning off alternate street lights at midnight for energy conservation.

Sample data required: No

## Mobile App for reducing power theft.

The mobile apps shall capture location of theft automatically by using GPS and shall have the provision of transmitting the same to a central server.  Photograph of area of theft shall be captured.

Sample data required: No

## Online Validation of Test Certificate of products in steel plant

Test Certificate of finished goods in Steel Plant are generated for a sampled lot of products. The products are procured by Purchaser and Purchaser in turn sell the products in separate lot to multiple customers and copies of the Test Certificate are given to each customer which may leads to  commercial misuse.  Solution like online validation of such transfer certificate is sought.

Sample data required: No

## Online Railway Receipt from Indian Railway

Dispatch documents along with details of loaded wagons are generated online and submitted to railway in hard copy for railway to generate Railway Receipt (RR). RR information generated through computer system by Railway is provided to Bhilai Steel Plant  in hard copy leading to manual data entry and delay in processing. A computerized solution for the same is sought.

Sample data required: No

## Railway Wagon number Tracking in Steel Plant

In Steel Plant, Railways goods wagons are weighed through automated means. However, the identification of wagons is done manually by the operator. A software to automatically read the wagon number and capture this information in computer is sought.

Sample data required: No

**Ministry of Railways:**

1. **Mapping Beneficiaries of Health Services**

Identification of Beneficiaries of Railway Health Services at the point of delivery of service can help in preventing pilferage of resources and also help in creating health profile of the patients. It can help in planning resources and man power required. Linkage of Aadhar can also be considered.

Sample Data Required: Yes

Code: #IR31

## Energy Efficiency

More than 2 crore passengers and 13 lakhs employees use railway infrastructure and offices.  Promoting behavioral change among passengers and employees to use energy efficient habits can help in saving energy. A software solution to keep reminding employees and passengers about efficient methods of using electric equipments is required.

Sample Data Required: Yes

Code: #IR30

1. **Website security**

Data from enquiry websites is being used by several other websites without proper authorization from railways. Unauthorized usage of data puts additional loads on the websites and slows down its performance.  A solution to prevent unauthorized data scrapping is required.

Sample Data Required: Yes

## Code:#IR29

## Analysis of Train wise Earnings

A dashboard showing trends in earnings of a train needs to be developed.  It will help in planning additional trains, change in composition in a train and monitoring the performance of staff deployed in the train.

Sample Data Required: Yes

Code: #IR28

## Integration of multiple Railway websites

Indian Railways have various websites viz, indianrailways.gov.in, indianrail.gov.in, irctc.co.in, enquiry.indianrail.gov.in.  The traffic on websites gets divided and user has to access different website for different services.  Integration of all websites into a single website will help in user convenience and greater popularity.

Sample Data Required: Yes

Code: #IR27

1. **Virtual Tour of Railway Station**

A host of facilities are available at major railway stations.  However, passengers are often unaware of the location of such facilities.  An application to provide virtual tour of Railway Station can be helpful in facilitating the information flow to the passengers.

Sample Data Required: No

Code: #IR26

## Unification of Railway Apps

Indian Railways have separate mobile Apps for train enquiry, e-ticketing, unreserved ticketing etc.  Unification of all the Apps on single platform will increase convenience for the users as well as improve popularity of the App.

Sample Data Required: No

Code: #IR25

## Disaster Preparedness

Rail accidents cause loss of life, property and hardships to passengers and railways.  Participation of all the stake holders viz., passengers, railways, local administration and citizens in nearby areas can help in speedy restoration.  A software solution to seek support and get required help in time is required.

Sample Data Required: No

1. **Involving Passengers in Upkeep of Railway Stations**

Railway stations are used by two categories of passengers – daily commuters and occasional travelers.    Involving passengers in station upkeep through education and active participation can help in finding a lasting solution.  Software to keep people engaged about the need to maintain the railway stations is required.

Sample Data Required: No

## Management of Railway Rest Houses & Holiday Homes

At present, the allocation of accommodation in Railway Rest Houses, Holidays Homes is done manually.  The request is to be given in writing and there is no mechanism to advise the applicant about status of booking of rooms.  This causes uncertainty and difficulty in planning one’s programme.  An online system of submitting request and allocation of rooms is required.

Sample Data Required: Yes

## Condition of Rail Bridges

Some of the Rail Bridges on Indian Railway network are very old.  Monitoring the condition of rail bridges is extremely important for safe train operations.  A software solution to monitor the condition of bridges can help in timely maintenance.

Sample Data Required: Yes

## Management of GUI based Multilevel Numbered List

In e-procurement system of Railways, several forms require creation of numbered list (like insertion of items in a tender document).  In such cases, multi level numbered lists are allowed.  In case of manual numbering, the user is required to manually edit the numbering of all subsequent items in case of any editing.  To improve user experience, it is intended to use auto numbering with features like auto updating of all serial numbers in case of insertion or deletion of row, user to be able to edit any or all serial numbers.

Sample Data Required: Yes

## E-ticketing

Issue of bypassing checks related to IP and multiple IDs creation are reported on e-ticketing website irctc.co.in.  A solution to the issue by linking of IP address, Machine ID, User ID etc., needs to be developed to ensure implementation of checks regarding maximum number of tickets being booked by an individual.

Sample Data Required: No

## De duplication of Price List Numbers

All regularly purchased items on Indian Railways are allotted a unique code called Price List Number (PLN).  In the database there are lakhs of records.  In some cases, same PL Numbers has been allotted to multiple items and in other cases multiple PL numbers have been allotted to same item.  An application needs to be developed to suggest duplicate PL Numbers by finding similarity in the PL description fields of different PL Numbers so as to eliminate the duplicity in data.

Sample Data Required: Yes

## Travel Planner App

An App to plan the journey with confirmed tickets availability from origin/way side station to be developed.

Sample Data Required: No

## Accidents at Unmanned Level Crossings

At several places, railway tracks are at the level of road.  Due to resource constraints, no railway staff is posted at many such crossings of railway track and road.  Accidents are often reported due to negligence by the road users.  A solution to this problem    needs to be developed which is effective and cost efficient.

Sample Data Required: No

## Ticket Checking System

At present, ticket checking is done on trains, at station exit and also at platforms.  Ticket checking is manual process and due to shortage of ticket checking staff, only a small number of passengers are checked.  There is need for solution which can ensure 100% ticket checking.  The solution should be such that passenger need not have to wait for getting his ticket checked.

Sample Data Required: Yes

## Preventing Untoward Incident

Software solution for preventing untoward incident based on analysis of past data, identifying possible vulnerable areas and action to improve security at those places can help in improving security.

Sample Data Required: Yes

1. **Telecom Connectivity**

Indian Railways have telecom connectivity through RailTel OFC network, BSNL etc., for reserved ticketing counters, Unreserved ticketing counters, freight operations information system terminals etc., across the country.  The uptime of telecom channels is monitored through network management system.  A software solution to monitor the telecom channels, analyze the status or performance of various channels and prevent failures can help in improving performance.

Sample Data Required: Yes

## Signaling

Indian Railways have multiple types of signaling system.   Failures of signals severely affect the movement of traffic.  Predictive analysis which can help identify the likely failure cases in near future can help in timely attention thereby preventing failures.

Sample Data Required: Yes

## Maintenance of Coaches & Wagons

Coaches and Wagons are maintained as per schedule in nominated depots.  The availability of complete profile of each coach and wagon at a centralized data base and its analysis can help in generating useful information about the causes of breakdowns, likely failures in future in specific coach or wagons and thereby enabling planning for maintenance.

Sample Data Required: Yes

1. **Tracking of Individual Package Booked in Parcel & Luggage**

Parcel and luggage packages are booked for transport from one station to another. A receipt is issued to the consigner on depositing the package at parcel/luggage office.  At some stations where computerization of parcel office has been implemented, Barcode tags are pasted on package.  At present, the mechanism of tracking of individual package is not available.  Customer wants the information about current location of the package on Indian Railways system.

Sample Data Required: Yes

## Waste Management

Huge amount of waste is generated on Railway stations and on trains.  Efficient waste management will help in keeping the station premises and trains clean and also enhance passenger comfort. Solid waste generated at workplaces, colonies, hospitals, etc is also required to be disposed properly. Software solution for efficient waste management can help in timely action.

Sample Data Required: No

1. **Energy Utilization**

Expenditure on Energy is one of the biggest heads of expenditure for Indian Railways. Energy utilization by various locomotives, buildings, station premises, offices needs to be optimized to prevent wasteful usage. Software solution can be helpful in monitoring the actual usage of energy and it can also compare usage by similar entity across the organization. Cases of excessive usage of energy over and above the requirement can be identified.

Sample Data Required: Yes

## Ministry Of Department Of Rural Development:

## Mapping Beneficiaries of Health Services

Identification of Beneficiaries of Railway Health Services at the point of delivery of service can help in preventing pilferage of resources and also help in creating health profile of the patients. It can help in planning resources and man power required. Linkage of Aadhar can also be considered.

Sample Data Required: Yes

## Energy Efficiency

More than 2 crore passengers and 13 lakhs employees use railway infrastructure and offices.  Promoting behavioral change among passengers and employees to use energy efficient habits can help in saving energy. A software solution to keep reminding employees and passengers about efficient methods of using electric equipments is required.

Sample Data Required: Yes

## Website security

Data from enquiry websites is being used by several other websites without proper authorization from railways. Unauthorized usage of data puts additional loads on the websites and slows down its performance.  A solution to prevent unauthorized data scrapping is required.

Sample Data Required: Yes

## Integration of multiple Railway websites

Indian Railways have various websites viz, indianrailways.gov.in, indianrail.gov.in, irctc.co.in, enquiry.indianrail.gov.in.  The traffic on websites gets divided and user has to access different website for different services.  Integration of all websites into a single website will help in user convenience and greater popularity.

Sample Data Required: Yes

## Virtual Tour of Railway Station

A host of facilities are available at major railway stations.  However, passengers are often unaware of the location of such facilities.  An application to provide virtual tour of Railway Station can be helpful in facilitating the information flow to the passengers.

Sample Data Required: No

**Unification of Railway Apps**

Indian Railways have separate mobile Apps for train enquiry, e-ticketing, unreserved ticketing etc.  Unification of all the Apps on single platform will increase convenience for the users as well as improve popularity of the App.

Sample Data Required: No

## Disaster Preparedness

Rail accidents cause loss of life, property and hardships to passengers and railways.  Participation of all the stake holders viz., passengers, railways, local administration and citizens in nearby areas can help in speedy restoration.  A software solution to seek support and get required help in time is required.

Sample Data Required: No

## Involving Passengers in Upkeep of Railway Stations

Railway stations are used by two categories of passengers – daily commuters and occasional travelers.    Involving passengers in station upkeep through education and active participation can help in finding a lasting solution.  Software to keep people engaged about the need to maintain the railway stations is required.

Sample Data Required: No

## Management of Railway Rest Houses & Holiday Homes

At present, the allocation of accommodation in Railway Rest Houses, Holidays Homes is done manually.  The request is to be given in writing and there is no mechanism to advise the applicant about status of booking of rooms.  This causes uncertainty and difficulty in planning one’s programme.  An online system of submitting request and allocation of rooms is required.

Sample Data Required: Yes

## Condition of Rail Bridges

Some of the Rail Bridges on Indian Railway network are very old.  Monitoring the condition of rail bridges is extremely important for safe train operations.  A software solution to monitor the condition of bridges can help in timely maintenance.

Sample Data Required: Yes

## Management of GUI based Multilevel Numbered List

In e-procurement system of Railways, several forms require creation of numbered list (like insertion of items in a tender document).  In such cases, multi level numbered lists are allowed.  In case of manual numbering, the user is required to manually edit the numbering of all subsequent items in case of any editing.  To improve user experience, it is intended to use auto numbering with features like auto updating of all serial numbers in case of insertion or deletion of row, user to be able to edit any or all serial numbers.

Sample Data Required: Yes

## De duplication of Price List Numbers

All regularly purchased items on Indian Railways are allotted a unique code called Price List Number (PLN).  In the database there are lakhs of records.  In some cases, same PL Numbers has been allotted to multiple items and in other cases multiple PL numbers have been allotted to same item.  An application needs to be developed to suggest duplicate PL Numbers by finding similarity in the PL description fields of different PL Numbers so as to eliminate the duplicity in data.

Sample Data Required: Yes

## Travel Planner App

An App to plan the journey with confirmed tickets availability from origin/way side station to be developed.

Sample Data Required: No

## Accidents at Unmanned Level Crossings

At several places, railway tracks are at the level of road.  Due to resource constraints, no railway staff is posted at many such crossings of railway track and road.  Accidents are often reported due to negligence by the road users.  A solution to this problem    needs to be developed which is effective and cost efficient.

Sample Data Required: No

## Ticket Checking System

At present, ticket checking is done on trains, at station exit and also at platforms.  Ticket checking is manual process and due to shortage of ticket checking staff, only a small number of passengers are checked.  There is need for solution which can ensure 100% ticket checking.  The solution should be such that passenger need not have to wait for getting his ticket checked.

Sample Data Required: Yes

**Preventing Untoward Incident**

Software solution for preventing untoward incident based on analysis of past data, identifying possible vulnerable areas and action to improve security at those places can help in improving security.

Sample Data Required: Yes

## Telecom Connectivity

Indian Railways have telecom connectivity through RailTel OFC network, BSNL etc., for reserved ticketing counters, Unreserved ticketing counters, freight operations information system terminals etc., across the country.  The uptime of telecom channels is monitored through network management system.  A software solution to monitor the telecom channels, analyze the status or performance of various channels and prevent failures can help in improving performance.

Sample Data Required: Yes

## Signaling

Indian Railways have multiple types of signaling system.   Failures of signals severely affect the movement of traffic.  Predictive analysis which can help identify the likely failure cases in near future can help in timely attention thereby preventing failures

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Coaches and Wagons are maintained as per schedule in nominated depots.  The availability of complete profile of each coach and wagon at a centralized data base and its analysis can help in generating useful information about the causes of breakdowns, likely failures in future in specific coach or wagons and thereby enabling planning for maintenance.

Sample Data Required: Yes

**Tracking of Individual Package Booked in Parcel & Luggage**

Parcel and luggage packages are booked for transport from one station to another. A receipt is issued to the consigner on depositing the package at parcel/luggage office.  At some stations where computerization of parcel office has been implemented, Barcode tags are pasted on package.  At present, the mechanism of tracking of individual package is not available.  Customer wants the information about current location of the package on Indian Railways system.

Sample Data Required: Yes

**Waste Management**

Huge amount of waste is generated on Railway stations and on trains.  Efficient waste management will help in keeping the station premises and trains clean and also enhance passenger comfort. Solid waste generated at workplaces, colonies, hospitals, etc is also required to be disposed properly. Software solution for efficient waste management can help in timely action.

Sample Data Required: No

## Energy Utilization

Expenditure on Energy is one of the biggest heads of expenditure for Indian Railways. Energy utilization by various locomotives, buildings, station premises, offices needs to be optimized to prevent wasteful usage. Software solution can be helpful in monitoring the actual usage of energy and it can also compare usage by similar entity across the organization. Cases of excessive usage of energy over and above the requirement can be identified.

Sample Data Required: Yes

**E-ticketing**

Issue of bypassing checks related to IP and multiple IDs creation are reported on e-ticketing website irctc.co.in.  A solution to the issue by linking of IP address, Machine ID, User ID etc., needs to be developed to ensure implementation of checks regarding maximum number of tickets being booked by an individual.

Sample Data Required: No

## Department Of Defence Production:

**To transmit document across Air Gap between Internet and Intranet**

One major problem faced in e-communication is that each agency has its  own isolated secure intranet but not connected to each other. Hence majority of communication is through hard copies or tedious process of downloading document on one internet/ intranet. Printing/ scanning and uploading in another intranet as most intranet require air gap to be maintained between Internet and Intranet. Organisation spends large amount of time & effort to convert hard copies to e-documents or vice versa and process them. We need an e-solution that will allow e-doc (Text/ Word/ PDF) from one intranet to another intranet or internet and vice-versa without violating the air-gap security breach or virus/ malware infection. This would reduce our processing time to produce a new standardization document significantly. This solution when applied to various defence networks would also provide major relief to communicate with ease across air-gap.

Additional Inputs:

* Agencies maintain different e-mail id for correspondence on intranet and internet.
* Process needs to automated to detect Text/ Word/ PDF attachment in incoming internet mail, download, use sensors to securely transfer across air-gap, convert back to Text/ Word/ PDF attach to intranet mail or folder.

Sample data required: No

## MD’s Message Online

MD’s message online to the Company’s Workforce. Without movement of the workforce in a Auditorium, Workforce can hear what is MD’s message to the workforce and they should be able to ask their questions/ queries too from their work location.

Suggest a solution to be implemented over company’s intranet.

How can this be implemented.

Sample Data Required: No

## Group Messaging Solution between Senior Exec’s & MOD

Evaluation of a group messaging solution between senior executives of DPSU’s and MOD’s workforce. The solution should be secure and only encrypted messages should be allowed, with no uploading of any file. The solution should support Group conference, Sharing of Desktop, Meeting Features.

Design a client server model with necessary secrecy/ security over mobile/ internet environment.

Sample Data Required: No

## To format document as per Formatting Standard adopted by DoS

A lot of formatting errors occur while standards are prepared as drafting is done in parts by multiple persons from multiple agencies. DoS needs a software tool that ensures document is formatted and published as per pre-defined formats.

Design a suitable interface where formatting information can be fed and output customised accordingly in an automated manner.

Make necessary assumptions, any open source word processing tool may be used.

Sample Data Required: No

**Negotiated price List for Regularly required products in DPSU (IT/ Non IT)**

Having a Yearly Negotiated Price List for equipments/ products/ services/ raw materials/ tools at DPSU Level.

To reduce the procurement time. With the requirement of IT products/ equipments/ services/ raw materials/ tools more or less on similar lines, yearly Procurement council of all DPSU’s can discuss and negotiate prices for a list of items, which can be released to all DPSU’s. This can greatly reduce the procurement time and quicken the purchase cycle. Some mechanism needs to be developed to enable this idea.

Suggest a design of a web based solution with associated distributed database, modules and interfaces.

Sample Data Required: No

## Data Consolidation for information kept at 4 different servers and in 4 different formats In shipbuilding Industry

1.1st Stage *–* Ship Design done using CAD software . The Data is stored in a OS level file systems.

2.2nd Stage – Product Data Management where Project & Work Completion schedules for every part designed in CAD is maintained along with quantity required in RDBMS like (Oracle/ SQL Server etc.) Predominantly it is OLTP based RDBMS.

3.3rd Stage – ERP itself where Project Data is linked with Inventory, Financials & HR. With exponential growth in Data Generated in ERP, generally enterprises are going for a Column based data storage.

4.4th Stage – Business Intelligence software where all the Data generated in past 3 stages should be consolidated and a 3 dimensional view of the Ship under construction should be projected. Generally this is stored in OLAP based RDBMS.

How to consolidate these 4  different formats of Data and present a consolidated picture.

Sample Data required: No.

**Asymmetric Key Based Encryption and Authentication for File Sharing**

HAL executives need to send many documents over the internal network which sometimes contain sensitive information. These documents will generally be password protected and password will be communicated through separate means. This is cumbersome and some time lead to guessing the password and opening the file by unintended person. A solution to be provided for encryption of a file and authentication of the user using asymmetric key algorithm (Public & Private key). The system should not to use any dongle/ Hardware device like digital signature, rather it is only a software driven digital signature system, which will encrypt the file and also authenticate the user. Keys can be generated through the system and distributed to users by the administrator. File encryption and authentication can be done using this small portal/ system on website.

Suggest an open source based solution.

Sample Data Required: No

## Collection and consolidation of Data through standalone files

HAL  has  to  frequently collect information pertaining to different departments in soft copy form. This data has to be consolidated  at Division, Complex and Corporate Levels and further analytics will be done on top of this data. Right now, the collation of Data happens by sending a Template in Excel/ Word to concerned  personnel through HAL’s internal mailing system. The  filled in Templates thus obtained  are consolidated using Excel/ Word by Copy-Paste, applying some formulas etc. The problem with this approach is that Making the Template with required validation, Data type requirement etc is a very tedious Job. The data fields required also undergoes some changes after sending the Template. A solution can be suggested to generate a offline Data Capturing template in Excel/ PDF  by the program owner with fixed (locked) cells/ columns, so that users can fill in the data in those cells/ columns only. No additional cells/ columns can be created by users.  Also data types such as numeric, text and Date can be defined by the program owner and Data to be filled has to match these Data types. Later after collecting the data in offline mode, Data  to be migrated to a predefined table of Oracle Database. This will help in collecting data for various requirements and can be used in Dash Board etc.

Necessary assumption be made.

Sample Data Required: No

**e-Log Card**

HAL is servicing many aircrafts and Helicopters. The aircrafts and helicopters dispatched by HAL contains a Log-card containing the Data on all LRUs (line Replaceable Units)  fitted on the Aircraft. This Data includes information such as Serial No., Flying Hours, Next Service Due, etc. This information will be changing once the customer performs some operations/ maintenance activities at the bases. When the aircraft comes again for servicing at HAL, the updated log card comes in hardcopy and manually punched for various analysis. The requirement is to automate the process of Log card maintenance. Devise a solution with offline data storing mechanism that can be executed in a standalone PC.  The solution should enable capture of information relating to log cards and save it in the PC. A interface should also be provided for downloading the data in  different formats such as CSV, XML etc for uploading to other Transactional Systems such as ERP.

Assume up to 100 parameters for 50 types of platforms.

Sample Data Required: No

**Biometric Authentication for Web Applications**

HAL is using many web based applications which requires capturing of credentials of the user such a employee code, designation, department etc. Currently the credentials are captured using a username and password for most of the applications. Although this authentication mechanism is sufficient for most of the requirements, users some times share their passwords which defeats the purpose in certain applications where it has to be ensured that the user being logged in is physically the same.  The Biometric authentication solution should have a generic code which can be plugged into any web based application and perform  authentication by Comparing a Users finger print (in binary/ hex etc) with the value stored in the Database. There should be provision for configuring tolerance (certain percentage of relaxation)  in matching the finger prints with the Database. Code preferably written in ASP.Net environment.

Sample Data Required: No

## Secure Correspondence amongst stakeholders over internet

Organizations makes lot of correspondence with Stakeholders. Many a times there is a  communication delay since the correspondence happens through hardcopy and reply also goes in hardcopy. The correspondence may also contain some sensitive information and should be protected from any unauthorized access. Commercial grade security is provided by techniques such as SSL VPN. A secure means of correspondence over the internet having military grade unique security which can work in asynchronous/ synchronous/ media transfer needs to be established between HAL and Stakeholders  which will make the communication faster and more efficient. Provision for scanning and uploading documents and mailing to concerned personnel should also be provided. The network should also enable KM requirement of stakeholders.

Sample Data Required: No

**HAL-Customer Data Sharing Interface**

HAL and Customers are maintaining separate RDBMS for various types of orders placed on HAL. There is a requirement of exchanging data between the two Databases. HAL & Customer network are Separate and the data in  the form of CSV/ XML file will be uploaded on a separate server in a common template. The common template needs to be updated through CSV/ XML. A sample common Template for Customer Order is as follows:-

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Order No | Order Date | Part No. | Quantity | Cleared Date | Receipt Date |
| (a) | (b) | ( c ) | (d) | (e ) | (f) |
|  |  |  |  |  |  |

Column (e) will be updated by HAL and column (f) by Customer.  The data in the CSV/ XML file should be secure and cannot be modified in transit. Device a solution for securely achieving the Data exchange and  update the common Template on a daily basis.

Sample Data Required: No

**Image Based Object Recognition**

Airborne platforms e.g. Aircrafts, Helicopters, UAVs etc are used for surveillance and reconnaissance activities. It is required that the onboard imaging system should capture the moving objects on ground and perform data processing in real time to recognize the objects. Images shall be captured from the onboard camera installed on an airborne platform (Aircrafts, Helicopters, UAV etc). The identified ground moving object needs to be matched with pre-stored object signature. Accordingly, the object type needs to be recognized in terms of name of the objects(e.g. Car, Bus etc), object type (e.g. Car type: Swift Desire etc).

Input:  Image captured from the airborne platform, Predefined set of sample object images.

Output: Recognized object with the relevant information display like object name, object type etc.

Environment:  C/C++

Sample Data Required: No

**Video Stabilization for Unmanned Aerial Vehicles**

Unmanned Aerial Vehicles carry color and infrared cameras to capture outside scenes in real-time. In military applications, the quality of imagery that these vehicles relay to the operators is directly related to how much of information they can extract from the frames being captured in real-time. Generally the captured video looks jittery and not appealing due to vibrations of the platform. This issue of oscillations and low frequency vibrations has to be addressed to improve visual quality without compromising computational efficiency.

Input: Jittery videos being captured by UAV in real-time

Output: Stabilized videos

Environment: C/C++

Sample Data Required: No

**Alertness App (Monitoring Tool)**

A mobile application to detect measure of alertness of user. Also provide tools and utilities to improve and maintain the alertness of user. In case of serious fatigue and sleeplessness generate alert by sending message to specific number.

Question: Design and development of mobile application to measure level of alertness?

Inputs: Mobile Sensor data or user questionnaires.

Output: Shows the alertness level and options to send it to someone. Also it should provide ways to improve the alertness of the user.

Sample Data Required: No

**Secure Copier (Secure Pen drive Copier)**

Develop a secure software/ tool which will only should Read/ Write from/ into the Pen Drives.

When some files or data is reading/ writing from/ into the Pen Drive it should give a pop up saying the following files are copying/ writing from/ into the Pen Drive, you want to continue or skip/ cancel without user intervention no data should be copied.

If the Pen Drive is being used on any other unauthorized system, then the Pen Drive should get formatted automatically.

Only authorized Pen Drives should be enabled on the machines.

Sample Data required: No.

**Remote Desktop Monitoring**

How to remotely monitor around 6 systems simultaneously. The intent is to split the screen into 1/6th and monitor all systems at the same time. Services are available to remotely monitor multiple desktops. It is overlapping. Our aim is to fixed location for each monitor whenever it is opened.  These remote desktops should not be overlapped with each other. User has to view simultaneously all the monitors.

What to do:

Develop the software to split the monitor based on number of remote desktops and fix location for each desktop.

Sample Data Required: No

## Medical record tracking system

Development of online Medical solutions (desktop application and mobile application) to view/ request for medical service to self/ family of the service personnel.

The solution has to enable them to utilize the services available in their region of stay/ postings/ field.

It should support maintenance of comprehensive data records lifelong of the personnel in electronic formats.

It helps in quickly delivering critical medical information/ service where it is needed to save lives when time is of the essence.

This data of the personnel collected over a period of time in data centres can also be used for medical data analysis of the defence personnel and disease patterns.

Assume medical record structure.

Sample Data Required: No

**Govt to host a ministry level, automated tender information system**

Development of Online Application to obtain real time info/track the status of any Government department related tenders by the vendors.

The app can also have provision for vendors to provide feedback, raise their concerns, this helps to improve transparency.

This can be an umbrella solution which can combine all info currently available in different Government department websites.

Assume structures and create an application which meets above requisite.

Sample Data Required: No

**Development of Plug-in to the IDE to add a function as reusable code and retrieve from the reusable list of functions**

Eclipse plug-in for code reuse – During development developers would want to know if a particular functionality or piece of code has already been implemented in some other project with a view to reuse code. Generally organizations maintain ‘reuse library’ where developers can look for reusable code. A facility access, review and incorporate code from within the IDE would improve the productivity of the developer.

Sample Data Required: No

**Development of Plug-in to find out programmers coding efficiency (Based on the compiler output)**

Identifying specific areas for improvement of software developers is very essential in providing focused training and there by improve productivity and product quality. This is usually done based on the feedback from their reporting officers. However, detailed inputs in this regard can be obtained by capturing the way the developer codes. Most developers use eclipse based IDE for development and invocation of static analysis tools to verify compliance to various coding standards (Quality, Security) are integrated into the IDE. A plug-in or a new version of IDE can be developed to capture the type of errors (e.g. syntax errors) and noncompliance with respect to coding standards. From the number and type of errors it is possible to assess the training needs of the developer.

After the training the same can be used to measure training effectiveness.

Sample Data Required: No

## Provisioning of Group members location & Chatting

Providing real time location of a group of people on a single screen has many advantages. The group of people can be family members and their real time location can provide them security. The group of people can be a group of police officers who are on field to locate some gangster. The group of people can be member of an elite force who are infiltrating a terrorist or naxalite location. So a mobile based application can be developed that will help people to locate other members of group in real time using GPS technology. The applications can provide details about the location of all members and a platform to communicate with them.

Provisioning a text based chat facility among the users, select a user single user group on the map and send camera pictures/ video.

Sample Data Required: No

**Low cost asset tracking system**

Presently office assets and equipment are numbered manually and their tracking and annual audit is done manually.

A suitable system with barcodes and barcode readers with backend system for tracking, auditing and ageing analysis will help a lot in asset management (alternately electronic tags can also be used instead of barcodes).

Suggest a scalable solution for tracking 500 IT and non-IT office assets distributed over 5 locations.

Sample Data Required: No

**File server solution to bring accountability of official electronic files copied on portable media**

Presently it is difficult to trace what kind of files are copied by employees and service providers on portable media like pen drives.

A suitable file server solution with built in checks and audit trails will help a lot in bringing accountability on employees and service providers.

The system should keep track who copied, what is copied with audit trails which are temper proof. Network has Windows and Linux servers and client machines have various flavors of windows.

Sample Data Required: No

## Group Messaging Solution between Senior Exec’s & MOD

Evaluation of a group messaging solution between senior executives of DPSU’s and MOD’s workforce. The solution should be secure and only encrypted messages should be allowed, with no uploading of any file. The solution should support Group conference, Sharing of Desktop, Meeting Features.

Design a client server model with necessary secrecy/ security over mobile/ internet environment.

Sample Data Required: No

[**Students' Voice**](https://innovate.mygov.in/challenge-category/citizens-voice/)

WHAT IS MIGHTIER THAN A PEN? Your ability to voice out India’s problems!! We invite you to be part of World’s biggest hackathon and India’s Digital Revolution. Come, propose digital solutions to some of India's most daunting issues.

## Do you have ideas to solve most daunting problems of India?

Do you know any problems faced by our nation? Do you have it in you to propose the Best Digital Solutions to solve some of them?

Then this is the exact place for you.

Just click below to participate.

[**NCPCR**](https://innovate.mygov.in/challenge-category/ncpcr/)

NCPCR Commission's Mandate is to ensure that all Laws, Policies, Programmes, and Administrative Mechanisms are in consonance with the Child Rights perspective as enshrined in the Constitution of India and also the UN Convention on the Rights of the Child. The Child is defined as a person in the 0 to 18 years age group.This department has identified 19 problem statements for the Smart India Hackathon 2017.

## Achieving the indicators setup by NCPCR for Child Friendly Villages to improve the status of children across the country.

Villages across 14 States/UTs have been indentified on the basis of work done in the field of health, education, protection and participation of children to become Child Friendly Villages as per indictors developed by NCPCR. The objective of Child friendly village is (i) to develop parameters of a child friendly village through consultation with specialized UN agencies including UNICEF and other NGOs. (ii)To formulate child friendly model at Panchayat level as a pilot initiative to achieve child friendly village. (iii)To ensure child participation and choices in matters and decisions affecting their lives.(iv)To document the experience for scaling up and replication.

A digitized monitoring tool needs to be developed for effective monitoring of Child Friendly villages across States/UTs currently on pilot basis. This tool should be developed in such a manner so as to scale it to all States eventually.

Sample data required: No

## Trained and qualified Counsellors in Child Care Institutions and in Schools

In the era of rapid economic growth and changing societies, issues pertaining to Mental Health problems are on an incline. Children are also subjected to various stressors impacting there psychosocial wellbeing and emotional health. Instances of depression, dysthymic moods, substance abuse, episodes of increased violence, bullying, abuse including sexual offences and other behavioral problems amongst children are becoming common and rampant in schools and other institutions of child care (CCIs) viz. Children Homes and Observation Homes etc.

To deal with such kind of situations an app based solution may be developed for providing telephonic/online counseling and information dissemination w.r.t mental health problems.The end user of such an app could be children and staff of CCIs, parents and other relevant stakeholders.

Sample data required: No

## Digitalization of Monitoring Mechanism of Anganwadi Centres (AWCs)

To ensure effective monitoring of Anganwadi Centres (AWCs) across the country, digitization of the data pertaining to AWC should be done i.e.  Standardized Matrix of Anganwadi’s in various Districts of States/UTs w.r.t. Supplementary Nutrition, Immunization, Health Check-up, Referral Services, Nutrition and Health Education and Non-formal Education needs to be developed. At the end of every quarter an automated State Report Card should be generated comprising of these indicators. This document shall be reference point of NCPCR for Monitoring purpose.

Sample data required: No

## Grievance Redressal Mechanism related to Child Health and Nutrition at NCPCR

For effective monitoring of Grievances pertaining to Child Health and Nutrition, there has to be standardized data matrices for capturing the same across various State and UTs. To enable this, a standardized data matrices system need to be developed which could be adopted by the concerned stakeholders i.e. Ministry of Health and Family Welfare, Ministry of Ayush, ministry of Drinking Water and Sanitation, Ministry of Women and Child Development, Ministry of Food, SCPCRs etc. This should eventually be culminated with the digital grievance redressal mechanism of NCPCR such as *E-Baalnidan*.

Sample data required: No

## Developing an automated Grievance Related Mechanism

To receive complaints regarding child rights violation, NCPCR has an online portal of Complaint Management System called eBaalNidan. Through eBaalNidan, any individual or organisation can file complaint relating to violation of child rights through internet facility. Complainant can view status of his or her complaint. Once the complaint is registered, NCPCR takes cognizance of the matter and upload the action taken on the system manually. With the use of technology, there is a need to make to make this system more effective and automated.

Sample data required: No

## Monitoring of children in Child Care institutions (CCIs)

As per J.J. act 2016, “child care institution” means Children Home, open shelter, observation home, special home, place of safety, Specialised Adoption Agency and a fit facility recognised under this Act for providing care and protection to children, who are in need of such services.  To ensure the timely rehabilitation of the children brought in CCIs, a centralised online system is required to track the children these institutions and time taken to rehabilitate/repatriate these children.

Sample data required: No

## Awareness regarding Skill Training protocols developed by National Skill Development Council

NSDC acts as a catalyst in skill development by providing funding to enterprises, companies and organisations that provide skill training. It will also develop appropriate models to enhance, support and coordinate private sector initiatives. It was set up as part of a national skill development mission to fulfil the growing need in India for skilled manpower across sectors and narrow the existing gap between the demand and supply of skills. Since it’s inception, one of the pillar on which NSDC was built are the Sector Skill Councils (SSCs), which play a vital role in bridging the gap between what the industry wants and what the skilling curriculum ought to be. The National Occupational Standard is one of the most significant contribution of NSDC to India’s skilling ecosystem – something that was made possible by the SSCs, which are national partnership organizations that bring together all the stakeholders – industry, labour and the academia. In order to achieve this ‘Skilling’ needs to start from formative years of a child. NCPCR has recommended to CABE Committee 2016 for imparting vocational skill based Education which requires detailing of skill based programs and ensuring them to be adopted as part of curriculum for children in schools. For this, the first and foremost step is to create awareness regarding the various skill programmes by NSDC in form of an application.

Sample data required: No

## Nutritional value of MidDay Meal served in government schools

With a view to enhancing enrolment, retention and attendance and simultaneously improving nutritional levels among children, the National Programme of Nutritional Support to Primary Education (NP-NSPE) was launched as a Centrally Sponsored Scheme on 15th August 1995, initially in 2408 blocks in the country. By the year 1997-98 the NP-NSPE was introduced in all blocks of the country. It was further extended in 2002 to cover not only children in classes I -V of Government, Government aided and local body schools, but also children studying in EGS and AIE centres. Central Assistance under the scheme consisted of free supply of food grains @ 100 grams per child per school day, and subsidy for transportation of food grains up to a maximum of Rs 50 per quintal. Though the real-time data on number of children availing MDM can be tracked using the real-time school attendance of children, it is important to also monitor the nutritional value of food provided to children. For this, a low-cost and time-efficient kit may be developed that gives the nutritional status of the food being served to the children on the spot and without sending to the labs for testing.

Sample data required: No

## Admission of students under Section 12(1)(c) of RTE Act, 2009

According to Section 12 (1)(c) of the Act, all specified category or private schools must reserve 25% of their seats for children belonging to EWS from the neighbourhood and provide them admission from Class I onwards; wherever such a school provides pre-school education, these rules are to be applied to the pre-school section as well. To maintain the spirit of inclusiveness, proper implementation and monitoring of this section is significant. At present, the consolidated data on number of children enrolled under this section is not available. Hence, there is a need for an online system to monitor the (a) admissions under this section, (2) entitlements given (3) children under the section leaving school.

Sample data required: No

## Orientation on Standard Operating Procedure (SOP) on Street Children

NCPCR is developing a common framework for rescue and rehabilitation of street children across the country. The SOP will provide minimum standards for care and protection to street children. An online system needs to be developed for orientation on the SoP for all stakeholders.

Sample data required: No

## Child rights violation related news on one portal

One of the important functions of NCPCR is to take *suo motu* cognizance of matters related to child rights violation. One of the sources of information regarding this is newspapers (print/on-line). For this, the media cell in the Commission manually search the news related to child rights to be taken up by the Commission either as a grievance or policy matter. To save time and for quick action it is required that a automated system be generated where all the news related to children or child rights be received everyday for further necessary action by NCPCR.

Sample data required: No

## Information on all child related Acts on one platform

At present there are around 18 child related Acts in India. The information on these is scattered and available on different websites. An application can be developed where information on all the Acts be available along with the information of concerned stakeholders.

Sample data required: No

## Implementation of Protection of Children from Sexual Offences (POCSO) Act, 2012

The Protection of Children from Sexual Offences Act (POCSO Act) 2012 was formulated in order to effectively address sexual abuse and sexual exploitation of children. Under Section 44 of the Protection of Children from Sexual Offences (POCSO)Act and Rule 6 of POCSO Rules, 2012, the NCPCR  is mandated to monitor the implementation of the Act. Today, all police stations in India are connected through internet. However, the real-time data on number of cases registered under POCSO Act all over India is not available. A single online platform needs to be in place where all such cases be updated as soon as the FIR is registered in the police station.

Sample data required: No

**Functioning of School management Committees**

The RTE Act emphasizes on the role of local authorities, School Management Committees (SMCs) and other national and state agencies/bodies in the implementation and monitoring of the RTE Act. The first line of monitoring the provisions of Act and addressing grievances is at the local level. The School Management Committees (SMCs) have been assigned two broad functions of implementing and monitoring of the RTE Act. In view of the important role that SMCs play in implementation and monitoring of different provisions of the Act, it is important that SMCs are strengthened through effective monitoring. For this, an online system needs to be in place where the information from each SMC would be updated on the following indicators:

* monthly meetings and meeting agenda
* important decisions
* follow-up on the decisions taken
* information on School Development Plan (SDP)
* funds sought from the State government
* funds received
* information on utilisation of funds

Sample data required: No

## Reporting infrastructure related complaints in schools

NCPCR has been mandated under Section 31 of the Right of Children to Free and Compulsory Education Act, 2009 to examine and review the safeguards of the rights provided under the act and to recommend measures for its effective implementation;  to inquire into complaints relating to violation of child’s right to free and compulsory education and to take necessary steps as provided under Section 15 of the Commission for Protection of Child Rights, 2005. At present, complaints of all nature are received through different modes including by post, by email or by the online complaint registration portal of the Commission- ‘ebaalnidaan’. For speedy reporting of infrastructure related complaints, an app can be developed for uploading pictures related to infrastructure along with a brief description of the place/time/nature of complaint/problem.

Sample data required: No

## Sensitisation and monitoring of School Safety and Security Manual

NCPCR is developing a manual to assist the Education Boards/Schools in developing an enhanced comprehensive safety and security program for children in schools. This Manual on Safety and Security of children in Schools will act as comprehensive guidelines for the Education Departments, Educational boards, school staff, students etc. This will also empower students to learn about safety measures. To achieve these objectives it is important to sensitize and monitor the implementation of this manual  as per the checklist provided in the manual. For this, an mobile-based application needs to be developed for not only providing information about the manual but also to facilitate the School Management Committees (SMCs) for filling up the checklist.

Sample data required: No

## Drop-out of children of migrant families from school

Migration for seasonal employment is one of the important factors that lead to the dropout rate of children from schools. Children of migrant parents– within or outside the State of domicile– are often uprooted in the middle of the academic year. They also face trouble rejoining schools and can also drop out of schools altogether. A digitised system needs to be developed for tracking and monitoring children migrating from one place (village, cluster, block, district or state) to another.

Sample data required: No

## Non-availability of teachers in government schools

According to Sustainable Development Goal No 4: To fulfil the promise of universal primary and secondary education, new primary school teachers are needed, with current estimates showing a need for nearly 26 million of them by 2030. Currently, India is facing significant challenge with regard to shortages of trained primary school teachers. Besides, there is an issue of proxy/para teachers engaged in teaching at Primary and Secondary levels thereby affecting the quality of teaching and learning amongst students. To overcome this challenge, a digitised teacher tracking system may be developed to locate schools with shortage of teachers w.r.t the norms given in RTE Act, 2009.

Sample data required: No

## Real-time school attendance of children and teachers in schools all over India

Students’ absenteeism often leads to drop out.  Also, teachers’ absenteeism is a major concern for quality education. However, the absenteeism reporting system in most schools relies on daily paper-based attendance of children as well as teachers. The data is then complied on completion of the year. This lag in data reporting is an inhibitor in planning preventive measures for out-of-school children. There is a need of a real-time reporting system on school attendance that will result in automatically sending data from all schools to a centralized database for further analysis and presentation, for monitoring patterns of absent students and prevent such students from dropping out of school.

Sample data required: No

[**Ministry of Tourism**](https://innovate.mygov.in/challenge-category/ministry-of-tourism/)

The Ministry of Tourism is the apex body for formulation and administration of the rules, regulations and laws relating to the development and promotion of tourism in India. They are participating the Smart India Hackathon 2017 seeking real time digital solutions to 21 issues faced by them.

## Any other path breaking technological solutions that would catapult India as the number one tourist destination for global travelers.

Out of the box technological solutions that are path breaking and would revolutionize promotion of tourism to India in the overseas markets and within India.

Sample Data Required: No

## Programme to monitor proposals pending with other Ministries and Departments at a glance.

The Ministry of Tourism receives a number of proposals under various promotional and      developmental schemes of the Ministry.  A Programme is required to monitor such proposals received and action taken on the same.

Sample Data Required: No

## Smart application for monitoring and tracking applications received and funds released under Market Development Assistance Scheme to service providers of the Ministry of Tourism.

The Marketing Development Assistance Scheme (MDA), administered by the Ministry of Tourism, Government of India, provides financial support to approved tourism service providers, i.e. hoteliers, travel agents, tour operators,tourist transport operators, approved by the Ministry of Tourism, Govt. of India or by the State Tourism Department in the case of Jammu & Kashmir and the North Eastern States (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura) for undertaking a various tourism promotional activities abroad.  Application for monitoring and tracking applications received and funds released under MDA Scheme is required.

Sample Data Required: No

## Smart solution for monitoring and to take follow up action with tour operators and decision makers after participating in various leading Travel Exhibitions / fairs / Marts / Expos, etc.

The Ministry of Tourism and its field offices in India and overseas markets participate in a number of leading travel and tourism fairs, exhibitions, expos, etc. A smart solution is required to monitor follow up action with tour operators and decision makers.

Sample Data Required: No

## Creating Incredible India Mobile App 2.0 version to make it most effective and sought after application.

The Ministry of Tourism launched the ‘Incredible India’ mobile application  in September 2014 to  assist international and domestic tourists to access information about Ministry of Tourism recognized tourism service providers namely approved Inbound Tour Operators, Adventure Tour Operators, Domestic Tour Operators, Tourist Transport Operators, Travel Agents, Regional Level Guides, Classified Hotels available in respective cities / Tourist centers including heritage significance of the place.

Incredible India Mobile App 2.0 version with more features using latest technology to be developed to make it a most sought after travel application for India on all platforms. The application must be purely informative and not to have any provision for commercial transactions of private party.

Sample Data Required: No

## Application for providing company profile of wholesaler / retailer tour operators overseas with details such as brochure support, joint advertising support, hospitality guests sent, etc.

An application providing information about wholesaler / retail tour operators overseas with details such as brochure support and Joint Advertising Support extended by India Tourism Offices in overseas markets to be developed.

Sample Data Required: No

## Smart Solution for monitoring publicity returns of Travel Writers / Journalists / TV Team, etc. invited under the hospitality scheme of the Ministry of Tourism for providing publicity for India.

The Ministry of Tourism, invites overseas travel Writers, Journalists, TV Team, Photographers, Opinion Makers on a familiarization of tour of India under its hospitality scheme. The purpose is to create awareness about India in the overseas markets and enhance foreign tourist arrivals to India. These overseas guests after visiting India, provide publicity returns in the form articles, documentary programmes, photos, etc. on India in various publications, TV channels, etc. in their countries. A smart solution is required to monitor publicity returns of various guests invited by Ministry of Tourism.

Sample Data Required: No

## Application for sourcing content and relevant information from various websites of Tourism Departments of State Governments and Union Territory Administrations in India.

In order to populate content in the form of text, images and videos on the www.incredibleindia.org website of the Ministry of Tourism, it  is interested in developing an application for sourcing authentic contents from websites of tourism departments of States and Union Territories.

Sample Data Required: No

## Solution for real time monitoring & tracking of projects and utilization of funds sanctioned to State Governments & Union Territory Administration under PRASAD Scheme of the Ministry of Tourism.

National Mission on Pilgrimage Rejuvenation and Spiritual Augmentation Drive (PRASAD) is one of the two flagship schemes of the Ministry of Tourism for integrated development of pilgrimage destinations in a planned, prioritized and sustainable manner to provide complete religious tourism experience. Under the Scheme, large sum of funds are disbursed to State Governments / Union Territory Administrations for developing tourism related infrastructure.  Technology based solution / application required to effectively monitor funds released and their utilization by State Governments / UT Administrations.

Sample Data Required: No

## Solution for real time monitoring & tracking of projects and utilization of funds sanctioned to State Governments & Union Territory Administration under Swadesh Darshan Scheme of the Ministry of Tourism.

Swadesh Darshan is one of the two flagship schemes of the Ministry of Tourism, wherein a large sum of funds are disbursed to State Governments / Union Territory Administrations for developing tourism related infrastructure.  Technology based solution / application required to effectively monitor funds released and their utilization by State Governments / UT Administrations.

Sample Data Required: No

## Application for real time monitoring of daily expenditure (accounts) of India Tourism Offices in India and overseas

The Ministry of Tourism is required to monitor expenditure of its fourteen offices overseas. These Offices are located at Sydney, Singapore, Beijing, Tokyo, Dubai, Johannesburg, Frankfurt, Paris, Milan, Amsterdam, London, Toronto, Los Angeles and New York  Each office is allotted annually funds in Crores of Rupees for running office, undertaking tourism promotion in various countries under their jurisdiction. In order to ensure effective use of funds, an application for real time monitoring of daily expenditure by overseas offices required. Allocated funds are utilized by the offices under various items of expenditure.

Sample Data Required: Yes

**Creating a dashboard for real time monitoring of performances by 14 India Tourism Offices located overseas based on Annual Action Plan of the concerned offices.**

The Ministry of Tourism has 14 offices overseas, they are called India Tourism Offices.  Their activities, performances required to be monitored on a daily basis by creating a dash board.

Sample Data Required: Yes

[Login here](https://innovate.mygov.in/login/?action=wordpress_social_authenticate&mode=login&provider=MyGov&redirect_to=https://innovate.mygov.in/challenges/creating-a-dashboard-for-real-time-monitoring-of-performances-by-14-india-tourism-offices-located-overseas-based-on-annual-action-plan-of-the-concerned-offices/)

## Creating a dashboard for real time monitoring of performances by 20 India Tourism Offices located in India, based on their Annual Action Plan.

The Ministry of Tourism has 20 offices in India, they are called India Tourism Offices.  Their activities and  performances are required to be monitored on a daily basis by creating a dash board.

Sample Data Required: Yes

## Developing Virtual Tour on the themes Cuisine, festivals, etc.

Virtual Tour is a technology driven tool widely used for marketing destinations all over the world.  India’s myriad tourism products and unparalleled beauty cannot be matched by any other country. Ministry of Tourism is interested in developing Virtual Tours on various theme including on variety of Cuisines popular in India and colorful festivals.

Sample Data Required: No

## Developing an algorithm for impact analysis of various publicity campaign being undertaken by the Ministry of Tourism in the Print Media, TV, Online and Social Media.

The Ministry of Tourism undertakes publicity campaigns in the Print, TV, Digital media, etc. for visibility of brand Incredible India, to create awareness about India among overseas travelers and   to encourage Indians to explore their country. A methodology is required to be worked out to analyze effectiveness of such campaigns undertaken by Ministry of Tourism both in the domestic and international media.

Sample Data required: Yes.

## Mobile application for mapping wildlife sanctuaries / National Parks / Bird Sanctuaries with requisite travel information useful for tourists.

Wildlife is one of the important aspects of adventure tourism. The Ministry of Tourism is interested in showcasing the diversity of flora and fauna in India’s National Parks / Willife sanctuaries / Bird Sanctuaries to both domestic and international travelers through a mobile application.

Sample Data Required: No

## Application for mapping of trekking routes in the Himalayas giving details of accommodation facilities, banks, hospitals, eateries, real-time information on weather and other relevant information required for trekkers.

Trekking in Indian Himalayas, Western Ghats, Eastern Ghats, Garwahl, Kumaon, Vindhya, Satpura, Aravalli ranges is rapidly growing in popularity as tourists seek different kind of vacations. An application for mapping all popular trekking routes in the Himalayan ranges, as well as other mountain ranges with necessary / relevant tourist information required by trekkers to be developed.

Sample Data Required: No

## Smart solution for providing commentary of exhibits in Museum in India.

The Ministry of Tourism is interested in developing application that provides commentary on the exhibits in leading Museums.  This would come handy for visitors to museums.

Sample Data Required: No

## Developing Offline City Maps of important cities in India.

City maps are very useful tool for tourists to explore the city they are visiting.  Ministry of Tourism is interested in developing Off-line maps of various cities, that could be downloaded from the Incredible India website of the Ministry of Tourism.

Sample Data Required: No

## Developing a Live Tourism Map of India

Ministry of Tourism is interested in developing a live tourism map of India that should show important tourism landmarks in the country, interactive and user friendly.

Sample Data Required: No

**Development of simple, user friendly and effective application for safety and security of single woman traveler in India. Application should be compatible on all platforms.**

Development of simple, user friendly and effective application for safety and security of single woman traveler in India. Application should be compatible on all platforms.

Sample Data Required: No

[Login here](https://innovate.mygov.in/login/?action=wordpress_social_authenticate&mode=login&provider=MyGov&redirect_to=https://innovate.mygov.in/challenges/development-of-simple-user-friendly-and-effective-application-for-safety-and-security-of-single-woman-traveler-in-india-application-should-be-compatible-on-all-platforms/)

[**Ministry of HRD**](https://innovate.mygov.in/challenge-category/ministry-of-hrd-ncertugccbsenios/)

1. NCERT Provides advice and support for the improvement of school education. This department is under the Ministry of HRD and they have identified 6 problems from their department for the Smart India Hackathon 2017. 2. CBSE is a Board of Education for public and private schools, under the Union Government of India. It comes under the Ministry of HRD. 3. National Institute of Open Schooling (NIOS) provides a number of Vocational, Life Enrichment and community oriented courses besides General and Academic Courses at Secondary and Senior Secondary level. It also offers Elementary level Courses through its Open Basic Education Programs

21 Problem Statement

**App for Monitoring of the Examination System**

* Based on the Geo tagging and Biometric Authentication an app is required for the following
1. Fixation of Examination Centre
2. Allocation of Invigilators, Evaluators, OSDS, External Examiners
3. Checking the Impersonation case with biometric authentication or by any relevant technology
4. Monitoring of Payment status of all the stakeholders of Examination.

Sample data required: No

## App for Intelligent Document Management system and retrieval

NIOS obtains various documents from the learners as well as preserves various official Document which needs to be digitized and retrieval mechanism should be developed for retrieval of these documents

Sample data required: No

## App for Stock Inventory of the Material Production and Distributio

NIOS Prints various Study Materials/Titles. A App is required for the tracking of the status of dispatched and balance Titles along with alerts when any titles reaches the buffer point.

Sample data required: No

**Learning Mobile App for the Learners with Disability may be developed**

* Based on the Learning disability the following may be developed
1. Study Material
2. Services provided by NIOS
3. Mobile App for Online Admission

Sample data required: No

## Integrated Mobile App for Tracking of the Job assigned to various officials as well as correspondence

Chairman Receives various communication from Ministry as well as different stake holders and based upon the requirement the jobs are assigned to various officials. To monitor these a Mobile app including the job assignment, last date to submit the report may be developed with Alerts facility.

Sample data required: No

**Digitization of the Personnel Record**

* The digitization of the HR Department including the Service Record, leaves, medical etc is required with Day to day activities.
* Data – Available

Sample data required: yes

## Complain/Feedback Redressal Mechanism

Online tracking and alerts system of complain received from the learners as well as visitors and the solution provided is required with SMS alerts.

Sample data required: No

**Online Accreditation System**

* NIOS Grants Accreditation to the Schools based on the Application form and after following the various Stages of scrutiny. The process of Accreditation
1. Submission of the Application form .
2. Digitization of the Process of Scrutiny of the forms
3. After Accreditation SMS alerts and mail to be send to the Accreditated Schools.

Sample data required: No

**Monitoring of Personal Contact Programs (PCP)**

* Learners enroll themselves from the Different study Centres and all the support in terms of Academic and Administrative is provided through these study centers. Study Centres also conduct the PCP Classes. To monitor the activities of the conduct of the Classes a i.e through Geo-tagging and Biometric Authentication a mobile app is required to day to monitoring activities and SMS alerts may be send to Learners and the coordinator for the conduct of the classes as well with the facility of payment tracking system
* Data – Data about the study centre and the Learners associated with the Study Centres can be provided

Sample data required: No

## Solution for making certification of online courses authentic at par with offline certification

The software should be able to perform proctoring of online exams appeared by learner, at any time, any place.

Sample data required: No

## Solution to prevent copy right infringement/piracy/plagiarism of NCERT text books

The tool should be able to identify that the publication is the original or the pirated one based on the paper characteristics e.g. water mark, paper quality etc., text formatting, dimensions of book e.g. length, width and number of pages etc.

The tool should scan the text published in the text books of different publishers using mobile phone, or any other devices or from inputting file and find-out whether the contents are plagiarized.

Sample data required: No

## Tool to evaluate the descriptive questions

The software should read the complete answer given by the students and evaluate the answer based on the marking scheme as far as possible in an objective way.

Sample data required: No.

## Software tool for evaluating performance of teachers by student

Software should be able to evaluate the performance of teacher based on the inputs provided by the students. The input parameters should be based on Teacher’s teaching-learning ability, attitude towards teaching, classroom management, leadership quality, inter-personal behavior etc. Based on these inputs received from the students, software should be able to give grade to the respective teacher.

Sample data required: No.

## Tool for online career counseling

The software should be able to counsel based on the academic track records, Interests, hobbies and other achievements in extra curricular activities. After consolidating all the relevant inputs the software should be able to identify the hidden potential of the candidate and advise accordingly.

Sample data required: No.

## Software tool to assess the learning achievement of students

The software should be platform independent and should assess the student’s achievement as per different learning out comes.  The purpose of these assessments would be to obtain an overall picture of what students in specific classes and subjects know and can do. These findings will be used to identify gaps between the student know and what he/she should know and diagnose areas that need improvement. This information can then be used to modify intervention strategies and frame policies, guidelines etc for improving students learning abilities.

Sample data required: No

## Prevention of Impersonation

In order to prevent any impersonation the invigilators checks candidates admit card and attendance sheet against the appearance of the candidate. However this is not a full proof system of checking impersonation.

The photograph of candidates are already available with us. There can be some online software which can match the candidate’s photograph against the candidate appearing for the examination.

A web camera may be paced at the entrance of the examination center which will first read the barcoded roll no. from admit card and than read the physical face of the candidate and match it  against that centers registered candidates. The software will give match or mismatch or percentage result of matching.

Sample data required: No

**Standardization of Marks**

Any examination body standardizes the marks across the sets of subjects based on difficulty level. At present the standardization is leading to:

1. Bunching of marks at certain level
2. The high scorers are at disadvantageous position

There should be some other method of standardization so that bunching can be avoided and equal benefit can be given to all students.

Sample data required: No

## Standardization/Grace Statistics

To arrive at standardization formula we normally do offline processing to generate statistics to get the pass percentage and impact of standardize/grace marks.

An online system is required which can give the impact on the result based on the selected standardization and grace values. The system will get the input like set no. of question paper, subject, standardize marks, grace marks. Based on these inputs the system should generate the statistics related to no. of candidates passing after awarding the proposed standardization and grace marks.

Sample data required: No

## Evaluation of Answer book

At present evaluator goes through each page of answer book physically and assigns marks on it. There are chances of overseeing an answer or skipping a page during evaluation, apart from totaling mistake.

To eliminate these errors, the OSM was introduced. However problem is being faced when a student answers question in a non serial manner.

There is need of a software which can identify question attempted by the candidate, and show the corresponding marking scheme to the evaluator. This will save the time in locating the marking scheme. A step further, if possible, system can read the answer written by the candidate and evaluate the same against the given marking scheme using some AI techniques.

Sample data required: No

## Image Data Processing and Evaluation

Competitive exams are conducted all across the country and abroad. The OMR answer sheets duly sealed are brought to Delhi for further processing through OMR scanner. This takes time and vulnerability exists.

There should be some mechanism through which the OMR answer sheet are scanned through normal document scanner and uploaded from the examination center itself on a central server. The software will generate the acknowledgement having information about total OMR answer sheet uploaded against the strength of that center. It will also show the candidates allotted to that center, OMRs images received and candidates absent. This will also keep an audit trail report like time of initiating upload, total time taken in uploading, order of uploading, date and time stamp, IP address, location of uploading.
Now after uploading, we need to evaluate the OMR sheet through image processing i.e. the system should read the image uploaded, process the data and prepare the result. This way we will be able to do the evaluation timely and without any chance of any wrong doing.

Sample data required: No

## GIS based examination centers allocation and search

At present the examination centers are being allotted based on the city choice of the candidate. Some time this leads to an examination center falling very far off from the residence of the candidate.

There is need of a software which can identify proposed centers within the 5 km radius from the candidates location. The center master data will be provided along with the capacity of the center. The software should do the center allocation based on the capacity and location of the candidate. The center should be in the same city of the candidate.
Also there should be an app through which candidate can locate the center using his/her roll no. The app will show it on the map along with the possible modes available and estimated time taken in reaching the examination center.

Sample data required: No

[**Ministry of Environment, Forests & Climate Change**](https://innovate.mygov.in/challenge-category/ministry-of-environment-forests-climate-change/)

MoEFCC is responsible for planning, promoting, coordinating, and overseeing the implementation of environmental and forestryprogrammes in the country. The main activities undertaken by the ministry include conservation and survey of the flora of India and fauna of India, forests and other wilderness areas; prevention and control of pollution; afforestation, and land degradation mitigation. It is responsible for the administration of the national parks of India. 28 problems statemenst from this Ministry will be given to technology students as a part of Smart India Hakcathon 2017.

## Mechanism to evaluate harmful radiation levels in working environment on human society and suggest measures to improve conditions.

In our working environments such as home, office, or an industry, we are surrounded by various kinds of electronic equipments which emit various types of radiation. Exposure to these radiations is known to create health problems. There is no policy, protocol or management system available in the country to handle this issue. It will be good to visualize a monitoring system to of measure the level of harmful radiation in any working environment and provide warning and suggestion on safeguard mechanism. A model project in this line will be a good initiative.

Sample Data Required: No

## Prediction of rain and local weather based on the available 100 years of rainfall data and modeling a farmer support system.

Some intelligent prediction/expectation of the local weather is essential for all agricultural activities. Mostly the farmers do it based on their understanding and observation on nature. An intelligent support system can be attempted with modern analytical tools and using database on the local weather information available. Predictive models can be made in support of the farmers for each localities and make it available on line whenever they are in need.

Sample Data Required: Yes, https://hydro.imd.gov.in/hydrometweb/(S(no0li555llzbqh4503fmvama))/landing.aspx

## Documentation and use of `Traditional Ecological Knowledge’ to conserve `Sacred Groves’ in India.

India is country with a treasure trove of traditional ecological knowledge associated with its biodiversity and natural resources. Thousands of sacred groves are available in every region which supports a high diversity of flora and fauna in the name of faith and belief.  Similarly, different rites associated with various aspects of life, different local resource management traditions associated with various belief systems, still undocumented local health traditions associated with locally available herbs and so on also need to be documented. Very little information is available Sacred Grooves in India. There is no mechanism for integrating such knowledge into a usable, functional and linked data base. A plan to device such a data base cum safeguarded retrieval information system can be taken as a project.

Sample Data Required: No

## Local level natural resource mapping and management for sustainable development.

For any local level planning for development, a proper natural resource mapping and accounting system is a prerequisite. One can select any ideal village in the country and a project can be made to map the geographical area of the village with details on the distribution of all natural resources available in the area along with human resource. Use this information for developing a digital support system for the people to understand about the available resources on real time basis such as ground water level (past and present), surface water availability, soil type, and suggestions on the farming potentials.

Sample Data Required: No

## Local level carbon sequestrations to mitigate Climate Change.

Sequestering carbon from air is a requirement to mitigate the imminent global climate change. Drive for carbon sequestration in terms of mass planting of appropriate fruit trees and other beneficial trees in villages, decentralized anaerobic production of charcoal from weed trees and plants such as *Prosopis* and *Lantana* can be taken up by the villagers. A digital mechanism can be planned to motivate this process as a mass movement across the country.  A proper quantified documentation and recording of these activities into a national data base will also create a proof for the country to present our case in the international climate change negotiations.

Sample Data Required: No

## Assessment of effect of tourism on local biodiversity in Protected Areas.

Tourism is a fast growing industry in India and elsewhere in the world. There is no mechanism available to evaluate the effect of tourism on local biodiversity in the Protected Areas (Sanctuaries, National Parks, Tiger Reserves, Biosphere Reserves etc.) in India.  Information on this effect should be quantified in real time and the management strategies should be adaptively modified. To begin with, a digital model plan for a Protected Area in India with high tourist flow to assess the effect of tourism on local biodiversity is a good project idea.

Sample Data Required: No

## Mechanism to evaluate Human-Wildlife conflicts in forest areas and develop technologies to mitigate the conflict issues.

This is an age old problem for the life of people living in and around forest areas. In the last two decades there is an increase in human-wildlife conflicts. This is due to increase in human population, decrease in forest cover and in some cases increase in wild animal population as well. Till date there is no mechanism available to evaluate the human-wildlife conflict issues in the state and national levels. Also to mitigate the issue, no technological solutions are available. Development of sensor based technology to mitigate human-elephant conflict issue could be one of the suggested problems.

Sample Data Required: No

## Evaluation of Health Hazards and management of electronic wastes.

As our utilization of electronic goods are increasing and at the same time the new technologies in the field of electronics and instrumentation making the existing equipments out dated, electronic wastes are indeed a menace to manage by the human society, considering the unprecedented high ecological threat with regard to their disposal. A digital solution system in this regard on management of electronic wastes and evaluation of health hazard to humans shall be prepared.

Sample Data Required: No

**Digital solutions for `Smart Transport’ restructuring to reduce air pollution in any city.**

Planning of `Smart Transport’ as a combination of well planned public transport and provisions of essential private transport is important for our society. Most of our cities are showing an increase level in air pollution and one of the ways to minimize air pollution in cities is through planning of `Smart Transport’. Considering all the existing practical limitations, planning a workable design of restructuring the city transport with a view to reduce air pollution is a challenge worth taking.

Sample Data Required: No

[Login here](https://innovate.mygov.in/login/?action=wordpress_social_authenticate&mode=login&provider=MyGov&redirect_to=https://innovate.mygov.in/challenges/digital-solutions-for-smart-transport-restructuring-to-reduce-air-pollution-in-any-city/)

## Digital solutions to control and manage noise pollution.

Everyone will agree that the noise pollution level in urban areas is in the increasing trend. Many studies have revealed the ill effects of excessive sound on human body. We do not have any clue about its destructive effect on the health and well being of wildlife and other animals. Hence there is an urgent need to measure, record the noise level; develop a warning-management system in our living and working environments. A model plan on this line will be a good project to undertake.

Sample Data Required: No

## Planning solid waste management for any urban area/ housing colony.

Solid waste management is a major problem of all urban areas in India.  Based on available information regarding solid waste management in major cities in the country, the most potential extent of waste generation and its removal policies shall be made through digital technology and an intelligent and efficient plan of action can be visualized and developed as a model.

Sample Data Required: Yes

## Digital solutions to evaluate the pollution and pressure on wetlands and water bodies and its conservation.

Our water bodies, especially those of the urban areas are under increasing threat due to pollution and anthropogenic pressure. As we have many colleges in cities and town, they can be motivated to do the pollution monitoring in a real time basis and the data can be integrated in to an assessment-warning-management suggestion system.

Sample Data Required: Yes

## A surveillance system for air pollution monitoring, warning and management .

Air pollution is one of the major threats to all life system in the world and India is no exemption to this issue. Most of our cities are chocked with poisonous gases and heavy loads of suspended particulate matter. This is a cause of concern for human life. Hence a digital surveillance system for air pollution monitoring shall be prepared. This localized information system of the changes in air pollution and the pollution level can alert the local people and authorities concerned in advance so that necessary remedial measures shall be taken for our wellbeing.

Sample Data Required: No

## Water usage audit of household/agricultural/industrial sectors and management plans.

One way of handling our water problem is its prudent and responsible use. A very great amount of water is being wasted in the country just by not being vigilant in its usage.  A proper system of water usage audit for house/ agriculture/ or an industry will help to promote better management plan for water usage in the country. Designing water auditing cum management plan can be taken as a good problem to work on.

Sample Data Required: No

## Evaluate the potential and develop a mechanism to promote alternative energy harvesting and usage.

The utilization of conventional fuel and energy resources such as petroleum and coal by the human society are in the increasing trend and the same time the availability of these resources are deceasing due to over exploitation. It is high time to tap the alternative energy resources or non-conventional energy resources (for example wind, wave, biomass, river flow and so on) at the earliest and if possible in a decentralized way of production and usage. A plan, design and networking proposal is required in this regard.

Sample Data Required: No

**Ministry of Skill Development and Entrepreneurship:**

Problem:

1. **Application Software – for Training Facility Management, Noida and Guwhati**
* Presently there is no In-house Application – that can facilitate Online booking of
* Incubator facility
* Training room facility
* Online registration for Trainings
* Payment gateway for online deposit of fees by Partner Institutes, Training Partners, Vendors that use Training rooms or incubators.
* There is No Online dashboard that can provide remotely Occupancy Status of Training Rooms / Incubators so that a Trainer or an Entrepreneur can plan his/her Business Premises requirements in accordance
* Need:Application that can better leverage ‘Training Infrastructure at NIESBUD and IIE.

Sample data required: No

Code : #MSD28

## 2. Entrepreneurship Facilitation Services Processing Centre

* There is no Cloud & Social fee based Online Application that can facilitate Entrepreneurs to do their:
* Day to day accounting – purchases, sales, returns
* Cash flow
* Stock taking
* Budgeting and Forecasting and Variance Analysis
* Third-party Vendor Management – Invoicing and Payment System leveraging smart payment solutions , receivables management viz AP , AR with OCR enable EIPPS ( Electronic Invoice Presentment and Payment System )
* Online Smart Banking – phasing out Manual Cheques, Doing Online Bank Reconciliation
* XBRL enabled Regulatory reporting
* Need: A customized Application that can be accessed either as a Licensed version or outsourced to Govt. Owned and Managed Entrepreneurship Facilitation Services Processing Centre.

Sample data required: No

Code : #MSD27

**3.PWD (Divyang) user friendly Entrepreneurship Support & Facilitation Ecosystem**

* Presently there is no Entrepreneurship Toolkit Application (viz Braille / Sign Language/ Speech Recognition software) that can be used by Divyang Entrepreneurs. There is need for a Divyang usable Application that is compatible – downloadable on Smart Phone or I pad or E-Book or Desktop – Laptop, based Entrepreneurship.
* Need:An integrated Application development that can be accessed by Divyang Entrepreneurs.

Sample data required: No

Code : #MSD26

## 4. National Entrepreneurship Internship Exchange

* An Online National Internship Exchange platform that can be a win-win model, where in NIESBUD can get short term resources for various entrepreneurial services like Business Plan Preparation Assistants, Training Co-coordinator Assistant, Conduct Field – Online – Surveys, Data gathering both from primary and secondary resources, Research Assistants that can help NIESBUD develop effective and efficient programs and services.
* Need: A bespoke Application development viz National Entrepreneurship Internship Exchange for Hiring, Deployment, Performance Tracking, Assignment Allocation to be developed.

Sample data required: No

Code : #MSD25

## 5. Easy solutions for doing BIG DATA analysis

* India has a population of 134 CRORES (1.34 BILLIONS). If we create a database which contains only one line information for one person each, our data base is estimated to cross millions of Zettabytes. How can we skill our countrymen to learn Big data analytics and create systems which can be safe proof? Solutions may be readymade solution for Big Data analysis or pedagogy for learning to do so. Design and suggest a Digital solution to achieve the above objective.

Sample data required: No

Code : #MSD24

## 6. Technological solution for recognition of prior skills in informal sector

* Majority of Indian workforce is working in informal sector. One of the biggest challenges for the policy makers is to understand the existing skill related manpower and to develop skill development program for skill up gradation. A number of skill development policies have been launched but inclusivity of informal sector still remains a challenge. The first ideal step is to understand the skill manpower data from the informal sector based on which the program for skill up gradation can be designed. The penetration of mobile technology is vast and the reach is increasing every day. A technologies solution is expected to understand the prior skill in informal sector. The solution has to be based on individualistic response mechanism due to the diversity in the sector.

Sample data required: No

Code : #MSD23

## 7. Skill Games

Gaming is considered as one of the best ways to impart skills while playing. This can be utilized for imparting skill training and creating NSQF level equivalent Games for vocational courses and trades. E.g. games for plumbing that uses the virtual reality to impart the exact skills. Data regarding the NSQF level for various trades is available in public domain. Design games which can be made available on Play Store or App Center for people to engage and learn while playing.

Sample data required: No

Code : #MSD5

## 8. PMKVY Dynamic Training Calendar App

Recent information / data are available on the PMKVY website to see PMKVY centers closest to one’s location preference – open, closed, available for enrolment. An app based solution in terms of a Dynamic PMKVY Calendar available on the mobile phone with GPS-enabled will help students and also employers to know what batches are underway where, when they intend to close, etc.

Sample data required: No

Code : #MSD6

## 9. PMKVY Employers App

* The detail of all trainees enrolled on PMKVY centers is available on LMIS data at https://www.lmis.gov.in/certified-candidates.There exists an opportunity to link employers to access certified candidates from the PMKVY system by job role, location, NSQF level, etc. This will elevate the Scheme *from a skills program to a jobs program*.
* An app based solution can be designed to help link the employer with the certified trainees.

Sample data required: No

Code : #MSD7

## 10. Technology platform for spreading awareness about PMKVY scheme among masses.

* Schemes like PMKVY, PMKK etc has been launched for the erupting youth of INDIA. This is a unique endeavour by the Govt. of India, which never happened in such a pronounced away even after 7 decades of independence. Enumerate various methodologies on how to percolate such a noble intention of our Prime Minister to reach to more and more masses?
* Design an effective media Campaign app based/ web based / any other for reaching out to masses and create more confidence in the heart of people of India that the schemes launched UNDER SKILLING DEPARTMENT will change the existing eco system of the country.

Sample data required: No

Code : #MSD8

## 11. Platform to track workforce requirement

* Creating a platform which can crawl information over the internet through websites where Tenders and Proposals are being listed out in India. Through Artificial Intelligence, the system can track the work force requirement in each proposal and can submit an entry on the website.
* Additionally, we can take future requirements from the corporate for their upcoming projects and allocate PMKVY numbers based on their commitment. The system can record the future demand of the corporate and through the dashboard can know the details where his workforce is getting trained. Design and propose such a digital platform which can provide these services.

Sample data required: No

Code : #MSD9

## 12. Skill India App

* There are many services provided by NSDC, details of which are available on websites of NSDC and Skill Exchange etc. The services are listed below
* Enrollment yourself for PMKVY,
* Become an NSDC training Partner,
* Partner with Skill India
* Contribute your CSR Funds to Skill India Mission
* Participate in World Skills Competition
* Find a training Center Nearby
* Setup a call or attend our weekly webinar
* Tenders or RFPs
* Skill GAP Study
* Report issues regarding a training institute
	+ Design a Skill India App that can aggregate all services above which is able to integrate and create a product which becomes our “ONE STOP SOLUTION”. It would be an effective way of disseminating knowledge.

Sample data required: No

Code : #MSD10

## 13. App to track Migration trends to find skill requirement

* Data is publically available through IMO and MEA, from which we can see the migration trends and forecast our skills requirements based on the same. This would include international and national migration trends (Natural Calamity or any Disaster).
* Design a Digital solution to be able to aggregate these data and give such national and International trends of migration to evolve Skills Requirement for the nation.

Sample data required: No

## 14. Platform for helping youth make informed decisions on career choices in the vocational sector

* With 1 million youth entering the job market every month, vocational pathways as an alternative to academic stream is imperative. While several thousand skill centres have opened across the country, informed decision making on which trade a candidate undertake training is lacking. This is because there is information asymmetry. If youth had access to relevant information (online) – they can make an informed decision on choice of trade and opt for appropriate training.
* Information such as:
* Options available (sectors and job roles)
* Access: where such training is available
* Cost – free or paid
* Academic requirements 5) Job prospects
* Estimated wages
* Career progression etc.
* Would greatly assist in making appropriate choices. There could also be provision of psychometric tests which could provide suggestions on trades which would be most suitable. This would be empowering for candidates and potentially improve outcome   metrics as also reduce dropout rates which are currently high.
* Design and suggest a Digital solution to achieve the above objective.

Sample data required: No

## 15. MIS for coordination of various departments in GoI

* When two government departments work in silo, the result is start of duplication and redundancy of work leading to red-tapism and frustrations. Almost 18-24 ministries have their own skilling initiatives being undertaken today and one of the most important tasks of MSDE is to create Coordination among all such initiatives.
* Keeping the above in mind, enumerate methods that can be enabled on digital India mission to create an MIS between the various ministries / departments of Government of India.
* Design and suggest a Digital solution to achieve the above objective.

Sample data required: No

## 16. Leveraging Project LOON by GOOGLE for spreading awareness of skill programs

* Google is launching project LOON, which would use helium balloons to reach to billions of internet user all over the world.
* How can INDIA as an emerging technological head take leverage of such initiatives to communicate to the masses and educate them on skill awareness programs?

Sample data required: No

**E- portal for processing application, registration, inspection and providing status report on affiliation of ITIs**

* There are 13,343 ITIs in the country and out of which only about 2300 are Govt. ITIs. Hence there are more than 11,000 ITIs operated by private players. Further, many more new aspirants/entrepreneurs are interested to invest in setting up new ITIs which will definitely give a leap to national skill development.
* We can provide an App for setting up new ITIs by facilitating on-line application, registration, document verification etc. and also providing feedback on standing committee inspection and finally granting affiliation.

Sample data required: No

## Creation of App for obtaining the status of regular up-gradation of ITIs

The ITIs can come on common e-platform with the proposal of up-gradation of their infrastructure with all supporting information. This would enable MSDE to make a suitable decision on the approach and modalities of up-gradation. Further, tendering, procurement of tools & equipment etc. and the time to time status report on up-gradation can be obtained through this digital platform.

Sample data required: No

**Creation of E-information Cell for providing Skill training related information which can be disseminated to all schools for providing necessary career guidance.**

The following Information can be disseminated such as

* Career choices available in different sectors and
* Emerging demand and Job prospects
* Access: where such training is available
* Details of the training courses
* Estimated wages
* Career progression etc.
* This E-information Cell can act as repository of all information which are frequently sought after by the candidates and would greatly assist in making appropriate choices.

Sample data required: No

## E-information/ Technology platform for standardized building layout and space allocations for shop floors

A system can be designed to provide information on trade specific advancements in the building layout / ambiance and shop floor layouts required to set up a modern training center to facilitate in implementation of standardized building norms. The focus on safety norms and other necessary prescriptions should be the additional information to be highlighted. This will help us keep abreast with the changing requirements also.

Sample data required: No

**National E- portal for distance learning in skill training in each sector**

* A method of studying in which lectures are broadcast or lessons are conducted by correspondence, without the student needing to physically attend /be present in a school /college. A way of learning remotely without regular & live physical face-to-face contact with a teacher in the classroom. This would be easy to use and accessible, inexpensive and can replicate the actual job situation on the virtual platform. The expert trainer can provide practical demonstration in one particular location can be regularly disseminated all over the country.
* The E-portal will provide all necessary information on the details of enlisted expert trainers, trade specific exercises covered and other necessary details on schedule of telecast etc. This would be a great help for the trainees to understand the critical practical/theory exercises through the direct demonstration of expert trainers. This also would help them to learn the same at their convenience.

Sample data required: No

**E-library and digitized didactic cell for all instructional materials, Question/Answers Bank and trouble shootings**

* The Information explosion, searching problem in traditional libraries, low cost of technology and considering the storage capacity of digital document and its maintenance then it can be easily realize that the cost of technologies is much more less than that of traditional libraries. A digital library is not confined to a particular location or so called building ITIs virtually distributed all over the world: The user of a digital library need not to go to the library physically, people from all over the world could gain access to the same information, as long as an Internet connection is available. Digital libraries can be accessed at any time, 24 hours a day and 365 days of the year. The same resources can be used at the same time by a number of users. A particular digital library can provide the link to any other resources of other digital library very easily and thus a seamlessly integrated resource sharing can be achieved.
* Hence e-platform to provide all necessary instructional materials, question & answers will benefit the learners through smooth access to the information and speedy learning.

Sample data required: No

## On-line skill test in every sector for every level of skill

On-line examination itself is Economical, Logistically efficient and Real Time Evaluation. Further, it is not human dependent for evaluation. All the activities such as development of application software for online admission/confirmation, examination fee payment confirmation, hall ticket verification, attendance reporting and declaration of results can be brought on to a e-platform to facilitate more candidates, speedy evaluation with higher level of validity and reliability.

Sample data required: No

**Technological solution for recognition of prior skills in informal sector**

* Majority of Indian workforce is working in informal sector. One of the biggest challenges for the policy makers is to understand the existing skill related manpower and to develop skill development program for skill up gradation. A number of skill development policies have been launched but inclusivity of informal sector still remains a challenge. The first ideal step is to understand the skill manpower data from the informal sector based on which the program for skill up gradation can be designed. The penetration of mobile technology is vast and the reach is increasing every day. A technologies solution is expected to understand the prior skill in informal sector. The solution has to be based on individualistic response mechanism due to the diversity in the sector.

Sample data required: No

Ministry of Road Transport and Highways

## Ambulance Service on National Highway

In case of accident, user is directed to nearest ambulance service, through the app. A list for all ambulance services to be prepared and mapped in the app, along with contact details as well as calling through the app facility.

Sample Data Required: No

## Emergency care services/Hospitals

There should be standardized toll free national access number to call for emergency medical help near National Highways.

Sample Data Required: No

## Online Toll payment system

1-2 km before the toll plaza, a notification should be received on the mobile phone of the approaching user with Toll Name and amount of applicable Toll Fee. Payment can be facilitated through mobile wallets and credit cards payment integration. An electronic receipt be generated, with bar code/QR code which can be shown at the Toll Booth. A list for all the toll plaza and respective services to be made available in the app.

Sample Data Required: No

## Mobile Mechanic

In case of tyre burst/puncture, the nearest mechanic with contact details can be found through the app. The mechanics can be registered on the app and they will receive a notification for a nominal charge.

Sample Data Required: No

## Public Toilets

An app to locate public toilets along the National Highways with details regarding time of operation and other services available.

Sample data required: No

## Nearest railway station

An app to locate nearest railway station along the National Highways with details regarding schedule of trains passing, and other facilities available at the station.

Sample data required: No

## Nearest Public Transportation facilities

An app to locate nearest bus stop along the National Highways with details regarding schedule of buses passing and other facilities, if any available.

Sample data required: No

## Petrol pump

An app to locate nearest petrol pump along the National Highways with details regarding time of operation and other services available.

Sample data required: No

## Police booth

An app to locate nearest police station along the National Highways with details regarding name and contact details of SHO.

Sample data required: No

## Geo Tag all department offices

Ministry of Road Transport has offices spread across India. The app should geo-tag all the offices so that the competent authorities can be easily found with contact number, department name, address etc.

Sample Data Required: No

## Online appointment

Ministry of Road Transport  has footfall of many citizens on a daily basis. Appointment should be done through this app with a notification and reminder option. The person with whom an appointment is sought, has the privilege to accept the request or decline it with a reason.

Sample Data Required: No

## Bypass

If we are travelling through a city and there is a option of bypass then through this app we can check the same.

Sample data required: No

## Area speeding check

Due to resource constraints, no traffic police staff is posted at road crossings.  Accidents are often reported due to negligence by the road users. Speed limit of the area can check by using technology and authorities can be intimated of the over-speeding 24×7. Also a photo should be shot through the traffic cameras of the speeding vehicle and relayed to the authorities for due action.

Sample Data Required: No

**INFRACON mobile app**

“INFRACON” has been developed by NHIDCL as a comprehensive National Portal for Infrastructure Consultancy firms & Key Personnel. The Portal has the facility to host Firms, and Personnel CVs and Credentials online. A mobile app is needed to enable firms to apply for a tender, generate a Team IDs, enable Key Personnel to accept request for any tender, and authorize the clients to make changes to a tender.

Sample Data Required: Yes

## INAM-Pro mobile app

INAM-Pro is a web based common platform for **Infrastructure and Materials Providers** and their **Buyers** to conduct business in a free and fair manner with utmost transparency. A mobile app is required to allow the full user and product registration functionality, facilitate placing of orders, viewing of orders, and scheduling of deliveries.

Sample Data Required: Yes

## Grocery Stores/Restaurants

An app to locate grocery stores/restaurants along the National Highways with details regarding time of operation and types of foods.

Sample data required: No

## Pollution check

Air pollution is high in many cities in India. Due to resource constrain, the pollution check is not captured. A solution to this problem needs to be developed which is effective and cost efficient.

Sample Data Required: No

**Traffic on road**

We can check the huge traffic area and if we are travelling through that area a notification should be received that this area has huge traffic. A solution to this problem needs to be developed which is effective and cost efficient.

Sample Data Required: No

## Leave management system

Employee can apply leave through app/portal. A solution to this problem needs to be developed which is effective and cost efficient.

Sample Data Required: No

## Mobile & Tour bills reimbursement

Ministry of Road Transport has offices spread across India. Through an app, the employees should be able to claim Mobile bills and tour bills online.

Sample Data Required: No

## Flyover

There is a huge network of road in India. An app to search how many flyovers are being constructed, length of flyovers, cost of flyover, a process to monitor the flyover if any maintenance is required. Who was the person who made the flyover etc.

Sample data required: No

## Games on Transport

A app game on Transport is required to teach the new people how to drive on road. Game should incentivize following of traffic rules and discourage, by means of penalties, the breaking of traffic rules.

Sample data required: No

## Potential of Digilocker

Driving Licenses and Vehicle Registration Certificates can now be accessed through Mobile App. integration of DigiLocker with Driving Licenses (DL) & Vehicle Registration Certificates (RC). With this integration people no longer need to carry around physical copies of their RCs and Driving Licences. They can instead access digital copies of the same on their mobile phones via the DigiLocker mobile app. We want further development of app to check the insurance as well as pollution expiry details through same app.

Sample data required: No

## Weight of vehicle

An app which will use RC number to view the vehicle details, weight of vehicle and how much weight is allowed to load on vehicle. And also through app we can search for Truck Weigh in motion System. Alert to be sent to competent authority if the load is higher than legal limits through this app.

Sample data required: No

**Ministry of Food Processing Industries (MOFPI)**

**App to connect Farmers directly with Retailers and Food Processing Industries**

* —Farmers are paid low prices by Mandis.
* —Inadequate cold storage to store excess produce.
* —Mandis charge higher prices from retailers and FPI.
* —Households pay higher prices.
* —The app would distribute trader’s margin between farmers and retailers/FPIs.
* Households would pay lower prices

Sample data required: No

**App to connect FPI directly with Domestic Retailers**

* —FPI mostly in the small scale sector.
* —Small enterprises located near farm gates.
* —High marketing costs makes them sell only in local markets.
* —No volumes to sustain business viability.
* —Wholesalers pay low prices stressing FPI viability.
* —App would connect FPI to large departmental stores and retail chain.
* Volumes would increase and wholesalers margins would redistribute between FPI and retailers

Sample data required: No

[Login here](https://innovate.mygov.in/login/?action=wordpress_social_authenticate&mode=login&provider=MyGov&redirect_to=https://innovate.mygov.in/challenges/app-to-connect-fpi-directly-with-domestic-retailers/)

**A dashboard to connect FPI with importers**

* —Low global acceptability because of poor product offerings and weak branding.
* —Need for focusing on process and product development.
* —Direct connect with importers is required.
* —Dashboard in the Ministry would provide product wise contacts of importers world wide.

Sample data required: Yes; —Contact information of importers available on UN Comtrade and Trade Map websites

**A dashboard for foreign investors to decide locations for setting up FPIs**

* —No organized information available to foreign investors to decide location to set up units.
* —A dashboard in the Ministry would provide district wise information such as:
1. —Agri-produce
2. —Product wise food clusters
3. —Processing infrastructure/common facilities
4. —Local industries and traders of food products
* —All such information is available in the public domain.

Sample data required: No

**Window on Ministry’s website to upload data on KPI of Mega Food Parks**

* —Mega Food Parks provide common facilities for units set up therein for processing.
* —Logistics support is also provided to bring agri-produce into the park.
* —No real time data available to monitor the performance of Mega Food Parks-for policy making.
* —On the window, parks at regular intervals, would upload data on various KPIs such as
1. —Agri-produce brought into the park
2. —Processing levels within the parks
3. —Farmers benefited
4. —Employment generated

Sample data required: No

**Window on website to upload traditional food recipes for commercial development**

* —Traditional food of high shelf life is a rich source of new product offerings but their information is scattered.
* —Their recipes need to be collected before food technologists and equipment manufacturers standardize them and lay out a blue print for scaling them up commercially.
* —The window on the website would enable uploading of recipes by individuals.
* —Industry would access such information and take it forward with the help of food technologists and equipment manufacturers.

Sample data required: No

**App for industry to post R&D requirements for reaching out to R&D Institutions**

* —Ministry funds applied R&D projects whose outcomes can be scaled up commercially.
* —R&D institutes seeking assistance for projects must show industry collaboration.
* —The industry-institute collaboration is happening through informal net works.
* —This precludes lot of prospective and meritorious collaboration.
* —On the app industry would post its requirements and researchers their areas of interest and the app would match them.
* —The collaboration need not look for government support.

Sample data required: No

**Window on Ministry’s website to upload data on KPI of Cold Chain Projects**

* —Cold Chain projects assisted by Ministry provide cold storage for and processing of perishables.
* —Cold chain includes pre-cooling facilities, cold storage and reefer vans together with processing element.
* —No real time data available to monitor the performance of cold chain projects – for policy making
* —On the window, cold chains at regular intervals would upload data on various KPIs such as
1. —Agri-produce stored and processed
2. —Number of farmers/FPI benefited
3. —Employment levels generated

Sample data required: No

**Window on Ministry’s website to upload data on KPI of Abattoirs**

* —Ministry provides support to Municipalities for setting up/modernization of Abattoirs.
* —Abattoirs process meat including poultry causing no pollution and provide meat fit for human consumption.
* —No real time data available to monitor the performance of Abattoirs– for policy making
* —On the window, Abattoirs at regular intervals would upload data on various KPIs such as
1. —Meat processed
2. —Number of farmers/FPI benefited
3. —Employment generated

Sample data required: No

[Login here](https://innovate.mygov.in/login/?action=wordpress_social_authenticate&mode=login&provider=MyGov&redirect_to=https://innovate.mygov.in/challenges/window-on-ministrys-website-to-upload-data-on-kpi-of-abattoirs/)

**App of small videos on food processing techniques for farmer community**

* —Inadequate cold chain facilities spoil perishable agri-produce.
* —Processing prevents perishable agri-produce from spoiling.
* —Inexpensive and home operable processing techniques can help farmers stock food.
* —Stocked food can be consumed or sold alleviating poverty.
* —The app would provide exposure to the farming community of best global practices on home based processing techniques.

Sample data required: No

**Dashboard of information for foreign investors to invest in retail food chain**

* —For making investment plans the investor would seek out the interactive dashboard for relevant information such as:
1. —Sourcing of various food products
2. —Availability of dry and cold storages
3. —Retail and wholesale market of agri-produce
4. —Interest shown by local partners
5. —Availability of logistics
6. —Leasing/owning of physical stores
* —Such relevant information is available on websites of ministries of food processing industries, agriculture, consumer affairs, DIPP and state governments.

Sample data required: No

**An app to match fortification ideas and nutrients blending technologies**

* —Fortification of food products with nutrients lessens nutritional deficiencies in masses.
* —Fortification can also build brands and create large markets.
* —Nutrients blending technologies are available but industry does not know much about them.
* —Food technologists also do not connect with industry to seek ideas on blending technologies.
* —On the app industry can post its fortification ideas and access information on nutrients blending technologies posted by food technologists.
* —Collaboration between the two can then happen.

Sample data required: No

**Spread sheet model for estimating processing levels periodically**

* —The processing level is below 10% in India, which is abysmally low compared to 50% or more in other countries.
* —Ministry makes soft and hard interventions to increase processing levels but cannot measure changes in it.
* —With no metric available for measuring changes in processing level, policy formulation becomes difficult. Accordingly  a spread sheet model is required that can automatically estimate processing levels periodically based on a standard methodology.
* —In the spread sheet model secondary data would be plugged in to calculate processing levels on a periodic basis.
* —The model can be based on the methodology used by Institute of Economic Growth in their 2014 study commissioned by Ministry of Agriculture.

Sample data required: No

**Spread sheet model for estimating wastage periodically**

* —There is high wastage of perishables like fruits and vegetables due to inadequate availability of cold storage.
* —Ministry implements cold chain scheme but is constrained by the lack of data on wastage to better plan its scheme.
* —With no metric available for measuring changes in wastage level, policy formulation becomes difficult. Accordingly  a spread sheet model is required that can automatically estimate wastage levels periodically based on a standard methodology.
* —In the spread sheet model secondary and survey data can be fed in so as to calculate wastage on periodic basis.
* —The model can be based on the methodology used by CIPHET, Ludhiana in a recent study commissioned by Ministry of Food Processing.

Sample data required: No

**Campaign on Facebook page for promoting processed food**

* —General mind set is that processed food lacks freshness and contains harmful preservatives.
* —This prevents rapid growth of FPI.
* —Mind set to be changed by highlighting nutritious, hygienic and convenience aspects of processed food.
* —Campaign of Facebook page will take advantage of growing popularity of social media.
* —Accordingly the face book page of the Ministry needs to include additional features on processed food promotion, which would engage followers in an interactive manner.

Sample data required: No

**Ministry of External Affairs of India**

## Ensuring the security of web applications hosted on the GI Cloud (Meghraj)

Several web applications of the Ministry are hosted on the GI Cloud.  The database is being monitored remotely by the project manager through the user ID and password.  Project managers of the web applications do not have any control or access to monitor the vulnerability of the database due to the vulnerability of other web applications hosted sidelines from different Ministries.

Can we have a solution to monitor the database vulnerability on real time basis through a web app remotely.

Special Note:  The solution should support the remote access through the authorised email ID and password via web or mobile app.

Sample Data Required: No

## Presently, there is no application for scanning the remote cloud and its several associated components to examine the level of vulnerability of the system from the Cyber security point of view

In present time, cloud offers hosting as a service for the web applications to be launched for the public.  The users are always sceptical about the vulnerability of the cloud environment where applications are to be hosted.  Ministry has several applications hosted on the cloud.  However, Ministry do not have any tool to evaluate the level of vulnerability of the cloud environment.  Can it be possible to develop an applications to scan the whole cloud system remotely by the authorised users of the cloud and receive the report on real time basis.

Special Note:

Sample Data Required: No

## Application to evaluate the operating systems vulnerability particularly Linux operating system

Windows and Linux operating systems are being used in different Departments and Officers of the Ministry.  As per Government of India norms, Open Source Software for the OS as well as for office automation are recommended.  There are hundreds versions of Linux operating system to be used by the users.  Each version has different levels of vulnerability.  How do we ensure the best secured operating system in Linux and ensure the security of all applications installed to the operating system?

Special Note: The application should run in the user’s computer and provide the online alert from time to time about the vulnerability of the operating system.

Sample Data Required: No

## Ensuring the security of all applications particularly the communication data on the local machine

Microsoft Office for windows platform and Libre Office for Linux system are being used in the Ministry for office automation works.  Ministry has no tool to access the vulnerability or infection of these office automation software in the machine.  Ministry is looking for a solution to ensure the data being created by this automation software through an application.

Special Note:  The application should run in the user system locally

Sample Data Required: No

**To monitor the pilferage/leakage of the data from the applications hosted on the cloud**

Several web applications are hosted on the cloud which is owned by the third party.  Ministries do not have the idea on how much the data are being pilferaged or leakaged due to vulnerability in the operating system and its associated components.

Special Note:  Solutions should work remotely

Sample Data Required: No

[Login here](https://innovate.mygov.in/login/?action=wordpress_social_authenticate&mode=login&provider=MyGov&redirect_to=https://innovate.mygov.in/challenges/to-monitor-the-pilferageleakage-of-the-data-from-the-applications-hosted-on-the-cloud/)

## Full-proof security (end-to-end) and data security between two web applications over the networks

Normally, the data transmitted between the two applications over the networks are happening without any encryption.  The data being transmitted to another PC are subject to vulnerability at different places like sender’s networks on the transit or receiver’s network.  To ensure the security of the data end-to-end, i.e., from application-to-application, what solutions are provided to ensure this?  Is there any encryption technology (at least 256 AES) to any applications hosted on the cloud.

Special Note: No

Sample Data Required: No

## Provisioning of geo-tagging information with the e-Governance applications accessed globally

Several Ministry’s e-Governance applications like MADAD Portal is being accessed globally by the NRIs, PIOs as well as Indians from India.  The users of the portal are submitting their complaints or grievances to be addressed by the Ministry.  Ministry does not have the geographical information about the applicants like from where the applicant has submitted the complaint or grievances.  Can we have the solutions to integrate the geo-tagging information of the application with his or her is portal login

Special Note:  The applications may or may not integrate with the MADAD Portal for integrating the geo-tagging information

Sample Data Required:  No

## Ensuring the Smartphones and its applications from any cyber attacks

In the present global scenario the smart phones with Android, Mac and Blackberry operating systems are mostly used by almost all working classes. It is also understood that smart phones with various apps are most vulnerable to the cyber crimes.  It has also become an obligation to use the smart phones for various purposes like email, chatting, calling, video conferencing, messaging etc. In this context how do we ensure the fool proof security of the data transmitted through these smart phones over the internet including emails.  Is there possibility to track the various data communication through the mobile over the internet?

Special Note: No

Sample Data Required: No

## Ensuring access of email and notes in the smart phones

For the security of emails and notes accessed through Smartphones, how do we ensure encryption of all the mails and the notes saved in the phone?  Can we develop a secured end-to-end encrypted email system for the smart phones?  How can it be possible to isolate the email and notes apps from malicious script installed in the smart phones?

Special Note: No

Sample Data Required: No

## Securing the data transition between domestic and international networks

For the internet connectivity to the Government organisations, the lease line circuits are being provided by the National Informatics Centres called the NICNET. However, the NICNET networks provide the interconnections for the domestic networks, and international networks are connected through the international gateway of private service providers.  How do we secure  the data transition over the domestic and international networks.

Special Note: No

Sample Data Required: No

## Devising a cost effective application for data mining and data analytics

The digitisation of Governments processes enabled the creation of large number of databases, containing the information valuable for the organisations from the analytics point of view. How do we devise a cost effective software applications for data mining of these databases to churn the data intelligence.

Special Note: No

Sample Data Required: No

## Devising a software for deployment of software on cloud through the SSH mode

Normally, FTP mode is being used for the software deployment on the cloud platform while hosting any web applications on the Cloud. However, FTP mode is not secured as it does not provide end to end encryption. Can we have a mechanism/tool to deploy the software on cloud for its hosting  with end to end encryption features?

Special Note: No

Sample Data Required: No

## Restoration of file in the Linux root file system

It is possible to take the backup of the hard disk with FAT or NTFS formats by connecting it  to any working computers through the standby connector(parallel to primary hard disk).  However, in case of hard disk with ext3/ext4  formats and  linux environment, the backup of the hard disk by connecting it (parallel to primary hard disk) to any working computer is not possible.  How do we take the backup of hard disk with ext3/ext4 formats or with linux environment?

Special Note: The solution may work  on any platforms (windows or linux).

Sample Data Required: No

**Email spoofing detection**

Spoofed email with swapped email ID (and IP too) can come to any user’s inbox. Suggest a mechanism to filter the spoofed email at Server only.

Special Note: No

Sample Date Required: No

[Login here](https://innovate.mygov.in/login/?action=wordpress_social_authenticate&mode=login&provider=MyGov&redirect_to=https://innovate.mygov.in/challenges/email-spoofing-detection/)

## Accessing the virtual dashboard of cloud application independent of the browser and operating system of the remote computer

The virtual dashboard of the applications hosted on the GI Cloud is accessed through the specific browser with certain version. Also it requires the certain operating system in the remote computer. For example, the dashboard of applications hosted on GI cloud is accessed only on Mozilla 26 browser on windows 7 and its lower version. What are the solutions for accessing the virtual dashboard independent of the browser and operating system on the remote computer.

Special Note: No

Sample Data Required: No

## Mapping of ports on Network

A single terminal on network may create vulnerability for entire network. So based on ports open on all the terminals of the network, identify the terminal uploading data from the network on restricted port.

Special Note: Network mapping capabilities from any terminal on networks

Sample Data Required: No

**Ministry of Electronics & Information Technology(MEITY)….**

## Electronic Personal Safety System

A GIS based integrated solution for personal security where instant police assistance should be provided to a person in extreme distress or feeling high threat to safety. The system should cater for women and children when they need immediate help.

Sample Data Required: Yes

**Security Surveillance System (Video Surveillance / Analytics)**

Video Surveillance solutions are security tools that help reduce crime and protect people and property. These solutions deter revenue loss from stolen merchandise, destruction of valuable information and vandalism.

Video Summarizer, Individual camera view, switch camera view for detailed view, Voice enabled activation, development of efficient Security Algorithms, Video Surveillance Cameras, Hosted Video services, On-site video monitoring, Video Alarm verification, video analytics, Risk management, integrated video solutions.

Sample Data Required: Yes

A GIS based integrated solution for personal security where instant police assistance should be provided to a person in extreme distress or feeling high threat to safety. The system should cater for women and children when they need immediate help. Sample Data Required: Yes

## National Disaster Mitigation Plan (Drought, Floods and Cold Wave/Frost)

Drought is a normal, recurrent feature of climate and characterized in terms of its spatial extension, intensity and duration. Conditions of drought appear when rainfall is deficient in relation to the statistical multi-year average for a region, over an extended period of a season or a year, or even more. Drought is a temporary aberration unlike aridity, which is a permanent feature of climate.

Mitigation measures are initiatives undertaken to reduce the incidence or minimise impacts of drought. Besides drought proofing, these measures help in adapting to climate change, restoring ecological balance and bringing development benefits to the people. However, drought mitigation programmes are not to be construed stand-alone interventions that are to be implemented only in the wake of a drought; but must form part of developmental planning in the domain of soil conservation, watershed development and forestry. As such, drought mitigation measures are to be mainstreamed in regular development programmes of Central and State Governments.

Sample data required: No

## Networking (Inter-Connected) Healthcare Technology

Currently, Hospitals/Healthcare centre work in isolation. The means for co-ordinated/inter-connection among them is still a long way to go in India. Patient records (medical life history as well as case to case) are not digitalized / transcribed and the data/record of medical history of a patient is not readily available/accessible online or on-demand across various Hospitals/Healthcare.

Networked devices will let hospitals monitor patients when they are away, and recommend interventions when a serious problem is imminent.

Policy, guidelines, norms, digital appliances and various software applications are required to Network all the Hospital and Healthcare centres in India.

Sample data required: No

## Accurate detection of impersonation in online examination

Impersonation detection is a major problem in conducting any examination, especially in Online examination. The main cause of the difficulty is the lack of efficiency and/or integrity on the part of the Invigilator. In order to have a fool-proof automated system, it is advised to remove the human factor in impersonation detection. Hence, an accurate system for detection of impersonation in online examination is the need of the hour

Sample Data Required: No

## Designing of geo-spatial tracking of Electronic and Electrical Equipments (EEE) for implementation of producer responsibility in Electronic Waste Rules 2016

According to E-waste Management Rules 2016, waste EEE’s proper disposal is responsibility of producer. For such purpose producer’s need to track their products for at least 5 to 10 years in which time that product stops functioning and enters into electronic waste stream. Which product will enter the waste stream at what phase is difficult to ascertain in terms of product life due to two primary factors; one, in India, products are repaired/ refurbished multiple times before it enters waste stream and second electronic waste collection is a major challenge for most of the states in India. So, tracking an EEE product is best way to provide yearly collection targets for producers in India.

Constraint/s: Tracking cannot be based on ownership as it will violate their privacy.

Sample data required: No

## Digital Rights Management System

Various knowledge content like Text, Scripts, Audio, Video, Images, Gifs etc when collected from various sources / resources persons can be digitally managed. Rights to the shared content might be free/open or charged per-usage.

A system is to be developed to digitally manage such work-out between various sources.

Sample Data Required: No

## Easy Navigation System for Visually Impaired Persons

GIS based navigation system to help blind persons to navigate in open & constrained areas, buildings, offices and specific locations.

The system should have multi-lingual support and speech interface integrated with it.

Sample data required: No

## Automation in preparation of the tender documents

Preparation of a Tender document is a lengthy and time consuming process.

By using automated tender document preparation, specific requirement for the tender may be given and can made in shortest possible time. Also, it would facilitate in adhering to the laid out rules and procedures strictly without any dilution. Though exceptions can be captured into the developed system wherever possible.

Sample Data Required: No

**App for monitoring the work done in Swachh Bharat Mission (GIS based)**

App should be able to Geo-tag a photograph and upload the same. At any time given time, for same location progress can be monitored (in Real Time). Facility to upload by citizen. Can be linked to Municipal Bodies  monitoring system for finding the loopholes and improve upon the reporting system.

Sample Data Required: Yes

|  |  |
| --- | --- |
| Gram Panchayat-wise Rural Sanitation Coverage | <https://data.gov.in/catalog/daily-data-rural-sanitation-coverage-under-swachh-bharat-mission> |
| Fund released for Swachh Bharat Mission (SBM) under SBM during 2015-16 (From: Ministry of Urban Development) | https://data.gov.in/catalog/answers-data-rajya-sabha-questions-session-239 |
| State/UT-wise Component-wise Central Share Expenditure Reported Under Swachh Bharat Mission (Gramin) (SBM) (G) from 2.10.2014 to 31.03.2016 (From: Ministry of Drinking Water & Sanitation) | https://data.gov.in/catalog/answers-data-rajya-sabha-questions-session-239 |

**Problems faced in crypto domain**

Challenges in decrypting PGP, AES, Truecrypt encryptions. This problem  is often faced in several cases of cyber crime where the criminal has encrypted his entire hard disk and it is difficult to decrypt the data.

Sample Data Required: No

[Login here](https://innovate.mygov.in/login/?action=wordpress_social_authenticate&mode=login&provider=MyGov&redirect_to=https://innovate.mygov.in/challenges/problems-faced-in-crypto-domain/)

## Lack of Secure channel for communication among cyber security experts

Developing Secure forums/groups for knowledge exchange among cyber security experts in the Country.

Sample Data Required: No

**Making of virtual environment for practicing cyber forensics learning.**

The virtual environment for practicing cyber forensics will be immensely useful for cyber crime investigators to gain a thorough understanding of the subject and creation of much needed technical manpower in this area.

This include creation of virtual lab having a complete learning management system where students can access various tools of learning, lectures, animated demonstration sharing of costly equipment or resources etc.

Sample Data Required: No

[Login here](https://innovate.mygov.in/login/?action=wordpress_social_authenticate&mode=login&provider=MyGov&redirect_to=https://innovate.mygov.in/challenges/making-of-virtual-environment-for-practicing-cyber-forensics-learning/)

## Lack of Testbed for cyber security experiments

For  creation of indigenous cyber range for training cyber warriors. There are available test bed’s offered by various vendors like **Breaking Point by IXIA** (Cyber Range) , **Cybergym** by an Israeli company which offers generation of traffic in the computer network and introduction of malwares for having cyber security drills etc. We can have attacking team who carries a cyber attack and a defending team which protects itself and the infrastructure from the attacks. Then there is a third team that oversees this drills. The available system are very costly and we need indigenous solutions/equipment for training purposes.

Sample Data Required: No

## Lack of Cyber Security Awareness among Students in technical institutions

Conducting Cyber Security drills and treasure hunt kind of Games to enhance cyber security awareness and skill sets.

Sample Data Required: No

## Automated questionnaire and test for basic cyber security learning for senior non-technical officers.

Automated questionnaire will help the trainees to master the subject and correct themselves.

Sample Data Required: Yes

## Kids, adults and internet awareness. Kids educational apps

India specific apps for educational purposes will help in increasing the spread of education in virtually every subject and may cater from basic to advanced level.

Sample Data Required: No

## Classroom optimization, Laboratory optimization & Optimization of other resources

Sometimes, it is found that all the classrooms are occupied while most of the labs are unoccupied and the machines are lying idle and vice versa.

A suitable optimization matrix will make maximum usability of all the resources.

Sample Data Required: No

## Create a program for year-wise listing of work done by researchers related to keyword input on web. Output should have country tags, institution tag and any other tag that could be provided to program through input.

Project assessment and technology development requires lot of background check on feasibility and technology status. The most time consuming effort in this task is collection of relevant data (work done by different researchers all over the world).  Several document sources such as patents, journal papers etc. needs to be looked into to arrive at a decent status know how and extract the feasibility of the project. To minimize the time, automation of this task is necessary.

Constraint: Output should be in html or .xls format

Sample Data Required: Yes

## Designing of product specific product development cycle based on manufacturing model (business and technical) of the product. Product development cycle time needs to be minimized for the problem.

***Brief Description:***

Every product has its own product development cycle and manufacturing model. During handling of projects, the product development cycle needs to be minimized for development time for the specific product. Design an generic optimization technique to minimize development time based on Nair’s product development model as depicted.

**Ministries/ Departments and the State Governments of the North Eastern Region**

**Development of Dynamic website of MoDoNER**

* Website of Ministry of DoNER is not user friendly; there are many problems.
* Favicon is missing from site.
* Eye catching-Picture Gallery/videos containing events/activities of Ministry in NER
* Notice board containing latest news.
* State Profile-Readily available information.
* Link of social media
* Site is totally disturbed in android, Iphone, ipad, user can not open on mobile.
* Search functionality of website.
* Navigation not clear.
* Site map.

Sample data required: No

[Login here](https://innovate.mygov.in/login/?action=wordpress_social_authenticate&mode=login&provider=MyGov&redirect_to=https://innovate.mygov.in/challenges/development-of-dynamic-website-of-modoner/)

**Centralized portal for in North Eastern States.**

North East is emerging as a touring hub. So there is a requirement of system which will provide information regarding the best place to be visited in any hour. The information may be comprises as under:-

* State-wise Tourist Circuits along with Photographs
* How to reach-nearest railway Station, bus stand or private Vehicle.
* Stay and Cost
* Best Season to visit

Sample data required: No

## Promoting Games/App

North East is bestowed with beautiful handicrafts , handloom products, different forms of dance and also emerging as a tourist hub. There is a need to promote Dance forms, Handloom and Handicrafts, Festivals and Cultural Events, Tourist and religious spots and dresses of North East and this can be done by developing Games and Applications.

For example, a treasure hunt, where a person finds different handicrafts items or matching memory game for matching different dance forms with the respective State.

Problem faced by tourism industry in the North East is the lack of adequate and reliable tourism infrastructure. Tourism in NE may be enhanced if the tourist has a faith on the place they are visiting . For this a mobile app may be developed which may provide details related to Air and road connectivity, infrastructural facilities at tourist sites and at nearby places in terms of accommodation, transport, banking including credit card use, drinking water, sanitation, health care. A rating based on tourist reviews  and their feedback can be shown which can build their confidence. This may even be used to display various tourist spots as per the tourist preference of certain location like Historical, mythological, nature etc.

Sample data required: Yes; Google maps and data will be modified as per the new landmarks added.

**Explaining the famous products of NER**

* Mobile App to explain the details of famous products (Bamboo products, Agriculture, etc.) of north east state wise which can be interfaced with the website of Ministry of DoNER and solve following problems related to products
* Availability/Accessibility of products.
* Advantages of products.
* Digital Marketing of Products (like NEHHDC and NERAMAC, for example the cost in the market of these  products is often less than even from purchased online and to create awareness among people to purchase these products).
* Handicrafts and handlooms in NE Region may be popularized by building a mobile app may be developed which may provide details related to different types of traditional handlooms and handicrafts as per the person’s current location ,his interest in particular dress form/state in NER. He can also upload the image of the dress and check the history related its origin and its transformation.

Sample data required: Yes; Images of various handlooms and handicrafts, google maps.

## Monitoring of Roads and Projects through Space Technology

To check the progress of ongoing Projects in remote locations of various states of North Eastern Region. There is a requirement to have system through which the progress of the project may be monitored through Space technology.

Sample data required: Yes; a database of quarterly progress report.

**Making project portal of NLCPR user friendly.**

* Mobile App for project portal of NLCPR.
* Interfacing the dashboard of NLCPR Portal with Mobile App.
* Feedback (comments) of people on individual projects regarding progress, photos, etc. And public may upload the photos of the projects.

Sample data required: No

## Keeping track of health of cancer patient through app based system to provide health care services online

Database on all the information related to cancer should be available on the app along with the Route map to near by hospitals and list of best cancer hostipal. Virtual Nurse service, Nurse at home ,counselling services , NGO support, ambulance services, insurance services and companion delivered via mobile app thorough video calling ,voice calling and IVR based support. Individual Account based reports and other medical details, progress reports and Doctor appointments. Cancer patient community Support on the concept of social networking sites.

Sample data required: No

**Real time information dissemination to the people of NER**

* The photos of completed projects and visual animated graphics i.e how would be the project after completion should be available on the app and a feedback system for this. DoNER’s website linked with social Networking sites i.e twitter,Facebook.
* Toll free No. for NER with IVR options like you want information on which state and which project with IVR and SMS based feedback system.
* Auto SMS forwarding system for the people in region in which the project has been taken up. Project completion status may be sent to the people in the region that the project has been started and you can now avail it. A URL link may also be sent in the sms which will  take to the app where all the details of the project will be available.
* **Information regarding activities of various in Ministries/Departments in North Eastern Region**
* Ministry of Development of North Eastern Region (MoDoNER) deals with the matters relating to the planning, execution and monitoring of development schemes and projects in the North Eastern Region. Mandate of MoDoNER is also to coordinate with various Ministries/Departments primarily concerned with development and welfare activities in NER. There is a requirement to view the status of all projects/schemes ongoing/completed by various Ministries/Departments in NER. The entire information may be available under one roof and accessible to all. It may help in bringing transparency in the system as all the information will be available in public domain. The requisite information may be as under:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **State** | **Ministry/****Department** | **Name of Project/****scheme** | **Budget Sanctioned** | **Date of Sanction** | **Deadline** | **Current Status** |
|  |  |  |  |  |  |  |

* Single Information Center
* Sample data required: No

## Technology innovation in North Eastern Region

There is a requirement of system to showcase latest technologies in North Eastern Region. This may help commercialize new products and technologies being implemented in various sectors in North Eastern Region. This may enable us to create database of innovations in the identified sectors. It may be utilized to showcase new machinery and technologies available in the country to enable entrepreneurs in the North Eastern region to adopt the same for promoting their products. Single window arrangement for obtaining technological consultancy. To provide a platform to share ideas and interact with stakeholder and may help in meeting demand with supply.

Sample data required: No

## Skill Development training for unemployed youths of North Eastern Region

Government has launched Pradhan Mantri Kaushal Vikas Yojana (PMKVY) to provide best technical training linked with employment for unemployed youths of country. Various training programs in various sectors are being conducted under PMKVY. There is a requirement of system through which youths after getting themselves registered may get day to day alert/information of notification issued for section of candidates for imparting them skill development training under the scheme. This will enable candidates to opt for suitable course as per their eligibility and apply for the courses on time without unnecessary hassle.

Sample data required: No

**Ministry of AYUSH….**

**Real time dashboard for tracking manpower (officers/employees) within the Institute as well as faculty of various AYUSH institutions of the country.**

* Academic institutions and research councils are having huge infrastructure and manpower. Many a times it is necessary to locate certain employee/resident/consultant/scientist in case of some emergency or for discussion of an urgent piece of work.
* We need an application that can locate the concerned person in real time.

Sample data required: Yes, [hackathonay5-sample-data-and-clarification](https://innovate.mygov.in/wp-content/uploads/2016/11/HackathonAY5-Sample-Data-and-Clarification.doc)

**Online consultation from AYUSH experts of various Institutes & Hospitals**

* With a mass inclination towards AYUSH system of medicine in recent time, there is scarcity of authentic practitioners and health care providers. More and more people are using the online consultation which at many times is not from an authentic source.
* An application that can help in looping the AYUSH health care experts across various Institutes and Hospital of our country, whereby the patient can directly avail his expertise/services/advice even from a remote location of country.

Sample data required: Yes; [hackathon-ay6-sample-data-and-clarification](https://innovate.mygov.in/wp-content/uploads/2016/11/Hackathon-AY6-Sample-Data-and-Clarification.doc)

**GAMES for propagating AYUSH systems of medicine**

* Ministry of AYUSH is propagating AYUSH systems through various IEC schemes and methods. One of the best methods for propagating them would be by creating app based games. This would help to make aware and popularize AYUSH systems among  children.

Sample data required: Yes; [hackathon-ay-7812121415](https://innovate.mygov.in/wp-content/uploads/2016/11/Hackathon-AY-7812121415.docx)

**Tracking of endangered species of Medicinal plants**

* The flora of India is one of the richest in the world due to the country’s wide range of climate, topology, and environment. Many plant species are being destroyed, however due to their prevalent removal roughly 1/4 of all plant species in the country are at risk of being endangered or going extinct.
* Solution is needed to track these medicinal plants so that their exploitation of the medicinal plants would be prevented**.**

Sample data required: Yes; [hackathon-ay-7812121415](https://innovate.mygov.in/wp-content/uploads/2016/11/Hackathon-AY-7812121415.docx)

**Database and status of various labs/equipment/machine utilized for quality control. Safety and efficacy assessment of ASU & H drugs**

* With an intent for promoting research in ASU & H sector and providing quality ASU & H medicine to the end users, it is necessary to check the quality standards of prepared medicine. There are a lot of small scale drug manufacturing units across country who finds it difficult to access/locate the laboratories involved in quality control process.
* We require a web based portal that can serve as a database for all such laboratories located across our country providing research facilities, quality control facilities as well as status of various tests that they carry out along with available equipment/machine/instrument with them to choose from.

Sample data required: No

[Login here](https://innovate.mygov.in/login/?action=wordpress_social_authenticate&mode=login&provider=MyGov&redirect_to=https://innovate.mygov.in/challenges/database-and-status-of-various-labsequipmentmachine-utilized-for-quality-control-safety-and-efficacy-assessment-of-asu-h-drugs/)

**Online registry system for the research topics of PG /PhD /research projects**

* Ample research is taking place in AYUSH sector across various research and academic institutions. Most of these are carried out by post graduate or doctoral research scholars as a part of their MD and PhD thesis respectively. Research councils are also performing research on various areas through their attached organizations. Most of the time researchers/ authorities are not aware about it , therefore there are chances of duplication.
* We require an online registry system for the research topics of PG / PhD thesis/ research projects conducted throughout the country. After successful registry, the system should generate an acknowledgement number or registration number, though which the concerned person can be traced for any sort of research problems arising therein. This should be openly accessible to all the registered scholars, after loging.
* The platform will provide an account of all research work carried out in any Institution across country for avoidingt any duplicity/plagiarism. It will also be helpful in associating like minded researchers/scholars for fulfilling their research needs.

Sample data required: Yes; [hackathon-ay10-sample-data](https://innovate.mygov.in/wp-content/uploads/2016/11/Hackathon-AY10-Sample-Data.docx)

**Monitoring system for drug manufacturing units of the country**

* There are hundreds of ASU & H drug manufacturing units in India. These manufacture and sell a wide range of classical and patent/proprietary medicines. Many times, it becomes difficult to locate the units in respect to their authentic certification (GMP / ISO certified or not), quality of drugs manufactured by them, repository of drugs manufacture in terms of classical/patent-proprietary medicines, rates of various preparations etc.
* We need a web based application that could pool all such drug manufacturing units at a single place along with the necessary information related to their manufacture.

Sample data required: No

**Geographical Location and identification of Medicinal Plants**

* A major problem which the practitioners of AYUSH systems face is the difficulty of identifying and finding geographical location of medicinal plants.
* Solution is needed which would help the users to identify the medicinal plant based on morphology using image technology and also find location of the plant geographically on the map.

Sample data required: Yes; [hackathon-ay-7812121415](https://innovate.mygov.in/wp-content/uploads/2016/11/Hackathon-AY-7812121415.docx)

**Quick diagnosis of Skin diseases**

* In clinical practice physicians most of the time face difficulty in identifying of Skin diseases.
* Solution is needed which would help the clinical practitioners to identify the Skin disease using image technology.

Sample data required: Yes; [hackathon-ay-7812121415](https://innovate.mygov.in/wp-content/uploads/2016/11/Hackathon-AY-7812121415.docx)

**Assessment of Prakriti (Body genomics constitution)Based on Image processing technology**

1. Prakriti *(Vata, Pitta & Kapha)-*  has been most notable basic construct of Ayurvedic health care philosophy. *Prakriti*is assessed by an individual’s Anatomical, Physiological and Psychological features.
2. An app would facilitate in identifying Prakriti of an individual in short time and more accurate using the image comparison for specially for anatomical features of the Prakriti.

Sample data required: Yes; [hackathon-ay-7812121415](https://innovate.mygov.in/wp-content/uploads/2016/11/Hackathon-AY-7812121415.docx)

**APP for Ministry of AYUSH**

Ministry of AYUSH is currently having a website. An app version of it would enable the user to access the same conveniently.

Sample data required: Yes; [hackathon-ay-7812121415](https://innovate.mygov.in/wp-content/uploads/2016/11/Hackathon-AY-7812121415.docx)

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| State-wise distribution of Post Graduate AYUSH colleges and their admission capacity | https://data.gov.in/catalog/state-wise-distribution-post-graduate-ayush-colleges-and-their-admission-capacity |
| State-wise distribution of Under Graduate AYUSH colleges and their admission capacity | https://data.gov.in/catalog/state-wise-distribution-under-graduate-ayush-colleges-and-their-admission-capacity |
| State-wise and Sex-wise AYUSH (Ayurveda, Naturopathy, Unani, Siddha and Homoeopathy) registered practitioners (Doctors) | https://data.gov.in/catalog/state-wise-and-sex-wise-ayush-ayurveda-naturopathy-unani-siddha-and-homoeopathy-registered |
| State-wise distribution of AYUSH (Ayurveda, Yoga, Naturopathy, Unani, Siddha, Sowa-Rigpa and Homoeopathy) hospitals, beds and dispensaries |  https://data.gov.in/catalog/state-wise-distribution-ayush-ayurveda-yoga-naturopathy-unani-siddha-sowa-rigpa-and |

**Online submission of grant applications and their real time status**

* Ministry of AYUSH through its research councils invites research projects from its various stakeholders (academia/researchers/scientists/industry). These projects on approval of authority are funded by the Ministry of AYUSH and are to be completed within a definite time frame.
* As of today, there is no system/portal/app for online submission of these projects/grant applications. We require an interface through which the interested individual can directly upload the research protocol in desired format as well as a method to check the real time status of submitted project with respect to its approval/rejection and on acceptance various timelines for assorted tasks, project status report, monitoring etc.

Sample data required**:** Yes; [hackathon-ay1-sample-data](https://innovate.mygov.in/wp-content/uploads/2016/11/Hackathon-AY1-Sample-Data.doc) (format for project submission is available at ‘www.ayush@gov.in’ under EMR project.

**Real time monitoring of various projects funded by the Ministry of AYUSH**

* Problem statement: Ministry of AYUSH offers various types of grants under its different Schemes. These projects on approval of authority are funded by the Ministry of AYUSH and are to be completed within a definite time frame.
* As of today, there is no system/portal/app for online monitoring of these schemes/ projects.
* We need an interface through which the in-house (in the Ministry / Research council) real time monitoring of the submitted project is facilitated in terms of its timelines and deliverables till it’s last date of execution.

Sample data required: Yes; [hackathon-ay2-sample-data](https://innovate.mygov.in/wp-content/uploads/2016/11/Hackathon-AY2-Sample-Data.doc)

## Reporting of side effects of Ayurveda, Unani, Homoeopathy & Siddha Medicines.

There has been resurgence in use of Ayurvedic medicine throughout globe. With increase in consumption, reports of side effects are also surfacing. With Pharmacovigilance programme in place, reporting of adverse events of an Ayurvedic drug is ensured. However, the process of reporting is manual and cumbersome. We require a mobile based app that makes the reporting of adverse events easy and that could be submitted ahead for further analysis of the obtained data. An app that could be similar or customized for Ayurveda, Unani, Homoeopathy & Siddha Medicines.

Sample data required: Yes; [hackathon-ay3-sample-data](https://innovate.mygov.in/wp-content/uploads/2016/11/Hackathon-AY3-Sample-Data.doc)

**Centralized online status of all registered medical practitioners of AYUSH system.**

* As on today, there are nearly 8 lakh AYUSH practitioners in India. They are registered in their respective state councils. As per state norms, the registration needs to be renewed after a certain period. At the central level, there is also a process of registering those AYUSH practitioners. However it is very cumbersome.
* We need a portal that can pool all the relevant registration details of such practitioners from all over India at a single platform.

Sample data required: No