

**Nepal Government  
Ministry of Home Affairs  
Department of National Identity and Civil Registration  
Singh Durbar, Kathmandu, Nepal**



**Expression of Interest  
for**

Consulting Services for Design and Development of core architecture, Install, Test and Operationalization of integrated social registry and improving harmonization of SSA, including Support service and mobile app development

**Terms of Reference (TOR)**  
**Consulting Services for hiring a consulting firm for the Design and Development of Social Registry**  
**and Interoperability Platform for**  
**Department of National ID and Civil Registration**  
**Government of Nepal**

## **1. Background**

Social protection plays a significant constitutional and political role in defining the social contract between the state and its citizen in Nepal. The right to social security has been enshrined in the Constitution of Nepal, in line with the concept of a socialism-oriented welfare state, as a fundamental right of the economically deprived, incapacitated and helpless, single women, the disabled, children, those unable to take care of themselves and endangered ethnicities. The Fifteenth Periodic Plan of the government also aims to "make social security and protection sustainable, universal and accessible, for the implementation of civil rights and strengthen the trust of citizens towards the state."

The Government of Nepal spends about 3.9 percent of GDP on social protection and implements a large number of social protection programs through various government agencies in health, education, employment, food and nutrition, agriculture and other sectors. The largest social protection program in the country, the Social Security Allowances (SSA), has an annual budget of more than NPR 93 billion for the FY21/22 and reaches around 3.5 million beneficiaries across the country. The lack of an integrated framework for social security and protection programs has led to fragmentation and duplication of resources and the lack of coordination between these various programs. Weak delivery systems, lack of integration between information systems, and low coverage of the population further add to the challenges of delivering and monitoring social protection programs in federal context.

The 15<sup>th</sup> Periodic Plan of the government has identified the development of an integrated social protection information system as a strategic sectoral priority to improve intergovernmental coordination and collaboration and to address the problems of lack of data, and fragmentation and inefficiency in social security delivery system. To implement the strategic vision in the Plan, the Government of Nepal has expressed commitment to establish an integrated social registry as an essential element of building such integrated information system. The Department of National ID and Civil Registration (DONIDCR) under the Ministry of Home Affairs (MOHA) has taken the lead in conducting multi-stakeholder policy and technical dialogue on building shared understanding and coordination needed to develop the technical foundations and long-term policy vision to establish an integrated social registry in the country. The department also plans to develop the basic foundations for social registry through the "Strengthening Systems for Social Protection and Civil Registration" (SSSPCR) project that it is implementing nationally.

The SSSPCR project supports the Department's Civil Registration (CR) and the Social Security Allowance (SSA) program and aims to improve the coverage of SSA and CR, and the delivery of SSA. Over the project period, the project is expected to support: (a) expanded coverage of CR and SSA; and, (b) improved delivery of SSA via transition to e-payments in selected Local Levels and improved overall business process for SSA service delivery, and (c) strengthened institutional capacity at federal and local level to transition to fully digitized SSA and CR processes. The project also includes a sub-component to design and develop the foundations of an integrated social registry in Nepal, to improve the SSA intake, registration and



enrolment processes, and improve interoperability with NID and CR systems. In particular, the social registry sub-component in the project includes the following activities:

- Enhance SSA processes and information systems to be interoperable with National ID and Civil registration system
- Improve business processes for validating household data and linking with individual identification updating household data through SSA enrolment and CR identifying poor households for child grant expansion, 'economically poor' category, and potential use for disaster response
- Develop the guidelines to establish and operationalize the SR
- Design the harmonized SSA form and business process for SR based application and enrolment
- Design the architecture of SR system that will specify the interoperability layer for different social programs systems
- Work in close coordination with Ministry of Land Management, Cooperatives and Poverty Alleviation (MOLMCPA), which oversees the Poor Household Identification Program (PHIP), to ensure PHIP system interoperability and harmonization of application tools
- Work in close coordination with and NDRRMA to develop a SR to ensure that NSR and SSA delivery system can be used for disaster response for flood and/or landslides
- Implement the social registry system and processes in select local levels to validate information in the existing data systems, and to use the integrated platform for intake and registration of existing and new SSA beneficiaries

It is in this context that the DONIDCR aims to procure the services of a consulting firm to support the design and development an integrated social registry system and associated interoperability platform, and provide support services during the first phase of implementation.

## 2. Objectives

The main objective of this assignment is to design and develop a **unified** and **scalable** system of Social Registry with **dynamically updated information** and **robust protocols of data exchange** among participating institutions (PIs) to increase efficiency and effectiveness in delivery of social protection programs in Nepal.

## 3. Conceptual and Strategic Framework for Building Integrated Social Registry in Nepal<sup>1</sup>

### *What is an Integrated Social Registry?*

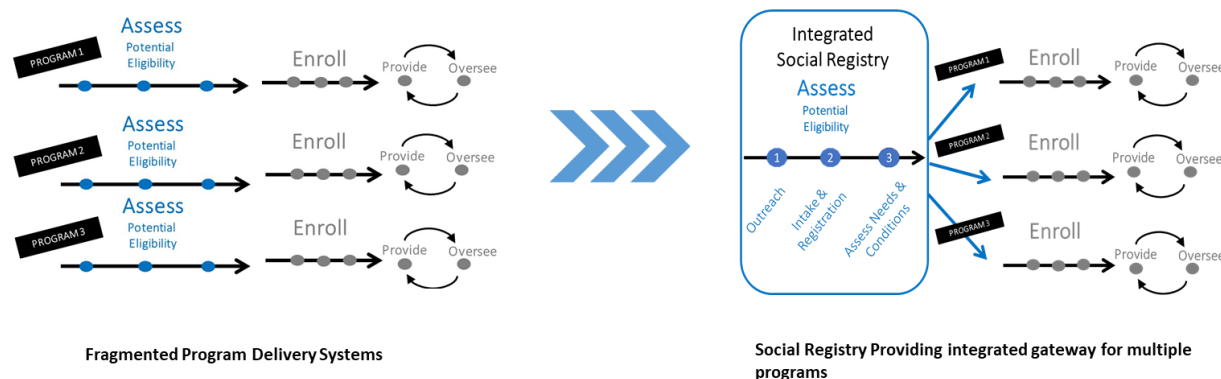
Countries offer a myriad of social programs to address the diverse needs of their populations. Although programs can be quite different with regards to its objectives or population of interest, they pass through common phases along the delivery chain, including: (a) outreach, intake & registration, (b) assessment of needs and conditions, (c) determination of potential eligibility, (d) taking decisions on enrollment and the benefits or service package; and (e) carrying out the implementation cycle of transactions (payments or service provision) and active case management (including monitoring, grievance redress, and so forth). However, despite common phases, social programs can be implemented in silos, with independent

---

<sup>1</sup> Please refer to the draft Concept Paper for ISR in Nepal provided as Annex **X** for more detailed description of the approach to ISR in Nepal.



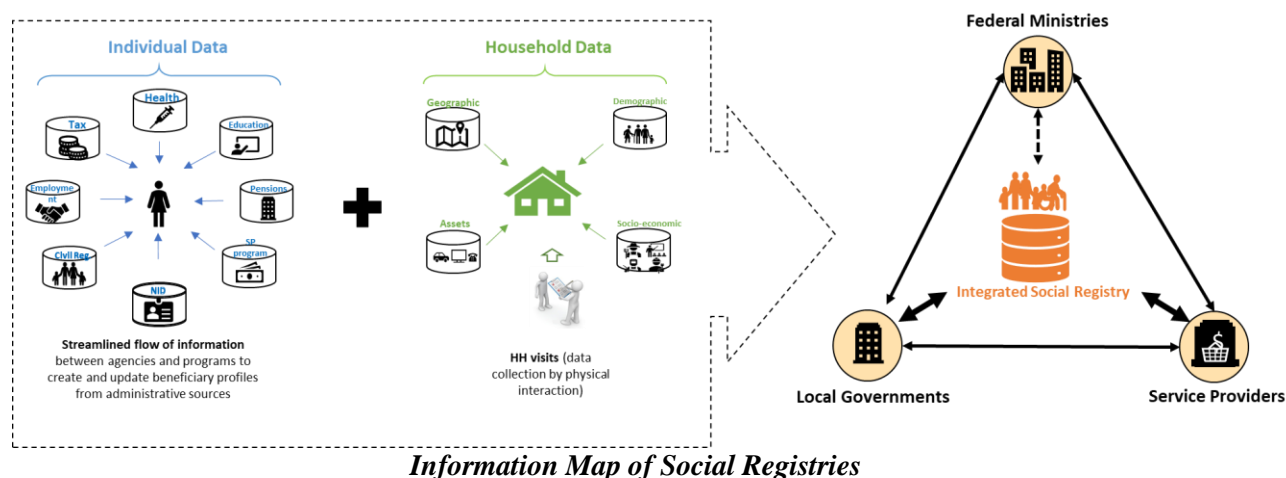
processes led by multiple actors creating fragmentation and bad duplications, and wastage of resources due to separate management and delivery by different actors.



### *Social Registry as Integrated Gateway for Multiple Programs*

**Integrated Social Registries (ISR)** are “information systems that support outreach, intake, registration, and determination of potential eligibility for one or more social programs... to provide a “gateway” for potential inclusion of intended populations into social programs” (Leite et al, 2017). An integrated social registry includes geographic, demographic, and socio-economic data of households and their members linked to foundational ID and program beneficiary databases. Social registry can help realize efficiency gains in terms of costs of data collection and identification of beneficiaries for multiple programs, improve coverage and linkages across programs and enable better preparedness and scalability of programs for shock response.

A critical element of implementing ISR includes agreement on an **integrated registration form** which collects minimum information on individuals and households required by different participating programs to identify and assess eligibility of applicants. The use of a single registration form and an integrated platform for multiple programs reduces operational costs for programs to separately collect, verify, process and store data required for eligibility assessment.

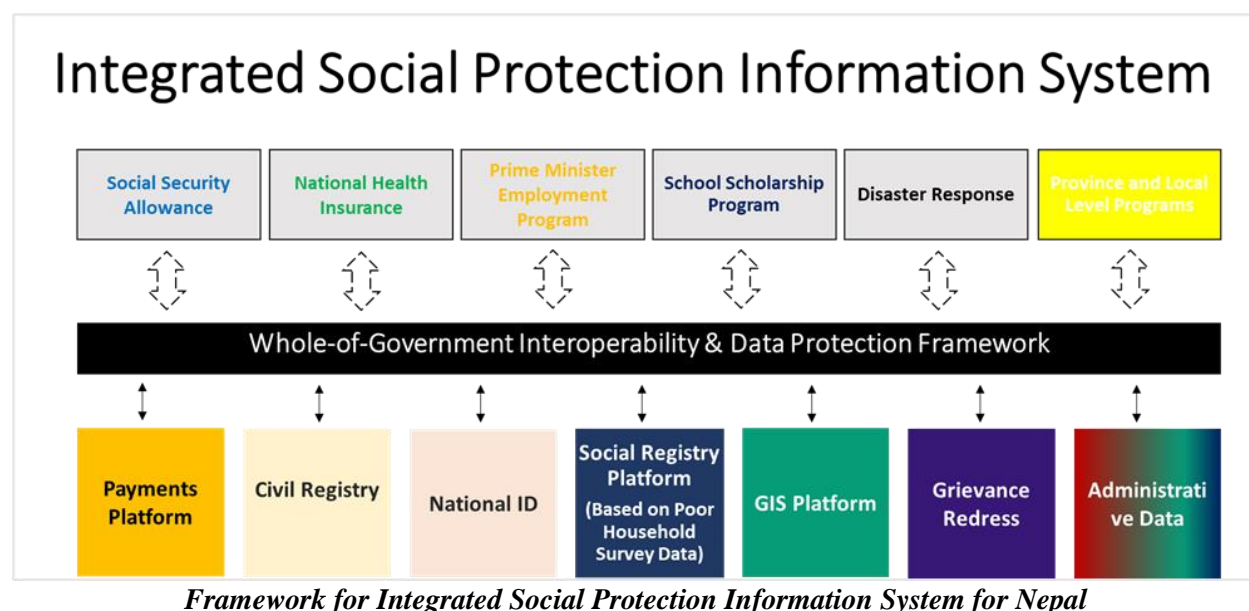


### *Approach to building ISR in Nepal*



In Nepal's context, among the many social protection programs being implemented by the government, only a few large ones have made significant investments in strengthening their program systems. The Social Security Allowances program, which is also managed by the DONIDCR, has a functional MIS with linkages to civil registration system to manage more than 3.5 million beneficiaries. Similarly, the Prime Minister's Employment Program (a public works-based employment guarantee scheme), is also in the process of developing its MIS which processes over half a million registered unemployed beneficiaries annually. Most other programs either have very basic systems to manage digitized beneficiary registries or continue to rely on paper-based lists that are archived at the local level. These programs collect and use similar individual and household level basic identification, demographic and socio-economic information through separate forms. However, in absence of an interoperability platform and data exchange mechanisms, there is a major challenge in sharing and monitoring data across programs which result in inefficiencies, lack of standardization of data, and reduced oversight capabilities. Fragmentation of programs and coordination challenges in federal structure combined with variations in level of development and interoperability capability of existing program systems constitute major challenges in developing an ISR in Nepal.

ISR is conceptualized here as a key instrument and an integral component of the Government of Nepal's policy objective to build and implement an integrated social protection information system. The broader role that the ISR is expected to fulfill is twofold: first, to improve the process for identification of population of interest for multiple programs, hence improve delivery of social programs, by integrating the outreach, communication, intake and registration, and assessment of needs and conditions for multiple programs through the use of a single or integrated registration form. In addition, due to the expansion of National ID and digitization of civil registration, the task will help to build the foundations for linking programmatic and administrative data systems to enable development of an integrated beneficiary registry of selected government social programs. The following figure outlines a proposed conceptual framework of an integrated social assistance information system with the ISR as a core element.



Five key guiding principles have been identified to guide the approach to design and implementation of ISR in Nepal: (a) **ensure data sharing and interoperability as core principle for all relevant stakeholders;** (b) **ensure clarity in institutional roles in federal structure;** (c) **adopt a phased approach**

to linking different programs and systems; (d) ensure dynamic updating of verified data; (e) prioritize ease of access and maximum population coverage; and (f) define clear data ownership rules while ensuring security and privacy.

### *Strategy for Populating and Deploying ISR*

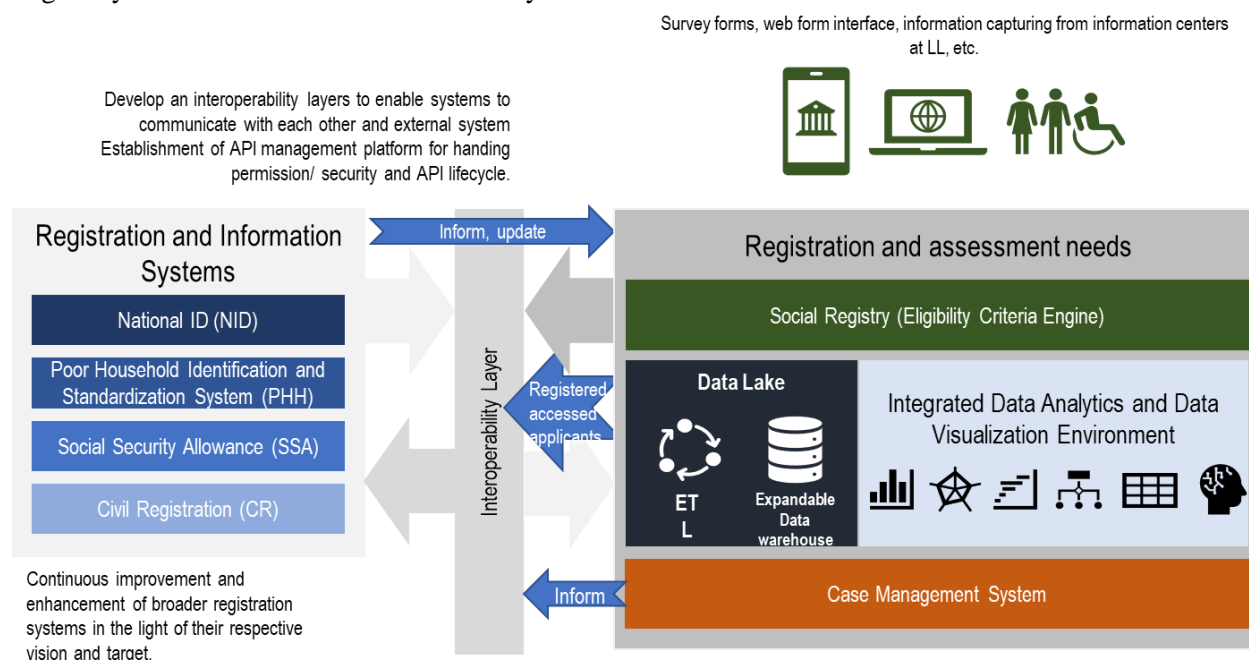
The DONIDCR has formulated a basic model of ISR in Nepal which will rely on the National ID and Civil registration systems database for unique identification of individuals while linking to the household level data being collected through the Poor Household Identification Survey. With these databases as source, a social registry platform will be built as an integrated and scalable system with robust interoperability capability to support intake, registration, and eligibility verification processes of multiple social programs. In the first phase of implementation, the department plans to link the ISR system with the Social Security Allowances program MIS and test the social registry-based intake and registration process for the program in selected local levels. However, the design and development of the system will be undertaken with the view to meet the minimum data requirements for major social protection programs for nationwide implementation, and will also help define the system requirements needs to link existing programs and administrative systems with the ISR in a phased approach.

A summary of the four key systems that will form the basis for the foundations of ISR in the first phase is provided below:

- (i) **National ID:** National ID is a biometrically authenticated unique ID to be provided to everyone who is a Nepali citizen or eligible to become citizens. The ID is intended to serve as a proof of identity of individuals for all government transactions. The NID information system generates ID to each eligible individual and authenticate identity. It is managed by the Department of National ID and Civil Registration (DONIDCR) under the Ministry of Home Affairs (MOHA). The issuance of national id to the eligible Nepalese citizens are still underway and yet to gain a substantial coverage. Given that the NID will be a unique id to uniquely identify individual member or beneficiary for the design of the social registry and interoperability, the project is considering to deploy the social registry in those districts that have wider coverage national id issuance.
- (ii) **Civil registration:** Civil registration captures five vital events: birth, death, marriage, divorce and migration into a centralized database. The civil registration system is transitioning from a manual to an electronic system whereby each registered event will be recorded in the MIS. The system is maintained and managed by DONIDCR and has in-house technical resources. The system is developed in MVC framework, ASP. Dot net and Oracle at the backend database. The department owns a full access to the source code files and backend design architecture and has also developed interoperability functions with NID.
- (iii) **Social Security Allowance (SSA)** – The SSA MIS is designed to capture enrolment and payment of SSA beneficiaries. The SSA database captures the information of beneficiaries of the five categories of social security allowances: senior citizens, single women, people with disability, Dalit children and children in selected districts, individuals belonging to the endangered ethnicities. The database with over 3 million records and is managed by the Department of National ID and Civil Registration under the Ministry of Home Affairs. The system developed using the same development technology as that of SSA.
- (iv) **Poor Household Identification and Standardization System (PHH)** – PHH captures socio-economic data derived from census of households in selected districts. The data is used to identify poor households. This is currently being managed by the Poverty Identification and Standards section under the Ministry of Land Reform, Cooperatives and Poverty Alleviation.



The figure below presents a high-level architecture of integrated social registry for Nepal for the implementation of the first phase in which interoperability between NID, CR, SSA and PHH systems will be established. The architecture includes four main components that link the data warehouse for social registry with the four systems: an eligibility criteria engine, a case management module, data analytics and visualization module and an interoperability module to share, exchange and validate data between these systems. As more programs are linked to the system, additional modules with separate business rules for eligibility verification will be added to the system architecture.

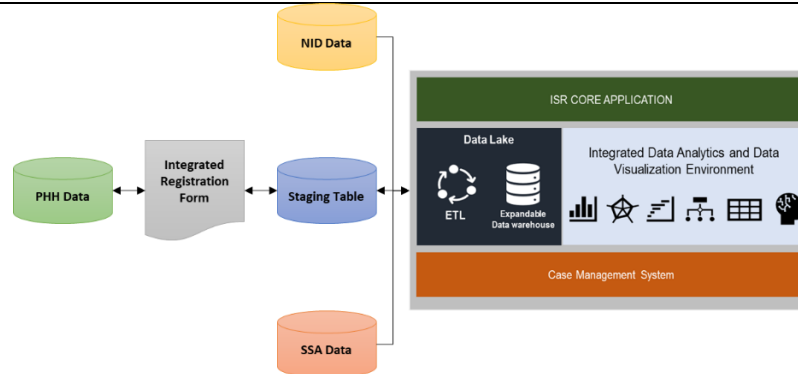


***High Level System Architecture for First Phase of Integrated Social Registry***

The scalability of the system and interoperability considerations with other program and administrative systems is a key part of the proposed architecture. The variations in level of development and interoperability capability of the existing systems mandates a phased approach which will require the ISR system to be scalable and support data exchange with programs and other databases. As programs adopt the ISR based intake and registration process, the need for separate data collection, verification, and processing will be avoided as the updated and validated data from ISR would provide a single or integrated source of individual and household information for eligibility assessment. An interoperability framework with two-way data exchange between ISR and program systems will enable programs to receive information on eligible applicants to process for enrolment and provision of program benefits, and for the ISR to pull details of benefits received from multiple programs to provide integrated data for monitoring and planning purposes.

***Proposed Business Processes for Creating Stock and Updating data in the ISR***

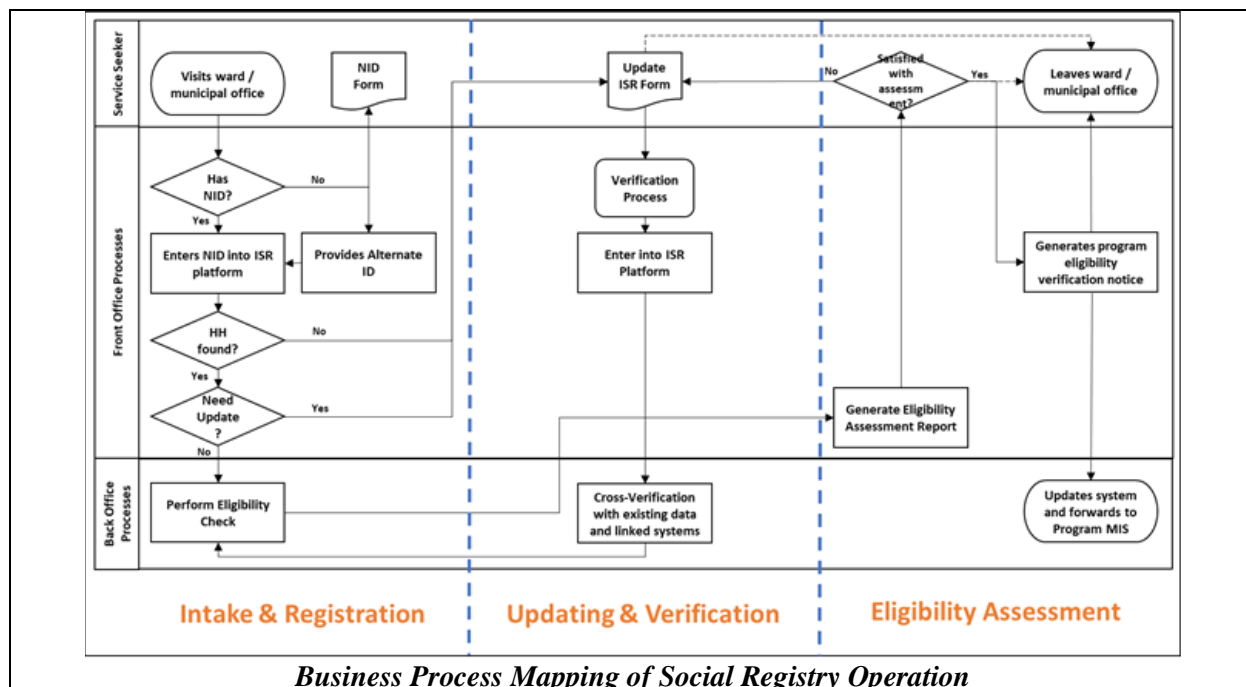
- (a) **Creating Stock of Social Registry:** The initial stock of household level data will be pulled from the PHH database through an API layer processing through the integrated registration form<sup>1</sup> format into a 'staging table' Individual identification information and SSA program beneficiary details will be mapped on to the household roster to pull individual details and populate the social registry database by local level (see figure below)



The individuals and households that are not matched will then be forwarded for local level verification process. Verification camps and/or household visits will be conducted at the local level to update, complete and verify the unmatched records. The updated information will be uploaded to the central database as the verification of all households in the local level is completed.

- (b) **Updating Data in Social Registry:** The usability of data in the social registry is highly dependent on ensuring that the information is updated regularly. Many criticisms of social registries (see Kidd et al 2021) derive from their outdated and poor-quality data that result in high exclusion errors for the poor and vulnerable when the information is used for targeting and eligibility assessment. Three kinds of data are stored in the social registry which can be updated through different means. First the individual identification data, as per the proposed design, can be updated only through NID and CR systems either through new entry or correction of errors. Second, the individual level socio-economic (education, income, employment) and administrative data (tax, pensions etc.) can be either updated through updating certain portions of the integrated form or through data exchange with administrative systems once they are established. Third, the individual and household level information in the social registry can be updated by defining validity period of the data and requiring updates in order to qualify to apply for programs or benefits, where people use webservices or visit service units to update their information. The use of the integrated registration form for multiple programs application will also allow the possibility of more frequent updating of the information through the regular intake and registration process with field level verification conducted as required for certain data fields. A proposed business process map of social registry operations through in person visit at local office is provided in figure below for reference, but the dynamism required to ensure inclusion and to keep data up-to-date can combine different approaches for data intake depending of the region.





With the above strategic approach and proposed business processes in consideration, the selected SI firm is expected to analyze these aspects from the perspective of data migration and exchange, scalability and interoperability, design of the mobile app and deployment in order to ensure the system implementation plan is well aligned.

The outlined below now provides a high level functional and technical requirement for SI to get a broader sense of the features and functionalities of the proposed platform under this assignment. Using this as a basis, it is the responsibility of the SI – using their proposed qualified skills, expertise and domain knowledge – gather deeper understanding of the business needs, analyze it from the prospective of applying international practice and standards, more practical innovations and design techniques that meets the overall objectives of this assignment. It is expected that SI will submit the final draft system requirement and design documents for DONIDCR’s final review and approval. To complement these efforts, DONIDCR in collaboration with the World Bank team recently conducted a technical assessment of these identified databases that highlights the underlying system design attributes of these systems and the gaps/recommendations for system interoperability. Likewise, efforts are also underway to develop a business process mapping to document the draft business process of forms and formats, identifying minimum data attributes for the design of the social registry etc. DONIDCR’s expects these background work to be complimentary for SI to further drilldown them from its own perspective to determine the most optimal solution architecture for the social registry platform based on the international standards and practice adapted for similar system design. DONIDCR will share this document and other available technical materials to the winning SI which shall be the inputs for finalization of the system requirements and design.

#### 4. Scope of Work and Services

- I. Based on the document provided by the Department of National ID and Civil Registration and other relevant study by the consultant prepare System Requirement Specification document and get approval by the department
- II. Prepare a detail system design document (SDD) and get approval by department
- III. **Design and Develop a centralized Social registry and interoperability platform/solution** with integrated case management module as per the agreed SRSD/SDD;
- IV. Integrate GIS Framework for household mapping
- V. Perform **System installation, configuration and deployment** on the hardware infrastructure provided by DONIDCR including DC, DR and Failover site (*hardware procurement is not a part of this assignment*);
- VI. Conduct **SR Platform testing**;
- VII. Design, develop and testing of tablet application for the SR data collection and verification
- VIII. Conduct **SR Platform user training** for DONIDCR and other participating institutions (PIs) using TOT approach;
- IX. Obtain **SR Platform Operational acceptance** for final deployment;
- X. Firm should provide Business Intelligence Tools (BI tools) and enterprise service bus (ESB)
- XI. Provide **Platform warranty and implementation support services** for a period of 12 months from the date of issuance of operational acceptance;

This assignment calls for the design and development an integrated social registry with interoperability functions initially for four main systems identified above and which adheres to the following design principles:

- (i) **Security**: that adapts to the robust data exchange protocols and techniques that fully supports data encryption, data privacy and protection policies;
- (ii) **Useability**: that the system is designed and developed in a manner that ensures useability of the various functions and platform modules that meets the intended business needs which is user configurable rather than hard-coded;
- (iii) **Scalability**: that the system is designed and developed in a manner that allows further building on the platform to incorporate more features and supports new institutions to join the platform with minimal technical interventions as the demands grows;

##### 4.1 Functional Modules

###### i. Design and development of social registry platform

- Functionality to allow ‘single-window’ registration of citizens as per the business needs of different social programs;
- System should have centralized database
- support online/offline data verification process using an integrated interoperability engine;
- Choice of online/offline data verification should be user configurable;
- Functionality to track beneficiaries across multiple programs routed through social registry;
- System should have a capability to targeting, reporting and operation by analyzing different social programs data;

- Functionality to enable data collection of SR applications intake through mobile app;
- Proper user management system to access SR from multiple agencies.

## **ii. Integration Engine**

Integration engine should defines a clear roles and responsibilities of the PIs as the data consumer/receiver; this protocol document shall be the basis on how the data would be exchanged and synchronized between the single or multiple sources of databases. The minimum requirements of service integrator bus for Social Registry will be:

### **a. Invocation (Call)**

The system should have a capacity to send requests and receives responses from integration services and integrated resources. The minimum capability will be following:

- Asynchronous messaging
- Synchronous messaging
- Translation of protocols
- FTP supports
- Support for SFTP
- HTTP support
- Support for POP3
- SMTP Support
- IMAP Support
- EDI Support
- Support for JMS

### **b. Routing**

System should have capacity to determine the destination of messages during transport. The minimum routing features will be:

- Content-based routing
- End point independence
- Delivery guarantee
- Load Balancing

### **c. Mediation**

The ability to transform or move non-equivalent resources in message transports

- Message verification
- Displaying diagrams
- Routing messages with errors
- Provision and registration of service

### **d. Adaptability**

System should have a provision to adopt to other service providers with following minimum capability

- Microsoft SharePoint services
- Custom adaptors
- MSSQL Server

- Sybase ASE Server
- Oracle databases
- .NET Adopter
- IBM MQ
- MS MQ Support
- Sockets Supports
- MS windows systems
- Linux/Unix Systems

#### **e. Security**

The system should have ability to provide secure messaging at all points of message transport with following minimum feature

- Notification
- High availability
- Crash recovery
- Security in web services
- Encryption/decryption of content
- Content authentication and authorization
- Digital Signature
- Keys syncing
- The impossibility of renouncing authorship
- Single sign-on

#### **f. Administration**

The ability to provide monitoring logging, auditing and integration scenarios with following minimum features:

- Prohibit or restrict message Adaptive Authentication, multifactor authentication, transaction risk analysis
- Logging and auditing
- Exception log processing
- Performance monitoring
- Compilation of statistical data
- Processing messages with errors (correction, auto-forwarding)
- Integrated development environment (IDE)

#### **g. Process orchestration**

The ability to perform complex business process described in the standard language (BPEL) with following minimum capability:

- Separation of rules
- Reuse rules between processes
- Dynamic re-configuration
- Exception handling
- Long-term transactions
- Generation of web services
- Automatic transaction
- Coordination of web services
- Extended service support
- Message tracking

- Publish and subscribe

#### **h. Complex events processing**

The ability to interpret events and the existing relationship between them for further guidance with following features:

- Dynamic resource allocation
- Data protection and cleaning
- Publish and subscribe to business events
- Managing the publication of business events
- Business events subscription management

#### **i. Development Tools**

The ability to provide tools for designing, developing, testing, and deploying applications for professional development with minimum following features

- Compilation of streams
- Error reporting
- Real-time monitoring of processes
- Monitoring and debugging threads
- Easy application deployment
- Ease of migration of application
- IDE
- Authorship and defining of business rules
- Version control
- Development and implementation of business rules

- a. Interoperability engine: that defines a clear roles and responsibilities of the PIs as the data consumer/receiver; this protocol document shall be the basis on how the data would be exchanged and synchronized between the single or multiple sources of databases;
- b. Design and develop a user-friendly interface to manage, monitor and configure such business rules without any backend process involved;
- c. Should define the data standards, API management and integration of other government systems for data exchange/share/validate;
- d. Any exchange of data should be conducted once authenticated by the business rule defined;
- e. Design, develop and customize the RESTful APIs/web services as needed for bringing the target PIs to plug into the SR platform;

#### **i. Case management/grievance handling**

- Functionality to allow applicants or program beneficiaries to register any grievances, appeals or complaints on the issues related, for instance, data quality, incorrect information, information update requests etc using a unified platform;
- Functionality to generate electronic forms for each type of grievance/complaints online or through the mobile app;
- Functionality to create case management criteria as per the business needs; for instance, if a request for updating the beneficiary's address is registered – such request should then route to the respective PI who is the authorized data owner of such update request;

- Functionality to issue a unique case ID for each case registered for case tracking and management;
- Functionality to track the case status / resolution;
- Functionality to send email alerts for unresolved cases for a prefixed period of waiting time; automatic escalation as per the predefined business rules;
- Ability to generate report on total number of service/case request in a day/week/month/year; types of requests made, status of case registered (opened, pending, processed, resolved, unresolved, closed);

**ii. Mobile APP:**

An android mobile app version shall be developed for the purpose of the data collection, verification and validation with following main functions:

- Functionality to perform upload data, offline data entry and synchronizing to central social registry;
- Functionality to allow two-way data synchronization between centralized social registry and mobile app;
- Single-sign-on with social registry platform;
- Functionality to track geo codes, upload documents and image files;
- Data collection for the case management and grievance readdress functions;
- Functionality to download the app from the cloud such as Google play station to be able to install and configure in user's mobile phone;
- Functionality to ensure data security and apply strong user's authentication management for verification. Two factor authentication should be implemented;

**iii. Data Analytics and business intelligence**

- Establishment of **integrated data analytics and data visualization** environment to allow extensive data mining of social registry Datawarehouse for conducting deeper data analysis, informed decision making and get support on policy design intervention;

The following minimum capability of BI tools should be required

- **Functional Requirements should be:** Globalization Support; Decentralized Analytics Environment;
- **Dash boarding and Data Visualization should be:** Interactive Data Visualizations; Data Storytelling; Filtering; Drill-Down and Drill-Up Capabilities; Auto-Charting; Geospatial Visualizations and Maps; Animations; Advanced Visualizations using external tools; Auto-refresh and Real-time Updates; Pre-Built Templates and Web Accessibility and Embeddability, etc.
- **Data Source Connectivity:** Standard Files (i.e. Excel, CSV, XML, JSON, PDF and more), Statistical Files; Relational and NoSQL Databases; JDBC, ODBC and Parameterized Connections; Big Data Ecosystems; Social Media, SEO and Web Analytics Platforms; and Enterprise Messaging Platforms; SFTP/FTP Support, etc



- **Data Management:** Data Exploration; Data Modeling; Data Preparation; Data Blending; Extract, Transform, Load (ETL); Metadata Management and Data Catalog; OLAP and Multidimensional Analysis; Data Governance; Advanced Data Preparation using others tools
- **Data Querying:** Query Multiple Data Sources; Complex Queries; Scheduled Queries; Readable and Modifiable SQL; Multi-Pass SQL; Batch Updates; Visual Querying; In-Memory Analytics; Live Connection, etc.
- **Data Analysis:** Ad Hoc Analysis, Segmentation and Cohort Analysis, Cluster Analysis, Scenario and What-If Analysis, Statistical and Regression Analysis, Time Series Analysis and Forecasting, Predictive Analytics and Predictive Modeling Markup Language (PMML) Support, Text Mining (Text Analytics) and Sentiment Analysis, Social Media and Web Analytics, Geo location Analysis; Advanced Data Analysis using Python and R; Streaming and Internet of Things (IoT) Analytics
- **Augmented Analytics:** Augmented Data Preparation, Automated Descriptive Insights, Key Driver Analysis; Automated Anomaly Alerting, Auto-Generated and Analyzed Segments or Clusters, Auto-Generated Forecasts or Predictions, Contextualized or Relevant Insights, Automated Feature Generation and Selection, Automated Algorithm Selection and Model Tuning, Automated Model Packaging and Monitoring, Text-Based and Voice-Based Natural Language Search
- **Reporting:** Canned/Managed Reporting, Conditional Formatting, Interactive Reporting, Ad Hoc Reporting, Auto-Schedule Reports, Built-in Alerts, Reports Exporting, Reports Versioning.
- **Embedded Analytics:** Embeddability, White Labeling, Multitenancy Support, Version Control, Mobile App Embeddability, In-App Reporting, Secure Write-Backs, Background Processing, Integrated Workflow Actions
- **Security:** Authentication Protocols and Systems, Single Sign-On and Trusted Authentication, Object-Level Security; Row-Level Security (RLS); Column Level Security; User Filtering; Application Activity Tracking; Integrated Security; Encryption;
- **Extensibility, Availability & Scalability:** Dynamic Scaling, High Availability, Fault Tolerance, API Extensibility and IDE Support

#### iv. Social Registry online portal

- Functionality of content management system which could be used as a tool to broadcast general information and announcements through an ISR portal, provide various reports and information to the citizens;
- Functionality for the citizens to apply online application(s) for registering into the social programs.
- **Non functional requirements**

- i. **User Interface and error message handling:** The system shall be a browser-based application that should work over the Intranet and/or through a secure Internet. The user interface should be user-friendly and easy to use by the users and should provide proper & clear messages (alert or error or notification) for better understanding to action ahead. Each alert that is generated by the system, tickets are generated to system admins such that they can trace back and resolve them.
- ii. **Query and advance search:** The system shall provide simple and advanced query and search facilities to all users or the system and possibility of exporting data into Excel/PDF for allowed users. This module allows users to build ad-hoc reports/listing from any part of the ISR database but limited to the datasets that are permitted to view for the user.
- iii. **Language selection:** The system should be capable of handle multi-language and able to consume Unicode or Nepali fonts along with English language;
- iv. The system should include an online help to enable users to download user manual and training materials as a learning materials;

- **Technical Requirements**

- i. **System Audit trail:** ISR Platform shall maintain the log of all changes or transactions to support required detail tracing of the transaction or operations in the system. Along with key data, it will store the authentication token, the user login details, time stamps, etc.
- ii. **Data security, access, and authentication:** The system should provide standard data security standard and access control for better application protection. The access control system allows ISR admin to create very fine-grained roles and permissions within the roles. The system keeps track of roles assigned to the users or groups and provides access based on it. Though the ISR system will have multiple components, access and rights management will be implemented via a centralized and single system.
- iii. **Data migration:** Setting up ISR requires one time data migration from the key agencies. Custom scripts will be written to perform the migration. The developed tools may be used for importing major sources of data. For smaller volumes of data, the data migration will be managed via the interoperability layer.
- iv. **System installation, configuration and Data hosting and data backup:** This activity involves installation and configuration of the system in the hardware/servers allocated for ISE hosting in a secure and reliable manner. The SI is responsible for installation and configuration of the system in the hardware infrastructure and work closely with the hardware supplier, government integrated data center (GIDC) and in achieving the objective.
- v. **System development tools:** SI is strongly recommended to use open-source technology and development tools such as Java/Dot net core/ and the RDBMS should be oracle.
- vi. **Third party licenses:** While firm is encouraged to propose open-source tools and technology for executing this task, for any third-party software used, firm must provide the valid license of such proprietary solutions at least for a period of 5 years.

- vii. **System architecture compliance:** Overall system should be compliant with at least GEA and NeGIF. Also, the banking industry have proven implementation of secure infrastructure and architecture by enforcing the NRB Guidelines. The same can be enforced for ISR.
  - viii. **Sizing, performance, load testing and scalability factors:** The system shall be capable of handling large volume online transaction from users and API integration with multiple external systems; Application that face customers/user/etc. should be auto scalable. As and when required, new nodes can be added to meet the high traffic requirements.
1. The system processing shall be scalable to support the volume estimates for a period of 10 years at 8-10% annual growth rate; SI must conduct a load testing taking above factors into consideration and submit a load testing results

The firm is expected to perform the following key activities at minimum.

#### **ix. Business needs analysis and System Requirement study**

At present efforts are underway to develop a business process mapping and system solutions document which is expected to provide a broader understanding an integrated social registry platform in terms of business processes, forms and formats, identification of minimum data attributes and the potential data exchange parameters (APIs) to be developed. The current background work by DONIDCR is expected to be one of the key technical input documents for SI to further drilldown and conduct deeper technical analysis based on SI's on ground stock taking and give a final shape taking into considerations of ground reality, SI's own technical prospective and evaluating the international standards and practice adapted for similar system design. The DONIDCR will share this document and other available technical materials to the winning SI during the project inception stage

During this stage, the SI is also expected to conduct a hardware and network needs assessment to identify and evaluate the hardware needs for implementing the system including the technical specifications, hardware architecture, bills of quantity and estimated budget to be procured separately.

The outcome of this phase will include the final draft document of an integrated social registry technical and functional requirements, data flows, data forms and formats, data attributes, required APIs for data exchanges, case management functions, mobile app, data migration strategy, data collection, data hosting, user training and testing methods etc. The DONIDCR technical team will review, provide comments and ultimately provide final acceptance to the document for next subsequent tasks to commence.

#### **x. System design**

Upon acceptance of SRS document, the SI is expected to conduct the System design of ISR Platform. While doing so, the SI is expected to document the underlying database structure and reflect both backend architecture and front-end interface design.

The outputs of system design (The System Design Document, SDD) should have minimum System Architecture, Technology Framework, Data Model, Data Flow Diagrams, ER Diagrams, System Development Project Plan, Implementation and Testing Project Plan, System test use cases, Functional Test use cases, User Acceptance Test, Application Monitoring Requirements, System performance KPIs, etc. and all requires final approval by DONIDCR.

#### **xi. Platform design, development, customization, configuration, and prototyping**

Development should be done in a development environment and then should be moved to testing server. After successful approval on demonstration and testing, the production environment should be updated. These changes processes should be automated. Thorough system testing, quality assurance, training, etc should be performed as mentioned below:

##### **1. System testing**

DONIDCR's technical team including the operational staffs from other participating institutions (PIs), MIS Advisor will be involved during the system testing and will verify that the system meets the business requirements and is being customized in line with the agreed SRS and SDD. The SI must incorporate all the missing features, functionalities and/or any bugs/errors encountered/identified during the system testing. System testing and training should go in parallel. Comprehensive testing of the ISR Platform and approval from DONIDCR is required before deploying in the production environment and before going live. SI should remediate any issues found during the testing and acceptance tests including flaws that may be due to errors in SRS and SDD itself. During the UAT, in the event of any disputes about the conduct or results of testing, the DONIDCR will provide to the SI in writing a description of the issues with specific recommendations on how to address them. The SI must take appropriate steps to resolve any disputes or provide satisfactory clarification as earliest.

##### **2. User training**

The SI will provide detailed training to the key users of the ISR Platform at various levels with an aim to ensure that users of ISR Platforms are able to use the system independently and perform various transactions as desired and also such that the participants can train other users as well as in the "train the trainer" (TOT). Comprehensive User's Manual should be developed for the end users, system admin, application admin. The SI is expected to conduct a ISR user-training program in TOT approach for about 50 ISR users and 5 System/Database Administrators. It is the responsibility of SI to arrange basic training logistics such as training materials, Nepali speaking training experts, handouts and simple refreshment arrangements during the training sessions. DONIDCR will arrange the training venue, focal person, list of training participants and contact details, laptops, internet connection etc.

##### **3. Handover of updated source code files and technical documents**

The SI should provide all the updated source code files and technical documents for each iteration completed. In addition, a final submission of the entire application files, source code and technical documents should be done prior to commencement of system warranty phase.

##### **4. Handover, Acceptance and deployment**

Each iteration shall be considered operationally acceptance once the user training is conducted successfully and the satisfactory feedback from the participants. At the end of the warranty period, the SI will be responsible for a complete system handover. In preparation, the SI must thoroughly provide training to the key user staff before the system transfer. Full system documentation must be provided as per the requirements of *Key Deliverable Section*. These documents must be current at the time of the handoff and cover the final version of the system implemented. All project documents, such as technical memoranda, change requests and status reports, must also be delivered to the DONIDCR. To ensure a smooth transition, the SI will agree a handoff checklist with the DONIDCR that will verify that all required tasks are completed before the system handover is accepted.

#### **xii. System warranty and implementation support services**

The implementation and system warranty support services shall be for a period of 12 months effective from the final acceptance of all iterations from DONIDCR. The warranty period should cover all minor feature enhancements, customizations, addition of reports in ISR as demanded by the users of both the systems as long as is within the scope of ISR functions. During the warranty period SI is responsible for the operation of the system, bug fixing, minor enhancements, reconfigurations, etc. All these activities should be carried out by trained people under the supervision of SI to ensure that handover becomes possible after a year.

#### j. Key deliverables

The SI shall provide all documentation in both hard and soft copies in English language and user manual (both in Nepali and English). The key deliverable shall, at minimum, include the following. SI is expected to organize a debrief session to DONIDCR for each of these deliverables submitted. DONIDCR will thoroughly review, provide comments/suggestions and feedback and it is the responsibility of the SI to ensure all the relevant comments/suggestions and feedbacks are appropriated incorporated for final acceptance by DONIDCR.

No.	Requirement
1.	<b>Project Inception Report</b> – Provides, at a minimum, SI's overall plan for completing the project, describes the manner in which the SI's team will work with DONIDCR; provides a timeline for project execution including dates, resources, and dependencies; provides a plan for communications/issue resolution with the DONIDCR, and agreed technical requirements.
2.	<b>Business needs analysis and System Requirement Study Document (SRSD)</b> – Provides a detailed description of business processes and functionalities of the ISR Platform. The document should also include process/data flow diagram of the proposed platform.
3.	<b>System Design Document (SDD)</b> – Provides a detailed description of the underlying system architecture of the proposed systems including table structure, data dictionary, Entity Relationship Diagram (ERD), object model, service specification document, etc,
4.	<b>Hardware, IT Equipment and Logistics</b> – Need assessment report containing technical specifications, proposed hardware architecture, bills of quantity of hardware to be required for different stages (short term, medium term and long term) of implementation.
5.	<b>Prototype Demonstration</b> - Provides a Graphical User Interface (GUI) based user templates with basic validation included to determine the functionality compliance and navigation flow of the system.
6.	<b>Handover ISR Platform and fully functional application Source Code files</b> —provides a complete source code and file of the application software and any other related bespoke application software.
7.	<b>Operational Acceptance Test Plan</b> – Provides a narrative of the approach that will be used to obtain user acceptance of the developed systems as well as test scripts that will be used to verify application operation.
8.	<b>Technical Documentation</b> – Provides a description of the system architecture, module integration points, work flow engine, data dictionary, user manual etc and any other technical material the technical team will need to understand and support the System in a longer run.
9.	<b>Training Materials</b> – Copies (and electronic) of handouts, manuals, Power Point slides and any other materials used prior to conducting training to staffs at various levels.

10.	<b>Monthly Status Reporting</b> – Copies (and electronic) of all status reports provided by the SI during the execution. Each status report should include, at a minimum, the current period's activity, current issues and planned activity for the next period.
11.	All the documentation deliverables must comply the following <ul style="list-style-type: none"> <li>- 2 copies in English Language in hard copy</li> <li>- Electronic submission</li> </ul>

**k. Minimum requirements and team composition**

The consultant shall have to demonstrate competences, capacity and experience in delivering the similar projects and services and in delivering the government enterprise projects. The table below sets the minimum criteria for selection.

S.N.	Requirement	Consultant				Supporting Documents
		Single Entity	In case of JV			
			Principle Partner	All Partner Combined	Each Partner	
1.	Legal Eligibility					
1.1	Company / Firm Registration	must meet the requirement	Must meet the requirement	NA	Meet the requirement	Registration certificate <b>or</b> Certificate of Incorporation
1.2	Tax Clearance Certificate of latest fiscal year.	must meet the requirement	Must meet the requirement	NA	Meet the requirement	Attested Copy of Tax Clarence Certificate
1.3	VAT/PAN Registration	must meet the requirement	Must meet the requirement	NA	Meet the requirement	Attested Copy of Tax Clarence Certificate
1.4	ISO or CMMI Certification	Must meet the requirement	NA	Must meet the requirement	NA	Valid ISO certificate ISO 9001:2015
2.	General Experience (Score 10)					
2.1.	The consultant must have at least 10 years' experience of software design, development and integration.	must meet the requirement	Must meet the requirement	NA	Must meet 50% of the requirement	Experience certificates as per the requirement including project description.
3.	Specific Experience (Score 40)					
3.1	Successfully complete at least one (1) contract / sub-contract with a value of at least <b>NPR 26 million</b> for the development of enterprise web application (software development services) for Government agencies.	must meet the requirement	NA	must meet the requirement	NA	Experience certificates as per the requirement including project description.



S.N.	Requirement	Consultant				Supporting Documents
		Single Entity	In case of JV			
			Principle Partner	All Partner Combined	Each Partner	
3.2	One (1) contract / sub-contract with value of at least <b>NPR 26 million</b> .  The contracts must be successfully and substantially completed and be similar contract.  Similar contracts will be contracts for social registry / social protection / national identity system where the scope of the requirements / delivery is substantially similar to the proposed social registry system.  Substantially completed means to have been delivered at least 80% of the contract / sub-contract.	must meet the requirement	NA	must meet the requirement	NA	Client references; project description; or any relevant supporting documents
3.3	Successfully designed, developed and delivered mobile application with integration in least in three (3) services (banking/ utility/ cash transaction/ fund transfer etc.)	must meet the requirement	NA	must meet the requirement	NA	Experience certificate work done in last five years
4.	Capacity (Score: 10)					
4.1	Average annual turnover of <b>NPR 50 million</b> in last three (3) years.	must meet the requirement	must meet the requirement	NA	Must meet 25% of the requirement	Audited balance sheets

*Note: Consulting Firm not confirming to any of the mandatory criteria will not be considered for any further evaluation. The supporting document annexed by the firm/ agency in support of the experience claimed under each criterion must clearly specify the name of assignment, period of assignment and scope of work for the assignments.*

**The consultant shall score minimum of 60% in each of the Evaluation Criteria i.e., Experience of Consulting Firm, Capacity of Consulting Firm and Proposed Key Experts.**

**The consultant shall score pass minimum of 70% in total.**

**The consultant who does not score as mentioned above will not be considered for shortlisting for request for proposal (RFP).**

It is the responsibility of the SI to maintain, manage and allocate its team resources as deemed necessary to achieve the overall project objective including the support and maintenance services. This project is a delivery-based assignment in which payments are linked to the milestone and hence the selected firm is expected to ensure continued availability of key technical resources throughout the contract period.

The table below lists the key positions and minimum number of key experts to fulfill the requirements of a contract with its specific size, nature and complexities. The CVs of the following key position **must be provided** as a part of the proposal. The consultant may propose and demonstrate additional team including non-key experts and other resources as deemed necessary to implement the project.

The qualification of the consultant's shall be evaluated on the basis of the availability of the key experts according to the submitted CVs and supporting documents.

S.N.	Positions	Qty	Unit	Man Months	
				Minimum Person Month	Total
Consultant's Key Experts					
1.	Team Leader	1	No.	9	9
2.	Social Registry Expert	1	No.	5	5
3.	Senior System Analyst	1	No.	6	6
4.	IT System Hardware/Network Architect / Expert	1	No.	2	2
5.	System and Data Integrator	1	No.	9	9
6.	Data Security Expert	1	No.	3	3
7.	BI/ Data Analyst	1	No.	6	30
8.	Database Administrator (DBA)	1	No.	2	2
Consultant's Non-Key Experts					
1.	Mobile App Developers	2	No.	4	8
2.	Senior System Developers	5	No.	7	7
3.	Quality Assurance Expert	1	No.	5	5
4.	UI/UX Designer	1	No.	3	3
5.	Trainer	2	No.	1	2

Minimum resource requirements for the design, development and implementation of ISR Platform including the implementation and system warranty support services period

**Key Positions qualification Requirements [CVs of the following candidates must be submitted] (Score: 40)**

S.N.	Key Experts / Qualification Criteria	Major tasks to be undertaken by the individual expert (not limiting the following)
1.	<p><b><u>Team Leader (1)</u></b></p> <ul style="list-style-type: none"> <li>• At least master's degree in Information Communication Technology or equivalent</li> <li>• 15 years of experience in solution development and project management;</li> <li>• At least 5 project experiences in development of information systems involving integration between government agencies as Team Lead.</li> </ul>	<ul style="list-style-type: none"> <li>• Lead the project team to implement the assignment, prepare reports, deliver the IT system, and achieve the project object objectives.</li> <li>• Prepare detailed project implementation plan, key deliverables, define the project goals, objectives and strategy for operationalization of ISR System,</li> <li>• Responsible to ensure the quality of service associated with the project and implementation plan,</li> <li>• Responsible for overall delivery of the ISR system as per the requirement and shall be guarantor of the implemented system,</li> <li>• Monitor the project activities to track the performance of the project towards the visions and goals of the project,</li> <li>• Responsible for developing the test strategy and test scenarios associated with the project and execute the test cases, test results, track the bugs identified and their fixes and next deliveries,</li> <li>• Responsible for reviewing, maintaining and tracking versions of software and project documents to be delivered to DoNIDCR,</li> <li>• Responsible for reviewing and delivering the project documentation, training materials and trainings, system administration guides, user manuals etc.</li> <li>• Primary contact for the assignment and will be responsible for ensuring timely completion of deliverables, oversee project implementation, manage the key and non-key experts, manage and coordinate the implementation of system changes,</li> <li>• Conduct weekly meetings and workshops with DONIDCR during project period. Also, shall be responsible to organize and/or workshops for the integrations of systems with other external agencies.</li> </ul>

S.N.	Key Experts / Qualification Criteria	Major tasks to be undertaken by the individual expert (not limiting the following)
		<ul style="list-style-type: none"> <li>Review the project progress against the agreed project plan, highlight deliverables,</li> <li>Notify the project of any problems or delays and updates statistics on key performance indicators as agreed in project implementation plan.</li> </ul>
2.	<p><b><u>Social Registry Expert (1)</u></b></p> <ul style="list-style-type: none"> <li>Minimum Master's degree in Public Administration, Public Policy or in relevant fields,</li> <li>15 Years of experience in administration, policy formulation or in relevant fields.</li> </ul>	<ul style="list-style-type: none"> <li>Review and assess government policies, rules and regulations related to the social security and social protection system of Nepal and studies to identify issues in the existing policy framework that will help to develop efficient social registry system.</li> <li>Shall assess the existing eligibility checking criteria for several social security schemes and verification processes for the social registry system.</li> <li>Conceptualizing the functions of the social registry system including data interoperability among other external systems.</li> <li>Conducting the business process review of the program processes and functions and define with a clear 'to-be' processes that aligns with the local context adapting the international best practice and techniques.</li> </ul>
3.	<p><b><u>Senior System Analyst (1)</u></b></p> <ul style="list-style-type: none"> <li>Minimum Bachelor's degree in IT Related fields,</li> <li>10 years of experience in System Analyst,</li> <li>At least five project experiences in development of information systems involving integration between government agencies as System Analyst;</li> </ul>	<ul style="list-style-type: none"> <li>Conduct system requirement study/gap analysis, developing data/process flow diagrams to effectively map the business requirements into MIS.</li> <li>Transform and/or map the integrated social security business processes and use cases into the business process diagrams and workflows including business process rules and special cases covering the registration/intake, eligibility testing and verification processes etc.</li> <li>Preparation of ISR System Data Dictionary and data flow matrix of the each of the systems and /or sub-system including their representation and storage.</li> <li>Preparation of System Requirement Specification Document.</li> </ul>
4.	<p><b><u>IT System Hardware/Network Architect / Expert (1)</u></b></p>	<ul style="list-style-type: none"> <li>Prepare the ISR System architecture based on the project requirement,</li> </ul>

S.N.	Key Experts / Qualification Criteria	Major tasks to be undertaken by the individual expert (not limiting the following)
	<ul style="list-style-type: none"> <li>• Minimum Bachelor's degree in IT or equivalent.</li> <li>• 10 years of demonstrated experience in conducting hardware needs assessment, analyzing the existing and future needs and developing an optimum hardware architecture for the implementation of large-scale IT systems and solutions;</li> <li>• Certified hardware and/or network engineer is an advantage;</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare the technical specification and bill of material (BoM) of hardware, COTS and/or customized software required for proposed system based on the sizing, performance, capacity and throughput specified in the project requirements and different project terms,</li> <li>• Assess the current hardware and network infrastructure available at DoNIDCR and optimize the proposed technical specification and bill of material (BoM) and recommend the available options to DoNIDCR,</li> <li>• Responsible for overall IT infrastructure setup, Installation, configuration of hardware and networking IT equipment such as servers, routers, switches provided by DoNIDCR. And also prepare the documentations for these activities,</li> <li>• Ensure the delivered and/ or installed COTS and custom software are of latest version with recent releases fixes and are free of any identified software vulnerabilities.</li> </ul>
5.	<p><b><u>System and Data Integration Expert (1)</u></b></p> <ul style="list-style-type: none"> <li>• Minimum Bachelor's degree in IT or related fields,</li> <li>• 10 years of experience in system integration,</li> <li>• At least 5 experiences in integration of IT systems of government agencies</li> </ul>	<ul style="list-style-type: none"> <li>• Assess for the designing of integrated social registry system Integration Platform (Enterprise Service Bus) according to the project requirement and provide the best design alternatives,</li> <li>• Assess the data sources and define the data integration architecture,</li> <li>• Design the internal and external interfaces according to the project requirements,</li> <li>• Define detail interface documentations including interface environment context, use cases, sequence diagrams, datatypes, message representations, response codes, error codes for each of the services required for ISR System,</li> <li>• Integrate software components and third-party programs,</li> <li>• Integrate the internal and external system and/or subsystems to achieve the project objectives,</li> </ul>

S.N.	Key Experts / Qualification Criteria	Major tasks to be undertaken by the individual expert (not limiting the following)
		<ul style="list-style-type: none"> <li>Ensure pluggability and interoperability of the system.</li> </ul>
6.	<p><b><u>Data Security Expert (1)</u></b></p> <ul style="list-style-type: none"> <li>Minimum Bachelor's degree in IT or related fields,</li> <li>10 years of demonstrated knowledge and experience in IT system and security and conducting information systems audits and audit of backend code vulnerability;</li> <li>Relevant professional certification is an advantage.</li> </ul>	<ul style="list-style-type: none"> <li>Shall be responsible for assessing the current trends in IT system security and data security standards,</li> <li>Shall be responsible to ensure security and quality of the selected technologies, security standards, personal information protection standards,</li> <li>Shall be aware of commonly known software vulnerabilities, their fixes and releases,</li> <li>Shall prepare the documentation of security administration and housekeeping tasks and their execution for monitoring.</li> </ul>
7.	<p><b><u>Senior System Developers (4)</u></b></p> <ul style="list-style-type: none"> <li>Minimum Bachelor's degree in IT or related fields</li> <li>At least five (5) years of demonstrated knowledge and experience in system design and development life cycle (software development life cycle);</li> <li>Experience in the technology platforms like .NET/Java;</li> </ul>	<ul style="list-style-type: none"> <li>Produce clean and efficient code based on specifications, data dictionary, business process and workflows and verify, deploy the software programs,</li> <li>Responsible for development of the software according to the design document and software development life cycle,</li> <li>Develop the custom scripts to integrate the several sub-systems using the robust database management system like Oracle.</li> </ul>
8.	<p><b><u>BI/ Data Analyst (1)</u></b></p> <ul style="list-style-type: none"> <li>At least Bachelor's degree in IT related fields</li> <li>5 years of experience in Data Analysis/Business Intelligence System</li> <li>At least 3 experiences in development of Data Analysis / Business Intelligence features</li> </ul>	<ul style="list-style-type: none"> <li>Understanding of the data and different data analysis techniques for detail analysis of captured data and develop required visualization;</li> <li>Assess visualization tools – opensource and commercial tools to provide reference for better visualization of extracted data;</li> <li>Designing the Business Intelligence System architecture with all technical detailing for e.g., collecting the business logs, fact tables, trend tables and also representation of reports, publishing the dashboards, charts and reports with multi-dimension of indicators,</li> <li>Setup the BI System, test and train the end users.</li> </ul>



S.N.	Key Experts / Qualification Criteria	Major tasks to be undertaken by the individual expert (not limiting the following)
9.	<b><u>Mobile Apps Developers (2)</u></b> <ul style="list-style-type: none"> <li>Minimum Bachelor's degree in IT related fields;</li> <li>At least Five years of demonstrated knowledge and experience in mobile application designing and development;</li> <li>Minimum 5 Project Experiences</li> </ul>	<ul style="list-style-type: none"> <li>Responsible for selecting the mobile app development tools and technologies both for front-end and back-end,</li> <li>Designing, implementing, and managing software programs,</li> <li>Writing high-quality source codes for mobile apps both for iOS and Androids platforms</li> </ul>
10.	<b><u>Database Administrator (1)</u></b> <ul style="list-style-type: none"> <li>Minimum Bachelor's degree in IT related field,</li> <li>10 years of experience in database administration, designing and management</li> <li>At least 5 experiences in development of enterprise application for government agencies as database administrator</li> <li>OCA/OCP certification is an advantage.</li> </ul>	<ul style="list-style-type: none"> <li>Responsible for installation, setup and creation of databases management systems in windows and /or Linux system,</li> <li>Set up and configuration of database system in datacenter, disaster recovery system and /or failover system,</li> <li>Creating, updating and for modifications to database structure and data models,</li> <li>Monitoring database and patch upgradation,</li> <li>Ensuring database security, integrity, stability and system availability of the system i.e., designing and defining the strategies for backup, fast recovery etc.,</li> <li>Responsible for creating custom scripts for data migration, update and data mapping.</li> </ul>
11.	<b><u>Quality Assurance Expert (1)</u></b> <ul style="list-style-type: none"> <li>Minimum bachelor's degree in IT Related field.</li> <li>At least three (3) years of demonstrated knowledge and experience in quality assurance and quality control for software projects;</li> </ul>	<ul style="list-style-type: none"> <li>Defining the test scenarios and test cases to ensure the quality, maturity level and robustness of the system,</li> <li>Perform different types of tests (unit test, integration test, regression test etc),</li> <li>Verification of developed system to confirm business requirements of the projects.</li> </ul>
12.	<b><u>UI/UX Designer (1)</u></b> <ul style="list-style-type: none"> <li>Minimum Bachelor's Degree in IT related fields</li> <li>At least five (5) years of demonstrated knowledge and experience in web-based application and /or website user interface designing and publishing;</li> <li>Experience in user interface, user experience designs and best practices for the same;</li> </ul>	<ul style="list-style-type: none"> <li>Develop ideas using business processes and workflows and also graphic user interface elements, like menus, tabs and widgets,</li> <li>Creating original graphic designs (e.g., images, sketches and tables),</li> <li>Identify and troubleshoot UX problems (e.g., responsiveness) and fix them,</li> <li>Responsible for designing the graphical user interfaces for ISR web portal, registration/intake</li> </ul>

S.N.	Key Experts / Qualification Criteria	Major tasks to be undertaken by the individual expert (not limiting the following)
		system, business reporting portal and administration/management for ISR System.
13.	<b>Trainer (1)</b> <ul style="list-style-type: none"> <li>• Minimum Bachelor's degree in related fields</li> <li>• At least 3 years of demonstrated knowledge and experience in providing training to trainers and end users</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation and presentation of training plan, training schedule and training materials,</li> <li>• Organization of all trainings specified in requirements.</li> <li>• Conducting the training evaluation of trainees, collecting the training feedback and adapting the improvements.</li> </ul>

### I. Implementation schedule

The following is the outline of the Implementation schedule for the SI to get a sense of the key tasks and activities and the proposed timeline. The SI may propose their own tasks and lists of activities in the best possible manner, however, must meet the following timeline.

Design and Development of Social Registry and Interoperability Platform												
Implementation Timeline												
#	Key Activities/Milestones	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11+12 months
1	Introductory meeting/mobilization											
2	Business needs assessment/system requirement study											
3	System requirement specifications Document (SRSD) submission, Review and Approval											
4	System Design											
5	System Design Document (SDD) submission, Review and Approval											
6	System Development and Deployment using agile methodology											
	<b>Iteration 1</b>											

7	deliverables to be decided during SRS phase											
8	System installation, configuration and hosting											
9	System Demo, testing and incorporation of feedback											
10	User training											
11	user acceptance and deployment											
	<b>Iteration 2</b>											
14	deliverables to be decided during SRS phase											
15	System Demo, testing and incorporation of feedback											
16	User training											
17	User acceptance and deployment											
18	<b>Iteration 3</b>											
19	System Demo, testing and incorporation of feedback											
20	User training											
21	Deployment											
22	User acceptance and deployment											
23	Monthly progress report											
24	Delivery of final documentation: user manual system requirement and design document, fully functional MIS installed, MIS installation and configuration manual, handover of most updated and complete MIS source code files											
25	End-to-end system testing and final operational acceptance											
26	Commencement of system warranty support services											

### **Project management and Reporting**

The DONIDCR will form a working team comprised of technical and operational staffs (include project MIS team) from the department and other PIs on need basis. Besides, DONIDCR is also expected to get regular technical guidance from the World Bank team during the period on the areas related to business needs, SR design, quality control and delivery compliance.

The **SI's Team Leader** (TL) will be the primary contact for the assignment and will be responsible for ensuring timely completion of deliverables, oversee project implementation, manage the key and non-key experts, manage and coordinate the implementation of system changes, conduct weekly meetings with DONIDCR and address any other concerns or issues the Project may have. During the weekly status meetings, TL must do a minimum review progress against the work plan, highlight deliverables that have been completed, notify the Project of any problems or delays, report on change requests and supply updated statistics on key performance indicators as agreed with the Project. Performance indicators may include, but are not limited to:

- Functional and technical requirements satisfied as a percentage of total,
- Results of testing,
- Percentage of tasks completed on time to date,
- Number of deliverables completed and accepted,
- Number of individuals trained,
- Number of technical support cases and average time to close,
- Number of deliverables completed during the period and year to date against plan;
- Current period's activities;
- Current period's issues;
- Activities planned for the next reporting period.

