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TECHNICAL PROPOSAL



DEVELOPMENT OF GENDER-BASED VIOLENCE CASE INFORMATION MANAGEMENT AND RESPONSE SYSTEM

-

The Network Against Gender-Based Violence and Partners

-

17.06.2022

SUBMITTED BY:

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1 – PROJECT BACKGROUND & OBJECTIVES



1.0 – Project Background

Gender-based Violence (GBV) is a socially challenging problem with infrastructural and system deficits. The first issue of the problem is service availability for survivors. On one hand there are limited GBV-specific services in most regions, while on another hand most survivors have challenges in accessing the limited support around them. In the same vein, the limited-service providers are not easily identified and rallied to offer these services which denies service providers available avenues to reach survivors, and/or interact with other GBV programmes. For that reason, GBV programmes often function in silos, with the program losing the harnessing power to deliver where needed.

Beyond service accessibility, it is important that GBV processes remain confidential, considering its social ramifications, especially in closed or semi-closed societies. Therefore, ease of confidential reporting greatly impacts the 'coming out' of survivors.

In other cases, the service provision process is not confidential. This is because the usual services provided for all other issues are not, and it is quite difficult to isolate GBV alone for a special treatment. The non-confidentiality of the process puts to risk the survivor data which remains paramount to the success of the GBV process. And for the service providers, this hindrance simply interprets to non-disclosure of survivors. On another note, it has been difficult or impossible for service providers to make efficient referrals owing to insufficient data or access to other actors.

1.1 – Objective

This consultancy is to develop a GBV reporting database, response, and referral system for survivors.

1.1.1 – EXPECTED OUTCOMES

- Design the online web based platforms;
- Develop the App to run the platform for the end users;
- The platforms linked with a phone in call systems;
- The designed platform should provide options for multisectoral and multiagency interventions with a strategy that works towards coordinated service provision, referral, and information for GBV programming, planning, and policy guidance in a resource limited environment; and
- Training manual on the data base system developed.

1.2 – System Requirements

Web database;

- The web database must encrypt information recorded and other relevant data in **Advanced Encryption Standards (AES)**;
- Request for and or transfer of data, communication between server and system application must be conducted via **SSL connection**;
- **Store information without using personal identifying information** as needed;
- The web database must be able to notify and alert relevant stakeholders within the platform; and
- The web database must have some **training** for new users and for various user levels.

Interoperability between web database and other systems;

- The system should be able to **support integration with known GBV systems.**

Backup and Contingency Plan;

- System **should perform regular backups and audits of all critical information system logs**, reports and queries in an encrypted format with **periodic testing** of the backup system in place;
- The contingency plan should include actions to be taken in case of any major breach or incident, the **fallback procedure and how to transfer essential information to a backup system that allows** for work to continue; and
- **Assign roles and responsibilities**, which define what must be done in case of any type of emergency.

2 – EXECUTIVE SUMMARY/LETTER OF MOTIVATION



National Coordinator
NGBV
Kanifing Institutional Layout
The Gambia
Attn: Procurement Committee Members

17th June 2022

Dear Sir,

RE: REQUEST FOR PROPOSAL FOR A CONSULTANT TO DEVELOP THE GBV CASE INFORMATION AND MANAGEMENT RESPONSE SYETEM

With reference to the above-mentioned consultancy, we **Forté Innovations Ltd** are pleased to submit our proposal for this assignment.

We would like to take the opportunity to introduce Forté Innovations as a reputed data-focused software company that promotes data-driven decisions by both private and public sector organizations. We are based in The Gambia and specialize in the delivery of **simple, fit-for-purpose and sustainable administrative and online database systems** for several Government Ministries, Departments and Agencies (MDAs), and regional private blue-chip companies. We have a committed team of experts including Masters' degree holders that are specialists in their respective specialized fields, each with over 15 years of work experience.

Over the past 5 years alone, Forté Innovations has completed **over 20 project similar assignments** across a range of sectors.

As **developers of several database platforms** for institutions wishing to perform similar activities, Forté Innovations has **developed a thorough understanding of the required tools**. We have delivered similar systems for institutions such as;

- **The Network Against Gender-Based Violence –** A **secure and accessible Gender-based Violence Intake System** for use by Department of Social Welfare, Female Lawyers Association of Gambia, Ministry of Justice, Police and the SGBV One-Stop-Centers to capture and process SGBV cases.
- **The Truth Reconciliation and Reparations Commission –** A secured statement intake system built with intuitive forms to facilitate the work of the TRRC.
- **The National Human Rights Commission (NHRC) –** A secure **user-friendly** web database system to facilitate the capture of **complaints** data at each stage of the complaints process. The system provides the option of **reporting cases either via the website** or physically at NHRC HQ. This system has a digital **workflow** functionality where each complaint logged is **tracked** and processed along various stages till a final outcome is achieved and complainant notified. This system has in built **administrative tools** for efficient and effective **user management** and **access rights control**.
- **The Gambia Police Force –** A **crime management mobile application** and **case management system** to facilitate the capture of crime incidents across the country through an online/offline mobile data collection application ensuring key personnel have overall visibility across the board to make timely and effective decisions. This system has a feature to **anonymize** data captured by **redacting sensitive information** based on key criteria including **SGBV cases**.

NOTE: Please see our team leader and lead software developer's CV for a list of other systems developed.

As the developers of the NGBV's current SGBV Case Management System, and having consulted extensively with all major stakeholders at one point or another, Forté Innovations has an fantastic understanding of

the requirements which will contribute to a speedy execution of assignment and a fit-for-purpose national SGBV database.

Our project implementation **team has more than 80 years' combined experience** in areas critical to successfully development and deployment of database systems. Our **proposed team leader and lead software developer** has **more than 20+ years' national & international experience**, and has also led the successful development of all the systems listed above. He will be complimented with a strong team including;

- a **Software Developer** with 20+ years' system architecture, project, and **User Acceptance Testing (UAT) management** experience;
- a **Business Process Analyst** and **project management specialist** with 20+ years' experience;
- a **SGBV** expert to help guide on services and issues related to GBV case management;
- an **IT Information Security** expert; and
- a technology **Product Manager** with 20 years + experience and expertise in **requirements/specifications gathering, user testing, and user training experience**).

We hope that our submission is seen in good light. Meanwhile, if you require further details or have questions, please contact **Mr. Malang Touray** on;

Telephone: +220 7081212 / 3981212; or

Email: malang@forte-innovations.com

Yours sincerely,



Malang Touray

Forté Innovations has the experience and the required resources to perform this consultancy to the required specifications and within the required timeframes. Forté Innovations have developed a track-record of developing systems that are sustainable, and providing the ongoing support required to achieve the objectives of the systems. Our clients have attested to this! (see REFERENCES)

2.1 - Contacts

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Web: http://www.forte-innovations.com
Contact Person: Mr. Malang Touray
Role: Director

3 – PROPOSED SOLUTION



Forté Innovations will design a national SGBV Case Management Database (from herein referred to as "database") accompanied by a range of tools such as USSD to facilitate the work users in a variety of environments. Due to the nature of data the database is expected to contain, the database will be robust, leveraging industry standard security measures. It will be designed such that users from different institutions, offering different services can access data in a controlled and secure manner, share data on SGBV cases in a timely controlled manner, facilitating the timely management of cases, without compromising the confidentiality expected by victims.

Forté Innovations' existing relationship with the NGBV (**see the enclosed professional reference provided**), and our understanding of their SGBV cases handling process, will ensure that our team will hit the ground running (if contracted). The current SGBV case management system we have already developed for the NGBV means that the assignment will be a continuation and therefore a seamless integration of the other partners. This will ensure risks of developing a database that is fit-for-purpose, are mitigated. **We have also secured the services of a SGBV expert to provide further guidance throughout the process, including during roll-out.**

The proposed development of database will facilitate data sharing among stakeholders including the Ministry of Justice, Gambia Police Force, Social Welfare, Paradise Foundation and other identified partners. It will incorporate functionalities that will facilitate the reporting of SGBV cases through a variety of touchpoints (from online, walk-in, call center and USSD), allow case files to be shared digitally, and tracked to ensure that complainant is informed about all the options available to them, and that issues and problems facing a survivor are identified and followed up in a coordinated way between different agencies.

Cases submitted via any of the touchpoints will automatically be sent to a central database that can only be accessed by staff of agencies with appropriate user credentials and access rights. The capture of the complaint will trigger the agreed automated workflow process. This will require custom mapping of workflows and associated milestones. **The custom workflow system will be web-based allowing it to be accessed by staff and stakeholders with appropriate permissions, even when they are not within the office environment**. This capability generally adds efficiency and timeliness to the handling of cases which has become even more critical during the era of the COVID 19 pandemic when there may be restrictions to staff movement and attendance.

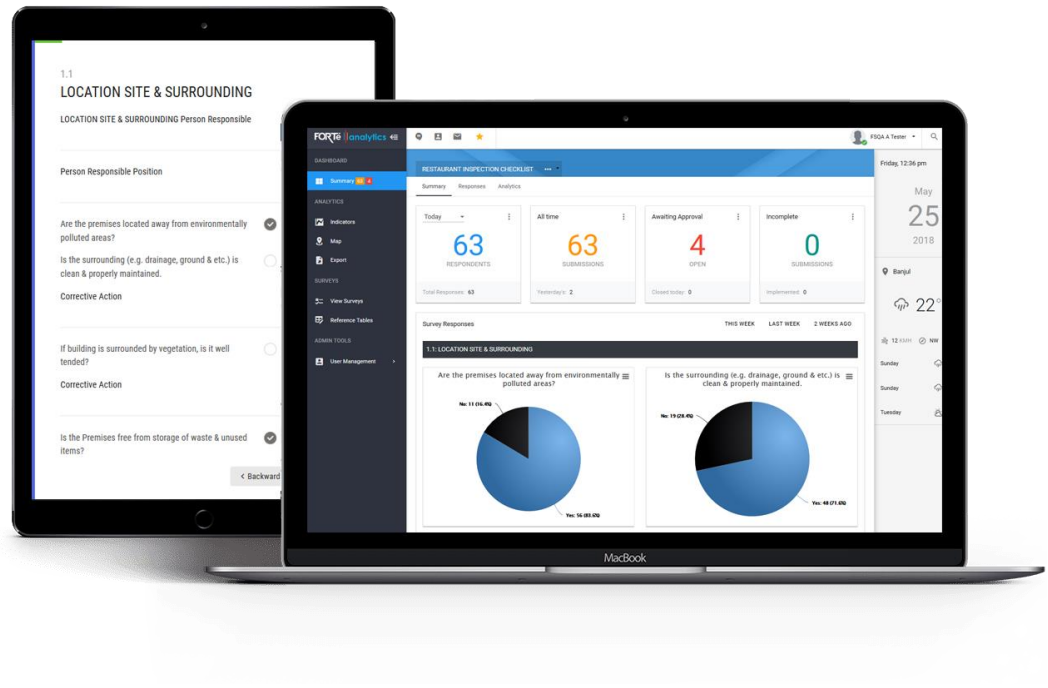
The custom digital forms on the website, integrated into the workflow system will also make it easy for survivors to discretely and even anonymously report cases to relevant institutions. A variety of **custom reports including operational process reports** geared towards maintaining and increasing complaint resolution efficiency, will also be available on the fly, via the web-based platform. **Thematic and disaggregated reports** relating to cases, agencies and individuals involved will also be integrated to provide interactive real-time reporting.

The proposed solution design will be comprehensive and should have the following key characteristics;

- Data is accessible at any place at any time;
- Data is as real-time as possible;
- Data is timely; and
- Data is secured.

Implementation of the solution will include the following components described in detail below;

1. Customization and optimization of **web-based SGBV case intake form** (customized based on the touchpoint a victim uses to make the initial complaint);
2. **A public facing platform** for **SGBV victims** and the public to **anonymously** report cases;
3. **USSD functionality to allow survivors and service providers to perform key functions in poor areas of connectivity;**
4. Integration of an **electronic workflow system** to facilitate sharing and complaint management;
5. Incorporation of **automated notifications** to ensure those required to take action, are aware.
6. Development of a **custom-designed SGBV case management database**; and
7. Integrated **reporting & data visualization platform**.



3.1 – Optimised web-based SGBV case intake form

The current NGBV database (designed and supported by Forté Innovations) includes a web-based SGBV complaint registration form purposely designed for use by NGBV staff. This complaint capture form will be reviewed and enhanced so it meets the requirements of all partner agencies. A **referral** option will be implemented to assign/select which agency is responsible to process a particular SGBV case based on the information provided by a survivor (or third party reporting a case).. This will influence which process to follow. Once a case is assigned, it will leverage an electronic workflow based on predefined processes and rules. See below for screenshots of a variety of systems we have already developed (including GPF and NGBV);

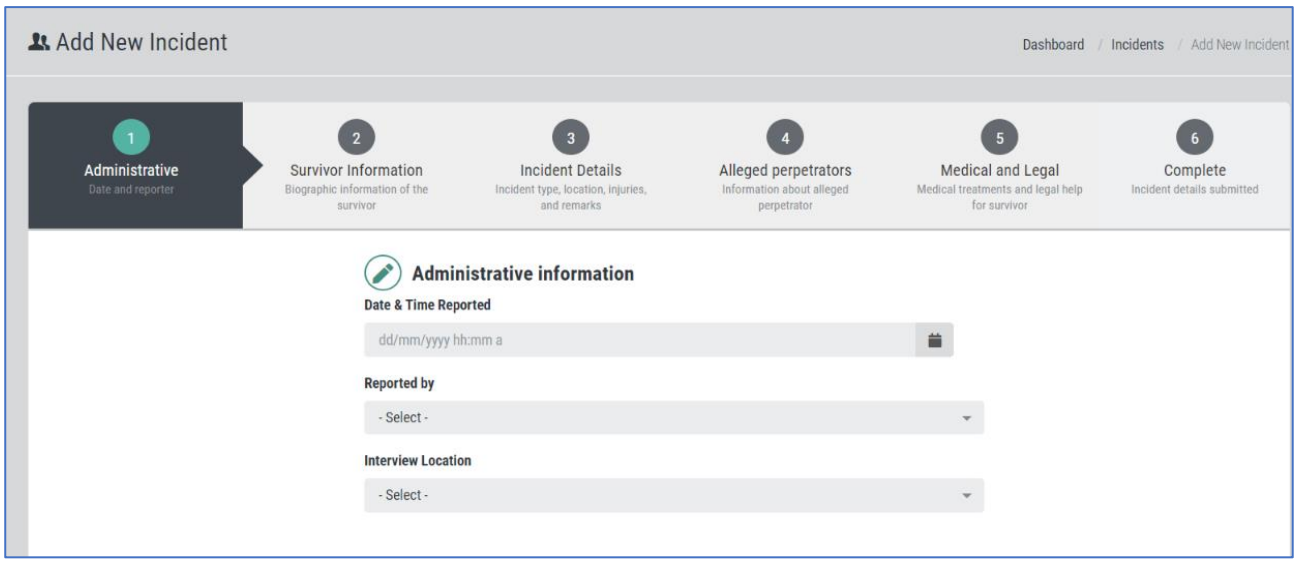


Image 1: NGBV - Case Intake Form (Administrative Details)

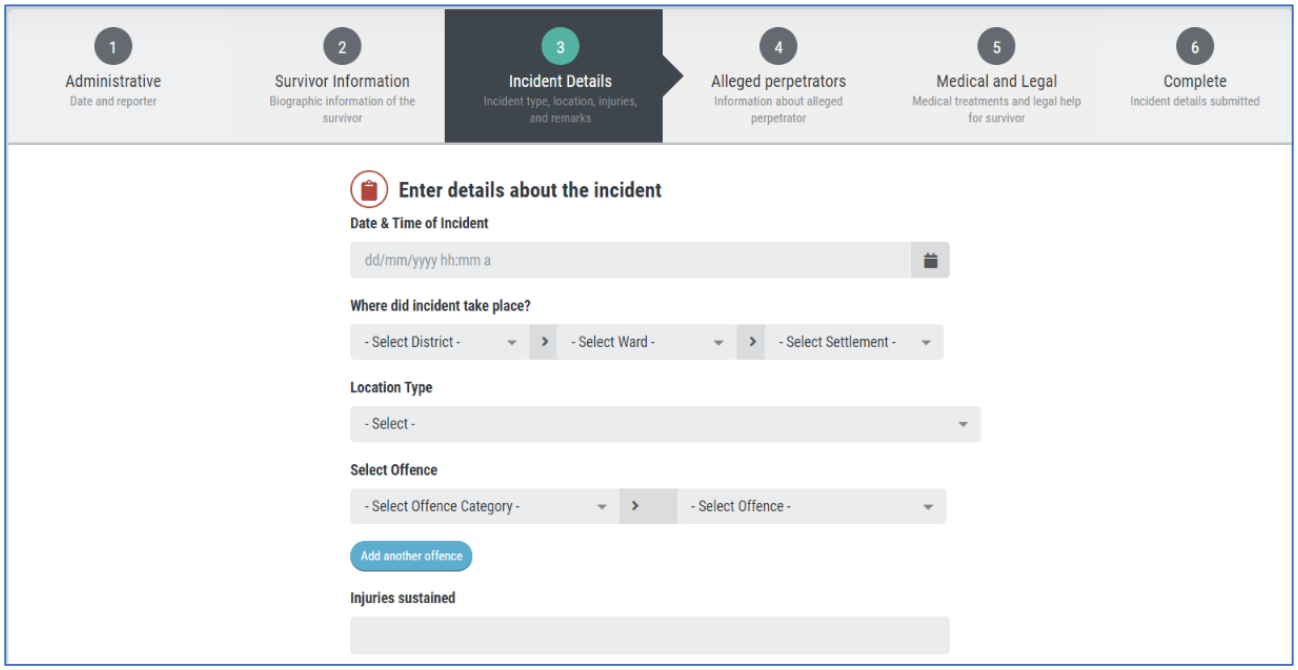


Image 2: NGBV - Case Intake Form (Incident Details)

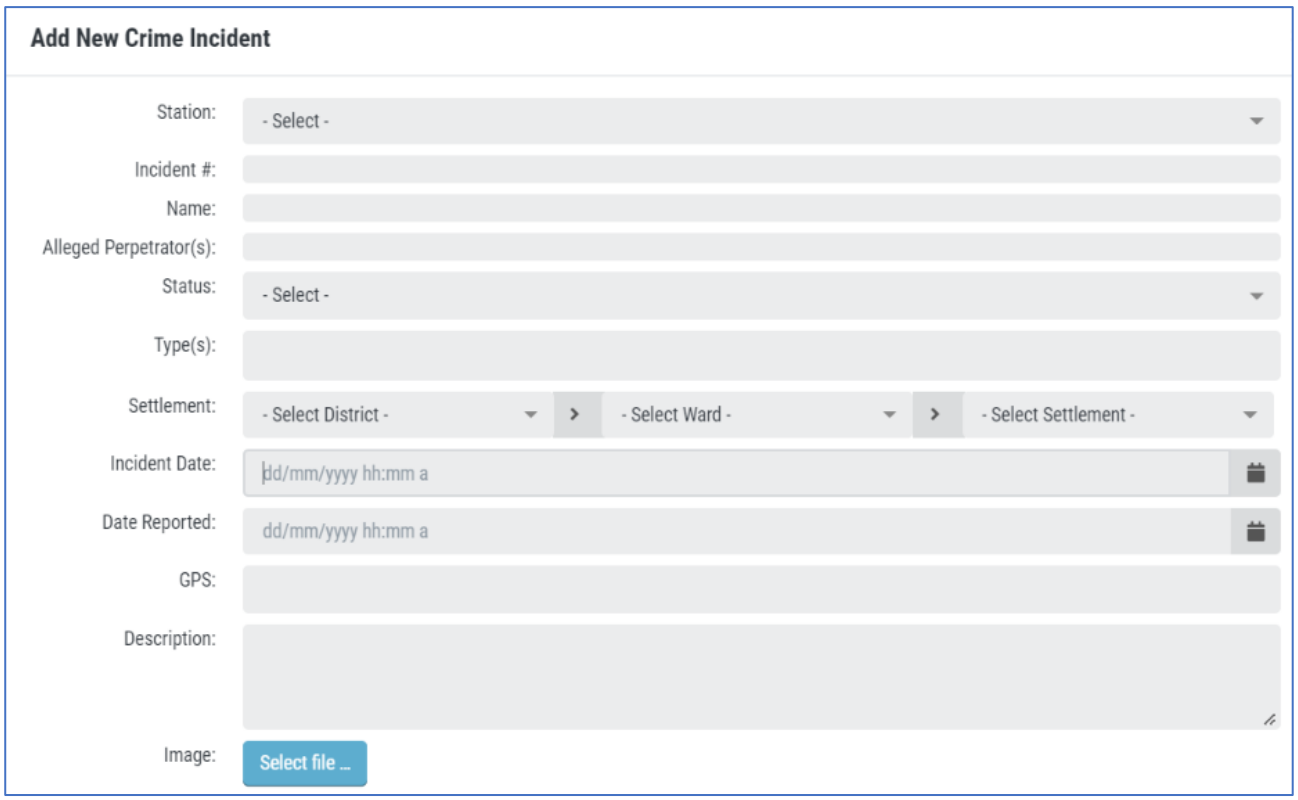


Image 3: The Gambia Police Force - Crime Incident Form

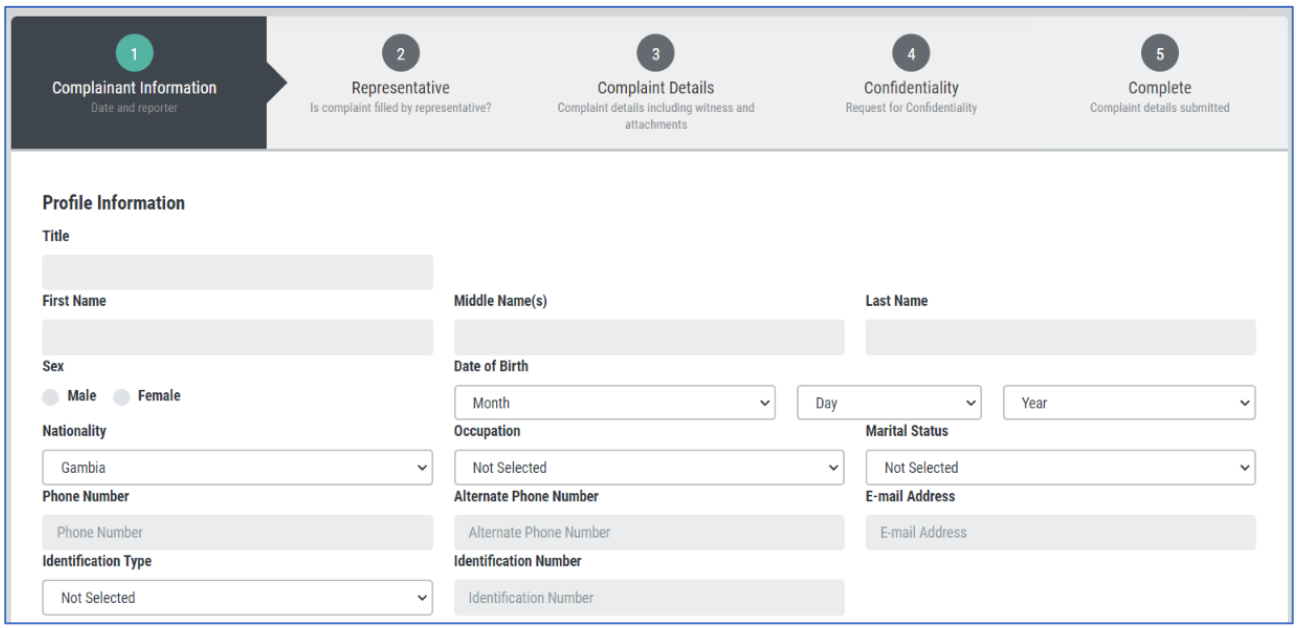


Image 4: The National Human Rights Commission – Complaints Form

Forté Innovations proposes to work with the identified stakeholder groups to ensure their respective intake forms are customized and appropriate for case data capture and sharing, by **firstly ensuring that it includes all fields necessary to capture the required information**. Secondly, instead of data from the submitted forms being sent to email addresses or in a static area of the Content Management System (CMS) where it may fall through the cracks**, it will be integrated to our proprietary electronic workflow system (Forté Workflow)** described in more detail in subsequent parts of this proposal.

The web-based platform will also include an area for the call center (Helpline) to keep a record of all incoming and outgoing calls through a call categorization system that will be developed leveraging the current reporting templates.

3.2 – Public Facing Platform

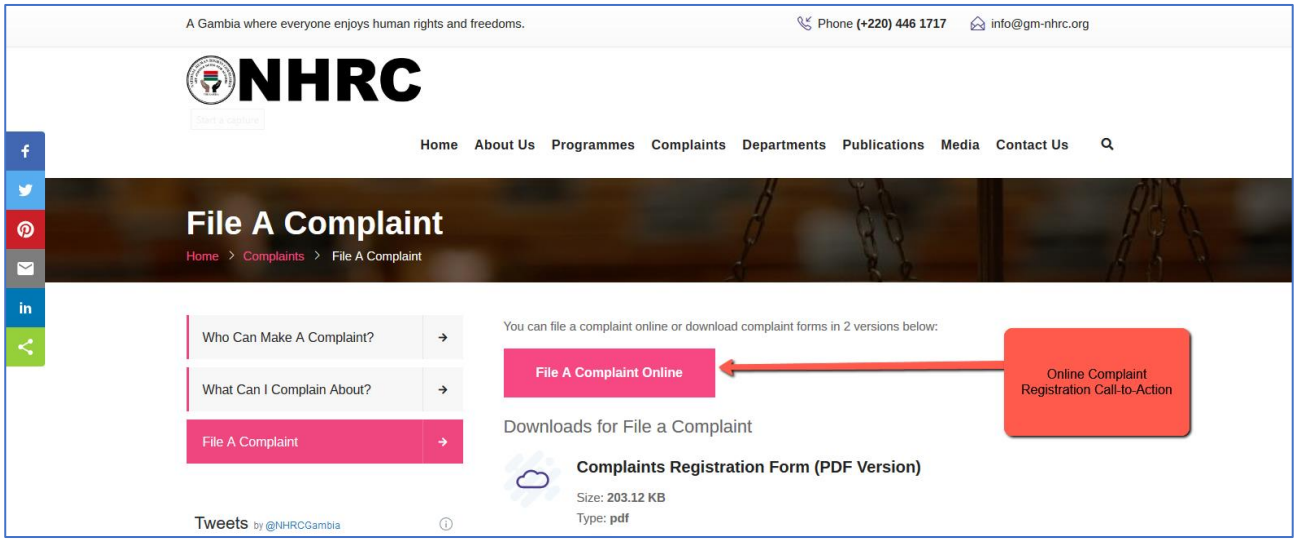
This platform will provide multiple ways to allow the public report SGBV cases and get referrals in an easy and timely manner regardless of where they are located. To achieve this, the database will contain the following functionalities;

3.2.1 – ONLINE PORTAL

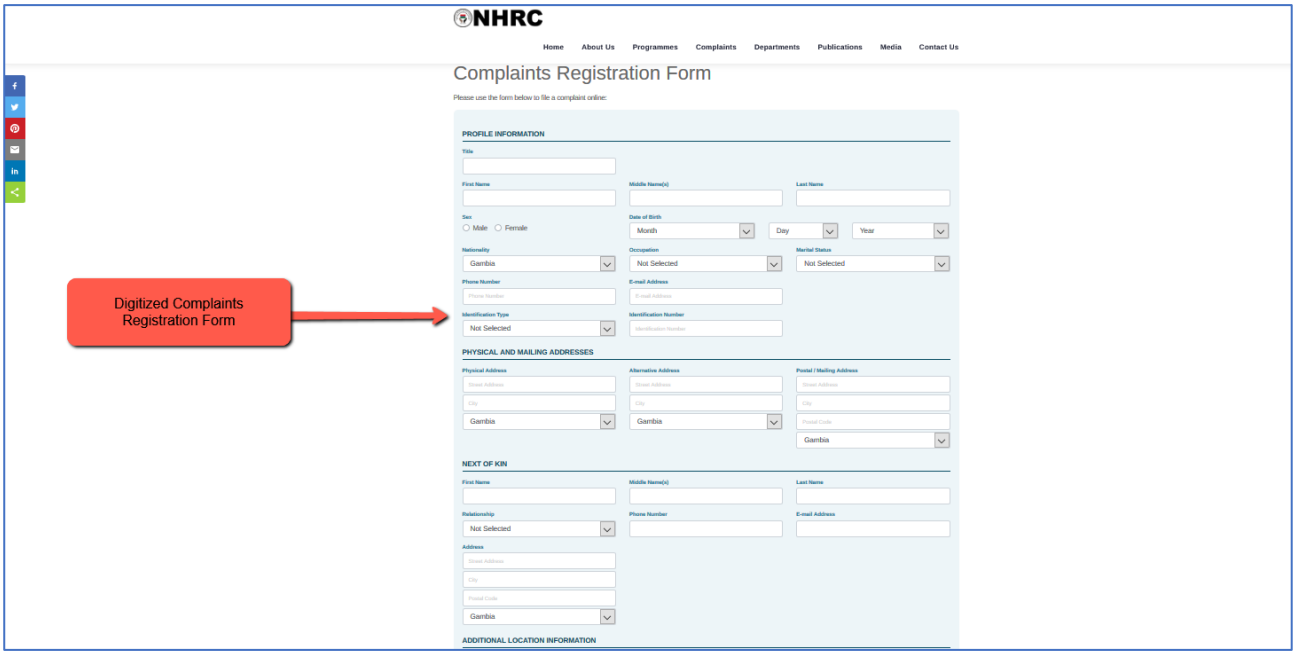
The database will be linked to an online public facing portal containing **digital online complaint forms** for public access. This form will contain tools to **anonymise** certain key information as per the requirements and instantly alert key personnel when new cases are submitted so appropriate action can be taken in a timely manner. If the partners agree, the capability can be included to allow survivors (or their representatives) to track cases in real-time via the same portal, once they have the right access credentials and rights.

The online portal can also share information on how and where to access support. Useful information on SGBV issues can also be included along with information on accessing various services from multiple agencies or providers. As a result, survivors can identify their preferred touchpoints based on their preference touchpoints when seeking help or during emergencies.

See below for screenshots of similar public complaints systems implemented and deployed.



NHRC Online Complaint Registration – Call-to-Action Button



NHRC Online Complaints Registration Form

3.2.2 - USSD

This functionality will be implemented to help the SGBV survivors, their representatives and any member of the public **anonymously** report SGBV cases, or request assistance/services via even simple mobile devices.

To achieve this, the database will be integrated with Unstructured Supplementary Service Data (**USSD**) technologies for GSM operators, so the public including SGBVC victims can **report** cases and receive referrals by dialling a unique **USSD code (e.g.: *1313#)**. This action opens a window with series of question and answer options categorised accordingly to capture all necessary SGBV information. Once submitted a workflow is initiated on the database where the appropriate persons responsible are alerted to take action and process case till a final outcome is achieved.

NOTE: This component will require collaboration with Africell or QCell to develop the necessary application programming interface (API).

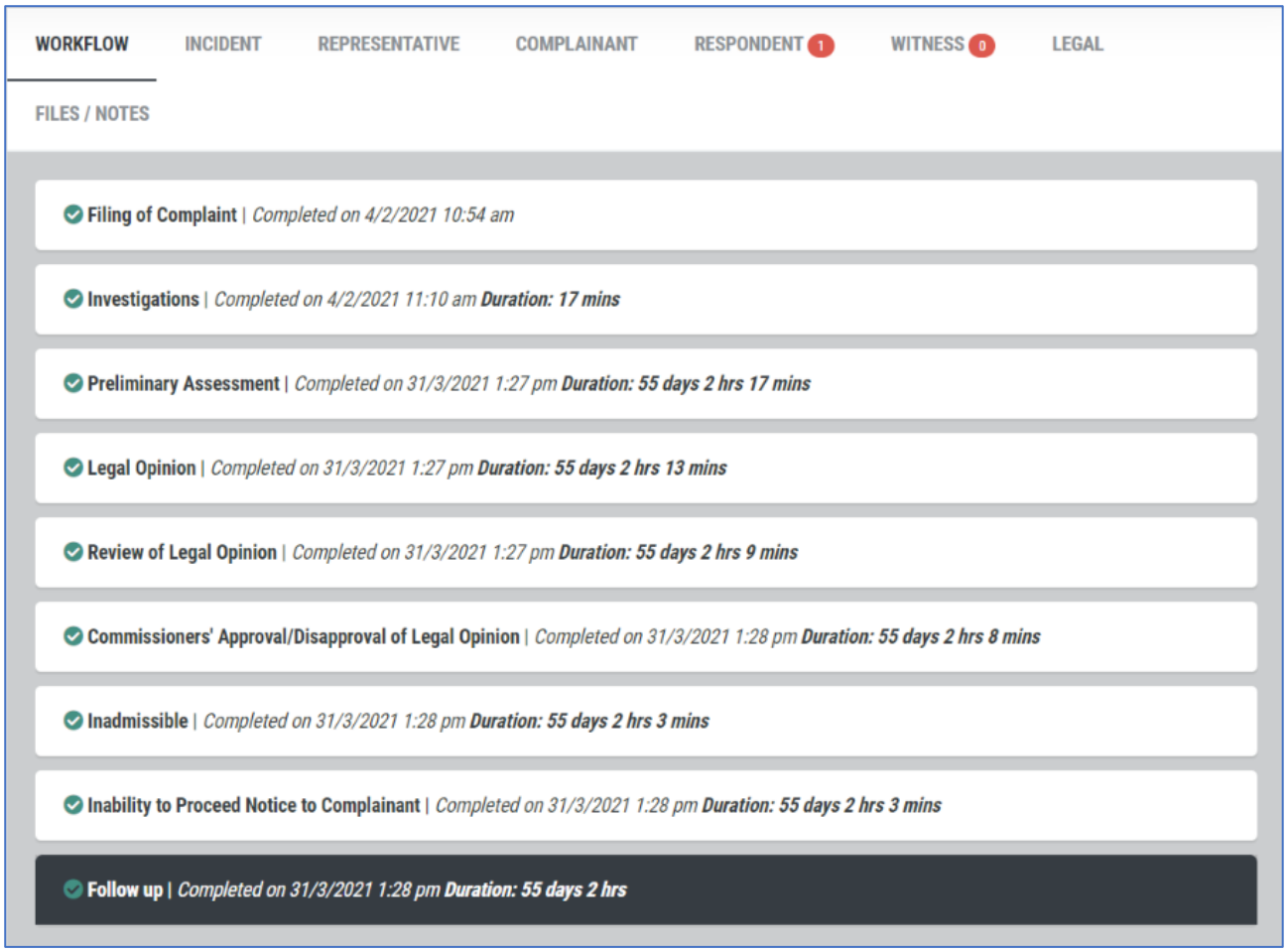
3.3 – Integrated electronic workflow system

This will be web-based and scalable. It will be integrated into the web-based case management system and once submitted, a case will trigger a workflow process which will allow it to be routed to different partner institutions whilst **allowing visibility at all times**. The workflow solution will have the following key capabilities;

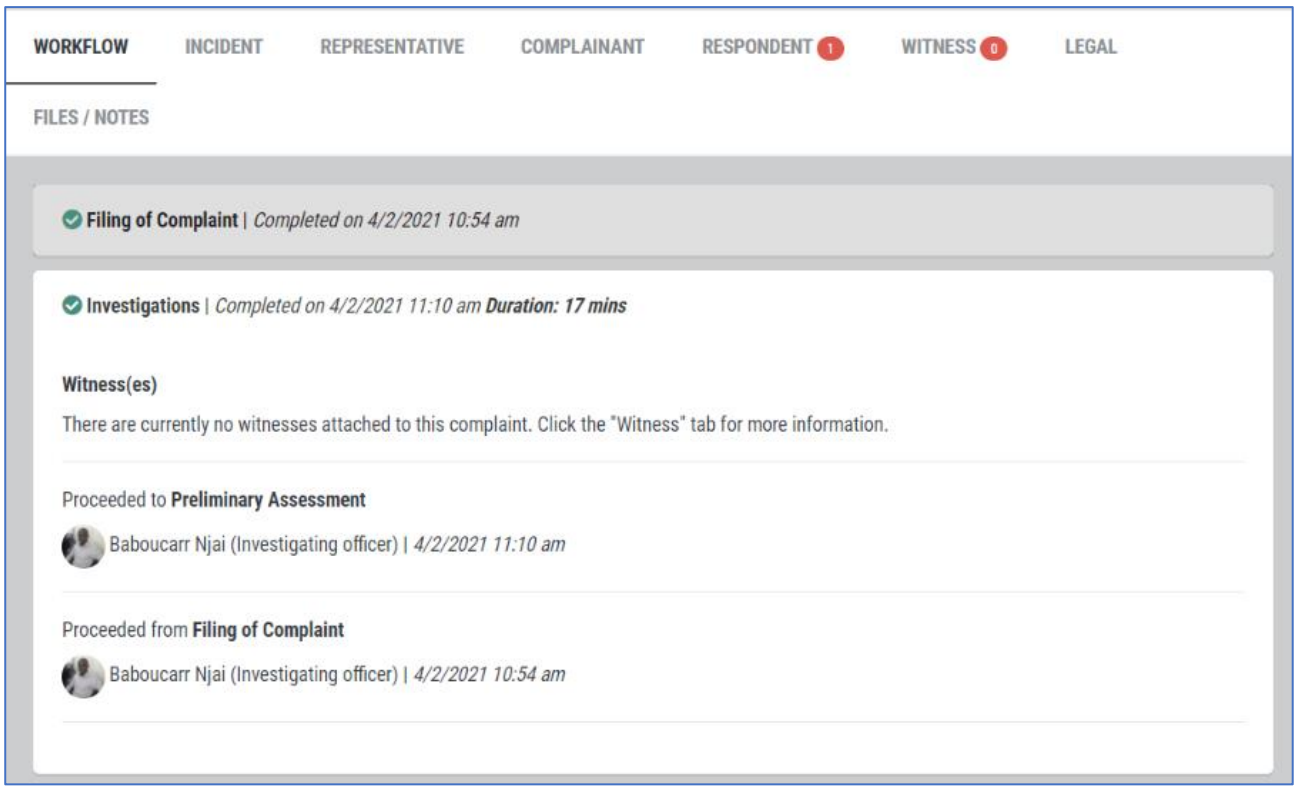
- Users can **visualize and track** the flow of cases through all steps defined in the workflow;
- **Define processes and include milestones so that bottlenecks can be identified early**, enabling stakeholders to take early action and increase timeliness of case processing using **Red, Amber and Green (RAG) approach;**
- **Automated Alerts/Notification/Reminders** will be generated and sent to appropriate persons once a case is moved from one step of the process, to another. When agreed service levels are due to be exceeded at any point along the workflow process, case reminders can be emailed to those involved at that step (and the person in charge of the process) to notify them to take action. This functionality can also serve as a **case reminder and tracking system** to ensure that cases are considered within a given timeframe;

- Fully **responsive on mobile devices**, **meaning that SGBV case management staff can work on steps no matter where they are**, and route cases to the right recipients;
- Extended reports including **personalized individual and team (group) dashboards;**
- Visualize the **workflow data in real-time** via graphs, charts and more;
- Neat and **User-friendly** interface; and
- **Role-based participation** meaning staff can only work on cases and steps they are mandated to.

NOTE: All documents attached to a workflow process are automatically categorized by case, archived and available for retrieval by NGBV and partners staff with the appropriate permissions.



Sample Case Handling Process Steps



Sample Workflow Progress View

3.4 - Custom-designed case management database

Timely availability of relevant information is vital for effective investigation and administering of cases. It requires an integrated system where all relevant stakeholders/partners can store and access data that can be queried and updated as required. The online portal, Helpline, workflow, USSD and any future modules will be integrated into one database to ensure there are no data silos, but instead access to data and collaboration is facilitated.

Our experience gained from working with institutions that handle similar data (such as NHRC, TRRC, GPF, Gambia Prisons Services and NGBV) and others in the Financial Services sector (such and Central Bank of The Gambia) stands us in good stead. Forté Innovations will develop a robust database with the following **key characteristics** as standard;

3.4.1 - ROLE-BASED ACCESS CONTROL & USER MANAGEMENT

The database will be designed with tools to create new users, capture, access and share key and confidential SGBV case details. Consequently, the database will be designed and set-up such that **multiple SGBV's response partners** accessing them, are created different access levels allowing them to run a fully digital response program both independently or as a unit of a larger network of SGBV agencies in a centralized platform. A user's level of access and the functions they can perform will be determined by their role and institution, which will determine what they can and cannot see. This will ensure that those without appropriate credentials and permissions do not have access to personal and sensitive data, contributing to the stringent data protection measures.

This feature will incorporate tools to make sure that users/agencies meet certain key criteria before they can be issued user credentials and access the database. The database allows the flexibility of choosing its **administrators** which can include either the Ministry**, UNFPA**, and any others in future.

Examples of access levels are below. These can be implemented by institution, unit/team and individual. More can be added and configured as required;

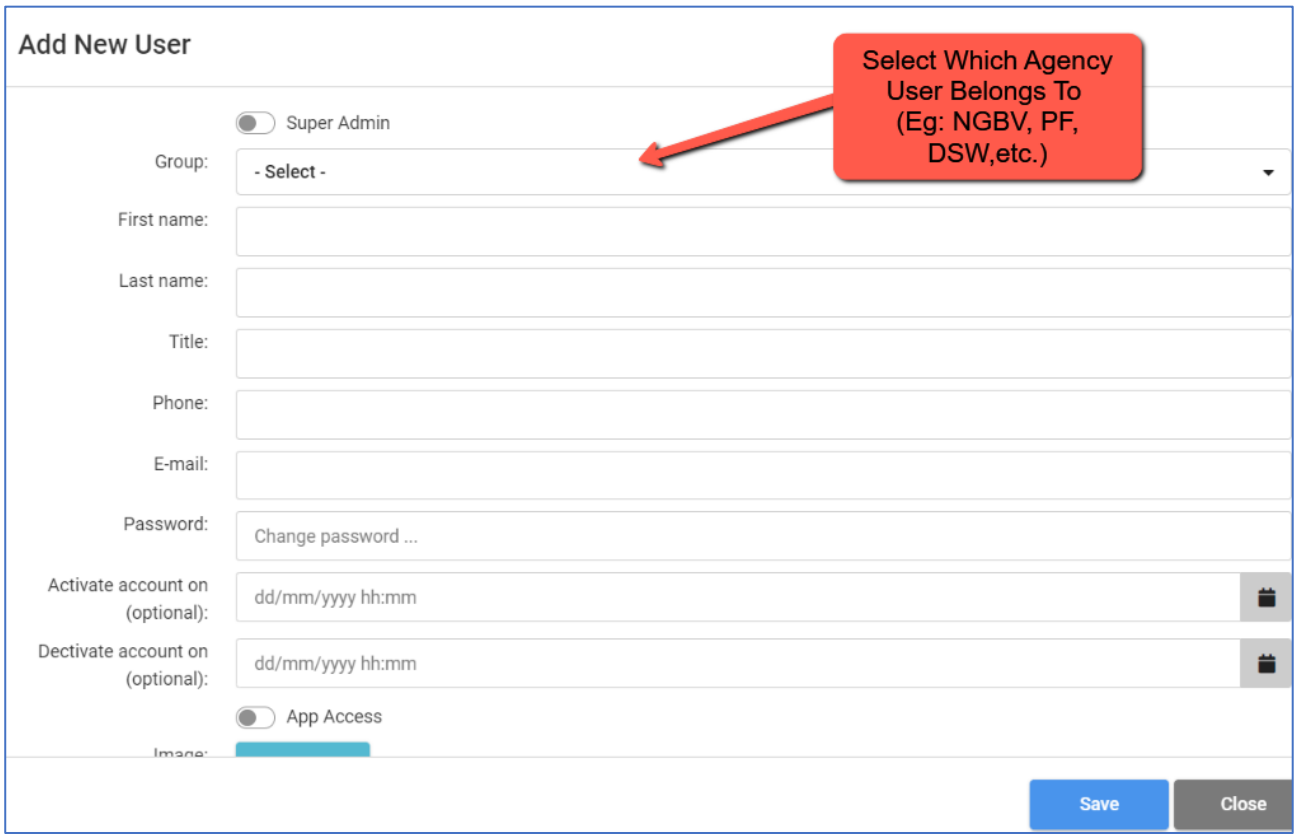
I. **Super Access Level** – Create and manage new users, view, and amend ALL data;

II. **Medium Access Level** – Retrieve and amend existing complaint records;

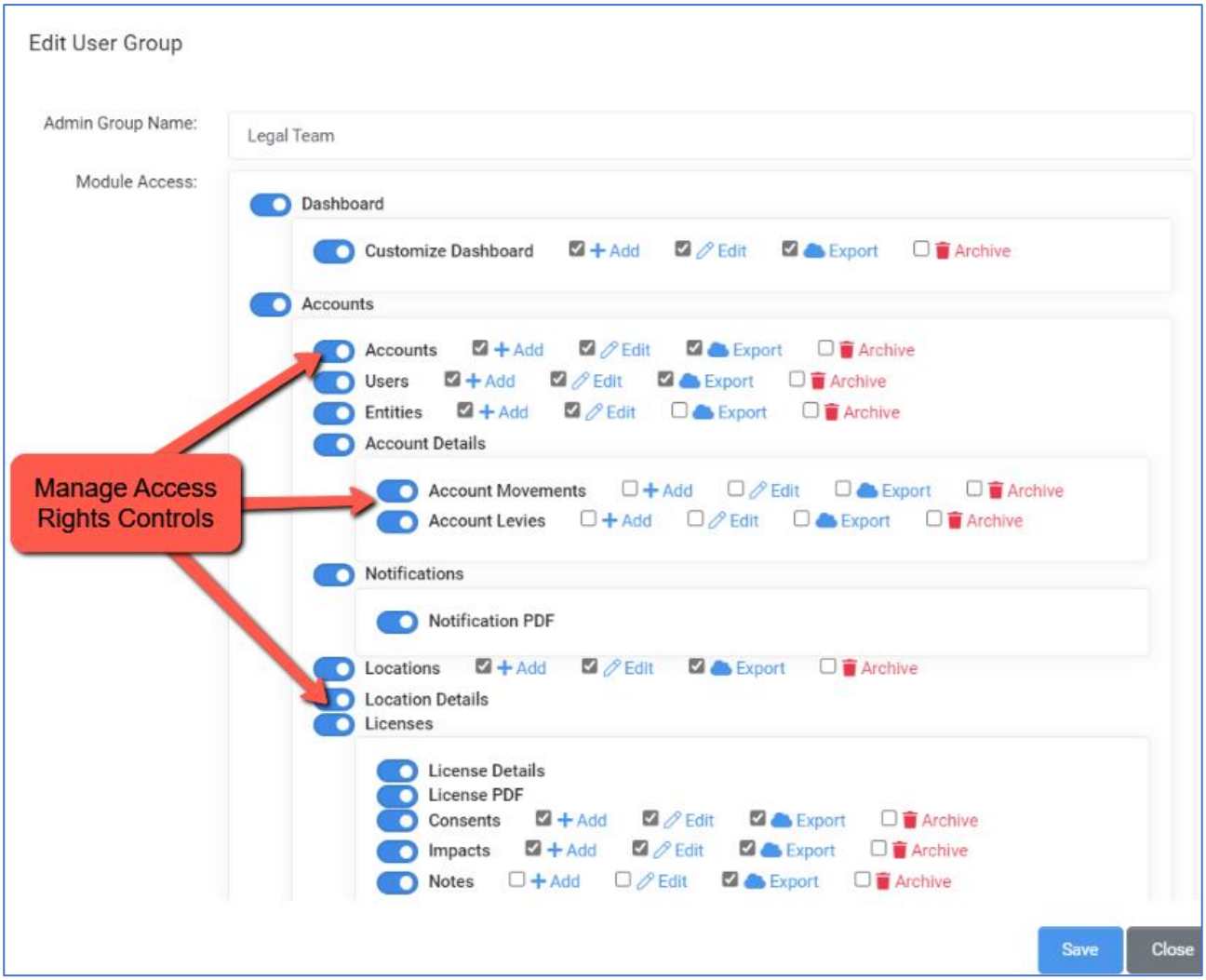
III. **Low Access Level** – Create new complaint records, search for, and retrieve BASIC encrypted data; and

IV. **Custom** – Specific permissions can be granted by System Administrator.

User groups can also be granted custom access rights to areas of the database.



Sample User Creation Form – User Management

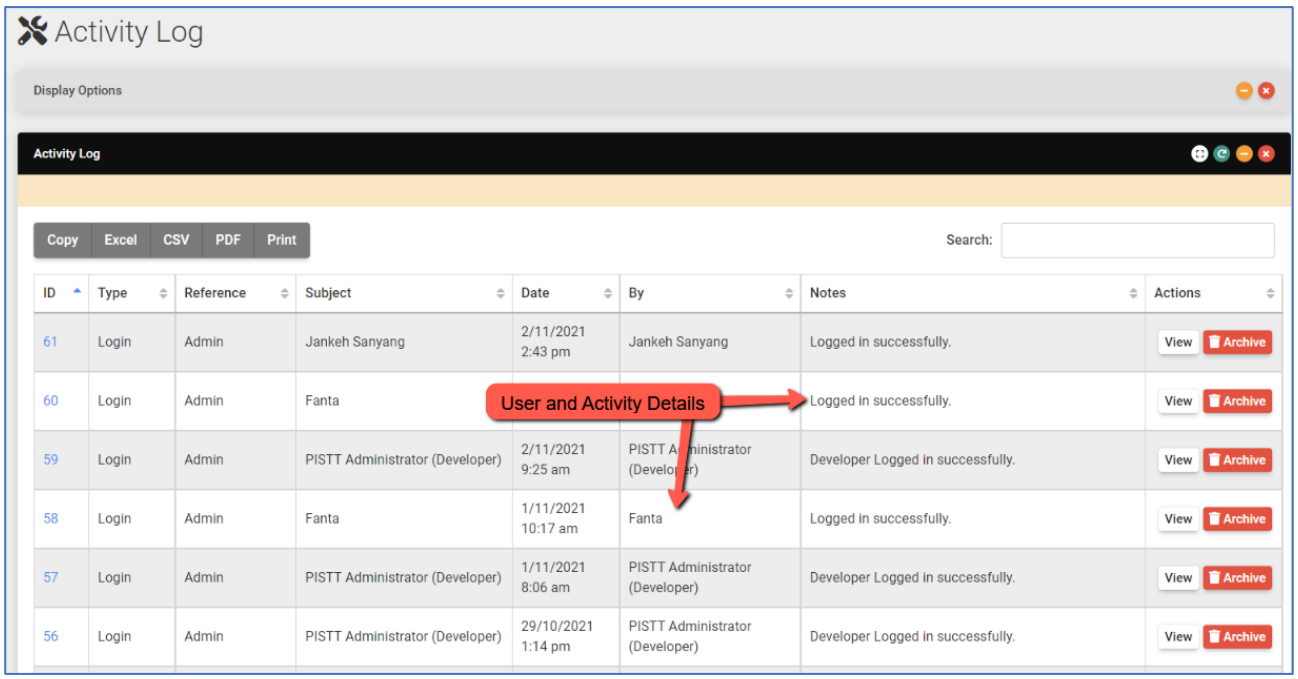


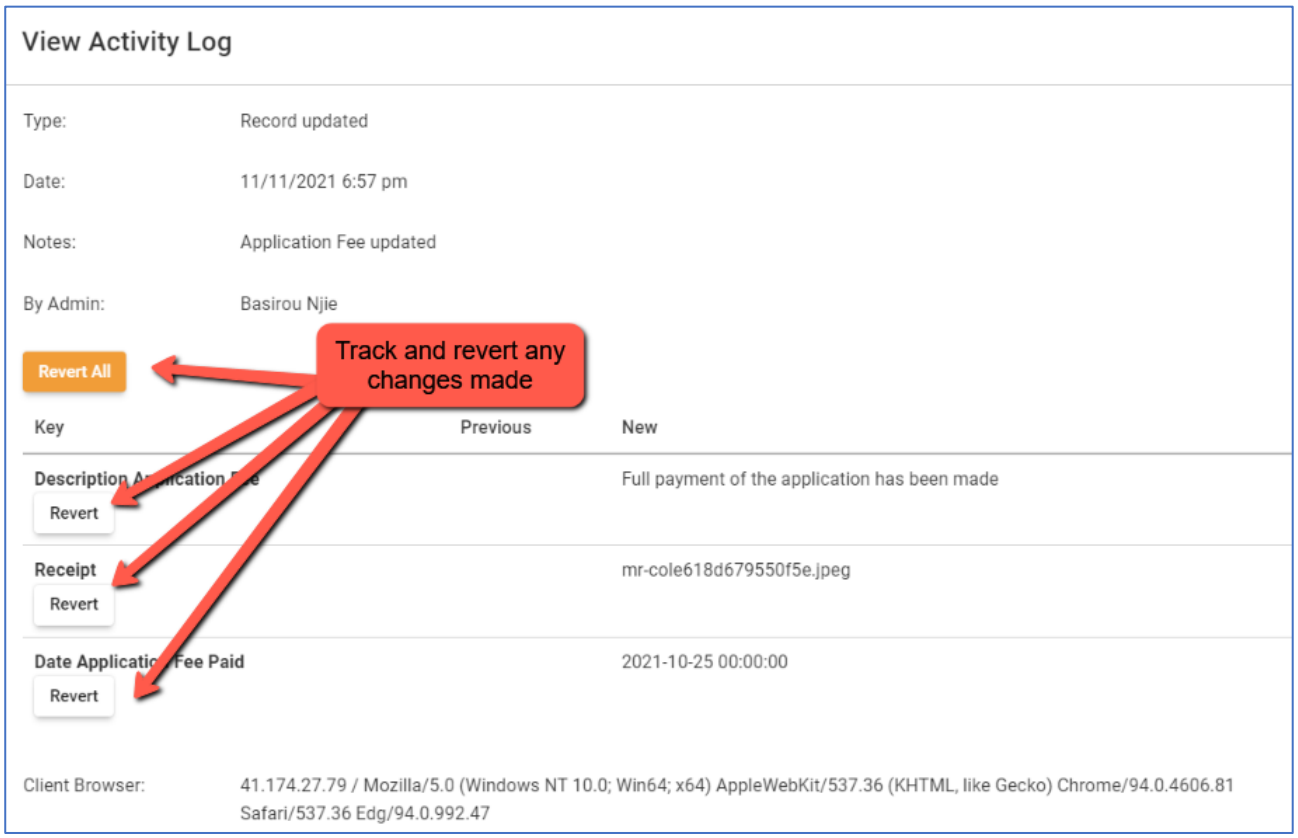
Sample Access Control Measure – User Group Management

3.4.2 - AUDIT TRAIL

Each user's activity on the system can be tracked. Any access of case records can be traced right back to an individual user. This ensures management has visibility of who is accessing and updating records thus strengthening data protection, security measures and **data integrity**. Furthermore, any undesired changes to case information, can also be reverted by users with the appropriate access rights.

To protect data and prevent it from being accessed by the wrong people, the database will be created with **encryption capability** built in.





Sample Activity Log – Audit Trail

3.4.3- ACCESSIBILITY

- **Web-based –** This will ensure access from common browsers and platforms including **windows**, **android**, **IOS** via a unified portal, which gains entry to all functions (based on user access rights);
- **USSD functionality –** This will ensure service access and provision is possible even in poor areas of internet connectivity;
- **Cloud-based** – Hosting on cloud-based servers rather than on physical servers located on premise ensures that the **uptime remains as high as possible** (more than 99.99%). The cloud-based servers also ensure that security updates can be automated. **Data can be replicated to physical servers if required**;

- **User-Friendliness –** The systems will incorporate user-interfaces designed to facilitate;
    I. Easy navigation across modules, minimizing the number of open windows;
    II. Pre-population of all redundant information; and
    III. Integration of data among modules to reduce duplication and coordinate real-time status of proposals and approvals among modules.
- **Customized Content Management Suite (CMS)** – The system will be deployed with a customized CMS allowing metadata tables to be adjusted and tweaked post-deployment ensuring it remains fit-for-purpose.

3.4.4 – CONCURRENT USE

As the total staff count of all institutions involved in the management of SGBV cases will be high, Forté Innovations will deploy a MySQL database with the capability for those multiple users (and more) to be able to access it concurrently to add and/or make amendments to existing cases. **MySQL is scalable and has the scope to handle concurrent usage traffic well beyond the anticipated traffic.**

3.4.5 - COMPREHENSIVE SEARCH FUNCTIONALITY

It is likely that once a case is lodged, not all information will be available. Therefore, appropriate staff of participating service providers may need to recall and update cases with information collected during investigations. Therefore, the database will be designed such that all data stored on it will be indexed and made searchable making it easy to retrieve and update records. If a user wants to see any specific data, he/she can apply as many filtering conditions as he/she wants and pull the data.

3.4.6 - CASE MANAGEMENT

Unique IDs will be allocated to relevant persons and cases. **This will allow individual records to be identified, retrieved, updated,** and even linked and thus **mitigate the risks of duplication** and increase ease case management and reporting.

3.4.7 - PERFORMANCE MANAGEMENT SUBSYSTEM

This is another key to mitigating the risk of user-apathy developing. The performance management subsystem provides facilities to optimize (or at least improve) systems performance. This is necessary because the large and complex software in such systems requires attention to ensure performance is efficient i.e. as an administrative system it will need to allow retrieval and changes to data to be made without requiring users to wait for significant periods of time for the systems to carry out requested actions.

Two important functions of the performance management subsystem are:

- **Query optimization**: Structuring SQL queries (or other forms of user queries) to minimize response times; and
- **DBMS reorganization**: Maintaining statistics on database usage and taking (or recommending) actions such as database reorganization, creating indexes and so on, to improve DBMS performance.

3.4.8 - DATA INTEGRITY MANAGEMENT SUBSYSTEM

The data integrity management subsystem will provide facilities for managing the integrity of data in the database and the integrity of metadata in the dictionary. This subsystem is concerned with ensuring that data is, as far as software can ensure, correct and consistent. There are three important functions:

- **Intra-record integrity:** enforcing constraints on data item values and types within each record in the database;

- **Referential integrity:** enforcing the validity of references between records in the database; and
- **Concurrency control:** ensuring the validity of database updates when multiple users access the database.

3.4.9 - BACK-UP & RECOVERY

It is proposed that the database **should ideally be hosted on cloud** to ensure automated back-up mitigating the risks of losing data (See Hosting Section of this proposal).

3.4.10 - ENCRYPTION

Due to sensitivity of some of the data the database will contain, encryption will be built in to anonymize data such as names, phone numbers etc.

3.4.11 - INTEROPERABILITY

The database will be designed with interoperability in mind. The interoperability measures may need to include data export/import (in a variety of formats). This can be automated or manual depending on the process established.

3.4.12 – TECHNOLOGIES & JUSTIFICATION

The relational database management system (RDBMS) that will serve as a backbone for the database is Oracle MySQL. MySQL is a full-featured RDBMS that competes with the likes of Oracle DB and Microsoft's SQL Server and is compatible with all major operating systems. There are many choices on the market when it comes to choosing a database management system (DBMS) and they all have their strengths. However, due to its low cost (free for the Community Edition), large support community, and flexibility, MySQL is one of the most popular database options for many applications.

Some key advantages of using MySQL include:

- It can be used efficiently for **large data sets** which makes it an effective database environment to implement **analytics** projects;
- It has supported the storing and processing of two-dimensional geographical data. Thus, **MySQL is well suited for GIS** (geographic information systems) applications; and
- It is considered an amazingly **fast database program**. This speed has been backed up by many benchmark tests.

For scripting and building custom APIs, we will use PHP server-side programming. PHP stands for Hypertext Preprocessor and it is the most popular server-side programming language in the world. There are many reasons to use PHP for server-side programming:

- Firstly, it is a **free language with no licensing fees** so the cost of using it is minimal;
- Another good benefit of using PHP is that **it can interact with many different database languages** including MySQL; and
- PHP also has particularly good online documentation with a good framework of functions in place. This makes the language very well supported online. There are countless forums and tutorials on various PHP methods and problems, so it is usually **extremely easy to find help if you need it**.

Due to PHP being so accessible and cost effective to setup, there are a lot of people who know how to use the language which makes finding new employees proficient in this language less challenging.

The big advantage of PHP / MySQL is its **interoperability with multiple operating systems and servers**. Portability being one of the biggest concerns for businesses, PHP solves the portability issues with one or

more use of the operating systems. NGBV and its partners can save money and leverage existing resources rather than investing large sums of money in purchasing the proprietary products.

3.5 - Reporting and Visualization

All data stored on the database will be available to relevant staff and stakeholders to pull together reports that can form the basis of cases management decisions, staff resource allocation strategies etc. Forté Innovations will incorporate flexible reporting capability access to which will be managed via the CMS.

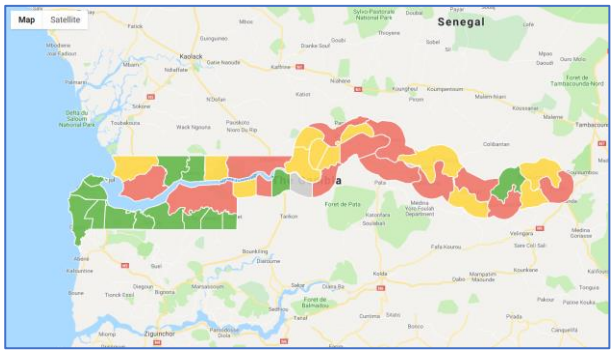
3.5.1 - INTERACTIVE CHARTS AND GRAPHS

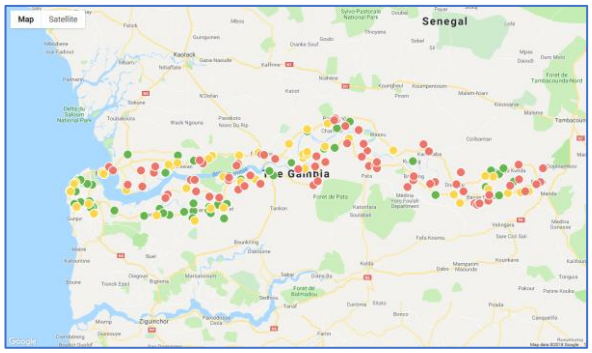
A general reporting area can be created for the senior management team to track its performance against all internal indicator targets and milestones, using the interactive charts and graphs. This module allows **visualization in the form of pie charts, line graphs, bar, and column charts etc**. Custom dashboards can also be created with views to suit individual users' needs.

3.5.2 - GEOGRAPHICAL VISUALIZATION

This component will be interactive allowing stakeholders to visualize any map-related data at different levels. Mouse-over and drill-down functionality allow relevant staff to take advantage of geographic indicators and view data by;

- Individual Complaint Records;
- District;
- Local Government Area (LGA); and
- National.





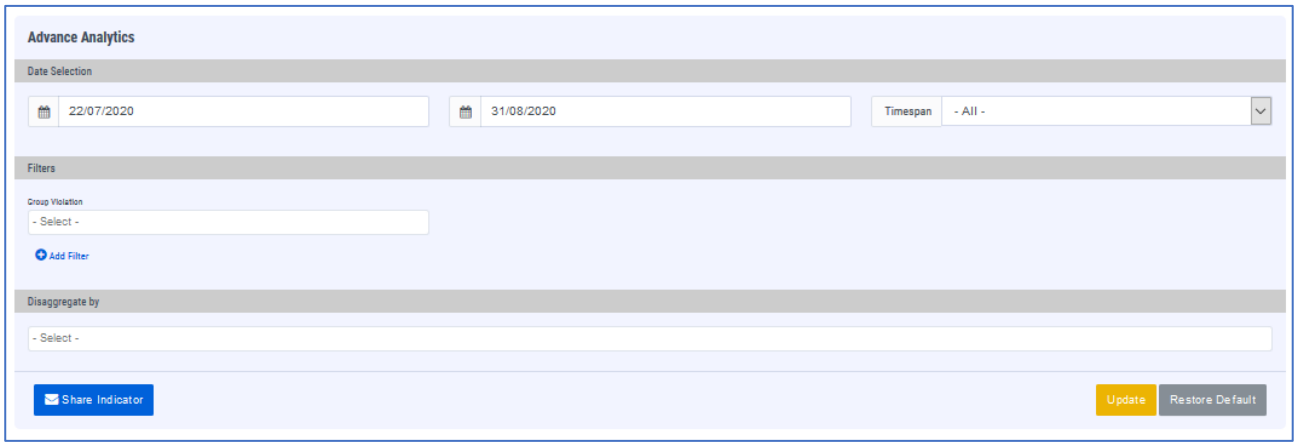
It allows visualization and identification of patterns and trends in your data. It can be configured using the **Red, Amber & Green** (**RAG**) approach to visualization, empowering all stakeholders to take advantage of geographic dimensions in its data. With its fast display and high level of flexibility, it offers a unique visualization experience.

3.5.3 - DASHBOARD – The database will be deployed with interactive dashboards that will display summaries of key indicator progress allowing decision-makers to perform quick analysis on performance. Users will have the flexibility to **personalize dashboards** to suit their own reporting needs.

The reporting will be via a web-based, visual application that can track key figures and facilitate stakeholders' analysis and reporting.



Sample Screen: Quick Reports



Sample Screen: Advanced Analytics Setting Management

3.6 - HOSTING

Forté Innovations proposes that the system is hosted on the cloud. Cloud services avoid the upfront costs of acquiring, configuring, and maintaining of a dedicated server. They also include data back-up as part of the hosting package. Consequently, this option will eliminate the need for huge initial outlays on servers. Besides, cloud services are secured to world-class standards and are trusted by governments of many First-world nations.

NOTE: SGBV case data can be replicated on a local server if required however this is not recommended as it increases the chances of exposure and data breaches.

3.6.1 – SECURE SOCKET LAYER (SSL)

Secure Socket Layer (SSL) a protocol used to establish a secure connection. It ensures all the data processed during an online activity is immune. SSL sets up a channel for data communication that applies encryption. Encryption is a practice for making information only readable to authorized users. In a real-world situation, whenever a user requests data from a server, or in reverse, all the information during the process is encrypted, and cannot be decoded and read by a third party.

Forté Innovations' will deploy SSL as part of the go-live process. (See 3.6.2, 3.6.3 & 3.6.4 for more on what we do to make sure is encrypted and safe).

3.6.2 - DATA SECURITY

Forté Innovations' approach to the software development cycle ensures security is embedded as a continuous process from planning, requirements specification, design, coding all the way to testing. At the same time, we use appropriate measures to keep personal data secure, and to protect against unauthorised or unlawful processing and against accidental loss, destruction, or damage.

We maintain data security by making sure that only people who are authorised to use the information can access it; and where possible, personal data is pseudonymised or encrypted.

Exposure of sensitive data is restricted through encryption and access control levels where the names of individual are hidden or not transmitted when aggregating data for analysis.

3.6.3 - DATA STORAGE SOLUTIONS

Our applications are hosted on Cloud, in advanced secured global data centres with the following advanced security controls. Several security capabilities and services are incorporated to increase privacy and control network access. These include;

- Network firewalls, and web application firewall capabilities to let you create private networks, and control access to your instances and applications;
- Encryption in transit with TLS across all services; and
- Connectivity options that enable private, or dedicated, connections from your office or on-premises environment.

3.6.4 - PENETRATION TESTING

Our Hosting involves regular penetrative testing and vulnerability assessments to ensure that the systems are not prone to attacks.

3.6.5 - BACKUP, DISASTER RECOVERY AND CONTINGENCY

At Forté Innovations, our focus is primarily on identification and mitigation of risks to prevent issues in the first instance. However, we also ensure that there are plans and procedures in place to allow us and our clients to have a structured approach to addressing any issues that may arrive;

- To mitigate against disaster, data for systems we host is stored in multiple data centres around the globe ensuring rapid recovery and minimal disruption in the event of a system failure. **As part of our solution, a disaster recovery strategy will be put in place to include a replica server with all the pre-requisite software to allow cut-over to a new instance with all data intact should the need arise**.

  In the case of a data breach, we would restrict all access to the system, determine if anything was breached and install new security protocols and change all the credentials and re-establish access.

- To establish smooth operations and accountability at all levels, **a set of primary contact points and escalation processes will be developed to ensure that in the event of an emergency**, somebody will be designated to address the issue. An escalation matrix and plan will be prepared to ensure service delivery is not interrupted or kept to a minimal with roles and responsibilities assigned in the matrix. This will be developed in conjunction with all stakeholders during our inception meeting.

3.7 - TRAINING & SKILLS TRANSFER

Sustainability is a critical consideration in systems design. For the system to remain operational post-deployment, the quality and duration of training and skills transfer is important.

Forté Innovations will involve key staff from the stakeholder institutions in the development process to ensure thorough understanding of key processes and functionalities by the time the system is ready for launch. Relevant staff will be involved in testing at all phases ensuring they are intimate with it. Further in-depth training will be conducted to make sure that all key staff are fully up to speed by the time the database is operational.

Our training will be facilitated by our retained SGBV expert and will include;

1) The Content Management System (CMS) to facilitate the ongoing management and maintenance of the systems and any associated databases;
2) Web-based SGBV intake Form Use;
3) The Public-Facing Platform;
4) Electronic Case Management Workflow System;
5) USSD module;
6) Reporting & Data Visualization Module Use; and
7) Other components of the final solution (yet to be agreed).

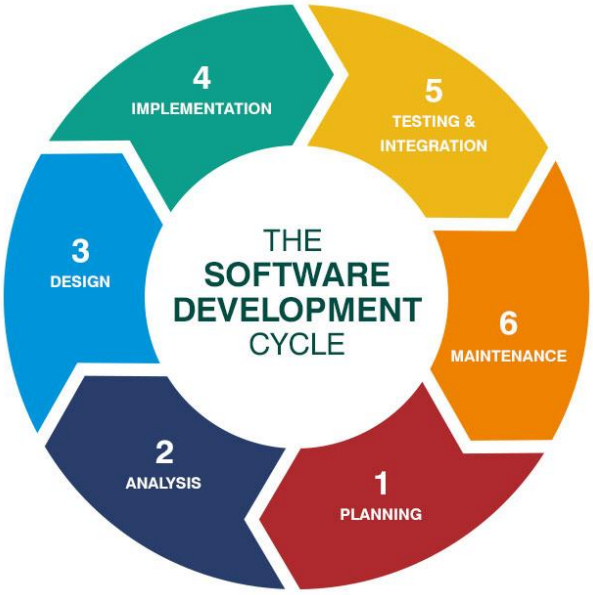
3.8 – MAINTENANCE AND SUPPORT

Forté Innovations is a Gambia-based company with vast international experience. The team can provide the level of **localized and affordable support** that is crucial to the success of such a solution. Forté will provide the maintenance and support for the solution for a set annual fee. We will conduct further skills transfer during this period to ensure the solution remains sustainable.

The package also includes upgrades of existing application features and bug fixes.

3.9 – METHODOLOGY

Forté Innovations proposes to build a web database (Information System) to facilitate SGBV case management by multiple partners. To achieve this, some of the most critical stages of the **Systems Development Lifecycle (SDLC)** will need to be conducted. These are covered below namely;



PLANNING – At this stage, a review is done of the objective. Is creating a solution possible? What type of system would work based on existing staff capacity? Is the proposed solution a good fit?

A key part of this step is a feasibility analysis, which includes an analysis of the technical feasibility, the economic feasibility, and the legal feasibility. This step is important in determining if a project with a target institution should even get started.

This involves consultations with key staff of stakeholder institutions.

ANALYSIS – This stage involves one or more system analysts working with different stakeholders to determine the specific requirements for the new system. No programming is done in this step. Instead, procedures are documented, key players are interviewed, and data requirements are developed to get an overall picture of exactly what the system is supposed to do. This will also include;

- Reviews and evaluations of existing systems (including IT infrastructure, information systems, paper-based forms, and databases etc.); and
- Desk reviews including of strategy, processes and procedures, policy documents etc.

*The result of this phase is a brief internal **system-requirements document**.*

DESIGN - In this phase, a designer takes the system-requirements document created in the previous phase and develops the specific technical details required for the system. It is in this phase that the business requirements are translated into specific technical requirements. The design for the user interface, database, data inputs and outputs, and reporting are developed here. The result of this phase is **a system-design document**. This document will have everything a programmer will need to create the system.

IMPLEMENTATION - The code finally gets written in the programming phase. The system design document will serve as a guide by the programmer (and his team) to develop the system. The result will be an initial working program that meets the requirements, laid out in the system-analysis phase and the design developed in the system-design phase.

TESTING & INTEGRATION - The software program developed will be put through a series of structured tests to assess code for errors or bugs and to check if different components of the system work together properly. Finally, the user-acceptance test allows those that will be using the software (NGBV and partners staff) to test the system to ensure that it meets their standards. Any bugs, errors, or problems found during testing are addressed and then tested again.

Once the new system is developed and tested, all dummy data will be deleted, and the system deployed for use by staff. This will require;

- In depth training of the users; and
- Provision of documentation (including user manuals).

The **implementation strategy** will be dependent on things such as;

- Type of system;
- The number and types of users; and
- Urgency for system to become operational.

MAINTENANCE – This involves;

- Rolling out a structured support process;
- Reported bugs are fixed; and
- System updates and backups are performed on a regular basis.

This is often overlooked in The Gambia. However, it is crucial to the deployed system's sustainability as it mitigates the chances of user apathy developing.

NOTE – The above methodology described is the waterfall methodology. This is the ideal methodology for when there are no real constraints. Following the inception meetings, a decision will be made as to which methodology to adopt for implementation depending on urgency, resource, etc. The options to consider are;

- **Agile Methodology;**
- **DevOps Deployment Methodology;**
- **Waterfall Development Methodology; and**
- **Rapid Application Development Methodology.**

4 – PAST EXPERIENCE



4.1 - About Forté Innovations

4.1.1 Profile

Forté Innovations as a reputed data-focused software company that promotes data-driven decisions. Our mission is to;

"Create technologies that support evidence-based decision making and policy design to maximize business process efficiency, to improve standards of living within the developing world".

Forté Innovations is a privately owned Gambian company (50% Alieu Ceesay and 50% Malang Touray) and is committed to providing technology consultancy services of international standard and quality, by leveraging local knowledge, at local costs to suit client requirements. Forté Innovations offers technical talent and specialized expertise to ensure solutions are both fit-for-purpose and sustainable. The quality of work and timely completion of projects are of paramount importance in each assignment that Forté Innovations undertakes.

Forté Innovations has been developing **custom-built systems** for institutions across the public and private sector for close to five (5) years now. The custom-built systems allow a level of customization and modularity that is difficult to achieve with off-the-shelf or open-source software.

As the original developer of NGBV's current database system and more than forty (40) other information systems, Forté Innovations has developed the experience and insights needed to ensure that the upgraded system is comprehensive and fit-for-purpose.

4.1.2 Area of Specialization

- IT Project Management;
- Business Process Mapping & Modeling;
- Requirement Specification and System Design;
- Custom & Open-source Software Development;
- Android-based Data Collection Applications;
- **Web-based Applications;**
- **Mobile Data Collection Applications;**
- **Information Security;**
- User Acceptance Testing (UAT);
- **Software/System Maintenance & Support;**
- M&E Systems;
- GIS Mapping;
- **User Training & Manual Development; and**
- Post Deployment Support and Sustainability.

4.1.3 Resources

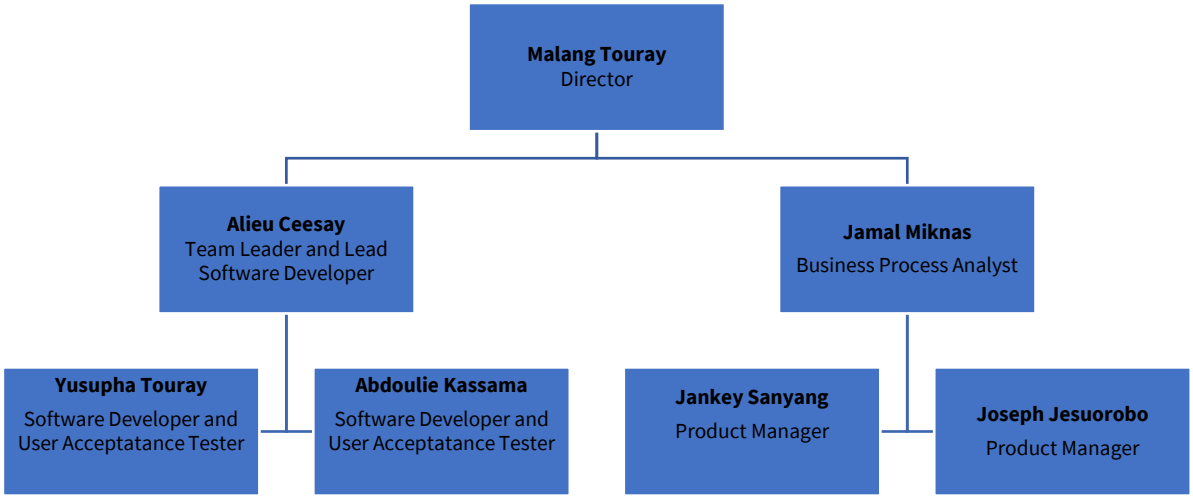
Panel of Experts	Technologies
- Database Schema Development - SQL Server Management - **Database Programming** - **CMS Module Programming and Customization** - Windows Server Management - **Software Architecture** - **Software Design & Development** - Project Management - Monitoring & Evaluations - Business Process Mapping/Reengineering/Management - Change Management - Distributed Computing - Relational Databases - Data Management - Business Intelligence - Troubleshooting - Disaster recovery - High availability and performance - Security - Management Information Systems - Enterprise Resource Planning	**Programming** - DHTML – HTML - CSS - JavaScript - Ajax - XHTML - XML - PHP - .NET / Cold Fusion - MSSQL / MySQL - Java / ActionScript - Node JS / Angular JS - Python **Technology Platform** - Windows NT /2000/ 2003 Server - Windows XP, Windows 2000 Pro - IBM iSeries V5R2 /V5R3 - SQL Server - IBM DB2/400 - Citrix Metaframe / XP - IBM WebSphere/JAVA/J2EE - LAN / WAN - Knowledge Oracle 10g - IBM DB2 for Windows - Formscape / CreatePrint - Cisco Switch & Routers - IP Networks & Infrastructure - MS SharePoint 2010 **Enterprise One Technologies** - CNC Architecture Design - Installations/ Implementations - Pathcodes/ Data Sources - Service Packs - ESUs/ ASUs/ Language Installs - OMW design/ OCM Configuration - Packages builds - Terminal server & Citrix - Web servers (JAVA Server) - XPI/Web methods - HTML/XML/ Meta data/ SOA

4.2 - Technical & Managerial Capability

Forté Innovations has team of multidisciplinary experts in the field of business process design, technology development, testing, deployment, support, and training. **All are either master's degree holders or have more than 20 years' experience in their respective specialized fields** i.e. business process analysis, software development, project management, IT documentation and IT support and maintenance. A list of select experts highlighting qualification and years of experience is given below.

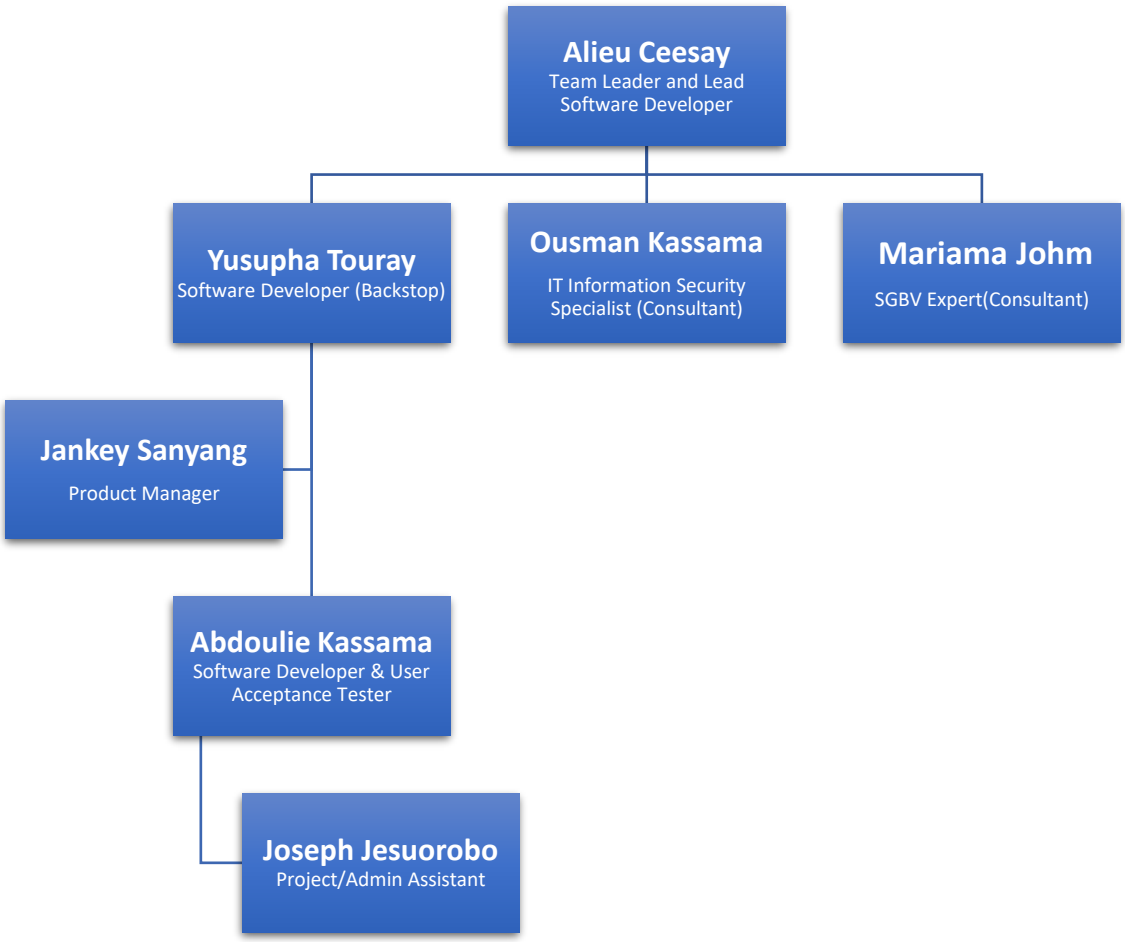
Forté Innovations takes a collaborative approach to work. Therefore, we have developed a human resource database that includes a variety of experts (local and international) that we can call on and hire to ensure that our solutions are always fit-for-purpose.

4.2.1 – Forté Innovations' Organogram



4.2.2 Team Organisation Chart

For the execution of this project, the team will be set-up as follows;



ALIEU CEESAY, BA

Team Leader and Lead Software Developer

EDUCATION

1995 – 1999 – BA Chemistry & Computer Science – Pomona College – USA

EXPERIENCE

20 years' experience of successful delivery of custom and open-source software, and online applications on all major browsers for clients across the world. Some relevant experience includes;

SPECIALIZATION

Software Development

Hosting, Server Management & Data Security

Software Support & Maintenance

User Training & Manual Development

User Requirements Documentation

System Design Studies (SDS) & Documentation

Documentation & Version Control

Database Schema Development

PROGRAMMING & DATABASE

DHTML - HTML, CSS, JavaScript, Ajax)

XHTML, XML

PHP

.NET / Cold Fusion

MSSQL / MySQL

Java / ActionScript

Node JS / Angular JS

Online Payment systems

Mobile app development

API Integration

EXPERIENCE IN COUNTRIES

USA

The Gambia

Senegal

Ivory Coast

Mauritania

YUSUPHA TOURAY, M. ENG

Software Developer (Back-stop)

EDUCATION

1999 – 2000 - M.Eng. Electrical and Computer Engineering, McMaster University, Hamilton, ON, Canada

EXPERIENCE

A **Masters' degree holder** with 20 years' experience of working at all levels of the Software Development Lifecycle – **Planning, Analysis, Design, Implementation, Testing & Integration and Maintenance**. Some relevant experience includes;

SPECIALIZATION

Software Development

Project Management & Delivery

Hosting, Server Management & Data Security

User Acceptance Testing

Software Support & Maintenance

User Training & Manual Development

User Requirements Documentation

System Design Studies (SDS) & Documentation

PROGRAMMING & DATABASE

C/C++

Python

BASH

.NET / Cold Fusion

MSSQL / MySQL

PostgreSQL

API Integration

EXPERIENCE IN COUNTRIES

Canada

USA

The Gambia

Senegal

Ivory Coast

ABDOULIE KASSAMA, B.SC

Software Developer & User Acceptance Tester

EDUCATION

2011 – 2015 – B.Sc. Computer Science, University of The Gambia, The Gambia

EXPERIENCE

8 years' experience of as a software developer working at all levels of the Software Development Lifecycle – **Planning, Analysis, Design, Implementation, Testing & Integration and Maintenance**. Some relevant experience includes;

SPECIALIZATION	PROGRAMMING & DATABASE	EXPERIENCE IN COUNTRIES
Software Development	ASP	The Gambia
User Acceptance Testing	Java	
	HTML	
Software Support & Maintenance	CSHTML	
User Training & Manual Development	Javascript	
	JQuery	
User Requirements Documentation	XML/JSON	
System Design Studies (SDS) & Documentation	VBScript	
	PHP	
Version Control	CSS	
	Bootstrap CSS	

OUSMAN KASSAMA, B.SC

IT Information Security Specialist

EDUCATION

2008 – 2011 – B. Sc. Computer Science, University of The Gambia

EXPERIENCE

8 years of assessing information technology security processes. Key experiences include;

SPECIALIZATION

Conducting Vulnerability Assessments

Training staff on information security and technology risks

Reviewing Failover and Business Continuity tests

Reviewing and updating standard operation procedures

IT Security and Risk Management

TECHNOLOGIES

SQL, Windows Security, authentication, networking protocols

Advanced computer and database querying skills

Microsoft Office Suite

HTML, JAVA, PHP, C++, Python

Adobe Photoshop, Picasa and MS Paint

EXPERIENCE IN COUNTRIES

The Gambia

4.3 - Details Of Relevant Experience

Forté Innovations exhibits commendable professional experience and prowess in the field of custom web-based database (Information Systems). It has wide experience in handling similar projects. References and descriptions of many projects conducted by the Forté Innovations team, which far exceed expectations both in quality and performance are given below.

Sl. No.	Name of Client	Country	Year	Description Services
1.	The Department of Strategic Policy and Delivery (DSPD)	The Gambia	2022	**Contract Title** – Development of a Policy Database System **Description** – This is systematic and sustainable database/repository of government policies and programs disseminated on a front-end platform for the public to access. **Solution:** - **Departments Module** designed to effectively capture all ministries, departments, and agencies linking them to the appropriate policies, strategies, strategic plans, action plan, etc. for the public displayed on a public facing platform. - **Document Hub** to capture and store all files for each ministry, department, and agency to be accessed by the public and managed by the relevant people with the right access rights. - **Dashboards –** The policy database contains a dashboard that prompts and alerts DSPD of expiring or expired documents for further follow-up. - **Content Management Suite** to help DSPD manage the front-end public facing platform. - **Reporting & Data Visualization –** This module allows management to run reports and analyze data for all documents present in the system and their download numbers from the public facing platform - **Admin** – **User and user group management**, **Access right management** (including access tokens), Device Allocation Log and User Activity Log **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • **Database Schema Development** • Functional Specifications Design • **Data Form Design** • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building**

				• System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2.	Public Utilities Regulatory Authority (PURA)	The Gambia	2021	**Contract Title** – Development of the PURA Information System of Tanker Trucks (PISTT) **Description** – This is a **multi-stakeholder** administrative information system involving the sector regulator, service providers, and approved transport operators. The requirement was to build a system that allows transporters to apply for vehicle testing and licensing as well as workflow system and data collection tools to facilitate the process. **Solution:** - **Transporters Accounts Module** designed with intuitive and interactive forms to accurately capture essential information of transporters including, vehicle information and its crew members (Drivers, Assistants, Driver Mates, etc.) - **Workflow Module** – This module is used to efficiently manage the process involved in licensing vehicles all the way from registration to testing and licensing. - **Field/Mobile Data Collection Module –** This data collection tool capable of scanning BAR&QR codes was deployed to help facilitate the inspection of tanker trucks by one PURA's stakeholder. With this tool each vehicle is tested and contextualized with images, checkboxes/options, QR code scanning, etc. that generates an instant inspection report after submitting. - **Reporting & Data Visualization –** This module allows management to run reports and analyze data for all transporters, their vehicles, inspections conducted, fees paid/received, etc. at the click of a button. - **Interactive Dashboards** – The PISTT contained interactive dashboards deployed to help provide overall visibility and display key information, reports generated, etc. for management and team. - **Notification Alert System** – The PISTT also has an effective alerting system responsible for engaging and informing all stakeholders involved on the various aspects of the system that they are involved in, depending on the access rights defined. - **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log **Technical Qualifications & Experience**; • Business Process Review & Analysis

				• Systems Analysis • **Database Schema Development** • Functional Specifications Design • **Data Form Design** • Mobile Data Collection Application Design & Development • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
3.	Ministry of Agriculture (Department of Planning)	The Gambia	2021	**Contract Title –** Development of a National Survey Database System **Description –** This project required us to develop a custom data collection application, build and deploy additional tools and functionalities to effectively carry out the Joint Preseason Assessment, Preharvest, Census, and Horticulture and integrate them into a scalable survey database system. **Solution:** • Census of Households within enumeration areas to determine whether they are farming households • **Automated Selection Farming Households** • Farmers are **randomly selected based on in-built/automated qualification criteria** • **Survey Approval –** Quality control area allowing system administrator to review data collected by staff, before approving. • **Robust Audit Trail** showing activities by all users • **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. • **Reporting and Data Visualization** Platform

				• **Admin** – **User and user group management**, **Access right management** (including access tokens), **Device Allocation Log** and **User Activity Log.** • **Interoperability** with GBOS Data Hub for data sharing. **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • **Survey Form Design** • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
4.	Ministry of Petroleum and Energy (MoPE) –	The Gambia	2021	**Contract Title** – Development of the National Petroleum Information System (NPIS) **Description –** The objective of the assignment was to develop an integrated multi-sectoral database for NPIS and CPR, provide training for its use and support services for its maintenance. **Solution:** • OMCs Accounts **Licensing /Registration/Accreditation Module** - Intuitive and responsive forms that allow the capture of information needed to create a profile for each OMCs and their service stations recording different forms of related data. • **Workflow Module -** License approvals are managed through an internal workflow system. • **Data Sharing Module –** This module allows 5 different stakeholders to add and share data to the

				NPIS using administrative tools and custom-designed data entry forms. • **Interactive Dashboards** for management and team to visualize and track key project information • **Information and Data Dissemination Module –** This module allows users to register in order to access services such as license application. In the public-facing component of this module, visitors can access rules, regulations, reports, guidelines etc., and petroleum sector-related data. All this resource is downloadable. • **Reporting & Data Visualization –** This is where management can run reports and analyze data at the click of a button. • **Document Hub** – **A central document repository** for relevant people to access subject to their access rights. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • **Database Schema Development** • Mobile Data Collection Application Design & Development • Functional Specifications Design • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
5.	Ministry of Transport Works and Infrastructure (MoTWI)	The Gambia	2021	**Contract Title** – The Development of a Ministry-Level Reporting System & Data Sharing Portal for Ministry Of Transport, Works & Infrastructure (MoTWI) **Description –** The objective of the project was to create a **multi-stakeholder** secure user-friendly database and data sharing portal that allows for the capture of projects, storage of all project-related data, sector indicators, and the ability to produce reports as required. **Solution;**

				- Projects Module - This module allows the Directorate of Planning staff to create new projects, add and manage relevant details. **- Sector Indicator Tracking Module -** This allows MoTWI to create indicators and input progress data to track its performance against targets. - **Interactive Dashboards** were deployed to help MoTWI and its stakeholders track and visualise the progress of key project indicators to improve decision making. **- Reporting & Data Visualization –** This is where management can run reports and analyze data at the click of a button. **- Admin** – This module is for **user and user group management, Access right management**, Device Allocation Log and User Activity Log. **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Data Form Design** • **Database Schema Development** • Mobile Data Collection Application Design & Development • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
6.	Non-Governmental Organizations Affairs Agency	The Gambia	2020	**Contract Title –** Development of a secure web M&E database system – MOLRG **Description –** The objective was to create a secure and scalable **monitoring and evaluation system** that has the capacity to track, monitor and report NGO activities using a functional M&E Framework and electronic Database system.

				Solution; • **NGO Licensing/Registration/Accreditation Module --** Intuitive and responsive forms that allow the capture of information needed to create a profile for each applicant including email address, address (including GIS coordinates), logo, status (national & international) etc. • **Monitoring & Evaluation Module -** This module will provide the tools for Agency staff to monitor and track the performance licensed NGOs against their agreed objectives. • **Dashboards** with intuitive and interactive functionalities to facilitate tracking and the visualization of key project indicators. • **Field/Mobile Data Collection Module -** The proposed mobile app, capable of scanning BAR & QR CODES, can be used to check status of NGOs during visits. • **Admin – User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • **Database Schema Development** • Mobile Data Collection Application Design and Development • Functional Specifications Design • **Data Form Design** • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures

				• Ongoing Support including Updates, Remedial Actions etc.
7.	National Human Rights Commission (NHRC) –	The Gambia	2020	**Contract Title –** Development of a Secure Web Database System for Complaints Management – UNDP **Description** – The objective was to create a secured user-friendly system to facilitate the capture of complaints data at each stage of the complaints' process. **Solution;** - **Online Complaints Registration Form –** This form is submitted by a complainant via the website to the database. - **Digitized Case Management Module** includes the following tabs; • Administrative. • Biographic Data. • Incident. • Violation. • Planned Action (Outcome). • Legal Opinion. • Support Services Accessed. • Alleged Perpetrator(S) Details. - **Integrated electronic workflow system** - includes the following tabs • Visualize and track steps via **interactive dashboards** • Automated Alerts/Notification/Reminders. • Role-based Participation. • Personalized Dashboards. - **Data Integrity Management Subsystem -** The data integrity management subsystem will provide facilities for managing the integrity of data in the database. - **Document Hub** & Management. - **Admin – User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log **Technical Qualification and Experience**;

				• Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Statement Capture Form Design** • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
8.	National Food Security, Processing & Marketing Corporation (NFPMC) –	The Gambia	2020	**Contract Title –** Development of a data collection tool & reporting system for the groundnut procurement process **Description –** NFPMC required a system that could help digitize its annual groundnut procurement activities and provide better oversight through real time reporting. The objective of the assignment was to develop an integrated system that will facilitate the collection, storage, retrieval of data for use in reporting, decision-making and strategy design. **Solution;** **- Data Collection Application** – NFPMC's staff uses this tool for data collection during the procurement process (Captures groundnut acquired, source and attachments of image files). It has online/offline capabilities ideal for remote locations. - **Approval Module**- This is a data quality control measure. Data collected from the field is checked and approved by a supervisor before being included in official data. - **Dashboard –** This is a data visualization tool deployed to use by management and team to efficiently track key project information and gain overall visibility to facilitate evidence-based decision making.

				- **Accounts Module**- This is an interactive log of all approved transaction data. - **Map** – This contains capture GIS locations of its agents and depots. **- Reporting & Data Visualization –** This is where management can run reports and analyze data at the click of a button. **- Admin** – This module is for **user and user group management, Access right management**, Device Allocation Log and User Activity Log. **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • **Data Form Design** • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
9.	Rice Value Chain Transformation Project	The Gambia	2020	**Contract Title –** Development of an M&E and Information System **– AfDB** **Description** – RVCTP is a project designed to Strengthen rice production and productivity and Improve market access and promotion of agro processors. The objective was to develop an **M&E** system meant to improve regular, timely and quality monitoring and reporting system on the overall projects, operations, and contribute to quality project execution. **Solution;** - **Development of a field data collection** application

				- Digitization of forms to facilitate **farmer and beneficiary registration and mapping** - Digitization of **forms for M&E visits** - **Creation of Indicators** and link them to outputs, activities, projects etc. - **Tracking of performance** against set indicators - **Interactive Dashboards** to facilitate tracking of key indicators in one or multiple view ensuring overall visibility for better decision making - Flexible and **configurable reporting and data analysis** **- Record of Support Accessed** – Capacity building, financial, inputs etc. **- Document Hub** – **A central document repository** for relevant people to access subject to their access rights **- Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking** and a range of other custom security measures. **- Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualification and Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Statement Capture Form Design** • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
10.	The Network Against Gender-based Violence	The Gambia	2020 -	**Contract Title –** Development of a Web Database and Intake Form for SGBV cases - UNDP TJHR PMU

			to-date	**Description –** The Network Against Gender-based Violence needed a secure and accessible Gender-based Violence Intake System for use by Department of Social Welfare, Female Lawyers Association of Gambia, Ministry of Justice, Police and the SGBV One-Stop-Centres to capture and process SGBV cases. **Solution**; - **Digitized Statement Intake Module** including the following tabs; o Administrative o Biographic Data o Incident Details - **Case Management** – Create, Search for, and Update Records (including outcome). - **Perpetrator and Survivor Log Database** – **All Persons are anonymized** and assigned with **Unique IDs** - **Record of Services accessed** – **Medical** (mental & physical health), **Legal**, **Children** & **Social** Services. - **Document Hub** – **A central document repository** for relevant people to access subject to their access rights - **Security Measures** - Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking and a range of other custom security measures. - **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualification and Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • **Statement Capture Form Design** • **User Acceptance Testing** • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures

				• Ongoing Support including Updates, Remedial Actions etc.
11.	The Gambia Bureau of Statistics	The Gambia	2019 - 2020	**Contract Title –** Development of an Administrative Management Information System for **The Gambia Prison Services, The Gambia Police Force, The Gambia Fire & Rescue Services, and The Gambia Civil Aviation Authority – MoFEA PCU/UNDP** **<u>Project 1 – Development of an Administrative Management Information System for The Gambia Prison Services</u>** **Description –** This is a **multi-stakeholder** project that required us to develop a scalable database-driven web-based information system to support the work of The Gambia Prison Services. **Solution:** • **Inmates Enrollment Log & Profile Module** - including gender, DOB and other biodata, medical & visitation records, offence type and sentence duration. • **Inmate Medical Module** – including linkage of prisoners to treatment, diagnosis, outcome treatment facilities etc. • **Prison Staff Database -** Census allowing individual profiles to be created for each staff – capturing

				assigned location, ranking, gender, DOB (retirement due date alerts) • **Threshold Settings Functionality** - to ensure HR manager receives alerts for staff due for retirement and alerts are sent when a prisoner is due for release. • **Interactive Dashboards** to help track key project information and facilitate evidence based decision making. • **Reporting and Data Visualization platform** • **Interoperability** with GBOS Data Hub for data sharing. • **Scan, upload, and attachment** documents (such as ID documents) to individual prisoner & staff profiles • **Update of Prisoner Statuses** including Notes/comments - (in-prison, discharged, hospitalized, and deceased). • Robust Audit Trail of user activity on system • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualification and Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • **Prisoner Intake Form Design** • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures. • Ongoing Support including Updates, Remedial Actions etc.

				Project 2 – Development of an Administrative Management Information System for The Gambia Police Force **Description –** This is a **multi-stakeholder** project that required us to develop a scalable database-driven web-based information system and field data collection application to facilitate the work of the Police Force. **Solution:** • **Field Traffic Accident Investigation Tool** – Android-based data collection app • Information System designed to be **modular** • **Interoperability with GBOS Data Hub** • **Scan, upload, and attachment documents** (such as ID documents) to individual prisoner & staff profiles • **Update of Staff Statuses** including Notes/comments - retired (automated based on DOB and national retirement age), transferred and deceased). • **Interactive Dashboards** to help track key crime information and facilitate evidence-based decision making. • **Reporting & Data Visualization** of all reported police cases in The Gambia • **Robust Audit Trail** of user activity on system • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. • **Interoperability** with GBOS Data Hub for data sharing. **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • **Accident Investigation Form Design** • Database-driven Web-platform Design & Development

				• User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc. **<u>Project 3 – Development of an Administrative Management Information System for The Gambia Fire & Rescue Services</u>** **Description –** This is a **multi-stakeholder** project that required us to develop a scalable and modular database-driven web-based information system and field data

				collection application to facilitate the work of the Fire & Rescue Service. **Solution:** • **Station Profile Management** • **Incident Intake form** and log • Paramedics Modules – Log of patients treated, diagnosis, treated outcome etc. • **Admin & Finance Module** – Log of all staff including rank, DOB and other biodata, expense log linked to vendors. • **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. • **Reporting and data visualization** • **Threshold Settings** Functionality to ensure staff do not unknowingly work past their retirement due date • **Interoperability with GBOS Data Hub** • **Scan, upload, and attachment** documents (such as ID documents) to individual prisoner & staff profiles • **Update of Prisoner Statuses** including Notes/comments - (in-prison, discharged, hospitalized, and deceased). • **Robust Audit Trail** of user activity on system • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Capture Form Design** • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • User Acceptance Testing

				• **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc. **<u>Project 4 – Development of an Administrative Management Information System for The Gambia Civil Aviation Authority</u>** **Description –** This is a **multi-stakeholder** project that required us to develop a scalable database-driven web-based information system to support the work of The Gambia Civil Aviation Authority. **Solution:** • **Aircraft Movements Module** – Create and manage Profiles of all operators, airlines, aircrafts, and flights into and out of The Gambia • **Data Collection Application** – for Airport User Surveys and to support offline data collection such as Flight Logging, Aircraft Fuel Loading Meter Readings etc. • **Scan, upload, and attachment** of documents such as air worthiness certificates, insurance certificates etc. • **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. • **Reporting and Data Visualization** • **Interoperability** with GBOS DATA Hub & Mobile Data Collection App • **Robust Audit Trail** of user activity on system • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design

				• **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc
12.	Ministry of Agriculture (Department of Planning) –	The Gambia	2019 - 2020	**Contract Title –** Development of a National Agricultural Sample Survey Information System – **FAO** **Description –** This project required us to develop a custom data collection application, build and deploy the national agricultural sample survey forms and integrate them into a scalable information system and a public-facing website. **Solution:** • Census of Households within enumeration areas to determine whether they are farming households • **Automated Selection Farming Households** to qualify to participate NASS step 2. • Farmers are **randomly selected based on in-built/automated qualification criteria** • **Survey Approval –** Quality control area allowing system administrator to review data collected by staff, before approving. • **Robust Audit Trail** showing activities by all users • **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. • **Reporting and Data Visualization** Platform • **Admin** – **User and user group management, Access right management** (including access tokens), **Device Allocation Log** and **User Activity Log.**

				• **Interoperability** with GBOS Data Hub for data sharing. **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • **Survey Form Design** • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
13.	The Gambia Livestock Marketing Agency –	The Gambia	2019 - 2020	**Contract Title –** Development of The Gambia Livestock Marketing Agency Market Information System **- FAO** **Description –** This project required us to develop a custom data collection application, build and deploy the market information data collection forms and integrate them into a scalable information system and a public-facing website. **Solution:** • Tools to facilitate Nationwide Census of all Livestock facilities and actors • **Survey Approval –** Quality control area allowing system administrator to review data collected by staff, before approving. • **Robust Audit Trail** showing activities by all users • **Reporting and Data Visualization** Platform

				• **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. • **Interoperability** with GBOS Data Hub for data sharing. • Secure Socket Layer (SSL) Certificate **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • **Survey Form Design** • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
14.	Ministry of Fisheries & Water Resources	The Gambia	2018 - 2019	**Contract Title –** Development of a Self-service Fishing License Application Portal and a Fisheries Information System **– FAO** **Description –** This is a **multi-stakeholder** project that involved building a public-facing website allowing industrial vessel owners to create accounts, register their vessel(s) and apply for fishing license(s). It also required the creation of a comprehensive Fisheries Information System to do the following. **Solution;** • Electronic Vessel Registration and Fishing License Application – **Online Application Forms** and

				Application Workflow System allowing visibility of the stage of all applications at any point in time • **License expiry alerts to notify license holders** that licenses are due to expire or have expired • Mobile Vessel Inspection module including **weighted checklist allowing automated vessel inspections/assessment** outcome as part of the licensing process. This ensures the process is consistent across all inspectors • **Creation and management of profiles of all vessels** (industrial of artisanal) operating in Gambian waters. • Android-app allowed both **survey and administrative data collection** to take place **online** (with internet connection) and **offline** (without internet connection). Staff in remote landing sites to conduct daily operations and administrative reporting including catch reporting, pre-licensing inspection etc. - **Central Secure Data Repository for all documents uploaded and attached. Possibility of attaching documents to profiles of vessels etc.** Fisheries Information System was built to be **interoperable with Vessel Monitoring System, FAO Lex, Food Safety Information System, Forté Data mobile app and GBoS Data Hub** (automated data sharing with The Gambia Bureau of Statistics). **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development

				• Database-driven Web-platform Design & Development • **Survey Form Design** • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
15.	Social Security & Housing Finance Corporation	The Gambia	2019	**Contract Title –** Development of a Database-driven Web-platform / Automated Benefits Calculator / Online Claims Submission Form / Electronic Pension Claims Workflow System **Description –** This project required us to develop a scalable database-driven web-platform, to which an electronic workflow system was subsequently added. **Solution:** - Database-driven and scalable website with built-in **Claims Workflow and Reporting;** - **Document Hub** & **Download/Central Repository Section;** - Intelligent forms allowing users to apply for pensions online; - **Central Document Repository** where resources can easily be retrieved; - A custom content management system (CMS) that is robust, with a user-friendly interface that makes it easy-to-use even for non-technical staff; - **Effective training** resulting in a website that is fully managed in-house Corporate Affairs Department; - Integrated electronic workflow system; - **Search Engine Optimized (SEO);**

				- **Automated** Benefits Calculator; - **Web-based forms** for claims submission; - **Modular Electronic Workflow** System providing visibility of the entire Pensions Benefit Claims; - **Threshold Settings Functionality** to ensure Claims are processed within Service Level Agreements; - Email alerts integrated to provide **reminders** – workflow steps due, when claims payments are due to stop etc. - Built to **interoperate with third-party** text/email alert systems; - **Scan, upload, and attachment** of documents to individual claims; - **Update of Claims Statuses** including Notes/comments fields and a Robust Audit Trail; - **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. - Colour coding of workflow steps for dashboard style visualization; - Reporting by process, individual etc.; and - Robust Audit Trail of user activity on system. **Technical Qualifications & Experience** - Business Process Review & Analysis - Systems Analysis - Functional Specifications Design - **Database Schema Development** - Mobile Data Collection Application Design and Development - Database-driven Web-platform Design & Development - Electronic Workflow System Design - User Acceptance Testing - **User Manual Development** - **Training and Capacity Building**

				- System Deployment & Implementation of Custom Security Measures - Ongoing Support including Updates, Remedial Actions etc.
16.	Les Grands Moulins De Mauritanie	Mauritania	2019	**Contract Title –** Market Intelligence Information System and Client Relationship Management (CRM) System **Description –** The client (the biggest flour mill in Mauritania) required an integrated system to gather market intelligence (build a detailed profile of all its direct and indirect clients), manage its field staff, and facilitate some of their daily operations. **Solution:** - **Module 1**: **Data Collection, Reporting & Visualization Application** to facilitate a census of clients – businesses by type, ownership by gender and nationality, staff numbers by gender and nationality, flour consumption, average prices etc. - **Module 2**: **Client Relationship Management System** to facilitate the management of interactions with clients – visits, stock threshold alerts, order management, complaints management and redress workflow, field sales staff performance management & reporting. - **Interactive Dashboards** to help track key project information, stock data, visits by staff, etc. to facilitate evidence-based decision making. - **Admin Tools** to **manage users, define access rights**, and tweak general settings. **Technical Qualifications & Experience** - Business Process Review & Analysis - Systems Analysis - Functional Specifications Design - **Database Schema Development** - Mobile Data Collection Application Design and Development

				- Database-driven Web-platform Design & Development - Survey Form Design - User Acceptance Testing - **User Manual Development** - **Training and Capacity Building** - System Deployment & Implementation of Custom Security Measures - Ongoing Support including Updates, Remedial Actions etc.
17.	Les Grands Moulins De Dakar	Senegal	2019	**Contract Title –** Market Intelligence Information System and Client Relationship Management (CRM) System **Description –** The client (the biggest flour mill in Senegal) required an integrated system to gather market intelligence (build a detailed profile of all its direct and indirect clients), manage its field staff, and facilitate some of their daily operations. **Solution:** • **Module 1**: Data Collection, Reporting & Visualization Application to facilitate a census of clients – businesses by type, location, ownership by gender and nationality, staff numbers by gender and nationality, flour consumption, average prices etc. • **Module 2**: Client Relationship Management System to facilitate the management of interactions with clients – visits, stock threshold alerts, order management, complaints management and redress workflow, field sales staff performance management & reporting. • **Interactive Dashboards** to help track key project information, stock data, visits by staff, etc. to facilitate evidence-based decision making. • **Admin Tools** to **manage users, define access rights**, and tweak general settings. **Technical Qualifications & Experience**: • Business Process Review & Analysis

				• Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • **Survey Form Design** • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security • Ongoing Support including Updates, Remedial Actions etc.
18.	Construct Ltd	The Gambia	2018 – 2019	**Contract Title –** Property Management Information System **Description –** The client required a global Enterprise Resource Planning (ERP) system to manage all activities including interactions with the clients. **Solution**; A secured and robust database-driven web-based application with the following modules; - Tenant / Client Management - Expenditure & Payment Management - Inventory Management - Document Storage / Hub - **Reporting and Data Visualization** - Human Resource Management - **Interactive Dashboards for overall visibility to improve decision making** **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Database-driven Web-platform Design & Development

				• User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
19.	Les Grands Moulins D' Abidjan	Ivory Coast	2019	**Contract Title –** Market Intelligence Information System and Client Relationship Management (CRM) System **Description –** The client (the biggest flour mill in Ivory Coast) required an integrated system to gather market intelligence (build a detailed profile of all its direct and indirect clients), manage its field staff and facilitate some of their daily operations. **Solution:** - **Module 1**: Data Collection, Reporting & Visualization Application to facilitate a census of clients – businesses by type, location, ownership by gender and nationality, staff numbers by gender and nationality, flour consumption, average prices etc. - **Module 2**: Client Relationship Management System to facilitate the management of interactions with clients – visits, stock threshold alerts, order management, complaints management and redress workflow, field sales staff performance management & reporting. - **Interactive Dashboards** to help track key project information, stock data, visits by staff, etc. to facilitate evidence-based decision making. - **Admin Tools** to manage users, define access rights, and tweak general settings. **Technical Qualifications & Experience**: - Business Process Review & Analysis - Systems Analysis - Functional Specifications Design - **Database Schema Development**

				- Mobile Data Collection Application Design and Development - Database-driven Web-platform Design & Development - **Survey Form Design** - User Acceptance Testing - **User Manual Development** - **Training and Capacity Building** - System Deployment & Implementation of Custom Security Measures - Ongoing Support including Updates, Remedial Actions etc.
20.	Global Properties	The Gambia	2019	**Contract Title** – Property Management Information System **Description –** The client required a global Enterprise Resource Planning (ERP) to manage all activities including interactions with the clients. **Solution**; A secured and robust database-driven web-based application with the following modules; - Tenant / Client Management - Expenditure & Payment Management - Sales Agent Management - Client/Tenant Portal - Document Storage / Hub - **Reporting and Data Visualization** - Data Collection & GIS Coordinates Capture - Human Resource Management - **Interactive Dashboards for overall visibility to improve decision making** **Technical Qualifications & Experience**; - Business Process Review & Analysis - Systems Analysis - Functional Specifications Design - **Database Schema Development** - Database-driven Web-platform Design & Development - User Acceptance Testing

				- **User Manual Development** - **Training and Capacity Building** - System Deployment & Implementation of Custom Security Measures - Ongoing Support including Updates, Remedial Actions etc.
21.	**TRRC Secretariat**	The Gambia	2018 – On-going	**Contract Title –** Witness Information System and Digitized Statement Intake Form **– UNDP** **Description –** The Secretariat required a secure and accessible Witness Statement Information System for The Gambia's ongoing TRRC; **Solution**: • **Digitized Statement Intake Module** including the following tabs; o Administrative o Biographic Data o Incident Details o Adversely Mentioned • **Case Management** – Create, Search for, and Update Records (including outcome). • **Persons Database** – Log of all persons related to cases (from complainants to perpetrators) allowing Granular Filtering to facilitate searches. **All Persons are anonymized** and assigned with **Unique ID** • **Psychosocial Assessment Module** including the following tabs; o Evaluation Assessment o Intervention o Referral • **Record of Services accessed** – **Medical** (mental & physical health), **Legal**, **Children** & **Social** Services. • **Case Mapping.** • **Document Hub** – **A central document repository** for relevant people to access subject to their access rights • **Task Management** – Central task planning and management for the Investigations team's outreach activities and follow-ups • **Interactive and Intuitive Dashboards** • **Security Measures** - Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking and a range of other custom security measures. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log.

				Technical Qualification and Experience; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Database-driven Web-platform Design & Development • **Witness Intake Form Design** • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
22.	Women's Bureau	The Gambia	2018	**Contract Title –** Gender Management Information System & Africa Gender Development Index (AGDI) Reporting Tool **– MoFEA PCU/UNDP** **Description –** The Women's Bureau (under the Ministry of Women's Affairs, Children and Social Welfare) needed a **multi-stakeholder** secure and accessible Gender-based Violence Intake System for use by Social Workers, Police etc. to capture and process cases. The client also required a web-based indicator data collection and reporting tool. **Solution**; • **Digitized Statement Intake Module** including the following tabs; o Administrative o Biographic Data o Incident Details o Adversely Mentioned • **Case Management** – Create, Search for, and Update Records (including outcome). • **Persons Database** – Log of all persons related to cases (from complainants to perpetrators) allowing Granular Filtering to facilitate searches. **All Persons are anonymized** and assigned with **Unique ID** • **Record of Services accessed** – **Medical** (mental & physical health), **Legal**, **Children** & **Social** Services.

				• **Interactive Dashboards** to help track key project information with overall visibility to improve and affect evidence-based decision making. • **Thematic Areas** – Managing AGDI Thematic Reporting Areas – Edit Indicators, Update Indicator Data and Visualize Reporting • **Document Hub** – **A central document repository** for relevant people to access subject to their access rights • **Security Measures** - Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking and a range of other custom security measures. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualification and Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
23.	Food Safety & Quality Assurance (FSQA)	The Gambia	2018	**Contract Value – Food Safety Information System** – EU **Description –** The objective was to develop a core system for performing all food safety-related operations in The Gambia. **Solution;** • Tools that the **correct checks and controls** are applied at the **correct time.** • **Digitize licensing and registration** process (workflow). • A mechanism to ensure adequate follow-up by FSQA of non-compliances identified.

				• A **digital record** of all checks and controls applied. • The basic data for **monitoring the performance** of FSQA and its partner stakeholders. • Information on changes in the food safety status of food business operators. • **Form & Checklists** Management. • **Business Status & Edit** Functionality. • Stakeholder/Sector access to FSQA Database. • Summary **Sector Dashboards fully interactive** to help track key project information and affect decision making. • User Creation, Management & Access Control. • Inspection Management & Scheduling. • Reminder & Alerts. • Document Hub & Management. • Import/Upload Function. • Reporting, Data Analytics and Visualization**.** **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • **Survey Form Design** • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
24.	The Gambia Bureau of Statistics	The Gambia	2017	**Contract Title –** NSS Data Information System **– UNDP** **Description –** The is a **multi-stakeholder** project with the objective of creating a central data storage for all

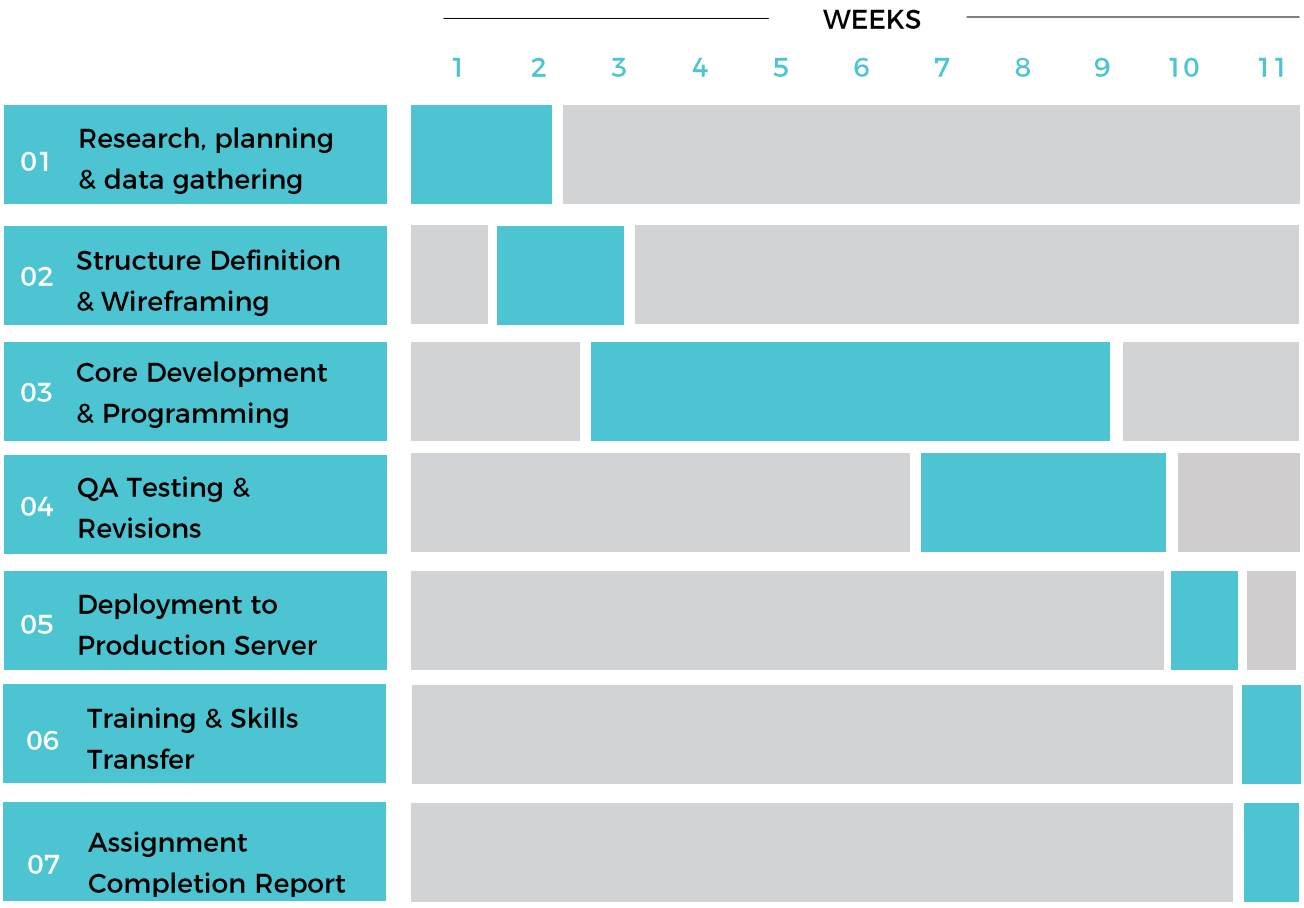
				survey data and a data dissemination platform. **Solution;** • **Thematic Areas** – Creating and Managing Thematic Reporting Areas (By Sector) – Edit Indicators, Update Indicator Data and Visualize Reporting • **Data Sharing** – An area **allowing MDAs** to securely share official data with GBOS • **Interactive Dashboards** to highlight key indicators to monitor and track to gain good insights on the information processed to improve decision making. • **Document Hub** – **A central document repository** for public to access and download publication • **Security Measures** - Secure Socket Layer (SSL) and a range of other custom security measures. • **Admin** – **User and user group management**, Access right management. **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.

5 – IMPLEMENTATION TIMELINES



To complete the work outlined in the project scope, Forté Innovations will need approximately **12 weeks** from beginning to end. However, this timeline is extremely dependent on how quickly we receive feedback at each milestone. Upon signing the contract, work can begin immediately.

The timeline below outlines a summary of the key stages and approximate start and end dates relative to the main project timeline. A detailed breakdown of each key stage is outlined in the next section.



5.1 | KEYSTAGES EXPLAINED

01 Research, planning sessions & data / requirements gathering

This process began before we first expressed our interest in working on this project and will continue in earnest once we have reached an agreement to proceed. We plan to meet with your staff for direction in completing this step. Points to discuss will include:

a) What data will be data collected by the partner institutions is relevant to NGBV's reporting needs
b) What amendments need to be made to capture required data
c) What systems are in place?
d) What the target institutions requirements are of the proposed administrative data systems

The overall architecture of the database will be scalable, so we do not need to get all the data in there at once, but it is important to get a handle on the format and sources of data to make design decisions that will ensure a robust system post deployment.

The inception report which will include a revised work plan for development and implementation will be submitted within ONE (1) WEEK of inception meeting.

02 Structure definition, wireframing and testing server

We will work with your team to refine the graphical user interface (GUI) for systems. This step will involve presenting you with design concepts to select from. The designs will not only be presented as digital images but can only be viewed online on a special staging server that will be configured to support the development of these systems. Aspects from the various designs can be combined into a final GUI. Your team may also suggest changes and enhancements to tools that will be digitized as part of the process.

At the conclusion of this phase, we will have a final GUI and navigation structure that will be tested on all major browsers on desktop / laptop computers and mobile / handheld devices.

URL for staging server will be http://ngbv-mis.forte-innovations.com/. This staging server will be password protected to prevent unauthorized access but will be accessible to members of your team throughout the development and testing phases so you can review progress reports and provide timely feedback.

We expect to start this phase in week 2 and take around 2 weeks to complete.

03 Core Development & Programming

The phase covers development of front-end and back-end components including database. The content management suite will be fully development and linked to the front-end. Modules for management of all aspects of the front-end will be put in place.

During this phase, design adjustments can also be made to suite different modules that start coming online and might not have been covered in the previous phase. The website will be available for review on the staging server throughout this phase. Core development will overlap with other phases especially QA testing & Revisions.

This phase will start in week 3 and will last for at least 7 weeks.

04 Quality Assurance (QA), Testing & Revisions

User testing involves giving members of your team access to our staging servers to review, test and give feedback. In-house usability professionals will also perform various tasks and help refine debugging efforts and propose various enhancements. This phase is critical and will overlap with Core Development & Programming to make sure all issues raised are addressed in a timely manner and any necessary database structural changes, or programming updates are implemented.

This phase will begin 2 weeks after commencement of Core Development and will last 4 weeks.

05 Deployment to Production Server

Before moving system assets to the production server, you team will be given a final thorough demo of the to highlight all key components. Final touches can be suggested, and certain questions answered, but no structural changes should be made at this point, only bugs / errors will be fixed.

All assets, including databases, are transferred to the production server. This process takes place over a few days to allow verification that all the necessary requirements are in place in the production environment before we finally flip the switch to go live.

We can expect this phase to be completed in week 11.

06 Training and Skills Transfer

Training will take place over one (1) week. We hope key staff to be trained will be made available throughout this phase to ensure it is completed on time.

Most of the interactive testing can take place on the staging server to avoid publishing sample data on the live system. Training areas will be decided upon finalisation of system requirements.

This phase takes place from weeks 11 to 12, just before submission of assignment completion report.

07 Assignment Completion Report

At the conclusion of the training phase, NGBV will formally sign off that all components of the solutions are working as required and that your team will be responsible for upkeep.

A final report will be prepared outlining the final status of the solutions along with all functional specs for the front-end and backend.

Submitted no later than 13 weeks (1 week after completion of the project).

5.2 | JUSTIFICATION OF TECHNOLOGIES

Database:

MySQL (version 8.0)

Front-end Scripting:

PHP (version 7.3)

PHP stands for Hypertext Preprocessor and it is the most popular server-side programming language in the world. There are many reasons to use PHP for server-side programming firstly it is a free language with no licensing fees so the cost of using it is minimal.

Another good benefit of using PHP is that it can interact with many different database languages including MySQL. We will work with MySQL on this project. MySQL is a full-featured relational database management system (RDBMS) that competes with the likes of Oracle DB and Microsoft's SQL Server and is compatible with all major operating systems.

PHP also has very good online documentation with a good framework of functions in place. This makes the language very well supported online. There are countless forums and tutorials on various PHP methods and problems, so it is usually very easy to find help if you need it.

Due to PHP being so accessible and cost effective to setup there are a lot of people who know how to use the language which makes finding new employees proficient in this language less challenging.

The big advantage of PHP / MySQL is its interoperability with multiple operating systems and servers. Portability being one of the biggest concerns for businesses, PHP solves the portability issues with one or more use of the operating systems. NGBV can save money and leverage existing resources rather than investing large sum of money in purchasing the proprietary products.

Front-end Mark-up / Design:

Bootstrap 4.3.1

CSS3

jQuery 3.4

JavaScript

CSS (Cascading Style Sheets) describes how HTML elements are to be displayed on screen, paper, or in other media. CSS3 is the latest standard for CSS and is completely backwards compatible with earlier versions of CSS.

Bootstrap is a front-end framework relaying on a CSS grid system for both responsive and non-responsive look and feel, and compatible with all modern desktop and mobile browsers (Chrome, Firefox, Internet Explorer, Safari, and Opera).

jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers.

6 – APPENDIX 1 – COMMENTS ON THE TERMS OF REFERENCE



1. University Degree (minimum Degree in computer science, database development, information and technology, or other related fields);

- Our **Team leader and Lead Software Developer** Alieu Ceesay holds a Bachelor of Arts – Bachelor of Arts | Double Major in Chemistry and Computer Science;
- Our **Backstop** (Software Developer) Yusupha Touray has a Master of Engineering – Electronic Communication Engineering (1st Class Honors) as well as a Master of Engineering – Electrical and Computer Engineering; and
- Our **User Acceptance Test Lead** Abdoulie Kassama holds a Bachelor of Science – Computer Science and a Master of Science – Software Engineering.

NOTE – Please refer to Academic Certificates in Appendix 3 and Technical & Managerial Capability page 30

2. Experience in development and implementing high quality secured custom database software solutions for 5 years;

As a company, Forté Innovations' main focus is addressing the issue of data by developing secured custom made solutions that are completely scalable and tailor-made to fit the requirements of its clients. Since its existence in **2017**, Forté Innovations has implemented and delivered numerous high quality custom administrative database software solutions for clients within the private and public sector in The Gambia and across the border (Senegal, Ivory Coast, and Mauritania). These software solutions remain operational with support and ongoing maintenance up till date. Some of these software solutions include;

- Ministry of Petroleum and Energy – Development of the National Petroleum Information System
- The Gambia Police Force – Online/Offline Crime Intake (Mobile) App and Case Management System Pilot
- Ministry of Fisheries and Water Resources – Development of Fisheries Information System
- Public Utilities Regulatory Authority – Development of the PURA Information System for Tanker Trucks
- Rice Value Chain Transformation Project – Development of an M&E Tool and Information System
- Food Safety & Quality Assurance – Development of the Food Safety Information System
- Truth Reconciliation and Reparations Commission (TRRC) – Victim statement database
- Central Bank of The Gambia (CBG) – Financial data storage, visualization, and dissemination;
- National Human Rights Commission (NHRC) – Complaints Management System;
- Gambia Prison Services (GPS) - Prisons Information System;
- Les Grands Moulins D'Abidjan – Client Relationship Management System
- NGOAA – Development of Monitoring & Evaluation Database And Training Of NGOAA;
- NGBV - Gender-based Violence Case Management System;
- Les Grands Moulins de Dakar – Client Relationship Management System; and
- Les Grands Moulins de Mauritanie – Client Relationship Management System.

NOTE: See Corporate CV on page 36

3. Developer must have at least 10 years' experience developing secured web-based database systems;

Forté Innovations' key experts each have a minimum of 15 years' experience in the development and maintenance of a variety of database systems, and web based applications including **Gender Based Violence and Human Rights Case Management Systems** for many government institutions and private sectors companies both locally and internationally. **Alieu Ceesay** alone has over 20 years' experience developing interactive custom secured web-based database systems, web-based applications, and mobile applications for clients across the globe. Highlighted below are the experiences accumulated for each key expert for this consultancy;

- The Team leader and Lead Software Developer **Alieu Ceesay** has over 20 years' experience of developing software solutions across the globe;
    - Notable countries involved – USA, The Gambia, Ivory Coast, Senegal, Mauritania

- The Backstop (Software Developer) Yusupha Touray has acquired over 20 years' experience working at all levels of the Software Development Lifecycle;
    - Notable countries involved – Canada, USA, The Gambia, Senegal, Ivory Coast.

- The I.T Information Security Specialist Ousman Kassama has acquired over 7 years' experience of assessing information technology and data security processes; and

- The User Acceptance Tester Abdoulie Kassama has acquired over 7 years' experience working at all levels of the software development cycle.

NOTE – Please see Technical and Managerial Capability in page 30 for more details

4. Experience in developing similar platforms, strong understanding of UN system, frameworks and structures particularly in programming, SGBV programming is desirable;

Forté Innovations has implemented a good number of assignments for agencies in the UN system including the **UNDP and FAO** over the past five (5) years thereby providing valuable knowledge and experience on understanding how the UN system works, its frameworks and structures especially in programming including SGBV where Forté Innovations with support from the **UNDP** developed a **Sexual and Gender-based Violence (SGBV)** Case Management System for the Network Against Gender-based Violence (NGBV) . Examples of such systems include but are not limited to the following;

- ✓ Network Against Gender-based Violence – Gender-based Violence Case Management System – UNDP;
- ✓ National Human Rights Commission – Complaints Management Database System – UNDP;
- ✓ Women's Bureau (now Ministry of Women's Affairs - Africa Gender Development Index Reporting & Gender-based Violence Intake Form – UNDP Funded;
- ✓ Gambia Police Force - Upgrade the Mobile Application for Reporting Crime/Training and Mentorship – UNDP Funded;
- ✓ Ministry of Fisheries and Water Resources – Fisheries Information System – FAO; and
- ✓ Food Safety & Quality Assurance – Development of the Food Safety Information System – EU/NAOSU-Funded.

NOTE: See Corporate CV on page 36 and Team Leader CV on Appendix 3 for a full list of project and clients.

5. Experience in working with government agencies and private firms on similar projects will be an advantage;

Since Forté Innovations was set up, we have built a vast portfolio of clients which **includes more than 20 Government of The Gambia Ministries, Departments and Agencies (MDA) and numerous medium-to-large private sector enterprises across 4 countries in the West African sub-region** where similar projects with such tools and functionalities has been implemented. These include Ministry of Justice, Ministry of Fisheries & Water Resources, Ministry of Agriculture, Ministry of Petroleum & Energy, Global Properties Ltd, Construct Ltd, Central Bank of The Gambia, Grands Moulins de Dakar etc.

NOTE: See Corporate CV on page 36.

6. Good presentation skills and ability to design and deliver capacity-building activities;

All systems developed by Forté Innovations over the years have required detailed documentation, training and capacity building. These require excellent presentation (oral and written) skills. Training and Capacity Building is usually conducted using The Training of Trainers model. This approach involves initially training a person or a group of people who in turn are capable and qualified to train other people/colleagues at their workplace/institution. Therefore, instead of relying on one individual to go through a lengthy training process, this approach builds a team of instructors and enablers so training initiatives can be accomplished in time thereby giving these enablers tools concerning not only what to teach, but how to teach. For an effective learning/capacity building activity, this process is broken down into the following methods;

- **Design Impact Matrix** – This helps users identify which parts of their job will be affected by the software system. This allows us to design our materials and sessions, so they meet the needs of user groups and types.
- **Blended Learning** – The above would inform our choice of training method tailored for each audience and the content they need to learn. This is referred to as Blended Learning.
- **User Participation in UAT** – This a great way to get user buy-in and ensure they understand the new system as much as possible before the training phase commences.
- **Training Set-up** – Making sure that the environment is conducive and that enough time is allocated is critical. After the first wave of testing and updates, project team members should be given access to familiarise themselves with the system. Typically, **training is hands-on** and delivered by experienced instructors (subject matter experts) in a classroom setting with **appropriate equipment and material**. Training participants are provided with easily accessible training manuals for use in the training sessions, and for use after as a desk companion, as well as other easily accessible reference resource.
- **Competency Tests** – Following user training, users are tested with different scenarios to ensure that they can perform functions independently. This ensures that they are competent by the time they are signed off as users or trainers.

7. Experience in developing high quality documents - User Manuals;

All systems developed by Forté Innovations come with a user manual completely standardized and made simple to adopt for system users. Having developed systems for numerous institutions over the years, Forté Innovations and its experts has leveraged the experience gained to constantly improve and produce high quality user manual documentations broken down in detail, and represented in a simple to use format. Here are a few systems developed and issued user manuals;

- Department of Strategy and Policy Delivery – Policy Database System
- Public Utilities Regulatory Authority – PURA Information System for Tanker Trucks ;
- Rice Value Chain Transformation Project – M&E Tool and Information System;

- The Non-Governmental Organizations Affairs Agency – M&E database system;
- National Human Rights Commission (NHRC) – Human Rights Complaints Reporting and Case Management System;
- Gambia Prison Department – Prisons Management Information System; and
- Network Against Gender-based Violence (NGBV) – Gender-based Violence Case Management System.

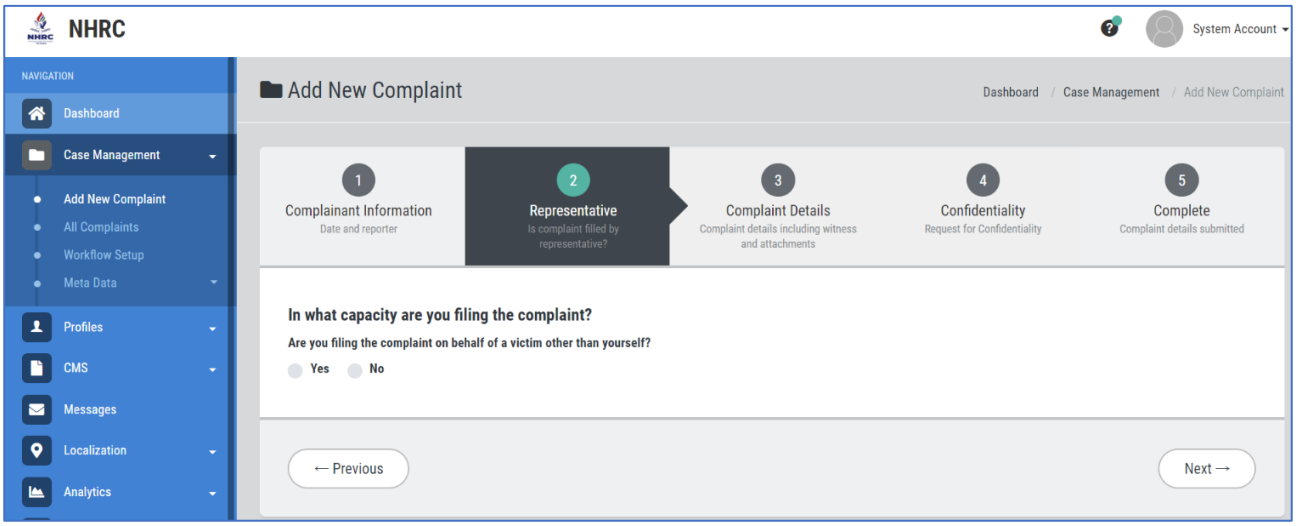
Note – A sample user manual documentation can be provided upon request.

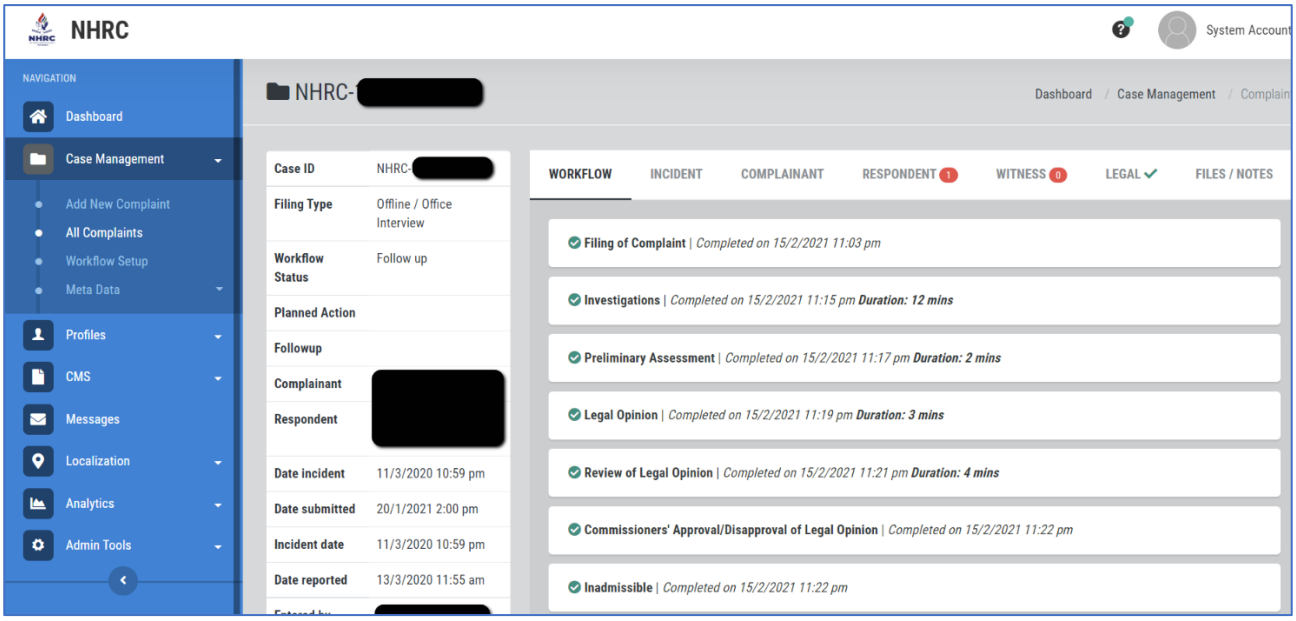
8. Prior experience developing web database for a human rights institution would be an advantage;

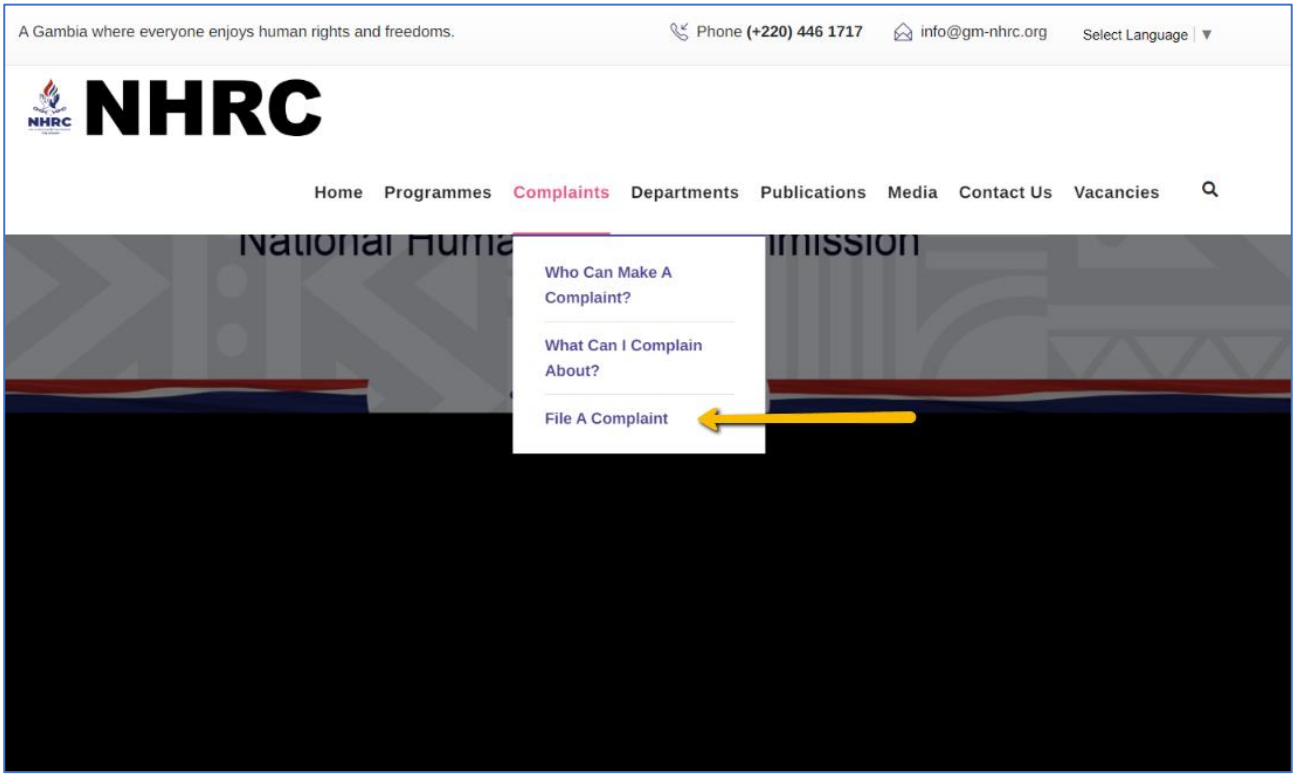
1. National Human Rights Commission – Forté Innovations has worked with the UNDP to developed a secured web- based complaints management system for the National Human Rights Commission (NHRC). This system helps facilitate the processing of human rights complaints through a digital electronic workflow till a final outcome is achieved. The system is integrated to a website where a digital complaint form is deployed to enable the public to log complaints online without having to physically go to NHRC HQ;

2. Truth Reconciliation and Reparations Commission (TRRC) – Forté Innovations through the UNDP developed a secure and accessible Witness Statement Information System for The Gambia's ongoing TRRC. This system contains a digitized statement intake module, psychosocial assessment tools , case management features, amongst others to efficiently track and record all cases for complainants and perpetrators during the ongoing TRRC.

Note – Please see sample screenshots of NHRC system below.




NHRC
System Account
NAVIGATION
Dashboard
Case Management
Add New Complaint
All Complaints
Workflow Setup
Meta Data
Profiles
CMS
Messages
Localization
Analytics
Admin Tools
NHRC-[redacted]
Dashboard / Case Management / Complaint
Case ID NHRC-[redacted]
Filing Type Offline / Office Interview
Workflow Status Follow up
Planned Action
Followup
Complainant [redacted]
Respondent
Date incident 11/3/2020 10:59 pm
Date submitted 20/1/2021 2:00 pm
Incident date 11/3/2020 10:59 pm
Date reported 13/3/2020 11:55 am
WORKFLOW
INCIDENT
COMPLAINANT
RESPONDENT 1
WITNESS 0
LEGAL
FILES / NOTES
Filing of Complaint | Completed on 15/2/2021 11:03 pm
Investigations | Completed on 15/2/2021 11:15 pm Duration: 12 mins
Preliminary Assessment | Completed on 15/2/2021 11:17 pm Duration: 2 mins
Legal Opinion | Completed on 15/2/2021 11:19 pm Duration: 3 mins
Review of Legal Opinion | Completed on 15/2/2021 11:21 pm Duration: 4 mins
Commissioners' Approval/Disapproval of Legal Opinion | Completed on 15/2/2021 11:22 pm
Inadmissible | Completed on 15/2/2021 11:22 pm

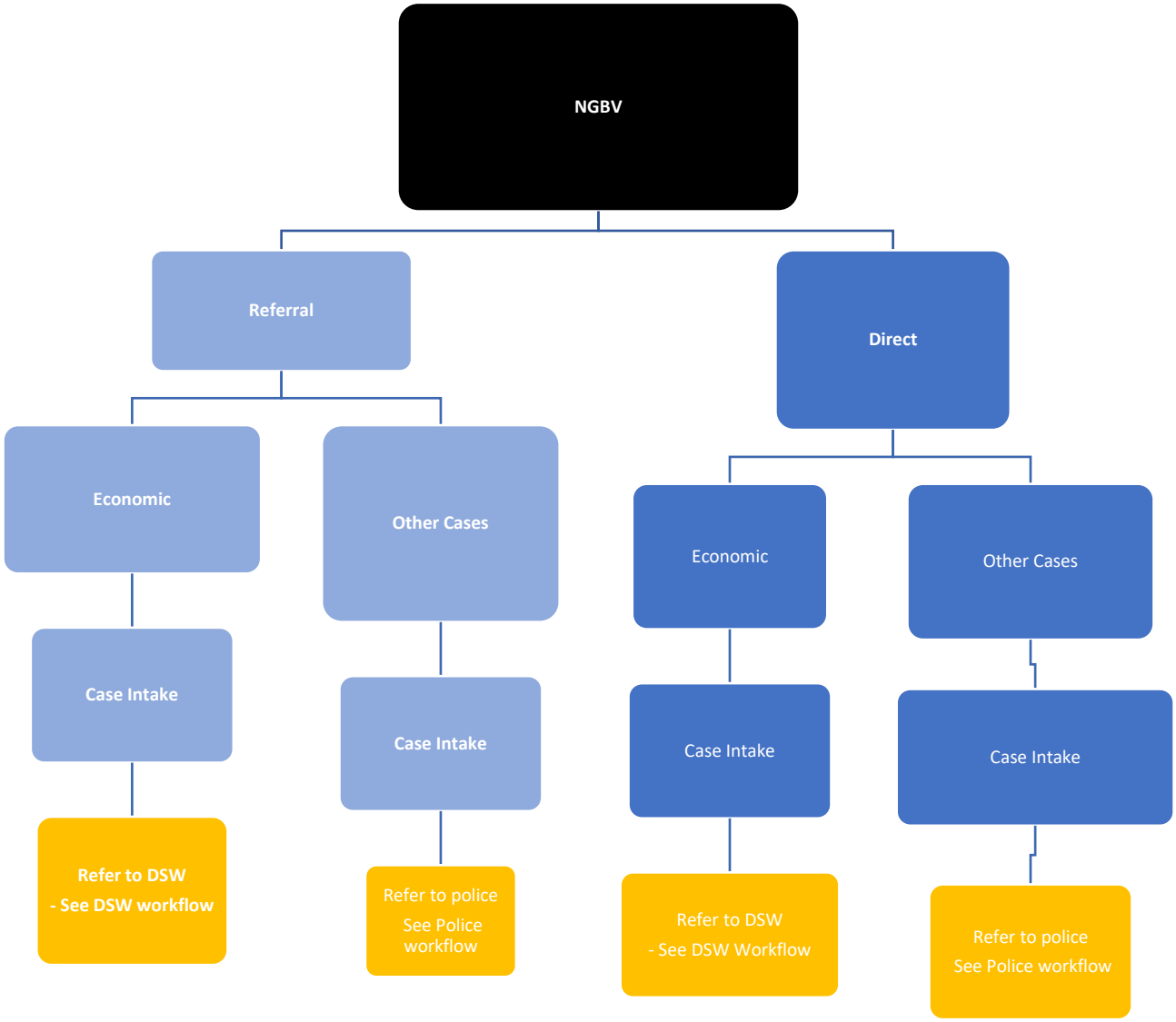

A Gambia where everyone enjoys human rights and freedoms.
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info@gm-nhrc.org
Select Language
NHRC
Home
Programmes
Complaints
Departments
Publications
Media
Contact Us
Vacancies
Who Can Make A Complaint?
What Can I Complain About?
File A Complaint


File A Complaint Online
Home > Complaints > File A Complaint Online
Complaints Registration Form
Please use the form below to file a complaint online:
PROFILE INFORMATION
Title
First Name
Middle Name(s)
Last Name
Sex
Male
Female
Date of Birth
Month
Day
Year
Nationality
Gambia
Occupation
Not Selected
Marital Status
Not Selected
Phone Number
Alternate Phone Number
E-mail Address
Identification Type
Not Selected
Identification Number
PHYSICAL AND MAILING ADDRESSES

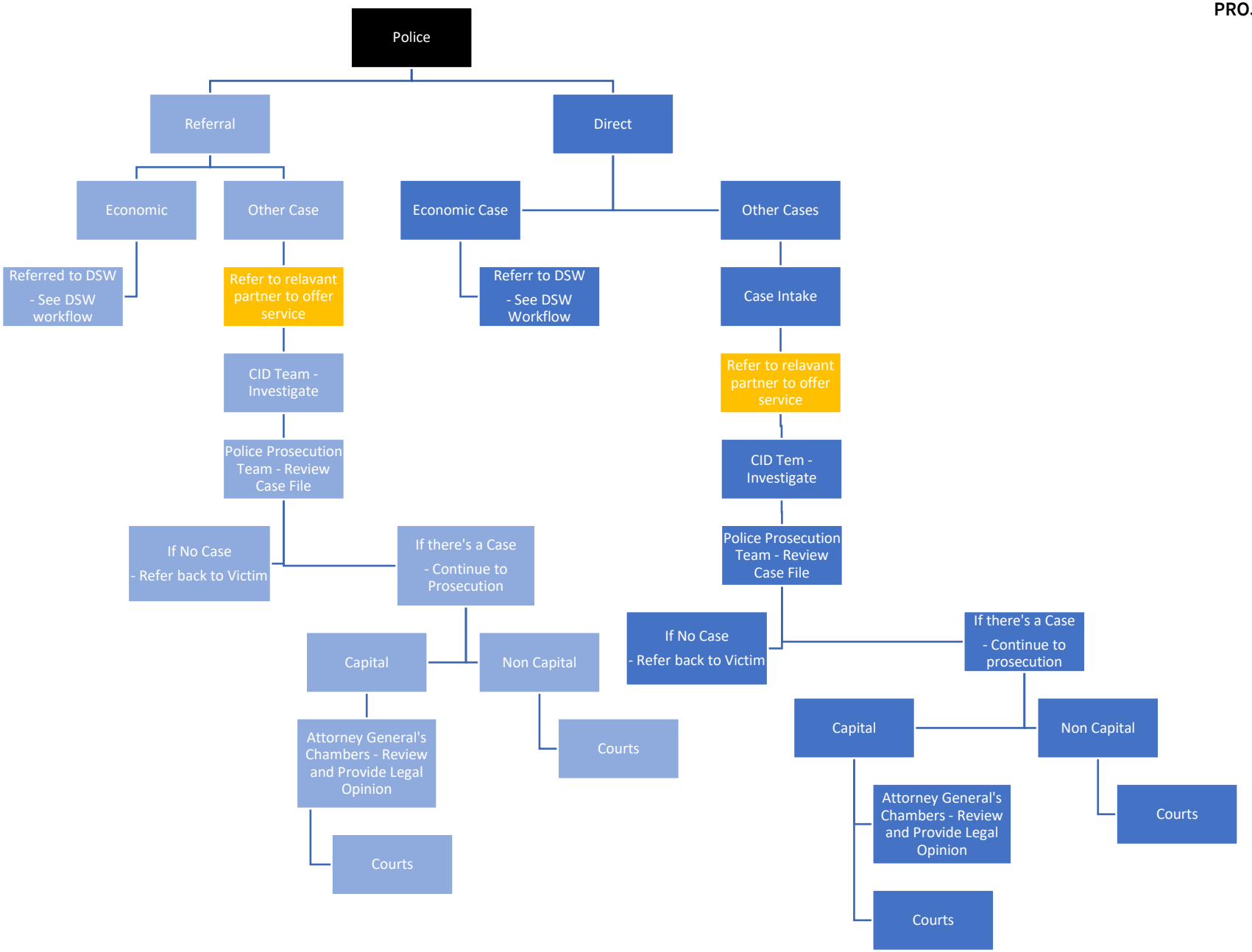
7 – APPENDIX 2 – SYSTEM EXPANSION PROCESS FLOW



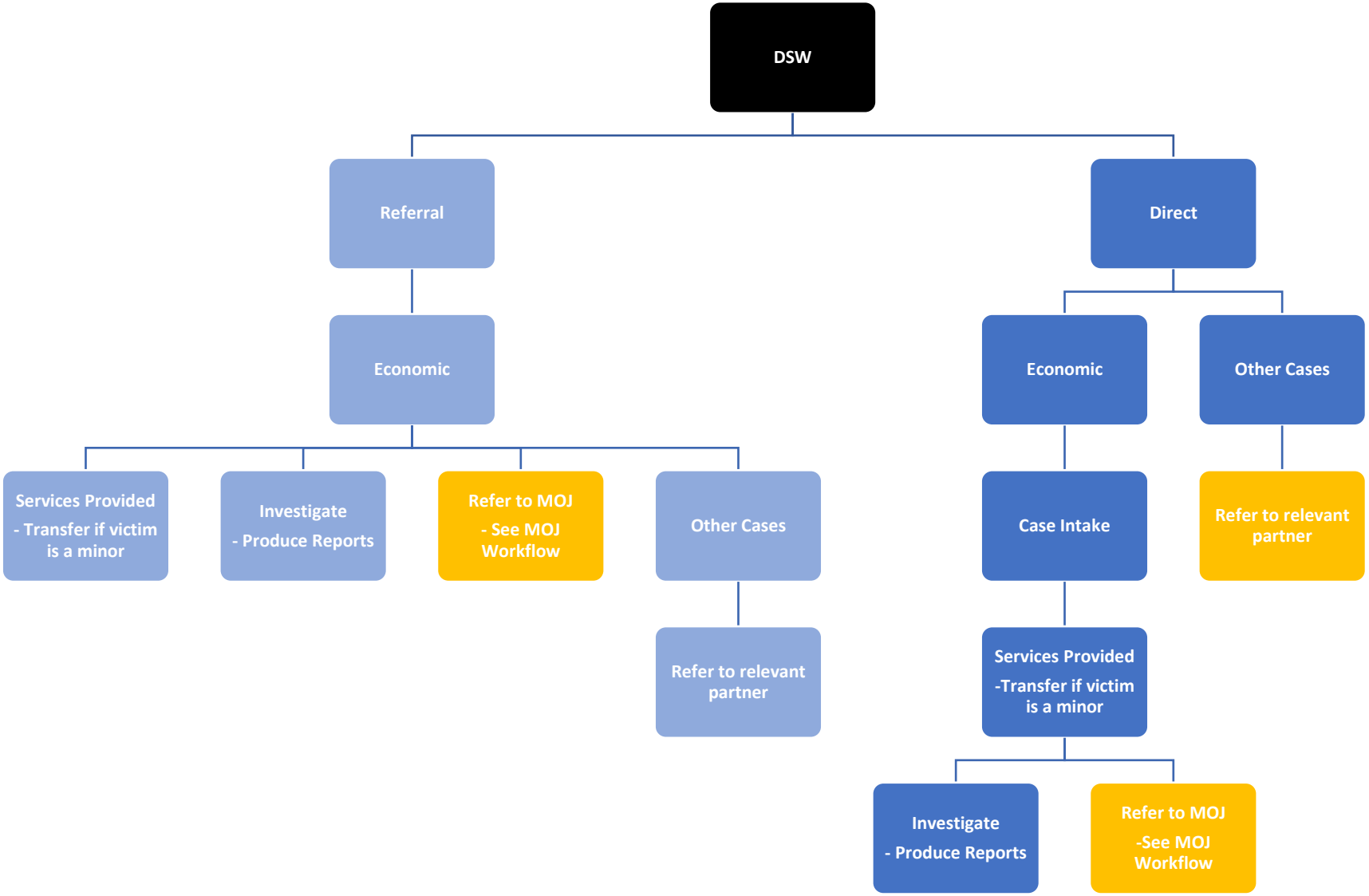
Process Flow 1: The Network Against Gender-Based Violence



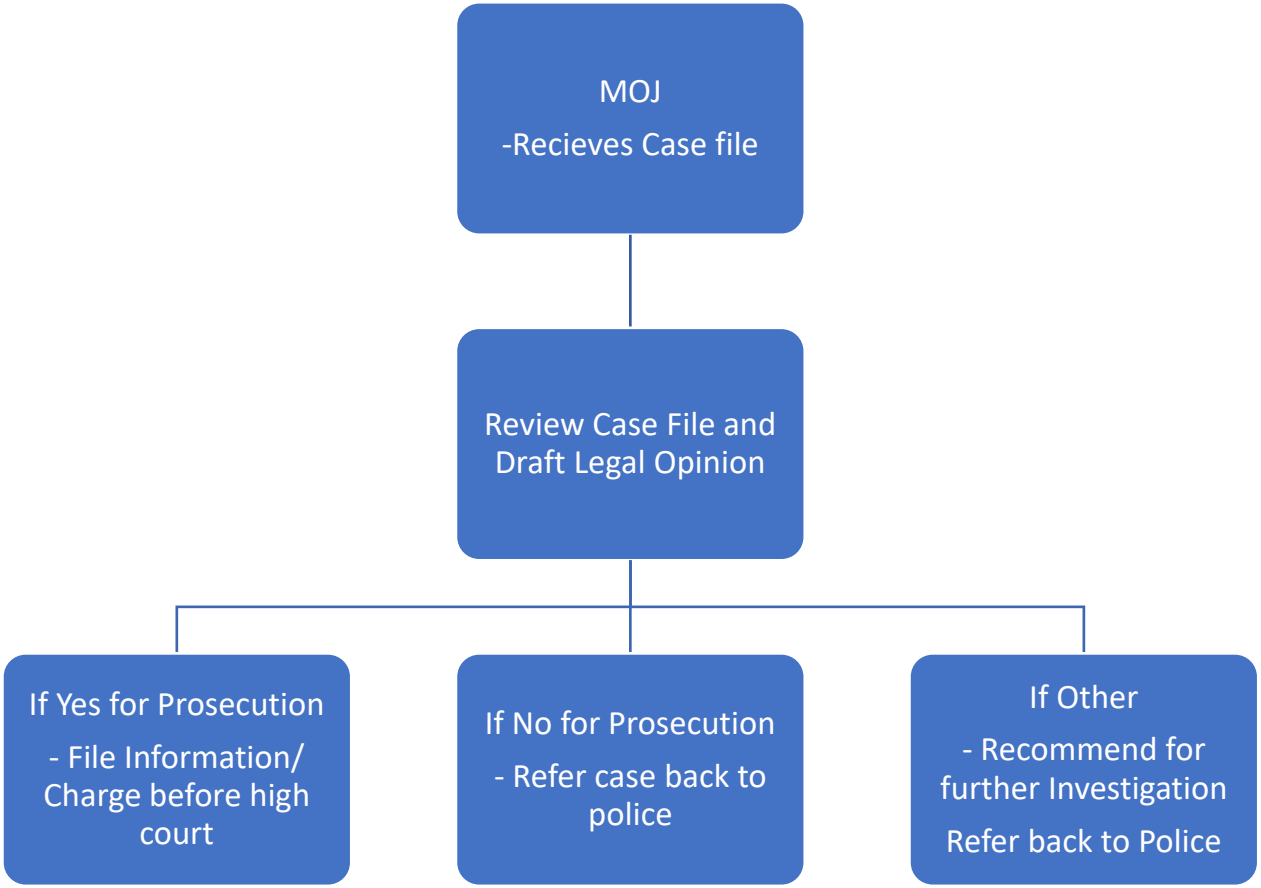
Process Flow 2: The Gambia Police Force



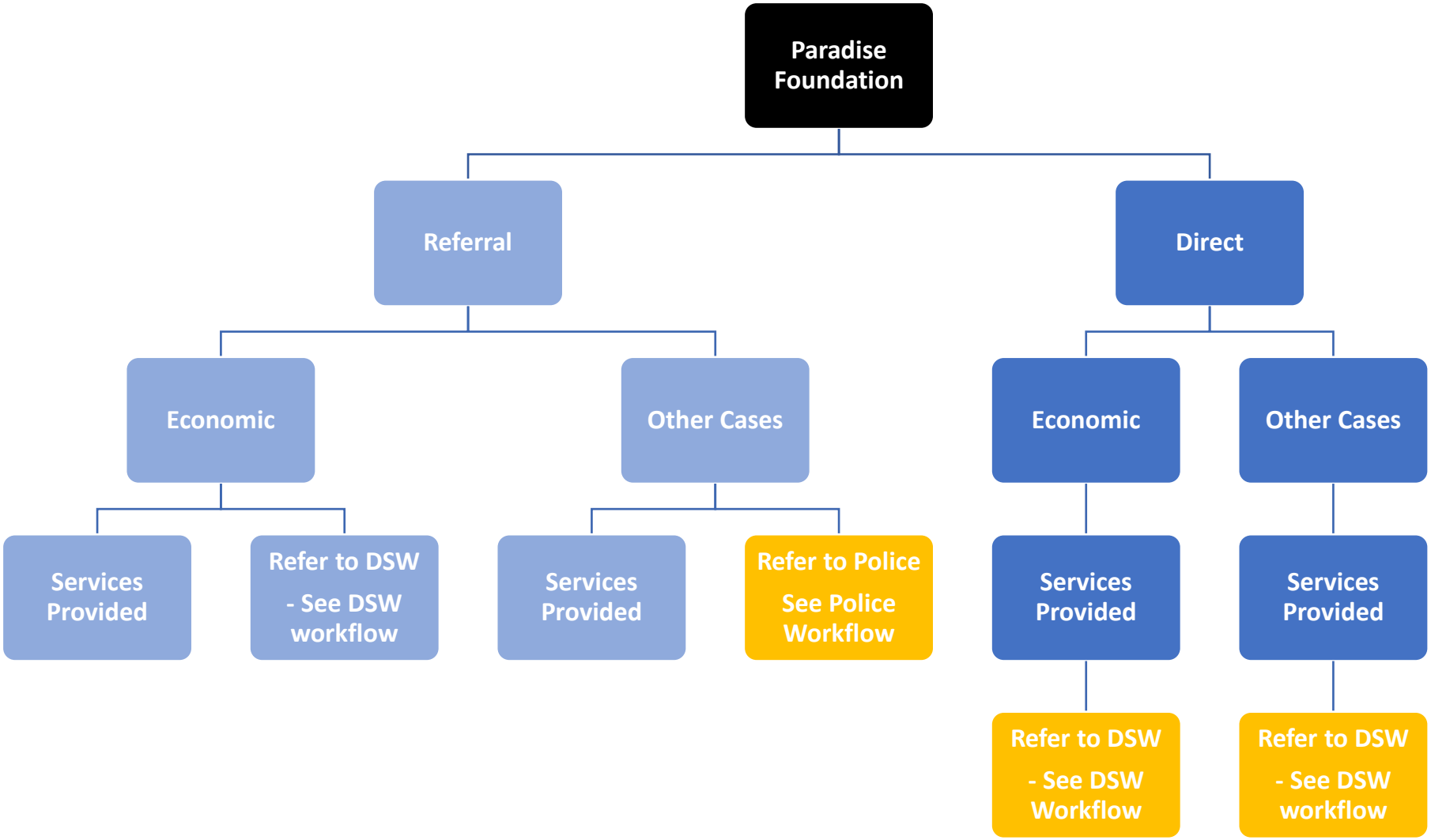
Process Flow 3: The Department of Social Welfare



Process Flow 4: The Ministry of Justice



Process Flow 5: Paradise Foundation



8 – APPENDIX 3 – CURRICULUM VITAE



EXPERT 1 – CURRICULUM VITAE (CV)

Position Title and No.	**Team Leader and Lead Software Developer**
Name of Expert:	Alieu Ceesay
Date of Birth:	30/03/1976
Country of Citizenship/Residence	The Gambia

Academic Background:

Sep 1995- May 1999 **Bachelor of Arts.**
Double Major in Chemistry and Computer Science
Pomona College | Claremont | CA

Sep 1994 – May 1995 **HS Postgraduate Diploma**
Independent study in Pascal computer programming with distinguished author Tim Corica

Advanced placement honours in Chemistry, Physics, and Mathematics
The Peddie School | Hightstown | NJ

Professional Experience:

Period	Name of Client	Country	Description of Services
2022	Department of Strategic Policy and Delivery (DSPD) **Team Leader and Lead Software Developer**	The Gambia	**Contract Title** – Development of a Policy Database System **Description** – This is systematic and sustainable database/repository of government policies and programs disseminated on a front-end platform for the public to access. **Solution:** - **Departments Module** designed to effectively capture all ministries, departments, and agencies linking them to the appropriate policies, strategies, strategic plans, action plan, etc. for the public displayed on a public facing platform. - **Document Hub** to capture and store all files for each ministry, department, and agency to be accessed by the public and managed by the relevant people with the right access rights.

			- **Dashboards –** The policy database contains a dashboard that prompts and alerts DSPD of expiring or expired documents for further follow-up. - **Content Management Suite** to help DSPD manage the front-end public facing platform. - **Reporting & Data Visualization –** This module allows management to run reports and analyze data for all documents present in the system and their download numbers from the public facing platform - **Admin – User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • **Database Schema Development** • Functional Specifications Design • **Data Form Design** • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2021	Public Utilities Regulatory Authority (PURA) **Team Leader and Lead Software Developer**	The Gambia	**Contract Title** – Development of the PURA Information System of Tanker Trucks (PISTT) **Description** – This is a **multi-stakeholder** administrative information system involving the sector regulator, service providers, and approved transport operators. The requirement was to build a system that allows transporters to apply for vehicle testing and licensing as well as workflow system and data collection tools to facilitate the process. **Solution:** - **Transporters Accounts Module** designed with intuitive and interactive forms to accurately capture essential information of

			transporters including, vehicle information and its crew members (Drivers, Assistants, Driver Mates, etc.) - **Workflow Module** – This module is used to efficiently manage the process involved in licensing vehicles all the way from registration to testing and licensing. - **Field/Mobile Data Collection Module –** This data collection tool capable of scanning BAR&QR codes was deployed to help facilitate the inspection of tanker trucks by one PURA's stakeholder. With this tool each vehicle is tested and contextualized with images, checkboxes/options, QR code scanning, etc. that generates an instant inspection report after submitting. - **Reporting & Data Visualization –** This module allows management to run reports and analyze data for all transporters, their vehicles, inspections conducted, fees paid/received, etc. at the click of a button. - **Interactive Dashboards** – The PISTT contained interactive dashboards deployed to help provide overall visibility and display key information, reports generated, etc. for management and team. - **Notification Alert System** – The PISTT also has an effective alerting system responsible for engaging and informing all stakeholders involved on the various aspects of the system that they are involved in, depending on the access rights defined. - **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • **Database Schema Development** • Functional Specifications Design • **Data Form Design** • Mobile Data Collection Application Design & Development • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures

			• Ongoing Support including Updates, Remedial Actions etc.
2021	Ministry of Agriculture (Department of Planning)	The Gambia	**Contract Title –** Development of a National Survey Database System **Description –** This project required us to develop a custom data collection application, build and deploy additional tools and functionalities to effectively carry out the Joint Preseason Assessment, Preharvest, Census, and Horticulture and integrate them into a scalable survey database system. **Solution:** • Census of Households within enumeration areas to determine whether they are farming households • **Automated Selection Farming Households** • Farmers are **randomly selected based on in-built/automated qualification criteria** • **Survey Approval –** Quality control area allowing system administrator to review data collected by staff, before approving. • **Robust Audit Trail** showing activities by all users • **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. • **Field Data Collection Module –** A custom-built mobile data collection application to conduct inspections and surveys leveraging real-time, online/offline technologies, GIS, quantitative and qualitative data, automated calculations, skip logic etc. • **Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking, Audit Trails** and a range of other custom security measures. • **Reporting and Data Visualization** Platform • **Admin** – **User and user group management, Access right management** (including access tokens), **Device Allocation Log** and **User Activity Log.** • **Interoperability** with GBOS Data Hub for data sharing. **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis

			• Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • **Survey Form Design** • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2021	Ministry of Petroleum and Energy (MoPE) **Team Leader and Lead Software Developer**	The Gambia	**Contract Title** – Development of the National Petroleum Information System (NPIS) **Description –** The objective of the assignment was to develop an integrated database for NPIS and CPR, provide training for its use and support services for its maintenance. **Solution:** • OMCs Accounts **Licensing /Registration/Accreditation Module** - Intuitive and responsive forms that allow the capture of information needed to create a profile for each OMCs and their service stations recording different forms of related data. • **Workflow Module -** License approvals are managed through an internal workflow system. • **Data Sharing Module –** This module allows 5 different stakeholders to add and share data to the NPIS using administrative tools and custom-designed data entry forms. • **Interactive Dashboards** for management and team to visualize and track key project information • **Information and Data Dissemination Module –** This module allows users to register in order to access services such as license application. In the public-facing component of this module, visitors can access rules, regulations, reports, guidelines etc., and petroleum sector-related data. All this resource is downloadable. • **Field Data Collection Module –** A custom-built mobile data collection application to

			conduct inspections and surveys leveraging real-time, online/offline technologies, GIS, quantitative and qualitative data, automated calculations, skip logic etc. • **Reporting & Data Visualization –** This is where management can run reports and analyze data at the click of a button. • **Document Hub** – **A central document repository** for relevant people to access subject to their access rights. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • **Database Schema Development** • Mobile Data Collection Application Design & Development • Functional Specifications Design • **Database-driven Web-platform Design & Development** • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2021	Ministry of Transport Works and Infrastructure (MoTWI) **Team Leader and Lead Software Developer** For references: Essa Drammeh – Director of Planning Email: bantadras@yahoo.co.uk	The Gambia	**Contract Title** – The Development of a Ministry-Level Reporting System & Data Sharing Portal for Ministry Of Transport, Works & Infrastructure (MoTWI) **Description –** The objective of the project was to create a **multi-stakeholder** secure user-friendly database and data sharing portal that allows for the capture of projects, storage of all project-related data, sector indicators, and the ability to produce reports as required. **Solution;** - **Projects Module -** This module allows the Directorate of Planning staff to create new projects, add and manage relevant details.

			- Sector Indicator Tracking Module - This allows MoTWI to create indicators and input progress data to track its performance against targets. - **Interactive Dashboards** were deployed to help MoTWI and its stakeholders track and visualise the progress of key project indicators to improve decision making. **- Reporting & Data Visualization –** This is where management can run reports and analyze data at the click of a button. **- Admin** – This module is for user and user group management, Access right management, Device Allocation Log and User Activity Log. **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Data Form Design** • **Database Schema Development** • Mobile Data Collection Application Design & Development • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2020	Non-Governmental Organizations Affairs Agency (NGOAA) **Team Leader and Lead Software Developer** For references:	The Gambia	**Contract Title –** Development of a secure web M&E database system – MOLRG **Description –** The objective was to create a secure and scalable **monitoring and evaluation system** that has the capacity to track, monitor and report NGO activities using a functional M&E Framework and electronic Database system. **Solution**; • **NGO Licensing/Registration/Accreditation Module --** Intuitive and responsive forms that allow the capture of information needed to create a profile for each applicant including email address, address (including GIS coordinates), logo, status (national & international) etc.

			• **Monitoring & Evaluation Module -** This module will provide the tools for Agency staff to monitor and track the performance licensed NGOs against their agreed objectives. • **Dashboards** with intuitive and interactive functionalities to facilitate tracking and the visualization of key project indicators. • **Field/Mobile Data Collection Module –** The mobile app, capable of scanning BAR & QR CODES, can be used to check status of NGOs during visits. It also has functionalities to support activities such as NGO mapping, project field assessments, monitoring and evaluations leveraging real-time, online/offline technologies, GIS, quantitative and qualitative data, automated calculations, skip logic etc. • **Admin – User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • **Database Schema Development** • Mobile Data Collection Application Design and Development • Functional Specifications Design • **Data Form Design** • **Database-driven Web-platform Design & Development** • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2020	National Food Security, Processing & Marketing Corporation (NFPMC)	The Gambia	**Contract Title –** Development of a data collection tool & reporting system for the groundnut procurement process **Description –** NFPMC required a system that could help digitize its annual groundnut

	Team Leader and Lead Software Developer For references: Muhammed Njie – Managing Director Email: mohnjie7@gmail.com		procurement activities and provide better oversight through real time reporting. The objective of the assignment was to develop an integrated system that will facilitate the collection, storage, retrieval of data for use in reporting, decision-making and strategy design. **Solution;** **- Mobile Data Collection Application** – NFPMC's staff use this tool for data collection during the procurement process to capture, quantities/volumes, type, location and photos of weighbridge receipt etc. As the majority of their depots are located in remote parts of the country with poor internet infrastructure, online/offline capability was built-in. The mobile application also captures GIS locations of agents and depots as a means of verifying the integrity of data submitted. - **Approval Module**- This is a data quality control measure. Data collected from the field is checked and approved by a supervisor before being included in official data. - **Dashboard –** This is a data visualization tool deployed to use by management and team to efficiently track key project information and gain overall visibility to facilitate evidence-based decision making. - **Accounts Module**- This is an interactive log of all approved transaction data. - **Map** – This contains capture GIS locations of its agents and depots. **- Reporting & Data Visualization –** This is where management can run reports and analyze data at the click of a button. **- Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking, Audit Trails** and a range of other custom security measures. **- Admin** – This module is for user and user group management, Access right management, Device Allocation Log and User Activity Log. **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis

			• Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • **Data Form Design** • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2020	National Human Rights Commission (NHRC) **Team Leader and Lead Software Developer** For references: Isatou Njai-Cham Communications Director Email: injaicham@gm-nhrc.org	The Gambia	**Contract Title –** Development of a Secure Web Database System for Complaints Management – UNDP **Description** – The objective was to create a secured user-friendly system to facilitate the capture of complaints data at each stage of the complaints' process. **Solution;** - **Online Complaints Registration Form –** This form is submitted by a complainant via the website to the database. - **Digitized Case Management Module** includes the following tabs; • Administrative. • Biographic Data. • Incident. • Violation. • Planned Action (Outcome). • Legal Opinion. • Support Services Accessed. • Alleged Perpetrator(S) Details. - **Integrated electronic workflow system** - includes the following tabs • Visualize and track steps via **interactive dashboards** • Automated Alerts/Notification/Reminders. • Role-based Participation. • Personalized Dashboards. - **Data Integrity Management Subsystem** - The data integrity management subsystem will provide facilities for

			managing the integrity of data in the database. - **Document Hub** & Management. - **Admin – User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log **Technical Qualification and Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Statement Capture Form Design** • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2020	Rice Value Chain Transformation Project (RVCTP) **Team Leader and Lead Software Developer** For references: Mr. Bakary K.S. Sanyang Planner, Policy Analyst & Monitoring and Evaluation Consultant Tel: + (220) 3866510 Email: bakskaddy@gmail.com	The Gambia	**Contract Title –** Development of an M&E and Information System **– AfDB** **Description** – RVCTP is a project designed to Strengthen rice production and productivity and Improve market access and promotion of agro processors. The objective was to develop an **M&E** system meant to improve regular, timely and quality monitoring and reporting system on the overall projects, operations, and contribute to quality project execution. **Solution;** - - **Field Data Collection Module –** A custom-built mobile data collection application to conduct inspections and surveys leveraging real-time, online/offline technologies, GIS, quantitative and qualitative data, automated calculations, skip logic etc. - Digitization of forms to facilitate **farmer and beneficiary registration and mapping**

			- Digitization of **forms for M&E visits** - **Creation of Indicators** and link them to outputs, activities, projects etc. - **Tracking of performance** against set indicators - **Interactive Dashboards** to facilitate tracking of key indicators in one or multiple view ensuring overall visibility for better decision making - Flexible and **configurable reporting and data analysis** **- Record of Support Accessed** – Capacity building, financial, inputs etc. **- Document Hub** – **A central document repository** for relevant people to access subject to their access rights **- Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking** and a range of other custom security measures. **- Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualification and Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Statement Capture Form Design** • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2020	Network Against Gender-based Violence (NGBV) **Team Leader and Lead Software Developer** For references: Mr. Fallu Sowe	The Gambia	**Contract Title –** Development of a Web Database and Intake Form for SGBV cases - UNDP TJHR PMU **Description –** The Network Against Gender-based Violence needed a secure and accessible Gender-based Violence Intake System for use by Department of Social Welfare, Female Lawyers Association of Gambia, Ministry of Justice, Police

	National Coordinator – NGBV
	
	Tel: (+220) 3453525
	Email: fallusowe9@gmail.com
			and the SGBV One-Stop-Centers to capture and process SGBV cases.
			
			Solution;
			
			- **Digitized Statement Intake Module** including the following tabs;
			  o Administrative
			  o Biographic Data
			  o Incident Details
			- **Case Management** – Create, Search for, and Update Records (including outcome).
			- **Perpetrator and Survivor Log Database** – **All Persons are anonymized** and assigned with **Unique IDs**
			- **Record of Services accessed** – **Medical** (mental & physical health), **Legal**, **Children** & **Social** Services.
			- **Document Hub** – **A central document repository** for relevant people to access subject to their access rights
			- **Security Measures** - Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking and a range of other custom security measures.
			- **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log.
			
			Technical Qualification and Experience;
			• Business Process Review & Analysis
			• Systems Analysis
			• Functional Specifications Design
			• **Database Schema Development**
			• **Statement Capture Form Design**
			• **User Acceptance Testing**
			• **User Manual Development**
			• **Training and Capacity Building**
			• System Deployment & Implementation of Custom Security Measures
			• Ongoing Support including Updates, Remedial Actions etc.

2019 - 2020	The Gambia Bureau of Statistics **Team Leader and Lead Software Developer** For references: Saffie Dambelleh - Project Director	The Gambia	**Contract Title –** Development of an Administrative Management Information System for **The Gambia Prison Services, The Gambia Police Force, The Gambia Fire & Rescue Services, and The Gambia Civil Aviation Authority – MoFEA PCU/UNDP**

	Tel: 4223304 / 4223301 Email: sdambelleh@yahoo.com		**Project 1 – Development of an Administrative Management Information System for The Gambia Prison Services** **Description –** This is a **multi-stakeholder** project that required us to develop a scalable database-driven web-based information system to support the work of The Gambia Prison Services. **Solution:** • **Inmates Enrollment Log & Profile Module** - including gender, DOB and other biodata, medical & visitation records, offence type and sentence duration. ○ **Mobile Data Collection Application** to capture and attach pictures of prisoners during enrollment process. Realtime, online/offline technologies incorporated due to poor internet infrastructure at prisons across the country. • **Inmate Medical Module** – including linkage of prisoners to treatment, diagnosis, outcome treatment facilities etc. • **Prison Staff Database -** Census allowing individual profiles to be created for each staff – capturing assigned location, ranking, gender, DOB (retirement due date alerts) • **Threshold Settings Functionality** - to ensure HR manager receives alerts for staff due for retirement and alerts are sent when a prisoner is due for release. • **Interactive Dashboards** to help track key project information and facilitate evidence based decision making. • **Reporting and Data Visualization platform** • **Interoperability** with GBOS Data Hub for data sharing. • **Scan, upload, and attachment** documents (such as ID documents) to individual prisoner & staff profiles • **Update of Prisoner Statuses** including Notes/comments - (in-prison, discharged, hospitalized, and deceased). • Robust Audit Trail of user activity on system • **Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer**

			(SSL), IP blocking, Audit Trails and a range of other custom security measures. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualification and Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • **Prisoner Intake Form Design** • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures. • Ongoing Support including Updates, Remedial Actions etc. **Project 2 – Development of an Administrative Management Information System for The Gambia Police Force** **Description –** This is a **multi-stakeholder** project that required us to develop a scalable database-driven web-based information system and field data collection application to facilitate the work of the Police Force. **Solution:** • **Online Statistics Database –** The database is designed to allow statisticians across the

			country to enter aggregated statistics for their region. • **Field Traffic Accident Investigation Tool** – Android-based data collection app • Information System designed to be **modular** • **Interoperability with GBOS Data Hub** • **Scan, upload, and attachment documents** (such as ID documents) to individual prisoner & staff profiles • **Update of Staff Statuses** including Notes/comments - retired (automated based on DOB and national retirement age), transferred and deceased). • **Interactive Dashboards** to help track key crime information and facilitate evidence-based decision making. • **Reporting & Data Visualization** of all reported police cases in The Gambia • **Robust Audit Trail** of user activity on system • **Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking, Audit Trails** and a range of other custom security measures. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. • **Interoperability** with GBOS Data Hub for data sharing. **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • **Accident Investigation Form Design** • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.

			<u>Project 3 – Development of an Administrative Management Information System for The Gambia Fire & Rescue Services</u> **Description –** This is a **multi-stakeholder** project that required us to develop a scalable and modular database-driven web-based information system and field data collection application to facilitate the work of the Fire & Rescue Service. **Solution:** • **Station Profile Management** • **Incident Intake form** and log • Paramedics Modules – Log of patients treated, diagnosis, treated outcome etc. • **Admin & Finance Module** – Log of all staff including rank, DOB and other biodata, expense log linked to vendors. • **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. • **Reporting and data visualization** • **Threshold Settings** Functionality to ensure staff do not unknowingly work past their retirement due date • **Interoperability with GBOS Data Hub** • **Scan, upload, and attachment** documents (such as ID documents) to individual prisoner & staff profiles • **Update of Prisoner Statuses** including Notes/comments - (in-prison, discharged, hospitalized, and deceased). • **Robust Audit Trail** of user activity on system • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Capture Form Design** • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development

			• User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc. **<u>Project 4 – Development of an Administrative Management Information System for The Gambia Civil Aviation Authority</u>** **Description –** This is a **multi-stakeholder** project that required us to develop a scalable database-driven web-based information system to support the work of The Gambia Civil Aviation Authority. **Solution:** • **Field/Mobile Data Collection Module** – This application app, capable of scanning BAR & QR CODES, leveraging real-time, online/offline technologies, GIS, quantitative and qualitative data, automated calculations, skip logic etc. This is used for Airport User Surveys and to support **offline data collection** such as Flight Logging, Aircraft Fuel Loading Meter Readings etc. • **Aircraft Movements Module** – Create and manage Profiles of all operators, airlines, aircrafts, and flights into and out of The Gambia • **Data Collection Application** – for Airport User Surveys and to support offline data collection such as Flight Logging, Aircraft Fuel Loading Meter Readings etc. • **Scan, upload, and attachment** of documents such as air worthiness certificates, insurance certificates etc. • **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. • **Reporting and Data Visualization** • **Interoperability** with GBOS DATA Hub & Mobile Data Collection App • **Robust Audit Trail** of user activity on system • **Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking, Audit Trails** and a range of other custom security measures.

			• **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2019 - 2020	Ministry of Agriculture (Department of Planning) **Team Leader and Lead Software Developer** For references: Mr. Ousman M. Bojang Food Security and Market Specialist Food and Agriculture Organisation of the United Nations (FAO) Tel: +(220) 4381488 / 3370514	The Gambia	**Contract Title –** Development of a National Agricultural Sample Survey Information System – **FAO** **Description –** This project required us to develop a custom data collection application, build and deploy the national agricultural sample survey forms and integrate them into a scalable information system and a public-facing website. **Solution:** • **Field/Mobile Data Collection Module** – This application app leveraging real-time, online/offline technologies, GIS, quantitative

			and qualitative data, automated calculations, landmass measurement, skip logic etc. • Census of Households within enumeration areas to determine whether they are farming households • **Automated Selection Farming Households** to qualify to participate NASS step 2. • Farmers are **randomly selected based on in-built/automated qualification criteria** • **Survey Approval –** Quality control area allowing system administrator to review data collected by staff, before approving. • **Robust Audit Trail** showing activities by all users • **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. • **Reporting and Data Visualization** Platform • **Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking, Audit Trails** and a range of other custom security measures. • **Admin** – **User and user group management, Access right management** (including access tokens), **Device Allocation Log** and **User Activity Log.** • **Interoperability** with GBOS Data Hub for data sharing. **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • Database Schema Development • Mobile Data Collection Application Design and Development • **Survey Form Design** • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.

2019 - 2020	The Gambia Livestock Marketing Agency **Team Leader and Lead Software Developer** For references: Mr. Kebba Sanyang FAO Administration Tel: (+220) 4498034 Email: FAO-GM@fao.org	The Gambia	**Contract Title –** Development of The Gambia Livestock Marketing Agency Market Information System **- FAO** **Description –** This project required us to develop a custom data collection application, build and deploy the market information data collection forms and integrate them into a scalable information system and a public-facing website. **Solution:** • **Field/Mobile Data Collection Module** – This application app leveraging real-time, online/offline technologies, GIS, quantitative and qualitative data, skip logic etc. for a Nationwide Census of all Livestock facilities and actors • **Survey Approval –** Quality control area allowing system administrator to review data collected by staff, before approving. • **Robust Audit Trail** showing activities by all users • **Reporting and Data Visualization** Platform • **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. • **Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking, Audit Trails** and a range of other custom security measures. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. • **Interoperability** with GBOS Data Hub for data sharing. • Secure Socket Layer (SSL) Certificate **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • **Survey Form Design**

			• Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2018 - 2019	Ministry of Fisheries & Water Resources **Team Leader and Lead Software Developer** For references: Dr. Demba Banja Permanent Secretary Tel: (220) 4227627 / 4224531 Email: info@mof.gov.gm	The Gambia	**Contract Title –** Development of a Self-service Fishing License Application Portal and a Fisheries Information System **– FAO** **Description –** This is a **multi-stakeholder** project that involved building a public-facing website allowing industrial vessel owners to create accounts, register their vessel(s) and apply for fishing license(s). It also required the creation of a comprehensive Fisheries Information System to do the following. **Solution;** • Electronic Vessel Registration and Fishing License Application – **Online Application Forms** and **Application Workflow System** allowing visibility of the stage of all applications at any point in time • **License expiry alerts to notify license holders** that licenses are due to expire or have expired • **Field/Mobile Data Collection Module** – This application leveraging real-time, online/offline technologies, GIS, quantitative and qualitative data, skip logic etc. This app is for amongst others; o Mobile Vessel Inspection module including **weighted checklist allowing automated vessel inspections/assessment** outcome as part of the licensing process. This

			ensures the process is consistent across all inspectors • **Creation and management of profiles of all vessels** (industrial of artisanal) operating in Gambian waters. • Android-app allowed both **survey and administrative data collection** to take place **online** (with internet connection) and **offline** (without internet connection). Staff in remote landing sites to conduct daily operations and administrative reporting including catch reporting, pre-licensing inspection etc. • **Central Secure Data Repository for all documents uploaded and attached. Possibility of attaching documents to profiles of vessels etc.** • Fisheries Information System was built to be **interoperable with Vessel Monitoring System, FAO Lex, Food Safety Information System, Forté Data mobile app and GBoS Data Hub** (automated data sharing with The Gambia Bureau of Statistics). • **Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking, Audit Trails** and a range of other custom security measures. • **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualifications & Experience** • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • **Survey Form Design**

			• User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2019	Social Security & Housing Finance Corporation **Team Leader and Lead Software Developer** For references: Mr. Dodou Jain Managing Director Tel: +(220) 4228688 Email: sshfc@gamtel.gm	The Gambia	**Contract Title –** Development of a Database-driven Web-platform / Automated Benefits Calculator / Online Claims Submission Form / Electronic Pension Claims Workflow System **Description –** This project required us to develop a scalable database-driven web-platform, to which an electronic workflow system was subsequently added. **Solution:** - Database-driven and scalable website with built-in **Claims Workflow and Reporting;** - **Document Hub** & **Download/Central Repository Section;** - Intelligent forms allowing users to apply for pensions online; - **Central Document Repository** where resources can easily be retrieved; - A custom content management system (CMS) that is robust, with a user-friendly interface that makes it easy-to-use even for non-technical staff; - **Effective training** resulting in a website that is fully managed in-house Corporate Affairs Department; - Integrated electronic workflow system; - **Search Engine Optimised (SEO);**

			- **Automated** Benefits Calculator; - **Web-based forms** for claims submission; - **Modular Electronic Workflow** System providing visibility of the entire Pensions Benefit Claims; - **Threshold Settings Functionality** to ensure Claims are processed within Service Level Agreements; - Email alerts integrated to provide **reminders** – workflow steps due, when claims payments are due to stop etc. - Built to **interoperate with third-party** text/email alert systems; - **Scan, upload, and attachment** of documents to individual claims; - **Update of Claims Statuses** including Notes/comments fields and a Robust Audit Trail; - **Interactive Dashboards** to help track key project information and facilitate evidence-based decision making. - Colour coding of workflow steps for dashboard style visualization; - Reporting by process, individual etc.; and - Robust Audit Trail of user activity on system. **Technical Qualifications & Experience** - Business Process Review & Analysis - Systems Analysis - Functional Specifications Design - **Database Schema Development** - Mobile Data Collection Application Design and Development - Database-driven Web-platform Design & Development - Electronic Workflow System Design - User Acceptance Testing - **User Manual Development** - **Training and Capacity Building** - System Deployment & Implementation of Custom Security Measures - Ongoing Support including Updates, Remedial Actions etc.
2019	Les Grands Moulins De Mauritanie **Team Leader and Lead Software Developer** For references:	Mauritania	**Contract Title –** Market Intelligence Information System and Client Relationship Management (CRM) System **Description –** The client (the biggest flour mill in Mauritania) required an integrated system to gather market intelligence (build a detailed profile of all its direct and indirect clients), manage its

	Mr. Patrick Malaga Tel: +33659775848 Patrick.malaga@gmd.sn		field staff, and facilitate some of their daily operations. **Solution:** - **Module 1**: **Data Collection, Reporting & Visualization Application** to facilitate a census of clients – businesses by type, ownership by gender and nationality, staff numbers by gender and nationality, flour consumption, average prices etc. - **Module 2**: **Client Relationship Management System** to facilitate the management of interactions with clients – visits, stock threshold alerts, order management, complaints management and redress workflow, field sales staff performance management & reporting. - **Interactive Dashboards** to help track key project information, stock data, visits by staff, etc. to facilitate evidence-based decision making. - **Field/Mobile Data Collection Module** – This application leveraging real-time, online/offline technologies, GIS, quantitative and qualitative data, skip logic etc. - **Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking, Audit Trails** and a range of other custom security measures. - **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualifications & Experience** - Business Process Review & Analysis - Systems Analysis - Functional Specifications Design - **Database Schema Development** - Mobile Data Collection Application Design and Development

			- Database-driven Web-platform Design & Development - **Survey Form Design** - User Acceptance Testing - **User Manual Development** - **Training and Capacity Building** - System Deployment & Implementation of Custom Security Measures - Ongoing Support including Updates, Remedial Actions etc.
2019	Les Grands Moulins De Dakar **Team Leader and Lead Software Developer** For references: Mr. Patrick Malaga Tel: +33659775848 Patrick.malaga@gmd.sn	Senegal	**Contract Title –** Market Intelligence Information System and Client Relationship Management (CRM) System **Description –** The client (the biggest flour mill in Senegal) required an integrated system to gather market intelligence (build a detailed profile of all its direct and indirect clients), manage its field staff, and facilitate some of their daily operations. **Solution:** • **Module 1**: Data Collection, Reporting & Visualization Application to facilitate a census of clients – businesses by type, location, ownership by gender and nationality, staff numbers by gender and nationality, flour consumption, average prices etc. • **Module 2**: Client Relationship Management System to facilitate the management of interactions with clients – visits, stock threshold alerts, order management, complaints management and redress workflow, field sales staff performance management & reporting. • **Interactive Dashboards** to help track key project information, stock data, visits by staff, etc. to facilitate evidence-based decision making. • **Field/Mobile Data Collection Module** – This application leveraging real-time, online/offline technologies, GIS, quantitative and qualitative data, skip logic etc. • **Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer**

			(SSL), IP blocking, Audit Trails and a range of other custom security measures. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualifications & Experience**: • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • **Survey Form Design** • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security • Ongoing Support including Updates, Remedial Actions etc.
2018 - 2019	Construct Ltd **Team Leader and Lead Software Developer** For references: Mr. Seena Shams Construct Ltd. Tel: +(220) 4375700 / 4390368 Email: seenashams@gmail.com	The Gambia	**Contract Title –** Property Management Information System **Description –** The client required a global Enterprise Resource Planning (ERP) system to manage all activities including interactions with the clients. **Solution**; A secured and robust database-driven web-based application with the following modules; - Tenant / Client Management - Expenditure & Payment Management - **Inventory Management** - Document Storage / Hub - **Reporting and Data Visualization** - Human Resource Management - **Interactive Dashboards for overall visibility to improve decision making** **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Database-driven Web-platform Design & Development

			• User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2019	Les Grands Moulins D' Abidjan **Team Leader and Lead Software Developer** For references: Mr. Patrick Malaga Tel: +33659775848 Patrick.malaga@gmd.sn	Ivory Coast	**Contract Title –** Market Intelligence Information System and Client Relationship Management (CRM) System **Description –** The client (the biggest flour mill in Ivory Coast) required an integrated system to gather market intelligence (build a detailed profile of all its direct and indirect clients), manage its field staff and facilitate some of their daily operations. **Solution:** - **Module 1**: Data Collection, Reporting & Visualization Application to facilitate a census of clients – businesses by type, location, ownership by gender and nationality, staff numbers by gender and nationality, flour consumption, average prices etc. - **Module 2**: Client Relationship Management System to facilitate the management of interactions with clients – visits, stock threshold alerts, order management, complaints management and redress workflow, field sales staff performance management & reporting. - **Interactive Dashboards** to help track key project information, stock data, visits by staff, etc. to facilitate evidence-based decision making. - **Field/Mobile Data Collection Module** – This application leveraging real-time, online/offline technologies, GIS, quantitative and qualitative data, skip logic etc. - **Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer**

			(SSL), IP blocking, Audit Trails and a range of other custom security measures. - **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualifications & Experience**: - Business Process Review & Analysis - Systems Analysis - Functional Specifications Design - **Database Schema Development** - Mobile Data Collection Application Design and Development - Database-driven Web-platform Design & Development - **Survey Form Design** - User Acceptance Testing - **User Manual Development** - **Training and Capacity Building** - System Deployment & Implementation of Custom Security Measures - Ongoing Support including Updates, Remedial Actions etc.
2019	Global Properties **Team Leader and Lead Software Developer** For references: Mr. Saul Frazer CEO Tel: +(220) 3300009 / 2000009 Email: sfrazer@globalproperties.gm sfrazer@live.co.uk	The Gambia	**Contract Title** – Property Management Information System **Description –** The client required a global Enterprise Resource Planning (ERP) to manage all activities including interactions with the clients. **Solution**; A secured and robust database-driven web-based application with the following modules; - Tenant / Client Management - Expenditure & Payment Management - Sales Agent Management - Client/Tenant Portal - Document Storage / Hub - **Reporting and Data Visualization** - Data Collection & GIS Coordinates Capture - Human Resource Management - **Interactive Dashboards for overall visibility to improve decision making** **Technical Qualifications & Experience**; - Business Process Review & Analysis - Systems Analysis - Functional Specifications Design - **Database Schema Development**

			- Database-driven Web-platform Design & Development - User Acceptance Testing - **User Manual Development** - **Training and Capacity Building** - System Deployment & Implementation of Custom Security Measures - Ongoing Support including Updates, Remedial Actions etc.
2018 - 2019	TRRC Secretariat **Team Leader and Lead Software Developer** For references: Mr. Alagie Barrow Director of Research and Investigations TRRC Email: lameenb@gmail.com	The Gambia	**Contract Title –** Witness Information System and Digitized Statement Intake Form **– UNDP** **Description –** The Secretariat required a secure and accessible Witness Statement Information System for The Gambia's ongoing TRRC; **Solution**: • **Digitized Statement Intake Module** including the following tabs; o Administrative o Biographic Data o Incident Details o Adversely Mentioned • **Case Management** – Create, Search for, and Update Records (including outcome). • **Persons Database** – Log of all persons related to cases (from complainants to perpetrators) allowing Granular Filtering to facilitate searches. **All Persons are anonymized** and assigned with **Unique ID** • **Psychosocial Assessment Module** including the following tabs; o Evaluation Assessment o Intervention o Referral • **Record of Services accessed** – **Medical** (mental & physical health), **Legal**, **Children** & **Social** Services. • **Case Mapping.** • **Document Hub** – **A central document repository** for relevant people to access subject to their access rights • **Task Management** – Central task planning and management for the Investigations team's outreach activities and follow-ups • **Interactive and Intuitive Dashboards** • **Security Measures** - Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking and a range of other custom security measures. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log.

			Technical Qualification and Experience; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Database-driven Web-platform Design & Development • **Witness Intake Form Design** • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.

2018	Women's Bureau
	
	Team Leader and Lead Software Developer
	
	For references:
	Mr. Kalaji Sonko
	Deputy Executive Director
	Tel: +(220) 4228730 / 4201263
			Contract Title – Gender Management Information System & Africa Gender Development Index (AGDI) Reporting Tool **– MoFEA PCU/UNDP**
			
			Description – The Women's Bureau (under the Ministry of Women's Affairs, Children and Social Welfare) needed a **multi-stakeholder** secure and accessible Gender-based Violence Intake System for use by Social Workers, Police etc. to capture and process cases.
			
			The client also required a web-based indicator data collection and reporting tool.
			
			Solution;
			
			• **Digitized Statement Intake Module** including the following tabs;
			  ○ Administrative
			  ○ Biographic Data
			  ○ Incident Details
			  ○ Adversely Mentioned
			• **Case Management** – Create, Search for, and Update Records (including outcome).
			• **Persons Database** – Log of all persons related to cases (from complainants to perpetrators) allowing Granular Filtering to facilitate searches. **All Persons are anonymized** and assigned with **Unique ID**
			• **Record of Services accessed** – **Medical** (mental & physical health), **Legal**, **Children** & **Social** Services.
			• **Interactive Dashboards** to help track key project information with overall visibility to improve and affect evidence-based decision making.
			• **Field/Mobile Data Collection Module** – This application leveraging real-time,

			online/offline technologies, GIS, quantitative and qualitative data, skip logic etc. • **Thematic Areas** – Managing AGDI Thematic Reporting Areas – Edit Indicators, Update Indicator Data and Visualize Reporting • **Document Hub** – **A central document repository** for relevant people to access subject to their access rights • **Security Measures** - Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking and a range of other custom security measures. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualification and Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Database-driven Web-platform Design & Development • Mobile Data Collection Application Design and Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.
2018	Food Safety & Quality Assurance (FSQA) **Team Leader and Lead Software Developer** For references: Name: Mamadou Bah Director General Tel: +(220) 4466797 / 4466855 Email: info@fsqa.gm	The Gambia	**Contract Value – Food Safety Information System** – EU **Description –** The objective was to develop a core system for performing all food safety-related operations in The Gambia. **Solution;** • Tools that the **correct checks and controls** are applied at the **correct time.** • **Digitize licensing and registration** process (workflow). • A mechanism to ensure adequate follow-up by FSQA of non-compliances identified. • A **digital record** of all checks and controls applied. • The basic data for **monitoring the performance** of FSQA and its partner

			stakeholders. • Information on changes in the food safety status of food business operators. • **Form & Checklists** Management. • **Business Status & Edit** Functionality. • Stakeholder/Sector access to FSQA Database. • Summary **Sector Dashboards fully interactive** to help track key project information and affect decision making. • User Creation, Management & Access Control. • Inspection Management & Scheduling. • Reminder & Alerts. • Document Hub & Management. • Import/Upload Function. • Reporting, Data Analytics and Visualization**.** • **Field/Mobile Data Collection Module** – This application leveraging real-time, online/offline technologies, GIS, quantitative and qualitative data, skip logic etc. • **Security Measures** - **Advanced Encryption Standards (AES) & Secure Socket Layer (SSL), IP blocking, Audit Trails** and a range of other custom security measures. • **Admin** – **User and user group management, Access right management** (including access tokens), Device Allocation Log and User Activity Log. **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • Mobile Data Collection Application Design and Development • Database-driven Web-platform Design & Development • **Survey Form Design** • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.

2017	Gambia Bureau of Statistics **Team Leader and Lead Software Developer** For references: Mr. Nyakassi M.B. Sanyang Statistician-General Tel: (+220) 4377847 Email: info@gbos.gov.gm / nmbsanyang71@gmail.com	The Gambia	**Contract Title –** NSS Data Information System **– UNDP** **Description –** The is a **multi-stakeholder** project with the objective of creating a central data storage for all survey data and a data dissemination platform. **Solution;** • **Thematic Areas** – Creating and Managing Thematic Reporting Areas (By Sector) – Edit Indicators, Update Indicator Data and Visualize Reporting • **Data Sharing** – An area **allowing MDAs** to securely share official data with GBOS • **Interactive Dashboards** to highlight key indicators to monitor and track to gain good insights on the information processed to improve decision making. • **Document Hub** – **A central document repository** for public to access and download publication • **Security Measures** - Secure Socket Layer (SSL) and a range of other custom security measures. • **Admin** – User and user group management, Access right management. **Technical Qualifications & Experience**; • Business Process Review & Analysis • Systems Analysis • Functional Specifications Design • **Database Schema Development** • **Mobile Data Collection Application Design** and Development • Database-driven Web-platform Design & Development • User Acceptance Testing • **User Manual Development** • **Training and Capacity Building** • System Deployment & Implementation of Custom Security Measures • Ongoing Support including Updates, Remedial Actions etc.

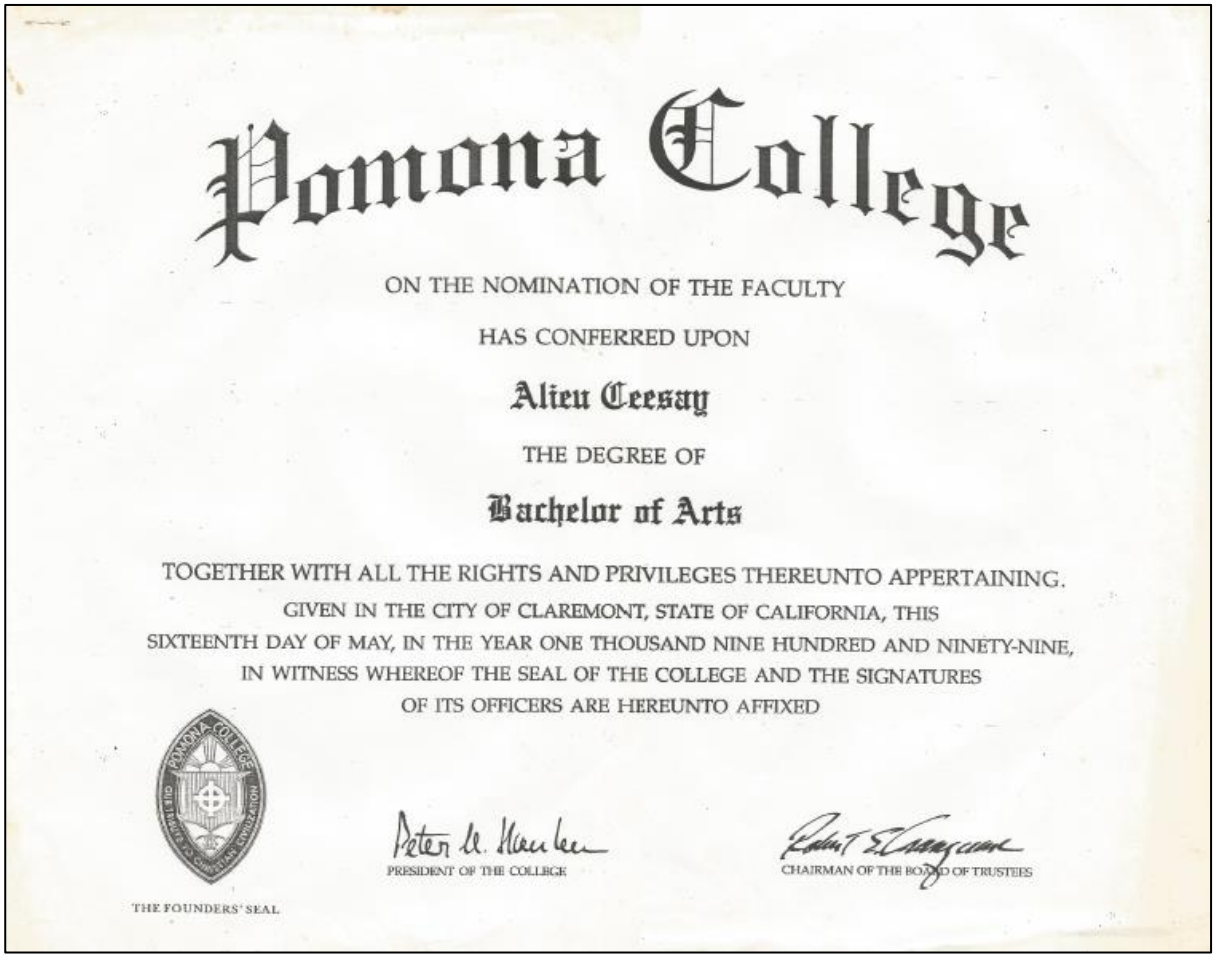
Language skills**: Scale of 1 to 5 (1 - excellent; 5 - basic)**

Language	Reading	Speaking	Writing
English	1	1	1

Contact information

Email : alieu@forte-innovations.com

Phone : (+220) 3417181



Pomona College

ON THE NOMINATION OF THE FACULTY

HAS CONFERRED UPON

Alieu Ceesay

THE DEGREE OF

Bachelor of Arts

TOGETHER WITH ALL THE RIGHTS AND PRIVILEGES THEREUNTO APPERTAINING.
GIVEN IN THE CITY OF CLAREMONT, STATE OF CALIFORNIA, THIS
SIXTEENTH DAY OF MAY, IN THE YEAR ONE THOUSAND NINE HUNDRED AND NINETY-NINE,
IN WITNESS WHEREOF THE SEAL OF THE COLLEGE AND THE SIGNATURES
OF ITS OFFICERS ARE HEREUNTO AFFIXED

THE FOUNDERS' SEAL

PRESIDENT OF THE COLLEGE

CHAIRMAN OF THE BOARD OF TRUSTEES

EXPERT 2 – CURRICULUM VITAE (CV)

Position Title:	**Technical Consultant – IT Information Security Specialist**
Name of Expert:	Ousman Kassama
Date of Birth:	14/10/1988
Country of Citizenship/Residence	The Gambia

Academic Background

Jan 2008 – Dec 2011 **Bachelor's Degree** in Computer Science
University of The Gambia | The Gambia

Aug 2004 – May 2007 **WASSCE Certificate**
Nusrat Senior Secondary School | The Gambia

Professional Experience:

Period	Employing organization	Country	Summary of activities performed
Oct 2016 – to date	Guaranty Trust Bank (Gambia) Limited. **Head – Information Technology Audit**	The Gambia	✓ **Conducting Vulnerability Assessments on Information Technology Systems** ✓ Daily review of system logs and alerts (DAM, IDS and link availability logs). ✓ **Periodic review of IT processes and ensuring security standards are being complied with (PCI-DSS and ISO27001).** ✓ Conducting Income Assurance Reviews and Reports. ✓ Training staff on information security and technology risks ✓ Reviewing Failover and Business Continuity tests. ✓ **Reporting to management and presenting findings and audit recommendations.**
May 2014 – Sep 2016	Guaranty Trust Bank (Gambia) Limited. **Operation Risk Management Officer**	The Gambia	✓Reviewing and updating standard operation procedures. ✓**Preparing reports on the design, adequacy, and operating effectiveness of the system of controls in the Bank.**

			✓ Monitoring and evaluating the Operational Health and Safety standards and making recommendations. ✓ Collate and review Key Risk Indicators and Incident Reports from all units in the Bank ✓ Reviewing the BCP and DRP planning of the Bank. ✓ Part of steering committee for reviewing the Bank's 2016-2021 strategy.
Jul 2013 – May 2014	Access Bank (Gambia) Limited **Information Technology Auditor**	The Gambia	✓ **Liaising with managerial staff and presenting technology audit findings and recommendations.** ✓ Ensuring that the Business Continuity Plan was updated accordingly. ✓ Testing of archived backed up data for integrity. ✓ Checking that financial reports and records are accurate and reliable. ✓ Monitoring and investigating alerts generated by the Database Activity Monitoring tool.
Nov 2012 – June 2013	Access Bank (Gambia) Limited **Compliance Audit and Internal Control**	The Gambia	✓ Reviewing and reporting suspicious transactions. ✓ Conducting Anti Money Laundering and Counter Terrorism Financing trainings. ✓ Monitoring transaction activities of Politically Exposed Persons. ✓ Ensuring procedures, policies, regulations are correctly followed and complied with. ✓ Examining the Bank's accounts and financial control systems. ✓ Handling customer complaints.
Jul 2012 – Oct 2012	Access Bank (Gambia) Limited **E-Business (Internship)**	The Gambia	✓ Driving the usage of Internet Banking and E-Solutions. ✓ Processing Point Of Sale Merchant Acquisition and Registration requests. ✓ Providing Point Of Sale Service Support

Technical and Digital Competence

- **Familiar with SQL, Windows Security, authentication, networking protocols.**
- Advanced computer and database querying skills.
- Very comfortable with Microsoft Office Suite. I gained experience creating complex formulas and templates on Excel while at work.
- Good knowledge of programming languages-HTML, JAVA, PHP, C++, Python.
- Good photo editing skills, familiar with Adobe Photoshop, Picasa and MS Paint.

Membership Groups/Associations

- ISACA Member
  - Being a professional ISACA member gave me access to useful resources, frameworks, trainings and a pathway to gaining globally recognized professional Certifications.
  - Currently pursuing CISA Certification.

- Rotaract Club of Fajara
  - I joined the Rotaract Club as it provided an opportunity for me to join other young enthusiastic people with the aim of addressing the needs and concerns of our community and our world at large.

Language Skills: **Scale of 1 to 5 (1 - excellent; 5 - basic)**

Language	Reading	Speaking	Writing
English	1	1	1

Contact Information:
Email: oskassama@yahoo.com | ousman.kassama@gtbank.com
Phone: +220 7959094

REFERENCES

1. Christopher K. Falana – christopherk.falana@gtbank.com – +220 7720352
2. Paul K. Munashe – munapo@gmail.com – +263 736759959
3. Numo Sanneh – numos@hotmail.com – 220 7470692
4. Prof. Jacques Boillat – jboillat@utg.edu.gm – +220 3100922

EXPERT 3 – CURRICULUM VITAE (CV)

Position Title:	**Technical Consultant – SGBV Expert**
Name of Expert:	Mariama Johm
Country of Citizenship/Residence	The Gambia

Academic Background

June 2021 – Sept. 2021 **Professional** Cookery and Pastry Practical
Gambia Tourism and Hospitality Institute | The Gambia

Sept. 2012 – 2016 **BSc.** Tourism and Hospitality Management
University of The Gambia | The Gambia

July 2011 – Sept. 2011 **French Language Certificate**
Alliance Francaise De banjul| The Gambia

Professional Experience:

Period	Employing organization	Country	Summary of activities performed
Feb. 2018 – to date	Afri Taste **Founder & CEO**	The Gambia	Afri Taste is a fruit, vegetable, nut and cereal processing company in The Gambia. **Activities performed**; ✓ Responsible for the coordination of all activities of the business; ✓ Provide technical support in design and implementation of strategies and activities of the business; ✓ Offer training to staff and partners on entrepreneurship in The Gambia; ✓ Ensure that the business is visible; ✓ Monitor staffs and client's behavior towards the business; ✓ Assist in the production and packing of food products; and ✓ Financing and managing the resources of the business.
Aug. 2021 – Dec. 2021	Ripples Consultancy	The Gambia	This is a consultancy firm that does research on various issues including Gender and development.

	Data Collector & Analyst		**Activities performed**; ✓ Collect data from stakeholders to develop the national policy on Female Genital Mutilation; ✓ Collect data from stakeholders to review the situational analysis of the rights of persons with disability in The Gambia; and ✓ Communicate broadly using bilingual skills to capture diverse data.
Aug. 2021 – to date	Think Young Women **Acting National Coordinator**	The Gambia	Think Young Women (TYW) is a young women led non-profit that promotes girls and women rights against all forms of **sexual and gender based violence** leadership development and empowerment through capacity building, awareness raising, networking and mentorship. **Activities performed**; ✓ Being responsible for developing budgets, proposals, managing grants, project materials, and information; ✓ Hire and manage TYW staff; ✓ Manage implementation of new projects across The Gambia; ✓ Provide technical support in design and implementation of strategies and activities of the organization; ✓ Manage the resources of the organization; ✓ Submit quarterly and annual reports of the organization to donors and partners; and ✓ Serve as a trainer during project implementation on **sexual and gender based violence issues**.
Jun. 2018 – Jan. 2021	Network Against Gender Based Violence (NGBV) **Advocacy & Campaign Officer**	The Gambia	NGBV is a membership based civil society organization established to combat **Gender based Violence** issues in the Gambia. **Activities performed**; ✓ Responsible for the coordination of all advocacy and campaign related activities of all projects; ✓ Provided technical support in design and implementation of advocacy and IEC strategies and activities;

			✓ Designed and implemented activities for the organization; ✓ Ensured NGBV social media pages were regularly updated; ✓ Monitored Projects on women empowerment and child rights; and ✓ Worked with survivors of Gender Based Violence in The Gambia.
Mar. 2017 – May 2018	Think Young Women **Program Officer**	The Gambia	Think Young Women (TYW) is a young women led non-profit that promotes girls and women rights against all forms of **sexual and gender based violence** leadership development and empowerment through capacity building, awareness raising, networking and mentorship. **Activities performed**; ✓ Monitored Projects on women empowerment and child rights in The Gambia; ✓ Mentored young girls in life skills and entrepreneurship; ✓ Managed TYW's social media platforms Twitter and Facebook; and ✓ Planned and executed events including speaker invites, event budget, tracking RSVPs, and work plan for logistics on the day of event.
Aug. 2015 – Dec. 2017	The Child Protection Alliance **Assistant Programing & Admin Officer**	The Gambia	This Organisation focuses solely on child rights promotion and protection in The Gambia. **Activities performed**; ✓ Supported the Program Officer in problem solving and project management; ✓ Assisted in organizing and facilitating meetings, conferences, and other events; and ✓ Represented Child Protection Alliance at events where I would speak or write memos to report back to the Country Director.

Honors & Activities

- Ignite fellow in **Ghana 2022;**
- Member of the Civil Society Regional Reference Group in the spotlight initiative of the UN and EU **2022 to 2023;**
- Runner up at the food and beverage competition **GGCI 2021;**
- Woman of the week by the She Awards **Gambia 2020;**
- Young women Muslim leader by the Ministry of family affairs in **Turkey 2020;**
- 25 Young emerging leaders in Africa by the Moremi Initiative **Ghana 2019;**
- Winner of the food tasting competition of the **Gambia Chamber of Commerce 2019;**
- Winner of the pitching contest of the **Gambia Youth Chamber of Commerce 2018;**
- Speaker at the international Youth Entrepreneurship & Self-Employment Forum in **Dakar 2018;**
- Speaker at the Startup incubator networking event **2018;**
- Award of Service to the **Gambia Tourism Board 2014;** and
- Award of Service, Voice of the young **2011.**

Skills

- Multi-Lingual;
- Microsoft Office;
- G-Suite;
- Social Media;
- Public speaking & advocacy in Sexual and Gender Based Violence and trade

Language Skills: **Scale of 1 to 5 (1 - excellent; 5 - basic)**

Language	Reading	Speaking	Writing
English	1	1	1
French	3	3	3
Wollof	1	1	1
Mandinka	1	1	1

Contact Information:
Email: mariamajohm5@gmail.com
Phone: +220 7837281.

9 – APPENDIX 4 – REFERENCES





NETWORK AGAINST GENDER BASED VIOLENCE
THE GAMBIA
EMAIL:non_genderbased@yahoo.com

NGBV

ADDRESS

C/o ActionAid Building, MDI Road, KM

TO WHOM IT MAY CONCERN

RECOMMENDATION FOR FORTÉ INNOVATIONS':

The Network against Based Violence (NGBV) hereby commend and applaud Forté Innovations' who developed a web-based database system for NGBV that will provide accurate and reliable data on SGBV and serve as a tool for evidence-based advocacy and decision making.

The objectives were:

- To create a secure, user-friendly digital platform that allows for the easy capture of data, query of information, gathered information-sharing protocol, and the ability to produce reports as required;
- To provide encrypted information with the aid of a coding system that is user friendly, secure, confidential and durable.

Forté Innovations' staff were very professional, efficient, flexible and reliable throughout our engagement with them. They were able to deliver a very user friendly system on time with their excellent mentoring and teaching skills demonstrating good working relationships. The new database they built for NGBV is simple, easy and user friendly. It is now functional for months with simple and clear standard operating procedures in both hard and soft copies to guide users. Forte innovations continue to provide technical support in person and remotely.
We are therefore, pleased and honored to recommend Forté Innovations' to any institution, development partner or government institution for any similar software development projects. With Forté Innovations' we are confident that the Gambia will be digitalized, lets support our own to move our country forward.

Yours Sincerely,

Fallu Sowe
National Coordinator-NGBV

Cc: File

TELEPHONE (+220)4398122 | WEBSITE www.networkgbv.org | TWITTER @NgbvTheGambia | FACEBBOOK Network Against Gender Based Violence The Gambia

NO TO SEXUAL AND GENDER BASED VIOLENCE

NETWORK AGAINST GENDER-BASED VIOLENCE – THE GAMBIA
CHAIRPERSON:MARIE ANTIONETTE CORR: (+220)2008904
NATIONAL COORDINATOR: FALLU SOWE: (+220) 9933491/7638129/3453525
PROGRAM MANAGER: HALIMATOU J JESUOROBO: (+220) 7780269/3852085

Reference 1: The Network Against Gender Based Violence



United Nations Development Programme

14 October 2019

To whom it may concern;

Re: Supplier Reference Letter

I am writing to commend the services of Forte Innovations who are currently under contract with the UNDP to build and maintain the Truth, Reconciliation and Reparations Commission's (TRRC) with a Witness Statement Information System.

This contract required them to deliver the system with speed due to the nature of the TRRC proceedings. They have also been required to modularly build the information system, allowing users to use it whilst it was in development. We have received only positive feedback from the beneficiary (TRRC Secretariat) and we have found them to be proactive and professional in their approach to the deliverables of this contract.

In the past, we have contracted them to deliver other similar systems and due to their timely execution of those, we regard them as a reliable supplier to our institution in our quest to support The Government of The Gambia.

If you have any further questions, please feel to contact me.

Yours sincerely,

Ms. Nessie Golakai-Gould

UNDP Deputy Resident Representative

Reference 2: UNDP – TRRC Witness Information System



10th October, 2019

To whom it may concern

Re: Letter of Reference – TRRC Witness Information System & Database

The Truth, Reconciliation and Reparations Commission (TRRC) needed a web-based information management system that is to keep a secure and comprehensive record of all witnesses. The information system would enable it to;

- Create a secure, user-friendly digital platform that allows for the easy capture of complaints and evidence, query of information gathered, and the ability to produce reports as required; and
- Provide encrypted victim information with the aid of a coding system that is user-level based and or on a need-to-know basis.

Having secured funding from UNDP, we contracted Forte Innovations based on demonstrations of similar solutions that they had within their portfolio. TRRC staff worked with Forte to firstly capture our detailed requirements and map out a way forward. These requirements were subsequently developed into working prototypes, demonstrated to our staff and refined. This was crucial because very early on, even before the project completion was due, we were able to secure sensitive witness testimony.

Since the TRRC Witness Statement Information System was completed and officially launched on 11th June 2019, Forte Innovations has continued to support the TRRC and are even developing extra modules not included in the original deliverables which include the psychosocial module and Forte continues to support our system users both on-site and remotely.

They have built an Information System that is fit-for-purpose and will allow the TRRC staff to report on the process once it has been completed and to put together evidence-based recommendations.

I have and continue to be satisfied with Forte Innovations' responsiveness and professionalism and would recommend them for similar projects.

Please do not hesitate to contact me, regarding their service provision for our Secretariat.

Yours sincerely,

Alagie Barrow

Director of Research and Investigations

Truth, Reconciliation and Reparations Commission

Dunes Hotel, Kotu

The Gambia

Reference 3: Truth, Reconciliation and Reparations Commission – Witness Information System

THE REPUBLIC OF THE GAMBIA

Women's Bureau
Ministry of Women, Children and Social Welfare
14/15 Marina Parade
Banjul

TEL NO: 4228730 / 4228733 / 4201263 **FAX NO: 4229846**

RG 156/166/01 PART VII/ (54KS) 10th October 2019

TO WHOM IT MAY CONCERN

Re: Africa Gender Development Index Reporting & Gender-based Violence Intake Form

Forté Innovations was contracted after a tender process to develop a gender-management information system and a reporting tool to facilitate tracking and reporting on The Gambia's performance against Africa Gender Development Index (AGDI) indicators. The project had been initiated a few years earlier but encountered challenges meaning that the Bureau did not have a system that was fit for purpose.

The system and deliverables included;

- A digital Gender-based Violence (GBV) intake form to allow police and social workers to capture GBV cases for investigations and referrals **(not in scope)**
- Indicator management & reporting including NDP, SDG and Agenda 2030 indicators
- Collection of indicator data from sectors and population of reporting module
- Project management area for Gender-related initiatives **(not in scope)**
- User training accompanied by a user manual

Forté Innovations was able to deliver the completed system within the contracted 3-month period and train users including police, social welfare, Women's Bureau staff and other stakeholders. Forté Innovations also hired a specialist that supported them with the development of the system, in particular the GBV form and the definition of the associated indicators. This resulted in a system that ensured that as part of our operations, our stakeholders were able to collect data that would facilitate our reporting against the Bureau's NDP, SDG and Agenda 2030 indicators.

Due to equipment procurement delays, the system was not launched as planned in November 2018. Forté Innovations was very accommodating in not only agreeing to retrain our staff and stakeholders but also re-hire and fly their specialist back from Ghana, at no cost to the Bureau or the sponsor (UNDP). This took place in February 2019.

We were very impressed with Forté Innovations as consultants as they delivered beyond what was required of them both in terms of system development and post-contract fulfillment. Forté Innovations not only helped us overcome a major challenge we had been facing for more than 3 years, but also continue to support with system demonstrations and sensitization activities with wider stakeholders.

I am happy to recommend Forté Innovations as a fantastic partner for custom software solutions.

Yours sincerely

WOMEN'S BUREAU SIGN ..... DATE 10/10/2019 EXECUTIVE DIRECTOR

MR. KAJALI SONKO
Deputy Executive Director

Cc: Permanent Secretary, MoWCSW

Reference 4: Women's Bureau

***** OTHER REFERENCES AVAILABLE ON REQUEST**

10 – APPENDIX 5 – LEGAL DOCUMENTS




GCCI

Gambia Chamber of Commerce and Industry

Certificate of Membership

Company: Forte Innovations Ltd

Owner / Manager: Forte Innovations Ltd

Legal Status: Ltd. Liability Company

Business Activity: Software Development +Consultancy

Business Registration #: 1720053132

GCCI Registration #: 01629

Membership Status: Small Business

Date of Registration with GCCI: May 12, 2022

Valid From: Jan 1, 2022 **To:** Dec 31, 2022

President

Chief Executive

Promoting Enterprise Growth and Sustainable Development

GCCI CERTIFICATE NO.2022/

Document 1: GCCI Certificate



THE GAMBIA

SRN: 1720053132

Form SWR3

Certificate of Business Registration

Is hereby granted to the under mentioned to carry on business in The Gambia

Nationality of owner of business or in the case of company, country of Incorporation The Gambia

Name of Business **FORTE INNOVATIONS Limited**

Type of Business **GENERAL TRADING, DESIGNERS, DEALERS IN ALL KINDS OF COMPUTER HARDWARE & SOFTWARE, COMPUTER TECHNOLOGY & PRODUCTS & CONSULTANCY SERVICES**

Place of Business **2 GOLF COURSE LAYOUT, Fajara, BAKAU, KANIFING MUNICIPALITY, THE GAMBIA**

GIVEN UNDER THE SEAL OF THIS OFFICE
THIS 31st day of March 2017

Registrar of Companies

Document 2: Certificate of Business Registration


Certificate No: 0024/2022 Supplier No: 3123

Gambia Public Procurement Authority

Value for Money in Public Procurement

GAMBIA PUBLIC PROCUREMENT ACT 2014

Certificate of Supplier / Contractor Registration

FORTE INNOVATION LIMITED

Is registered with the Gambia Public Procurement Authority for the year 2022.

Type of Business: **CONSULTANCY & GOODS ONLY**

This certificate is valid until the 31st day of December 2022.

Given under my hand this 5th January, 2022

ISSUING OFFICER

DIRECTOR GENERAL

Document 3: GPPA Certificate 2022



GAMBIA REVENUE AUTHORITY

TAXPAYER IDENTIFICATION NUMBER (TIN) CERTIFICATE

ISSUE OFFICE: KANIFING TIN: 1720053132

NAME: FORTE INNOVATIONS LIMITED

REGISTRATIO N DATE Thursday, March 30, 2017

PHYSICAL ADDRESS: 2 FAJARA GOLF COURSE

POSTAL ADDRESS: N/A

This certificate is issued pursuant to the Taxpayer Identification Number Act, 1994 and pursuant further to Part VII Section 194(3) and 195(2) of the Income & Sales Tax Act No. 19, of 2004.

GAMBIA REVENUE AUTHORITY LTU KANIFING TAX OFFICE

Commissioner General

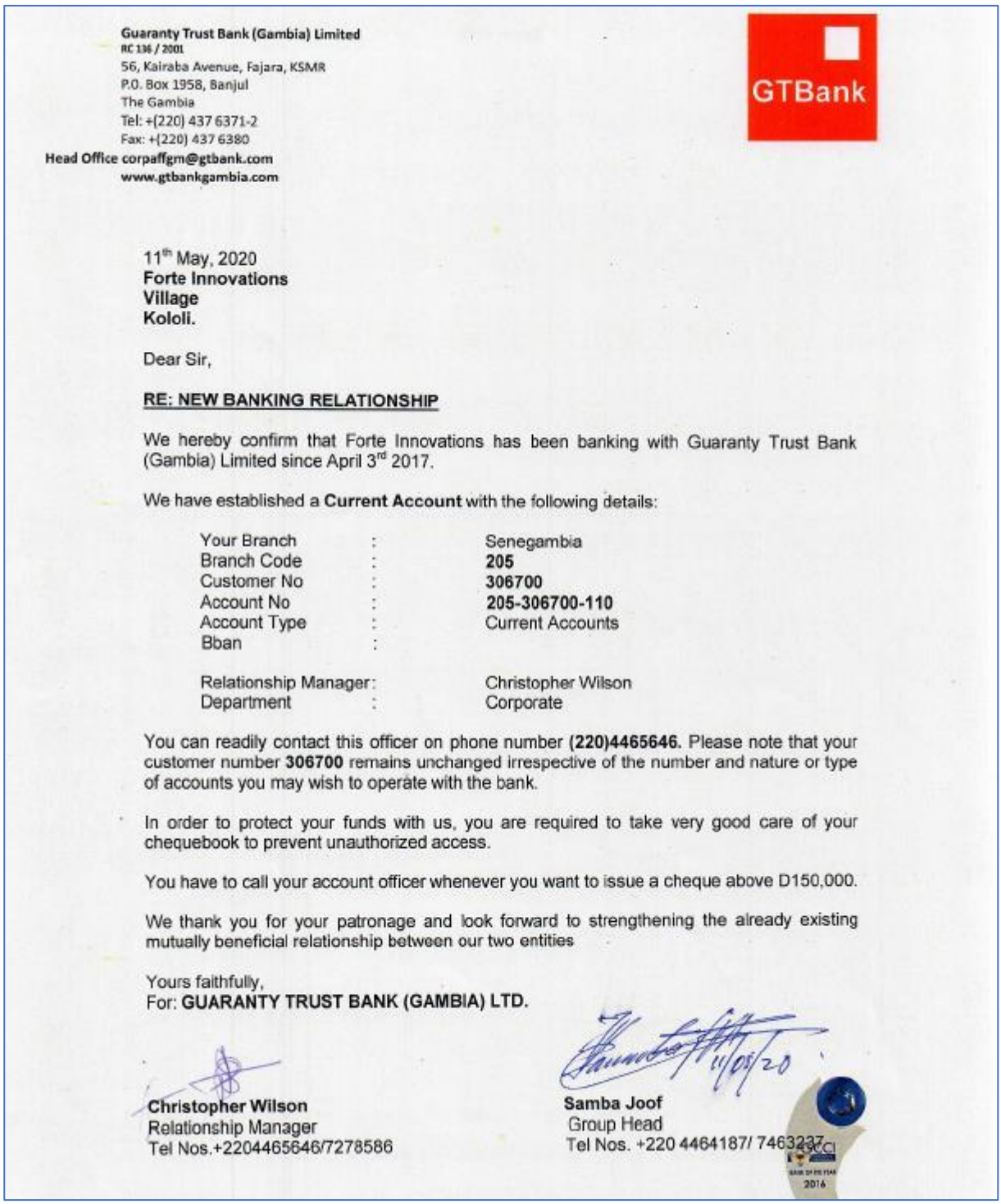
Issue Date 30 March 2017

Note: This Certificate is not a Tax Clearance Certificate

Document 4: TIN Certificate

11 – APPENDIX 6 – BANK REFERENCE





Guaranty Trust Bank (Gambia) Limited
RC 136 / 2001
56, Kairaba Avenue, Fajara, KSMR
P.O. Box 1958, Banjul
The Gambia
Tel: +(220) 437 6371-2
Fax: +(220) 437 6380
Head Office corpaffgm@gtbank.com
www.gtbankgambia.com

GTBank

11th May, 2020
Forte Innovations
Village
Kololi.

Dear Sir,

RE: NEW BANKING RELATIONSHIP

We hereby confirm that Forte Innovations has been banking with Guaranty Trust Bank (Gambia) Limited since April 3rd 2017.

We have established a **Current Account** with the following details:

Your Branch	:	Senegambia
Branch Code	:	**205**
Customer No	:	**306700**
Account No	:	**205-306700-110**
Account Type	:	Current Accounts
Bban	:	
Relationship Manager	:	Christopher Wilson
Department	:	Corporate

You can readily contact this officer on phone number **(220)4465646.** Please note that your customer number **306700** remains unchanged irrespective of the number and nature or type of accounts you may wish to operate with the bank.

In order to protect your funds with us, you are required to take very good care of your chequebook to prevent unauthorized access.

You have to call your account officer whenever you want to issue a cheque above D150,000.

We thank you for your patronage and look forward to strengthening the already existing mutually beneficial relationship between our two entities

Yours faithfully,
For: **GUARANTY TRUST BANK (GAMBIA) LTD.**

11/05/20

Christopher Wilson
Relationship Manager
Tel Nos.+2204465646/7278586

Samba Joof
Group Head
Tel Nos. +220 4464187/ 7463237

Bank Reference: GT Bank

THANK YOU!

Forté Innovations Ltd.

E104 The Village,
Bertil Harding Highway, KMC
The Gambia

708-1212 / 398-1212

info@forte-innovations.com