



**الملحق رقم (11): المواصفات الفنية
لصيانة وتأهيل وإعادة كتابة برامج الصندوق الوطني للضمان الإجتماعي**

NATIONAL SOCIAL SECURITY FUND (NSSF)

**MAINTENANCE, REHABILITATION AND REWRITING OF THE NSSF
SOFTWARE APPLICATIONS**

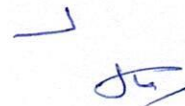
ANNEX 11 – TECHNICAL REQUIREMENTS

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ACRONYMS

Term	Description
BC	Business Continuity
BCP	Business Continuity Plan
BRD	Business Requirements Document
DMS	Document Management System
DR	Disaster Recovery
DRS	Disaster Recovery Site
DRP	Disaster Recovery Plan
FTP	Functional Testing Plan
ICT	Information and Communication Technology
LAN	Local Area Network
MIS	Management Information System
NSSF	National Social Security Fund
RISKM	Risk Management
TAD	Technical Architecture Document
TDD	Technical Design Document
TTP	Technical Testing Plan
UAT	User Acceptance Testing
WAN	Wide Area Network
WMS	Workflow Management System

1. INTRODUCTION

This document aims to describe the technical requirements for the maintenance, rehabilitation and rewriting of the NSSF Software Applications.

2. PROJECT OBJECTIVES

The objectives of this project are:

- **Handover at the beginning of the contract between the NSSF and the Company.**
- **Operate and manage the existing applications and infrastructure:**
 - Operate, monitor, and manage the current infrastructure.
 - Maintain the current Software Applications (Headquarter and Branches).
 - Ensure the Level 2 and Level 3 Support for the **NSSF IT Support Team**.
 - Train and handover continuously to the NSSF IT Teams. The Company can assign tasks to the NSSF IT Teams members to perform tasks.
- **Design the future software applications (Headquarter and Branches):**
 - Assess the functional scope and the technical architecture of the existing Software Applications currently used by the NSSF Headquarter and by the NSSF Branches.
 - Assess the new needs of the end users based on their experience with the current Software Applications.
 - Define the Functional Requirements of the future Software Applications based on the assessment of the existing and the gap analysis resulted from the end users' needs assessment.
 - Design of the Technical Architecture of the future Software Applications based on the following requirements:
 - Unified technical environment.
 - Unified and reliable applicative security.
 - Unified Integration between different modules.
 - Unified Integration between external stakeholders and the NSSF.
 - Unified and dynamic reporting.
 - Digital Services Readiness through secure APIs.
 - Specify the required infrastructure for the deployment of the future Software Applications.
 - Define a detailed implementation plan of future Software Applications.



- **Implement the future software applications (Headquarter and Branches):**
 - Develop and test the new Software Applications based on their Design.
 - Produce all deliverables of the new Software Applications.
 - Prepare needed environments for the acceptance by the NSSF.
 - Fix all defects during the acceptance.
- **Deploy the future software applications (Headquarter and Branches):**
 - Prepare the production environment (to be purchased by the NSSF based on the technical specification provided by the Company).
 - Deploy the new Software Applications on the production environment.
- **Migrate the data from the current to the new Software Applications.**
- **Manage the change for the new Software Applications:**
 - Plan for change.
 - Organize awareness sessions for the decision makers.
 - Communicate with all stakeholders about their roles in this change.
 - Train all stakeholders (managers, end users, functional administrators, technical administrators).
 - Onsite support for users during three months after the deployment of the new Software Applications.
- **Handover at the end of the contract between the Company and the NSSF.**



3. NSSF PRESENTATION

يتولى الصندوق الوطني للضمان الإجتماعي إدارة نظام الضمان الاجتماعي ومختلف فروعته:

- ضمان المرض والأمومة.
- نظام التقديرات العائلية (والتعليمية).
- نظام تعويض نهاية الخدمة.

وذلك للأجراء (عمال ومستخدمون)، الدائمون والمؤقتون، والمتمرنون والموسميون، والمتدربون الذين يعملون لحساب رب عمل واحد أو أكثر، لبنانيون أو أجانب.

بعض الإحصاءات:

- عدد المضمومين ~ 660 ألف أجير – (لبناني أو أجنبي).
- عدد المستفيدين على العائق ~ 823 ألف مستفيد (الأهل، الأولاد، زوج / زوجة).
- عدد المؤسسات المسجلة في الصندوق ~ 54 ألف.
- عدد المؤسسات والهيئات الصحية المتعاقدة مع الصندوق ~ 18 ألف.
- عدد المراكز: 40.

The NSSF has three IT Teams:

- **NSSF IT Support Team:** in charge of end-users' 1st level technical support in the branches and the headquarter.
- **NSSF IT Infrastructure Team:** in charge of systems and network infrastructure 1st level trouble shooting and support.
- **NSSF IT Development Team :** in charge of developing new queries and reports.

4. SCOPE OF WORK

The scope of work is defined with four phases:

Phase 01 – Handover from the NSSF to the Company:

- This phase is needed if, at the beginning of the contract, the selected supplier is different than the last supplier ensuring the applications and infrastructure operations.

Phase 02 – Operate, Maintain and Manage the existing applications and Infrastructure:

- See Annex 01 – List of Existing Headquarter Applications.
- See Annex 02 – List of Existing Branches Applications.
- See Annex 03 – List of Existing Infrastructure Components.
- The Informative and Transactional NSSF Website after its acceptance (this website is under implementation).
- Any new designed, implemented, and deployed application during the contract.
- Any new extended infrastructure components during the contract.

Phase 03 – Design, Implement, and Deploy new software applications:

- Re-design and Re-implement, and Re-deploy the existing software applications:
 - See Annex 01 – List of NSSF Headquarter Software Applications.
 - See Annex 02 – List of NSSF Branches Software Applications.
- Design, Implement, and Deploy new software application:
 - See Annex 04 – List of New Software Applications to be Implemented.
- Specify the needed infrastructure to run the new software applications.

Phase 04 – Handover from the Company to the NSSF:

- This phase is needed if, at the end of the contract, a new team and/or new supplier is selected by the NSSF to continue the applications and infrastructure operations.

Preliminary Planning:

	Year 01												Year 02												Year 03												
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
Phase 01 – Handover from the NSSF to the Company																																					
Phase 02 – Operate, Maintain and Manage the existing applications and Infrastructure	Infrastructure and Applications Operations (including new deployed applications and new infrastructure components)																																				
Phase 03 – Design, Implement, and Deploy new software applications	Design, Implementation, Data Migration, UAT, and Live																								Support and Enhancements												
Phase 04 – Handover from the Company to the NSSF																																					

5. PHASE 01 – HANDOVER FROM THE NSSF TO THE COMPANY

Definition:

- Develop and execute a handover plan to ensure the success of the transition between the NSSF and the Company. The following elements should be handed over:
 - Applications and programs (source code and documentation).
 - Current architecture and topology.
 - Hardware and equipment inventory.

Main Tasks:

- Assign the needed resources from the NSSF or from a delegated third party to participate to the handover phase at the beginning of the contract.
- Develop the handover plan between the NSSF team and the Company team.
- Execute all tasks of the handover plan and finalize them with the signature of both parties.

Deliverables:

- Handover Plan.
- Handover Acceptance Sheets.

Required Service Level Agreements:

- Availability of the Transition Team from the NSSF and the Company.

Acceptance:

- Handover Acceptance Sheets Signed by both parties.



6. PHASE 02 – OPERATE, MAINTAIN AND MANAGE THE EXISTING APPLICATIONS AND INFRASTRUCTURE

6.1 INFRASTRUCTURE OPERATIONS

6.1.1 INTRODUCTION

The main objectives of the infrastructure operations component of this TOR are to maintain the current NSSF information systems operational as per the business and regulatory requirements in a secure way by preserving information confidentiality, integrity, and availability.

The below paragraphs will provide some key requirements without being an exhaustive list.

In brief, the Company will be in charge and responsible of the whole information systems of NSSF.

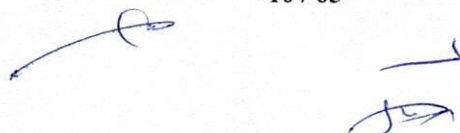
6.1.2 SYSTEM ADMINISTRATION

Definition:

- Operating, configuring, maintaining, and managing all servers, storage, and network equipment.

Main Tasks:

- Work continuously on monitoring the performance of systems and devices by implementing adequate monitoring tools.
- Conducting tests on them regularly for a health check process.
- Fixing the issues in cases of poor performance, work pressure or poor load distribution of loads and discussing the proposed solutions with the NSSF management.
- Implementing security procedure to prevent, detect, and correct the spread of malwares on all servers and workstations.
- Maintaining all systems updated, mainly with latest security patches.
- Allocating and managing mass storage space.
- Address all system incidents and fix them as per business criticality requirements.
- Manage and maintain users on systems (Active Directory, etc.). Only active NSSF employees and authorized persons should be enabled; no generic users to be defined, default users to be changed, etc.
- Enable, monitor, and review the systems log files.



- Acting as second support level when requested by the **NSSF IT Support Team** and **NSSF IT Infrastructure Team**.

Deliverables:

- Monthly report with the different indicators and accomplished tasks.

Required Service Level Agreements:

Indicator	SLA
Applications Indicators	
Number of applications unavailability 24/7	<= 1
Application Availability Incident Mean Time to Resolve	30 minutes
SAN Storage Indicators	
SAN Failover RTO (Recovery Time Objective) – Waiting Time	<= one minute
SAN Failover RPO (Recovery Point Objective) – Data Loss	0
Database Indicators	
Number of Unsuccessful Database Backup per month	0
Number of Database Unavailability per month	0
Power Indicators	
Number of Power Supply Unavailability – Main Data Center	0
Number of Power Supply Unavailability – Secondary Data Center	<= 1

Acceptance:

- Monthly acceptance of submitted report based on Service Level Agreements.

6.1.3 NETWORK ADMINISTRATION**Definition:**

- Operating, configuring, maintaining, and improving the network infrastructure (WAN and LANs) and active components.

Main Tasks:

- Administration of key components of the network infrastructure (routers, switches, network segmentation, performance management, remote access, firewalls, IPSs, etc.).
- Ensuring that links between NSSF branches and headquarter are functioning correctly.
- Ensuring that links are secure and reliable.
- Maintain redundancy of links where redundant links exist.

- Maintain a reliable and secure Internet connection to safeguard NSSF information systems from any malware, hacking, unauthorized access, etc.
- Provide Internet connections only to authorized persons.
- Update the configuration of the routers, switches, firewalls, etc. as per the business needs.
- Close unnecessary ports to prevent from any unauthorized access.
- Maintain all network and security components updated with latest signatures and security patches, including anti-malware tools.
- Manage administrators accessing the components.
- Address all network incidents and fix them as per business criticality requirements.
- Ensuring that backups of the system are occurring.
- Acting as second support level when requested by the **NSSF IT Support Team** and **NSSF IT Infrastructure Team**.

Deliverables:

- Monthly report with the different indicators and accomplished tasks.

Required Service Level Agreements:

Indicator	SLA
Network Indicators	
Number of Network Incidents per Month	≤ 1
Network Incident Mean Time to Resolve	30 minutes

Acceptance:

- Monthly acceptance of the report based on Service Level Agreement.

6.1.4 DATABASE ADMINISTRATION**Definition:**

- Definition, configuration, monitoring and maintenance of the data structures in the corporate database systems.

Main Tasks:

- Specifying the physical data definition.
- Changing the physical data definition to improve performance and optimize databases.

- Implementing database definition controls, access controls, update controls and concurrency controls.
- Implementing security controls to prevent unauthorized access to the databases by back doors or direct access to the tables and data.
- Monitoring database usage, collecting performance statistics and tuning the database.
- Maintaining, securing, and reviewing databases log files, mainly to monitor administrators' access and any suspicious and abnormal activities.
- Address all databases incidents and fix them as per business criticality requirements.
- Defining and initiating backup and recovery procedures.
- Acting as second support level when requested by the **NSSF IT Support Team** and **NSSF IT Infrastructure Team**.

Deliverables:

- Monthly report with the different indicators and accomplished tasks.

Required Service Level Agreements:

Indicator	SLA
Database unavailability duration per month	0
Database security compliance	0
Success of restore database testing (at least one test per year)	All

Acceptance:

- Monthly acceptance of the report based on Service Level Agreements.

6.1.5 BACKUP, BUSINESS CONTINUITY, AND DISASTER RECOVERY**Definition:**

- Ensure the backup of data and all servers and equipment.
- Ensure the continuity of service (infrastructure and applications).
- Ensure the continuity of service during incidents and disasters.

Main Tasks:




- **Backup:**
 - Ensure daily backup of all databases, systems, and network equipment.
 - Ensure weekly backup of all applications, including source code.



- Ensure monthly backup of systems state.
- Ensure that the backup will allow complete systems recovery in case of major disaster.
- Follow the existing backup process.
- Suggest new improvements of existing processes and procedures.
- Ensure that backup media are stored in secure off-site locations.
- Raise any risks, issues, or problems encountered during backups with suggested solutions.
- Restore periodically databases to ensure the effectiveness of the backup procedure.
- **Local High-Availability:**
 - Ensure the availability of the two existing data centers in the main location with proper replication between them.
 - Suggest new improvements for the existing data centers.
 - Raise any risks, issues, or problems encountered during backups with suggested solutions.
 - Test periodically the failover of the main data center to the secondary data center to ensure the effectiveness of the business continuity procedure. Test also the fall back from the secondary to the main data center.
- **Disaster Recovery:**
 - Ensure the availability of databases and the continuity of all network equipment and applications during disasters.
 - Ensure the availability of the Disaster Recovery Site.
 - Suggest new improvements of existing Disaster Recovery Site.
 - Raise any risks, issues, or problems encountered during backups with suggested solutions.
 - Simulate periodically the Disaster Recovery (at least twice per year) to ensure the effectiveness of the Disaster Recovery procedure. Fail-over and fall back are to be tested between the main data center and the disaster recovery site. Connectivity between the branches and the disaster recovery site are to be tested as well.

Deliverables:

- Monthly report with the different indicators and accomplished tasks.



Required Service Level Agreements:

Indicator	SLA
Backup completeness per day	All
Business Continuity completeness per test	All
Disaster Recovery completeness per simulation	All

Acceptance:

- Monthly acceptance of the report based on Service Level Agreements.

6.1.6 NSSF WARRANTY AND SUPPORT CONTRACTS MANAGEMENT**Definition:**

- The monitoring and control of existing warranties, supports contracts and SLAs is under the responsibility of the **NSSF IT Infrastructure Team**. The contracts cover hardware, network equipment, security tools, software licenses, and subscriptions, etc.

Main Tasks:

- The Company must coordinate with the **NSSF IT Infrastructure Team** for any infrastructure purchase.
- Recommend to the **NSSF IT Infrastructure Team** renewal or new contracts.
- Review the terms and conditions of all existing and new contracts.
- Recommend possible improvements.

Acceptance:

- Monthly report about the services performed by the **NSSF IT Infrastructure Team**.

6.2 SOFTWARE APPLICATIONS MAINTENANCE**Definition:**

- Responds to functional defects and needs for functional enhancements.
- Ensure a single point of contact for the NSSF Directorates.

Main Tasks:

- Log the request.
- Qualify the request and its priority.
- Analyze and resolve the request.

- Communicate the solution to the focal point for testing.
- Deploy the resolution when the focal point validates the correction.
- Close the request.

Requested SLAs based on KPIs:

Response Time	Priorities			
Category	P1	P2	P3	P4
Request for Information	One business day	Two business days	Three business days	Four business days
Request for Bug Fixing	One business hour	Two business hours	One business day	Three business days
Request for Enhancement	One business day	Two business days	Three business days	Four business days
Request for Authorization and Access	One business hour	Two business hours	One business day	Two business days

Resolution time	Priorities			
Category	P1	P2	P3	P4
Request for Information	One business day	Two business days	Three business days	Five business days
Request for Bug Fixing	Two business hours	Five business hours	Two business days	Five business days
Request for Enhancement	One business day	Two business days	Three business days	Five business days
Request for Authorization and Access (Applications)	Four business hours	One business day	Three business days	Seven business days

Acceptance:

- Monthly acceptance based on Service Level Agreements.

6.3 LEVEL 2 AND LEVEL 3 SUPPORT

Definition:

- Responds to technical questions and problems faced by **NSSF IT Support Team**.
- Ensure a single point of contact for the **NSSF IT Support Team**.

Main Tasks:

- Register the call and log the request.

- Qualify the request and its priority.
- Analyze and resolve the request.
- Communicate the solution to the **NSSF IT Support Team**.
- Close the request.

Deliverables:

- Monthly report with the different indicators.

Requested SLAs based on KPIs:

Response Time	Priorities			
Category	P1	P2	P3	P4
Request for Information	One business day	Two business days	Three business days	Four business days
Request for Technical Assistance	One business hour	Two business hours	Three business hours	One business day
Request for Authorization and Access	One business hour	Two business hours	One business day	Two business days

Resolution time	Priorities			
Category	P1	P2	P3	P4
Request for Information	One business day	Two business days	Three business days	Five business days
Request for Technical Assistance (System and Network)	Two business hours	One business day	Three business days	Five business days
Request for Technical Assistance (Hardware)	Two business hours	One business day	Three business days	Five business days
Request for Technical Assistance (Applications)	Two business hours	Five business hours	Two business days	Five business days
Request for Authorization and Access (System and Network)	Four business hours	One business day	Two business days	Five business days
Request for Authorization and Access (Applications)	Four business hours	One business day	Three business days	Seven business days

Acceptance:

- Monthly acceptance based on Service Level Agreements.

6.4 TRAINING AND CONTINUOUS HANOVER TO THE NSSF IT TEAM

Definition:

- Responds to technical questions and problems faced by **NSSF IT Teams (Infrastructure, Development, and Support)**.
- Ensure up to **three days** full time equivalent of training and continuous handover **per month**.
- Ensure a single point of contact for each team.

Main Tasks:

- Log the request.
- Qualify the request and its priority.
- Prepare the training materials.
- Plan the training sessions.
- Train the team members with attendance sheets and evaluation forms.
- Close the request.

Deliverables:

- Training Materials.
- Attendance Sheets.
- Evaluation Forms.

Required Service Level Agreements:

- Evaluation should be more than 70% of satisfaction.

Acceptance:

- Based on deliverables and training evaluations.



7. PHASE 03 – DESIGN, IMPLEMENT, AND DEPLOY NEW SOFTWARE APPLICATIONS

7.1 INTRODUCTION

The purpose of the new applications is not to develop the same existing programs 1 to 1 but develop an integrated global application including the current functions, adding the missing ones, capable of future expansion, to be integrated with the e-services.

The Phase 2 and Phase 3 are to be conducted in parallel and should start at the same time.

7.2 IMPLEMENTATION PLAN

Definition:

- The Company must prepare an implementation plan of existing and future applications for the first two years (in parallel of the Phase 02).

Main Tasks:

- Make a global assessment of the existing and future applications to be designed and implemented.
- Define the sequence of the applications to be designed, implemented, and deployed based on different criteria: their priorities, their technical feasibility, and their ease of integration with the existing.
- Prepare a detailed planning of the implementation of existing and future applications.
- Each implementation phase should be defined with the following:
 - List of application to be designed, implemented, and deployed during this phase.
 - Duration of the needs assessment and business requirements.
 - Duration of the solution design and technical architecture.
 - Duration of the implementation and the data migration.
 - Duration of the UAT (User Acceptance Testing) with Parallel Run.
 - Duration of the Change Management activities.
 - Milestone of the availability of the application on Live environment.

Deliverables:

- Implementation Plan.



Acceptance:

- Validation of the Implementation Plan by all NSSF.

Note: The following activities must be performed by the company for each phase of the Implementation Plan:

7.3 NEEDS ASSESSMENT AND BUSINESS REQUIREMENTS

Definition:

- The Company must perform a needs assessment for the different NSSF Directorates to better understand the gap between the existing functionalities supported by the current applications and the end users' needs. The Company must re-build the existing applications based on the needs assessment (**not rewrite them with their current scope**).

Business Objectives:

- Increased productivity and reduction in processing time in the delivery of NSSF services.
- Realized predictable service quality levels through enhanced efficiency.
- Freed up NSSF employees from excessive manual processing to shift their focus on the core of their responsibilities to attain citizens' and businesses' satisfaction.
- More consistent NSSF processes and operating procedures through automation to pave the way to ease inter-partners electronic correspondences.
- Life made as least difficult as possible for citizens and businesses.
- Take on consideration the e-services to be implemented during the near future.

Main Tasks:

- Assess the needs of the end users in the NSSF Headquarter and the NSSF Branches.
- Define all business processes and all administrative procedures that will be automated by the System. Each business process and/or administrative procedure should be approved by the NSSF.
- Define, for each business process and/or administrative procedure, the following:
 - Steps and involved actors needed for procedures related to the workflows, the input forms, the output documents, and the applied policies and business rules in each task in the procedure.
 - Forms to be filled out and document created and/or submitted.
 - Required integration with existing applications or other procedures.