National Single Window Blueprint
for
MONTENEGRO

Executive Summary

December 2022

IFC International Finance Corporation
WORLD BANK GROUP
Creating Markets, Creating Opportunities

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This report has been prepared by the IFC team assigned to support the Ministry of Finance in developing a Blueprint for the Montenegro National Single Window (NSW). The IFC would like to acknowledge the support of the involved government and private sector stakeholders that participated in the preparation activities.

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Acronyms and Abbreviations

Acronym or Abbreviation	Description
BPA	Business Process Analyses
BPR	Business Process Re-engineering
CIS	Customs Information System
FSVPA	Directorate for Food Safety, Veterinary and Phytosanitary Affairs
GoM	Government of Montenegro
G2G	Government-to-Government
G2B	Government-to-Business.
LCPO(s)	License(s), Certificate(s), Permit(s) and Other authorization(s)
MASP	Multi-Annual Strategic Plan
NCTS	New Computerized Transit System (NCTS)
NSW	National Single Window
PMO	Project Management Office
PMQA	Project Management and Quality Assurance
RCAM	Revenue and Customs Administration of Montenegro
SAN	Storage Area Network
SEED	System of Electronic Exchange of Data
SWIF	Single Window Implementation Framework
UCC	Union Customs Code
UNCEFACT	United Nations Centre for Trade Facilitation and Electronic Business
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
WTO TFA	World Trade Organization Trade Facilitation Agreement

Preface

This Annex forms an integral part of a set of documents which, taken together, constitute the ***Blueprint for the Implementation of the National Single Window (NSW) of Montenegro.***

The complete set of documents comprises the following components and constitute the **framework of an NSW implementation project**:

1) Annex 1 – Vision
2) Annex 2 – Strategy
3) Annex 3 – Governance and Operational Model
4) Annex 4 – Legal Basis
5) Annex 5 – Functional Model, Business Process Analysis and Business Process Re-Engineering
6) Annex 6 – Functional and Technical Architecture
7) Annex 7 – Financial Model
8) Annex 8 – Harmonized Data Model
9) Annex 9 – Risk Management Model
10) Annex 10 – Change Management, Capacity Building and Communications
11) Annex 11 – Implementation Plan
12) **Annex 12 – Executive Summary**

1. Executive Summary

1.1 Introduction

The Government of Montenegro (GoM) plans to implement a National Single Window (NSW) to facilitate international trade and economic growth. The introduction of an NSW is encouraged under the World Trade Organization's Trade Facilitation Agreement, which Montenegro ratified in 2016 and which entered into force in 2017. The development of a regional NSW is also an ongoing initiative in the European Union.

To help the Government realize this plan, the International Finance Corporation (IFC) provided technical assistance under the Multi-Donor Trust Fund for Trade by engaging a team of experts to develop a Blueprint for the development and implementation of an NSW of Montenegro.

The Blueprint comprises an illustration of the components for an NSW implementation program as applicable to the circumstances of Montenegro. The components are based on key decisions elaborated through consultation with the stakeholders and are in line with their vision for the NSW, which is for a paperless, electronic, online facility that will facilitate trade by reducing the cost, time and effort of fulfilling regulatory requirements for import and export.

The Blueprint sets out all the key decisions to be made by the stakeholders in relation to the establishment of an NSW and provides guidelines as to how to implement them. The detailed analysis and recommendations with regard to the decisions are provided in the related Annexes. This document, together with the Annexes, represents the **Blueprint for the Implementation of a National Single Window in Montenegro.**

1.2 Background

1.2.1 The Single Window Concept

Trade facilitation is about cutting red tape in international trade. Within contemporary trade policy, the National Single Window concept is generally considered to be one of the more ambitious trade facilitation measures and aims to improve the performance of border agencies, including their ability to better control goods. The Single Window also aims to significantly reduce the costs of compliance for all businesses involved in the cross-border trade of goods.

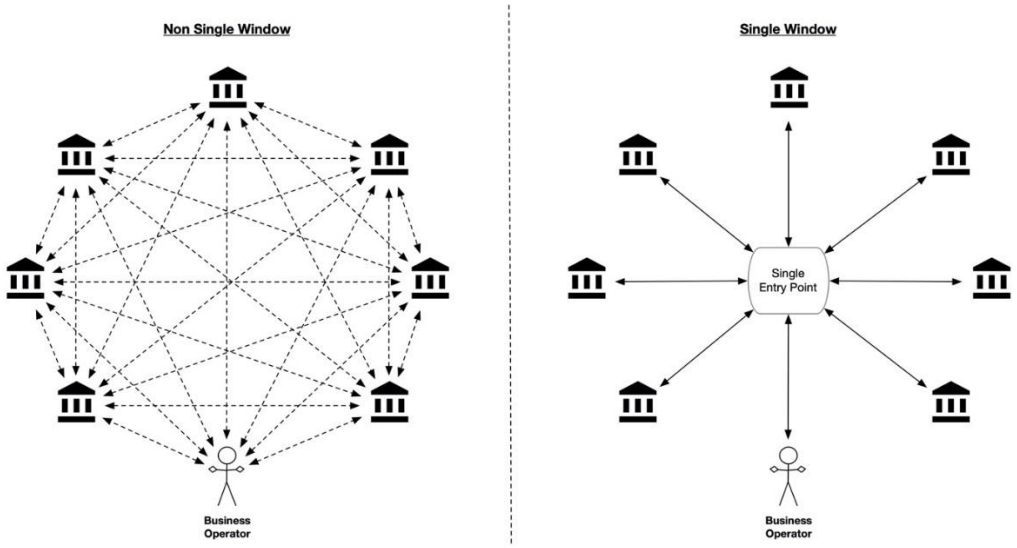
Defined within the UNCEFACT Recommendation No. 33[1], a Single Window "... *allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfil all*

[1] UNCEFACT Recommendation No. 33: Recommendation and Guidelines on Establishing a Single Window (2020).

import, export, and transit-related regulatory requirements. Individual data elements should only be submitted once electronically".

The list of all parties, often referred to as stakeholders, – as highlighted in the UNCEFACT Recommendation No. 33 – is extensive. The single entry point serves as a hub through which the stakeholders can receive and exchange all required information for a particular trade transaction. This is preferable to more traditional non-single window environments where information is shared directly with each involved stakeholder and where the opportunity to explore streamlined processes, eliminate duplicate information requests, and retain data for repeat use (e.g. authorization numbers, permits and licenses) is limited.

Figure 1: Illustrative comparison of non-Single Window arrangements with that of a Single Window operating through one single point of entry – Source: UNCEFACT Recommendation No. 33



1.2.2 EU Single Window initiative

The EU proposal for establishing the EU Single Window Environment makes it mandatory for member states to exchange electronic information on regulatory formalities. The proposal also sets out the provisions for an electronic NSW, which will be linked to the EU Regional Single Window Environment and provides a single communication channel with which economic operators fulfil the relevant customs and non-customs formalities. The NSW development among the EU member states during the past three decades has been based on different national objectives, ambitions, and legacy systems, where significant resources and efforts have been used to align national systems with the Union Customs Code (UCC) and the Multi-Annual Strategic Plan (MASP).

Montenegro, as well as all other Western Balkan countries, has an outstanding opportunity to be in the forefront of this development by building modern NSW solutions which are both aligned with EU standards, integrated with national systems, and facilitate regional integration for improved trade facilitation and security measures. The NSW enhances the abilities to exchange electronic information on the regional (Western Balkans) level. Moreover, access to high-quality pre-arrival supply chain and

regulatory data will enable the Western Balkan countries to perform holistic risk management and implement simplified procedures that can dramatically improve the trading environment and economic growth in the region.

2. NSW Blueprint Design

The introduction of an electronic Single Window is a large and complex undertaking due to the many components and challenges that need to be addressed, e.g. inter-agency collaborative issues among different stakeholders, complicated procedures and document requirements, the potential need for modifications to laws, organizational changes, electronic system development, and security and business continuity issues to name just a few.

An effective and intuitive approach to handle the design of such a system is to systematically break down those large and complex problems into smaller components contributing to the design and successful implementation of the whole. UNESCAP in its guide for implementing NSW projects[2] advocates the use of such a method as a means to support policy managers in their decision making. It promotes a Single Window Implementation Framework[3] (SWIF), this being an adaption of an enterprise architecture model for large information systems design and implementation.

Each of the Annexes of the NSW Blueprint complements the SWIF components. The Annexes summarized below in abbreviated form, outline the requirements to be met for implementing the decisions made by the stakeholders of Montenegro. Many of these decisions are inter-related and therefore have all been brought together and consolidated in a coherent sequence in the Implementation Plan, which is also included in the Blueprint. For more details on each of the components, refer to the main and comprehensive annex reports of the Blueprint.

2.1 Vision

At a visioning workshop held in Podgorica on 31 March and 1 April 2022, the participants, representing stakeholders from all the agencies to be involved in the NSW and the private sector, discussed their

[2] http://www.unescap.org/resources/single-window-planning-and-implementation-guide.

[3] UNECE: The Single Window Implementation Framework (SWIF).

expectations concerning the NSW and **agreed on a vision of the NSW which encompasses the expected scope, key features and key outcomes.**

The workshop participants articulated various views and recommendations, which ultimately led to the development of a specific Vision Statement for the NSW in Montenegro:

> ***The NSW will be an electronic, paperless system.***
>
> ***The NSW will enable the single submission of standardized requests, simplified processing and delivery of authorizations in accordance with legal requirements related to import, export and transit of goods.***
>
> ***The NSW will enable the interconnectivity of all institutions involved in international trade and leverage existing services and infrastructure to the maximum extent possible.***
>
> ***The implementation of the NSW will result in time reduction, cost savings, efficiency, predictability and transparency for trade transactions. The NSW should further provide opportunity for continual improvement of the trading environment.***

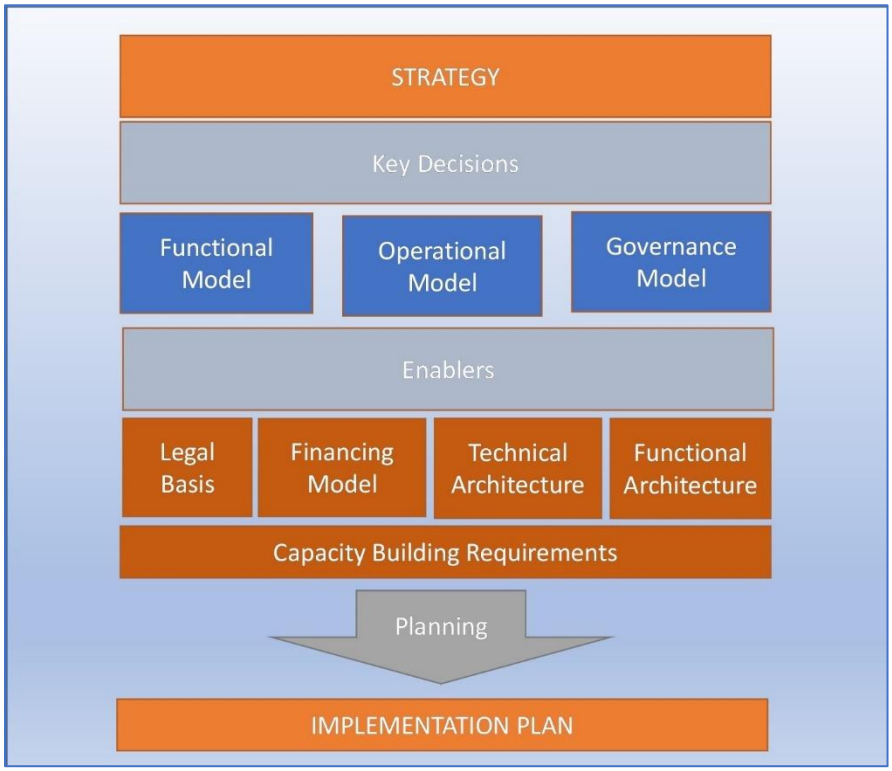
This **NSW vision for Montenegro will result in processing improvements at the involved agencies,** whether dealing with the processing of Licenses, Certificates, Permits or Other authorizations (LCPOs) applications for border clearance activities, and such interventions will result not just in savings to the public sector but also to the private sector, that will be the primary beneficiary of the system.

Of particular note, the ambition is that the NSW will provide a vehicle for continuous improvement, and this is especially pertinent to the aspect of the NSW implementation that deals with the introduction of service level agreements and service level objectives with the aim to establish service goals and systems to better monitor processing and clearance activities in Montenegro.

2.2 Strategy

The purpose of the strategy is to establish the high-level requirements and guidelines for the design and development of the various components of an NSW. The strategy involves making key decisions with regard to three main components of the NSW as illustrated by the diagram below.

Figure 2: Components of an NSW Strategy



The three main components for which key decisions were required concern:

a) The Functional Model, i.e. how the NSW will operate;

b) The Operational Model, i.e. which organization will be responsible for operating the NSW thus providing a service to the traders and Government Agencies;

c) The Governance Model, i.e. which authority will determine NSW policy on behalf of the GoM and have oversight responsibility of the Operator of the NSW.

These components were discussed during the above-mentioned workshop and the participants were given the opportunity to identify and discuss the key issues pertaining to each component relevant to Montenegro's context.

Stemming from these three key decisions are options to be considered with regard to the enabling framework for the NSW. In particular:

a) the Legal Basis to underpin and enable the operation of the NSW;

b) the Financing Model, i.e. the decisions on how to finance the initial capital expenditure and implementation costs and the ongoing operational costs of the NSW;

c) the Functional Architecture, i.e. the Functional Model above expanded into the software components and how the software will operate in terms of interactions between users and other functionality;

d) the Technical Architecture, i.e. the infrastructure, equipment, telecommunications networks and equipment, operating software and other facilities required to support the desired Functional Model.

Successful introduction of any single window and this introduction to "carry" an overall implementation strategy will, however, require more than adapted equipment and technology; it will rely substantially on the readiness, skills, and capacity of the people who will implement and use the system.

The introduction of the NSW and the required business process automation will necessitate up-skilling of Government Agencies and trader staff in a number of disciplines concerned with both using and managing the system. There will be the need for a substantial capacity building program and this to form part of a much broader *Change Management Plan* which should include a communications plan and considerations on resourcing for training development and delivery (see also *Annex 10* – Change Management, Capacity Building and Communications).

2.3 Governance and Operational Model

It is the recommendation of the Blueprint for both the implementation and the operation of the NSW, to appoint the present "**Coordination Body for the Development of the National Trade Single Window Blueprint"**, located at the Ministry of Finance and comprising all relevant stakeholders, as the **Governing Entity (i.e. NSW Steering Committee)** of the NSW. Its current Terms of Reference (TOR) ("Decision establishing a Coordination body for the Development of the National Single Window Blueprint") should be adapted for this role, and include senior management, to better reflect the tasks and responsibilities of this body. The co-chair arrangement in the Coordination Body (Ministry of Finance & Revenue and Customs Administration of Montenegro (RCAM)) should be altered to ensure a clear separation of the NSW Steering Committee (Ministry of Finance) and the **Lead Agency/NSW Operator** (RCAM), which the Steering Committee will oversee. The RCAM may still remain member of the NSW Steering Committee.

The **Lead Agency** will be primarily responsible for

a) the establishment of the Project Management Office (PMO) to perform technical and administrative work and drive the overall project
b) the procurement of hardware, software, infrastructure and services required to implement the NSW
c) establishment of the central technical infrastructure (and potentially physical infrastructure) for the data centers as well as to design, build, test and deploy the NSW central services
d) configuration, testing and deployment of facilities in all involved Government Agencies (new business processes, standard operating procedures, application software, technical infrastructure and attendant training, change management, capacity building, communications events, etc.),
e) communications (public relations) events for the trading community, and capacity building of staff
f) legal and regulatory reform processes, etc. in coordination with delegated working groups and legal experts.

The **RCAM** is best suited for the role of **Lead Agency**: It plays a central role in trade facilitation and has ample experience in modernization and digitization efforts. It uses a range of applications critical for the NSW, especially the Customs Information System (CIS), the New Computerized Transit System (NCTS) and

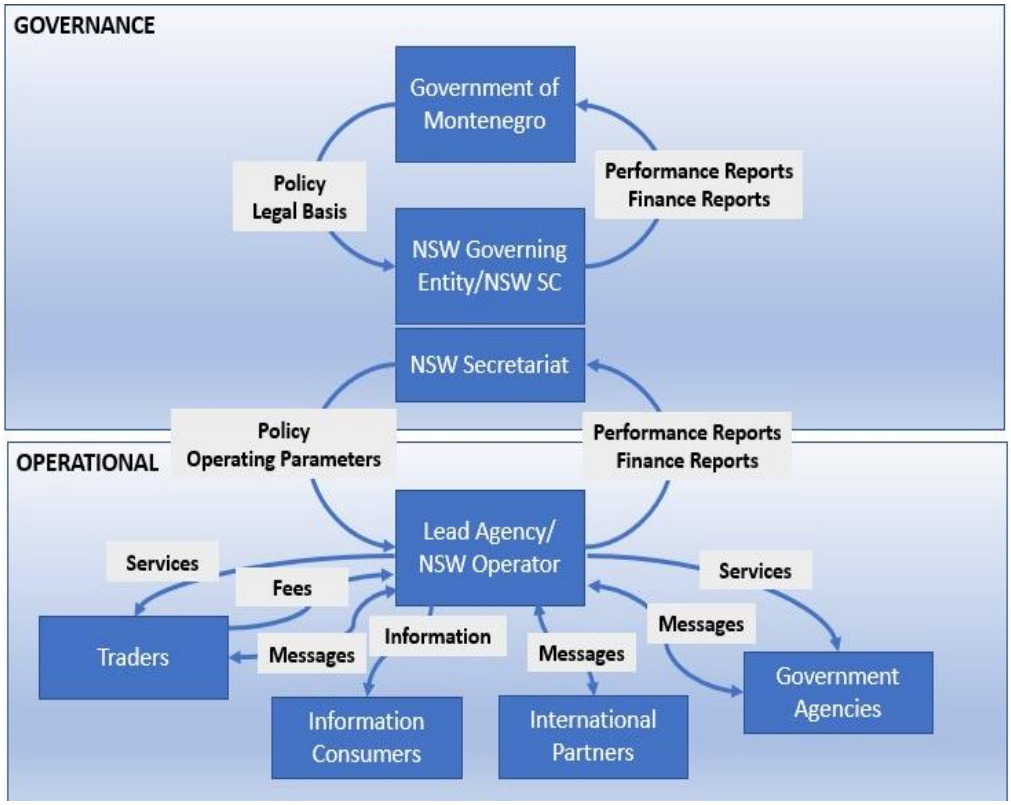
the System of Electronic Exchange of Data (SEED). It has experience with data models and standards for information exchange both in the area of G2G (Government-to-Government) and G2B (Government-to-Business) and has experience in managing and operating the helpdesk facility. The RCAM faces challenges to provide sufficient staff to fully take on the role as Lead Agency and will need to gradually build staff capacity, potentially also aided by external staff recruited for the NSW implementation.

A key organizational role during the Implementation Phase of the NSW is played by the **Project Management Office (PMO)**, tasked to perform technical and administrative work. The PMO should be staffed with knowledgeable officers and placed within the Lead Agency. The PMO will be responsible for executing tasks and producing deliverables as outlined in the overall Project Plan and directed by a full-time Project Manager. The core members of the PMO will be appointed by the Lead Agency, under the direction of the NSW Steering Committee, and will be supplemented by specialist advisors as well as representatives of Government Agencies who will form part of the team at relevant points of implementation.

At the start of the NSW operational phase, the RCAM should take on the role of **NSW Operator**. This ensures continuity and places the most suitable agency at the center of NSW operations. The **NSW Operator** will be in charge of ensuring **daily operations and delivery of all services** and report to the NSW Steering Committee via the **NSW Steering Committee Secretariat,** a small, permanent, professional, qualified and capable organizational unit possibly staffed by members of the established operational **Task Force** in the NSW Steering Committee in the Ministry of Finance. The Secretariat should have the financial capacity to call upon short-term professional expertise (technical, financial, auditing, quality assurance, etc.) as needed. It may be constituted by migrating the PMO into this role at the end of the implementation phase and before start of operations.

Once the NSW is operational, the **NSW Steering Committee** would be responsible for monitoring and directing the **NSW Operator** to ensure that it serves the Government's objectives, meets its commitments, meets the intended needs of the stakeholders and looks forward to opportunities for enhanced services as agreed among the stakeholders. It should also be responsible for monitoring the service level agreements (SLAs) concluded with various parties in the NSW as well as the service level objectives of the Government Agencies participating in the NSW – the latter as far as they are in existence. The NSW Steering Committee will regularly report to the Ministry of Finance (when re-established, to the National Trade Facilitation Committee (NTFC) by means of periodic progress and financial reports.

Figure 3: Governance and Operational Model during Operation



2.4 Legal Basis

A clear and sound legal basis and regulatory framework for the creation, organization, and management of an NSW is a vital component for a successful NSW initiative.

To fully enable the trade facilitation potential of an NSW, legislation must authorize the participating government agencies and traders to carry out import and export transactions in full electronically – *i.e.*, to apply for licenses or permits, to declare goods, to submit notifications, to make payments, to keep records, *etc*. –in place of, and without need for, paper documents, handwritten signatures or physical stamps, or other manual processing.

Moreover, because an NSW is intended to enable the participating agencies to share information needed for import and export processing and controls, the legal framework must include clear rules for proper handling of sensitive information, such as personal data and confidential commercial information submitted by economic operators. There also should be a legal basis to enable the government to finance the operation of the NSW, as well as legislation to establish the NSW in a law as the entity through which

import and export transactions shall be conducted, and to define the rights and obligations of the NSW operator, the participating government agencies, and economic operators.

Montenegro's legislation includes most of the provisions needed to support effective implementation and operation of the NSW, consistent with the foregoing principles. Montenegro's legislation thus includes **key laws** essential to effective implementation and operation of the NSW. These laws, which are largely consistent with EU and international standards, include

- a Law on Electronic Documents, which recognizes the legal validity of electronic documents;
- a Law on Electronic Identification and Electronic Signature, which is based on the EU eIDAS and provides the legal framework for use of electronic signatures and stamps;
- a data protection law modelled on EU's 1995 directive (and which the government is in the process of updating to align to the EU's 2016 General Data Protection Regulation); and
- a Law on Administrative Procedure, which provides full due process rights for businesses in relation to administrative decisions and acts.

Moreover, the primary enabling laws of the government agencies who will participate in the NSW do not contain provisions that would preclude the use of electronic messages in lieu of paper. However, there are a few improvements that should be made to the legislation to fully support NSW implementation:

- The Law on Electronic Documents, which the government is now in the process of revising, should include a positive assertion that if any other law (*e.g.*, the enabling laws of the government agencies participating in the NSW) requires information to be submitted in writing or a signature, those requirements shall be considered satisfied by submission of an electronic document or electronic signature. This recommendation, which is based on UNCITRAL model laws, would ensure that if the legislation of any government agency that participates in the NSW, now or in the future, specifies a written document or hand signature, an electronic document and electronic signature will override that requirement.
- The Law on Electronic Documents also should be revised to include a provision to recognize the legal validity of an electronic copy of an original paper document (*e.g.,* allow the electronic submission of a PDF in place of a paper commercial invoice or other supporting document), as well as technical provisions to define the legal effect of information incorporated by reference in an electronic message, the person who shall be deemed to have sent an electronic message, and the deemed place of sending and receipt of an electronic message.
- Development of a new **NSW Law,** which will establish the NSW entity in law, is essential. The main purposes of an NSW Law are to:
    - mandate that specified regulatory operations for cross-border trade shall be conducted through the NSW
    - designate the NSW operator
    - define the NSW operator's authority and responsibilities

- list the NSW participants with their obligations and entitlements
- define the NSW governance structure, including reporting obligations
- ensure that electronic submission of a document or data to the NSW will satisfy a requirement of other law that the document or data be submitted to a government agency.

This new NSW law may also be used as the vehicle to clarify uncertainties in existing legislation concerning the handling of sensitive information and fees for NSW services. In particular, while Montenegro's legislation generally prohibits disclosure of confidential commercial information, it does not fully allow such information to be shared among the government agencies who will participate in the NSW. There is also some uncertainty as to whether Customs, if designated NSW operator, will have legal authority to collect a fee for NSW services. To eliminate these uncertainties, the new NSW Law might thus include provisions to authorize the NSW operator to impose a fee for NSW services, and to define the conditions for protection and sharing sensitive information among the government entities who will participate in the NSW.

2.5 Functional Model, BPA and BPR

An exercise in **Business Process Analysis (BPA)** was conducted in order to map all the existing processes within the agencies that will be involved in the NSW related to authorizing imports, exports or transit movement. The detailed "as-is" analysis showed considerable scope for process improvement. Current impediments include, for example, a continued reliance on paper documents (despite significant electronic innovation at some Government Agencies) and as a result repeated processing steps and physical movement of people to make application, payments and collections at multiple times in the processes.

The **"as-is" analysis was used to inform an NSW "to-be" re-engineered business processes**. The research and analysis were based on Business Process Management (BPM) methods, the review of relevant literature, input from participating government agencies, and best practices from NSW experiences gathered in other similar projects worldwide.

The **"to-be" model presented in *Annex 5* is a general model intended to capture the workflow of all Government Agencies.** The model and the processing steps described should be adopted and applied to the individual demands of each Government Agency and of each applicable License, Certificate, Permit or Other (LCPO) processes. During the development and implementation phase, the selected NSW IT solution provider will need to collaborate with each of the Government Agencies to adopt and modify the proposed general "to-be" model for the specific needs of each LCPO determining the number of steps in the model and the involved officers for receiving, reviewing and approving the LCPOs. Or, in the case

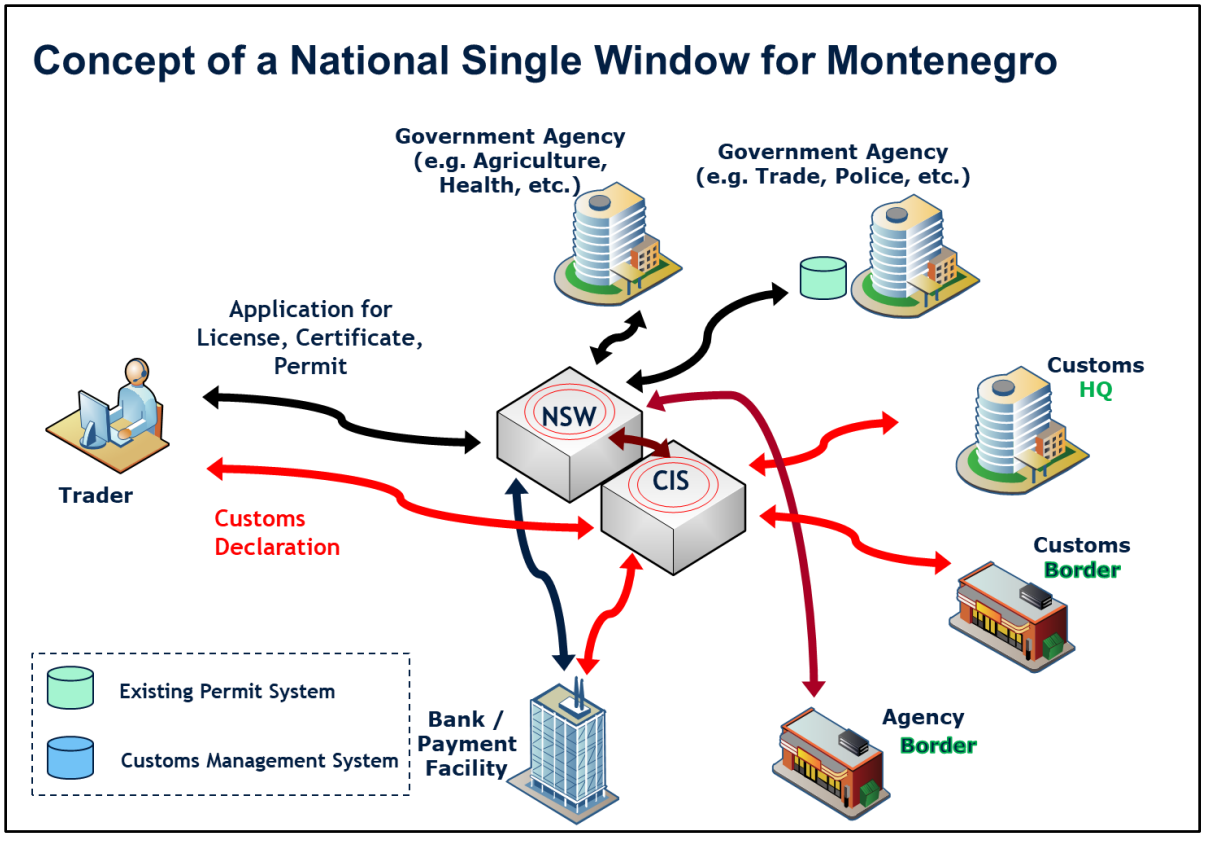
where Government Agencies have their own existing processing systems determining the means of interoperating with the NSW.

The NSW will introduce and operate in a fully electronic environment where processing and issuance of applications for LCPOs will be conducted through automated workflow management facilities within all agencies involved. This is in line with the stakeholders' vision for the NSW as an electronic, paperless facility that can facilitate all import, export and transit related transactions between traders and Government Agencies and across multiple agencies where required.

The **existing Customs Information System (CMS) will integrate seamlessly with the NSW** in order to provide fully automated and paperless clearance through and exchange of LCPO details to the Customs Information System, and declarations information with the NSW, to ensure a single submission of data in line with UNCEFACT Recommendation No. 33, and international definitions of NSW operation.

This model is illustrated at high-level in the figure below.

Figure 4: Concept of Single Window



2.6 Functional and Technical Architecture

The key purpose of the Functional and Technical Architecture is to **establish an agreed platform upon which specifications for application software, technical infrastructure and attendant services are to be elaborated.** The specifications would thereafter form part of the necessary bidding documents for tender and selection of an appropriate service provider for delivery of the NSW solution, working in partnership with the proposed lead agency of the NSW, the RCAM.

The functional and technical architecture models are synthesized from several influences, including the government's preferences for single window operation (the functional model), the reengineered business processes, relevant agency automation already in place, the desired scope of implementation, volume of trade transactions and commercial and financial considerations. Further influences consider international guidance for NSW implementation, industry trends in technology, and minimum infrastructure requirements necessary for modern ICT enabled single window operation.

Montenegro aims to implement business procedures and systems for the clearance of goods whereby an interested trader (directly or through a broker or agent) would interact on-line and in real-time through a single entity (an electronic single window) for the submission of an application for various import, export or transit LCPOs. The intention is then to use that electronic window as the channel for subsequent intermediate transactions, for example when applications are subject to corrections and clarifications, or when payment of any fees and charges are due. The NSW will also aid in coordinating border inspections and will send to the trader the final notification that delivers the issued LCPOs or release note for the goods. The ideal would be for a turn-around time of minutes.

Notably, Montenegro has stated it aims to introduce a 'loosely-coupled' NSW model that retains submission of the Customs declaration through the Customs Information System. This requires that the details of LCPOs would be available for reuse at the time of declaration submission, and thus ensuring adherence to the international concept of single submission of data for operations of an NSW.

Annex 6 expands on an architecture model to deliver such a single window solution for Montenegro, and which is described in terms of four dimensions: Application, Data and Messaging, End-user Communications and, Server and Network Infrastructure. *Annex 6* goes on to consider certain other aspects implied by the technical architecture, and in conclusion presents a comprehensive list of candidate offices for implementation.

2.6.1 Functional Architecture

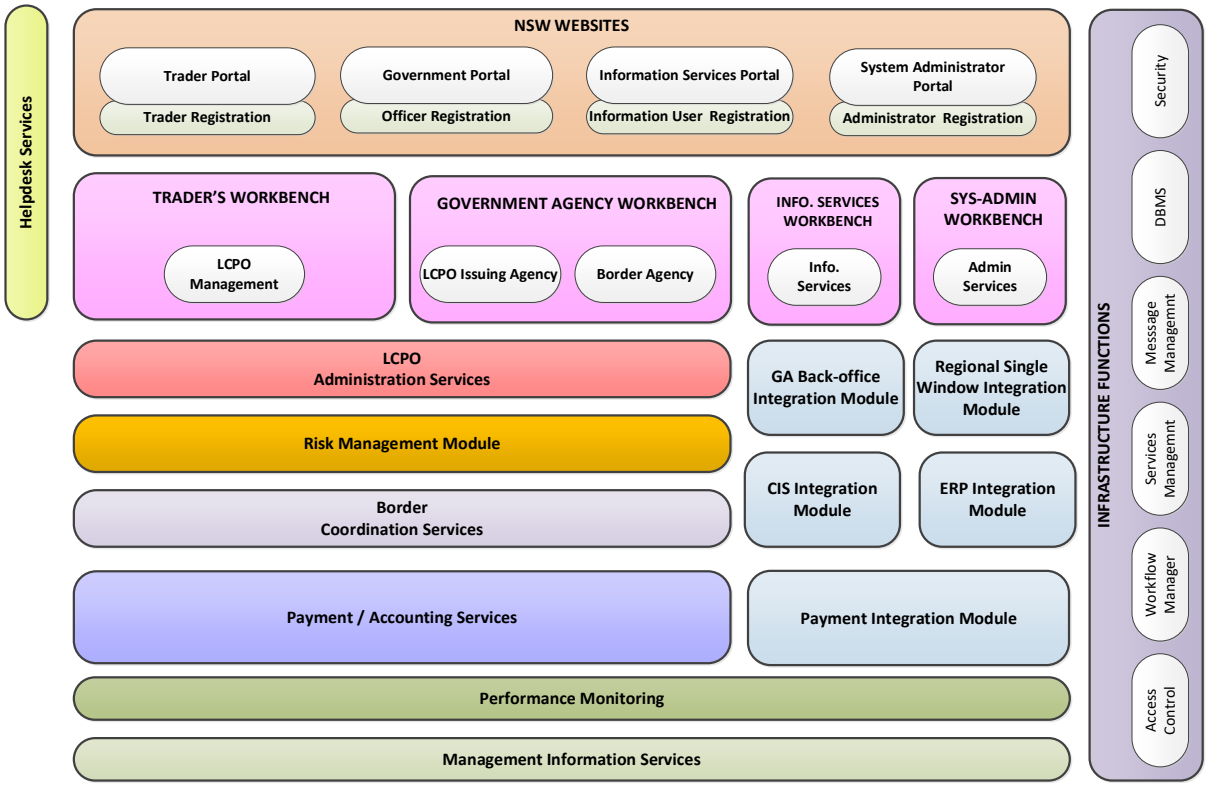
The **NSW will be a web-enabled application**, which will provide a range of services and facilities for the different user groups, both private and public, that will be required to use the NSW to conduct business. Primarily the users will consist of the following user classes: traders (either Importer/Exporters, Brokers or Agents), LCPO issuing agencies at Podgorica and the Directorate for Food Safety, Veterinary and Phytosanitary Affairs (FSVPA) for inspection and clearance coordination at border locations.

The NSW will provide, for each LCPO issuing agency without an established processing system, a 'Type 1' automated and configurable workflow that will enable each connected agency to receive, process and

issue all forms of LCPOs under their responsibility electronically. For those agencies with their own electronic processing systems, e.g. Institute of Medicinal Products and Medical Devices (IMMD), Directorate for Food Safety, Veterinary & Phytosanitary Affairs (FSVPA), the NSW will provide a 'Type 2' messaging service that will allow the preparation and submission of related LCPO applications through the NSW and manage their transmission to the other systems for processing. Subsequent queries, messages and final notification will be routed through the NSW to the traders.

Notably, NSW will provide the tools for Traders to prepare, submit and communicate on all matters relating to LCPOs. The functions to be provided by the NSW are best illustrated in the functional decomposition diagram of Figure 5: NSW Functional Model**,** which is further explained in *Annex 6.*

Figure 5: NSW Functional Model



2.6.2 Technical Architecture

The Technical Architecture for NSW is described in a manner consistent with operational requirements and the various influences and preferences for a modern 'good practice' solution and is described in terms of (i) Server and (ii) Network communications infrastructure models.

The models take into consideration the present ICT infrastructure implemented by the GoM and operated by the Ministry of Public Administration. All effort is made to align the technical infrastructure of NSW with that of the Ministry of Public Administration so that the existing infrastructure, including data centers, network devices and communications can be re-used as to lower NSW infrastructure costs and

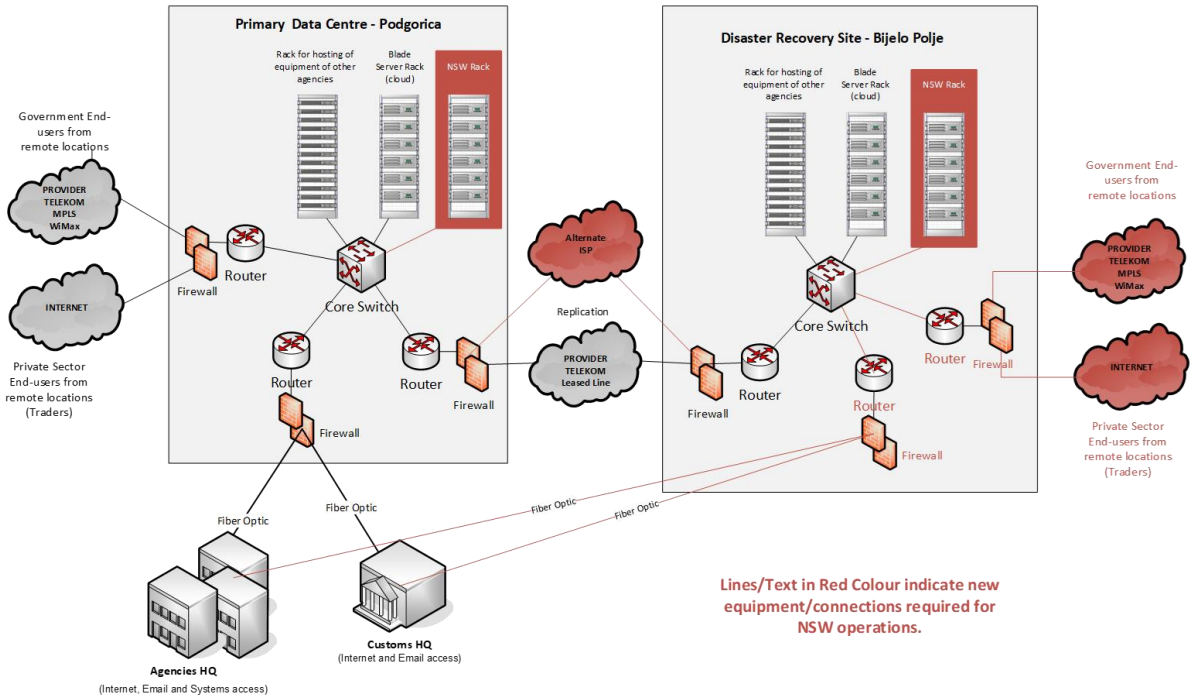
enhance compatibility. NSW server architecture is however separated from the Ministry of Public Administration server system in alignment with the preference of the Ministry of Public Administration and RCAM in its role as lead agency for implementation.

Essential characteristics of the server and system infrastructure model include:

- **Dual central computer sites**, in active / passive mode, with replicated infrastructure for NSW production services. The main and secondary data centers are to be those of the Ministry of Public Administration, with need to upgrade communication devices and lines at the secondary data center which are costed within the NSW budget;
- **n-tier server architecture** for production services in a clustered operation and with separation of server by role, especially for database, application and web servers;
- **Virtualized server environment** for non-production services to include transition-to-live (quality control / testing), training and development;
- **Production data held on SAN devices at each central site** with multiple fiber channel access to database servers, with SAN or Database level replication;
- **Separated infrastructure** (servers and SAN) for business intelligence / information services (warehousing) at production location.

These characteristics are illustrated at a high level in **Error! Reference source not found.** below and are elaborated in *Annex 6*, in particular at the Server and Data Communications sections which provides a more detailed description and explanation that includes Government Agencies, RCAM and Border office connections. Quantification of elements of the proposed models in terms of sizes and numbers of components will depend on the eventual NSW solution; however, indicative figures have been provided for budget estimation which informs the financial model

Figure 6: Main and Secondary Data Centre Configuration



2.7 Financial Model

The Financial Model relates to the key decisions regarding:

a) The strategy for funding the implementation of the NSW; and

b) The strategy for funding the ongoing operational cost of running the NSW once implemented.

It is the recommendation of the Blueprint that the implementation of the NSW **is financed through Government funds with the support of development partners in the form of a loan.** At present, the most viable option is the loan agreement for the Trade and Transport Facilitation Project currently negotiated with the World Bank Group. Based on insights gained during consultative process with the stakeholders, the Blueprint recommends that the loan should cover all of the investment and installation costs of the NSW. **The estimated costs of implementation** of the NSW are **$4,452,050 over an implementation period of two years**. This estimate includes the data center costs, costs of end-user equipment for all participating agencies and the build and implementation costs of the NSW.

Should Montenegro deem it needed and appropriate, additional funds may be required for any technical or legal assistance during the preparatory phase for the NSW implementation, as well as for NSW program management, supervision and quality assurance (PMSQA) during the NSW preparatory and implementation phase[4]. These costs are estimated at 10% of the NSW implementation costs, which results in a **total estimate of $4,897,255 for the preparatory and implementation phases of the NSW Program**.

The NSW Blueprint Coordination Body stakeholders have agreed that **the NSW operational costs should be covered entirely by a fee levied on traders who use the NSW.** The preference of the NSW Blueprint Coordination Body was to use a **transaction-based fee per customs declaration**. The **NSW operational costs** aimed at ongoing operation, maintenance and further expansion of the system are estimated to be approximately **$1,026,290 annually**. With reference to the loan agreement currently discussed to cover the NSW investment costs, it is assumed in the Blueprint that only NSW operational costs of a recurrent nature should be recovered through the NSW fee, and not the costs for initial investments and installation of the NSW.

According to the WTO rules and requirements, the **fee for using an NSW should not be higher than the costs of the services rendered** (i.e., the operational costs should be covered but no surplus accumulated).

The **NSW fee should be legally prescribed, fair to all NSW users and transparent**. The **electronic payment facility should be an integral part of the NSW solution** and should enable easy and efficient payment of the NSW fee and LCPO-related fees, collection of payments, as well as accurate and transparent accounting. The NSW Steering Committee as the NSW Governing Entity should be responsible for

[4] These costs are entirely dependent on the existing capacities of Montenegro to implement complex automation projects, such as NSW, requiring a whole-of-government approach, and are integrated in the overall cost estimate as a safeguard to ensure that sufficient expertise is readily available.

oversight of all accounts and ultimately direct the allocation of funds by the NSW Operator to various purposes such as those necessary for NSW operation, support and maintenance.

Cost of implementation of the NSW: $4,452,050 over two years and $445,205 for PMSQA: This estimate, presented in the table below, includes: Data center costs including technical equipment (servers and additional equipment) and software needed for the NSW hosting and operation; costs of end-user equipment for all participating agencies (headquarters equipment and local office equipment for approximately 11 participating agencies dealing with LCPOs); NSW build and implementation costs covering project management, management and technology expertise, NSW related change management, communications and publicity activities, NSW software licensing, software development, integration and configuration; as well as Telecommunication and installation costs where needed for all NSW participating agencies.

The Blueprint Implementation Plan envisages that it could take up to 20 months before the NSW supplier is contracted and NSW build is formally initiated. Therefore, the cost estimate is expanded to include any costs deemed appropriate and aimed at ensuring that sufficient expertise is readily available to support Montenegro in the preparatory stage before the NSW supplier commences work, as well as to ensure professional program management, supervision and quality assurance (PMSQA) during the NSW preparatory and implementation phase. The **total NSW Program costs for the preparatory and implementation phases of the NSW are estimated at $4,897,255.**

Total NSW Build and Implementation Costs	
Component	**Cost ($)**
Data Centre Costs	802,100
End-User Equipment Costs	361,200
Build and Implementation Costs	3,272,000
Sub-total NSW Implementation Supplier Costs	**4,435,300**
Telecommunications Installation Costs	16,750
Sub-total Telecommunications Installation Costs	**16,750**
Total NSW Implementation and Installation Costs	**4,452,050**
NSW Project management support, supervision and quality assurance (PMSQA) during NSW preparatory and implementation phase (@10% costs)	445,205
Total NSW Program Costs	**4,897,255**

Annual NSW operational costs: approximately $1,026,290, as presented in the table below. The estimate includes the annual costs of the NSW management office, NSW operational and technical support staff, including mandatory NSW Help desk facility staff; annual telecommunications costs potentially acquired by participating agencies to utilize the NSW, cost of power supply for the twin data centers[5], support and

[5] The annual costs of power supply for the twin data centres were estimated as zero since it is recommended to utilize the existing State Data Centre and secondary Disaster Recovery Site (DRS) and use their backup power facilities.

maintenance costs for the NSW operating software, twin data center hardware and software maintenance, as well as annual maintenance and upgrade of the end-user equipment of the participating agencies.

Total NSW Recurrent Costs (per annum)	
Component	**Cost ($)**
Management Office and Staff	600,000
Telecommunications	106,000
Power Supply	0
Maintenance and Support	320,290
Total Annual Recurring Costs	**1,026,290**

For more detail breakdown of costs, please refer to *Annex 7* – Financial Model of the Blueprint.

The NSW Blueprint Coordination Body has agreed and recommended to **recover the NSW operational costs from traders through a fee mechanism**. The stakeholders have discussed different types of possible NSW fees, **and the preference of the NTSW Blueprint Coordination Body is to use a transaction-based fee per customs declaration**. Based on the existing statistics on the number of customs declarations, such **NSW fee could be approximately $2.15 per customs declaration**. According to the WTO rules and requirements[6], to which Montenegro must adhere as a member of the WTO, the fee for using an NSW should not be higher than the costs of the services rendered.

The NSW Blueprint Coordination Body stakeholders have opted that there should not be a transitional period where the use of the NSW will be free. Rather, the stakeholders' preference was to charge the NSW fee immediately after the NSW becomes operational. An effective communications and publicity campaign will be critical during the NSW implementation phase to deliver clear messages to traders about the NSW benefits in order to ensure general acceptance of the fee approach in support of NSW sustainability.

If, at any stage of the NSW implementation or operation, it is decided to additionally introduce a registration and/or annual subscription fee (e.g., as a potential mechanism for lowering the transaction-based fee), it is recommended to include and levy all commercial entities engaged in cross-border trade as NSW users.

2.8 Harmonized Data Model

Annex 8 contains an initial Harmonized Data Model (HDM) developed from information collected from all the agencies that will be involved in the NSW during the business process analysis exercise.

[6] Article VIII of the General Agreement on Tariffs and Trade (GATT) and Articles 6.1 and 6.2. of the Trade Facilitation Agreement (TFA) of the World Trade Organization (WTO).

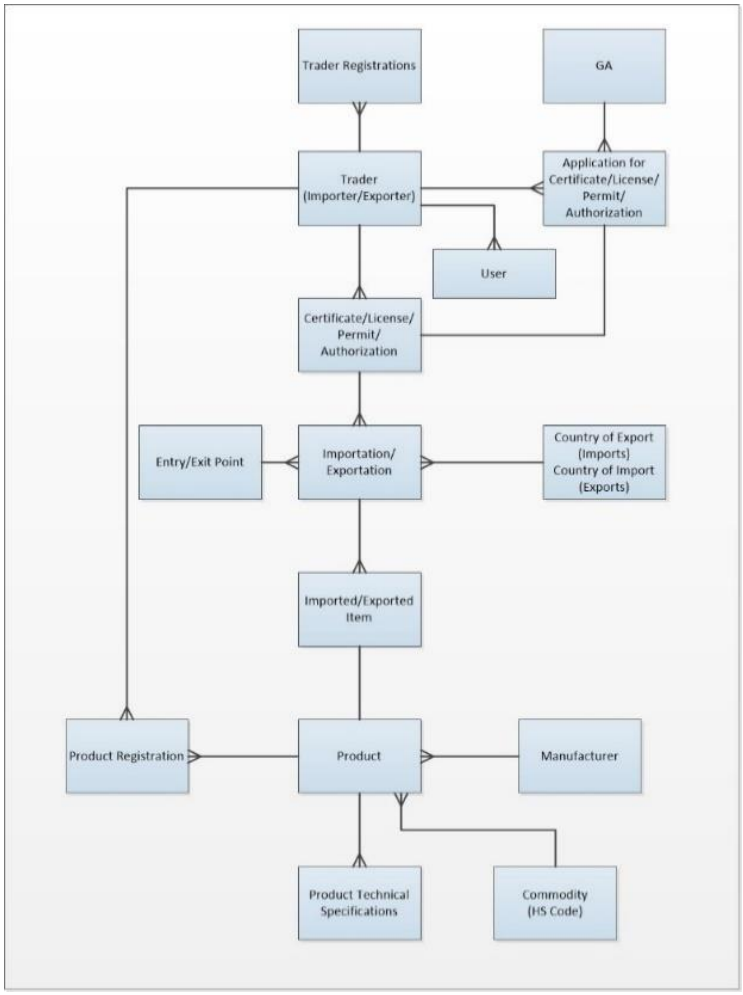


Figure 7: Harmonized Data Model ER-Diagram

The objective of data harmonization, in the context of the NSW, is to **eliminate redundancies and duplication in the data used across different agencies.**

Data harmonization enables data interoperability among individual information systems by using a set of harmonized core data elements, i.e. data elements which carry the same meaning, are combined into a single data element.

The HDM is represented pictorially by an Entity-Relationship diagram deduced from grouping all related data elements under separate entities or classes of information types, shown at Figure 7: Harmonized Data Model ER-Diagram.

The baseline Harmonized Data Model included in the Blueprint will underpin the operation of the NSW for all the Government agencies that issue LCPO forms of authorization as part of the import/export/transit cycle both prior to importation/exportation and at the border and will form the basis for the database schema to be developed as part of the application software.

The Harmonized Data Model is aligned to international standards, in particular the WCO Data Model and the UN Trade Data Element Directory 2005. The WCO Data Model is fully compatible with the EU Customs Data Model.

2.9 Risk Management Model

Risk management in the context of international trade pertains to efforts by government agencies to protect the society and the natural environment of Montenegro and to maximize legitimate revenue collection by implementing effective control measures. The control measures aim to prevent importation of unsafe goods, and the export or smuggling of prohibited and restricted goods. RCAM is responsible for the protections related to international trade, revenue collection, and against smuggling. RCAM is also the border-zone gatekeeper for implementation of the security mechanisms of the other Government Agencies excluding those of food safety, biosecurity (plant, animal, and fisheries products) which falls to the Directorate for Food Safety, Veterinary and Phytosanitary Affairs at the border locations.

The availability of data across agencies and over time afforded by the NSW will provide opportunities for enhancing the capabilities of agencies in conducting risk-based assessments of transactions in order to apply differentiated forms of treatment both at the border and prior to arrival for LCPOs. The NSW facilities related to risk management will include:

- **Business processes implemented specifically for each License, Certificate, Permit and Other and government agency inspection process** using the workflow management system of the NSW allowing for differentiated treatments according to an assessment sent from the NSW risk analysis engine as further described in *Annex 6* – Functional Model.
- **The NSW risk analysis engine that would be applied to any data field within incoming requests from traders:** registration and LCPO requests using selection profiles set by each government agency from time to time to assess a business process treatment advice.
- **Risk profile management tools** (for setting, revising, removing) logical tests that may be applied to data fields in the NSW transactions to assess a process treatment recommendation, and also to set a random selection rate.
- **A database comprising trade-related transaction data** (in registration forms and data, application forms, declarations, certificates, assessments, reports of findings, and registers) within the NSW facilitates real-time assessment, management, and response to risk.
- **A database of the results of the selectivity:** transactions selected by treatment type, any officer-initiated escalation of treatment type, and the findings according to treatment type. This database also would be used by the government agency risk management analysts.

The availability of data in electronic format and the functionality of NSW will allow the creation of risk profiles and selectivity criteria to facilitate improved risk management within each government agency.

Each Government Agency would work with NSW implementers to design and make ready the reengineered business procedures at a time that is both practical and feasible for that Government Agency. This would include (i) establishing organizational roles and structures for business processes (for designing the differentiated treatments), risk profile setting, and transactional analyses to study the effectiveness of selectivity criteria; (ii) comprehensive training for use of risk management within the NSW; (iii) ensuring that the underlying laws and regulations permitted differentiated treatment paths and data sharing for more coordinated border management; and (iv) updating and formalizing joint inspection arrangements at all border crossing points.

Annex 9 illustrates a good practice approach to the adoption of a risk management to the operation of all the government agencies involved in the NSW and further elaborates in the practical aspects of change required to implement at the agencies.

2.10 Change Management, Capacity Building and Communications

Change Management is a structured process for **taking an organization from where it is now to where it needs or wants to be**. Change Management is normally included as a key part of any overall

implementation program where people and processes will be substantially affected by the desired change. Planning for change contemplates the potential for resistance and incorporates strategies for overcoming or at least neutralizing it. Successful change management creates strong champions for change and enthusiasm for the outcomes sought.

In the context of Change Management for the NSW, **"Capacity Building" refers to a process which increases the skills, infrastructure, and resource of individuals, organizations and communities**. It involves the planned development of an organization or entity's ability to achieve outcomes by improving skills and other capabilities - through knowledge acquisition, new technology, new infrastructure and/or training.

The NSW project will entail complex and multifaceted change. To be a success, **effective communications are essential** for assisting stakeholders with understanding the vision for change and the benefits to be delivered by the NSW. A communications strategy is, therefore, a crucial element of any change process – not only to inform stakeholders about the change, but how it will impact them on a personal level.

The NSW will introduce a range of new equipment and technology to trade-related transactions, along with some important and potentially substantial changes to internal agency and external business processes. These changes will involve a move away from many current methods and the introduction of new processes. The full introduction of the NSW will not only comprise the acquisition and use of new technology, but, as mentioned above, will involve new knowledge, skills and techniques for those who participate in the trade and clearance functions. The people involved will be central to the ultimate success of the NSW. Therefore, the level of support or resistance from key stakeholders, and the strategies used to gain and give support need to be included in the early stages of implementation planning.

It is important that those people and stakeholder who are most directly affected are engaged and informed at the earliest stage as well as supported, encouraged and provided with the skills they need as implementation begins.

An on-line survey among agency staff revealed a need for general trainings on WTO TFA topics and a broad overview of the NSW, including objectives, rationale, its functionalities, costs and benefits, etc. Training was further suggested on the ICT tools needed to use and operate the NSW, NSW policies, procedures and processes across all impacted stakeholder entities; rights, obligations, services and roles of the NSW Operator and other users and participants.

Fundamentally the **change management strategy** for the NSW will require a clear picture of:

- The "as is" situation (where are we now): This is comprehensively described in the 'as is' analysis sections of *Annex 5* (Functional Model, BPA and Business Process Re-Engineering (BPR)) as well as other components of the Blueprint.
- The "to be" situation (where do we want to be in the future): This is also comprehensively addressed by the 'to be' (BPR) and Functional Model sections of *Annex 5* as well as other components of the Blueprint such as the Vision, the Strategy and other models such the Financial Model.

- Who will need to come with us to get there (who are our key stakeholders and what will they want)?
- How do we plan to get there (the key elements for implementation success)?
- How long will it take (broad implementation timeframes)?; and
- How will we know when we have arrived (how will success be measured)?

This will require setting **Key Performance Indicators (KPI)** as part of the Implementation Plan for the successful implementation of the NSW and a monitoring framework to measure their success.

The criteria above should be used to create the baseline for a ***Change Management Plan***. The Change Management Plan will define the actions required to facilitate and complement the objectives of the Implementation Plan and, as such, will need to be synchronized with it.

The successful introduction of an NSW for Montenegro's border agencies and traders will require timely and effective communications, engagement and marketing strategies, backed up by training for staff and technical support. Communication needs to be planned and managed as part of the overall change management plan. For this reason it is highly advisable that a "**Communications Manager**" be appointed as part of the NSW Change Management team. This officer will need good writing, presentation and negotiation skills, as well as sound conceptual abilities.

Communications is the key to engagement, which is in turn is key to the achievement of "buy-in" by stakeholders and stakeholder groups. Stakeholder "buy-in" is important if change is to be accepted, embraced and implemented by those who will be affected by it. Communications in this context means more than just information provision; it includes processes for two-way exchanges of information, ideas and views in an advice/listen/revise/monitor loop. Reliance on a narrow one-way view of information provision for projects that involve significant process and practice change will be insufficient to achieve truly successful outcomes.

2.11 Implementation Plan

The **Implementation Plan** provides the guidelines for how to build an actionable Implementation Plan for the development and introduction of the NSW and the guiding control instrument through the lifecycle of the NSW implementation program.

The Implementation Plan consists of a planned series of tasks which are best illustrated in the high-level Gantt Chart shown in Figure 8[7] below, structured into four main stages: initiation, planning, execution and closure. Each task contained in these stages is aimed at implementing one of the key decisions elaborated as part of the planning for the NSW and that are all integrated in the Blueprint. Each Annex of the Blueprint fully describes the approach that has been adopted to implement the specific key decisions to which the

[7] A more detailed Gantt chart is provided in *Annex 11* of the NSW Blueprint.

Annex relates and therefore the Annexes provide the guidance for what each task in the Implementation Plan should achieve.

The Implementation Plan covers the process of establishing a fully operational NSW, in a phased approach, but it does not cover the ongoing operation of the NSW. The plan comprises the following activities:

- Procurements of physical and technical infrastructure and equipment required to develop the NSW
- Software development
- Roll-out (probably phased)
- Change management and capacity building
- Communications and outreach
- Project quality assurance and management

The Implementation Plan can be considered the top-level program management instrument. Its purpose is for the overall Program Manager to plan and mobilize the required resources for each task, monitor progress and report to the GoM via the NSW Steering Committee. Each activity of the plan will result in one or more sub-projects which will have to be managed individually at a greater degree of detail.

The implementation of the NSW will consist of several parallel implementation activities which, when taken together with the actual implementation of the NSW product/s, shall be referred to, overall, as the "**NSW Program**". The actual ongoing operation of the NSW, as well as its enhancement and possible expansion, is expected to go on for many years beyond initial implementation and will thus be considered outside the scope of the NSW Program. However, the scope of the NSW Program may also cover the transitional stages of operation as the NSW services are introduced.

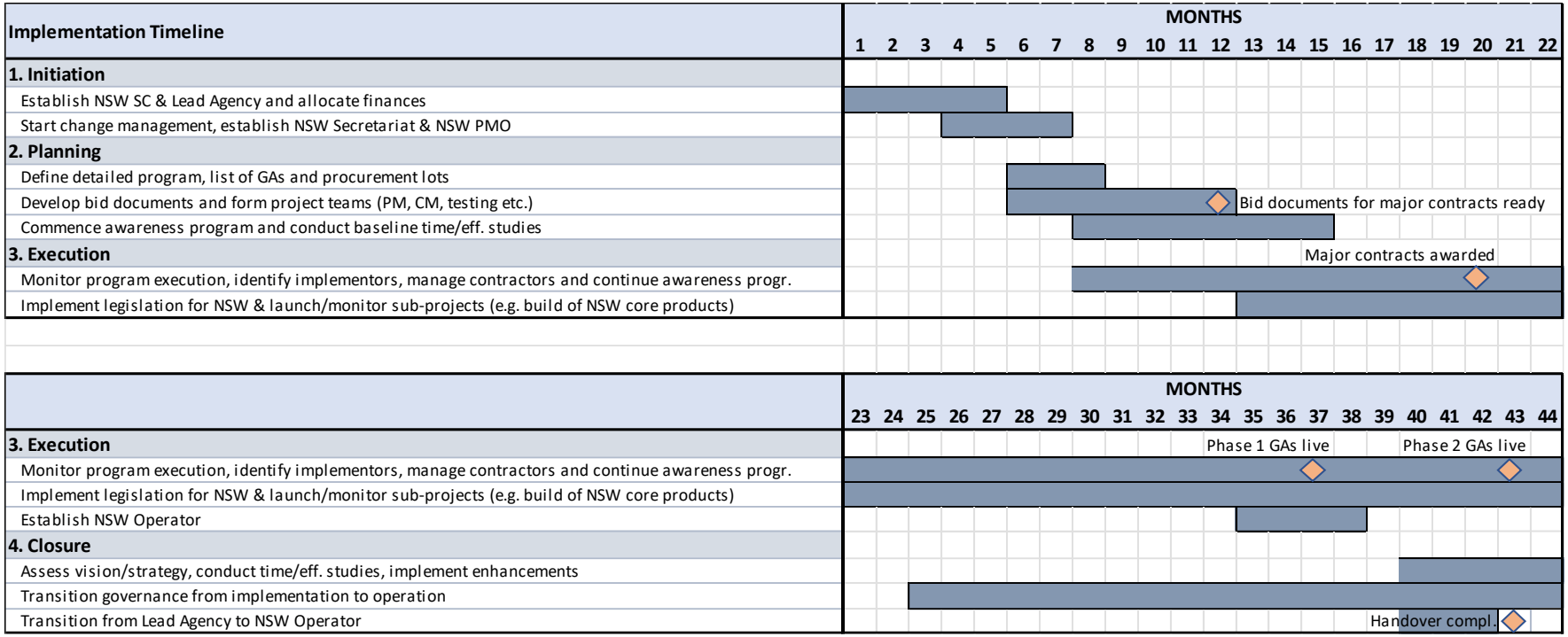
The envisaged activities in the NSW Program are as follows:

a) Pre-implementation steps:
    - Establishing governance and program implementation arrangements
    - Financing arrangements
    - High-level organizational and operational designs based on the Blueprint options
    - Detailed program planning and design
b) Preparation and running of several procurement projects, including that of the NSW supplier to develop, configure and implement the NSW
c) Initiate and establish Service Level Agreements (SLA)/Service Level Objectives (SLO) between participating entities
d) Communications/Publicity
e) Management of several contracts
f) Governance organizational setup for ongoing operations
g) Establishing the NSW Operator

h) Legal and regulatory framework for the NSW (if necessary)
i) Overseeing Change Management and Capacity Building activities
j) Overseeing SLA/SLO monitoring and enforcement
k) Overseeing System Turnover, commencing the long-term operation, support and maintenance arrangements for ongoing operations

The **overall duration of the NSW project is estimated at 44 months,** consisting of 20 months for initiation and planning, followed by 24 months for implementation. For more details on each phase's timing and activities refer to the Annexes of the Blueprint for Implementation of the NSW for Montenegro, in particular *Annex 11* – Implementation Plan.

Figure 8: Implementation Timeline



3. Proposed Next Steps

To ensure timely execution of the project, there are several proposed next steps that the GoM can immediately pursue.

Step	Rationale
Develop an NSW Law.	The NSW Law is needed to establish the NSW entity, to authorize the NSW operator to assess and collect a fee for NSW Services, and to establish conditions for protection and sharing sensitive information among NSW participants.
Draft adapted NSW Steering Committee Terms of Reference and receive endorsement to establish the NSW Steering Committee Secretariat.	The NSW Steering Committee needs to be empowered as early as possible to fully take on its role of Governing Entity of the NSW, especially by creating the Secretariat as its main support body (i.e. recruit/assign its staff and provide needed equipment).
Make a binding decision to assign the role of Lead Agency to the RCAM and define the Terms of Reference of the Project Management Office.	As with the NSW Steering Committee, getting in place the Lead Agency as the daily driving force of NSW implementation is of utmost importance. To fulfil its role, the Lead Agency needs to establish a Project Management Office as the focal point and central hub for NSW implementation.
Complete loan agreement negotiations with development partners to secure financing for NSW implementation. At present, the most likely option appears to be the loan under the Trade and Transport Facilitation Project of the World Bank Group. **Once the negotiations on the loan agreement are completed, both the GoM and the Parliament should adopt the respective law on the loan agreement.**	Given that successful implementation and installation of NSW solution is a complex initiative requiring a whole-of-government approach, sufficient financing must be secured prior to initiation of this endeavor. Due attention should be given that the NSW implementation costs could be entirely covered by the negotiated loan agreement.
Get the change management process under way – appoint team and develop plan for communicating the project, obtaining buy in and identifying training needs.	The people component of a large change project such as the introduction of the NSW requires that the impacted individuals are informed, brought along and trained accordingly in order for them to support this change and be able to operate in the new environment.

4. Conclusion

This Blueprint represents the IFC's technical team's best effort at producing an actionable plan and framework for the implementation of Montenegro's NSW. It contains guidelines and recommendations that cover all the elements of program design required to ensure the success of the NSW initiative.

More specifically, the Blueprint for the development and implementation of an NSW for Montenegro has been described within the context of the Single Window Implementation Framework of Section 2 and in greater detail in the accompanying Annexes to the Blueprint.

An implementation project is proposed in summary at Section 2.11 and elaborated in corresponding *Annex 11*. However, the implementation project can commence only after several steps are taken and necessary conditions are made ready. Section 3 of this Summary provides a list of the most important next steps in order that necessary pre-requisites are undertaken first.

All the recommendations and specifications in this document have been elaborated following discussions with and approval by the stakeholders in Montenegro through a process of consultation and review and, therefore, they represent the stakeholders' preferred options in respect of the key decisions concerning the NSW. We therefore commend the Blueprint to the Government of Montenegro for approval and adoption, and further recommend action on the next steps to establish the necessary conditions to commence project activities.