DLV02.01 – Business processes

Study on functional, technical and semantic interoperability requirements for the Single Digital Gateway implementation

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1. Introduction

The present document, framed into the project "*Study on functional, technical and semantic interoperability requirements for the single digital gateway implementation*" aims at analysing the business processes necessary to put in place and run the different IT tools of the Single Digital Gateway (SDG). The SDG will be aligned with the proposal for a Regulation of 2 May 2017 [COM(2017)256]. The regulation aims at making it easier for EU citizens and businesses who need to navigate regulatory and administrative requirements to access the necessary information, procedures and assistance services online.

As the first decisive step towards defining the business processes, the different actors of the future SDG have been analysed along with the different IT tools. The business processes elaborate and focus on the characteristics that a particular process must possess. These characteristics are identified by concentrating on the business logic of the process (how activities are conducted), rather than on the product perspective (what activities). The emphasis on the technical and functional implementation will be further elaborated in the scope of other deliverables.

The processes have been analysed following a **methodological framework** that revolves around four steps. Firstly through an analysis of existed documentation. Next, a **SIPOC analysis** has been produced in order to obtain a high level overview of the different process. On this basis, the processes have been further developed by means of **modelling techniques**, outlining swimlane diagrams that encompass the flow of activities across the different actors identified, and finally, a **process fiche** has been produced to describe in detail the way each process work.

A total of 24 processes have been identified and described. As requested by DG GROW, in the case of two of these processes –*Search and access links* and *Assistance finder to access links*– two alternative solutions have been proposed. Each solution presents and defines different business approaches to the aforementioned processes.

2. Methodology

Processes are a set of activities from one or more units aimed at achieving a common goal, generated by an **input** from a **supplier** and oriented to the production of a product or service (**output**) to a **customer** (internal or external). In the context of IT development, processes are used to successfully translate business needs into the IT architecture.

In the current study, the production of the business processes is performed following a four-step approach**,** which required the usage of different methods: firstly, a document analysis was performed. After, the SIPOC method is presented with a high-level overview of each process; the outputs are then used to further refine the business processes by means of a swim lane diagram that outlines the flow of activities. Finally, as a last step, a process fiche provides detailed insights on the way the business process work.
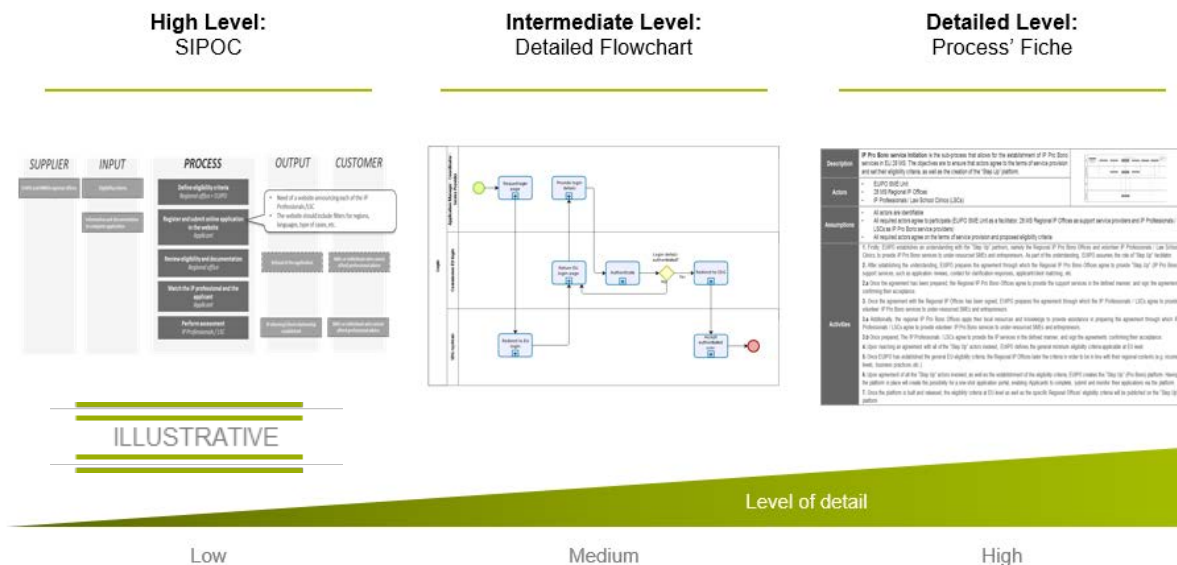
Figure 1: Methodological approach (illustrative)

The methods and techniques used are described below.

2.1. Document analysis

Document analysis is a means to elicit requirements by studying available documentation related to the project, including: legal texts and functional and technical documentation of different kind made available by DG GROW. See *6.3. References* for a list of available documentation. The business processes identified and described in the current document are based on this analysis.

2.2. SIPOC analysis

SIPOC is the acronym for what is considered the basic elements of a business process, namely, Suppliers, Inputs, Process, Outputs and Customers. When approaching business processes, the SIPOC analysis and map offers a high level overview of the processes that are later further examined.

The added value of performing a SIPOC is that it allows to identify the main phases of the process, the main inputs and outputs and the main actors involved in the process (suppliers and customers). Below are presented brief definitions of the SIPOC elements:

- **Supplier**: represents person, department or organisation that provides the input;
- **Input**: is the element that undergoes a transformation or allows it (e.g. a request, an incident, etc.);
- **Process**: set of organisational internal actions to produce the desired result;
- **Output**: products or services that are generated throughout the process (e.g. users' authentications, updated information in the system, etc.);
- **Customer**: represents the receiver of the goods or services generated in the process.

2.3. Process modelling

Process modelling is used to obtain a visual representation of a process encompassing a sequential flow and specific control logic. A process model will be used to obtain a detailed view of the processes mainly combining: activities, decisions, events, flow and roles. The final format of the process modelling will be a swim lane diagram, which encompasses horizontal sections illustrating the activities that are performed by specific roles. The notation used for modelling the business processes is described in *6.1. Annex 1: BPMN*.

2.4. Process Fiches

Process fiches are a narrative that aims to describe in detail the way each process is modelled. The process fiches describes in detail the activities, the assumptions, inputs, outputs and actors involved in the process.

3. Actors

Actors – and how they interact – are an essential element in process modelling and business analysis. Hence, it is crucial to offer clear and concise definitions of each actor involved in the business processes and the different roles they play. Based on the analysis of the SDG, the current section offers basic definitions of the actors involved.

From a high level perspective, there are four main responsible actors:

- End users
- European Commission
- National Coordinators
- National Service Providers

Each one of the actors above can be further decomposed into different roles, – e.g. the European Commission is decomposed in SDG System (as owner of the SDG), Application Manager, Commission Coordinator and Commission Service Provider.

A description of the four responsible actors and their decomposition into roles are further explained below.

3.1. End users

- Description: The End user is understood as "anyone who is a citizen of the Union, a natural person residing in a Member State or a legal person having its registered office in a Member State, and who accesses the information, the procedures, or the assistance or problem solving services" [1] Therefore, the End user will be the ultimate beneficiaries of the services provided on the SDG.
- Roles and responsibilities: End users are the EU citizens and businesses that will be accessing the front end of the SDG to perform searches and provide feedback on quality and on the barriers they encounter when operating in the Single Market. End users are not further decomposed in roles.

3.2. European Commission

- Description: The European Commission (the Commission), as executive actor of the Digital Single Market, is the owner of the SDG.
- Roles and responsibilities: The Commission plays two main roles in the SDG, one as owner of the SDG and main provider of the IT tools that support the SDG, and another as provider of the EU-level services that feed part of the SDG.

  As owner of the SDG, the Commission ensures that the IT support tools offer the relevant information for the End users. In this role, the Commission is the owner and responsible of the search engine, the links repository, the links interface, the user feedback tool, the feedback common database, the feedback interface and the Commission-generated user data / statistics. Hence, the Commission is represented in the business processes as **SDG (System)** and as **Application Manager.**

  As provider of the EU-level services information, the Commission provides all the necessary EU-related links that feed the links repository. In this role, the Commission is represented in the processes as **Coordinator**, **Service Provider** and **Service Provider (System)**.

3.2.1. SDG (System)

The **Commission SDG (System)** refers to one or more technical building block(s) that will be delivering the functionalities of SDG.

3.2.2. Application Manager

The **Application Manager** is the IT administrator of the **SDG (System)**.

3.2.3. Commission Coordinator

The actor presented as "**Commission Coordinator**" comprises the Commission in its role to promote the quality and availability of the information accessible in the SDG, i.e. the links

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[1] Article 3 of the proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on establishing a single digital gateway to provide information, procedures, assistance and problem solving services and amending Regulation (EU) No 1024/2012, of 2 May 2017 [COM(2017)256]

repository. A Commission representative, e.g. the chair of the gateway coordination group, is assumed to play this role. The commission coordinator has a logged-in role to manage the content of the SDG and to perform content changes.

3.2.4. Commission Service Provider

The **Service Provider** comprises the Commission in its role of information provider. Examples of Commission providers can be the EURES[2] or the Online Disputes Resolution[3] provided by DG JUST. These actors can login to the system with the role to manage the links in the SDG; the Commission Coordinator can evaluate their changes.

3.2.5. Commission as Service Provider (System)

The **Commission Service Provider (System)** includes all the different systems that support the services hosted by the Commission as Service Providers. In the Commission side, it includes all the systems owned and maintained by the Commission that link their information to the SDG.

3.3. National Coordinators

- Description: The National Coordinators act as liaison officers between the National Service Providers and the SDG[4]. Each Member State appoints one National Coordinator dedicated to the SDG.
- Roles and responsibilities: The main responsibility of the National Coordinators is to ensure that the National information that feeds the SDG, meets the quality standards set in the SDG Regulation [5] In this role, National Coordinators are responsible for coordinating the links sets to be captured and indexed in the SDG link repository.

3.3.1. National Coordinator

The actor presented as **National Coordinator** comprises the National Coordinators in their role to promote the quality and availability of the information accessible from the SDG, i.e. the link repository. The SDG National Coordinator of Estonia or Italy are examples of National Coordinators. These actors have logged-in roles to allow content changes in the SDG and to supervise compliance with the quality criteria at national level.

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[2] https://ec.europa.eu/eures/public/en/homepage
[3] https://ec.europa.eu/consumers/odr/main/index.cfm?event=main.home2.show&lng=EN
[4] Article 24 of the proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on establishing a single digital gateway to provide information, procedures, assistance and problem solving services and amending Regulation (EU) No 1024/2012, of 2 May 2017 [COM(2017)256]
[5] Articles 7 to 13 of the proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on establishing a single digital gateway to provide information, procedures, assistance and problem solving services and amending Regulation (EU) No 1024/2012, of 2 May 2017 [COM(2017)256]

3.4. National Service Providers

- Description: The National Service Providers[6] are the different "*competent authorities*" that actually produce and manage the information (links) provided in the SDG. Competent authorities are defined as "*Member State body or authority established at either national, regional or local level with specific responsibilities relating to the information, procedures, assistance and problem solving services*"
- Roles and responsibilities: National Service providers are the owners and responsible of information on the different areas of information and procedures covered in SDG[7], and the ultimate responsible of the quality of the information and support that they offer. They are the owners of the links that they share with the National Coordinators, responsible of the maintenance of the websites and the databases, the owners of the user feedback tools and data / statistics generated by the tools, and providers of the digitalised procedures.

3.4.1. National Service Provider

The **National Service Provider** includes each of the different information providers involved in the SDG. Examples of National service providers can be the Estonian e-Business Register[8] or the French Service-Public.fr[9]. These actors can login to the system with the role to manage their links in the SDG; the National Coordinators can evaluate their changes.

3.4.2. National Service Provider (System)

The **National Service Provider (System)** include all the different systems that support the services hosted by the National Service Providers. In the Member States side, it includes all the systems owned and maintained by the different authorities and service providers that link their information to the SDG.

4. IT tools overview

The business processes described in this document model the behaviour of the different IT tools that are part of the SDG:

- **Search facility,** aims at linking to information and procedures located both in Commission and Member States websites. The linking information is to be kept in a central repository;
- **Common assistance service finder**, similarly to the search facility it provides links to assistance and problem solving services offered by Commission and Member States authorities;
- **User Feedback tool (quality),** aims at assessing and improving the quality of information, procedures and assistance services;

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[6] Article 3 of the proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on establishing a single digital gateway to provide information, procedures, assistance and problem solving services and amending Regulation (EU) No 1024/2012, of 2 May 2017 [COM(2017)256]

[7] Annexes I and II of the proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on establishing a single digital gateway to provide information, procedures, assistance and problem solving services and amending Regulation (EU) No 1024/2012, of 2 May 2017 [COM(2017)256]

[8]: http://www.rik.ee/en/e-business-register

[9] https://www.service-public.fr/particuliers/vosdroits/F1757

- **User Feedback tool (SM obstacles)**, aims at gathering feedback on obstacles to the Single Market – interoperability questions may be raised as regards the link to information collected by assistance and problem solving services;
- **Statistics of use,** aims at providing the statistics of use of the portal in order to give an overview of its functioning;
- **Dashboard,** it enables to access the back office tools. It also offers an interface to analyse and monitor feedback received from users, and the statistics on the usage of the SDG.

Section *5. Business Processes* describes and contextualises each process into each of these tools.

5. Business Processes

The current section presents the different business processes identified for the SDG, which have been analysed and framed into the previously described IT tools. The image below summarises, in the form of a process map all the processes identified:
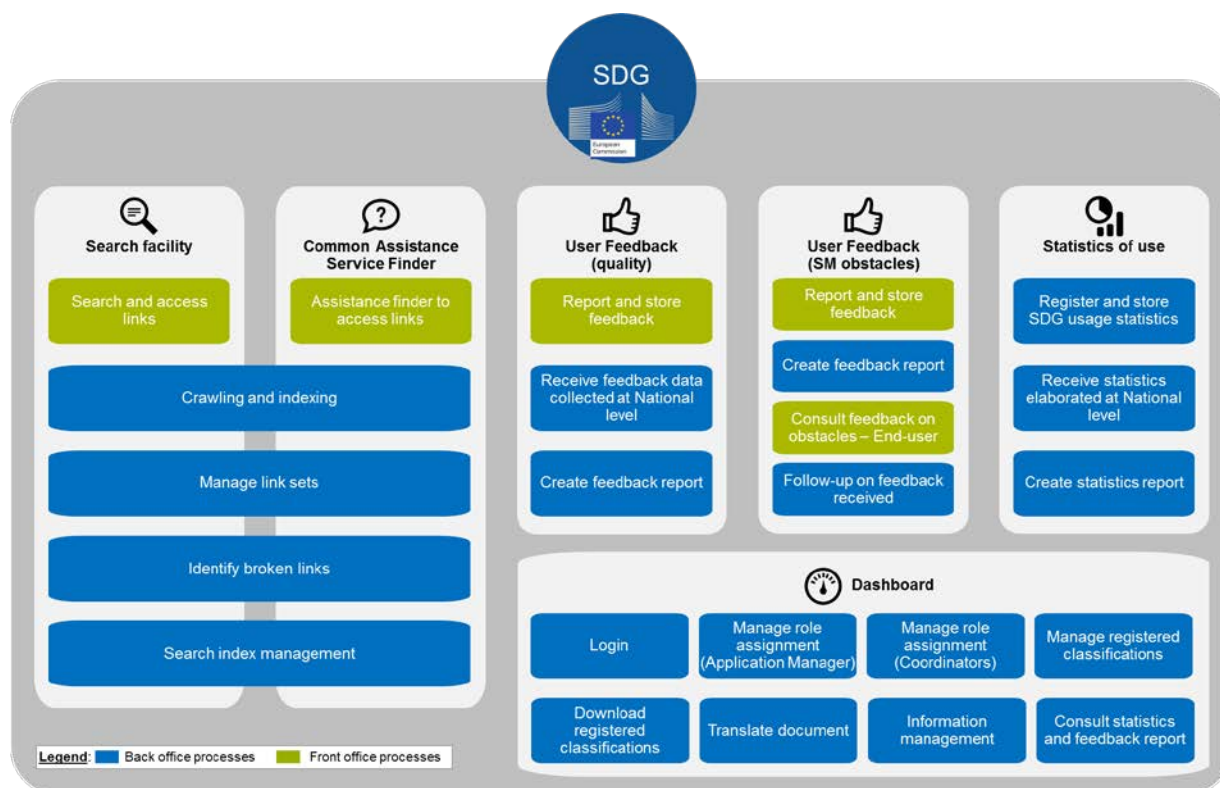
Figure 2: Processes map

For each of the 24 detailed processes a SIPOC, a BPMN diagram and a fiche are provided.

5.1. Search facility

The search facility provides users with links to access information and procedures located on the Commission and Member States websites. It is composed of a tool that provides access to a set of repositories located in SDG that contain this information. Information is indexed and the links are managed and curated.

This section contains the following processes:
- Search and access links, which includes two different approaches for MS to provide links:
  - Targeted solution
  - Interim solution
- Crawling and indexing
- Manage link sets
- Identify broken links
- Search index management

5.1.1. Search and access links

The process of Search and access link is described through two alternative solutions, a **targeted solution and an interim solution**. The two solutions propose different approaches and are dependent on the format Service Providers provides and manage links.

In the targeted solution it is assumed that Service Providers provide metadata whereas in the interim solution it is assumed that Service Providers provide only links (root page) but no metadata:

Interim solution

Targeted solution

Provision of links without metadata

Provision of links with metadata

Figure 3: Two alternative solutions to share links

The recommended solution, through which the queries can be executed with higher quality and relevancy results by the SDG, is the targeted solution, because the metadata associated with each link will help to provide a more structured and reliable results.

The SIPOC is common to both alternatives, while the process diagrams and fiches are different from each alternative.

Supplier	Input	Process	Output	Customer
• End user	• Query keywords	• Submit query • Execute query • Deliver the result • Access link	• Links to online procedures • Links to online information on rules, rights and obligations	• End user

Table 1: Search and access links SIPOC

Targeted solution
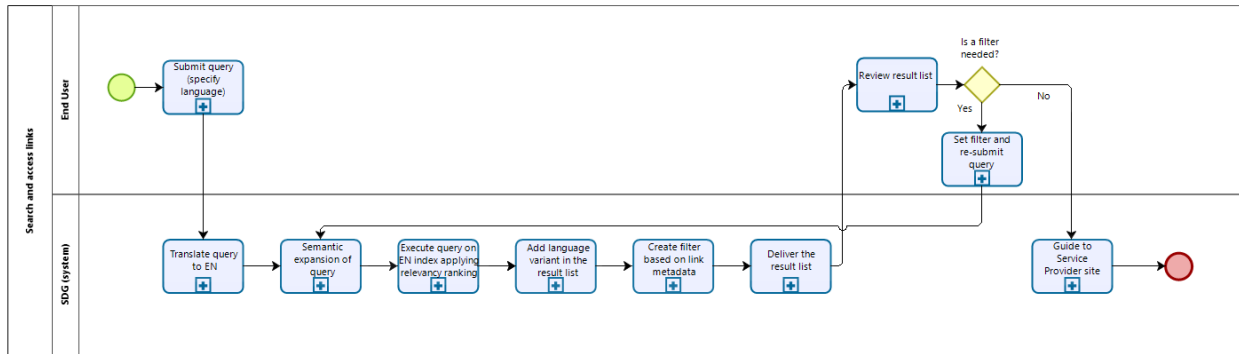
Figure 4: Targeted solution for Search and access links diagram

Search and access links – Targeted solution	
Description & Activities	**Actors**
The purpose of the **Search and access links** process is to provide End users with the information they are looking for. Search and access links is composed of 10 steps: • **Submit query (specify language):** In the front end, the End user types the keywords related with the information or administrative procedure it is searching for (into the search query area). The language setting for the query is copied from the settings of the browser of the End user, but can be changed if needed; • **Translate query into English:** The SDG System translates any query submitted in any of the others 23 languages into English; • **Semantic expansion query:** The SDG System applies semantic expansion to ensure inclusion of all relevant results. It evaluates the End user's input and expands the search query to match the related links from the repository; • **Execute query on English index applying relevancy ranking:** The search engine retrieves the relevant results from the search index and orders them according to the rules defined for relevancy ranking; • **Add language variants in the result list:** Extend the individual results to include results to links in the variant languages; • **Create filter based on link metadata:** Create a filter based on the metadata properties available in the links in the result list. The End user to further specify their query can use this filter;	• End user • SDG System • National Service Provider (System) • Commission Service Provider (System)

Search and access links – Targeted solution	
• **Deliver the result list:** The SDG System presents into the SDG front end the results of the query to the End user; • **Review result list:** The End user receives and reads the results of the query. If with this first search the End user finds what it is looking for, it can continue and access the link to retrieve the information; if the user does not find what it is looking for in the result list, it can filter and re-submit the query; • **Set filter and re-submit query:** If the user does not find what it is looking for in the result list, it can filter the result list. By filtering the result list, the End user re-submits the query; • **Guide End user to Service Provider site:** When the End user finds what it is searching in the result list, it can access the link at the Service Provider;	
Assumptions	
• The SDG System is working correctly • The Service Provider System is working correctly • There are no server malfunctions	
Inputs	
Keywords that frame the End user's search	
Outputs	
Link	

Table 2: Targeted solution for Search and access links fiche
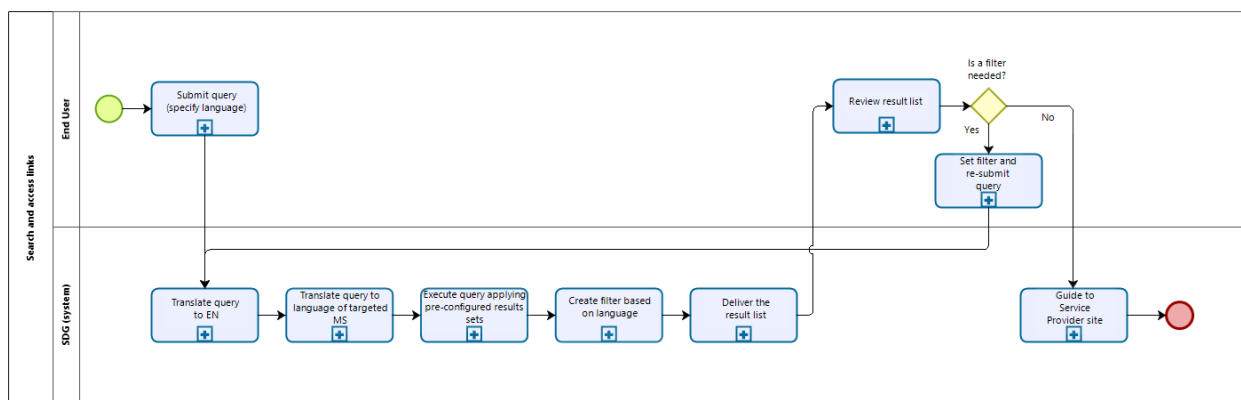
Interim solution

Figure 5: Interim solution for Search and access links diagram

Search and access links – Interim solution	
Description & Activities	**Actors**
The purpose of the **Search and access links** process is to provide End users with the information they are looking for. Search and access links is composed of nine steps: • **Submit query (specify language):** In the front end, the End user types the keywords related with the information or administrative procedure it is searching for (into the search query area); • **Translate query into English:** The SDG System translates any query submitted in any of the other 23 languages into English; • **Translate the query into the language(s) of the targeted MS:** Based on the key words used in the query, the SDG System identifies the targeted MS and also translates the query into the language(s) of the targeted MS; • **Execute query applying pre-configured results sets**: The search engine retrieves the relevant results from the search index and orders them according to pre-configured results sets; • **Create filter based on the languages:** Create a filter based on the language properties available in the links in the result list. The End user can filter the results to limit the number of provided results; • **Deliver the result list:** The SDG System presents into the SDG front end the results of the query to the End user; • **Review result list:** The End user receives and reads the results of the query. If with this first search the End user finds what it is looking for, it can continue and access the link to retrieve the information; if the user does not find what it is looking for in the result list, it can filter and re-submit the query; • **Set filter and re-submit query:** If the user does not find what it is looking for in the result list, it can filter the result list. By filtering the result list, the End user re-submits the query; • **Guide End user to Service Provider website:** When the End user finds what it is searching in the result list, it can access the link at the Service Provider.	• End user • SDG System • National Service Provider (System) • Commission Service Provider (System)
Assumptions	
• The SDG System is working correctly • The Service Provider System is working correctly • There are no server malfunctions	

Search and access links – Interim solution
Inputs
Keywords that frame the End user's search
Outputs
Link

Table 3: Interim solution for Search and access links fiche

5.1.2. Crawling and indexing

Crawling is the process that the machine conducts of visiting URLs and following the links to obtain the information required and of indexing the links in order to make them accessible through the web search. In the context of the SDG, the SDG System crawls links to information, procedures and assistance services.

Supplier	Input	Process	Output	Customer
• SDG System • National Service Provider (System) • Commission Service Provider (System)	• Updated link sets in link set database	• Retrieve link set to index • Remove outdated links from the index • Crawl and index links	• Updated Search Index	• SDG System

Table 4: Crawling and indexing SIPOC
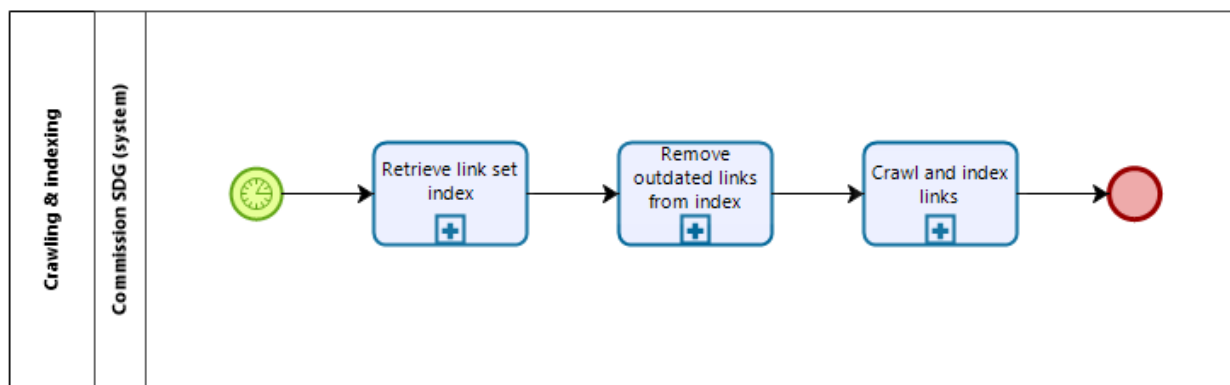
Figure 6: Crawling and indexing diagram

Crawling and indexing	
Description & Activities	**Actors**
The purpose of the **Crawling and indexing** process is to align the contents of the search index with the registered	• SDG System • National Service Provider (System)

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Crawling and indexing	

link sets in the link set database. The Crawling and indexing process is composed by three steps:
   • **Retrieve link set index:** In this step the SDG System queries the link set database for link sets that have been added, updated or de-activated (outdated);
   • **Remove outdated links from the index:** The SDG System removes the links from the search index that are associated with de-activated (outdated) link sets;
   • **Crawl and index links:** The SDG Systems crawls and indexes the updated sets of links.
	• Commission Service Provider (System)

Assumptions	
• The process is a scheduled process • The SDG System is working correctly • The Service Provider System is working correctly • There are no server malfunctions	
Inputs	
Updated link set database	
Outputs	
Updated Search index and all link set updates processed	

Table 5: Crawling and indexing fiche

5.1.3. Manage link sets

Supplier	Input	Process	Output	Customer
• Commission Service Provider • National Service Provider • Commission Coordinator • National Coordinator • Application Manager	• Link sets containing a link or a list of links available to be indexed	• Propose new and to be deleted link sets • Evaluate proposed changes • Implement changes to SDG link set repository	• Updated link set repository on the SDG	• SDG System

Table 6: Manage link sets SIPOC
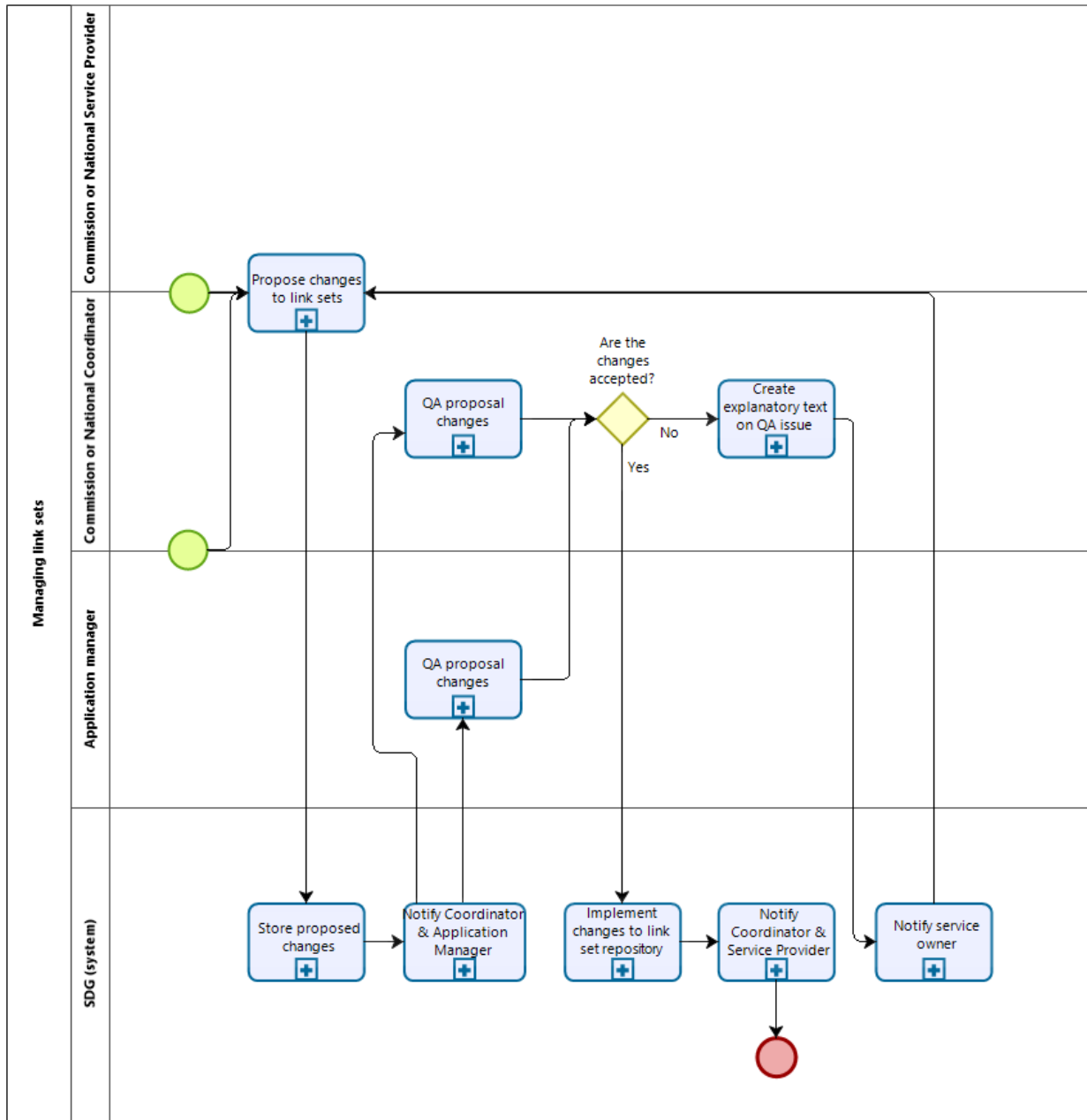
Figure 7: Manage link sets diagram

Manage link sets	
Description & Activities	**Actors**
The purpose of the **Manage link sets** process is to update the current set of link sets registered in the link set database of the SDG. It includes adding, updating, deleting and guaranteeing pre-defined quality levels. The Manage link sets process is composed by nine steps:	• SDG System • Commission Coordinator • National Coordinator • Commission Service Provider

Manage link sets	
Propose changes to link sets: The Service Provider, the Coordinator or the Application Manager proposes new link sets, updates to link sets and deletions of existing link sets; **Store proposed changes:** The SDG stores the proposed changes; **Notify Coordinator and Application Manager:** The SDG notifies the Coordinator and the Application Manager that new proposed changes are available and can be evaluated; **QA proposed changes:** The Application Manager evaluates the link set updates proposed by the Commission and National Service Provider and approves or rejects them; **QA proposed changes:** The Coordinator evaluates the link set updates proposed by the Commission and National Service Provider and approves or rejects them; **Create explanatory text of QA issue:** In case the Coordinator or the Application Manager rejects the proposed change, he/she provides and explanatory text; **Notify service owner:** The SDG sends the information on the rejected proposed change with the explanatory text to the Service Provider; **Implement changes to link set repository:** The SDG implements the additions and updates to the SDG. Deletions are implemented by de-activating the link set record; **Notify coordinator and service provider:** The SDG notifies the Coordinator and the Service Provider on the implemented changes.	- National Service Provider - Application Manager
Assumptions	
- The SDG System is working correctly - The Service Provider System is working correctly - There are no server malfunctions	
Inputs	
Updated link set database	
Outputs	
All link set updates processed	

Table 7: Manage link sets fiche

5.1.4. Identify broken links

This is the process to identify and report on broken links. The business process focuses mainly in an automatic, recursive and batch approach. Some sub processes can be derived from this scenario where a verification can be done every time a link is visited instead of an automatic approach.

Supplier	Input	Process	Output	Customer
• SDG System	• Registered active link sets in link set repository	• Retrieve all link sets • Iterate over link sets, testing if the links can be retrieved • Notify in case links of the link set are broken	• Notifications on links that are broken	• National Coordinator • Commission Coordinator • Commission Service Provider • National Service Provider

Table 8: Identify broken links SIPOC
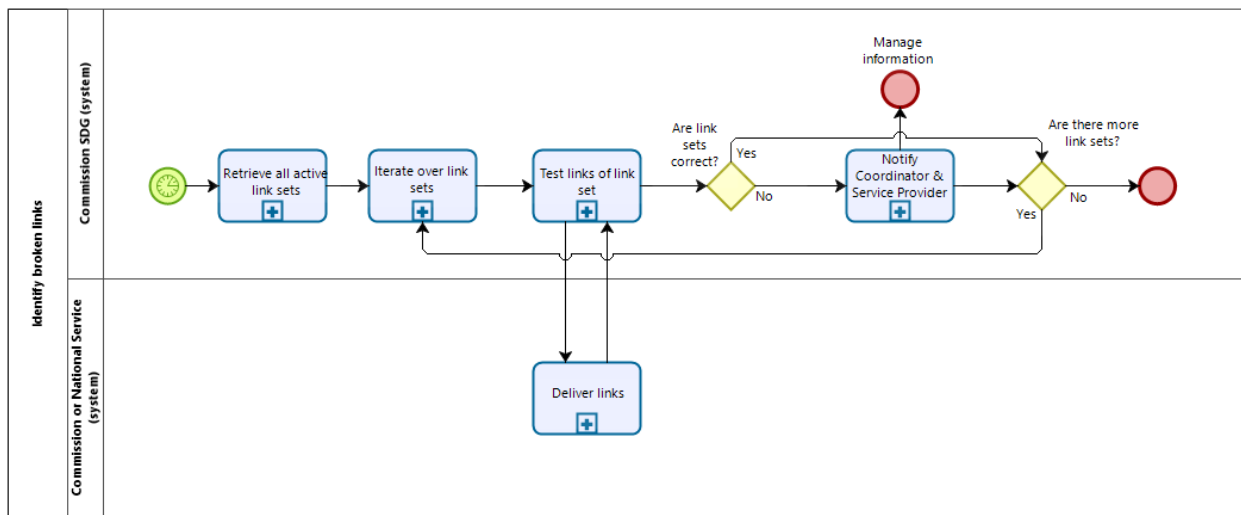
Figure 8: Identify broken links diagram

Identify broken links	
Description & Activities	**Actors**
The purpose of the **Identify broken links** process is to verify that all links part of an active link set in the SDG System can be retrieved properly. The Identify broken links process is composed by five steps:	• SDG System • National Service Provider (System) • Commission Service Provider (System)

Identify broken links
• **Retrieve all active link sets:** The SDG System retrieves all active link sets from the link set repository; • **Iterate over link sets:** The SDG System iterates over the link sets; • **Test links of link set:** The SDG System tests links within a link set by requesting the associated link from the service; • **Deliver link:** The service delivers the link to the SDG System, so that the SDG System can evaluate if the link can be retrieved properly; • **Notify Coordinator and Service Provider:** The SDG sends an email to the Application Manager, National or Commission Coordinators and National or Commission Service Providers.
Assumptions
• The process is a scheduled process • The SDG System is working correctly • The Service Provider System is working correctly • There are no server malfunctions
Inputs
Active link sets stored in the SDG link set database
Outputs
Notifications to the coordinator and service provider on broken links

Table 9: Identify broken links fiche

5.1.5. Search index management

Supplier	Input	Process	Output	Customer
• Application Manager	• Configuration files, link set database, and the links at the services	• Rebuild the SDG search index	• Updated Search Index	• SDG System

Table 10: Search index management SIPOC
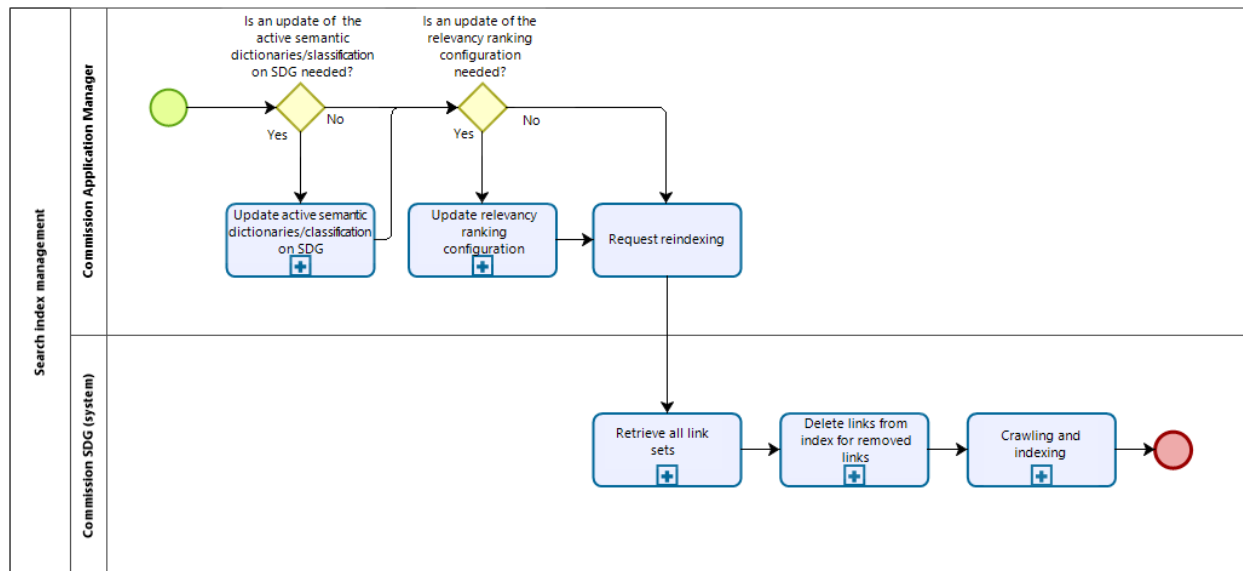
Figure 9: Search index management diagram

Search index management	
Description & Activities	**Actors**
The purpose of the **Search index management** process is to rebuild the SDG search index. This process is required in case of malfunction of the index, when the classifications are updated, and/or when the search index configuration files of the search index are updated. The Search Index management process is composed by six steps: • **If required: Update active semantic dictionaries/classifications on the SDG:** the Application manager updates the SDG classifications and search index dictionaries (used for synonym expansion); • **If required: Update the relevancy ranking configuration:** the Application Manager updates the relevancy ranking configuration of the search index; • **Request re-indexing:** the Application manager requests the SDG to re-index the search index; • **Retrieve all link sets:** the SDG retrieves all link sets stored in the link set repository of the SDG; • **Delete links from index for removed links:** the SDG removes from the index all links that have been deactivated; • **Crawling and indexing**: the SDG crawls and indexes the updated sets of links.	• SDG System • National Service Provider (System) • Commission Service Provider (System) Application Manager
Assumptions	

Search index management
- The SDG System is working correctly   - The Service Provider System is working correctly   - There are no server malfunctions
Inputs
Configuration files, link set database, and the links to the services
Outputs
Search index has been re-indexed

Table 11: Search index management fiche

5.2. Common assistance service finder

The common assistance service finder provides End users with assistance and problem-solving services offered by the Commission and the Member States authorities. Basic information to assistance service links can include the scope of the assistance service, the entity responsible, fee ranges of the assistance service (if applicable) and estimated time of response.

With exception to the *Assistance finder to access links*, most of the sub-processes of the common assistance service finder –mainly related to the maintenance of the link repository– work in a very similar way to the Search Facility service. Hence, the processes described in *5.1 Search facility* are mostly reused in the common assistance service finder. Regarding the *Assistance finder to access links*, it proposes two different approaches for End users to find and access links: the **text search** approach, which works as the Search facility, and the **guided search** approach, which uses taxonomy techniques.

This section refers to the same following processes:
- Assistance finder to access links, which includes two different approaches to access links:
  - Text search approach
  - Guided search approach
- Crawling and indexing
- Manage link sets
- Identify broken links
  Search index management

5.2.1. Assistance finder to access links

In this process, the document presents two alternative solutions, reflecting a different approach to the End user's search of assistance within the SDG.

Text search approach

In the text search approach, the End user goes through a process that is similar to the process already described in Search and access links. The End user submits a query with keywords and displays a list of assistance service links.

Service Providers might provide metadata together with links for the assistance services in order to improve and allow the display of better results to the End user. In the text search approach processes are identical to the ones described in *5.1.1 Search and access* is reused.

Guided search approach

In the Guided search approach, the End user does not have to submit a query, but rather navigate through a list of pre-defined taxonomy, hence going through few steps that allows the End user to identify the needed assistance service.

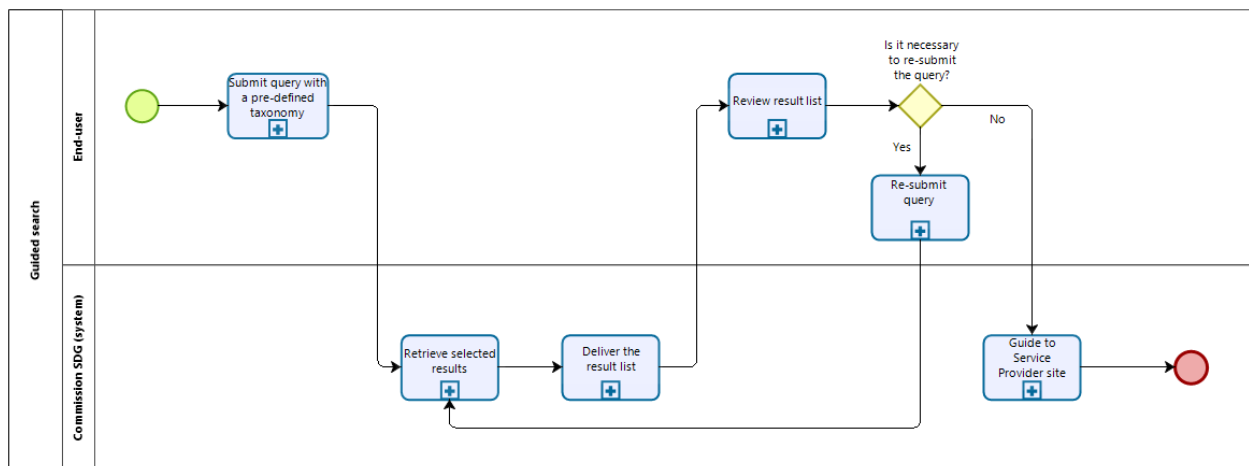| Supplier	Input	Process	Output	Customer
• End user	• End user preferences	• Submit query with a pre-defined taxonomy • Retrieve selected results • Deliver the result list • Review result list • Set filter and re-submit query • Guide End user to Service Provider site	• Assistance link	• End user

Table 12: Guided search SIPOC

Figure 10: Guided Search diagram

Guided Search	
Description & Activities	**Actors**
The purpose of the Guided Search process is to provide assistance to End users by using taxonomy techniques. The Guided Search process is composed by six steps: • **Submit query with a pre-defined taxonomy**: The End user selects the needed assistance by going through a pre-defined taxonomy with different levels of hierarchy-structured drop-down lists in each level; • **Retrieve selected results**: Based on the search performed by the End user, the SDG system retrieves the results requested and guides the End user to the Service Provider. • **Deliver the result list:** The SDG System presents into the SDG front end the results of the query to the End user; • **Review result list:** The End user receives and reads the results of the query. If with this first search the End user finds what it is looking for, it can continue and access the link to retrieve the information; if the user does not find what it is looking for in the result list, it can return to the drop-down lists and re-submit the query; • **Re-submit query:** If the user does not find what it is looking for in the result list, it can return to the pre-defined taxonomy and re-submit the query;; • **Guide End user to Service Provider site:** When the End user finds what it is searching in the result list, it can access the link at the Service Provider.	• SDG System • End user • National Service Provider (System) • Commission Service Provider (System) • Application Manager
Assumptions	
• The SDG System is working correctly • The Service Provider System is working correctly • There are no server malfunctions	
Inputs	
Pre-defined taxonomy and End user preferences	
Outputs	
Requested results based on End user preferences	

Table 13: Guided search fiche

5.2.2. **Crawling and indexing**

See *5.1.2. Crawling and indexing*

5.2.3. Manage link sets

See *5.1.3 Manage link sets*

5.2.4. Identify broken links

See *5.1.4. Identify broken links*

5.2.5. Search index management

See *5.1.5. Search index management*

5.3. User Feedback tool on quality

The user feedback tool on quality allows End users to provide feedback about the quality of the services requested through the SDG, both at MS and EU levels. The feedback is on the availability and reliability of the information on rights, obligations and rules, which are derived from national and EU law; the information about the procedures, which are established at national and EU levels; and information about the assistance and problem solving services, which are established at national and EU levels. The feedback provided can be used by the Commission and the National Service Providers for further improvement of the provided services. MS also share their responses to the feedback received. Once the tool collects the feedback, it can analyse it and create a feedback report, which can then be consulted by the Commission and National Coordinators, and the Commission and National Service Providers.

This section contains the following processes:
- Report and store feedback
- Receive feedback data collected at National level
- Create feedback report

5.3.1. Report and store feedback

Supplier	Input	Process	Output	Customer
• End user	• Feedback	• Report feedback on the quality and availability of the service on the service's webpage	• End user's feedback	• SDG System

Table 14: Report and store feedback SIPOC
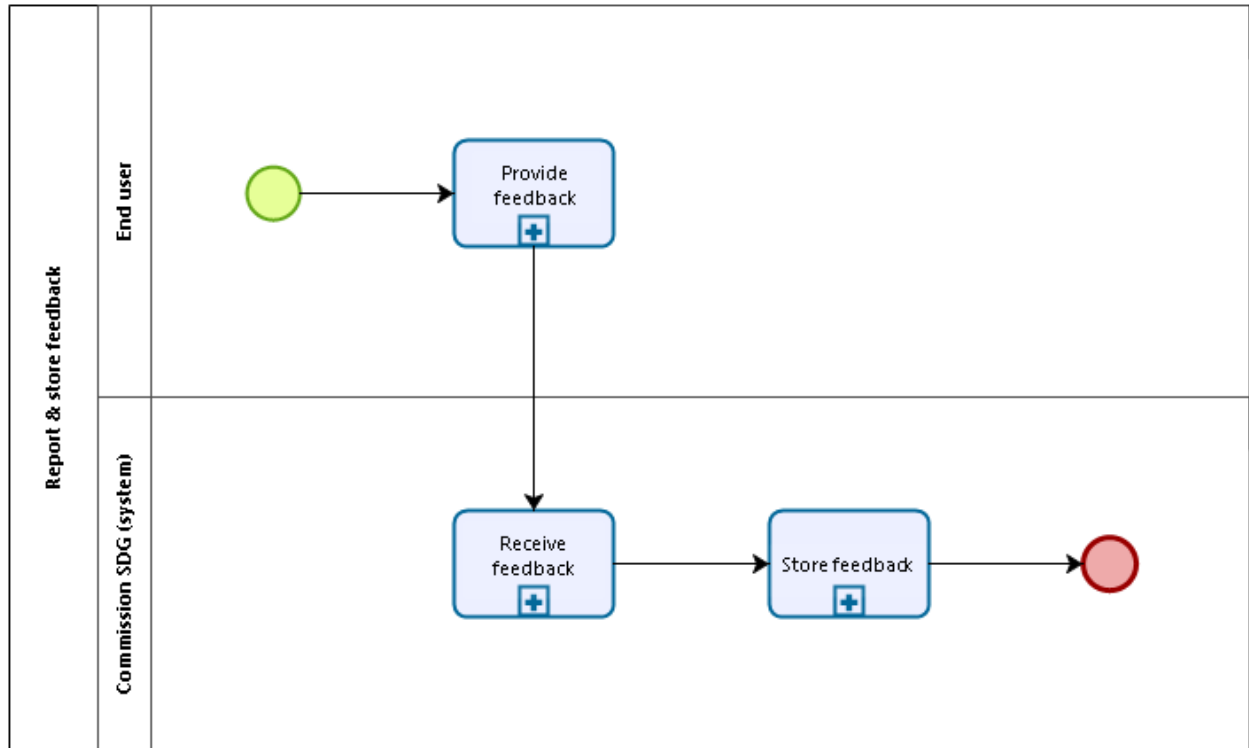
Figure 11: Report and store feedback diagram

Report and store feedback	
Description & Activities	**Actors**
The purpose of the **Report and store feedback** process is to gather feedback on the SDG, input by the End user. Report and store feedback is composed by three steps: • **Provide feedback:** The End user provides personal feedback; • **Receive feedback:** The SDG System registers the feedback input by the End user; • **Store feedback:** The SDG System stores the feedback input by the End user.	• End user • SDG System
Assumptions	
• The SDG System is working correctly • There are no server malfunctions	
Inputs	
End user's feedback	
Outputs	
End user's feedback is stored in the SDG and updated SDG feedback repository	

Table 15: Report and store feedback fiche

5.3.2. **Receive feedback data collected at National level**

Supplier	Input	Process	Output	Customer
• National Service Provider	• Feedback collected from the End user by a National Service Provider • Response from MSs on the feedback received	• Delivery of feedback data • Store feedback data	• End user's feedback collected and stored into the Commission's common database • Response from MSs on the feedback received is collected and stored	• SDG System

Table 16: Receive feedback data collected at National level SIPOC
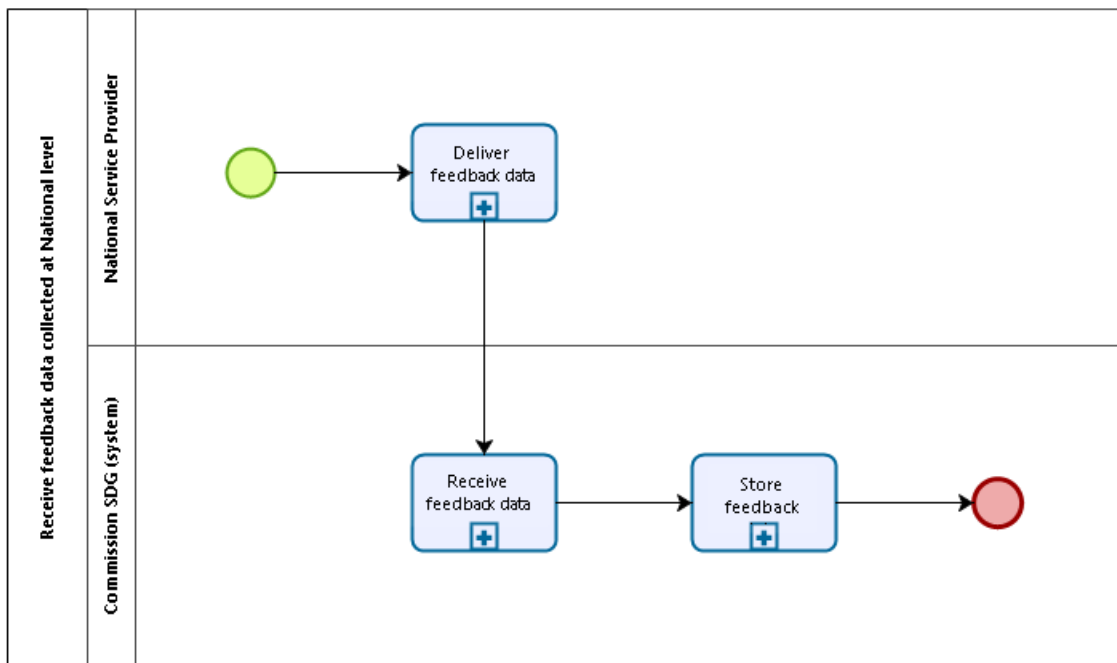
Figure 12: Receive feedback data collected at National level diagram

Receive feedback data collected at National level	
Description & Activities	**Actors**
The purpose of the **Receive feedback data collected at National level** process is to collect the feedback that End users provide on the National Service Provider and monitor the response of the MS to the feedback received. Receive	• SDG System • National Service Provider

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Receive feedback data collected at National level	
feedback data collected at National level is composed by three steps: • **Deliver feedback data:** The Service Provider delivers to the SDG the feedback data that has been gathered from End users at National level and the response of the MS to the feedback received; • **Receive feedback data:** The SDG receives the feedback data and the response of the MS to the feedback received; • **Store feedback data:** The SDG stores the feedback data and the response of the MS to the feedback received.	
Assumptions	
• The SDG System is working correctly • The Service Provider system is working correctly • The two systems are interoperable • There are no server malfunctions	
Inputs	
Feedback data gathered at the service of the National Service Provider and the response of the MS to the feedback received	
Outputs	
Updated feedback database	

Table 17: Receive feedback data collected at National level fiche

5.3.3. Create feedback report

Supplier	Input	Process	Output	Customer
• SDG System	• Feedback data	• Retrieve feedback data • Calculate statistics • Render report • Store report	• Report with Feedback data statistics	• SDG System

Table 18: Create feedback report SIPOC
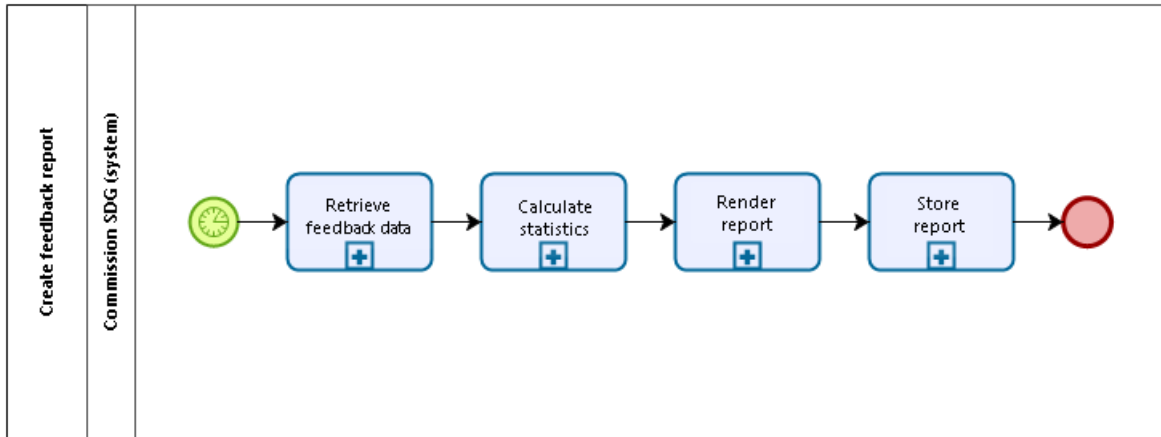
Figure 13: Create feedback report diagram

Create feedback report	
Description & Activities	**Actors**
The purpose of the **Create feedback report** process is to capture End users' feedback in a summary report. In this process the report is created and stored, the report is then displayed in a separate process called "Consult Statistics and Feedback reports". Create Feedback Report is composed by four steps: • **Retrieve feedback data:** The SDG retrieves from its feedback database the feedback data; • **Calculate statistics:** The SDG calculates the statistics required for the report; • **Render report:** The SDG renders the statistics in a feedback report; • **Store report**: The SDG stores the feedback report.	• SDG System
Assumptions	
• The process is a scheduled process • The SDG System is working correctly • There are no server malfunctions	
Inputs	
Feedback data stored in the SDG feedback database	
Outputs	
Feedback report	

Table 19: Create feedback report fiche

5.4. User Feedback on SM obstacles

The user feedback tool on SM obstacles allows users to provide feedback on the obstacles they encounter in the implementation of the SM, both at MS and EU levels. The feedback can be used to better understand the SM obstacles and how they can be addressed. Since the SM obstacles need to be addressed at National level with the support of the EC, the feedback received on SM obstacles will be forwarded to the responsible EU / National authorities i.e. Commission, National Coordinators and the competent authorities.

The tool has a channel through which it is possible to provide feedback, the feedback data is later gathered by the tool to develop an overview report. Since the tool works in a very similar way to the user feedback tool on quality, the processes described in *5.3 User Feedback tool on quality* are reused in the user feedback tool on SM obstacles. Additionally, a consult feedback on obstacles for End user process has been added.

This process would be very similar to the User Feedback tool on quality, however, it would also have some additional features, for example: the possibility to forward particular feedback on obstacles to third parties, and the possibility to assign an institution or a third party to the task of following-up on the feedback.

This section refers to the following processes:
- Report and store feedback
- Create feedback report
- Consult feedback on obstacles – by End user

5.4.1. Report and store feedback

See *5.3.1 Report and store feedback*

5.4.2. Create feedback report

See *5.3.3 Create feedback report*

5.4.3. Consult feedback on obstacles – End user

Supplier	Input	Process	Output	Customer
• End User	• Request on feedback information	• Request information on obstacles • Receive feedback information on obstacles	• Information on obstacles	• End user

Table 20: Consult feedback on obstacles – End user SIPOC
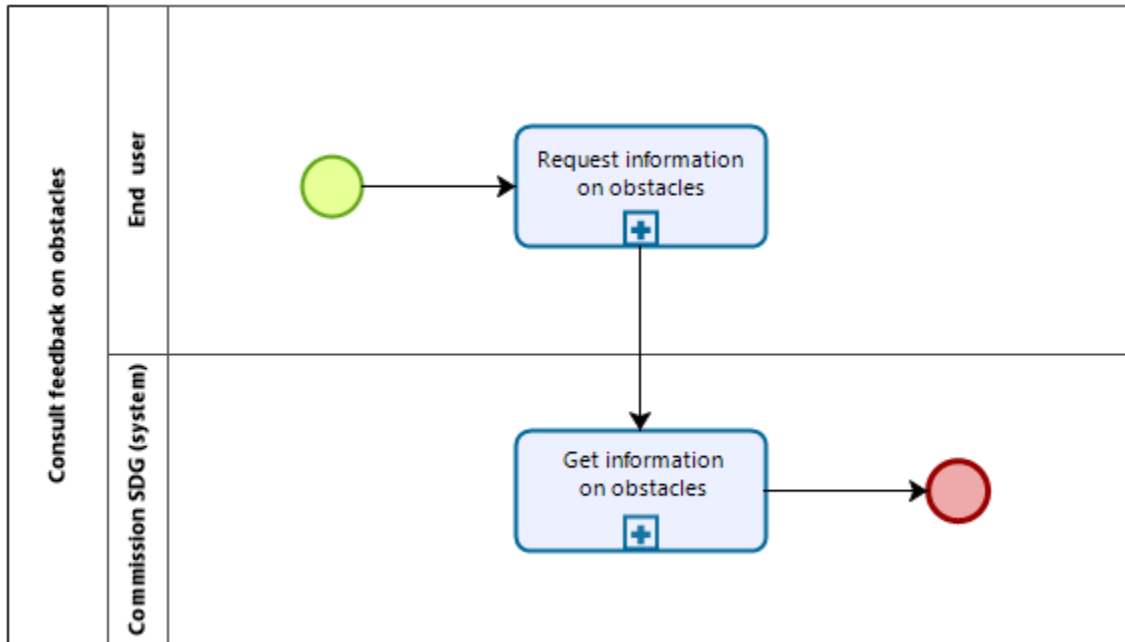
Figure 14: Consult feedback on obstacles – End user diagram

Consult feedback on obstacles – End user	
Description & Activities	**Actors**
The purpose of the **Consult feedback on obstacles** process is to provide to the user certain feedback on obstacles and is composed by two steps: • **Request information on obstacles:** The End user request information on obstacles; • **Get information on obstacles:** The SDG System obtains information on obstacles and provides it to the user.	• End user • SDG System
Assumptions	
• The SDG System is working correctly • There are no server malfunctions	
Inputs	
End user request	
Outputs	
Feedback on obstacles is consulted	

Table 21: Consult feedback on obstacles – End user fiche

5.4.4. Follow-up on feedback received

Supplier	Input	Process	Output	Customer

• Commission Coordinator • National Coordinator	• Request list of feedback on obstacles	• Select feedback received • Forward feedback	• Feedback on obstacles	• Commission Coordinator • National Coordinator • Commission Service Provider • National Service Providers

Table 22: Follow-up on feedback received SIPOC
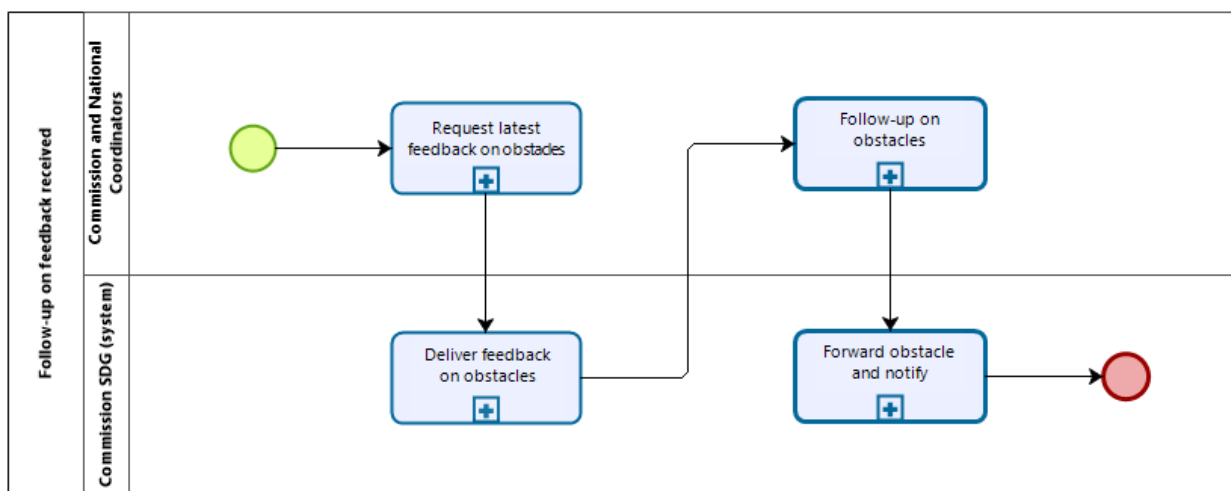
Figure 15: Follow-up on feedback received diagram

Follow-up on feedback received	
Description & Activities	**Actors**
The purpose of the **Follow-up on feedback received** process is to assist the authorities at EU and National level in following up on feedback that End users submitted with regards to SM obstacles and is composed by three steps: • **Request latest feedback on obstacles:** The Commission Coordinator or the National Coordinator request the latest feedbacks on obstacles stored by SDG; • **Deliver feedback on obstacles:** The SDG System retrieves the feedbacks on obstacles and provides it to the Commission Coordinator or National Coordinator; • **Follow-up on obstacles:** The Commission Coordinator or the National Coordinator can consult the feedbacks on obstacles and follow-up on them with other users of the SDG;	• Commission Coordinator • National Coordinator • SDG System

Follow-up on feedback received	
• **Forward obstacle to selected competent authorities and notify:** The SDG System forwards the feedback on obstacles to the competent authorities selected by the Commission Coordinator or National Coordinator and notify them that a feedback on obstacles is available in the SDG system.	
Assumptions	
• The SDG System is working correctly • There are no server malfunctions	
Inputs	
Request on feedback on obstacles	
Outputs	
Feedback on obstacles is consulted	

Table 23: Follow-up on feedback received fiche

5.5. Statistics of use

The Statistics of use process aims at collecting and elaborating data on the usage of the SDG platform by End users. Objectives of these statistics are to identify the target audience and improve the quality of the SDG processes, of the information provided and of the assistance and problem solving services.

Examples of usage statistics that can be collected include but are not limited to:
- Number of visits and number of visitors
- Information on the origin country, the language and the acquisition channels
- Number of visits to the online procedure pages, number of users who visited the procedure pages
- Top search terms on the MS websites
- Most visited pages on the MS websites
- Number of requests for assistance
- Subject matter of requests
- Average and maximum response times

This section contains the following processes:
- Register and store SDG usage statistics
- Receive statistics elaborated at National level
- Create statistics report

5.5.1. Register and store SDG usage statistics

Supplier	Input	Process	Output	Customer
• End user	• SDG usage data	• Access SDG • Access information is	• SDG usage statistics collected and	• SDG System

		registered and stored • Calculate statistics • Store statistics	stored into the Commission's common database	

Table 24: Register and store SDG usage statistics SIPOC
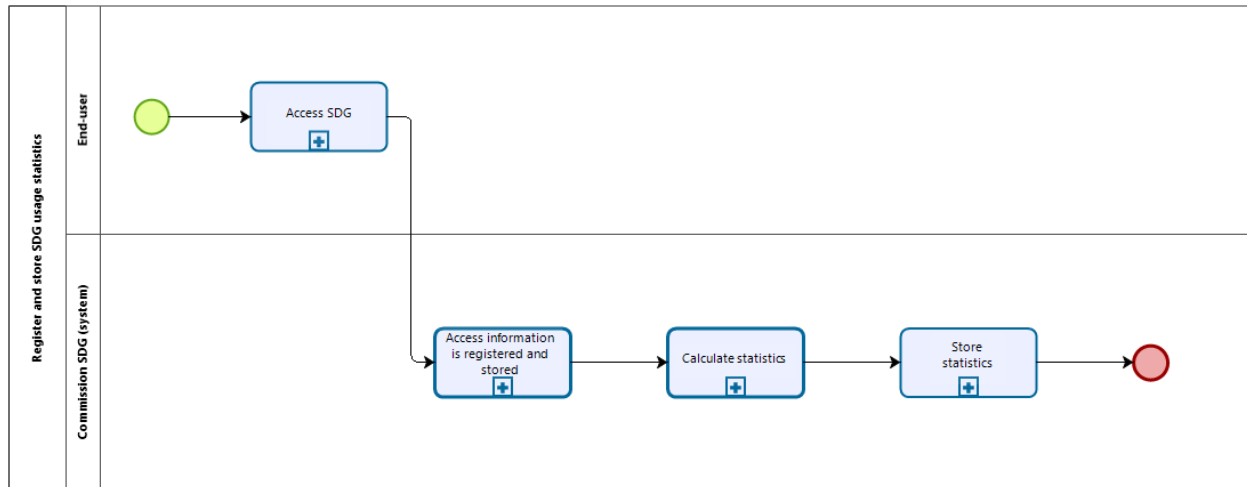
Figure 16: Register and store SDG usage statistics diagram

Register and store SDG usage statistics	
Description & Activities	**Actors**
The purpose of the **Register and store SDG usage statistics** process is to collect the statistics of usage of the SDG. Register and store SDG usage statistics is composed by four steps: • **Access SDG**: the End user accesses the SDG and navigates through it; • **Access information is registered and stored**: the SDG registers the usage data and stores it; • **Calculate statistic:** The SDG calculates the usage statistics on the base of the usage data stored; • **Store statistics:** The SDG stores the statistics.	• End user • SDG System
Assumptions	
• The SDG System is working correctly • There are no server malfunctions	
Inputs	
End user access and navigation through the website	
Outputs	

Register and store SDG usage statistics
SDG usage statistics, updated statistics database

Table 25: Receive statistics elaborated at National level fiche

5.5.2. Receive statistics elaborated at National level

Supplier	Input	Process	Output	Customer
• National Service Provider	• Statistics elaborated about the usage of the services by a National Service Provider	• Delivery of statistics • Store statistics	• Usage statistics collected & stored into the Commission's common database	• SDG System

Table 26: Receive statistics elaborated at National level SIPOC
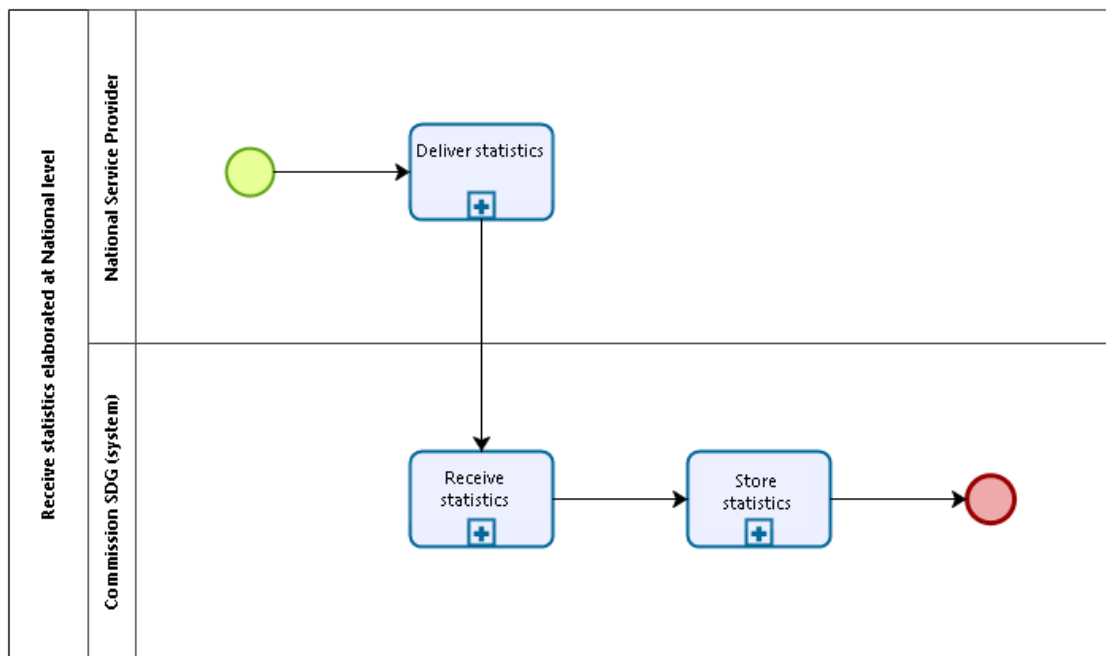
Figure 17: Receive statistics elaborated at National level diagram

Receive feedback data collected at National level	
Description & Activities	**Actors**
The purpose of the **Receive statistics elaborated at National level** process is to collect the statistics of usage elaborated by the National Service Provider based on the information gathered at National level. Receive statistics elaborated at National level is composed by three steps:	• SDG System • National Service Provider

Receive feedback data collected at National level	
• **Deliver statistic:** The Service Provider delivers to the SDG the statistics that have been elaborated at National level; • **Receive statistics:** The SDG receives the statistics; • **Store statistics:** The SDG stores the statistics.	
Assumptions	
• The SDG System is working correctly • The Service Provider system is working correctly • The two systems are interoperable • There are no server malfunctions	
Inputs	
Statistics elaborated based on the service of the National Service Provider	
Outputs	
Updated statistics database	

Table 27: Receive statistics elaborated at National level fiche

5.5.3. Create statistics report

Supplier	Input	Process	Output	Customer
• SDG System	• National statistics data • SDG statistics data	• Retrieve statistics data • Render report • Store report	• Report with statistics data	• SDG System

Table 28: Create statistics report SIPOC
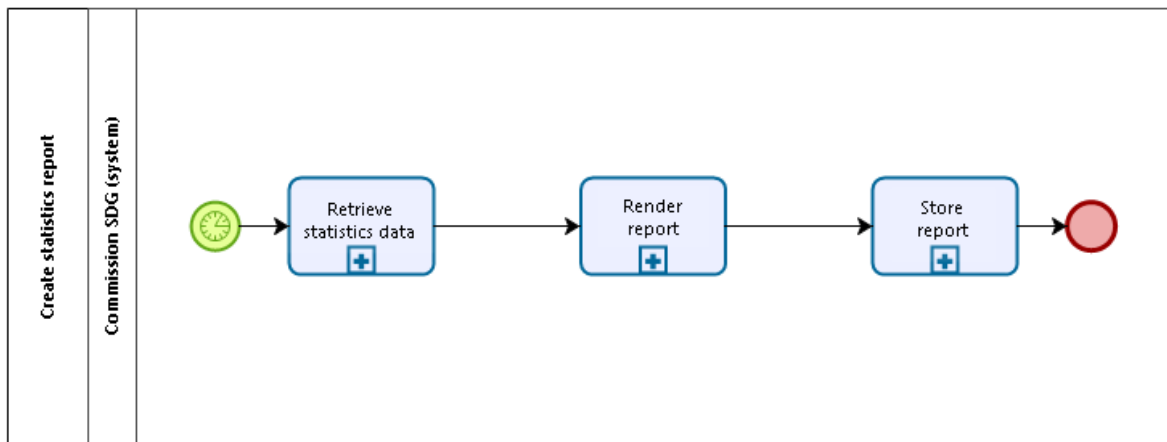
Figure 18: Create statistics report diagram

Create statistics report	
Description & Activities	**Actors**
The purpose of the **Create statistics report** process is to capture the usage statistics of MS services in a summary report. In this process the report is created and stored (pre-processed), the report is then displayed in a separate process called "Consult Statistics and Feedback report". Create statistics report is composed by three steps: • **Retrieve statistics data:** The SDG System retrieves from its statistics database the statistics data collected at National level and the SDG usage statistics; • **Render report:** The SDG System renders the statistics in a statistics report; • **Store report**: The SDG System stores the statistics report.	• SDG System
Assumptions	
• The process is a scheduled process • The SDG System is working correctly • There are no server malfunctions	
Inputs	
Statistics data stored in the SDG statistics database	
Outputs	
Statistics report	

Table 29: Create statistics report fiche

5.6. Dashboard

The Dashboard tool hosts the support processes that take place in the back office of the SDG. These processes are transversal to all the IT tools of the SDG and, although they do not affect every business process from every IT tool, they are necessary to enable the management of the platform and monitor its results, both at national and European level.

This section includes the following processes:
- Login
- Manage role assignment (Application Manager)
- Manage role assignment (Commission Coordinator and National Coordinator)
- Manage registered classifications
- Download registered classifications
- Translate document
- Information Management
- Consult statistics and feedback reports

5.6.1. Login

Supplier	Input	Process	Output	Customer
• Application Manager • Commission Coordinator • National Coordinator • Service Providers	• User's credentials	• Provide login details • Authenticate • Login user • Authorize	• Authenticated and authorized user	• SDG System

Table 30: Login SIPOC
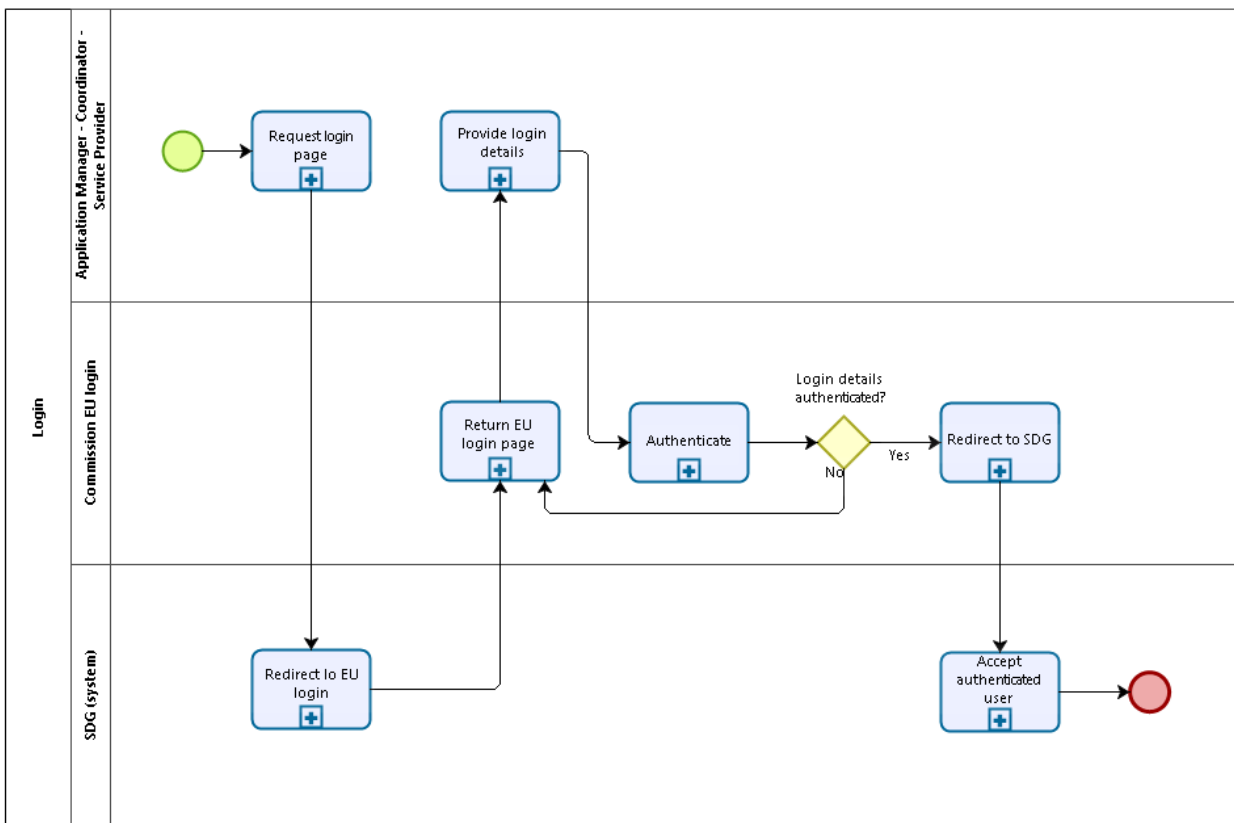
Figure 19: Login diagram

Login	
Description & Activities	**Actors**
The purpose of the **Login** process is to authenticate and provide the proper rights to the user that is trying to access the SDG. In the SDG context, the users that need to authenticate are: the Application Manager, Coordinators,	• Application Manager • Commission EU Login (System) • SDG System • Commission Coordinator

Login	
and the Service Providers. The Login process is composed by seven activities: **Request Login page**: The user requests the login form; **Redirect to EU login:** The user's request to login is redirected from the SDG System to the EU Login (European Commission Authentication Service); **Return to EU login page**: The user has been redirected to the EU Login; **Provide login details**: In the EU Login, the user submits its authentication details; **Authenticate**: The EU Login verifies the authenticity of the user. If the authentication is correct, the user is directed to the SDG; if the authentication is incorrect, the user needs to submit its authentication details again; **Redirect to the SDG:** If the authentication is correct, the Commission EU Login system communicates the success of the authentication to the SDG; **Accept authenticated user:** The SDG system accepts the user as an authenticated user within the current session.	- National Coordinator - Service Providers
Assumptions	
- The user has an SDG role assigned with active user rights - The authentication credentials are correct and valid - The EU Login is working correctly - The SDG System is working correctly - There are no server malfunctions	
Inputs	
User request to login	
Outputs	
The user is authenticated, logged in and can conduct its activities in the SDG	

Table 31: Login fiche

5.6.2. Manage role assignment (Application Manager)

Supplier	Input	Process	Output	Customer
• Application Manager	• EU Login ID of the user to be associated with a role	• Creating, or deleting a role-assignment for a user	• Managed role-assignment	• Application Manager • Commission Coordinator • National Coordinator • SDG System

Table 32: Manage role assignment (Application Manager) SIPOC
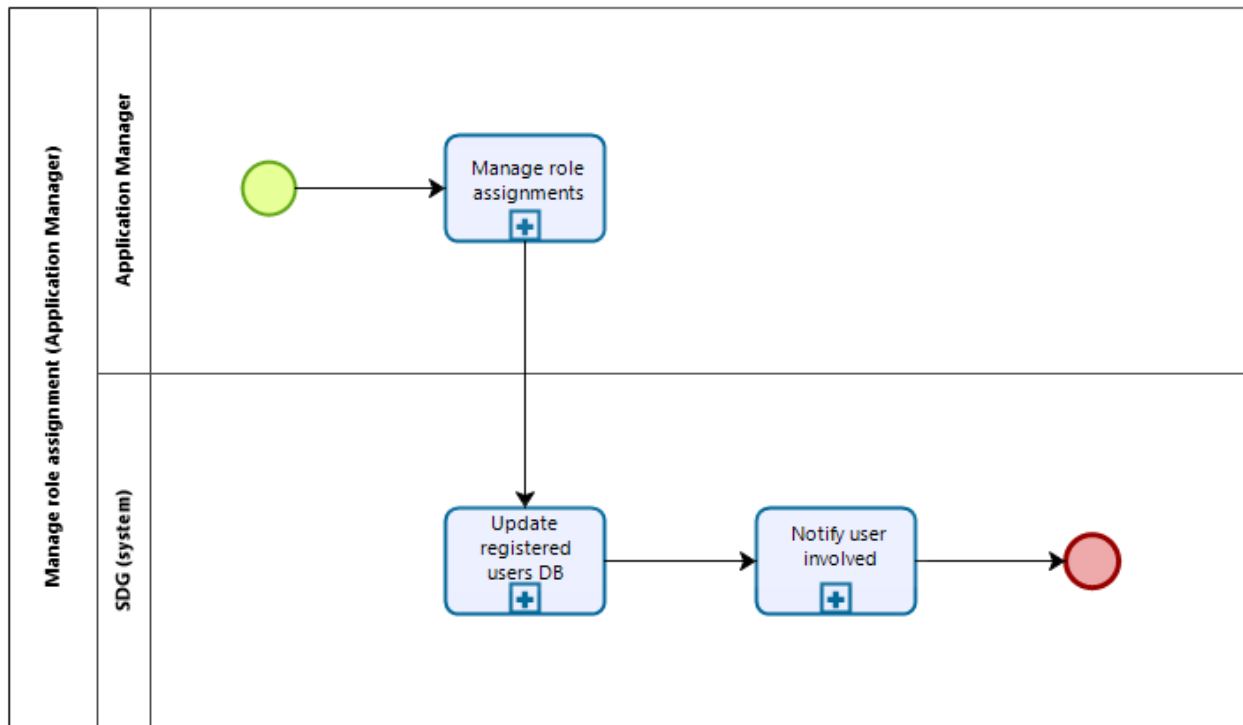
Figure 20: Manage role assignment (Application Manager) diagram

Manage Role Assignment (Application Manager)	
Description & Activities	**Actors**
The purpose of the **Manage Role Assignment (Application Manager)** process is to manage the assignment of roles for the Application Managers, the Coordinators, and the Service Providers of SDG. In other words, these users obtain their rights to execute certain processes on the SDG on the basis of these roles. Manage Role Assignment (Application Manager) is composed of three steps: **Manage role assignments:** The Application Manager creates and/or updates the assignment of a role to a user on the basis of their EU Login ID; **Update registered users database (DB):** The SDG System registers the addition, update, or deletion of the role assignment; **Notify user involved:** The SDG System automatically creates a notification to the user for which the change in role assignment has been performed.	• Application Manager • SDG System
Assumptions	
- The Application Manager is logged-in in the SDG - The user already exists - The SDG System is working correctly - There are no server malfunctions	
Inputs	
EU Login ID of the user for which the role assignment has to be updated	
Outputs	
Updated role assignments within the SDG users' database. The user for which the role assignment has been updated receives an email notification about the changes in their role assignment	

Table 33: Manage role assignment (Application Manager) fiche

5.6.3. Manage role assignment (Commission Coordinator and National Coordinator)

Supplier	Input	Process	Output	Customer
• Commission Coordinator • National Coordinator	• EU Login ID of the user to be associated with a role	• Creating, or deleting a role-assignment for a user	• Managed role-assignment for service provider	• National Service Provider • Commission Service Provider • National Coordinator • Commission Coordinator • SDG System

Table 34: Manage role assignment (Commission Coordinator and National Coordinator) SIPOC
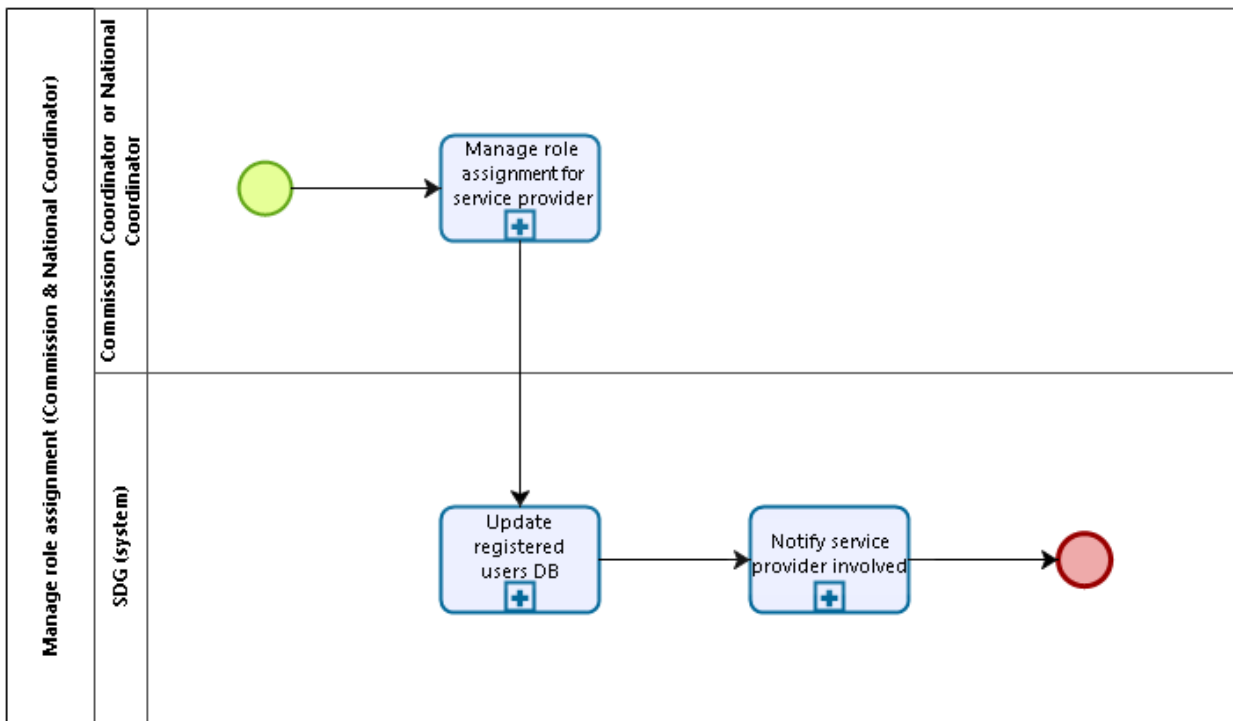
Figure 21: Manage role assignment (Commission Coordinator and National Coordinator) diagram

Manage Role Assignment (Commission Coordinator and National Coordinator)	
Description & Activities	**Actors**
The purpose of the **Manage Role Assignment (Commission Coordinator and National Coordinator)** process is to manage the assignment of Commission or National Service Providers user roles in the SDG. In other words, these users will obtain their rights to execute certain processes on the SDG on the basis of these roles. Manage Role Assignment (Commission Coordinator and National Coordinator) is composed of three steps: • **Manage role assignments for service provider:** The Coordinator creates and/or updates the assignment of a role to a user on the basis of their EU Login ID; • **Update registered users database (DB):** The SDG System registers the addition, update, or deletion of the role assignment; • **Notify service provider involved:** The SDG System automatically creates an email notification to the user for which the change in role assignment has been performed.	• SDG System • Commission Coordinator • National Coordinator
Assumptions	
• The Coordinator is logged-in in the SDG • The user already exists • The SDG System is working correctly • There are no server malfunctions	
Inputs	
EU Login ID of the user for which the role assignment has to be updated	
Outputs	
Updated role assignments within the SDG users' database. The user for which the role assignment has been updated receives an email notification about the changes in their role assignment	

Table 35: Manage role assignment (Commission Coordinator and National Coordinator) fiche

5.6.4. Manage registered classifications

Supplier	Input	Process	Output	Customer
• Application Manager	• Classification	• Management of classifications for the SDG classification system	• Updated SDG	• SDG System

Table 36: Manage registered classifications SIPOC
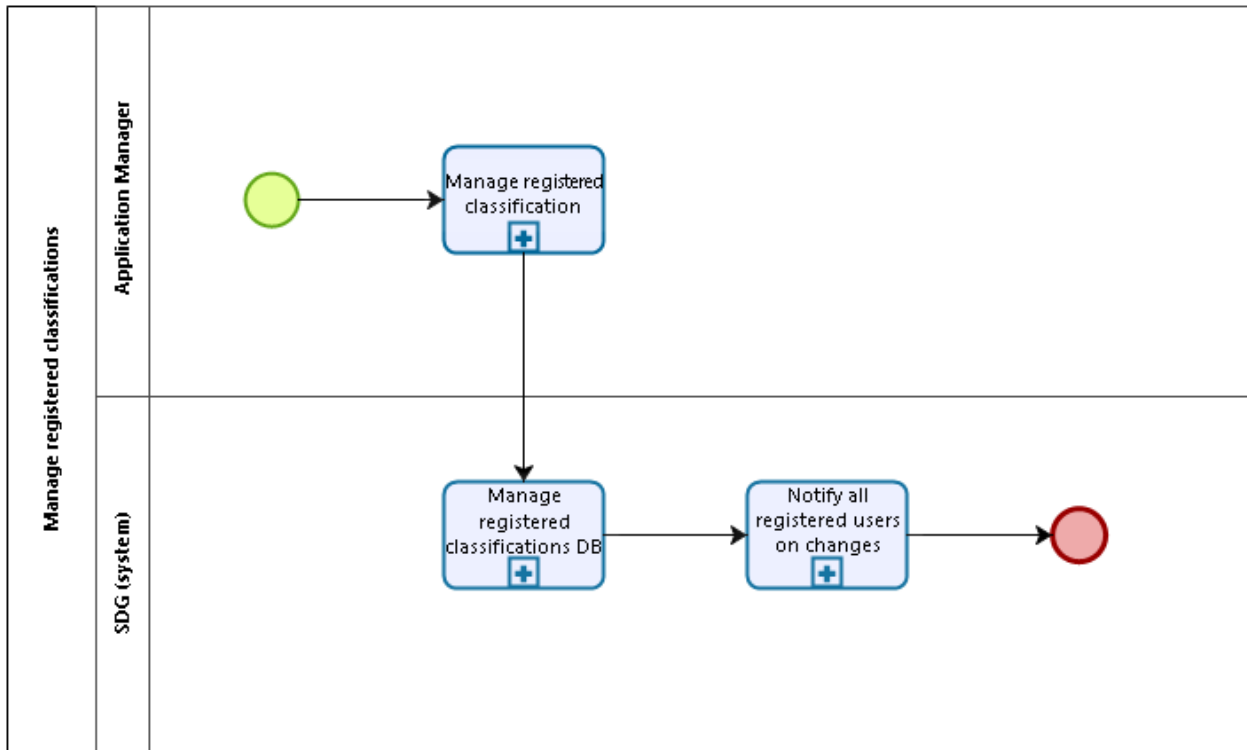
Figure 22: Manage registered classifications diagram

Manage Registered Classification	
Description & Activities	**Actors**
The purpose of the **Manage Registered Classification** process is to manage the classifications into the SDG by the Application Manager. The management of categories, tags, or metadata permit to connect, relate and classify content. The process allows the management of different types of taxonomy and will contribute to a better management of the data stored in the system. Manage Registered Classification process is composed by three steps: • **Manage registered classification**: The Application Manager manages the classification in the SDG System; • **Manage registered classifications database (DB)**: The SDG System manages the classification registry of the SDG; • **Notify all registered users on changes**: The SDG System automatically creates a notification to inform the Coordinators and the Service Providers that the different classifications are deployed and available on the SDG.	• Application Manager • SDG System
Assumptions	
• The different classifications have been previously established • The SDG System is working correctly • There are no server malfunctions	
Inputs	
Managed classification	
Outputs	
The SDG classification registry has been managed and the Coordinators and the Service Providers are informed that the different classifications can be consulted	

Table 37: Manage registered classifications fiche

5.6.5. Download registered classifications

Supplier	Input	Process	Output	Customer
• SDG System	• Request registered classifications	• Request of current classifications • Storage/use of classification locally	• Classifications for local use	• Commission Coordinator • National Coordinator • Commission Service Provider • National Service Provider

Table 38: Download registered classifications SIPOC
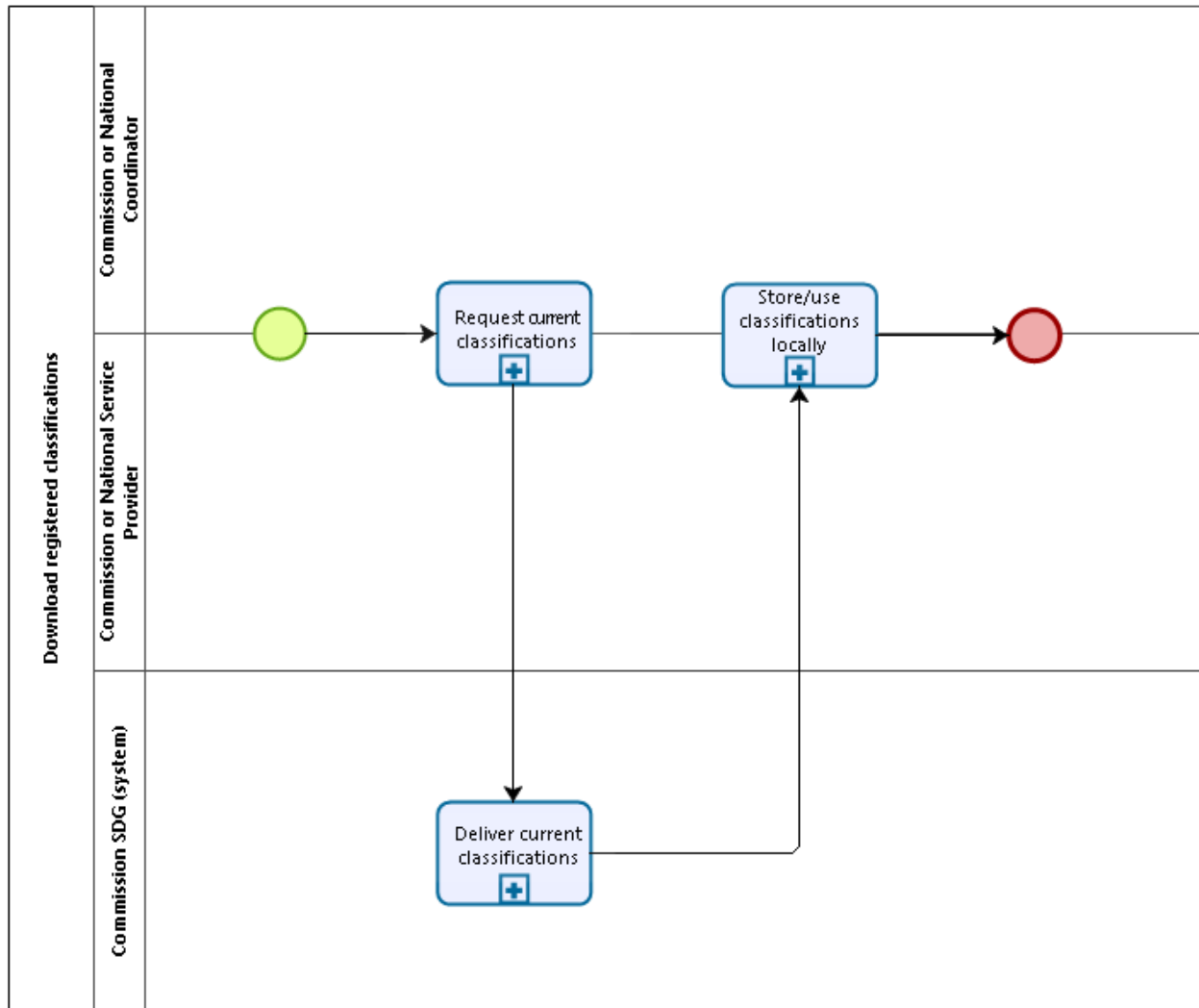
Figure 23: Download registered classifications diagram

Download registered classifications	
Description & Activities	**Actors**
The purpose of the **Download registered classifications** process is to provide access to SDG classifications for the Coordinators and Service Provider so that they have access to the vocabularies needed to tag their links. Download registered classifications is composed of three steps: • **Request current classifications:** The Coordinators and the Service Providers send a request to the SDG to get access to the classifications; • **Deliver current classifications**: The SDG delivers the SDG classifications; • **Store/use classifications locally:** The Coordinators or Service Providers store the classifications for local use.	• SDG System • Commission Coordinator • National Coordinator • Commission Service Provider • National Service Provider
Assumptions	
• Coordinator or Service Provider are logged-in to the system • The SDG System is working correctly • There are no server malfunctions	
Inputs	
Registered classifications	
Outputs	
The set of current classifications active of the SDG locally available	

Table 39: Download registered classifications fiche

5.6.6. Translate document

The process of document translation enables the National Service Providers to submit a document for translation in any of the remaining 23 official EU languages. This process is crucial to ensure that every document in the platform can be accessed by any SDG user regardless of his/her language.

Supplier	Input	Process	Output	Customer
• National Service Provider	• Document	• Request approval • Submit document for translation • Translate document • Deliver translated document	• Translated document • Notification	• National Service Provider

Table 40: Translate document SIPOC
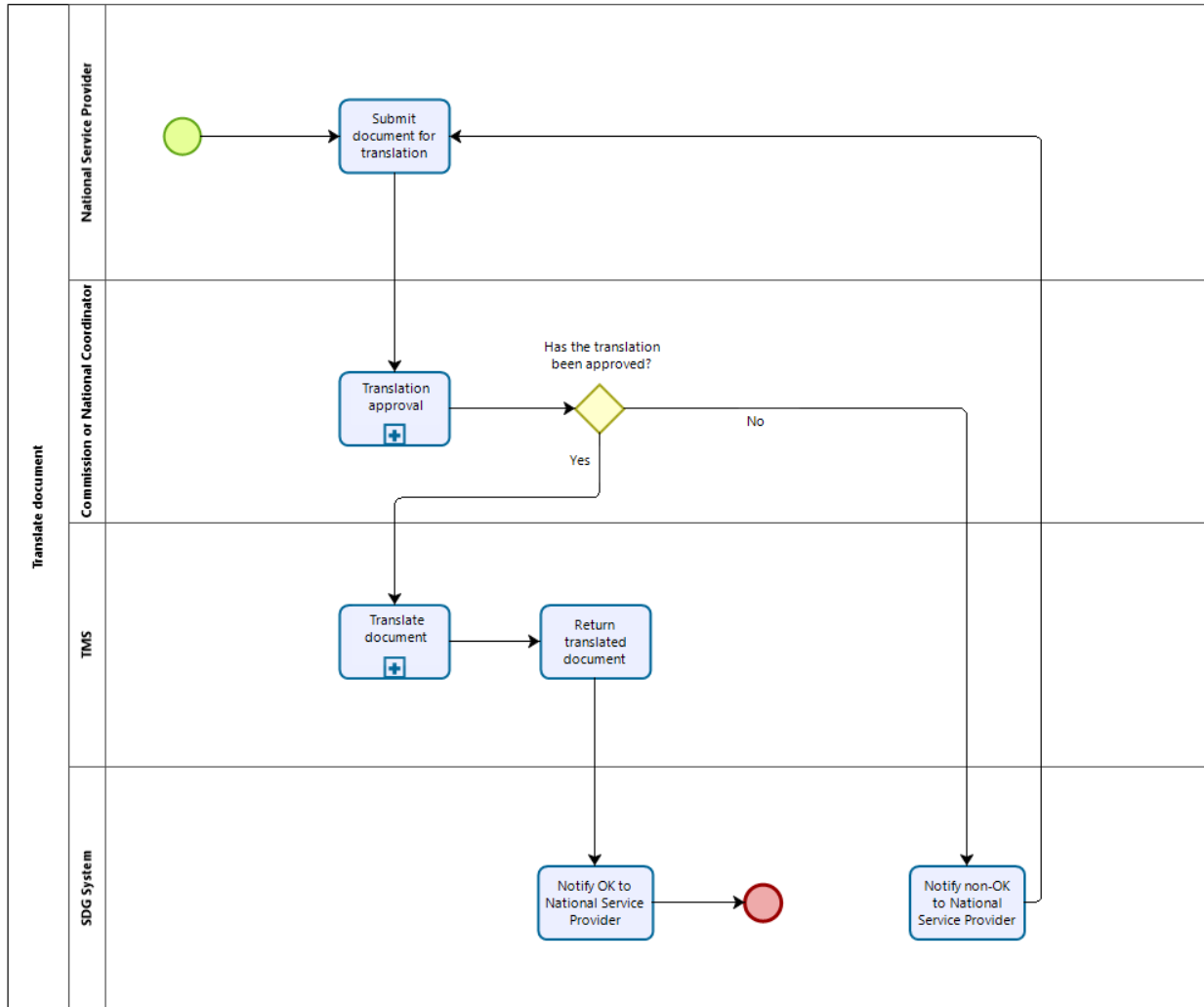
Figure 24: Translate document diagram

Translate document	
Description & Activities	**Actors**
The purpose of the **Translate Document** process is to provide National Service Providers with an efficient mechanism to have their document translated. Translate document is composed of six steps: • **Submit document for translation:** the National Service Provider submits a document to the TMS for translation; • **Translation approval:** The Commission or National Coordinator approves or rejects the translation requested by the National Service Provider. The Commission and National Coordinators have the possibility to monitor the	• National Service Provider • SDG System • Commission Coordinator • National Coordinator • Translation Management System (TMS)

Translate document	
coverage of the budget for translation and to decide which documents should be prioritised for translation; • **Notify non-OK to National Service Provider**: The SDG System automatically creates a notification to inform the National Service Providers that the Commission or National Coordinator has not approved the document for translation; • **Translate document:** the TMS system translates the document submitted in any of the other 23 languages. While the document is being translated, the translator and the Application Manger will be able to send each other messages with regards to the document itself; • **Return translated document:** the TMS System delivers the translated document to the National Service Provider; • **Notify OK to National Service Provider**: The SDG System automatically creates a notification to inform the National Service Providers that translated document is now available.	
Assumptions	
• The TMS System is working correctly • The Service Provider System is working correctly • There are no server malfunctions	
Inputs	
A document in any of the 24 supported EU languages	
Outputs	
Translated document in any of the other 23 languages	

Table 41: Translate document fiche

5.6.7. Information Management

The Information Management business process aims at allowing back office users of the SDG to exchange information. The exchange of information is to be made in the form of information items. Information items can include: tools monitoring the status of digitalisation of MS services, documents, information on organised meetings and the possibility to organise meetings, promotion activities and events, and an internal communication tool.

Although the specificities of information items will be further detailed in the scope of requirements documentation, interesting examples within the Information Management process include the internal communication tool and the tool monitoring the status of digitalisation of MS services. The internal communication tool is proposed in the form of a forum. The mechanism to monitor the status of digitalisation will allow to track the progress of each Member State towards full digitalisation.

Supplier	Input	Process	Output	Customer
- Commission Coordinator - National Coordinator - Commission Service Provider - National Service Provider	- Information item - Information item description	- Upload information item to be shared - Information item accessible	- Information item available - Notification	- Commission Coordinator - National Coordinator - Commission Service Provider - National Service Provider - SDG System - Application Manager

Table 42: Information Management SIPOC
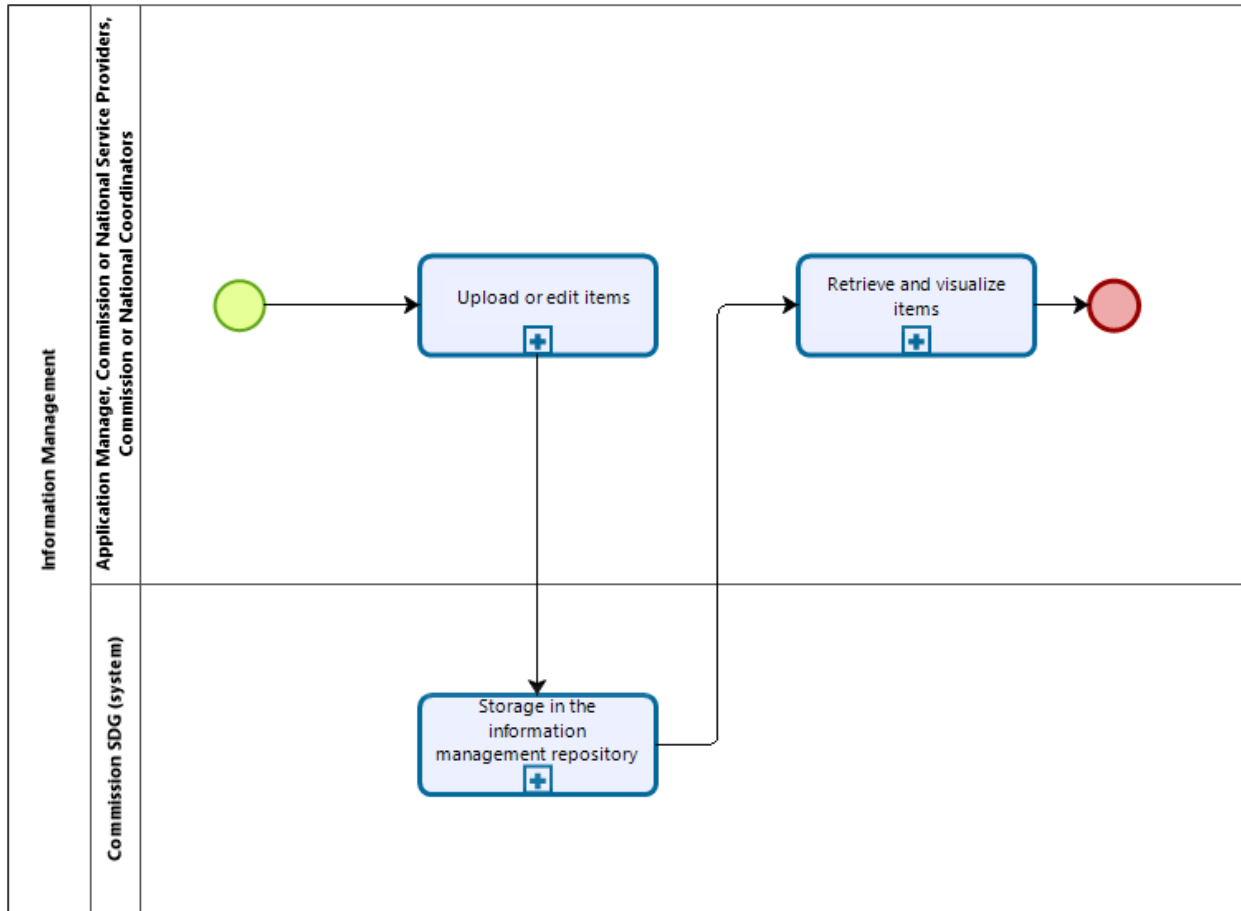
Figure 25: Information Management diagram

Information Management	
Description & Activities	**Actors**
The purpose of the **Information Management** process is to allow SDG users to exchange information items related to management and coordination issues of the SDG. Information Management is composed of three steps: **Upload or edit items:** the user uploads the item/s aimed at being shared; **Storage in the information management repository:** the SDG System stores the information item; **Retrieve and visualize items:** the user retrieves the item/s from the information management repository to visualize them.	- Commission Coordinator - National Coordinator - Commission Service Provider - National Service Provider - SDG System - Application Manager
Assumptions	
- The SDG System is working correctly - The Service Provider System is working correctly	

Information Management
• There are no server malfunctions
Inputs
SDG related information items. Such as status of digitalisation, information on meetings, documents, and list of promotion activities/events.
Outputs
• Item • Item Description

Table 43: Information Management fiche

5.6.8. Consult Statistics and Feedback reports

Supplier	Input	Process	Output	Customer
• SDG System	• Feedback report on quality • Feedback report on SM obstacles • Statistics report	• Request Reports • Deliver Reports	• Reports consulted	• Commission Coordinator • National Coordinator • Commission Service Provider • National Service Provider

Table 44: Consult Statistics and Feedback reports SIPOC
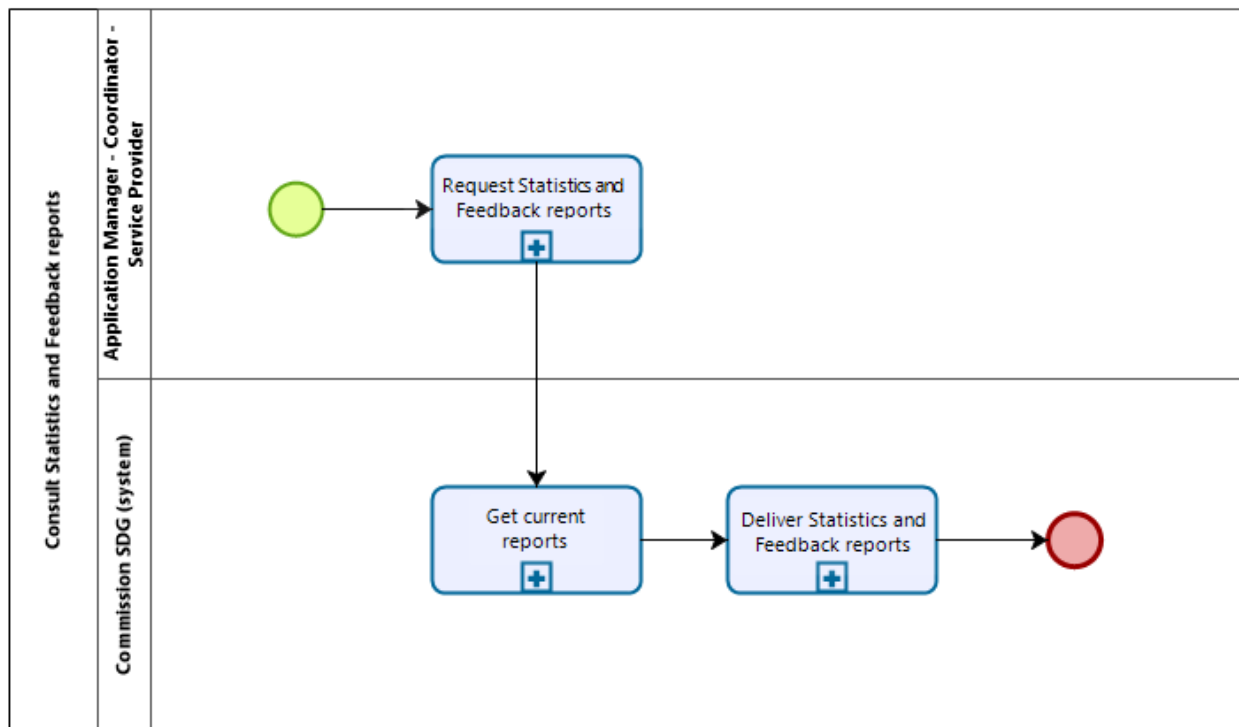
Figure 26: Consult Statistics and Feedback reports diagram

Consult statistics and feedback reports	
Description & Activities	**Actors**
The purpose of the **Consult statistics and feedback reports** process is to get access to the feedback (quality and obstacles) and statistics reports. The reports are previously created and stored in the processes already described. Consult statistics and feedback reports is composed by three steps: • **Request statistics and feedback reports:** The Application Manager, Coordinator, or Service Provider requests access to the reports; • **Get current reports:** The SDG retrieves the current reports (feedback report on quality, feedback report on SM obstacles, and Statistics report). The reports will vary depending on the requestor's profile and the different information can be filtered; • **Deliver statistics and feedback reports:** The SDG delivers the requested reports in the Dashboard to the Application Manager, Coordinator or Service Provider.	• SDG System • Commission Coordinator • National Coordinator • Commission Service Provider • National Service Provider
Assumptions	
• The SDG System is working correctly	

Consult statistics and feedback reports
- The Service Provider system is working correctly   - The two systems are interoperable   - There are no server malfunctions
Inputs
Reports stored in the SDG
Outputs
Statistics and Feedback reports

Table 45: Consult statistics and feedback reports fiche

6. Annexes

6.1. Annex 1: BPMN

Business Process Model and Notation (BPMN) is a specification originally developed by the Business Process Modelling Initiative (BMPI, 2017) and it is currently maintained by the Object Management Group (OMG, 2017). It consists of a set of guidelines for the modelling of business processes. These guidelines establish a common framework for the representation of business processes in a standardised and visual way.

The BPMN organises its elements around **five main categories,** and defines them in its "Quick Guide" (BMPN, 2017) as follows:

- **Event**: A happening, the arrival of a significant point in time, a change in status of something, or the occurrence of something external that causes the business to react.
- **Activity**: Any work that a company or organisation performs using business processes. An activity can be atomic or non-atomic (compound). The types of activities that are a part of a Process Model are: Process, Sub-Process, and Task.
- **Gateway**: Gateways control token flow in a process. They allow modelling decisions based on data and events as well as fork / join concurrency.
- **Flow**: A directional connector between elements in a Process, Collaboration, or Choreography. A Sequence Flow represents the sequence of Flow Objects in a Process or Choreography. A Message Flow represents the transmission of a Message between Collaboration Participants. The term "flow" is often used to represent the overall progression of how a Process or Process Segment would be performed.
- **Swim lane**: A graphical container for partitioning a set of activities from other activities. BPMN has two different types of Swim lanes: "Pool" and "Lane."

Inside each of these categories, there is a wide range of elements used for the graphic representation of specific business processes. However, given the fact that the present document aims at representing the business processes carried out by the SDG in the simplest way possible, only a small selection of those elements is been used.
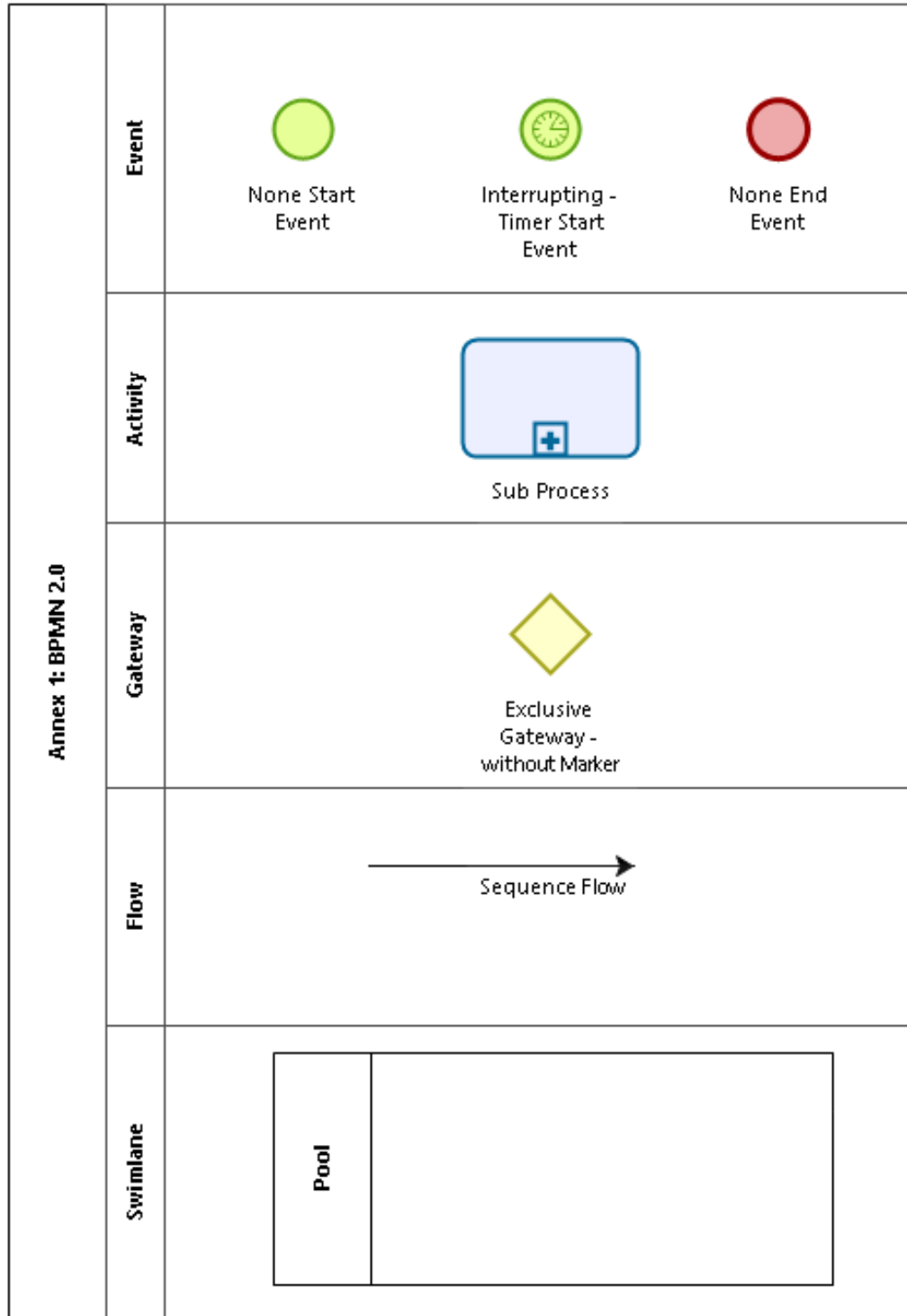
Figure 27: BPMN categories

The definition for the elements above belonging to BMPN 2.0 (BPMN 2.0, 2017) can be found below:

Type of process		Definition
Event	**None Start Event**	The None Start Event does not have a defined trigger. There is no specific event definition subclass for None Start Events. If the start event has no associated event definition, then the event MUST be displayed without a marker
	Interrupting - Timer Start Event	A Timer Start Event is used to create process instance at a given time. It can be used both for processes which should start only once and for processes that should start in specific time intervals.
	None End Event	The None End Event does not have a defined result. There is no specific event definition subclass for None End Events. If the End Event has no associated event definition, then the Event will be displayed without a marker.
Activity	**Sub-process**	A Sub-process is an activity whose internal details have been modelled using activities, gateways, events, and sequence flows. A Sub-process is a graphical object within a process, but it also can be "opened up" to show a lower-level process. Sub-processes define a contextual scope that can be used for attribute visibility, transactional scope, for the handling of exceptions, of events, or for compensation.
Gateway	**Exclusive Gateway – without marker**	A diverging Exclusive Gateway (Decision) is used to create alternative paths within a process flow. This is basically the "diversion point in the road" for a process. For a given instance of the process, only one of the paths can be taken. A decision can be thought of as a question that is asked at a particular point in the process. The question has a defined set of alternative answers. Each answer is associated with a condition expression that is associated with a gateway's outgoing sequence flows.
Flo	**Sequence Flow**	A Sequence Flow is used to show the order that activities will be performed in a process and in a choreography.
Swim lane	**Pool**	A Pool is the graphical representation of a participant in a collaboration. It also acts as a "swim lane" and a graphical container for partitioning a set of activities from other pools, usually in the context of B2B situations. A Pool MAY have internal details, in the form of the process that will be executed. Or a Pool MAY have no internal details; i.e., it can be a "black box."

Table 46: BPMN elements

6.2. Terms and acronyms

6.2.1. Glossary

Term	Description
Assistance Service	The European Commission has set up a series of assistance services in partnership with various actors in the Member States, aimed at informing effectively EU citizens and businesses about their rights and the opportunities arising from the EU. A comprehensive list of EU assistance services can be found at EU information and assistance services.
Competent Authority	Any Member State body or authority established at either national, regional or local level with specific responsibilities relating to the information, procedures, assistance and problem solving services covered by this study.
Feedback report	Report elaborated based on the feedback submitted to the gateway by the various actors at National and European level. It will contain information on the quality of the service and the main obstacles found to the consecution of the Single Market.
Link Repository	A list of the stored links to be indexed by the SDG System.
Link Set	A set of one or several links provided by EC or MS involved in the SGD National actors that will need to be indexed by the system.
Item	Object that may adopt various formats. In the case of being related to a specific domain, like ''information item'', it means any object that shares the common characteristic of that specific domain, regardless of its format or content.
Procedure	A procedure is a sequence of actions that must be taken by users to satisfy the requirements or obtain from a competent authority a decision in order to be able to exercise their rights.
Registered and valid User	Registered and valid User refers users responsible of the proper functioning of the SDG. They include the Application Manager, the Commission Coordinators, the National

Term	Description
	Coordinators, the Commission service providers, and the National service providers.
Registered classification	Registered classifications support the SDG System to organise the repository of link sets. The classifications include the list of the 24 EU languages, the list of the EU level services involved in the SDG, the list of EU MS, and specific categories to the SDG.
Search Index	Group of objects that follow a specific configuration that is the result of the Crawling and indexing process and that will be composed of the links provided to the portal by the different actors.
Service	Means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific costs and risks.

Table 47: Glossary

6.2.2. Acronyms and abbreviations

Term	Description
BPM	Business Process Modelling
BPMN	Business Process Model and Notation
DSM	Digital Single Market
EC	European Commission
EU	European Union
MS	EU Member States
SDG	Single Digital Gateway
SIPOC	Supplier, Input, Process, Output, Customer
SM	Single Market
TMS	Translation Management System

Table 48: Acronyms and abbreviations

6.3. References

- BMPI. (2017). Retrieved September 15, 2017, from www.BPMI.org
- BMPN. (2017). Retrieved October 03, 2017, from http://www.bpmnquickguide.com/

- BPMN 2.0. (2017). Retrieved September 2017, from http://www.omg.org/spec/BPMN/2.0/PDF

- BPMN. (2017). Object Management Group Business Process Model and Notation. Retrieved September 12, 2017, from http://www.bpmn.org/

- Collection of data by PSC. Summary note on the basis of PSCs responses to the online questionnaire

- Compliance Package. Proposal for a regulation of the European parliament and of the council. May 2, 2017, from European Commission

- Compliance Package. Annexes to the Proposal for a regulation of the European parliament and of the council. May 2, 2017, from European Commission.

- Feeding the Single Digital Gateway with information from the Taxes in Europe Database (TEDB)

- Implementing the Single digital gateway – Who needs to do what to make the SDG work? (tasks and roles)

- YANG & EL-HAIK (2003) *Design for Six Sigma – A Roadmap for Product Development*, McGraw-Hill

- Overview – single digital gateway technical architecture (power point presentation)

- PYZDEK, Thomas (2003) *The Six Sigma Handbook – Revised and Expanded*, McGraw-Hill

- SDG Pilot – SDG Component Diagram

- SDG Pilot – SDG Deployment Model

- SDG Pilot – SDG Functional Architecture

- Single digital gateway services architecture (power point presentation)

- Study on the business and technical feasibility for the development of a search tool and a dynamic user interface for the EU Single Digital Gateway

- Technical seminar on the single digital gateway. Summary of main points discussed. Brussels, 21 September 2017