EUROPEAN UNION AGENCY FOR RAILWAYS

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Vision

One Stop Shop [ERA-DRO-010]

Document History

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0.20	13/01/2016	Additions and changes to all chapters.
0.30	20/01/2016	Feedback from VA and SSC projects.
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1. REFERENCES, DEFINITIONS AND ABBREVIATIONS

1.1. Reference Documents

[Ref. N°]	Title	Reference	Version
[1]	4RP Programme Plan	ERA-PRG-005-PPL	1.1
[2]	OSS Project Charter	ERAEXT-1127-236	1.0
[3]	OSS Use Case Requirements	ERAEXT-1127-359	0.17
[4]	OSS System Wide Requirements	ERAEXT-1127-137	0.70
[5]	OSS Glossary	ERAEXT-1127-64	0.40
[6]	PM^2 methodology	Link	2.5
[7]	RUP@EC methodology	Link	5.1
[8]	RUP – University of Houston	Link	N/A

Table 1 : Table of Reference Documents

1.2. Definitions and Abbreviations

1.2.1. Standard Terms and Abbreviations

The general terms and abbreviations used in the present document can be found in a standard dictionary. Furthermore, a glossary of railway terms that focuses primarily on safety and interoperability terminology, but also on other areas that the Agency can use in its day-to-day activities as well as in its Workgroups for the development of future publications, is available on the Agency website (http://www.era.europa.eu/Document-Register/Pages/Glossary-of-railway-terms.aspx).

1.2.2. Specific Terms and Abbreviations

The specific terms and abbreviations that are used in the present document and in the OSS related documentation can be found in the Reference Document [5] OSS Glossary.

2. EXECUTIVE SUMMARY

According to the 4RP, the process of granting Single Safety Certificates (SSC) and Vehicle Authorisations (VA) will be shared between the Agency (ERA) and the National Safety Authorities (NSAs). Additionally the Agency will be in charge of approving the ERTMS trackside projects. Changes are expected also in the way NSAs operate and collaborate with the Agency and eventually in how the Railway Sector (Applicants) will interact with both when applying for the abovementioned certifications, authorisations or pre-authorisations of ERTMS trackside projects.

The OSS project is launched to support these new tasks. The project's only objective is to develop an Information and Communication System (ICS) with a virtual one-stop shop (OSS) functionality that will support the Applicants, ERA and the NSAs to accomplish their tasks related to Single Safety Certifications, Vehicle Authorisations and ERTMS trackside projects.

The OSS should include such functionality to support the submission of applications, the proper dissemination of information about them, such as stages and their outcome and an early warning to users when similar tasks are requested. It should also allow the integration of related information and make use of the current ERA registers when applicable.

System specifications shall be developed in close collaboration with the NSAs, as well as with the Railway Sector. There are different and often contradicting expectations from the stakeholders. A major project challenge, and project risk, is to balance them and produce an outcome that will satisfy all.

The OSS should be operational as of:

- 16/02/2019, as regards submission of applications for VA,
- 16/06/2019, as regards the remaining VA features, SSC and ERTMS.TP

The high level system requirements were approved by the ERA MB in September 2017, quite late in the project schedule. Therefore, a flexible approach for developing the system is adopted.

Another significant factor for the timely delivery of the system will be the compatibility of the plans for the projects within the 4RP program and the environments of the NSAs, as well as their rigorous implementation. Actually, the project is greatly dependent on the development of the Practical Arrangements for the SSC and the VA, as the elaboration of the OSS business needs is included in the scope of these two projects.

The project is considered to be critical and to have a high complexity. Thus the current document, setting the basis for the project activities, is of great importance and should be understood, agreed and respected.

3. PROJECT DESCRIPTION

3.1. Scope

3.1.1. Scope Statement

The 4RP contains important changes designed to improve the functioning of the single European railway area through amendments to the relevant directives and the Agency regulation which are directly linked to the tasks of ERA and the NSAs. In particular, ERA should be empowered for issuing VA, SSC and to act as the system authority for approval of ERTMS trackside projects. In order to facilitate the required cooperation and guarantee a clear distribution of tasks and responsibilities between the Agency and the NSAs, a communication protocol between the two should be developed.

The scope of this project is to develop a common Information and Communication System (ICS) with a virtual One-Stop Shop (OSS) functionality, if appropriate on the basis of the existing applications and registers, with the aim of keeping ERA, NSAs and Applicants informed about all applications for vehicle authorisations/safety certifications/ERTMS trackside projects approvals, stages of these procedures and their outcome.

All applications should be submitted through the OSS platform. An important objective of the platform is to identify at an early stage the needs for coordination between decisions to be taken by NSAs and ERA in the case of different applications requesting similar VA and SSC. Such cases should be identified in a summarised way by automatic notifications.

3.1.2. Includes ("IN" Scope)

As mentioned above, the OSS project aims at establishing an ICS for allowing the Sector representatives (Applicants) to submit applications for vehicle authorisations and safety certifications, keeping ERA, NSAs and the Applicants informed about these applications, their statuses and their outcome. In order to obtain full benefit, the ICS should provide the ERA and the NSAs with a tool for supporting their operations and cooperation as regards the handling of the applications.

In more details, the scope of the project is to design, develop, test and deploy **the initial operational release of an ICS** as required and conduct all needed supporting activities such as training and early lifecycle users' support. The ICS must include at least the following functions/components, as explicitly required by the new legal text:

1. A single entry point where the applicant shall **submit an application** for type authorisation, vehicle authorisations (VA) for placing in the market and for single safety certificates (SSC), as well as for approving technical solutions of ERTMS trackside projects.
2. A common information exchange platform, providing the Agency, the NSAs and the Applicants with **information about applications they are concerned by, for the purposes of vehicle authorisations (VA), single safety certifications (SSC) and approvals of ERTMS trackside projects (ERTMS.TP), stages of these processes and their outcome**, and, where applicable, the requests and decisions of the **Board of Appeal**.
3. An "**Early warning system**" able to identify at an early stage the need for coordination between the Agency and the NSAs in order to ensure consistency of decisions to be taken, in the case of different applications requesting similar SSC or VA.
4. A seamless integration mechanism with **ERADIS** register for the exchange of information related to SSC.

In addition to what the legal text explicitly requires, the following elements will be included for the OSS to become a useful and efficient tool for all users:

5. The functionality that will allow the submission of applications for **pre-engagement** activities, where applicable, supporting the Applicants and the Agency/NSAs in their related tasks.
6. An interface with the ERA enterprise system for **identity management** (Stakeholder Relationship Management – SRM).
7. The appropriate infrastructure and software components, designed following service-oriented approach, allowing for the easy **integration of any NSA platform to the OSS platform.**
8. An interface with the ERA enterprise system for **project and program management** (Microsoft Project).
9. The **specifications of the Service Level Agreement (SLA)** needed for proper operation of the system.
10. The functionality to support the **internal to ERA processes** for assessing an application. The functionality will also be offered to all interested NSAs, especially those not using their own internal IT systems for supporting related processes.

3.1.3. Excludes ("OUT" Scope)

The project does not include the following components, at least for the release of June 2019:

1. The creation of, or any integration with, the **European Vehicle Register** (EVR), as introduced by Article 35 of new ERA Regulation and Articles 46, 47 of the new Interoperability Directive. A possible integration of a future OSS version with EVR will be examined as soon as the EVR project matures, in terms of functional and technical specifications.
2. The integration with the **Single Rules Database** (SRD), to be developed by the Agency in the forthcoming years. A possible integration of a future OSS version with SRD will be examined as soon as the SRD project matures, in terms of functional and technical specifications.
3. The development of a **repository for storing and accessing information related to supervision** (supervision reports) on certified railway undertakings between all NSAs.
4. An interface with the **EC Translation Centre** systems to support cases when translation of documents will be necessary.
5. Integration with **other IT systems** not mentioned under 3.1.2.
6. A public information area, an **information portal,** where one could find information about preparation of applications and other related documents.
7. The required **support to the OSS users** related to business matters.
8. Development of any **native mobile apps**.
9. The **establishment of an internal to ERA, IT organisation** for the OSS to operate. This organisation includes all needed processes and procedures, resources and competences for supporting operations and managed services, to ensure a Service Level Agreement.
10. The functionality to assess the **fees and charges** for each application.
11. An integration mechanism with **ERATV** register for the exchange of information related to VA. This integration will be implemented after July 2019, thus excluded from the current scope.

3.2. Key principles

The following statements have been agreed by the project stakeholders and are considered as the key principles which drive the project development.

The system must be:

1. Easy to use, introducing the minimum, or no administrative burden at all to the users.
2. Flexible, not driving or constraining the business process, nor requiring its users to record more information than what is necessary to support their decision making process, or inform other involved parties about important information.

3. Able to allow secure access to information, based on well-defined access rights, and protected against data manipulation and data loss.
4. Able to support the Agency internal organisation and procedures. Such capabilities will not constraint the NSA/Applicant users, but they could be used by them on a voluntary basis.
5. Able to allow NSAs and Applicants to export the application files, in order to create their own archive for supporting their internal needs and complying with legal obligations.
6. Able to trace all main events in the management of a file, including modifications by the applicant in the content of its application file.
7. Built in iterations, based on prioritised requirements.
8. Easily adaptable, in order to be able to support the business processes as they will evolve in the future.
9. Designed and built in collaboration with the NSAs and the Railway Sector.
10. A common solution for SSC, VA, ERTMS.TP, to the extent possible.
11. Interoperable, in order to support the exchange of information with ERADIS and NSA legacy systems.
12. Able to archive all authorization documents and the reasons for authorization decisions, for at least the next 15 years.

3.3. Success Criteria

The project stakeholders consider the following success criteria as important:

1. An OSS release able to support the shadow running phase will be ready **before 31/07/2018**.
2. An OSS release able to support operations for VA will be ready **before 16/02/2019**.
3. An OSS release able to support operations for SSC and ERTMS.TP will be ready **before 16/06/2019**.
4. More than 80% of the OSS stakeholders will be satisfied of the OSS **quality, usability and performance**, as a result of a survey that will be conducted in Q4 2019 after the go-live date.

3.4. Stakeholders and Users

3.4.1. Stakeholders

Name (Organisation)	Project Role	Responsibilities
Management Team (ERA)	Project Steering Committee (PSC)	▪ Champions the project and raises awareness at senior level. ▪ Guides and promotes the successful execution of the project at a strategic level, keeping the project focused towards its objectives. ▪ Ensures adherence to organisation policies and directions (e.g. IT Governance, Data Protection, Information Security, Document Management, etc.). ▪ Provides high level monitoring and control of the project. ▪ At the end of the Initiating phase, authorises the project, based on the project's Project Charter. ▪ At the end of the Planning Phase, authorises the project to continue to the Executing phase, based on the Project Plan. ▪ Authorises plan deviations, scope changes with high project impact and decides on recommendations. ▪ Arbitrates on conflicts and negotiates solutions to escalated issues.

Name (Organisation)	Project Role	Responsibilities
		▪ Drives and manages change in the organisation caused by the project.
Thierry BREYNE (ERA)	Project Owner / Programme Manager	▪ Acts as the project champion promoting the success of the project. ▪ Sets the business objectives for the project. ▪ Owns the project risks and assures proper project outcomes are in-line with business objectives and priorities. ▪ Monitors project progress regularly. ▪ Provides leadership and strategic direction to the Business Managers (BM) and the Project Manager (PM). ▪ Coordinates resolution of issues and conflicts. ▪ Ensures that the project outcome meets the business expectations. ▪ Drives organisation change and monitors proper evolution and change implementation. ▪ Approves and signs-off all key management milestone artefacts (Project Charter, Project Plan), all project deliverables related to Business Requirements and final acceptance of deliverables that will be exposed to and used by the final users (mock ups, visual design, releases, user guides, training material etc.).
(See Below)	Business Managers	▪ Assist the Project Owner (PO) on the specification of the project and the main business objectives. ▪ Communicate with the User Representatives (URs) and act as a liaison towards the provider organisation. ▪ Establish and guarantee an efficient collaboration and communication channel with the Project Manager (PM). ▪ Manage the business (requestor) side activities of the project. ▪ Lead the implementation of the business changes as defined by the project objectives. ▪ Ensure that the business organisation is ready to accommodate and employ the final project product once delivered from IT. ▪ Support the coordination of the schedule and delivery of user training (and production of necessary user support material). ▪ Devise the best track for business changes or reengineering actions, when needed. ▪ Establish the Service Level Agreement (SLA) on behalf of the business organisation and the users.
Hugues DELSOIR (ERA)	Business Manager	▪ Leads the Single Safety Certificate and Vehicle Authorisation projects
Sarah YOUNG (ERA)	Business Manager	▪ Responsible for the Vehicle Authorisation project

Name (Organisation)	Project Role	Responsibilities
Mathieu SCHITTEKATTE (ERA)	Business Manager	▪ Responsible for the Single Safety Certificate project
Maria BUENO COBOS (ERA)	Business Manager	▪ Leads the ERTMS trackside project
Zografia PYLORIDOU (ERA)	Business Manager	▪ Leads the Board of Appeal project
Stefan MEERT (ERA)	Business Manager	▪ Leads the Fees and Charges project
Project Officers (ERA) Representatives from Member States and the Railway Sector (NSA, NRB)	Business Implementation Group	▪ Under the coordination of the Business Manager (BM) plan and implement the activities needed to achieve the desired business changes as needed. ▪ Analyse the impact of the project implementation to the ongoing operations and existing business processes, the people and the culture of the organisation. ▪ Participate in the redesign or updating of any affected business processes. ▪ Implement organisational change activities that fall under the scope of the project. ▪ Implement the business (requestor) side activities of the project, including the definition of business requirements, participating in training and conducting the User Acceptance Testing of the product.
Emanuele TRAMACERE (ERA)	Solution Provider	▪ Assumes the overall accountability for project deliverables and services requested by the PO. ▪ May help the PO define the objectives for the project. ▪ Represents the interests of those designing, delivering, procuring, and implementing the project's deliverables. ▪ Agrees on objectives for the supplier activities and audits the contractor's deliverables for the project. ▪ Mobilises the necessary resources for the project in accordance to the budget. ▪ Appoints the Project Manager (PM). ▪ Monitors project progress regularly. ▪ Approves and signs-off all project deliverables that are not signed by the PO nor the PSC.
Nikolaos PAPPAS (ERA)	Project Manager	▪ Proposes and executes the project plan as approved by the PSC. ▪ Daily manages and coordinates the Project Core Team (PCT) activities, making optimal use of the allocated resources. ▪ Ensures that project objectives are achieved within the quality, time, and cost objectives, taking preventive or corrective measures where necessary. ▪ Manages stakeholder's expectations.

Name (Organisation)	Project Role	Responsibilities
		▪ Is responsible to create all the project management artefacts and proposes them for approval to the PO and the PSC. ▪ Ensures a controlled evolution of products under version control, by implementing the Project Change Management Plan. ▪ Compares project expenditures to what was planned and reports project progress accordingly. ▪ Performs risk management for project related risks. ▪ Escalates unresolvable project issues to the PSC. ▪ Liaises between the Directing and Performing Layers of the project.
IT staff, Contractors and the Head of ITFM (ERA)	Project Core Team	▪ Contribute in the elaboration of the project scope and the planning of the project activities. ▪ Perform the project activities according to the project plan. ▪ Produce project deliverables. ▪ Provide information to the Project Manager (PM) regarding the progress of activities. ▪ Participate in project meetings as needed and contributes to the resolution of issues. ▪ Participate in the Project-End Meeting to derive and document useful lessons learned for the organisation. ▪ Provide expert advice. ▪ Get involved in contract management activities.
Project Officers from Finance and Legal (ERA) Security Officer (ERA) Data Protection Officer (ERA)	Project Support Team	▪ Provide specialised advice and support to ensure the project meets its objectives. ▪ Define and propose requirements in their domain. ▪ Contribute to produce project deliverables.
Josef DOPPELBAUER (ERA)	ERA Executive Director	▪ Chairs the PSC.
European Commission European Parliament	Project Requestors	▪ Have set the legal basis and requested the project.

Table 2 : Stakeholder Summary

3.4.2. Users

Name	Description

Applicants	An applicant is a representative of an organisation authorized and empowered by his/her management to file and manage an application in the OSS on its behalf. They are able to create and submit applications for SSC, VA or approvals for ERTMS trackside projects. They may also view them at a later stage, along with information about their status. They are also notified when supplementary information has to be submitted and eventually receive their certificate or authorisation from the system. When applicable, they may also file an appeal through the system.
National Safety Authorities Officers	Users who are in charge of assessing the applications under certain circumstances. The NSA users, as human actors or as IT systems, may update the application with information about the assessment process, the outcome of stages and the necessary reports. In case of the NSA being the Authorizing Entity or Safety Certification Body, the NSA officers can take also the duties of managing an application (i.e. milestones, communication) and issuing a decision on an application.
ERA Officers	ERA Officers mainly performing the tasks of managing or assessing an application. They are able to view and create information relevant for the assessment of an application, such as reports, and communicate through the system with other users. They are also able to perform searching for information and documents, view reports and assign users to specific applications. ERA officers are also responsible for the administration of the OSS. They have access to functions that ensure the system operations in agreed standards, can view logs and help with the troubleshooting in case of system malfunctions. They may also monitor the system performance and functions as the system backup as well as import/export data. Finally, specific ERA users are entrusted with the ability to assist all other users with their correct usage of the OSS. They have access to part of the system information that is necessary for troubleshooting.

Table 3: User Summary

3.5. Stakeholder Requests (STRQ)

The high level requirements (stakeholder requests - STRQs) are listed in the table hereunder. The first column is the requirement identification number, while the second column contains the description of the requirement. The third and fourth columns include references to the legal basis, i.e. the specific relevant articles of the Agency Regulation (2017/796) and/or Practical Arrangements (PA) for SSC (version 12/07/2017 voted at RISC) and/or PA for VA (version EN 02, 20/07/2017). The fifth column includes a reference to the specific relevant articles of the Agency Regulation (2017/796) and to an internal document setting the business requirements (BR) for ERTMS.TP, as the elaboration of the Practical Arrangements for ERTMS.TP is not yet complete.

N.B.: Several requirements are proposed by the Agency to support its internal organisation and/or harmonising the process, having a positive or neutral impact on the NSAs and the Applicants.

STRQ ID	Description	SSC	VA	ERTMS.TP
01	The Applicant representatives, the NSA and the Agency users shall follow a registration process, and are required to login to the system, before they are allowed access to its functionality and information.	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d), 12.2	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d), 12.2 PA VA Articles 21.1, 31.1, 31.4, 35.1, 35.2, 36.1, 36.2, 36.3, 46.7, 51.1	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 2
02	The Applicant representatives shall be able to register without any validation or approval by the Agency or the NSAs.	2016/796 Articles 12.1.(a), 12.2	2016/796 Articles 12.1.(a), 12.2 PA VA Articles 21.1, 31.1, 35.1, 46.7, 51.1	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 4
03	The Applicant representatives shall be able to share an application and its content with other Applicant users, who then have the same role for that application.	2016/796 Articles 12.1.(a), 12.2	2016/796 Articles 12.1.(a), 12.2 PA VA Articles 21.1, 31.1, 35.1, 46.7, 51.1	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 7
04	The Agency shall be able to deactivate the user accounts of the Applicant representatives, or remove their permission to access applications, following a request by the Applicant.	2016/796 Articles 12.1.(a), 12.2	2016/796 Articles 12.1.(a), 12.2 PA VA Articles 21.1, 31.1, 35.1, 46.7, 51.1	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 2

STRQ ID	Description	SSC	VA	ERTMS.TP
05	The Agency and the NSA shall be able to register and deactivate the users within their organizations, including independent experts.	2016/796 Articles 12.1.(b), 12.2	2016/796 Articles 12.1.(b), 12.2 PA VA Articles 31.4, 35.1, 36.1, 36.2, 36.3	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 2; 14; 17
06	The Agency shall be able to register the NSA responsible for managing the users for each NSA and for each of the business domains (SSC, VA, ERTMS.TP).	2016/796 Articles 12.1.(b), 12.2	2016/796 Articles 12.1.(b), 12.2 PA VA Articles 31.4, 35.1, 36.1, 36.2, 36.3	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 1; 6
07	The Applicant representatives, the NSA and the Agency users shall be able to update their user account information.	2016/796 Articles 12.1.(a), 12.1.(b), 12.2	2016/796 Articles 12.1.(a), 12.1.(b), 12.2 PA VA 21.1, 31.1, 31.4, 35.1, 36.1, 36.2, 36.3, 46.7, 51.1	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 2

STRQ ID	Description	SSC	VA	ERTMS.TP
08	The Applicant, the NSA and the Agency shall be able to manage information both via online forms and/or uploaded documents prepared offline.	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d) PA SSC Recital 4, 10, Articles 3(6), 3(7), 7(1), 7(2)	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d) PA VA Articles 4.3, 7, 8, 21, 22, 23, 30, 31.3, 33, 34, 35, 36, 37.6, 39, 40, 41, 42, 43, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, Annexes I to IV.	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 53
09	The Agency and/or the NSA shall be able to manage the templates of documents to be used in the VA, SSC and ERTMS.TP processes.	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d) PA SSC Recital 4, Article 3(7)	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d) PA VA Articles 7, 8, 21, 22, 23, 30, 31.3, 33, 34, 35, 36, 37.6, 39, 40, 41, 42, 43, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, Annexes I to IV.	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 56

STRQ ID	Description	SSC	VA	ERTMS.TP
10	The Applicant representatives shall be able to create and submit an application file for a VA/SSC/ERTMS.TP, and include all documentary evidence in accordance to the applicable legislation and/or application guides.	2016/796 Article 12.1.(a) PA SSC Article 4(1), 4(3), 4(5)	2016/796 Article 12.1.(a) PA VA Articles 21.1, 22, 30, 31.1, 51.1, 53.3, Annexes I and II	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 5; 8; 11
11	The Applicant representatives shall be able to update an application file in case it is requested by the Agency or an NSA to resolve an issue/comment that has been raised during the assessment.	2016/796 Article 12.1.(a) PA SSC Recital 4, Article 7(1), 12(1)	2016/796 Article 12.1.(a) PA VA Articles 3, 21.5, 34.3, 34.4, 34.5, 35.1, 41, 42, 54.5	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 57; 60
12	The Applicant representatives shall be able to update the Application file, with the agreement of the Agency.	2016/796 Article 12.1.(a) PA SSC Recital 4	2016/796 Article 12.1.(a) PA VA Articles 3, 21.5, 41, 42, 54.5	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 57; 60
13	The Applicant representatives shall be able to request the termination of an application.	2016/796 Article 12.1.(a) PA SSC Article 4(4)	2016/796 Article 12.1.(a) PA VA Article 21.4, 31.3	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 58

STRQ ID	Description	SSC	VA	ERTMS.TP
14	The Applicants, the Agency and the involved NSA shall be notified upon specific events of the application lifecycle (e.g.: submission of an application file, setting the T0, acknowledging the completeness, decision).	2016/796 Article 12.1.(b) PA SSC Article 7(2), 7(4), Article 9	2016/796 Article 12.1.(b) PA VA Articles 4, 7, 8, 21, 23, 31.4, 32, 33, 34, 35, 36, 37, 39.5, 40.6, 41, 42, 43, 44, 45, 46.7, 51, 53, 54 , 55	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 11; 28; 43; 54; 55
15	The Applicants, the Agency and the NSA users, depending on their roles, shall be able to configure how they will receive notifications (i.e.: by email and/or by in-system messages), and which notifications they will receive (i.e.: choosing from a list of possible events).	2016/796 Article 12.1.(b) PA SSC Article 7(2), 7(4), Article 9	2016/796 Article 12.1.(b) PA VA Article 31.4, 35, 36, 37	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 11; 28; 43; 54; 55
16	The Agency and/or the involved NSA shall be able to maintain and make available to all involved parties, a directory of people relevant to a specific application, together with their contact details, in order to facilitate their communication.	2016/796 Article 12.1.(b) PA SSC Annex II, point 2.2	2016/796 Article 12.1.(b) PA VA Article 4, 7, 31.4, 35, 36, 37	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 46
17	The Applicant representatives shall be able to contact other assigned users of an application, and they shall be able to respond, creating a thread of messages.	2016/796 Article 12.1.(a) PA SSC Article 11(1), 11(2)	2016/796 Article 12.1.(a) PA VA Article 3, 4, 7, 35	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 10

STRQ ID	Description	SSC	VA	ERTMS.TP
18	The Agency and/or the involved NSA, for each application, shall be able to produce a report that indicates similar cases (Early Warning System), based on specific matching criteria and information available in the system.	2016/796 Articles 12.1.(d), 12.4	2016/796 Articles 12.1.(d), 12.4 PA VA Annexes I & II, Articles 48, 49, 52, 53, 55	N/A
19	The Agency and/or the NSA shall be able to assign roles to their users (i.e.: assign users to an application), within each of their applications, thus controlling access to the system.	2016/796 Articles 12.1.(b), 12.1.(d), 12.2	2016/796 Articles 12.1.(b), 12.1.(d), 12.2 PA VA Articles 4, 7, 23, 31.4, 32, 35, 36, 37, 39, 40, 43, 45, 46, 54	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 17; 18; 19; 20
20	The Applicant representatives, the NSA and the Agency users, depending on their role(s) for a specific application, shall be able to upload and organise information according to a library structure and classify it according to its type.	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d), 12.2	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d), 12.2 PA VA Articles 22, 29, 30, 31, 35, 36, 37, 39, 40, 41, 42, 43, 45, 46, 47, 48, 49, 51, 53, 54, 55, , Annexes I to IV	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 59

STRQ ID	Description	SSC	VA	ERTMS.TP
21	The Applicant representatives, the NSA and the Agency users, depending on their role(s) for a specific application, shall be able to append updated versions of existing documents to the library, retrieve the latest and all past versions of documents and information, and tag documents as invalid.	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d), 12.2	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d), 12.2 PA VA Articles 22, 29, 30, 31, 35, 36, 37, 39, 40, 41, 42, 43, 45, 46, 47, 48, 49, 51, 53, 54, 55, , Annexes I to IV	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 60
22	The Agency and/or the NSA shall be able to extend the default library structure and/or the library structure of a specific project.	2016/796 Article 12.1.(b)	2016/796 Article 12.1.(b) PA VA Articles 22, 29, 30, 31, 35, 36, 37, 39, 40, 41, 42, 43, 45, 46, 47, 48, 49, 51, 53, 54, 55, Annexes I to IV .	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 61

STRQ ID	Description	SSC	VA	ERTMS.TP
23	The Applicant representatives, the NSA and the Agency users shall have access to a list of applications and their content only if they are authorised, according to their roles.	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d), 12.2	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d), 12.2 PA VA Articles 3, 4, 7, 21.1, 23, 31.1, 31.4, 35.1, 36, 37, 38, 39, 40, 45, 46, 51, 53, 54, 55	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 62
24	The Agency and/or the NSA shall be able to define the project milestones, and update the project status and the outcome of stages of an application.	2016/796 Article 12.1.(b) PA SSC Articles 3(1a), 6(4), 7(2), 9	2016/796 Article 12.1.(b) PA VA Articles 4, 7, 21, 23, 34, 35, 36, 51, 53, 54	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 22; 26
25	The Applicant representatives, the NSA and the Agency users assigned to a specific application shall be able to access information on the overall status of the process, the outcome of the different stages and the project milestones.	2016/796 Article 12.1.(b) PA SSC Articles 7(2), 9	2016/796 Article 12.1.(b) PA VA Articles 4, 7, 21, 23, 34, 35, 36, 51, 53, 54	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 47
26	The Applicant representatives, the NSA and the Agency users assigned to a specific application shall have access to an event log, which shall contain information on important actions performed by the different users.	2016/796 Article 12.1.(b)	2016/796 Article 12.1.(b) PA VA Whereas (9), Articles 35, 36, 37	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 63

STRQ ID	Description	SSC	VA	ERTMS.TP
27	The Agency and/or the NSA shall be able to assess and acknowledge the completeness of an application file to the Applicant.	2016/796 Article 12.1.(b) PA SSC Articles 6(2), 6(4), 7(2)	2016/796 Article 12.1.(b) PA VA Articles 23, 30, 32, 33, , 34.1-3, 53, 54	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 27
28	The Agency, and/or the involved NSA, shall be able to submit their assessment reports (or Opinion in ERTMS.TP) and their recommendation (for SSC, VA only) for issuing, or not, an SSC/VA or for approving an ERTMS.TP.	2016/796 Article 12.1.(b) PA SSC Articles 3(3), 3(4), 9	2016/796 Article 12.1.(b) PA VA Articles 4, 7, 34.3, 34.4, 34.5, 35, 36, 37, 38, 39, 40, 41, 42, 43, 45, 51	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 25
29	The Agency, and/or the involved NSA, for each one of the requirements or for a group of them, shall be able to register issues (comments for ERTMS.TP) as a result of their assessment, assign them to other users of the project, and finally record the resolution and/or their residual risk before closing them.	2016/796 Article 12.1.(b) Articles 7(1), 12(1), 12(2)	2016/796 Article 12.1.(b) PA VA Articles 4, 7, 21, 32, 34, 35, 37, 38, 39, 40, 41, 42, 43, 51	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 9; 24
30	The Applicant representatives shall be able to register their comments on the required documentation for an ERTMS.TP application.	N/A	N/A	On hold, until there is clarity on ERTMS requirements
31	The Agency, for each one of the required documentation for an ERTMS.TP application, shall be able to define their status, as a result of the assessment.	N/A	N/A	On hold, until there is clarity on ERTMS requirements

STRQ ID	Description	SSC	VA	ERTMS.TP
32	The Applicant representatives, the NSA and the Agency users assigned to a specific application shall be able to access a log of issues (comments for ERTMS.TP) and messages, recording all actions and any exchange of information regarding each specific item.	2016/796 Articles 12.1.(b) PA SSC Articles 7(1), 9, 12(1), 12(2)	2016/796 Article 12.1.(b) PA VA Articles 3, 4, 7, 21, 32, 34, 35, 36, 37, 41, 42, 43, 54	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 67
33	The Applicant representatives shall be able to respond to an assigned issue/comment, for the purpose of proposing measures to resolve it.	2016/796 Articles 12.1.(a), 12.1.(b) PA SSC Articles 7(1), 9, 12(1), 12(2)	2016/796 Articles 12.1.(a), 12.1.(b) PA VA Articles 4, 21, 34, 35, 41, 42, 54	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 10
34	The Agency, or the NSA when being the AE/SCB, shall be able to extend the timeframe of the assessment.	2016/796 Article 12.1.(b) PA SSC Articles 6(4), 6(5), 6(6), 6(7)	2016/796 Article 12.1.(b) PA VA Articles 23, 34, 42	N/A
35	The Agency, or the NSA when being the AE/SCB, shall be able to submit their quality assurance report.	2016/796 Article 12.1.(b) PA SSC Articles 3(1), Annex II point 4.13e	2016/796 Article 12.1.(b) PA VA Article 43, 45	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 35
36	The Agency, or the NSA when being the AE/SCB, shall be able to register their decision for issuing the SSC or VA, or for the approval of an ERTMS.TP.	2016/796 Article 12.1.(b) PA SSC Articles 7(2), 9	2016/796 Article 12.1.(b) PA VA Articles 46, 47, 48, 49	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 39; 40

STRQ ID	Description	SSC	VA	ERTMS.TP
37	The Agency, or the NSA when being the AE/SCB, shall be able to create the SSC, VA and approval decision of an ERTMS.TP based on information contained in the application, which shall be either electronically signed or a scanned copy of the original shall be appended to the electronic version.	2016/796 Article 12.1.(b) PA SSC Recital 4, Articles 7(2), 9	2016/796 Article 12.1.(b) PA VA Annex I and II,Articles 31, 46, 47, 48, 49, 53	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 69
38	The Applicant representatives, when creating an application, shall be able to retrieve the EIN number(s) of an existing Safety Certificate, and the certificate status, from the European Database for Interoperability and Safety (ERADIS).	2016/796 Article 12.1.(a)	N/A	N/A
39	The Agency or the NSA shall be able to publish the SSC and related information to the European Database for Interoperability and Safety (ERADIS), when the SSC is issued (i.e.: automatic update of ERADIS).	2016/796 Article 12.1.(b)	N/A	N/A
40	The Agency, or the NSA when being the AE/SCB, shall be able to register a note to the file and close a project.	2016/796 Article 12.1.(b) PA SSC Annex II, point 6.1	2016/796 Article 12.1.(b)	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 70
41	The Agency, the NSA and the Applicant should be able to export the information of an application, according to their access rights.	2016/796 Articles 12.1.(a), 12.1.(b), 12.4.(d), 12.2	2016/796 Articles 12.1.(a), 12.1.(b), 12.4.(d), 12.2	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 71
42	The Applicant representatives shall be able to submit a request for engaging with the Agency and/or the NSA in a Pre-Engagement activity (for SSC, VA), or an Initial Engagement (for ERTMS.TP).	2016/796 Article 12.1.(a) PA SSC Recital 2, Article 2(3), 3(2)	2016/796 Article 12.1.(a) PA VA Articles 4, 7, 21, 22, 23	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 78

STRQ ID	Description	SSC	VA	ERTMS.TP
43	The Agency, in cases of arbitration (for SSC, VA only) or appeal, shall be able to update the status of an application accordingly, register the arbitration or appeal decision once the process is completed and update the decision on the application, if required.	2016/796 Articles 12.1.(b), 12.4.(b), 55-63 PA SSC Article 6(6b)	2016/796 Articles 12.1.(b), 12.4.(b), 55-63 PA VA Articles 44	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 72
44	The Applicant representatives shall be able to submit a request for review after a decision of the Agency or an NSA has been issued.	2016/796 Articles 12.1.(a), 12.1.(b) PA SSC Articles 14(1), 14(2), 14(7)	2016/796 Articles 12.1.(a), 12.1.(b) PA VA Article 51	2016/796 Article 12.1.(c) BR ERTMS.TP Req. 12
45	The Applicant representatives shall be able to retrieve the draft Vehicle Type from ERATV when creating an application, or for updating an application after an issue has been raised.	N/A	2016/796 Articles 12.1.(a), 12.1.(b) PA VA Annex I, Annex II (NOT INCLUDED IN THE SCOPE FOR JUNE 2019)	N/A
46	The Agency or the NSA shall be able to publish the Vehicle Type in ERATV, when the Vehicle Authorisation is issued (ie: automatic update of ERATV).	N/A	2016/796 Articles 12.1.(a), 12.1.(b) PA VA Article 50 (NOT INCLUDED IN THE SCOPE FOR JUNE 2019)	N/A

STRQ ID	Description	SSC	VA	ERTMS.TP
47	The Agency shall be able to transfer information for each application to the Agency system for Project and Program Management (MS Project).	2016/796 Article 12.2 PA SSC Recital 11, Article 3(9)	2016/796 Article 12.2	2016/796 Article 12.2 BR ERTMS.TP Req. 73
48	The Agency shall be able to update the requirements of an application file when the need arises, for all new and ongoing ERTMS.TP applications.	N/A	N/A	On hold, until there is clarity on ERTMS requirements
49	The Applicant representatives, while creating an application file for SSC, shall be able to insert information for the purpose of covering all requirements based on national rules.	2016/796 Article 12.1.(a) PA SSC Articles 3(8), 4(2), Annex I, point 8.1, 8.2	N/A	N/A
50	The Agency, the NSA and the Applicant representatives shall be notified in case there is an update of the required documentation in the course of the assessment of an application for ERTMS.TP.	N/A	N/A	On hold, until there is clarity on ERTMS requirements
51	The Applicant representatives, the NSA and the Agency, depending on their role(s) and access rights, shall be able to search for applications by their attributes.	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d), 12.2	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d), 12.2 PA VA Annex I, Annex II	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 49

STRQ ID	Description	SSC	VA	ERTMS.TP
52	The Applicant representatives, the NSA and the Agency, depending on their role(s) and access rights, shall be able to search for documents by their attributes and/or by matching the full text in the documents.	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d), 12.2	2016/796 Articles 12.1.(a), 12.1.(b), 12.1.(d), 12.2 PA VA Annex I, Annex II	2016/796 Articles 12.1.(c), 12.2 BR ERTMS.TP Req. 51
53	The Agency and the NSA shall be able to produce a set of database reports, with information on the applications and their related attributes.	2016/796 Articles 12.1.(b), 12.1.(d), 12.2	2016/796 Articles 12.1.(b), 12.1.(d), 12.2	2016/796 Article 12.1.(c), 12.2 BR ERTMS.TP Req. 74

Table 4: Stakeholder/User needs (STRQ)

3.6. Features (FEAT)

The system shall provide the following high level services that directly fulfil the stakeholder needs.

FEAT ID	Title	Description
01	User management	User management service allows: The creation of a user (registration). The update of a user's information (i.e.: name, password). The deletion/deactivation of a user. The assignment/update of system-wide roles to the users.
02	User authentication	User authentication service allows users to login to the system using their credentials (eg: username and password).
03	User and system-wide role assignment	User and system-wide role assignment service allows for assigning users to a specific application, through the assignment of roles to the users. It also allows for assigning system-wide roles to users.
04	Application submission	Application submission service allows the Applicant to create and submit an application file for a SSC, VA, ERTMS.TP, SSC/VA pre-engagement and ERTMS.TP initial engagement.
05	Reporting (incl. EWS)	Reporting provides aggregated information about the applications and their attributes.
06	Dashboard management	Dashboard management service allows the planning and follow up of the milestones, application status and outcomes of the assessment process.

FEAT ID	Title	Description
07	Issues/comments/messages/topics management	Issues, comments, messages and topics management service allows the creation, editing and assignment of pieces of information to be exchanges among stakeholders, for the purpose of logging problems during the assessment process, or for allowing their communication for any reason.
08	Document management	Document management service allows for the uploading, management and sharing of documents.
09	Information management (web forms)	Information management through web forms (or web services) allows the management of structured information.
10	Notifications	Notifications service allows the users to be notified upon certain events of the application lifecycle.
11	Access to application information	Access to application information service allows the users to access, retrieve and update information of an application, according to their role(s).
12	Event log	Event log service allows for keeping track of the different events and user actions, for the purposes of monitoring and auditing.
13	Integration with ERADIS/ERATV	Integration service with ERADIS/ERATV service allows the exchange of information among systems.

Table 5: List of Features (FEAT)

3.7. Deliverables

ID	Deliverable Name	Deliverable Description
1	Business Requirements	A set of documents that will capture the OSS business needs and specify how the system will be built. It will include general and domain-specific business rules, use cases, non-functional requirements, information architecture and system mock-ups.
2	Architecture	This set of documents will capture technical aspects of the system to be implemented. It includes architectural decisions, system components and their interactions, operational model and other technical elements. The system design and development will be based on this document.
3	Development Artefacts	This set of artefacts includes software code files, prototypes, data files, data model, database design, builds and design.
4	Test Artefacts	This set of artefacts includes test related information such as plan, cases, scripts, logs, data, design, evaluation summary and findings.
5	Supporting Environments	This deliverable is about establishing all proper IT environments for enabling the execution of the project tasks. It includes the setup of proper environments for the project management, business requirements management, design, development and test domains.

6	Deployment Environment and Artefacts	This set of artefacts includes all system executables and other items, media content, production environment, deployment plan and procedures, training plan and material, user support material and bill of materials.
7	Project Management Artefacts	This set of deliverables will be produced by the PM function and will include the Project Charter, Project Logs, Minutes of Meetings, Project Plan, Project Reports and Project-End Report.

Table 6: List of deliverables

3.8. Constraints

The major project constraint is the project schedule. The deadline for having an operating system for the shadow running phase is 31/07/2018 and the ultimate deadline for establishing an operational OSS is 16/06/2019.

In fact, the schedule is even more limited. Changes to the requirements are allowed until very late in the project lifecycle. This actually means that system design will also be consolidated quite late and the plan needs to be adapted to accommodate this constraint. Hence, the real constraint is that the typical "waterfall" approach for implementing the system cannot be applied in this case and more flexible and iterative techniques must be adopted.

In addition, the recast of the Agency Regulation as well as the RS and IO Directives set the framework and define the scope of the project. The technical, financial and human resources of the Agency are also constraining the project.

More constraints may arise when all the 4RP related projects plans will be known (Single Safety Certificate, Vehicle Authorisation, ERTMS Trackside, Staff Competencies, Fees and Charges and Board of Appeal projects) as well as projects in the environments of the NSAs.

Finally, some constraints might be imposed by other initiatives, as the creation of a European Vehicle Register (EVR) and any other project or maintenance activity that will deliver changes in the current environment of the databases and registers of ERA.

3.9. Assumptions

The following project assumptions are adopted:

- As a key principle for the elaboration of the system requirements, we target a system that will not drive the process, being restrictive, but rather capture and store the important information and support its proper dissemination.
- The project outcome will be delivered in stages, thus a progressive delivery of software releases is planned. System functionality will be designed and realised in iterations, starting with the ones that are of the highest impact and value.
- The Business Requirements will be collected in iterations as well, in order to support the iterative delivery of software releases.
- The "Early Warning System" function is valid only for the VA and SSC domains. The ERTMS trackside project does not require such function.
- All servers and infrastructure will be hosted outside ERA premises.
- ERA, as the OSS owner organisation, will timely establish a proper IT operations environment for ensuring a service level standard. The service level specifications will be produced by the OSS project.

3.10. Risks

Title	Cause	Effect	Preventive Actions	Risk Level
OSS will not be ready for the Shadow Running phase.	Time insufficient to develop all system functionality between requirements consolidation (09/2017) and final delivery for Shadow Running (05/2018).	Project schedule is compromised and release for Shadow Running is delayed.	- Develop and follow a proper project plan so that system functionalities are developed in phases and software releases are delivered even before the milestone of Business Requirements consolidation. - Plan and execute project in iterations. - Regularly consult the Users Group about the OSS Requirements development. - Regularly report the project status to PO and the PSC.	Critical
Input from ERA Business or Users Group not on time.	Bad alignment of project plans. Lack of commitment or wrong prioritization of business activities.	The project plan and especially the project schedule will be compromised.	- Adjust project plans within the programme and apply proper monitoring to ensure coordination among them. - Keep all stakeholders informed about upcoming deadlines and milestones. - Keep all stakeholders informed of the related project risks and their impact.	Critical
Major changes in project scope and business requirements.	Insufficient scope control and uncertainty about requirements.	The project plan will not be followed (time, cost, quality).	- Apply strong scope control and change management. - Engage important stakeholders early during the business requirements phase.	Critical

Title	Cause	Effect	Preventive Actions	Risk Level
			- Ensure that the user requirements are fully investigated and agreed before implementing them.	
No suitable solution found that meets all the objectives.	Impossible to reach a solution that meets all needs and pleases all stakeholders.	Stakeholders not satisfied or not using the system.	- Prioritise project objectives and define project success criteria. - Prioritise requirements.	High
Low quality of deliverables/product.	ERA lacks similar experience, mainly because of project size.	Outcome not accepted by stakeholders or stakeholders not satisfied.	- Apply strong Quality Assurance and Quality Control functions. - Develop deliverables in iterations. - Provide stakeholders with artefacts as mock-ups and prototypes as early as possible in the project.	High
Wrong business requirements or poor capture of them.	Bad interpretation of business objectives or lack of involvement from business managers or bad implementation of requirements gathering process.	Failure to meet minimum requirements or failure to achieve business benefits or need to rework solution after rollout or failed delivery.	- Focus on User Requirements and Business Modeling capture mainly at start of project. - Engage best people with appropriate knowledge and authority to decide and time to be involved. - Ensure the ongoing involvement of accountable process owners, executive leaders and Users Group. - Work closely with ERA business managers and participate in SSC and VA workshops. - Hold workshops with a dedicated OSS agenda.	High

Title	Cause	Effect	Preventive Actions	Risk Level
			- Have stakeholders validate work done by OSS team. - Use the right tools to communicate.	
Practical Arrangements documents will not be fixed by the end of 2016.	An agreement is not reached among project stakeholders.	The OSS business requirements v2.0 cannot be ready until April 2017.	- Communicate risk in clear way to all program members. - Provide feedback to SSC and VA teams about critical issues that are not resolved. - Support a coordinated approach for the two teams.	High

Table 7: Main project risks

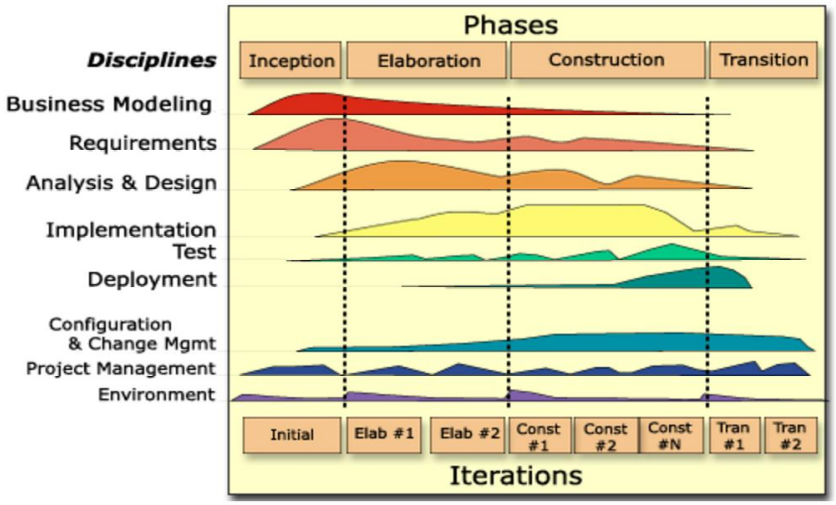
4. APPROACH

4.1. Methodology – Software Development in Iterations

The Rational Unified Process® (RUP) product is a software engineering process. It provides a disciplined approach to assigning tasks and responsibilities within a development organization. Its goal is to ensure the production of high-quality software that meets the needs of its end users within a predictable schedule and budget. RUP@EC methodology is a customised version of the RUP® (IBM Rational Unified Process®) methodology for use within the Commission and it is also adopted by ERA for its IT projects.

The figure below shows the overall architecture of the RUP. There are two dimensions:

- the horizontal axis represents time and shows the lifecycle aspects of the process as it unfolds
- the vertical axis represents disciplines, which group activities logically by nature.



The first dimension represents the dynamic aspect of the process as it is enacted, and it is expressed in terms of phases, iterations, and milestones.

The second dimension represents the static aspect of the process: how it is described in terms of process components, disciplines, activities, workflows, artifacts, and roles.

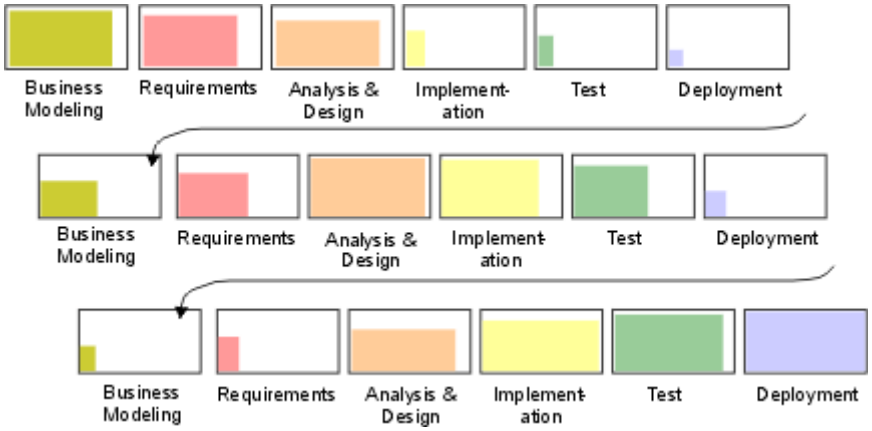
The graph shows how the emphasis varies over time. For example, in early iterations, we spend more time on requirements, and in later iterations we spend more time on implementation.

Why Iterate?

Traditionally, projects have been organized to go through each discipline in sequence, once and only once. This leads to the waterfall lifecycle:

This often results in an integration 'pile-up' late in implementation when, for the first time, the product is built and testing begins. Problems which have remained hidden throughout Analysis, Design and Implementation come boiling to the surface, and the project grinds to a halt as a lengthy bug-fix cycle begins.

A more flexible (and less risky) way to proceed is to go several times through the various development disciplines, building a better understanding of the requirements, engineering a robust architecture, ramping up the development organization, and eventually delivering a series of implementations that are gradually more complete. This is called an iterative lifecycle. Each pass through the sequence of process disciplines is called an iteration.

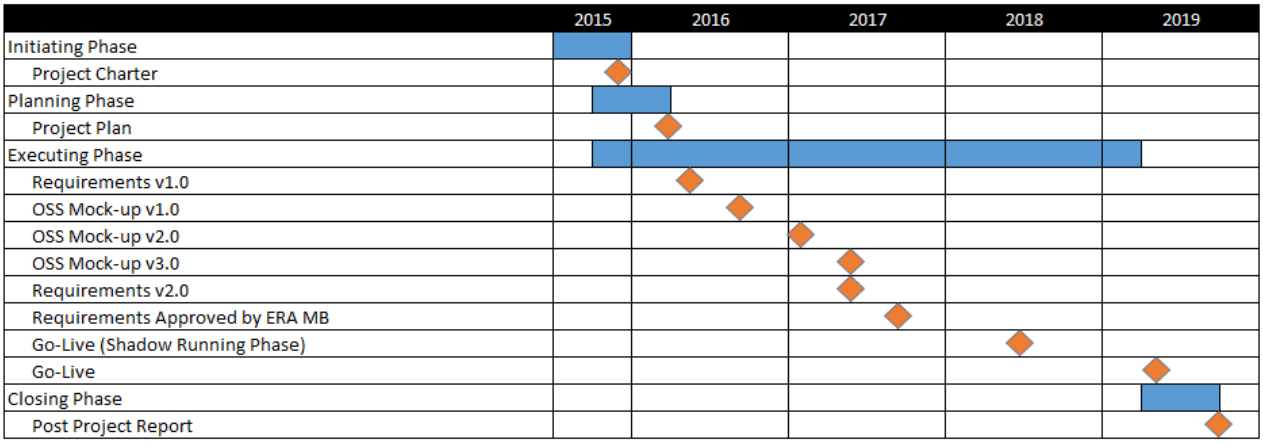


Therefore, from a development perspective the software lifecycle is a succession of iterations, through which the software develops incrementally. Each iteration concludes with the release of an executable product. This product may be a subset of the complete vision, but useful from some engineering or user perspective. Each release is accompanied by supporting artifacts: release description, user documentation, plans, and so on, and updated models of the system.

The main consequence of this iterative approach is that the sets of artifacts, described earlier, grow and mature over time.

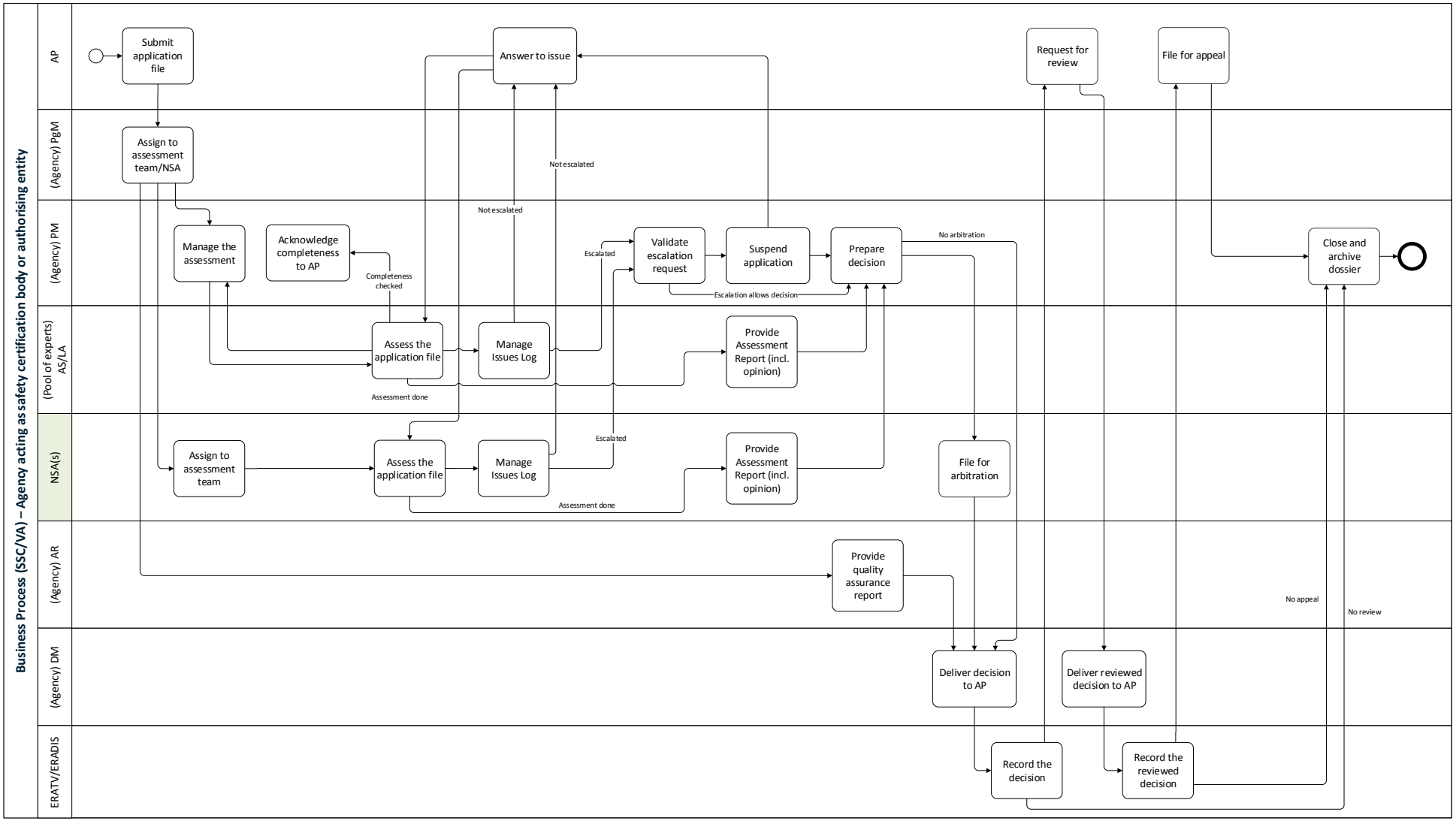
4.2. Schedule and Milestones

The OSS shall be operational at the latest three years after the entry into force of the new Regulation, thus the system should be ready to be used before 16 June 2019. However, due to the current 4RP program plan, the OSS should be delivered a year earlier to support the "shadow running phase" of the program; this actually means that the release date for the OSS is 31 July 2018. Having in mind all constrains and also the proposed iterative approach to the project, the high level project schedule is as follows:

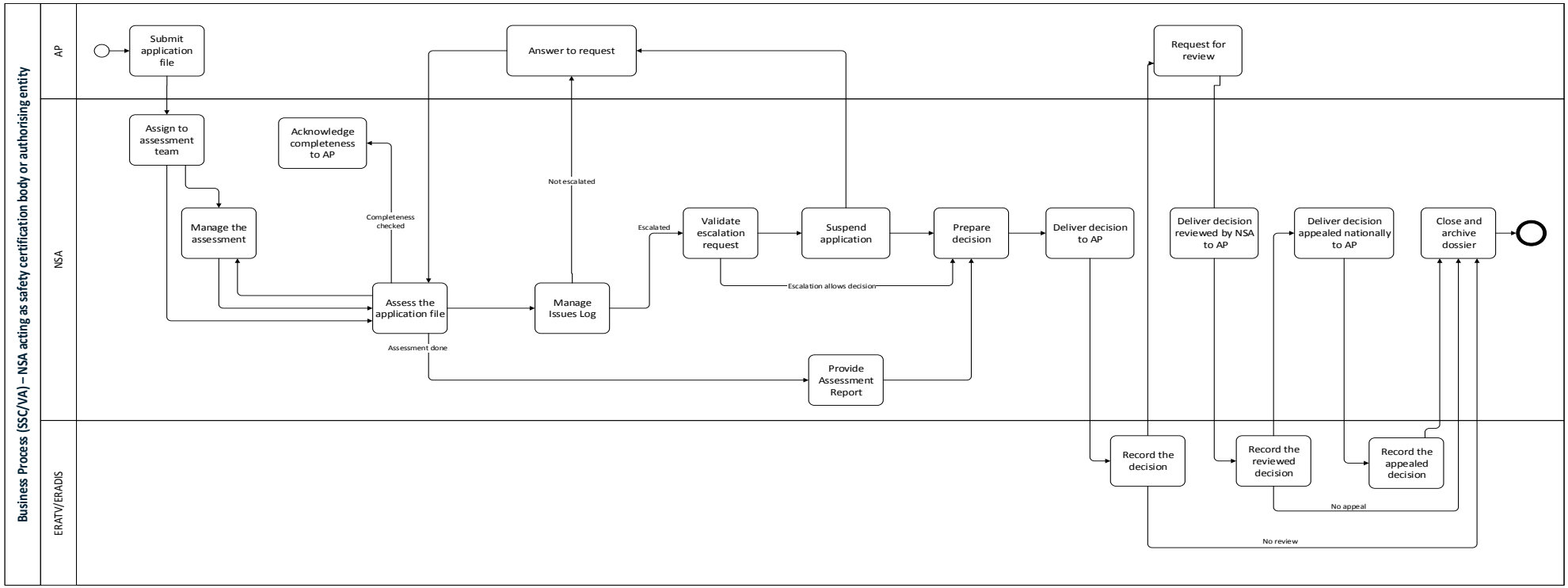


Annex – Business Process Diagrams

The following business flow diagram applies both to the vehicle authorisation (VA) and safety certification (SSC) processes and describes the different activities to be managed by the different actors (i.e. the Agency, the relevant NSA(s) and the applicant) through the One Stop Shop **when the applicant chooses the Agency as authorising entity / safety certification body**, from the submission of the application file to the final decision-making (including the closing and archive of the project and the management of any request for review and appeal from the applicant).


Business Process (SSC/VA) – Agency acting as safety certification body or authorising entity
AP
(Agency) PgM
(Agency) PM
(Pool of experts) AS/LA
NSA(s)
(Agency) AR
(Agency) DM
ERATV/ERADIS
Submit application file
Assign to assessment team/NSA
Manage the assessment
Acknowledge completeness to AP
Completeness checked
Assess the application file
Manage Issues Log
Assessment done
Answer to issue
Not escalated
Not escalated
Escalated
Validate escalation request
Suspend application
Escalation allows decision
Prepare decision
No arbitration
Provide Assessment Report (incl. opinion)
Assign to assessment team
Assess the application file
Manage Issues Log
Escalated
Assessment done
Provide Assessment Report (incl. opinion)
File for arbitration
Provide quality assurance report
Request for review
File for appeal
Close and archive dossier
No appeal
No review
Deliver decision to AP
Deliver reviewed decision to AP
Record the decision
Record the reviewed decision

The following diagram applies both to the vehicle authorisation (VA) and safety certification (SSC) processes and describes the different activities to be managed by the different actors (i.e. the applicant and the relevant NSA) through the One Stop Shop **when the area of use / operation is limited to one Member State and the applicant chooses the NSA as authorising entity / safety certification body**, from the submission of the application file to the final decision-making (including the closing and archive of the project).


Business Process (SSC/VA) – NSA acting as safety certification body or authorising entity
AP
NSA
ERATV/ERADIS
Submit application file
Assign to assessment team
Manage the assessment
Acknowledge completeness to AP
Completeness checked
Assess the application file
Assessment done
Answer to request
Not escalated
Manage Issues Log
Escalated
Validate escalation request
Escalation allows decision
Suspend application
Prepare decision
Provide Assessment Report
Deliver decision to AP
Request for review
Deliver decision reviewed by NSA to AP
Deliver decision appealed nationally to AP
Close and archive dossier
Record the decision
Record the reviewed decision
Record the appealed decision
No appeal
No review