

Project guidelines for customs to connect to the eTIR international system



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1. Introduction

This document describes the methodology and the sequence of actions that customs authorities of contracting parties of the TIR Convention, bound by its Annex 11, should perform to interconnect their national customs systems with the eTIR international system. It includes a product brief to introduce the eTIR international system, a description of the proposed methodology and communication management for the project, a list of milestones detailing the notable steps and draft Gantt chart. This will allow customs to have an overview of the implementation progress and a better understanding of the first/next steps. These guidelines are accompanied by a series of technical documents intended for the Information, Communication and Technology (ICT) team:

- The **Introduction document** which is the starting point for the implementation of all eTIR messages;
- The **I1/I2 messages** related to accepting the guarantee;
- The **I5/I6 messages** related to querying the guarantee;
- The **I7/I8 messages** related to sending the declaration;
- The **I9/I10 messages** related to starting a TIR operation;
- The **I11/I12 messages** related to terminating a TIR operation;
- The **I13/I14 messages** related to discharging a TIR operation;
- The **I15/I16 messages** related to sending notifications to the customs;
- The **I17/I18 messages** related to refusing to start a TIR operation;
- The **E9/E10 messages** related to receiving the advance TIR data;
- The **E11/E12 messages** related to receiving updates on the advance TIR data;
- The **E13/E14 messages** related to receiving cancellation of the advance TIR data.

2. Target audience

This guide has been prepared for the customs management team as well as the ICT team in charge of implementing the eTIR procedure.

It is recommended to have an understanding of the [TIR Convention](#) (especially of its articles and its new [Annex 11](#)) and to be familiar with the [eTIR concepts](#).

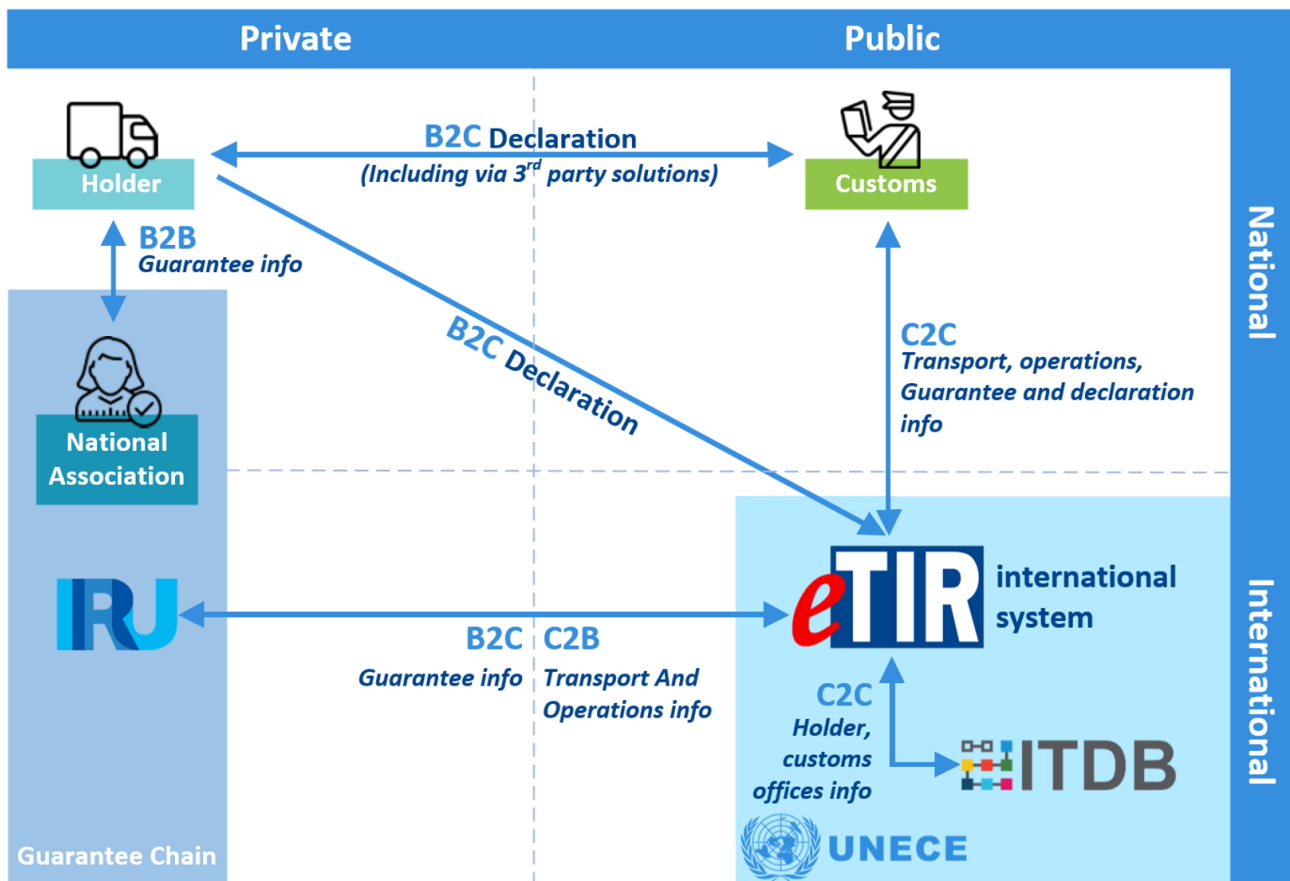


In order to ensure an implementation that delivers the best value and services to customs, we highly recommend that the ICT team, in charge of establishing the connection with the eTIR international system, be accompanied by a TIR subject matter expert during all important stages of the project.

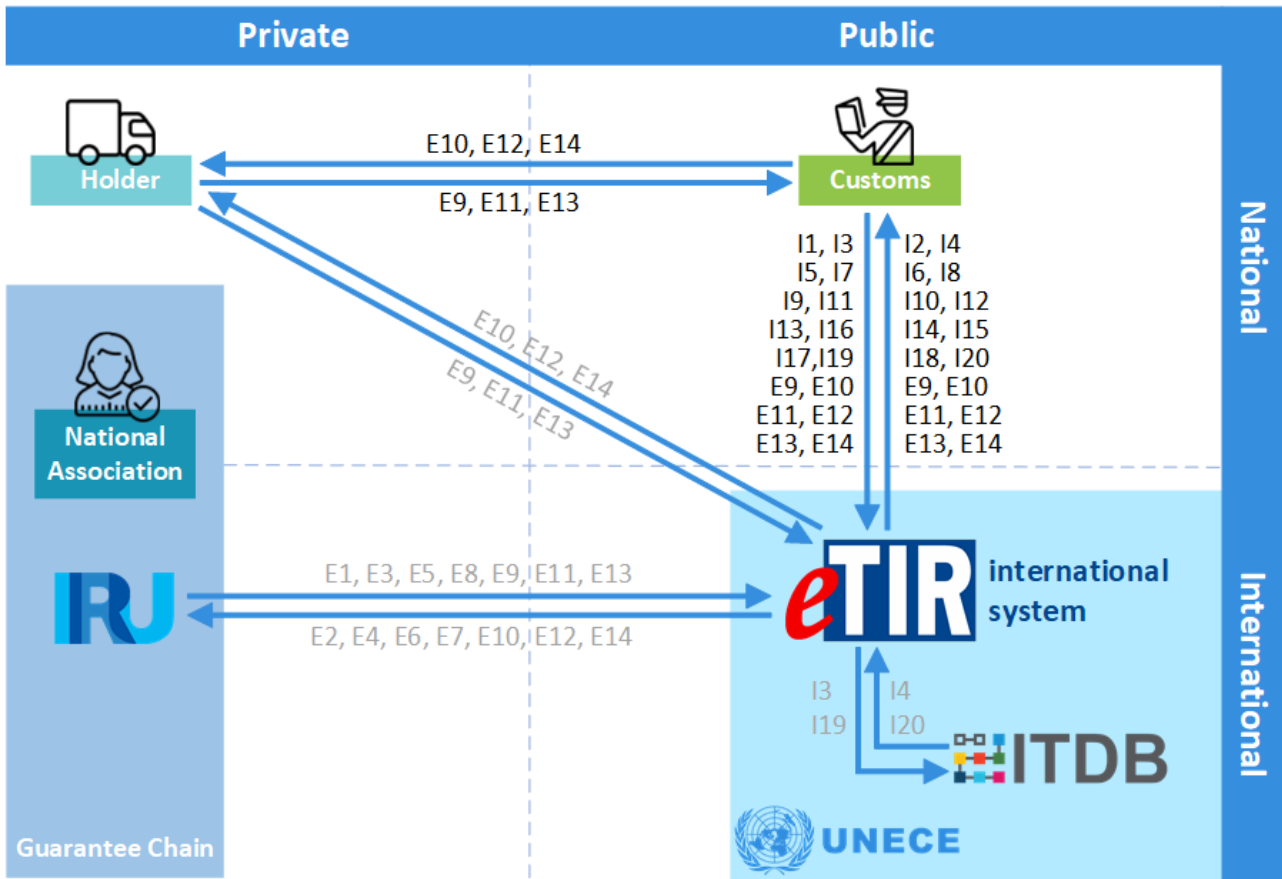
3. eTIR in brief

In 2003, the contracting parties to the TIR Convention launched the so called "eTIR Project", aimed at providing an exchange platform for all actors (customs, TIR Carnet holders and guarantee chains) involved in the TIR system, known as the "eTIR international system" (customs to customs information system).

The eTIR international system aims at ensuring the secure exchange of data between national customs systems related to the international transit of goods, vehicles or containers according to the provisions of the TIR Convention and to allow customs to manage data on guarantees, issued by guarantee chains to TIR Carnet holders authorized to use the TIR system.



The figure above shows the interactions between the main actors of the TIR Convention in the context of the eTIR procedure. The guarantee chain starts by issuing an electronic guarantee to a holder and registers it with the eTIR international system. The holder sends the declaration data to customs or directly to the eTIR international system which will then forward it to customs. Upon presentation of the vehicle at the customs office of departure, its loading is checked against the declaration data previously sent, and customs send the approved declaration data to the eTIR international system and notify the start of a TIR operation. When the TIR transport reaches the customs office of exit, customs notify the termination and, possibly at a later stage, the discharge of the TIR operation to the eTIR international system. The same occurs for all subsequent TIR operations in the countries en route and of destination. The guarantee chain and the customs authorities participating in the TIR transport are notified by the eTIR international system on specific events so they can follow the transport and query information on the guarantee to populate their information systems. Finally, necessary checks are continuously performed by the eTIR international system against the International TIR DataBank (ITDB) with regard to holder and customs office data.

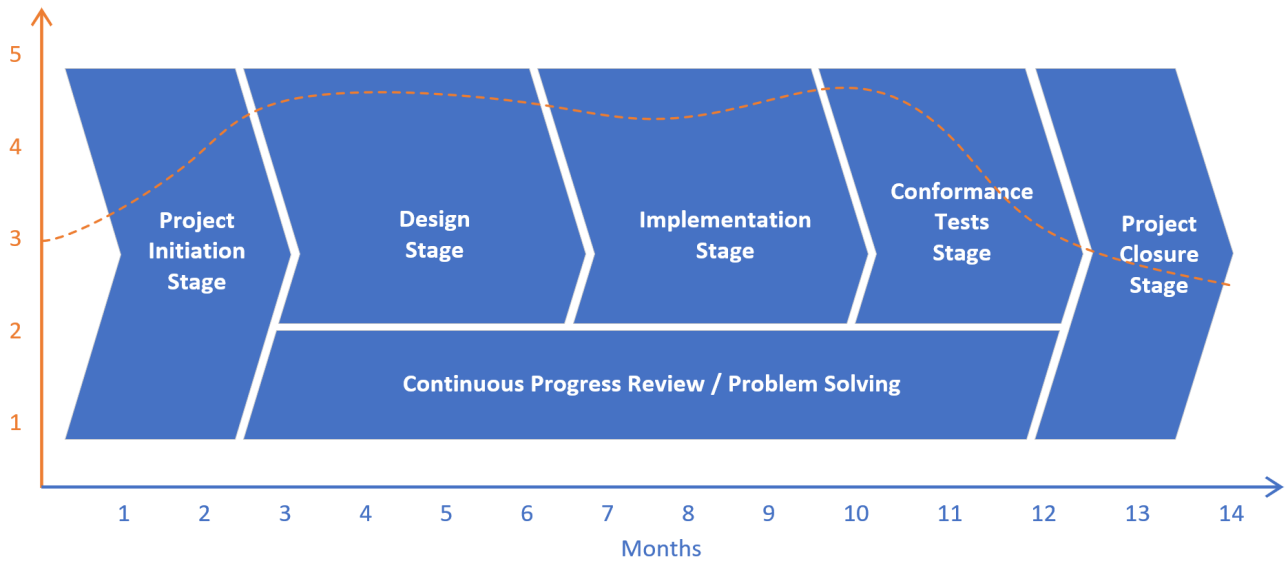


The figure above shows all messages exchanged between the actors and are described in detail both in the eTIR functional and technical specifications. The messages displayed in black are the ones that need to be implemented and processed by customs.

4. Project methodology

A project will be started between a group of experts working in the customs (hereafter called as the 'project team') and experts from the TIR secretariat (hereafter called as the 'ECE team'), to connect the national customs systems with the eTIR international system. The following schema illustrates the methodology that the ECE team proposes to follow to achieve this objective. It includes seven main stages and gives an indicative time frame for the completion of the project as well as indicative expected efforts in terms of resources for customs authorities.

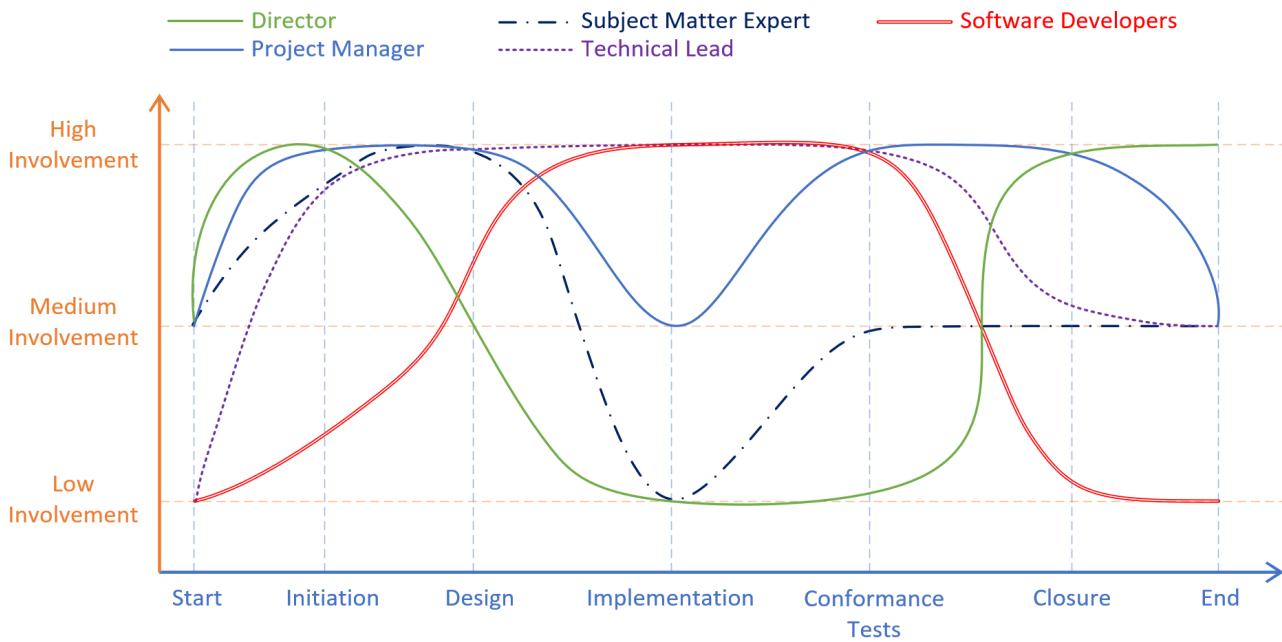
Customs Authorities
Resources



The actual time frame and the number of resources required for the project team will depend on several parameters, inter alia:

- the architecture and complexity of the national customs systems as they need to be modified to adapt to the eTIR procedure and to share the eTIR information with the customs officers;
- the organization and readiness of the customs to establish the connection with the eTIR international system;
- the number of resources assigned to this project, as well as their knowledge and experience of the technology stack required to connect to the eTIR international system using Simple Object Access Protocol (SOAP) web services.

The following schema shows in greater detail the projected involvement of the various roles working on the project (see in the annexes for a description of the [Roles and responsibilities](#)).



Based on the methodology and on the level of involvement depicted in the schemas above, on the foreseen activities and on an estimation of a given amount of available resources, time estimates show that an average of fourteen months would be required to complete this project. This covers the full development of the changes needed in the national customs systems, along with their testing and deployment in the production environment to officially start using the eTIR procedure. The seven main stages of the methodology are detailed in the following sections.

4.1. Project initiation stage

The two partners (the TIR secretariat and customs) will identify the focal points on each side who are responsible for the daily management of the project: a project manager who will lead the project team and an ECE focal point who will coordinate the efforts of the ECE team. Then, a kick-off meeting should be organized where key aspects and objectives will be discussed and agreed among the partners: way of doing business, project management approach, communication arrangements and composition of the teams. A detailed presentation of the eTIR international system will take place for the experts from the customs to discover the system, its functions and requirements.

The project initiation stage will be completed with the presentation of the project plan and the agreement from both sides before entering the next stage of the project.

4.2. Design stage

During this stage, the project team will then take the time needed to read the eTIR specifications and come back to the ECE team to ask any questions it may have. The objective of this stage is for the project team to have a good understanding of the changes that are foreseen in the national customs systems in order to list all the activities (Work Breakdown Structure) that will need to be performed, and to update the project plan with estimated timelines and milestones based on their resources. The project team will review the existing processes and use cases implemented in the national customs systems in light of the eTIR specifications, to see how much they will need to be adapted. Here, the interaction between the subject matter expert(s) and the IT experts of the project team will be very important to properly design the changes that need to be implemented. Not only the usual - nominal - scenarios should be carefully considered, but also all cases where errors would happen, how they would be managed in the systems, how the information would be presented to customs and what would be the consequences for the related TIR transports. Once again, the project team can count on the support from the ECE team to clarify the eTIR specifications and answer any question it may have.

The project plan will be updated upon completion of this design stage.

4.3. Implementation stage

This stage is the main one of the project as the project team implements and tests the changes that were designed in the previous stage. To do this, they will have access to a specific User Acceptance Tests (UAT) environment of the eTIR international system, set up for testing purposes only. It is foreseen that the interaction between the project team and the ECE team will be intense during this stage as the efforts on the internal testing aspects will need to be thorough to prevent any possible problems in subsequent stages.

4.4. Conformance tests stage

The objective of this stage is to perform a comprehensive set of conformance tests between the new version of the national customs systems and the eTIR international system, testing all possible scenarios defined by the ECE team. If issues are found, the project may need to return to the implementation stage for additional rework. As a result, several iterations may be needed between these two stages before being able to move to the next stage. Once all conformance tests successfully pass, the new version is deployed in the production environment and a certificate is issued to the Project team to signify that the national customs systems are certified in conformance with the related version of the eTIR specifications.

4.5. Project closure stage

Finally, the project team needs to ensure that the day-to-day management and the maintenance of the new systems and processes (support) can be handed over to the operational and maintenance teams before the project team can be disbanded. Also, a meeting should be organized for both parties to review and agree on how potential outstanding issues should be dealt with and to draw lessons from the experience acquired during the project. Finally, a final report will be prepared to summarize the achievements of the project.

4.6. Continuous progress review / problem solving processes

Based on the communication plan adopted during the project initiation stage, both teams will regularly communicate and organize meetings to monitor progress and discuss potential issues and questions. Ad-hoc virtual meetings may also be organized to address urgent and/or blocking issues. Virtual meetings using video conferencing technologies should be preferred although, depending on arrangements taken between both parties, experts may need to travel to achieve specific tasks (help with designing or programming, training, etc.).

4.7. What is next?

Once this Connection project is completed, it might not be possible to operate TIR transports using the eTIR procedure if the conditions are not met (see [Annex 11](#)). When TIR transports using the eTIR procedure can be organized, the TIR secretariat can offer support to the operational and maintenance teams of the Customs to actively start monitoring these first transports, to verify everything is working correctly.

5. Milestones

The following table details the milestones required to interconnect the national customs systems to the eTIR international system.

#	Milestone	Stage
01	Kick-off meeting Organize a kick-off meeting of the project between the customs (represented by the director) and the TIR secretariat (represented by the TIR Secretary) to discuss and agree on various aspects of the project before officially starting it.	Project initiation
02	Definition of the project team Customs review the Roles and responsibilities and define the project team by assigning persons to the roles using the Roles assignment document (both available in the annexes). i If external consultants are to be involved in the project, their roles and responsibilities should be clearly identified and they must be included in the Roles assignment document.	Project initiation
03	Basic project plan The project team drafts a first version of the project plan containing the list all the activities (work breakdown structure) that will need to be performed, the communication plan and a tentative Gantt chart with estimated timelines.	Project initiation
04	Refined project plan After having designed the changes to be applied to the national customs systems, the project team refines the project plan to provide a more comprehensive list of activities and review the time estimates.	Design
05	eTIR international system / national customs systems trusted connection Generate, communicate and mutually register X.509 certificates between the eTIR international system and the national customs systems to enable secured communications between both parties (as described in the https://etir.org/documentation/introductioneTIR Introduction document).	Implementation
06	eTIR international system readiness for new customs connection Collection of all key technical information and completion of all the preparation tasks to start allowing connections between systems, and finally confirmation of readiness.	Implementation
07	Implementation and test of the web services and related eTIR messages Implement and test the customs related eTIR messages and endpoints, as described in the eTIR web services introduction document and in the dedicated eTIR message documents. This task is broken down by message pair (request/response) that will be implemented by the IT team. i The eTIR messages and endpoints newly implemented by the IT team will be tested on the User Acceptance Testing (UAT) environment of the eTIR international system, with the assistance of the ECE team.	Implementation
07.1	I1 - Accept guarantee / I2 - Acceptance results Implement and test the I1 - Accept guarantee and the I2 - Acceptance results eTIR messages and endpoints as described in the corresponding eTIR document .	Implementation
07.2	I5 - Query guarantee / I6 - Query results Implement and test the I5 - Query guarantee and the I6 - Query results eTIR messages and endpoints as described in the corresponding eTIR document .	Implementation
07.3	I7 - Record declaration data / I8 - Record declaration data results Implement and test the I7 - Record declaration data and the I8 - Record declaration data results eTIR messages and endpoints as described in the corresponding eTIR document .	Implementation
07.4	I9 - Start TIR operation / I10 - Start results Implement and test the I9 - Start TIR operation and the I10 - Start results eTIR messages and endpoints as described in the corresponding eTIR document .	Implementation

#	Milestone	Stage
07.5	I11 - Terminate TIR operation / I12 - Termination results Implement and test the I11 - Terminate TIR operation and the I12 - Termination results eTIR messages and endpoints as described in the corresponding eTIR document .	Implementation
07.6	I13 - Discharge TIR operation / I14 - Discharge results Implement and test the I13 - Discharge TIR operation and the I14 - Discharge results eTIR messages and endpoints as described in the corresponding eTIR document .	Implementation
07.7	I15 - Notify customs / I16 - Notification confirmation Implement and test the I15 - Notify customs and the I16 - Notification confirmation eTIR messages and endpoints as described in the corresponding eTIR document .	Implementation
07.8	I17 - Refusal to start TIR operation / I18 - Refusal results Implement and test the I17 - Refusal to start TIR operation and the I18 - Refusal results eTIR messages and endpoints as described in the corresponding eTIR document .	Implementation
07.9	E9 - Advance TIR data / E10 - Advance TIR data results Implement and test the E9 - Advance TIR data and the E10 - Advance TIR data results eTIR messages and endpoints as described in the corresponding eTIR document .	Implementation
07.10	E11 - Advance amendment data / E12 - Advance amendment data results Implement and test the E11 - Advance amendment data and the E12 - Advance amendment data results eTIR messages and endpoints as described in the corresponding eTIR document .	Implementation
07.11	E13 - Cancel advance data / E14 - Cancel advance data results Implement and test the E13 - Cancel advance data and the E14 - Cancel advance data results eTIR messages and endpoints as described in the corresponding eTIR document .	Implementation
08	Internal tests Validate the eTIR web service client implementation using unit, integration and functional tests under the UAT environment to verify, inter alia, the correct use and processing of the eTIR messages and their sequence.	Implementation
09	International TIR DataBank (ITDB) data validation Verify that customs offices data and TIR Carnet holders data are all properly registered in ITDB, and up to date. Confirm that the correct accounts are configured for both customs and national associations and the related personnel is properly trained to use the ITDB web application . Confirm also that customs officers who have a user account in ITDB can manage the list of customs offices and TIR Carnet holders data. ⓘ This step can be completed in parallel to previous steps but it remains a prerequisite for the following ones.	Implementation
10	Conformance tests of the eTIR web service client Fully test the eTIR web service client implementation under the UAT environment against a comprehensive set of scenarios simulating possible scenarios that may happen under the eTIR procedure (see article 11.2 of Annex 11).	Conformance Tests
11	Deployment in production Deploy the new version of the national customs systems in the production environment and perform the final tests.	Conformance Tests
12	Switch to operations Verify that operational teams, processes and resources are ready at customs to support the connection to the eTIR international system. Ensure that these operational teams are familiar with the Standard Operating Procedures (SOP) of the eTIR service desk. Communicate internally to all national (associations, TIR Carnet holders) and international (other customs authorities) stakeholders.	Project closure
13	Full compliance with eTIR After having performed the last project management tasks related to the closure: reviewing issue logs, lessons learned as well as optional project artifacts (benefits review plan, final report, etc.).	Project closure

6. Communication Management



Communication between the teams (customs/IRU/ECE) should always include focal points.

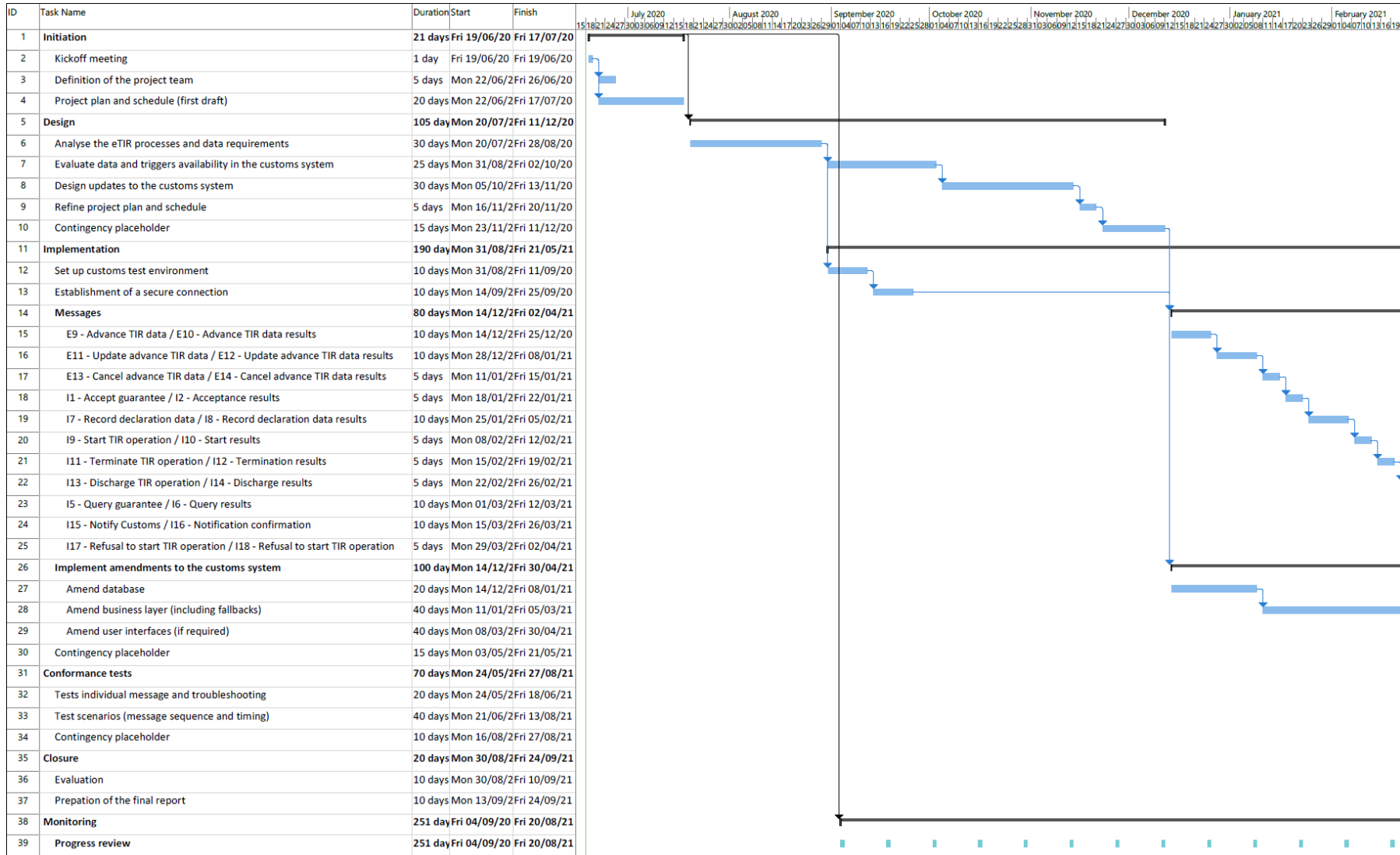
Type	Objective	Medium	Frequency	Audience	Deliverables	Stages
Kick-off meeting	Introduce the project objectives, the teams and the project methodology. Consider draft project plan and communications plan.	Virtual meeting	Once	Project teams	Agenda / Meeting minutes	Initiation
Project plan meetings	Discuss and finalize the project plan (including schedule) and communication plan	Email / virtual meeting	As needed	Project teams (as required*)	Agenda / Meeting minutes / Project plan (including schedule) and communication plan	Initiation
eTIR specifications Q&A	Provide answers to questions on the eTIR specifications raised by the customs project team (by email for individual and simple questions / virtual meeting in case of numerous or complex questions)	Email / virtual meeting	As needed	Project teams (as required*)	Agenda** / Meeting minutes**	Initiation / Design / Implementation
eTIR international system issues reporting	Escalate issues related to the functioning of the eTIR international system (by email for individual and simple issues / virtual meeting in case of numerous or complex issues)	Email / virtual meeting	As needed	Project teams (as required*)	Agenda** / Meeting minutes** / Follow up with ECE project team (Jira)	Design / Implementation / Conformance tests
Project progress report	Review progress of the project against the project plan/schedule. Update the project schedule if necessary. Via email or virtual meeting depending on the needs	Email / virtual meeting	Every 2 weeks	Focal points	Agenda** / Meeting minutes** / Project schedule	Design / Implementation / Conformance tests
Technical meetings	Discuss and develop technical solutions for the project	Virtual meeting	As needed	Project teams (as required*)	Agenda / Meeting Minutes	Design / Implementation / Conformance tests
Project status reports	Regular review of the project progress	Email	Monthly	Project teams	Project status report / Project schedule	Design / Implementation / Conformance tests
Project final report	Final report (including the customs system conformance with the eTIR specifications)	Email	Once	Project teams	Project final report	Closure

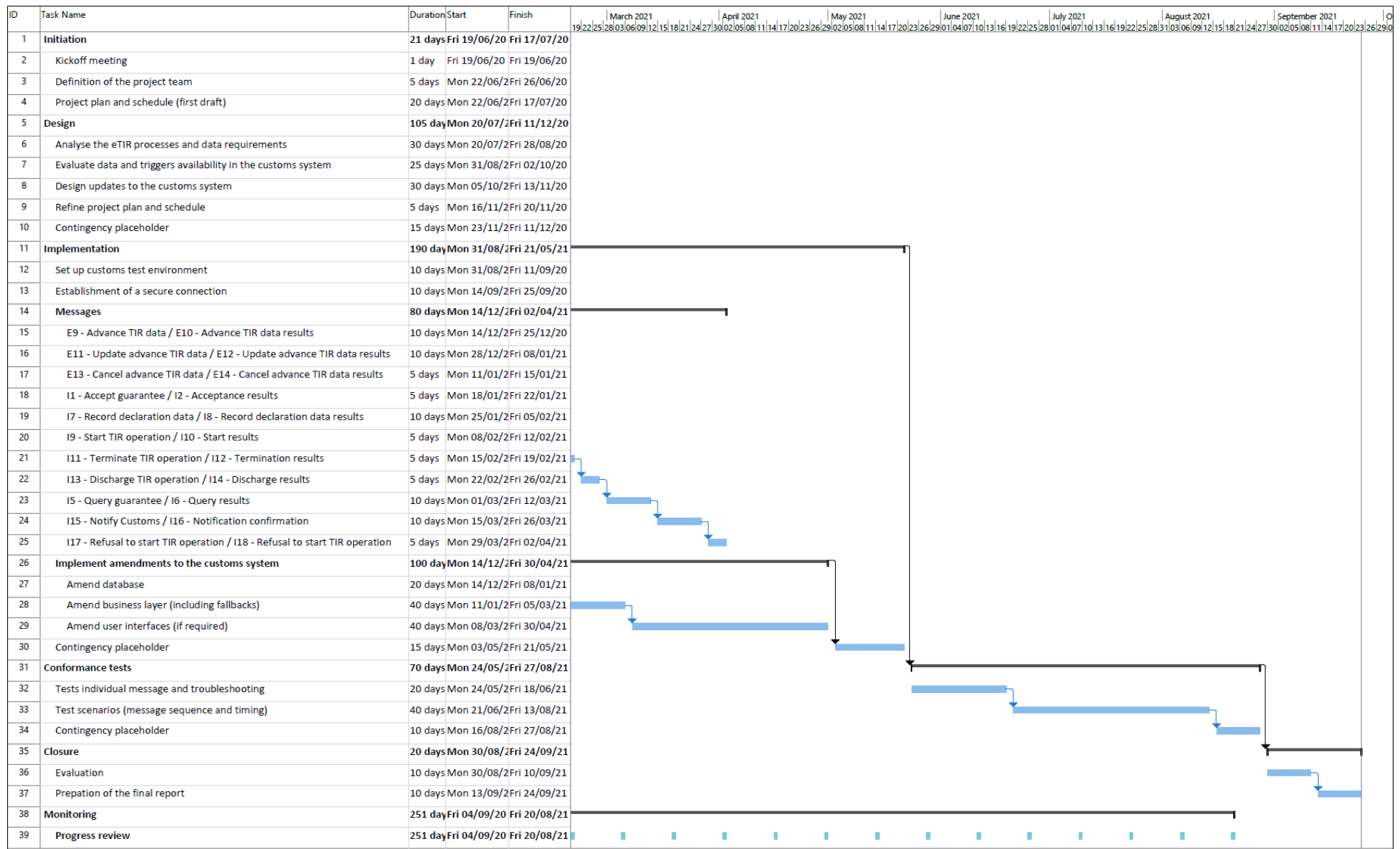
* The attendance on each side of the project teams will be determined by their respective focal points.

** Optional.

7. Gantt chart

The following Gantt chart gives an overview of the macro activities of the project per stage.





8. Support and contact

Kindly note that in the context of the interconnections projects by customs, the eTIR service desk stands ready to assist contracting parties while interconnecting their national customs systems to the eTIR international system. Also, in case of questions or issues related to this document or to the eTIR international system, you can use the contact details below (contacts by email should be preferred).

Organization United Nations Economic Commission For Europe
TIR secretariat
Palais des Nations,
1211 Geneva 10, Switzerland

Contact Email: etir@un.org
Phone: +41 (0)22 917 55 06

9. Version history

Date	Author	Document version	Notes	eTIR specification version
19/06/2020	Jonathan Valdes	1.0	Initial draft	4.3a
06/09/2021	TIR secretariat	1.1	Added message metadata documentation and updated URLs to point to new eTIR documentation portal	4.3.0
22/12/2021	TIR secretariat	1.2	Updated links to code lists	4.3.0

10. Document revision note



This document has been published on **22/12/2021**, and is valid for the **eTIR international system version 1.0** based on the **eTIR specifications version 4.3.0**.

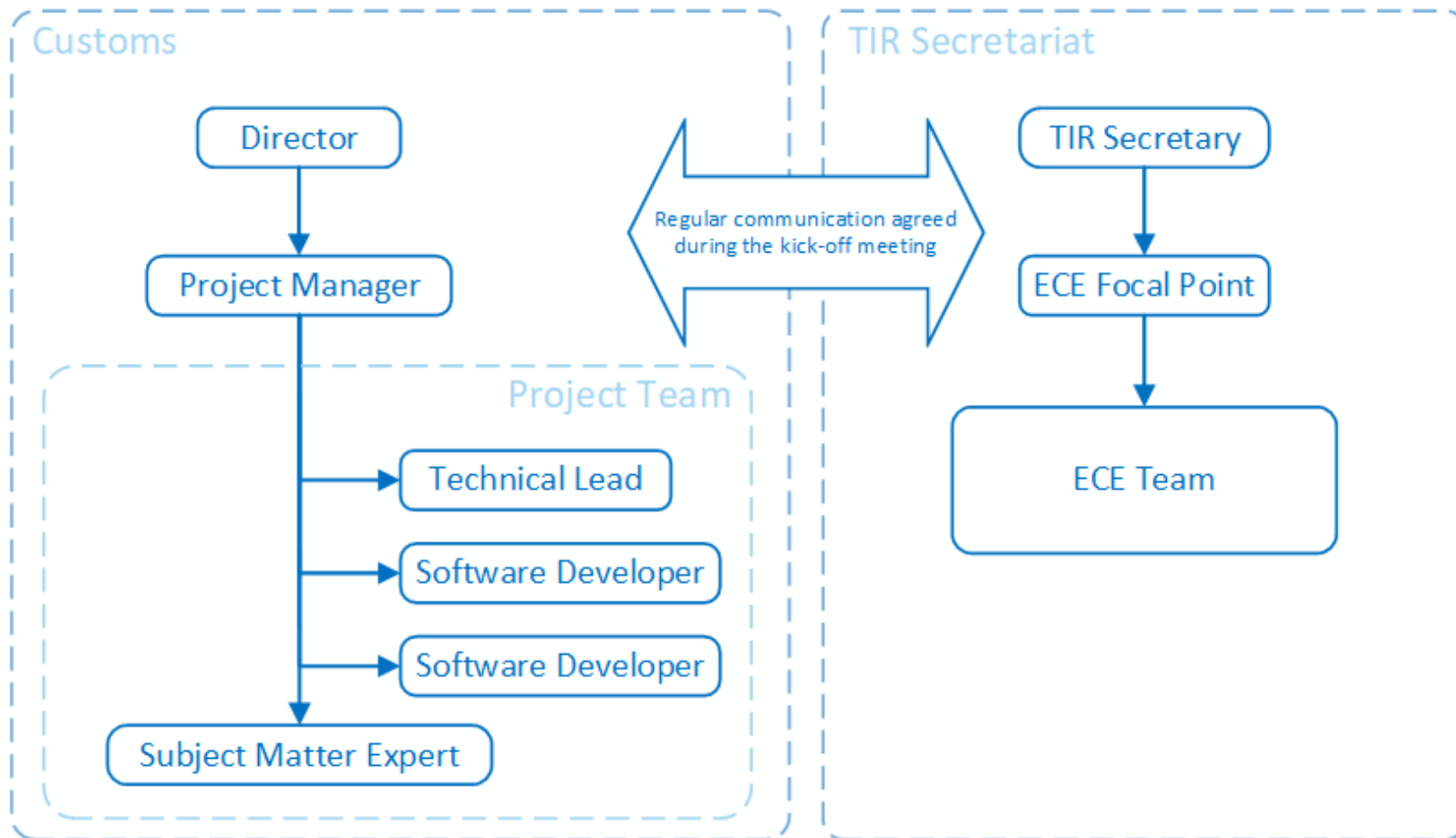
Please ensure you get the latest version of this document from the [eTIR documentation portal](#) or contact the eTIR service desk ([Support and contact](#)).

11. Annexes

11.1. Roles and responsibilities

This annex provides the list of roles which will intervene in the scope of the project. Each role has a non-comprehensive list of responsibilities. Roles for both the TIR secretariat and customs are detailed and a diagram showing their interactions is available at the beginning.

Interactions between roles



Director

The person is a senior manager from customs and provides resources and support for the project and is accountable for enabling success. This role is called "Sponsor" in the Project Management Professional® and "Executive" in the PRINCE2® methodologies.

Responsibilities

- The director designs and appoints the project management team (in particular the project manager). The director secures the funding for the project.

- The director participates to the kick-off meeting and in all important project meetings. The director monitors and controls the progress of the project at a strategic level and liaises with the TIR Secretary when needed.
- From project initiation through project closure, the director promotes the connection between the national customs systems and the eTIR international system. This includes serving as spokesperson to higher levels of management to gather support throughout customs and promoting the benefits the project brings.
- The director leads the project through the initiating processes until formally authorized by customs and plays a significant role during the project initiation stage.
- For issues that are beyond the control of the project manager, the director serves as an escalation path. The director may also be involved in other important issues such as authorizing changes in scope, stage-end reviews, and go/no-go decisions when risks are particularly high.
- The director also ensures a smooth transfer of the deliverables of the project to the business team after project closure. The director ensures that the benefits of the connection between the national customs systems with the eTIR international system will be realized.

Project manager

The project manager has the authority to run the project on a day-to-day basis on behalf of the director within the constraints laid down by him or her.

Responsibilities

- The prime responsibility of the project manager is to ensure that the project produces the required products within the specified tolerances of time, cost, quality, scope, risk and benefits.
- In collaboration with the director and with the support of the members of the IT team, the project manager defines the scope of the project, in particular the changes that need to be performed in the national customs systems.
- With the support of the members of the team, the project manager builds the Work Breakdown Structure (WBS) of the project, provides realistic estimates of the activities identified and builds a plan in accordance with the available resources.
- The project manager coordinates the daily work of the team and regularly liaises with the director and the ECE focal point to monitor progress and discuss potential issues encountered and how to best solve them.
- The project manager follows the guidelines and best practices established by the contracting party in terms of project management and risk management methodologies, which can involve creating and maintaining additional documentation, registers, logs and following additional processes.

Technical lead

The technical lead is an experienced software engineer who establishes a technical vision within the project team and who works with software developers to turn it into reality.

Responsibilities

- The primary responsibility of the technical lead is to ensure a timely production of the work packages allocated by the project manager.
- The technical lead is responsible for the software architecture of the national customs systems and makes sure that the changes that are designed within the scope of this project will properly integrate into the overall architecture.
- The technical lead takes directions from the project manager. Please note that both the roles of project manager and the technical lead may be the assigned to the same person.
- The technical lead is responsible for leading the development team to develop and deliver solutions for the project.
- The technical lead coordinates multi-disciplinary activities and inputs by the development team, including specialist inputs, to ensure an integrated solution.
- The technical lead ensures that the work packages developed conform to the specifications and have the appropriate level of quality that has been validated by appropriate test procedures.
- The technical lead may provide support in user training activities.

Subject matter expert

The subject matter expert, in the context of eTIR international system connection project, is an expert with thorough understanding of the TIR Convention and very good experience in the use and functioning of the national customs systems.

Responsibilities

- The main responsibility of the subject matter expert is to accompany the project team - principally during the design stage - to identify the functions of the national customs systems that will have to be modified to integrate the changes further to the introduction of the eTIR procedure.
- The subject matter expert collaborates with the project team to provide expertise in the TIR Convention, national customs systems and, more generally, border crossing facilitation processes.
- The subject matter expert is responsible, along with the project manager, to ensure that the solution developed by the customs IT team delivers the best added value for customs.
- The subject matter expert will validate that the final product satisfies the defined requirements.
- The subject matter expert ensures that all necessary business logics are clear to the IT developers and that their implementation is aligned with the customs rules and best practices.
- The subject matter expert is responsible for creating the necessary user acceptance test cases that will validate - from an end user perspective - the changes applied to the national customs systems.

- The subject matter expert reviews the technical documentation, such as user guides, training manuals and system specifications, prior to distribution to end-users and ensures that the content is correct and adapted to the audience.

Software developer

The software developer is a software engineer who will program the changes needed into the national customs systems to complete the project.

Responsibilities

- The main responsibilities of a software developer are researching, designing, implementing and managing the software programs required to deliver the project work packages.
- The software developer reports to the technical lead and project manager and works closely with other software developers and the subject matter expert.
- The software developer is responsible for identifying areas for modification in existing programs and subsequently designing and developing these modifications.
- The software developer is accountable for writing and implementing efficient code, following the coding guidelines promulgated by the IT entity of the customs.
- The software developer must follow his/her organization quality assurance procedures and implement the tests needed to ensure a high-quality software.
- The software developer is responsible for maintaining and upgrading existing systems.
- The software developer may provide support in user training activities.

11.2. Roles assignment

This annex provides a template for customs to assign the various envisioned roles in the project to individuals. The main responsibilities devoted to these roles are listed in the [Roles and responsibilities](#) annex. In addition to having one main individual assigned to a role, each role should ideally also have an **Alternate** individual for backstopping purposes.

Director

Primary

Name:	
Title:	
Email address:	
Phone number:	
Postal address:	

Alternate

Name:	
Title:	
Email address:	
Phone number:	
Postal address:	

Project manager

Primary

Name:	
Title:	
Email address:	
Phone number:	
Postal address:	

Alternate

Name:	
Title:	
Email address:	
Phone number:	
Postal address:	

Technical lead

Primary

Name:	
Title:	
Email address:	
Phone number:	
Postal address:	

Alternate

Name:	
Title:	
Email address:	
Phone number:	
Postal address:	

Subject matter expert

Primary

Name:	
Title:	
Email address:	
Phone number:	

Postal address:	
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Alternate

Name:	
Title:	
Email address:	
Phone number:	
Postal address:	

Software developer

Primary

Name:	
Title:	
Email address:	
Phone number:	
Postal address:	

Primary

Name:	
Title:	
Email address:	
Phone number:	
Postal address:	

Primary

Name:	
Title:	
Email address:	

Phone number:	
Postal address:	