PRAETORIAN

D1.1 Quality Assurance Plan

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Protection of Critical Infrastructures from advanced combined cyber and physical threats

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Abstract

The Quality Assurance Plan describes how PRAETORIAN will put into operation - from a very pragmatic perspective – a focused, lean but effective framework to support the partnership in achieving the scientific, technical and business objectives of the project, taking into consideration the specific strengths and constraints of the consortium. Self-assessment activities and monitoring of the quality of the work are key elements for this task.

**Type. Report; Demonstrator; Ethics*

***Dissemination Level. Public; Confidential (Confidential, only for members of the consortium (including the Commission Services)); RESTREINT UE (Classified information, RESTREINT UE (Commission Decision 2015/444/EC)).*

Disclaimer

PRAETORIAN

PRAETORIAN strategic goal is to increase the security and resilience of European CIs, facilitating the coordinated protection of interrelated CI against combined physical and cyber threats. To that end, the project will provide a multidimensional (economical, technological, policy, societal) yet installation-specific toolset comprising: (i) a Physical Situation Awareness system, (ii) a Cyber Situation Awareness system; (iii) a Hybrid Situation Awareness system, which will include digital twins of the infrastructure under protection; and (iv) a Coordinated Response system. The PRAETORIAN toolset will support the security managers of Critical Infrastructures (CI) in their decision making to anticipate and withstand potential cyber, physical or combined security threats to their own infrastructures and other interrelated CIs that could have a severe impact on their performance and/or the security of the population in their vicinity.

The project will specifically tackle (i.e. prevent, detect, response and, in case of a declared attack, mitigate) human-made cyber and physical attacks or natural disasters affecting CIs. It will also address how an attack or incident in a specific CI can jeopardise the normal operation of other neighbouring/interrelated CIs, and how to make all of them more resilient, by predicting cascading effects and proposing a unified response among CIs and assisting First Responder teams.

PRAETORIAN is a CI-led, user-driven project, which will demonstrate its results in three international pilot clusters, some of them cross border -Spain, France and Croatia-, involving 9 outstanding critical infrastructures: 2 international airports, 2 ports, 3 hospitals and 2 power plants.

Document history:

Version	Date of issue	Content and changes	Partner
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0.2	04/08/2021	Chapter 4 - Internal Reviewing Procedure	ETRA
0.3	13/08/2021	First complete draft	ETRA
0.4	20/08/2021	Second draft version	ETRA
0.5	27/08/2021	Third draft version	ETRA
1.0	31/08/2021	Final version	ETRA
1.1	19/06/2023	Renumbering of deliverables according to amendment of GA. Revision of typos.	ETRA

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Table of Contents

Index of Tables

Index of Figures

Abbreviations and Acronyms

BIM	Business and Innovation Manager
CI	Critical Infrastructures
CP	Consortium Plenary
DAM	Demonstration Activities Manager
DCOM	Dissemination and Communication Manager
DoA	Description of Action
EB	Ethics Board
EC	European Commission
H2020	Horizon 2020. The EU Framework Programme for Research and Innovation
IAB	International Advisory Board
PDF	Portable Document Format
PM	Project Manager
PMB	Project Management Board
PMO	Project Management Office
PO	Project Officer
QA	Quality Assurance
QAP	Quality Assurance Plan
SAB	Security Advisory Board
SG	Stakeholder Group
TL	Task Leader
TM	Technical Manager
URL	Uniform Resource Locator
WP	Work Package
WPL	Work Package Leader

Executive Summary

The Quality Assurance Plan describes the roles of the different actors in the project management and gives guidelines for performing the day-to-day project management actions. Together with the Project Management Handbook (deliverable D1.5), the QAP is the tool to ensure that the prescribed management principles and structures are correctly implemented. The internal reviewing procedure is of great importance since it is one of the main tools to guarantee the quality of the results. PRAETORIAN will follow a procedure based on the peer review of the project deliverables which must ensure they are submitted to the EC with the highest quality. Moreover, QA guidelines must be applied for the reporting procedure as well as for dissemination and communication.

A key aspect for the project monitoring is the Management Dashboard that has been created to show relevant KPIs for the project progress. This tool, to be maintained and updated periodically during the whole project duration, will allow the consortium partners to have up-to-date information and visualisation about the project status and possible deviations.

Finally, the project's risk management process is envisioned in this report and will be further defined in D1.2 "Risk & Opportunities Register". A continuous risk assessment will allow that in case of problems, the required corrective actions are initiated in co-operation with the concerned partners.

1. Introduction

1.1 Purpose of the document

The main goal of project management is to provide a focused, lean but effective framework to support the partnership in achieving the scientific, technical and business objectives of the project. Efficient decision-making processes and swift responsiveness to changing circumstances are required.

The quality of the project management is ensured by the Quality Assurance Plan. This document describes how PRAETORIAN will put into operation - from a very pragmatic perspective - all the previously described principles, taking into consideration the specific strengths and constraints of the consortium. The goal is to define the management structure as well as the principles and procedures that, whilst being as flexible, agile and cost-efficient as possible, leave no room to subjective interpretation.

1.2 Scope of the document

This document is aimed at providing guidelines for deliverables, presentations and key messages delivery, internal and external communication, description of the internal review process to be followed by all partners and specific KPIs for quality check

The document will allow the team leaders within each organisation to have at any moment clear guidelines for the project implementation to ensure the quality of the results, with the support of the tools to detect deviations and to propose the corrective actions that can mitigate those deviations, towards the smooth Implementation of the project work plan.

1.3 Structure of the document

This document is structured as follows:

- Section 2 provides a clear description of both internal and external roles, as well as the management structure defined for ensuring smooth decision-making processes during PRAETORIAN lifetime, and the tools designed to enable this.
- Section 3 includes Quality Assurance guidelines for the reporting procedures, together with a defined convention for numbering and naming the deliverables.
- Section 4 details the internal review protocol to be followed for each deliverable.
- Section 5 describes the risk assessment & management methodology to be performed during the project, enabling early identification of risks and proposals of mitigation measures.
- Section 6 provides a general overview of QA guidelines for dissemination and communication.
- Section 7 summarises the conclusions.

2. Management structure

PRAETORIAN will be implemented by 23 partners. Its nature puts greater emphasis on decision-making mechanisms, hence a shallow management hierarchy with transparency in the information flow must facilitate a team of empowered and motivated individuals to respond to the needs of innovative products development and demonstrations. The management structure has the following characteristics:

- Goal orientation – the project requires a determined management with a strong desire to "get things done".
- Agility – to allow adaptation to fast-moving technology dynamics and end-user demands.
- Empowerment/productivity – shallow hierarchy, information transparency and well-defined objectives.

2.1 Roles in the management structure

The **Project Director (PD)** has the responsibilities of the Project Coordinator as defined in the Grant Agreement and will set up the strategic lines of the project –thus ensuring a user driven project- following the advice and support of the **Project Management Office (PMO).** The PMO, led by the **Project Manager (PM)**, is the management body with the integrated overview of the project activities, responsible for the administrative management and the technical coordination. The PD will interact with the EC on contract-related issues and represent the project in official meetings and workshops, but will delegate responsibility to the PM regarding chairing of regular working meetings, setting of administrative and financial tasks, collecting administrative reports from partners, preparing and updating the Consortium Agreement between the participants, administering project resources, etc. The PM –with the support of the PMO– will monitor the project's performance, manage the technical audits, and supervise the preparation of the deliverables.

The other members of the PMO are:

- the **Technical Manager (TM),** who supports the PM in technical matters, e.g. strategic decisions regarding technical designs and implementations;
- the **Dissemination and Communication Manager (DCOM)** who is responsible for all dissemination activities and direct interaction with end-users and mass media, the definition of the project website structure and functionalities, etc.;
- the **Business and Innovation Manager (BIM)** who is responsible for the exploitation activities and innovation management;
- the **Demonstration Activities Manager (DAM)**, who will coordinate the deployment and demonstration activities arranged in WP8;

- the **Legal, Ethical and Policy Issues (LEPI)** Officer who is the coordinator of all the activities related to legal, ethics and policy issues that may arise as part of the project activities and beyond.

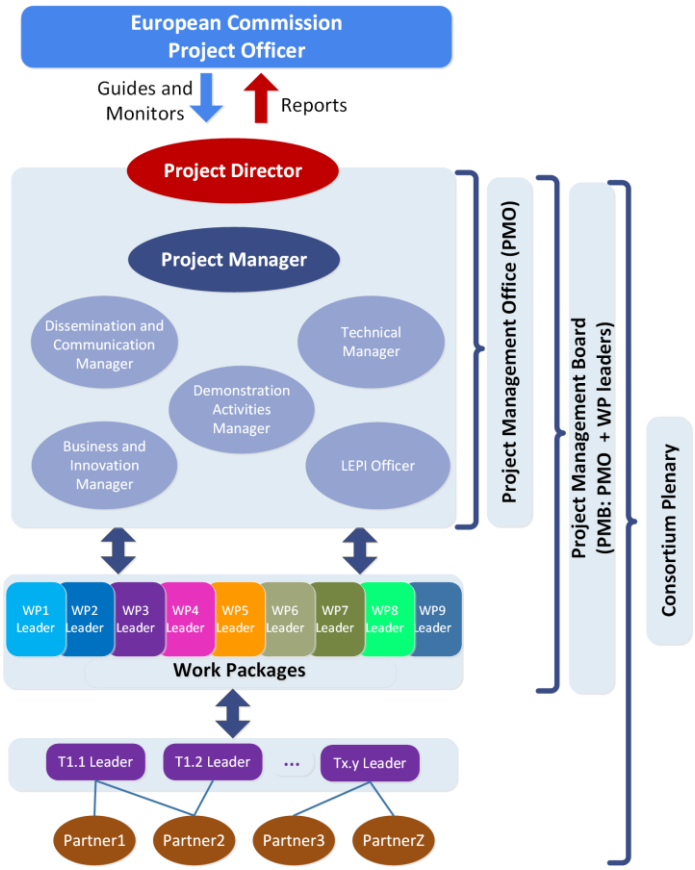

Figure 1 – PRAETORIAN Management structure

The **Project Management Board (PMB)** is formed by the PMO and all the **WP leaders** (**WPL**). The PMB, chaired by the PM, will meet at least quarterly or at a request of the PM/TM to discuss the progress of the individual WPs and assess and discuss with more detail the project progress. Reasons for any deviations from the project plan will be identified and the necessary corrective actions will be proposed by the PMO and decided by the PMB.

Within each work package, the **Task leaders (TL)** will be the direct responsible for the day-to-day work needed to carry out the tasks related to their specific activity. Their coordination work is not subject

to any additional administrative or reporting burden; instead, they will act as team leaders of all the individuals from the different partners involved in a specific task.

Finally, all the partners in PRAETORIAN are represented in the **Consortium Plenary (CP)**, chaired by the PD. The CP is the key liaison between the project and partner organisations. In the CP meetings, the PM will present the project's status and plans for the next period. Representatives of the partner organisations will be able to voice their opinions and ask for more elaborated information on the project progress and plans. The CP meetings (plenary meetings) shall take place at least twice a year and, when possible, in conjunction with the scientific and technical dissemination activities of the project and PMO meetings. When/if unable to meet in person, the meetings will be held remotely. Major changes in the project plan, such as reallocation of resources or workloads, may be done within the limits of agreements, by the decision of the CP.

Table 1 – Project Management Board

Project Director	Frédéric Guyomard (EDF)	**WP3 Leader**	Stéphane Paul (THA)
Project Manager	Antonio Marqués (ETRA)	**WP4 Leader**	Virgilio Gómez (ETRA)
Technical Manager	Eva Muñoz (ETRA)	**WP5 Leader**	Federico Carvajal (UPVLC)
Dissemination and Communication Manager	Konstantina Remoundou (ICCS)	**WP6 Leader**	Kostas Demestichas (ICCS)
Business and Innovation Manager (WP10 leader)	Eva Muñoz (ETRA)	**WP7 Leader**	Tim Stelkens-Kobsch (DLR)
Legal Ethical and Policy Issues Officer (WP9 leader)	Plixavra Vogiatzoglou (KUL)	**WP8 Leader**	Rafael Company (FVP)
Demonstration Activities Manager (WP8 leader)	Rafael Company (FVP)	**WP9 Leader**	Plixavra Vogiatzoglou (KUL)
WP1 Leader	Frédéric Guyomard (EDF)	**WP10 Leader**	Eva Muñoz (ETRA)
WP2 Leader	Frédéric Guyomard (EDF)		

Finally, the **Demo sites** play a key role in this management structure, focusing on a project with a strong presence of end users and with a clear orientation to large scale demonstrations: 9 end users (CI operators) and 3 First Responders are demonstrators and facilitators for early adoption:

- EDF and HEP are Power plant and Hydro Power Plant CI operators
- AENA and ZAG are Airport CI operators
- FVP and GPMB are Port CI operators
- HULAFE, MUG and KABEG are Hospital CI operators
- CMRS, CPBV, SDMIS are First Responders

Focusing on the activities with end users, demo sites are organized in local clusters and therefore will have partners in charge of representing the whole demo site in case of specific requirements coming from WPs or to coordinate certain activities at a local level. These demo sites management structure has to interact closely with the PMB, in order to ensure a smooth monitoring of the demo sites

activities, as shown in the Figure 2~~Figure 2~~.

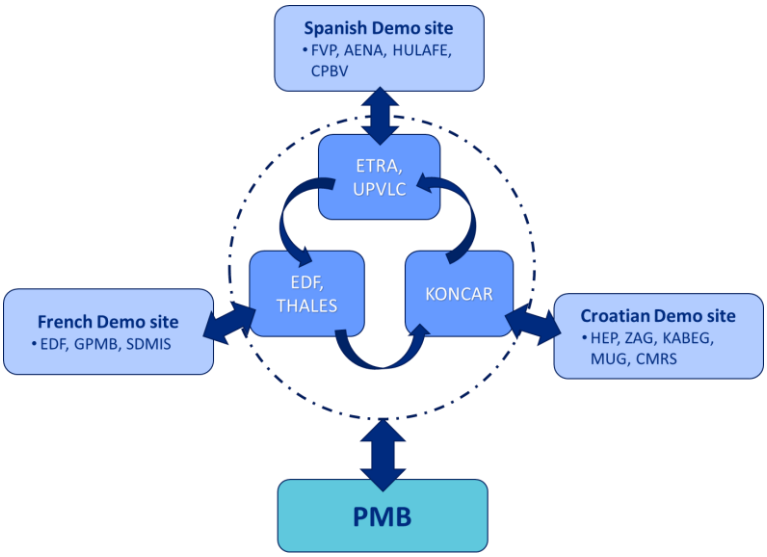

Figure 2 – Demos sites Management structure

2.2 Extended consortium

There are four main bodies to support the PRAETORIAN Consortium during its activities in the project. These bodies are integrated by a set of experienced figures, as follows:

2.2.1 The Stakeholder Group (SG).

The SG is formed by representatives of CI owners and different civil society organizations and related initiatives from Europe. The main objectives of the SG are:

- Reinforce and complement the role of the end users formally included as the consortium. This will allow boosting the presence and contributions in PRAETORIAN and the achievement of a user driven project whilst at the same time keeping the consortium size compact.
- It will act as an additional antenna for the consortium to closely monitor both the integration and operational evolution of the project results during the whole duration of the project.
- It will act as a privileged dissemination and exploitation forum to the project developments. This facilitates the replication of project conclusions and results, maximising the impact of PRAETORIAN, in a cost-effective way.

2.2.2 The International Advisory Board (IAB).

The IAB is composed by international key experts in the security aspects, and the ethical and legal issues related, that will participate actively in the project discussions, supporting the consortium with their knowledge and experiences in their areas of expertise in several workshops along the project and periodic revision of the preliminary results.

The confirmed members of the PRAETORIAN IAB are:

- Rainer Kölle is an ATM security expert at EUROCONTROL in Brussels, Belgium.
- Professor Diane Cox will act as an independent ethics advisor. She is an Emeritus Professor of Occupational Therapy affiliated to the Institute of Health and the Centre for Research in Health & Society at the University of Cumbria.
- Dr Zachary Au is a Chartered Ergonomist & Human Factors Specialist (C.ErgHF) with 30 years of experience.

2.2.3 The Ethics Board (EB).

The Ethics Board will be composed by independent members with relevant experience in the field. It will aim at monitoring ethics issues in the project and how they are handled. More details about the Ethics Board membership can be found in the deliverable D11.6 GEN – Requirement No.6.

2.2.4 The Security Advisory Board (SAB).

The project has set up a Security Advisory Board (SAB) to address security matters. The main functions of SAB are to review the project deliverables, to assess whether they include any sensitive information and to propose timely measures for preventing the misuse of such information. The SAB is composed of one EDF member (the PSO), one member from ETRA, and five additional members to cover the PRAETORIAN demo sites and CIs in a balanced way: one security representative from Zagreb Airport, one from Valencia port, one from Valencia hospital, one from Bordeaux port, and one from Croatian hydro power plant. The reason for this composition of the SAB is that each national and sector security norm, for both physical and cyber security, may vary, and each type may be different from the EU norms or definitions. To ensure that a common terminology is applied throughout the project, a relevant person from each type of infrastructure and each demo site country will be included on the SAB. The Security Advisory Board will meet twice per year to validate the deliverables level of confidentiality and the modes of information sharing pertaining to project information.

2.3 Quality management cycle

Since PRAETORIAN objectives are ambitious, it cannot be exactly planned beforehand for its whole life span. This makes continuous planning and refinement of the project plan necessary. It is expected that a full cycle: planning -> execution -> analysis -> revision -> planning, etc. should take 3 months. The Project Manager, ETRA, is certified with the standards ISO 9001:2015 [1], which specifies requirements

for an effective quality management system at the scale that the PRAETORIAN project requires. Therefore, the management of the project will be based on the standard in order to assure the quality and conformity of the solutions and knowledge generated.

The PRAETORIAN Project Management Board has agreed on a biweekly based system for follow-up and analysis of the tasks performed according to the project work plan. Therefore, online PMB meetings are arranged each two weeks where WP leaders present the work in progress and discuss about blocking issues or interdependencies between tasks. This is a very efficient tool to perform the quality management cycle as described above, since it allows to revise the status of the work and adopting the corrective measures in case they are needed, while ensuring that barriers are detected and even anticipated.

2.4 The Operational Dashboard

The **Operational Dashboard** provides an up-to-date tracking and evaluation tool allowing partners to follow-up on a regular basis critical milestones and respective teams' performance progress.

The aim is to have a reliable and up-to-date working document helping project stakeholders to easily identify the overall progress status and avoid any major deliverables gap and/or delay.

This working document is divided in three sheets:

1. Dashboard (summarizes overall progress status and deliverables)
2. Risks Assessment (detailed work packages risk assessment, outlining the main risks and vulnerabilities)
3. Project Schedule (Project comprehensive timeline including priority and completion status)

WP leaders are required to complete the document with a periodically review and assessment of their work package progress, on a monthly basis.

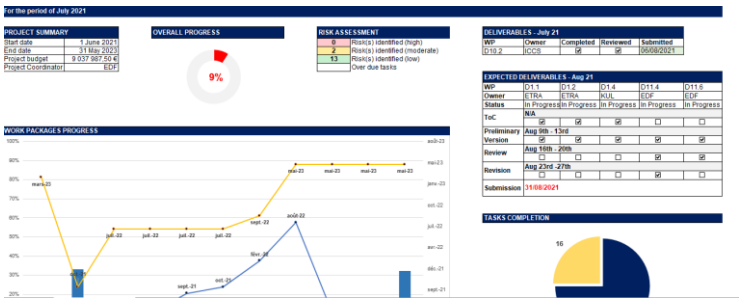

Figure 3 – Dashboard sheet

3. Reporting procedure: QA guidelines

3.1 Deliverables and documents

Deliverables will normally fall within the work to be done in the Work Packages, and as such, each WP leader will be responsible for the quality of results described in deliverables which will be subject to a peer review by at least two experts, according to the procedure described in Section 4. The Consortium has elaborated a table to allocate the responsibilities for the peer-to-peer review of each deliverable, trying to ensure that all partners participate in this process in a balanced way and also to prioritize that at least one of the partners is from a different WP, when possible.

The templates for the deliverables are available at the project repository, one for public deliverables, another one for confidential deliverables and a final one for documents that include EU Classified information. The document shall contain all the logos and it will be formatted according to the document numbering and naming convention as defined in section 3.2.

Once the project coordinator has submitted the deliverable to the EC, the final documents will be also uploaded (both DOC and PDF version) in the Alfresco document library. When the document is approved by the EC, in the case of a public deliverable, the document will be made available in the PRAETORIAN public web site.

At least the project coordinator will keep an additional copy for backup and security reasons.

3.2 Document numbering and naming convention

The deliverables are classified according to the following types:

- **R:** Document, Report
- **DEM**: Demonstrator, pilot, prototype
- **ETHICS:** Ethics requirement

With respect to the confidentiality of deliverables and other documents, including presentations, the following levels of security are considered in PRAETORIAN:

- **PU**: Public
- **CO**: Confidential, only for members of the consortium (including the Commission Services)
- **RESTREINT UE/EU RESTRICTED** : EU Classified information, RESTREINT UE/EU RESTRICTED (Commission Decision 2015/444/EC)

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The documents will be named and numbered according to the following rules, in order to facilitate the quick identification and indexing:

PRAETORIAN_<dnum>_<dname>_<sec>_v<ver>.pdf

All the documents' names start with the word "PRAETORIAN" in order to facilitate the identification with other project documents, and to raise the awareness of the project within a number of people

that will download the documents from the public website. The fields <dnum> represents the code of the deliverable, <dname> the name of the deliverable as stated in the DoA, <sec> is filled with the acronyms related to dissemination level (e.g. PU = public, CO = confidential, EUCI = EU RESTREINT) and <ver> the version of the document.

Versions 0.X will indicate that the document is still a draft not approved by the internal reviewers. The official document to be sent to the EC will be numbered as v1.0. Further revisions or new issues of a deliverable will make use of the following format: v1.X, vY.X.

For example, the version submitted for deliverable D1.5 Project Management Handbook, being the security level public usage, would be named in the following way:

PRAETORIAN_D1.5_Project-Management-Handbook_PU_v1.0.pdf

In order to facilitate the work and localisation of the documents, all the documents will be posted in the repository as soon as possible.

4. Internal reviewing procedure

The internal reviewing procedure is one of the main tools to guarantee the high quality of the results.

Each WP leader will be responsible for the quality of the results, especially deliverables, which will be subject to a peer review by at least two experts, one of whom will be another WP leader. The peer review team must check their quality (not including the periodic progress reports) before the final submission to the EC. EDF, as Project Director, will review the progress reports containing resource-reporting information, as the last stage before submission to the EC.

Furthermore, backup WP leaders have been appointed in order to ensure quality process enforcement and reduce risks during project implementation.

The following table, based on the one provided in the DoA section 3.2.3, has been updated to ensure a balanced workload for the partners in the consortium, also considering their role (WP leaders) and resources in the project.

Table 2 – Peer Review Responsible Partners and Backup leader

WP #	Leader	Reviewed by	Backup
1	EDF	UPVLC, FVP	ETRA
2	EDF	HULAFE, IDMG	FVP
3	THA	ICCS, KONCAR	EDF
4	ETRA	RINI, UPVLC	IDMG
5	UPVLC	THALES, ICCS	AIT
6	ICCS	RINI, DLR	ETRA
7	DLR	AIT, UPVLC	KONCAR
8	FVP	AENA, ZAG	EDF
9	KUL	DLR, ETRA	EDF
10	ETRA	EDF, KONCAR	ICCS
11	EDF	KUL, ETRA	KUL

The table is also available in the Alfresco document library. Just to add that, even if this is not included in the table, ETRA as Technical Coordinator will review the relevant deliverables when a project milestone is related. Furthermore, EDF as a Project Director will also review all relevant deliverables pertaining to PRAETORIAN.

Each partner responsible for a deliverable will provide (or upload in the repository) the proposed table of contents at least 60 days before the submission date. A preliminary full version of the deliverable will be sent to the WP leader as well as to the peer reviewers allocated in the table at least **three weeks in advance** of the due date. The Project Director and the Project Manager will be also informed. It needs to be noted that early draft versions of the deliverable should be periodically circulated in order

to confirm that the work progresses as expected, and progress update will be reported during the regular PMB meetings.

The peer reviewers will review the document and send comments **within 10 days** using the peer review report template available at the repository as well as using the track changes mode in the draft version of the document. In case they encounter that the document does not fulfil the requirements for such document, they will notify accordingly the deliverable responsible partners within one week after the request.

The new version of the document will be again available for the deliverable responsible partner who will modify the document accordingly. Upon confirming with the peer reviewers that their comments have been effectively addressed, the final version will be sent to the Project Coordinator **at least 2 working days** before the delivery date.

In case the deliverable fulfils the required objectives, the Project Director will submit it to the EC.

Whether the deliverable responsible partner fails to deliver the document, or the document does not fulfil the objectives, the Project Management Board will take the required actions according to the provisions of the Consortium Agreement and Contract.

The process of internal review is summarized in the following diagram:

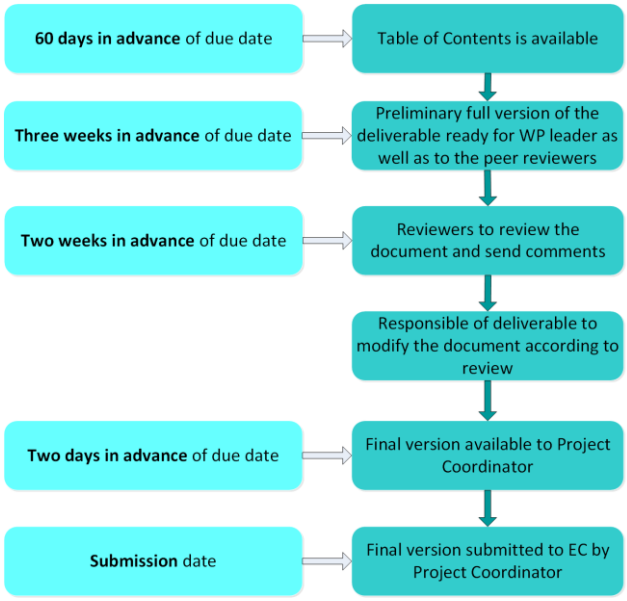

Figure 4 – Internal Review Procedure

A template for the peer review process is available in the project repository.

5. Risk Management

The consortium's experience in managing complex international projects in conjunction with its technological competence on communication and networking permits to identify the following main areas of possible risks:

- Technical: lack of competence to overcome unexpected difficulties.
- Financial: deterioration of the economic situation of a partner, which imposes a stop or an unacceptable reduction of all its activities.
- Key resources availability: abandon of the participation to the project of resources with key roles.

Various combinations of these three main negative factors could also happen with the effect to increase their impact.

The level of technical risk is intrinsically reduced by the composition of the PRAETORIAN Consortium, thanks to the participation of a well-assorted set of primary Industries and Research Centres, with a demonstrable consolidated experience as leaders in the technological areas in which each of them contributes to the project.

In case of financial problems or lack or resources availability, the corrective measures will include distributing to the remaining partners the activity not fulfilled or to subcontract them to a third party, or a combination of the two. The corrective measures will be chosen after an evaluation of their impact and relevance on the project. Furthermore, in order to minimise the potential impact of these unlikely situations, each WP leading partner will have a backup leading partner in case the initial WP leader becomes unavailable – see previous table.

For the PRAETORIAN project, a risk is defined as an event that may or may not occur in the future, which could potentially have an adverse effect on a team's progress and success. A risk has a severity of impact and a probability of occurrence – formal definition can be found in next section.

5.1 Definitions

Risk

In the context of the project management, a risk is a measure of the inability to achieve overall project objectives within defined cost, schedule, and technical (performance and quality) constraints and has two components:

1. The probability of failing to achieve a particular outcome and
2. the consequences (impact) of failing to achieve that outcome.

For PRAETORIAN, the risk is a measure of the difference between actual performance of a process and the known best practice for performing that process.

Risk Event

Risk events are those events within PRAETORIAN that, if they go wrong, could result in problems in the development of the expected research results, production and assessment of the prototypes, and dissemination of the results. Risk events should be defined to a level such that the risk and causes are understandable and can be accurately assessed in terms of likelihood/probability and consequence to establish the level of risk.

Type of Risk

A **Technical Risk** is the risk associated with the evolution of the research results and the prototypes development of PRAETORIAN affecting the level of performance necessary to meet the requirements of the DoA.

A **Financial Risk** is associated with the ability of the project to achieve its cost objectives as determined in the DoA. Two risk areas bearing on cost are:

1. The risk that the cost estimates and objectives are not accurate and reasonable and
2. the risk that project execution will not meet the cost objectives as a result of a failure to mitigate technical risks.

Schedule Risks are those associated with the adequacy of the time estimated and allocated for the development, production, and fielding of the system. Two risk areas bearing on schedule risk are:

1. The risk that the schedule estimates and objectives are not realistic and reasonable and
2. the risk that program execution will fall short of the schedule objectives as a result of failure to mitigate technical risks.

Risk Ratings

This is the value that is given to a risk event (or the overall project) based on the analysis of the likelihood/probability and impact of the event. For PRAETORIAN, risk ratings of *Low*, *Moderate*, or *High* are assigned based on the following criteria:

- **Low Risk**: Has little or no potential for increase in cost, disruption of schedule, or degradation of performance. Actions within the scope of the planned project and normal management attention should result in controlling acceptable risk.
- **Moderate Risk**: May cause some increase in cost, disruption of schedule, or degradation of performance and/or quality. Special action and management attention may be required to control acceptable risk.
- **High Risk**: Likely to cause significant increase in cost, disruption of schedule, or degradation of performance and/or quality. Significant additional action and high priority management attention will be required to control acceptable risk. This type of risk may be subject to a report to the Commission.

Contingency Plan

Once identified and assessed, it is essential to trace risks both in their status (Risk Monitoring) and with respect to necessary activities. A contingency plan should cover the registration and reaction to the change of environmental conditions to avoid risk events.

5.2 Risk Management Organisation and Responsibilities

The Technical Manager (TM) is the overall risk manager and responsible for:

- Briefing the consortium on the status of PRAETORIAN risks during CP meetings.
- Tracking efforts to reduce high risk to acceptable levels.
- Facilitating consortium-level risk assessments during PMB meetings.
- Combining risk briefings, reports, and documents as delivered by the WP leaders and required for project reviews by the Commission.

The **PMB** assists the TM with:

- Maintaining this section of the Quality Assurance Plan - Risk Management – updated (as a supporting process) for PRAETORIAN.
- Provision and maintenance of the risk information form.

The **Work Package Leaders** are responsible for the risk assessment within their work packages:

- Risk identification.
- Risk analysis.
- Risk handling.
- Risk information to the PM and PD (in case of moderate or high risk).
- Risk monitoring.
- Briefing the respective Work Package members on the status of risks.
- Tracking efforts to reduce low and moderate risk to acceptable levels.
- Preparing risk briefings, reports, and documents required for project reviews during PMB meetings.

5.3 Risk Management Process

A risk management process will be defined and will be implemented during the project duration. Different stages must be part of this iterative process, as shown in Figure . The complete approach will be reported in the document D1.2 “Risk & Opportunities Register” in month 6, which will include the risk/opportunities policy, as well as the forecasted and detected risks/opportunities and the action descriptions, deadlines, and responsibilities.

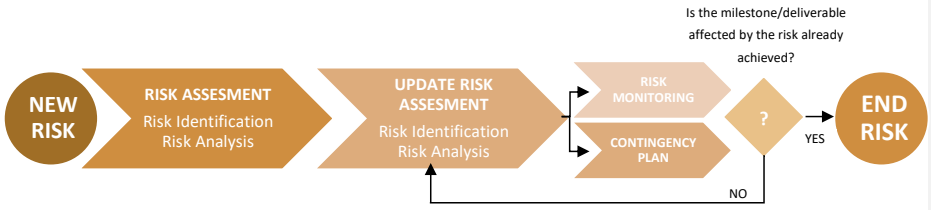

Figure 5 – Risk Management Process

5.4 Risk Table

The main tool to keep track of the different identified risks is the Risk Table. It contains all the fields to correctly assess, monitor and mitigate a risk.

The table is structured considering the WPs in PRAETORIAN in order to create a direct connection – by default – between the risks and the responsible of its control. It could be the case that the risk manager – or WP leader – is not the same as the risk responsible – partner that should provide an action plan and mitigate the problem.

The risk table provides an easy way to quantify the severity of the problem. It implements the risk assessment matrix described above and a global risk indicator that considers the assessment of the four consequence areas as a whole.

In this way, the partner identifying a risk only has to indicate the probability of the risk (HL=Highly Likely=4; L=Likely=3; U=Unlikely=2; R=Remote=1) and the impact in each of the consequence areas (1 Minimum, 4 Maximum). The table is capable of translating the assessment into the three categories (high risk, moderate risk, low risk) and calculate the global indicator as an average of the different areas (0 Minimum, 4 Maximum).

A low global indicator may still imply a high risk, since the worst case should be always considered. A high risk in a single area will imply a low global indicator; however, it requires the maximum priority and attention. The global indicator serves to prioritize and order risks with the same qualification but affecting more than one area.

The risk table is available at the project repository in Alfresco. The first risk assessment to be produced will be reported as part of deliverable D1.2.

Last Update: 12/07/2021

PRAETORIAN — **RISK TABLE**

	Nr of Risk	WP leader or Risk Manager	Date		Risk description	Type of Risk (Technical/Financial/Schedule)	Risk responsible	Milestone or deliverable affected	Probability HL/L/U/R	Consequence/Impact 1=Minimum-4=Maximum				Risk Assessment	Global Risk 0=Minimum 4=Maximum	Dates and trends			Contingency Plan or link to document
			Identification	Last update						Technical Performance	Schedule	Cost	Impact on other teams			Open	Trend (+ - =)	Close	
WP1 - Project Management	WP1-1	ETRA	01/06/2021		Missing skills in the consortium when facing innovation and business challenges.	Technical / Schedule	ETRA		1	2	1	2	2	LOW	0,4375	01/06/2021			The consortium is composed by experienced partners with complementary competences and access to a wide pool of knowledge and resources.
	WP1-2	ETRA	01/06/2021		Underestimation or resources not well balanced for the design and development of the project products.	Financial / Schedule	ETRA		2	1	2	1	1	LOW	0,625	01/06/2021			Regular monitoring of the work and reallocation of resources when needed will take place in every stage of the project.
	WP1-3	ETRA	01/06/2021		A partner leaves the consortium, for example, because of deterioration of its economic situation.	Schedule	EDF		2	2	2	1	3	MODERATE	1	01/06/2021			The corrective measures would be distribution to the remaining partners of the activity not fulfilled or to subcontract to a 3rd party, or a combination of the two.
	WP1-4	ETRA	01/06/2021		Disagreement or lack of communication among partners	Technical	EDF		1	1	2	1	2	LOW	0,375	01/06/2021			Continuous communication between all partners. The PM is the responsible for solving conflicts during the project.
	WP1-5	ETRA	01/01/2020		COVID crisis could affect the organizations of project meetings and visit to the pilot sites.	Schedule	ETRA		1	1	2	1	1	LOW	0,3125	01/06/2021			These meetings will be organized virtually, and the visits to the pilot sites will take place when the COVID crisis will allow it.

Figure 6 – Example of Risk Table in PRAETORIAN

6. Dissemination and Communication: QA guidelines

This section provides the basic QA guidelines and information regarding the publication procedure in PRAETORIAN. The details about the dissemination and communication plan, target groups, and means of communication defined so far can be found in D10.2 Communication Strategy and Dissemination Plan v1. A content of special interest for these QA guidelines is the section 2.8 "Basic rules for communication" in D10.2, which all the PRAETORIAN partners are encouraged to read and follow.

6.1 Publication procedure

In order to coordinate the participation of partners in dissemination activities and conferences (both in Europe and outside Europe) and properly notify the EC of any event, PRAETORIAN has defined the communication management procedure (deliverable D10.2, section 2.7) in which the following steps are identified: (1) Initialization, (2) Execution, (3) Monitoring & Reviewing, (4) Reporting and (5) Closing. A loop will be organized between step 2 and step 4.

The publication procedure encompasses the cycle between step2 and step 4:

- STEP 2: Execution

The execution will follow the plan:

1. Prepare communication content;
2. Prepare communication support;
3. Validate through the Press Office (described D10.2) or the WP10 participants;
4. Diffuse the communication and, if possible, obtain feedback;

After the communication action, archive the communication for traceability and potential reuse.

- STEP 3: Monitoring & reviewing

This step includes monitoring and analysing the communication activities performed during specified periods in order to ensure that the PRAETORIAN partners will reach their communication goals at the end of the project. The different indicators will be computed and analysed regarding the targets of the communication activities within the specified period.

- STEP 4: reporting

In this step, a report shall be created with all the information from the previous monitoring phases. This reporting has two targets: the consortium itself and European Commission. For each reporting period, it is expected that the provided reviews regarding the PRAETORIAN dissemination and communication strategy and process will be used to revise the strategy for the next reporting period.

Some important recommendations must be followed when disseminating and communicating the project results:

- Unless the Commission requests otherwise, any notice or publication by the partners about the project, including at a conference or seminar, must specify that the project has received research funding from the EC H2020 Programme and may display the EU emblem; when displayed in association with another logo, the EU emblem should be given appropriate prominence.
- For publications in journals and articles in the press, the H2020 logo as well as the emblem of the EU will not be included. However, the reference of the funding received from the European Union will be integrated in the acknowledgement.
- Any notice or publication by the partners, in whatever form and on or by whatever medium, must specify that "The contents of this document and the view expressed in the publication are the sole responsibility of the author and under no circumstances can be regarded as reflecting the position of the European Union".

In general, the dissemination activities, including but not restricted to publications and presentations shall be governed by Article 29 of the Grant Agreement. The Consortium Agreement defines also the dissemination rules in section 8.4. Specifically, partners will be responsible for including the EU emblem, acknowledgement of EU funding, and disclaimers.

6.2 PRAETORIAN logo and acronym usage

A specific project logo has been developed for the project identity. The logo will be included in all project promotional material including the factsheet, website, etc.

Table 3 - PRAETORIAN Logo, Acronym and full name

PRAETORIAN Logo	PRAETORIAN Acronym and full name
PRAETORIAN	PRAETORIAN Protection of Critical Infrastructures form advanced combined cyber and physical threats

Recommendations for reproduction quality and visibility:

- To use only the logos that can be downloaded from the document repository Alfresco and do not copy them from any other place. Reproduction quality needs to be ensured.
- In order to ensure the logo's visibility, the minimum logo size for print is 5 cm in length. Online, the logo must not be smaller than 36 pixels at 72 ppi.

It is advised that the PRAETORIAN logo appears in all PRAETORIAN related documents. Any material co-funded with the project budget needs to make explicit reference to it – see the Publication Procedure In section 6.1 and D10.2– and if possible, make use of the PRAETORIAN logo.

The Acronym of the project – i.e., PRAETORIAN – is the main representative mark and must be written always in the same way. When possible, it has to be used with the above-mentioned logo, respecting the font and colors.

6.3 Image rights and quality

Notes on image quality and image rights needs to be paid attention at all publication activities. The general recommendation for the image quality is shown in the following table. In the case of picture rights, the origin of the picture as well as the creator must be mentioned. During the project, the author is always responsible for obtaining appropriate image rights, whether for printing publications or web based publications. The general recommendations are:

Table 4 – Image rights and quality

Quality	Images for publications, 300 dpi (Size 100 x 150mm) Images for web, 160 dpi (Size 60 x 60mm)
Rights	© Institution/Company or author, origin

7. Conclusions

The Quality Assurance Plan in PRAETORIAN ensures that the project activities are developed and built with the agreed quality, according to the framework set to achieve the expected milestones and results. Moreover, it provides the tools to all the partners to contribute to the correct performance of the project.

The project Quality Assurance Plan define roles and responsibilities, with emphasis on the required skill sets to address the complexities and risks of the project. It also shows how the activities as well as the resources used in the project can be reported and it clearly defines the review process, which is a critical part in the whole process to ensure that the project deliverables achieve a high level of quality.

The peer review reports, the different boards, the PMB meetings and the biannual meetings are the main tools in PRAETORIAN to monitor the progress and quality of the project. Moreover, Risk Management is also a critical factor for the management processes – i.e. a low quality in a deliverable need to be identified as a risk, involving a mitigation plan to be prepared and executed.

8. References

1. **ISO.** *ISO 9001:2015. Quality management systems - Requirements.* s.l. : 2015.