



5G LOGINNOV

D6.6

Quality and Risk Management Plan

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LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviation	Meaning
CCAM	Cooperative, Connected and Automated Mobility
CAD	Connected and Automated Driving
DoA	Description of Action
EC	European Commission
FMEA	Failure Mode and Effect Analysis
GA	General Assembly
LL	Living Lab
NDA	Non-Disclosure Agreement
OEM	Original Equipment Manufacturer
ORDP	Open Research Data Pilot
PC	Project Coordinator
PERT	Programme Evaluation Review Technique
PM	Person Month
PMT	Project Management Team
PO	Project Officer
PMBok1	Project Management Body of Knowledge
PRINCE2®	stands for PProjects IN Controlled Environment. PRINCE2® is a process-based approach for project management providing an easily tailored and scalable method for the management of all types of projects.
QA	Quality Assurance
QC	Quality Control process
QM	Quality Manager
QMP	Quality Management Plan
SAE	System Architecture Evolution
SME	Small and Medium-Sized Enterprises
PMT	Project management team

¹ PMBOK® Guide – Sixth Edition (2017)

TS	Trial Site
TSL	Trial Site Leader
WP	Work Package
WPL	Work Package Leader

EXECUTIVE SUMMARY

This document is the deliverable D6.6 – Quality and Risk Management Plan (QMP) of 5G-LOGGINNOV, aiming at providing a single point of reference for the quality management processes implemented during the project.

The QMP defines guidelines to ensure the overall project quality. It targets the achievement of high-quality project outcomes and primarily applies to deliverable management, reporting and dissemination activities. It also describes the project organisation, roles and responsibilities related to Quality Assurance (QA) and Quality Control (QC) activities. QA comprises managerial actions aiming at high-quality output whereas QC is used to verify the quality of the output.

QA activities and procedures include but are not limited to: (a) the definition of the roles and responsibilities of each partner in the consortium with regard to quality issues; (b) harmonisation and systemisation of 5G-LOGGINNOV's communication elements, such as templates for deliverables, internal or EC reports. This part complements the outputs resulting from WP7 – Dissemination and Exploitation. QC activities and procedures include but are not limited to: (a) defining and applying a methodology for peer reviewers to guarantee that the project deliverables are of high-quality and meet scientific standards and project objectives; (b) clear deliverable evaluation criteria to monitor all phases of their development process.

This deliverable complements D6.1 – Project Management Plan. D6.1 describes the overall project management and introduces elements that are essential to a proper understanding of the present document, for instance the detailed organisational structure of the project and risk management.

The QMP is structured as follows. **The first chapter – Introduction** briefly presents 5G-LOGGINNOV, describes the key concepts of quality management and outlines the QMP structure. **The second chapter – Quality Assurance Plan** presents the project's quality management principles in a comprehensive manner to help partner beneficiaries carry out their activities with a high standard of quality. **The third chapter – Quality Control Activities** provides a set of procedures for optimal monitoring of the project quality and production of deliverables. **Chapter 4** describes the technical management procedures with details of risk management. Finally, **the fifth chapter summarises** the main elements of the deliverable.

1 INTRODUCTION

1.1 Introduction to 5G-LOGINNOV

5G-LOGINNOV main aim is to design and innovative framework addressing integration and validation of CAD/CAM technologies related to the industry 4.0 and ports domains by creating new opportunities for LOGistics value chain INNOVation. 5G-LOGINNOV will focus on seven 5G-PPP Thematics and support to the emergence of a European offer for new 5G core technologies in 11 families of use cases.

5G-LOGINNOV is supported by 5G technological blocks, including new generation of 5G terminals notably for future Connected and Automated Mobility, new types of Internet of Things 5G devices, data analytics, next generation traffic management and emerging 5G networks, for city ports to handle upcoming and future capacity, traffic, efficiency and environmental challenges. 5G-LOGINNOV will deploy and trail 11 families of Use cases beyond TRL7 including a GREEN TRUCK INITIATIVE using CAD/CAM & automatic trucks platooning based on 5G technological blocks. Thanks to the new advanced capabilities of 5G relating to wireless connectivity and Core Network agility, 5G-LOGINNOV ports will not only significantly optimize their operations but also minimize their environmental footprint to the city and the disturbance to the local population.

5G-LOGINNOV will be a catalyst for market opportunities build on 5G Core Technologies in the Logistics domains, thus being a pillar of economic development and business innovation and promoting local innovative high-tech SME and Start-Ups. 5G-LOGINNOV will open SMEs' and Start-Ups' door to these new markets using its three Living Labs as facilitators and ambassadors for innovation on ports. 5G-LOGINNOV promising innovations are key for the major deep sea European ports in view of the mega-vessel era (Hamburg, Athens), and are also relevant for medium sized ports with limited investment funds (Koper) for 5G.

The Project's ambitious work plan includes cyclic iterations of specifications, development, trials and evaluation activities. Testing and validation of the 5G technology will be carried out along three trial sites related to three ports & ports-cities areas. There are also cross-cutting activities to maximise impact related to deployment enablers and communication and dissemination of the Project's results. The Project Consortium includes 15 beneficiaries. This large Consortium will share responsibilities of tasks divided into eight work packages (WPs) across 8 EU countries.

In working towards its ultimate goal of the roll out of 5G networks to support new types of use cases related to ports businesses, 5G-LOGINNOV is determined to realise its objective in a societally acceptable and ethical manner consistent with the H2020 programme. The scale and complexity of the Project, both in terms of innovation and the partners involved, call for a carefully designed management plan for the Project.

1.2 Introduction to Project Quality Management

This document, the Quality Management Plan (QMP), mainly relies on the Project Management Body of Knowledge (PMBOK), a set of standard terminologies and guidelines for project management. The body of knowledge evolves over time. Its most recent version was released in 2017². PMBoK results from work overseen by the Project Management Institute.

The PMBoK highlights the importance of quality planning, quality assurance and quality control as essential aspects of the project management plan. These quality management processes are defined in Table 1 – Project Quality Management Processes. All quality criteria that are specific to 5G-LOGINNOV are listed in the second chapter.

A Quality Management Strategy is a document and a plan of action that defines the Quality requirements and the Quality Control method for all the deliverables, products in the project. This document also confirms how the Quality systems and standards from the customer and supplier are going to be applied in the project. In other words, the Quality Management Strategy document defines how Quality will be done in the project.

The Quality Management Strategy is including:

- Quality Assurance
- Quality Planning
- Quality Control

The 5G-LOGINNOV Quality Management Plan document sets out and defines the 5G-LOGINNOV project Quality Management System that comprises a set of tasks and procedures, to carry out the technical work of the project, with the aim to ensure that the work and results of the 5G-LOGINNOV project are of a uniformly high quality. It has been created to ensure that the project meets the stated objectives and comply with the specifications set out in the 5G-LOGINNOV Grant Agreement - Description of Action. The 5G-LOGINNOV Quality Plan is applicable to all the activities related to the project and thus all partners must comply with the processes listed herein.

² PMBOK® Guide – Sixth Edition (2017)

Table 1 – Project Quality Management Processes

Quality management processes	What
Quality Planning When? - Before the production process -When quality assurance activities find a quality issue involving project changes and an update of the project management plan.	<p>The QMP determines the quality requirements and how to measure and control them. It can be defined in a subsection of the project management plan or, for larger projects, a standalone document.</p> <p>Outputs: The QMP should contain at least:</p> <ol style="list-style-type: none"> 1. Quality standards that apply to the project 2. Measurement criteria and frequency 3. Inspection criteria = Quality Control Sheets
Quality Assurance When? During the production process, throughout the duration of the project.	<p>Quality Assurance is prevention of errors to reach quality. Performing quality assurance ensures that the processes are in place to produce the project deliverables at the applicable level of quality. Quality Assurance asks the following questions:</p> <ol style="list-style-type: none"> 1. What are the applicable quality standards? 2. How is quality measured? 3. Who measures it? 4. What is measured? (number of units? types? processes?) 5. When is it measured? 6. What are the criteria for rejection? <p>Quality Assurance creates and analyses the systems to measure and control quality, in order to create confidence that quality deliverables will be produced.</p> <p>Outputs: A quality system is in place.</p>
Quality Control When? After the production process.	<p>Quality Control is inspection for quality. Quality control measures the quality level of individual products and deliverables, and accepts or rejects them based on the criteria developed by Quality Assurance.</p> <p>Outputs: Quality is monitored on project outputs. Measures are taken to reach the expected quality, which may result in a change to the quality management plan.</p>

1.3 Purpose of the deliverable

The QMP is delivered as part of WP6 and serves as a guideline and reference to enable a successful collaborative work towards achieving the project objectives with the highest quality. The document establishes procedures for Quality Assurance and Control, which are carried out through the following activities:

- Liaising with the Project Management Team (PMT) about the quality status of project deliverables;
- Defining 5G-LOGINNOV's quality procedures and providing guidelines for the production and peer review of project deliverables;
- Supporting the deliverable and work package leaders in maintaining a high standard of quality in their deliverables;
- Supporting the coordination team with the risk management by monitoring quality risks;

Deliverable D6.6 Quality and Risk Management Plan will be complemented by *D6.1-Project management plan*, *D6.2 – Innovation Management Plan*, *D6.3 -Innovation Management Report*, *D6.4-Data Management Plan* and *D6.5-Open Data Publication* to provide an overall strategy for organisation and execution of core tasks to achieve the objectives of the Project Coordination work package (WP6) in terms of, both, operational and technical coordination.

1.4 Status of the deliverable

The information used in the deliverable and the situation description of the project management procedures is based on the consortium and project plan situation.

1.5 Intended audience

The dissemination level of D6.6 is 'public' (PU) and available to members of the consortium, the Commission Services and those external to the project. This document is primarily intended to serve as an internal guideline and reference for all 5G-LOGINNOV beneficiaries, especially the governance bodies such as the General Assembly, the Project management team, and the external Advisory Board.

2 QUALITY ASSURANCE PLAN

2.1 Introduction

Quality Assurance, along with Quality Control, is a primary component of a project quality system and comprises a set of processes to ensure that project deliverables meet the planned quality standards.

In 5G-LOGINNOV, the quality assurance plan:

- Specifies tools: Microsoft SharePoint and Quality registers.
- Defines roles and responsibilities of all parties involved in the quality processes.
- Establishes quality assurance procedures to obtain project deliverables with a high-quality standard.

2.2 Quality assurance roles

This section lists the governance bodies that have a direct responsibility in project quality management, as well as their roles. The complete project organisation, including the different management structures and complete contact details, are described in deliverable [D6.1](#).

The project's approach to quality assurance activities may include quality assurance responsibilities to the General Assembly, Executive Board, Project Coordinator and Project Manager and Core Management Group, Living Lab coordination, Work package structure and last but not least responsibilities of the Quality Assurance team and Project Assurance Manager.

The following tables provide a summary of the roles and responsibilities involved in quality management aspects, particularly with regard to the completion of tasks and submission of deliverables.

2.2.1 Operational bodies

Operational bodies are detailed in [D6.1](#). Quality assurance roles in 5G-LOGINNOV are distributed to participants according to their level of involvement and responsibilities. These roles are summarised in Table 2. In the tables below, the **Project Management Team (PMT)** appears in orange (for project managers) and green.

Table 2 – Quality assurance roles in 5G-LOGINNOV

Body (Partner)	Responsibility regarding quality management
Technical Coordinator (TC)	<ul style="list-style-type: none"> • Quality control and overall risk and deadlines management • Collaborate with "Task T6.6 – Quality Management" to ensure deliverable quality, namely. • The TC is responsible for the technical coordination team, which <u>monitors and updates the Risk Matrix for their domain based on the feedback from the CBC/TS experts and the progress of work within the project.</u>
Work Package Leaders (WPLs)	<ul style="list-style-type: none"> • Ensure timely and high qualitative production of all WP deliverables and results (e.g. deployments, tests, demos).
Corridor and Trial Site Leaders	<ul style="list-style-type: none"> • Ensure the harmonization of time plans, test scenarios, data management and the continual information about evaluation methods and impact assessment. These measures contribute to the project quality.

Body (Partner)	Responsibility regarding quality management
Task Leaders	<ul style="list-style-type: none"> Coordinate quality control of the activities related to their task.
Deliverable Leaders (DLs)	<ul style="list-style-type: none"> Coordinate quality control of their deliverables.
Innovation Manager (VICOMTECH)	<ul style="list-style-type: none"> Ensures that the project coordination develops favourable conditions for innovation and takes necessary actions to ensure that the innovations are effectively exploited after the end of 5G-LOGINNOV. Quality criteria are listed in Chapter 2.
Data Manager (AKKA)	<ul style="list-style-type: none"> Raises potential issues and proposes solutions for dealing adequately with data privacy and data protection regulations. Quality criteria are listed in Chapter 2.
Quality Manager (ERT)	<ul style="list-style-type: none"> Leads the Quality Management task (T6.6) Acts in support to the PMT (in particular WPLs) for implementing the QMP and management of quality processes.
Communication Manager (CIRCLE)	<ul style="list-style-type: none"> Ensures that the project is well coordinated for achieving excellent outreach with public events, scientific publications and presentations. Quality criteria are listed in Chapter 2.

2.3 Quality assurance procedures

This section describes a series of tools and methodologies used to ensure a high standard of quality in the activities and outputs of the project.

2.3.1 Quality criteria in 5G-LOGINNOV

The table below provides a preliminary list of quality criteria that are considered in 5G-LOGINNOV to ensure the overall quality of the project's outcomes, i.e. the conditions that need to be met to ensure quality. It covers general aspects of quality management, such as meeting deadlines or achieving deliverables, but also project-specific activities such as those related to trial sites.

The **success indicators** (i.e., measurable states that allow an assessment of criteria achievement) and **verifiers** (demonstration that the required state is achieved) associated to a criterion are outside the responsibility of the quality manager and are managed in each WP under the responsibility of the WP leader.

Table 3 – Preliminary criteria for ensuring quality in 5G-LOGINNOV

Category	WPs	Criteria	Verification means
Governance	WP1	Timeline: respect of deadline for submitting the deliverable to the European Commission	<ul style="list-style-type: none"> Gantt chart and quality control.
		Regular monitoring of risk management	<ul style="list-style-type: none"> Number of times the risk register document has been consulted (Statistics visible on SharePoint).
Deployment, Roll-out & Integration	WP2	Development activities finished on time	<ul style="list-style-type: none"> Progress monitoring of individual development activities by Task leaders via the ClickUp tool. Tool produces alarms upon overdue tasks.
		Deployment and roll-out of equipment and infrastructure	<ul style="list-style-type: none"> Progress monitoring of individual roll-out activities by Task leaders.

		are on time	
		TS-CBC integration activities	<ul style="list-style-type: none"> • Specific tasks created in ClickUp. Progress monitored with the tool by the Task leaders. • Special task group created within the Technical Management Team. Monthly updates on status.
		Development, roll-out and integration activities alignment and scheduling.	<ul style="list-style-type: none"> • 5-phase plan defined in D3.1 with the agreement of all WP3 task leaders. Bi-weekly status monitoring at the T3.1 telco.
Trials	WP3	Definition of the trial methodology and preparation of the trials	<ul style="list-style-type: none"> • Biweekly calls and telcos are organised to check the progress and propose action plans to be undertaken until the next call. • Preparation of a detailed calendar at the WP4 level as well as for each TS/CBCs • Preparation of a monitoring checklist to be filled in by each TS and CBC. • Preparation of a trial plan by each TS and CBC for each scenario to be tested during the trial phase, with details on the scenarios, type of test, hypotheses, results obtained, data collected, etc. • Use of the ClickUp management tool to monitor the progress of the work done by the tasks leaders and to monitor the deadlines.
		Execution of early trials and full trial phase	<ul style="list-style-type: none"> • Preparation of progress reports which to be filled in twice (one during the early trials and one during the full trials). • Regular telcos are organised to monitor the progress of the trialling phase and discuss any issues concerning the progress of the trials. • Workshops and experts' meetings to be organised to facilitate communication and address potential difficulties that will appear during the next phases.
Marketplace and emergence of new actors	WP4	Analyse the current and future market linked to the 5G core technologies innovations that are addressed in the 5G-LOGINNOV pilot sites	<ul style="list-style-type: none"> • Identify the gaps between the current and future market scenarios • How many innovative start-ups and SMEs will be involved • 5G new core innovation technologies in logistics operations
Technical evaluation data	WP5	Ensure that data are consistent before considering them for the KPI calculation.	<ul style="list-style-type: none"> • Total amount of valid data to perform the Technical Evaluation. This will be monitored by the quality check taskforce dedicated to WP5.
Recommendation	WP6	Regular monitoring of 5G for	<ul style="list-style-type: none"> • Number of patents reviewed

and guidance for deployments		State of the Ar use casest	<ul style="list-style-type: none"> • Number of papers reviewed • Number of projects reviewed • Number of gaps/barriers identified • Number of technical innovations identified • Verified in T6.2/3 & D6.2/D6.3
		Regular monitoring of stakeholder needs	<ul style="list-style-type: none"> • Number of stakeholders reached • Number of questionnaires sent • Verified in T6.4 & D6.4/D6.8
		Potential for first market replication	<ul style="list-style-type: none"> • Number of business models proposed • Coverage of value chain (# of stakeholders per study) • Number of gaps/barriers identified • Verified in T6.2 & D6.2/D6.6
		Potential for contribution to SDOs and other industry groups	<ul style="list-style-type: none"> • Number of contributions to SDOs • Number of standards reviewed • Number of gaps/barriers identified • Number of technical innovations identified • Verified in T6.3 & D6.3/D6.7 • Number of SDO meetings attended
		Monitoring of spectrum allocation	<ul style="list-style-type: none"> • Number of countries where spectrum auctions are monitored • Verified in T6.3 & D6.3/D6.7
		Monitoring of regulatory frameworks	<ul style="list-style-type: none"> • Number of regulatory frameworks reviewed • Number of gaps/barriers identified • Verified in T6.4 & D6.4/D6.8
Dissemination	WP7	Scientific quality	<ul style="list-style-type: none"> • Impact factor for journal publications and CORE rank for conference papers; • Prize-awarded stands at conferences and trade fairs. • Webinars: attendance and performance statistics (attendance and attentiveness rate, number of questions received). • Project workshops & stakeholder events (including demonstrations at pilot sites): number as well as types of stakeholders attending. • Number of peer-reviewed journal publications.

		Communication quality	<ul style="list-style-type: none"> • Number of news articles, posts, profiles or other information released through communication channels. • Website traffic: overall number of unique visitors to the 5G-LOGINNOV website; traffic sources – creation of loyal visitors, direct traffic to the website; high bounce rate – length of stay on website. • Number of followers on social media such as Twitter and Linked in use as a social forum. • e-newsletter: number of subscribers, opening rate. • Number of views for videos. • Number of press mentions (following a communication of the project, e.g. press release, pilot site event) through a monitoring service.
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2.3.2 Templates

Templates are available on the SharePoint platform [Dissemination/Templates/] (Annex 2 – Templates). Three template categories are available:

- Meeting minutes (Microsoft Word);
- Deliverables (Microsoft Word) (detailed in paragraph 2.3.4 Deliverable template);
- Presentations (Microsoft PowerPoint).

These templates include four configuration management tables for the deliverable (displayed on pages 1 to 3 of the current document): a cartridge that sums up the document identity, a list of authors, a table to document deliverable document changes and a list of reviews.

2.3.3 Deliverable procedures

Deliverables are documents that are formally submitted to the EC. The deliverables should be edited only locally with MS Word, since the online SharePoint editor might create issues with the file and do not incorporate all the functionalities of the template.

2.3.3.1 Process owners

- DLs are responsible for the execution of the activities related to a deliverable. They must liaise with task participants and communicate efficiently and regularly.
- WPLs are responsible for monitoring the activities related to deliverables, including quality aspects and the respect of deadlines. WPLs report the progress to the PMT.
- In case of conflict, problem or need for assistance in any of the steps described below, then the DL can interact with the WPL, which in turn may involve the QM.

Supporting tools for process owners are Emails, and on SharePoint: the deliverable register; review report and comments left in track changes mode by reviewers.

2.3.3.2 Deliverable life cycle

Deliverable life cycle is described in Table 4 with related activities, activities owners and supporting tools used to share information and documents. Deadlines are expressed in duration before the deliverable submission deadline to EC that is indicated in the deliverable register.

Table 4 – Deliverable life cycle and process owners

Deadline and Owner	Actions and Tools
WPL <i>During all process</i>	Ensure that deadlines are met.
6 months³ DL	<p>Set up the document with the deliverable template, then fill-in:</p> <ul style="list-style-type: none"> • Deliverable audience. • Deliverable purpose. <p><u>Inform the WPL that document has been set-up.</u></p>
	Tool: SharePoint: Draft version folder
6 months WPL	Inform the QM about the deliverable status.
6 months QM	<p>Update the quality register based on information sent by the WPL.</p> <p>Tool: SharePoint: Deliverable register file</p>
5 months DL	<p>Write Table of Content and share work between authors.</p> <ul style="list-style-type: none"> • With all task participants: <ul style="list-style-type: none"> • Agree on Table of Content. • Share drafting responsibilities between authors at section level. • In the deliverable, fill-in: <ul style="list-style-type: none"> • An initial Table of Content – up to Level 3, with first version of executive summary. • The deliverable type • The deliverable dissemination level) • Inform the WPL of the document status. Copy the QM. <p>Writing process can start. DLs monitor writing process:</p> <ul style="list-style-type: none"> • Ensure consistency across contributions. • Regularly interact with WPL and authors. • Iteratively update purpose – audience – conclusion – executive summary. • Monitor progress: when at least 50% of the sections of the ToC are completed, please report this fact to the WPL.

³ Date of delivery for submission on the EC.

	Tools: SharePoint: Draft version folder; Emails.
5 months QM	Update the quality register based on information sent by the DL.
	Tool: SharePoint: Deliverable register file.
3 months WPL	Select peer reviewers and invite them to review the deliverable. <ul style="list-style-type: none"> • Select at least two peer reviewers, with the assistance of the DL. The TM and QM can help if needed. This activity is detailed in the “Selection of peer reviewers” section, page 27. • Notify peer reviewers about their assignment with an indicative date to start the review and a deadline date to end the review. Copy DL and QM. • Remind DL about his/ her role in the peer review process.
	Tools: SharePoint: Deliverable register file (read mode); Emails
3 months QM	<ul style="list-style-type: none"> • Update the deliverable register file with peer reviewers’ names.
	Tools: SharePoint: Deliverable register file.
1 month DL	Consolidate document. Launch peer review. <ul style="list-style-type: none"> • Merge input from all authors and perform final editing of the deliverable draft. • Upload the deliverable to be reviewed on Sharepoint. • Launch peer review (see 3.2), copy WPL and QM. Deliverable status advancement is 80%. Deliverable is now available for peer review and for quality check.
	Tools: SharePoint: Draft version folder and deliverable register file with the “add reviewers” option; Emails.
20 days QM	End of quality check. The QM checks that the deliverable complies to the characteristics described in paragraph “2.3.4 Deliverable template and writing recommendations”.
20 days DL	End of peer review. Each peer reviewer uploads his/her review in the appropriate sub-folder on SharePoint and notifies the DL and the QM. Please see details in the “Template email to launch a peer-review” section, page 27.
	DL fills in peer-reviewers’ names and organisations in the deliverable Control Sheet (page 2 of the deliverable).
	From now: take into account peer reviewers’ remarks and first quality check output.
	Tools: SharePoint: Draft version folder of the deliverable, Emails.
	Tools: SharePoint: Draft version folder; Emails.

15 days DL	End of integration of peer reviewers' outputs. <ul style="list-style-type: none"> Upload the deliverable and a commented version of the deliverable if required (see 3.5.4 How to take into account peer reviewers' comments) in MS Word format on SharePoint. Send an email with the link on SharePoint to the PC team (ERTICO: Eusebiu CATANA (Project Coordinator), Jana HABJAN and Sandra DWORAK), with the QM and the WPL in copy. Final check can start.
	Tools: SharePoint: Final version folder; Emails.
WPL	Final check the deliverable for content. Manage last-minute changes with the assistance of the QM and the DL. The PC may be contacted in case of problem.
QM	Final check the deliverable for quality. Contact the DL, the WPL or the PC in case of problem.
PC	Final check the deliverable.
2 working days QM	Final check is over. <ul style="list-style-type: none"> Generate pdf version to be submitted.
	Tools: SharePoint: Final version folder; Emails.
Deadline PC	Submit the deliverable to the EC.
	Tool: EC portal (unless printed copies are requested)

2.3.4 Deliverable template and writing recommendations

The use of Microsoft Word deliverable template is mandatory for all deliverables. Deliverables must not override the structure defined in the template. Formatting or template-related issues of any kind are the responsibility of the deliverable leader and must be managed with the communication manager.

2.3.4.1 Naming convention and version numbering

Deliverables should be named using the following structure: "5G-LOGINNOV - DN.N - Name - vX.Y.docx".
Version numbering: The (first) version submitted to EC by the PC is V1.0. When a deliverable has been rejected and resubmitted, the subsequent submitted versions should be numbered as V2.0; V3.0, etc. The "y" in Vx.y may be used internally only to number draft versions.

2.3.4.2 Manage headers and footers in MS Word Template

Headers and footers may be tricky to manage in the deliverable template (see **Error! Reference source not found.**). It is advisable not to use the "Different Odd & Even Pages" option, and to use the "Different first page" option for differentiating the cover page, which has special headers and footers (i.e., EC acknowledgement footer and empty cover page header). Headers and footers should not be configured with the "Link to previous" option.

2.3.4.3 Cover page with cartridge

On the cover page, please fill-in the cartridge.

Row name	Please fill in	How to fill in
Dissemination level	Choose an item.	See “Table 6”
Work package	Choose an item.	
Deliverable number	Dx.y	
Version	Vx.y	See 2.3.4.1
Submission date	DD/MM/YYYY	First date of deliverable submission to EC
Re-submission date	DD/MM/YYYY	Last date of deliverable submission to EC, if different from first date
Due date	DD/MM/YYYY	Due date for the first version.

Table 5 – How to fill in the deliverable cartridge

Dissemination level mentioned in the cartridge is to be chosen in Table 6:

Table 6 – Deliverable dissemination levels as defined by H2020

Level	PU	PP	RE	CO
Description	Public	Restricted to project partners	Restricted to a group specified by the consortium	Confidential, only for members of the consortium

2.3.4.4 Authors and Control Sheet

Please fill in these fields. Peer reviewer names and their respective organisations should be filled in by the Deliverable Leader.

2.3.4.5 Table of contents, list of figures, list of tables.

Please update the table of content, the list of figures and the list of tables (if not empty) before submitting the deliverable. Please check numberings. Please make sure that figures and tables are easy to read and not too small and have appropriate titles: captions should be inserted using the automatic numbering in Microsoft Word.

2.3.4.6 List of abbreviations

Please make sure that all abbreviations used in deliverable are listed. Following abbreviations (Table 7) should be used when necessary for the pilot site.

Table 7 – Abbreviations for countries names

Definition	Abbreviation
Germany	DE

Greece	EL
Slovenia	SI

2.3.4.7 Executive summary

The executive summary sums up the entire document (unlike an introduction). It has no bullet points.

2.3.4.8 Introduction

The deliverable introduction includes:

- Project introduction, required if the dissemination level of the deliverable is “public”.
- Purpose of the deliverable.
- Intended audience.

2.3.4.9 Content: writing recommendations

Please ensure content quality:

- Consistency with project scope.
- Consistency with the expected impact of the task with which the deliverable is associated.
- Coherent structure.
- No redundancies with other deliverables.

Please ensure text quality:

- Proofread and check language.
- Avoid copy/paste and plagiarism.
- Use dynamic cross-referencing of section numbers.

Please apply deliverable template and pay a particular attention to the following points:

- Cover page,
- Numbering,
- Header and footer,
- Bullet points style,
- Executive summary without bullet points,
- Tables format, captions, clarity,
- Figures caption, figures readability,
- Title styles.

2.3.4.10 Conclusion, References, Annexes

Conclusion is mandatory. References and Annexes sections may be removed if empty.

2.3.5 Internal reporting

2.3.5.1 Organisation contact details

Partners are responsible for keeping their organisation contact details up to date:

- By updating the administrative data on the EC Participant Portal.
 - By informing the PC about contact details or internal organisational changes.
- The PC is responsible for updating SharePoint and the project contact database.

2.3.5.2 Meetings and meeting minutes

In order to ensure an effective and efficient internal coordination, internal communication involves the organisation of meetings, whether physical or virtual:

- Categories of meetings are summarised in deliverable [D6.1](#).
- All meeting minutes documents should be named using the following structure: “yyyy mm dd - 5G-LOGINNOV - meeting name - vX.X.docx”.
- The meeting minutes template is available in SharePoint and its use is mandatory for all partners.
- A Chairperson who either is the initiator of the meeting or is appointed by the initiator, for example a WPL, leads each meeting. The Chairperson is responsible for producing the meeting minutes using the meeting minutes template. The Chairperson distributes the meeting minutes to attendees for review within 15 days. If there are any comments, the chairperson introduces them in the document and share a reviewed version of the minutes. Attendees have then 15 days to provide a feedback. If there are no comments, the minutes are considered accepted and they are shared with the PC by the Chairperson, and through SharePoint. Meeting categories are defined in [D6.1](#).

2.4 Quality assurance tools

2.4.1 Microsoft SharePoint

SharePoint is a web-based project management and collaboration platform from Microsoft. It contributes to project quality because it is used as a single storage platform for project documents and includes a versioning system for deliverables. All draft and submitted deliverables must be saved on SharePoint. Quality management tools are also accessible there.

2.4.2 Deliverable register

The QM maintains a deliverable register to have a view on deliverables’ status and allocated reviewers that monitors deliverable writing, peer review and submission processes. It also includes the milestones’ status and their completion (which is assessed based on EC's acceptance of the project deliverables).

The deliverable register has been initially defined using the list of deliverables and milestones described in Annex I of the Grant Agreement and evolves throughout the project according to amendments, technical reviews, revision needs. A screenshot of the deliverable register and a list of deliverables are available in “Annex 1 – Deliverable register”. The deliverable register is maintained and updated by the QM and is regularly confronted with the information available on the EC Research Participant Portal (SygMa) to reflect the latest decisions done by the PMT and recorded by the EC. Deliverable types as defined by H2020 are used to qualify deliverables (see Table 8).

Table 8 – Deliverable types as defined by H2020

Type of deliverable	R	DEM	DEC	OTHER
Description	Document, report (excluding the periodic and final reports)	Demonstrator, pilot, prototype, plan designs	Websites, patents filing, press & media actions, videos, etc.	Software, technical diagram, etc.

The deliverable register is located on SharePoint: [Deliverables/Deliverable & milestone register - Quality Management.xlsx].

3 QUALITY CONTROL ACTIVITIES

3.1 Deliverable life cycle progress in %

Quality control activities are associated with the creation of project deliverables. Quality control prevents and resolves errors in project deliverables. Quality Control verifies that deliverables are of acceptable quality and they meet the deliverable quality standards and the completeness and correctness criteria established.

Deliverables represent and embody project results. They show that the proposed goal has been achieved and they provide a record of the work done and fulfilment of legal obligations. Electronic copy of each deliverable should be submitted to the coordinator for approval. The coordinator will provide all deliverables to the EC.

Deliverables may be of different types, principally:

- A report (of findings, recommendations, or trials at various stages);
- A specification;
- A physical demonstrator, prototype, tool, etc.;
- A handbook, manual, or other product or service;
- A website;
- A leaflet, a poster, graphical work, etc.

In the case of physical demonstrators, prototypes, tools, etc., an executive summary should also be prepared describing the physical deliverable and stating where it runs and how it can be used.

Deliverables should take into account the goals of the project, details and objectives of the work packages, as well as the objectives of the programme. It is therefore implied that every deliverable must meet appropriate standards for:

- Subject to QMP & PRINCE2 framework in compliance with ISO 9004:2018 and ISO9000:2015;
- Stakeholders are satisfied;
- Corrective action has been planned / carried out ;
- Deliverable matches the GA requirements;
- Deliverable is formatted correctly (see deliverable templates);
- Objectives, achievements, technical issues, conclusions are clear and in line with the planned activities.

These are the criteria used for acceptance by the Commission. A reviewer has been assigned to each of the 5G-LOGINNOV deliverables. The reviewers were selected among partners' experts in the field of the deliverables but who are not directly involved in the deliverables drafting.

Deliverables are complete when:

- They meet quality criteria;
- They are fit for purpose;
- Corrective action has been planned / carried out;
- Agreed processes are followed;
- Approval authorities have been involved;
- Stakeholders are satisfied;
- Audits have taken place.

The percentages described in Table 9. Table 9 can be used as a reference to qualify the state of deliverables, namely to do deliverable follow-up in the deliverable register.

Table 9 – Deliverable life cycle progress (percentage)

State description	
10%	Write Table of Content and share work between authors.
40%	At least 50% of the sections of the ToC are completed.
80%	All content of the deliverable is completed and the deliverable is available for peer review.
90%	Deliverable peer-review is done.
100%	The final check of the deliverable is done by the PC. The deliverable is submitted to the EC by the PC.

3.2 Quality Inspection Method

The coordinator as part of its own Quality Management System (QMS) is performing annual quality inspection methods for its projects. This procedure outlines the different tests that ERTICO is using to ensure that its activities are properly supervised.

The tests will be applied:

- when any activity starts: entry test;
- during the activity: intermediate test;
- at the end of the activity: exit test;

This will be reported in the Quality Register.

3.3 Quality Register

The Quality Register is a diary of the Quality events that take place during the project, such as workshops, reviews, testing and acceptance. The Quality Register will be updated every six months and include the following information:

- Product ID: A product tracking number in the project (ex: 124);
- Product Name: A common name to refer to the product (ex: "RSU");
- Quality Method: Describes how testing will be done. (e.g., Inspection for the RSU);
- Producer: Who produces or installs the product (an RSU Co.);
- Approver: Who Quality-approves the product (ex: "John from Safety Company");
- Target Review date: When the product should be reviewed (ex: "June 2021.");
- Actual Review date: Actual date that the review happened;
- Target Approval date: When the Project Manager will get Approval (ex: 1 week later);
- Actual Approval date: Actual date when the Project Manager received Approval;
- Result: This can be Pass or Fail;

The register is presented in table 10.

Table 10: Quality Register

Quality ID	Product Identifier(s)	Product Title(s)	Method	Roles and Responsibilities		The Quality Activity			Result	Quality Records
				Name	Role	Planned Date	Forecast Date	Actual Date		
1										
2										
3										
4										
5										
6										
7										
8										
9										
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11										
12										
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18										
19										
20										
21										
22										

3.4 Quality timeline

The timeline Workflow for reporting and deliverables production is defined as follows:

Task partner:

- completes task;
- delivers output to task leader.

Task leader:

- compiles task partners' results into internal task report or project deliverable;
- circulates draft task report/deliverable to task partners, WP leader ;
- revises draft task report/deliverable with comments received;
- submits final draft task report/deliverable to WP leader and task partners.

WP leader:

- compiles task reports into WP report or project deliverable;
- circulates draft WP report/deliverable to WP partners and project coordinator;
- revises draft WP report with comments received;
- submits final draft WP report/deliverable to project coordinator and WP partners.

Pilot site leader:

- coordinates the pilot site work across several work packages;
- plans and monitors the progress in his/her own pilot site so that it follows the work plan agreed with the WP leaders;
- coordinates production of WP deliverables input from his/her test site;
- anticipates possible risks and finds solutions.

Project Coordinator:

- controls task progress and report/deliverable production according to the project work plan;
- if necessary, incorporates any required amendments in the final version;
- identifies need for corrective action;
- submits final version of deliverable to EC Project Officer;
- posts submitted deliverable on 5G-LOGINNOV projectplace;
- controls the project progress and deliverable production.

Quality Assurance team:

- verifies deliverable conformity with quality requirements and arranges for peer review of deliverable.

3.5 Peer review

All deliverables should be peer reviewed by two experts within the consortium. The deliverable register on SharePoint shows reviewers' assignments. The peer-review process is part of the deliverable life cycle, described in "Table 4 – Deliverable life cycle and process owners", pages 17-17.

5G-LOGINNOV uses the peer review process for internal quality assurance of deliverables. Deliverables should take into account the goals of the project, details and objectives of the Work Package as well as the objectives of the programme. It is therefore implied that every deliverable considers the internal and external review process. The peer review follows established procedures to assess articles and papers for publication.

In general the following quality criteria should be observed:

- The strategy clearly defines ways in which the customer's quality expectations will be met;
- The defined ways are sufficient to achieve the required quality;
- Responsibilities for quality are defined up to a level that is independent of the project and the Project Manager;
- The strategy conforms to the supplier's and customer's quality management systems;
- The strategy conforms to the quality policy;
- The approaches to assuring quality for the project are appropriate in the light of the standards selected.

Specific deliverable quality criteria can be seen below in the table. The peer reviewer needs to fill in the table 11:

Table 11 – Peer Review criteria

Criteria	definitely	satisfactorily	somewhat	not at all	not applicable
Deliverable matches the GA requirements		X			
Objectives are clear and in line with the planned activities		X			
Issues at project level are properly treated	X				
Author responds to readers' needs	X				
Technical approaches used are appropriate	X				
Content is well organised			X		
Issues raised are relevant	X				
Achievements are clear	X				

Contents contribute to the state of the art	X				
Conclusions (if any) are valid		X			
Deliverable is complete (no major parts missing)	X				
Deliverable is formatted correctly (see deliverable template)		X			

3.5.1 Selection of peer reviewers

For each deliverable, the WP Leader selects two peer reviewers with the support of the Quality Manager, who may be assisted by the technical manager if no one is found. A third reviewer may be appointed by the QM if needed. Peer reviewers are two experts of the subject developed in the deliverable to be reviewed. Each peer reviewer:

- Works for an organisation within the consortium and this organisation is not a major author of the deliverable to be reviewed;
- Has not personally contributed to the creation of the deliverable to be reviewed;
- Is technically able to evaluate the content of the document;
- Is able to evaluate whether the deliverable is aligned with the scope and objectives of the 5G-LOGINNOV project.

3.5.2 Template email to launch a peer review

The WPL or the DL invites peer-reviews via an email. To help you, an exemplar email is:

“Dear Colleagues,

I would like to kindly invite you to offer your reviewing service for DELIVERABLE NUMBER AND NAME which is due for submission on DATE.

According to Quality Management procedures, we aim at the following tentative timeline:

[DATE (deadline – 1 month)] Send DX.Y for peer-review through *this folder* (add hyperlink on Sharepoint). Each review should be uploaded here (add hyperlink on Sharepoint) and is composed of two documents:

- The Word document with comments and suggestions with the "track changes" mode
- The review form completed

[DATE (deadline - 20 days) EoB] Deadline for peer review.

[DATE (deadline – 15 days) EoB] Send the final version to the QM and ERTICO.

[DATE (deadline – 2 working days)] Quality Manager generates pdf version to be submitted

[DATE] Deadline for submitting the deliverable to the EC by ERTICO.

Please let me know about your availability as soon as possible, but not later than

Many thanks in advance.

Kind regards,
Xxx”

3.5.3 Peer review output documents

Each reviewer gives two documents:

- The deliverable document (in MS Word format), with peer reviewers' comments and suggested modifications made in "track changes" mode.
- The completed review report, stored on SharePoint (Annex 3), to give a general appreciation of the deliverable and to point out the overall points to be improved.

3.5.4 How to take into account peer reviewers' comments

Concerning the handling of reviewers' feedback, the deliverable leader has the final decision. She/He may decide not to take comments into account. In this case, the deliverable leader should resolve the reviewer comments by answering comments that are not taken into account in a commented copy of the final version, for example: "comment rejected for reason ..." or "comment useful but apply differently ...". The DL can contact the reviewers if necessary.

3.6 Quality requirements for trials preparation and management

3.6.1 Roll-out plan

A roll-out plan must be defined and documented to describe the activities to be performed on each trial site and the interactions between them (both technical or administrative). This plan serves as a reference for the rest of the project. It is described in D3.1 – "5G-LOGINNOV Roll-Out Methodology and Roadmap defined" and must therefore be known to all partners involved in the experimental part of 5G-LOGINNOV. This roll-out plan includes, for each trial site activity:

- The activity ID and if relevant the use case ID,
- The activity title,
- The timeline (start month, end month),
- The end month (e.g. M11),
- The target completion date and phase.

Three roll-out phases have been initially identified, allowing the activities on each trial site to be conveniently coordinated. These phases are detailed in D3.1.

The following principles apply:

- Any deviations between the plan and the trial sites must be identified and controlled by the WP leader as early as possible.
- Additional information, comment and graphical display of information may be added to clarify or precise the roll-out plan, for example to visualize the different phases.
- Any graphical view resulting from a trial site should be of adequate quality and the text should be big enough to be easily read.

3.6.2 Steps in trial sites

Each trial site may be associated with a set of steps, which should be clearly identified through the roll-out plan in order to create meaningful and understandable check-lists. These check-lists might be of interest for the trial site leader, but also for the WP leader, the QM and the PM to check the overall progress and consistency of the activities carried out in a trial site. These steps are highly correlated with the use-cases et user stories that are defined in each trial site (see Deliverable 2.1). They include, but are not limited to, the following items:

- Integration of developments associated to the use case.
- Laboratory testing of the use case and fine-tuning development
- Validation of the use case in a controlled environment.
- Recruitment of participants.
- Mature and real-world testing.
- Validation and exploitation of the results.

3.6.3 Milestones

Milestones have been defined to ensure that the project progresses and is on schedule. These milestones are monitored using the deliverable register file on SharePoint (second tab) and are regularly checked by project managers and the PC to ensure their successful completion. The milestones, as of March 2020, are listed in Table 12 below.

Table 12 – Milestones (as of November 2020)

MS#	Milestone name	WP	Due date	Means of verification
MS1	Project kick-off	WP6	M01	Kick-off minutes
MS2	Communications tool ready website online	WP5	M04	D5.2
MS3	Living Labs' specification ready	WP1	M08	D1.1 to D1.5
MS4	Living Labs' trials and evaluation Plans ready	WP3	M12	D3.1
MS5	Marketplace & new actor support strategy ready – Open Call start-ups selected	WP4	M12	D4.1 and D4.2
MS6	Evaluation data management tools ready	WP2	M14	D2.2
MS7	Living Labs' deployment completed	WP2	M20	D2.3
MS8	Living Labs' trial preparation completed – trials ready to start	WP3	M22	D3.2
MS9	Living Labs trials and evaluations completed	WP3	M32	D3.3 and D3.4
MS10	Evaluation and vision for take up of 5G enabled and innovative Next Generation Logistics' Operation ready	WP4	M36	D4.3 and D4.4
MS11	Congresses, all Living Labs events, contribution to Standardisation, Networking and Clustering successfully completed	WP5	M36	D5.3, D5.5, D5.6, D5.7
MS12	ORDP data ready and innovation results	WP6	M36	D6.3 and D6.5

3.7 Delivery

The project coordinator is responsible for submitting the deliverables to the European Commission. An electronic copy must be sent to the EC project officer and the project mailbox, using the contact details as indicated at the beginning of all deliverables. The deliverable documents will be submitted electronically only in Word and PDF format in the participant portal if required.

4 MANAGEMENT OF RISKS

4.1 Management of risks and quality assurance

Risk assessment with a thorough analysis of potential risks and close monitoring of the defined corrective actions is an important factor in the 5G-LOGINNOV Project Coordination Plan. This is not only important in order to reach the objectives of 5G-LOGINNOV within the given time, budget and with high quality, but also to achieve a maximum of synergies with related projects and national 5G trial activities.

A ‘risk’ is defined as an event precluding the achievement of the objectives of a certain activity or task. Risk management involves a structured process aimed at estimating the probability of occurrence of a risk event and identifying and limiting its potential consequences through a series of mitigation strategies defined in advance.

The risks are materialised in a “Risk matrix”, which is based on the FMEA (Failure Mode and Effects Analysis) as described in below in the next section.

This management activity is aimed at achieving the Project’s objectives on time and within budget. The Technical coordination team will monitor the risks already defined in the risk register or identify new risk, in consultation with the WP leaders or trial site leaders, who can also raise new risk to the technical coordination team as well. Following this regular evaluation of the risk register, the technical coordination team will update the register, i.e. the risks will then be assessed and mitigating actions proposed. Then the technical coordinator will submit the updated register for review and approval to the PMT, at the occasion of its bi-weekly teleconferences or meetings.

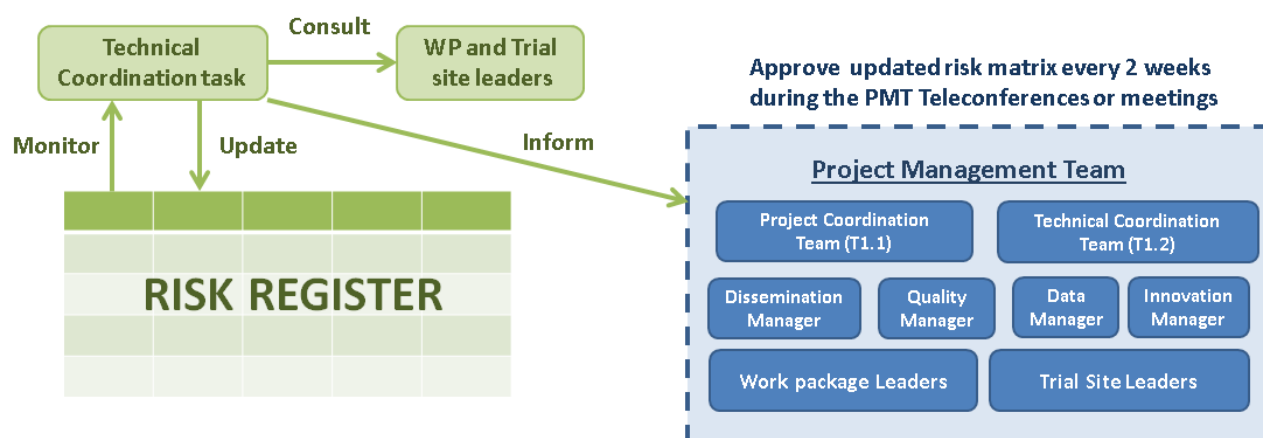


Figure 1: Risk matrix update

The risk management process will be monitored in parallel by the Quality Manager. The complete list of quality management procedures are documented in D6.6 – *Quality and Risk Management Plan*. By defining clear procedures and establishing deadlines for deliverable production, review and submission, the Quality Manager will ensure low exposure to risk and the highest possible quality of 5G-LOGINNOV outcomes.

Recommendations arising from project periodic reviews will also be added as risks to be addressed in the following reporting period.

4.2 Risk management by Failure Mode and effects analysis

5G-LOGINNOV will use the Failure Mode and Effects Analysis (FMEA)ⁱ for its risk-management. This structured approach will allow discovery of potential failures in the design and processes of the

Project's activities. By analysing the harmful effects of failures, the FMEA can identify, prioritise and ultimately mitigate the failure modes.

The risk assessment procedure by way of FMEA comprises four main steps with sub-steps:

- Step 1 – Identification and definition of the risks
- Step 2 – Risk validation
- Step 3 – Assignment of Risk Prioritisation Number
- Step 4 – Identification of risk mitigation strategy

1) Step 1 – Identification and definition of the risks

WP, Trial Site and Task Leaders will identify the risks relevant to their activities or tasks and subsequently properly and promptly document them in the risk register. In addition to technical and organisational issues, possible risks will pertain to behavioural and legal issues as well. For each solution the following indicators should be provided:

1. Risk identification: What is the risk associated with the implementation of this solution?
2. Risk effect: What effect will the occurrence of this risk have?
3. Risk cause: What could be a possible trigger for this risk?
4. Risk detection and recognition: How would this risk be detected when it occurs?

2) Step 2 - Risk validation

All risks will undergo a validation process to rank them and assess their priority. This step involves assessing each risk based on a severity, occurrence probability and detectability index.

- **Risk Severity (S)**

The severity levels for technical and organisational failures are presented in Table 13.

Rating	Occurrence Probability (O)	Technical / Organisational issue
9 – 10	Disastrous	The most serious effect of the failure mode would result in Project failure.
7 – 8	Severe	The failure mode would result in disruption of one or more of the items in terms of the Project's scope/time/resource definition and require serious reorganisation.
5 – 6	Moderate	Failure mode would result in considerable delays, reworking or reorganisation. Some changes to roles and responsibilities may be required.
3 – 4	Slight	Failure mode would cause some minor delays or reorganisation.
1 – 2	Irrelevant	There would be no discernible effect in terms of the Project's end goal.

Table 13 – Unmitigated severity levels for risks

- **Risk Occurrence Probability (O)**

The occurrence probability index, presented in Table 14 provides a ranking based on the probability that all the risk causes related to the risk modes described in the analysis can occur.

Rating	Occurrence Probability (O)	Technical / Organisational issue
9 – 10	High	This failure mode is almost certain to occur.
7 – 8	Moderate	There is a moderate possibility for the failure mode to occur.
5 – 6	Occasional	There is a possibility of occasional occurrence of the failure mode.
3 – 4	Remote	There is a slight probability that the failure mode will occur.
1 – 2	Improbable	It is unlikely that a failure mode will occur.

Table 14 – Risk occurrence indicator scale

- **Risk Detectability (D)**

Finally, the detectability index (Table 15) describes the probability of detecting the occurrence of a risk mode identified in Step 1 of the methodology. Detection of a developing risk is crucial for overall risk management and early detection is a prerequisite for the effective application of mitigation strategies. Using additional sensors and processing along with monitoring and feedback throughout the Project are important tools for risk detection.

Rating	Detectability (D)	Technical / Organisational issue
9 – 10	Low	It is impossible or improbable that the technical/organisational failure will be detected.
7 – 8	Fair	The issue is detected only in particular cases.
5 – 6	Moderate	It is probable that the technical/organisational issue will be detected.
3 – 4	Good	It is highly likely that the technical/organisational issue will be detected.
1 – 2	High	It is certain that the risk outcome will be detected.

Table 15 – Risk detectability indicator scale

3) Step 3- Risk Prioritisation Number assignment

After each risk is classified based on the Severity (S), Occurrence Probability (O) and Detectability (D) indices, a Risk Priority Number (RPN) is assigned to it based on a straightforward formula:

$$\text{RPN} = \text{S} \times \text{O} \times \text{D}$$

Based on this equation, the RPN of each risk will vary from 0 to 1000 and fall into one of five

categories: disastrous, severe, moderate, slight, or insignificant as shown in Table 16.

Risk category	Risk Priority Number	Mitigation possibility
Disastrous	513 - 1000	Very High
Severe	217 - 512	High
Moderate	65 - 216	Medium
Slight	64 - 9	Low
Insignificant	0 - 8	Improbable

Table 16 – RPN and risk categorisation

4) Step 4- Mitigation strategies identification

The risk register will indicate the Work Packages or Trial Sites implicated by the risk and assign a caretaker for each risk, who will follow its analysis and mitigation. Mitigation of the risks adverse effects will rely on a risk reduction strategy by way of an iterative process. Some ways to do this will include:

- Reducing the probability of the hazard occurring
- Increasing failure detection speed and probability
- Reducing the magnitude (severity) of the consequences of the potential hazard
- Protecting against the risk-mitigating strategies to compensate for a failure (e.g. back-ups)

As a first step towards the adoption of this robust risk management strategy, critical risks identified in section 1.3.5 of the DoA during the proposal phase and Grant Agreement preparation have been added to the risk register. The 5G-LOGINNOV critical risks and mitigation actions are presented in Table 17.

Table 17 – 5G-LOGINNOV critical risks and mitigation actions

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
Organisational	Discrepancies in the technical visions	Incompatibility at integration level; Project delays	Lack of common understanding of Project objectives	During WP & Technical Management Team meetings (Telcos); throughout the development phase of the Project	9	8	4	288	Frequent communication within WPs (through meetings, Telcos, etc.) and at the TMT level to resolve issues. Good cooperation between Project Coordinator, Technical Manager, the Technical Management Team and the Consortium.	WP6, WP2, WP3	Project Coordinator (ERT)
Organisational / Technical	Technical work diverges from the Project's initial goals	Core technical items not adequately addressed to meet Project objectives	Ineffective technical management / lack of coordination in deliverable development	Through key project milestones / deliverables	10	5	2	100	All development activities will be closely monitored at various levels (Task, WP, TMT) to ensure that the Use Cases are delivered according to the precise specifications outlined in WP2 & WP3. EC review feedback will be adhered to as closely as possible at all stages. An "Experts Group" has been assembled to assist the TM and closely monitor developments.	WP1, WP2, WP3	Technical Coordinator (ERT)

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
Organisational (Dissemination & Exploitation)	Limited dissemination & exploitation impact: Low interest or engagement of 5G-LOGINNOV target stakeholders	Low or no user/stakeholder acceptance. Low awareness of the Project and the Project results.	Lack of Project beneficiaries' commitment to dissemination and exploitation activities. Delay in planning of dissemination and exploitation activities (e.g. workshop, demonstration event) due to delays in e.g. pilots readiness, etc.	Low response rate / participation in the Project's dissemination channels & activities (newsletters downloads, webinars, social media followers, workshops), low interest of stakeholders especially towards the end of the project.	8	7	3	168	KPIs are clearly defined and monitored. The Dissemination & Exploitation plan includes a sound selection of channels and planned activities to keep all stakeholders in the value chain informed, involved, on a regular basis. The plan will be re-evaluated periodically and updated as needed.	WP1, WP6, WP7	WP7 leader (ERT)
Organisational (Dissemination & exploitation)	Limited number of 5G-LOGINNOV-related publications in scientific journals	Low awareness and low uptake of projects results in scientific & research community.	Low number or quality of candidate papers suitable for peer-reviewed journals	Low number of scientific journal publications reported	8	7	5	280	KPIs are clearly defined and monitored. Monitoring of academia partners. Encourage the submission of papers around specific targeted events. Identify relevant deliverables that could be candidate topics. Use TMT meetings as internal information channel (and WP	WP7	WP7 Leader (ERTICO), Task 7.2 Leader (ICCS)

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
									Leaders as relay) for reminders		
Organisational (Dissemination & exploitation)	Limited number of dissemination results published on the 5G-LOGINNOV website	Perceived low level of dissemination activities and thus of project's visibility and impact achieved	Dissemination activities performed by partners not systematically reported to WP7 and Task 7.2 Leader	Low number of dissemination activities reported. Low number of entries published in related 5G-LOGINNOV website sections	6	7	2	84	KPIs are clearly defined and monitored. Clear procedures set in place to monitor dissemination activities as recorded in D7.3 and regularly reminded to partners. Use TMT meetings as internal information channel (and WP Leaders as relay) for reminders	WP7	WP7 Leader (ERTICO), Task 7.2 Leader (ICCS)
Organisational (Evaluation)	Evaluation trials are not successful	Insufficient impact assessment.	Inadequate evaluation framework and experimental plans or wrong application of them across the sites. Failure in logging mechanisms.	While processing the collected data during field trials execution.	9	7	1	63	Multi-phase evaluation methodology: T2.5, T3.5, T4.1 and T5.1 iterative process, and verification (T3.6) as well as roll-out (WP3) is implemented to ensure the data collected is according to expectations. Clear and comprehensive data management plan.	WP2, WP3, WP4, WP5	WP5 leader (ICCS)

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
Organisational (Exploitation)	Conflicts of interest between partners on commercial model	Delay in delivery of results and / or partners' withdrawal from the project.	No common understanding of project goals; lack / change of commitment.	Contribution to deliverables stops; technical / research work does not progress.	7	3	2	42	The Project Consortium was built with a variety of complementing stakeholders. All Project beneficiaries will have the possibility to contribute towards the development of the exploitation plan and list their interests. An IPR registry will be maintained to clearly list ownership and rights.	WP1, WP6, WP7	Innovation manager (VICOM)
Technical	The existence of little cooperation between a trial site (or several)	TS trials not so complete and TS role in the project may be jeopardized	Lack of coordination between the TS	The lack of communication between parts or the development of isolated activities.	9	7	4	252	The User Stories have been defined in WP2 with the clear objective to highlight the added value of the trial sites. Specific TS contributions have been defined as Tasks in the ClickUp tool and assigned to specific people with given deadlines and dependencies. Much easier to track progress and guarantee significant contributions from TSs. The creation of a technical coordination team that monitors these and other aspects will mitigate this risk.	WP2, WP3, WP4, WP5	Technical Coordinator (ERT) and UserStory/ Applications technical coordinator

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
Technical	The implementation and integration plan is not followed due to the size of the project and the number of partners in each TS. Coordination of technical tasks fails	The technical solutions are only partially implemented.	Lack of clarity in technical steps	Via breakdown of activities, analysis of dependencies among activities and critical path analysis	9	5	4	180	The ClickUp project management tool has been employed in the project. Each TS has broken down their implementation path in concrete steps with a start and end date. Each task has been assigned to a responsible expert and dependencies between tasks have been created indicating the critical path and providing detailed Gantt charts to the completion of the solution. The ClickUp tasks are regularly updated by the responsible of each task.	ALL	Technical Coordinator (ERT), TM Experts Group, TS leaders
Organisational	Non-attendance at consortium meetings	Project delays	Delays in decision-making	Delays in deliverables and milestones	6	7	5	210	Less project follow-up meetings. Offline monitoring.	ALL	Project Coordinator (ERT)
Technical	Possibility of not having the 5G SA	Non-compliance with 5G SA objectives	Technology not available	Technical follow-up	8	8	2	128	Highest technical monitoring to evaluate the technological progress. Test certain KPIs on the other side with 5GSA.	TSs	TS leaders
Regulatory	No roadblocks accepted for testing	Non-compliance with open road testing	PO Requirements	Regulatory and legal compliance	7	3	2	42	Collaboration with the authorities to carry out the tests in an open environment.	WP4	T-SYS

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
Technical	Delays in the acquisition of equipment/devices	Delays in tests execution	Low availability in the global market	Continuous follow-up with suppliers	8	9	2	144	There are significant delays for the commercial availability of 5G chipsets from almost all chipset vendors. The consortium has approached several (Qualcomm, Quectel, etc.) and has nominated Quectel as the most appropriate vendors. Their latest roadmap promises the 5G chipset availability for end of December/Q1 2021. This is closely monitored by the 5G Expert team leader	ALL	ININ / T-SYS / ICCS
Regulatory	No or partial testing permissions	Non-compliance with open road testing	PO Requirements	Regulatory and legal compliance	7	8	2	112	Early contacts with authorities. Engagement from multiple sides. Constant effort to acquire the licenses.	TS	All Telecom beneficiaries

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
Technical	Delays in the integration of TS solutions	Delays in tests execution	incompatibility of solution and need for custom integration	Continuous follow ups and collaboration among TS experts	6	6	3	108	Clear contribution planning, which is documented in ClickUp. Exchange of architectural designs and agreement among experts. Specific experts from the TSs have been brought into contact with specific experts from 5G telecom. Solution design already discussed.	TSs	T-SLO
Technical	Actual implementation deployment and roll-out of TSs diverges from deployment planning	Delays in trial executions	Equipment availability, roadmap updates, delays in development process	Regular updates of planning / actualization map	6	6	4	144	T3.1 performs a regular update of the actualization of the infrastructure deployment at the TSs and compares to the planning. Constant communication among TS leaders. Updates in trial planning may allow for later trials (available time until the end of the project)	WP3 (T3.1)	T-SYS
Technical	Data collection & management tools are incompatible with TS deployments	Inability to take proper measurements and for global storage	Different implementations of infrastructure and unclear design guidelines	Availability of a clear early design of the data collection requirements and agreement among TS leaders regarding tools	8	3	5	120	Participation of TS experts in the data collection and management tool design. Testing of compatibility during the various development phases.	WP1& WP2	AKKA

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
Technical	Verification process indicates that a TS is not suitable for proper evaluation of the undertaken use case categories	Inability to perform value adding evaluations	In proper design of architecture and lack of understanding of the UCC requirements	Gradual verification process as part of WP3 activities, following infrastructure deployment	8	4	6	192	Multiple experts from all TS verify the suitability of each TS design for the proper evaluation of the undertaken UCCs, as part of Assignment of specific local stakeholders to assist a TS in case of such an issue.	WP3	T-SYS
Technical	Initially proposed use cases changed dramatically and overlap each other; lack of complementarity of evaluations and contributions among local sites and corridors	Inability to proceed in next tasks and WPs	Lack of communications between local sites and corridors	Mainly D1.1	8	2	1	16	A clear commitment exists from TSs to contribute with specific solutions.	WP1, T1.1	VICOMTECH /CIRCLE as D1.1 leader; also WP1, WP2 and WP3 leaders

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
Technical	The network infrastructures are not openly described revealing integration opportunities and limitations	Inability to properly proceed in the next phases (WP3 and WP4)	Lack of communications at local level (among local partners of a site) and external partners	Mainly D1.2	5	4	4	80	More detailed designs are available as we get closer to deployment (High level design) Partners from TSs are actively involved, hence are involved in the planning process to identify and missing info.	WP1& WP2	VICOMTECH , CIRCLE also WP2, WP3 and WP4 leaders
Technical	The road infrastructures are not openly described revealing integration opportunities and limitations	Inability to properly proceed in the next phases (WP3 and WP4)	Lack of communications at local level (among local partners of a site) and external partners	Mainly D1.3 and recent negotiations between local sites and corridors	4	2	4	32	Continuous monitoring of local sites and corridors activities.	WP1, T1.3	SWARCO as D1.3 leader; also WP2, WP3 and WP4 leaders
Technical	The vehicles and OBUs are not openly described revealing integration opportunities and limitations	Inability to properly proceed in the next phases (WP1 and WP2)	Lack of communications at local level (among local partners of a site) and external partners	Mainly D1.2 and recent negotiations between local sites and corridors	4	2	4	32	Continuous monitoring of local sites activities	WP1, T1.2	T-SLO as D1.2 leader; also WP2, WP3 and WP4 leaders

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
Technical	Due to initial KPIs proposed during the proposal, some kPIs may not be relevant to the project	Inability to properly proceed in the next phases (WP1 and WP2). Consumption of resources to measure less valuable KPIs	Lack of communications at local level (among local partners of a site) and external partners	Mainly D1.4 and recent negotiations between local sites and corridors	6	6	4	144	Continuous monitoring of local sites	WP1, T1.4	AKKA as D1.4 leader; also WP2, WP3 and WP4 leaders
Technical	Delay in OBU delivery	Delay of local activities	External provider (QUALCOMM)	Local meetings and discussions DE	6	8	4	192	OBUs and 5G modems for initial experiments	DE	T-SYS leader (CONTI)
Technical	Due to limited scale of trials, technical measurement data is not sufficient to build statistical confidence in results	Inability to produce meaningful results and overall conclusions regarding technical performance	Limited scale of project trials (number of vehicles, number of drivers)	Mainly WP3 and meetings and discussions with trial sites and use case leaders.	5	6	4	120	Continuous monitoring of evaluation scenario and plan developments, as well as of conformance of trials to evaluation plans. Evaluation scenario planning shall focus on ensuring statistical confidence through appropriate scenario repetition.	WP3, T3.1, 3.2, 3.3, 3.4, WP4	T-SYS, TS leaders; also WP4 leader

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
Technical	Due to limited scale of trials, impact assessment and user acceptance evaluations may not yield sufficient (statistically) quantitative data	Inability to produce meaningful results and overall conclusions regarding impact and user acceptance	Limited scale of project trials (number of vehicles, number of drivers, number of passengers)	Mainly T5.3 and T5.4, WP4 and meetings and discussions with trial sites and use case leaders.	6	8	3	144	Continuous monitoring of evaluation plan developments; early communications with trial site owners for enlarging the sample/subject size as much as feasible; reaching out other ICT-18 project communities of users; creating on-line questionnaires	T3.5 and T3.6, WP4	ICCS & ICOOR as T3.5/T3.6 Leaders, also WP4 leader
Organizational	Coronavirus Outbreak in Europe and its impact on the project's timeline	Delays on the deployment and roll-out of the solutions. Delay of deliverables and milestones.	The travel ban issued even for internal travels and the general restrictive measures in place.	Regular updates from the TS regarding measures in their country and updated estimates of roll-out	7	9	2	126	Tight Coordination with the PO and the TS leaders.	ALL	Project Coordinator (ERT)

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
Organizational	Lack of participation of Stakeholders (OEMs, Public Authorities, etc.) in questionnaires or any inquiry about their view over use cases using 5G.	WP4 definitions not being adjusted to real scenarios or future demands.	Lack of availability, fear of sharing privileged information, not wanting to commit with any option at this point.	Not having any input from them after two consecutive deadlines provided; Getting a negative response from them.	5	7	3	105	Informing stakeholders about the advantages to them in participating in this early stage of definition. Involving them in the project (considering the limits of privileged information).	WP4	WP4 leader (ICOOR) and all its interfaces with stakeholders

Requirement	Potential failure mode (risk)	Potential effect of FM	Risk cause	Risk detection	Risk severity	Risk occurrence probability	Risk detectability	Risk priority number (RPN)	Risk mitigation measures	Relevant WPs	Risk caretaker
Technical	TS implementation limited due to logistic difficulties or lack of interoperability .	Not benefiting from the TS contribution, different complementary approaches, exploring different roaming options, not testing interoperability .	Difficulties dealing with the distance between TSs (mobilizing technical teams, transporting vehicles and infrastructure, etc.); to get the timeslots of closed roads; lack of interoperability related with compatibility of radio equipment, different standards or application issues.	To keep communication channels frequent between TSs and local stakeholders to detect eventual situations in time to avoid them.	6	5	6	180	To prepare TS activities far in advance (logistics, detailed planning, etc.); To estimate the duration of TS activities accurately so that no logistic limitations occur (available time in public roads, for instance); to ensure between technical teams the proper compatibility of equipment and applications.	WP3, WP4 and WP5	Project Coordination and TS leaders

5 CONCLUSIONS

The quality and risks management plan (D6.6) covers the procedures, control measures and operating practices intended to ensure that all activities in 5G-LOGINNOV are carried out with a high standard of quality. It complements the project management plan ([D6.1](#)) and must be followed to ensure the proper implementation of the project and the high quality of its deliverables. This work is also crucial to the other project tasks and serves as a reference point for process monitoring, in both technical and managerial terms.

Together with the Grant Agreement and the Consortium Agreement, this document is to be regarded as a reference for the overall project quality management of 5G-LOGINNOV.

ANNEXES

Annex 1 – Deliverable register

Deliverable tab (illustration) and peer review:

WP No	Del Ref. No	Del No	Title	Description	Lead Beneficiary	Nature	Dissemination Level	Est. Del. Date (annex I)	Owner	Reviewer 1	Reviewer 2	Status
WP1	D1.1	D4	5G-enabled logistics	5G-enabled logistics	CIRCLE	Report	Public	31 Jan 2021	Marco Gorini	Dejan Soster	Andreas Schmid	Pending
WP1	D1.2	D5	5G architecture and test	5G architecture and test	TSLO	Report	Public	30 Apr 2021	Dejan Soster	Ralf Vollenbrock	Pavlos Basaras	Pending
WP1	D1.3	D6	5G-enabled Living Labs	5G-enabled Living Labs	SNARCO	Report	Public	30 Apr 2021	Andreas Schmid	Ralf Vollenbrock	Pavlos Basaras	Pending
WP1	D1.4	D7	Initial specification of	Initial specification of	AKKA	Report	Public	30 Apr 2021	Ranaivo Nirina	Ralf Vollenbrock	Marco Gorini	Pending
WP1	D1.5	D8	Data and cyber-protection	Data and cyber-protection	AKKA	Report	Confidential, only for	30 Apr 2021	Ranaivo Nirina	Pavlos Basaras	Marco Gorini	Pending
WP2	D2.1	D9	Development and deployment	Development and deployment	ICCS	Report	Public	31 Aug 2021	Pavlos Basaras	Ralf Vollenbrock	Marco Gorini	Pending
WP2	D2.2	D10	Data collection and evaluation	Data collection and evaluation	AKKA	Report	Public	31 Oct 2021	Ranaivo Mandimby	Marco Gorini	Dejan Soster	Pending
WP2	D2.3	D11	Development and deployment	Development and deployment	ICCS	Report	Public	30 Apr 2022	Pavlos Basaras	Ralf Vollenbrock	Janez Sterle	Pending
WP3	D3.1	D12	Trial methodology, platform	Trial methodology, platform	TSYS	Report	Public	31 Aug 2021	Ralf Vollenbrock	Janez Sterle	Pavlos Basaras	Pending
WP3	D3.2	D13	Living Labs trials preparation	Living Labs trials preparation	TSYS	Report	Public	30 Jun 2022	Ralf Vollenbrock	Janez Sterle	Pavlos Basaras	Pending
WP3	D3.3	D14	Evaluation of operational	Evaluation of operational	ICCS	Report	Public	30 Apr 2023	Pavlos Basaras	Ralf Vollenbrock	Janez Sterle	Pending
WP3	D3.4	D15	Evaluation of social and	Evaluation of social and	ICCOOR	Report	Public	30 Apr 2023	Andrea Porelli	Selini Hadjilimnriou	Peter Schmitting	Pending
WP4	D4.1	D16	Plan for boosting market	Plan for boosting market	ICCOOR	Report	Public	28 Feb 2021	Andrea Porelli	Selini Hadjilimnriou	Peter Schmitting	Pending
WP4	D4.2	D17	Start-ups integration	Start-ups integration	CIRCLE	Report	Public	31 Aug 2021	Marco Gorini	Frank Daems	Peter Schmitting	Pending
WP4	D4.3	D18	Achievements with network	Achievements with network	ICCOOR	Report	Public	31 Aug 2023	Andrea Porelli	Selini Hadjilimnriou	Peter Schmitting	Pending
WP4	D4.4	D19	Lessons learned and	Lessons learned and	ERTICO	Report	Public	31 Aug 2023	Frank Daems	Marco Gorini	Dejan Soster	Pending
WP5	D5.1	D20	Communication plan	Communication plan	ERTICO	Report	Public	30 Nov 2020	Sandra Dworak	Valeria Burlando	Jana Habjan	Submitted
WP5	D5.2	D21	Dissemination plan	Dissemination plan	CIRCLE	Report	Public	31 Dec 2020	Valeria Burlando	Sandra Dworak	Jana Habjan	Pending
WP5	D5.3	D22	Dissemination and communication	Dissemination and communication	CIRCLE	Report	Public	31 Aug 2023	Valeria Burlando	Sandra Dworak	Jana Habjan	Pending
WP5	D5.4	D23	Exploitation plan	Exploitation plan – MNC	ICCOOR	Report	Public	28 Feb 2022	Michela Apruzzese	Frank Daems	Andreas Schmid	Pending
WP5	D5.5	D24	Exploitation report	Exploitation report – MNC	ICCOOR	Report	Public	31 Aug 2023	Michela Apruzzese	Frank Daems	Andreas Schmid	Pending
WP5	D5.6	D25	Standardisation and	Standardisation and	TSYS	Report	Public	31 Aug 2023	Ralf Vollenbrock	Peter Schmitting	Frank Daems	Pending
WP5	D5.7	D26	Clustering and network	Clustering and network	CIRCLE	Report	Public	31 Aug 2023	Valeria Burlando	Sandra Dworak	Frank Daems	Pending
WP6	D6.1	D27	Project management	Project management	ERTICO	Report	Public	31 Oct 2020	Eusebiu Catana			Submitted
WP6	D6.2	D28	Innovation management	Innovation management	VICOM	Report	Public	31 Aug 2021	Loyo Estibalz	Peter Schmitting	Ranaivo Nirina	Pending
WP6	D6.3	D29	Innovation management	Innovation management	VICOM	Report	Public	31 Aug 2023	Loyo Estibalz	Peter Schmitting	Ranaivo Nirina	Pending
WP6	D6.4	D30	Data management plan	Data management plan	AKKA	ORDP: Open Research	Public	28 Feb 2021	Ranaivo Nirina	Peter Schmitting	Loyo Estibalz	Pending
WP6	D6.5	D31	Open data publication	Open Data Publication	AKKA	ORDP: Open Research	Public	31 Aug 2023	Ranaivo Nirina	Peter Schmitting	Loyo Estibalz	Pending
WP6	D6.6	D32	Quality and risk management	Quality and risk management	ERTICO	Report	Public	30 Nov 2020	Eusebiu Catana			Submitted
WP7	D7.1	D1	H - Requirement No. 1	2.1 The procedures are	ERTICO	Ethics	Confidential, only for	31 Mar 2021	Rita Bhandari	Marco Gorini	Mauro Dellamico	Pending
WP7	D7.2	D2	POPD - Requirement No. 2	4.7 A description of the	ERTICO	Ethics	Confidential, only for	28 Feb 2021	Rita Bhandari	Marco Gorini	Mauro Dellamico	Pending
WP7	D7.3	D3	GEN - Requirement No. 3	12.4 An independent	ERTICO	Ethics	Confidential, only for	28 Feb 2021	Rita Bhandari	Marco Gorini	Mauro Dellamico	Pending

Milestones tab (illustration):

#	Milestone name	WP	Due date	Means of verification	Status
S1	Project kick-off	WP6	M01	Kick-off minutes	completed
S2	Communications tool ready website online	WP5	M04	D5.2	completed
S3	Living Labs' specification ready	WP1	M08	D1.1 to D1.5	
S4	Living Labs' trials and evaluation Plans ready	WP3	M12	D3.1	
S5	Marketplace & new actor support strategy ready – Open Call start-ups selected	WP4	M12	D4.1 and D4.2	
S6	Evaluation data management tools ready	WP2	M14	D2.2	
S7	Living Labs' deployment completed	WP2	M20	D2.3	
S8	Living Labs' trial preparation completed – trials ready to start	WP3	M22	D3.2	
S9	Living Labs trials and evaluations completed	WP3	M32	D3.3 and D3.4	
S10	Evaluation and vision for take up of 5G enabled and innovative Next Generation Logistics' Operation ready	WP4	M36	D4.3 and D4.4	
S11	Congresses, all Living Labs events, contribution to Standardisation, Networking and Clustering successfully completed	WP5	M36	D5.3, D5.5, D5.6, D5.7	
S12	ORDP data ready and innovation results	WP6	M36	D6.3 and D6.5	

Deliverable register:

The deliverable register is based on the list of deliverables. Table 18 shows an extract as of November 2020. In columns titles, “Ref.” stands for “reference” and “Diss.” Stands for “dissemination”.

Table 18 – List of deliverables (as of November 2020)

Del. No.	Delivery Name	WP	Lead	Diss. level	Type	Delivery date
D1.1	5G-enabled logistics use cases	WP1	CIRCLE	PU	R	M05
D1.2	5G architecture and technologies for logistics use cases	WP1	TSLO	PU	R	M08
D1.3	5G-enabled Living Labs infrastructure	WP1	SWARCO	PU	R	M08
D1.4	Initial specification of evaluation and KPIs	WP1	AKKA	PU	R	M08
D1.5	Data and cyber-protection policies	WP1	AKKA	CO	R	M08
D2.1	Development and deployment plan	WP2	ICCS	PU	R	M12
D2.2	Data collection and evaluation procedures	WP2	AKKA	PU	R	M14
D2.3	Development and deployment final report	WP2	ICCS	PU	R	M20
D3.1	Trial methodology, planning and coordination	WP3	TSYS	PU	R	M12
D3.2	Living Labs trials preparation report	WP3	TSYS	PU	R	M22
D3.3	Evaluation of operation optimization	WP3	ICCS	PU	R	M32
D3.4	Evaluation of social and economic impacts	WP3	ICOOR	PU	R	M32
D4.1	Plan for boosting marketplace and emergence of new actors	WP4	ICCOR	PU	R	M06
D4.2	Start-ups integration report	WP4	CIRCLE	PU	R	M12
D4.3	Achievements with new actors and opportunities	WP4	ICOOR	PU	R	M36
D5.4	Lessons learned and recommendations for stakeholders	WP4	ERTICO	PU	R	M36
D5.1	Communication plan	WP5	ERTICO	PU	R	M03
D5.2	Dissemination plan	WP5	CIRCLE	PU	R	M04
D5.3	Dissemination and communication report	WP5	CIRCLE	PU	R	M36
D5.4	Exploitation plan	WP5	ICOOR	PU	R	M18
D5.5	Exploitation report	WP5	ICOOR	PU	R	M36
D5.6	Standardisation and spectrum policy report	WP5	TSYS	PU	R	M36
D5.7	Clustering and networking results	WP5	CIRCLE	PU	R	M36
D6.1	Project management plan	WP6	ERTICO	PU	R	M02
D6.2	Innovation management plan	WP6	VICOM	PU	R	M12
D6.3	Innovation management report	WP6	VICOM	PU	R	M36
D6.4	Data management plan	WP6	AKKA	PU	ORDP	M06
D6.5	Open data publication	WP6	AKKA	PU	ORDP	M36
D6.6	Quality and risk management plan	WP6	ERTICO	PU	R	M03
D7.1	Ethics requirements	WP7	ERTICO	CO	R	M07
D7.2	Ethics requirements Ethics- POPD	WP7	ERTICO	CO	R	M06
D7.3	Ethics requirements – Ethics- GEN – Requirement	WP7	ERTICO	CO	R	M06

Annex 2 – Templates

Location on SharePoint: [Dissemination/Templates/]

Three template categories are available:

- Meeting minutes (Microsoft Word)
- Deliverables (Microsoft Word)
- Presentations (Microsoft PowerPoint)



Annex 3 – Review report

Location on SharePoint: [Deliverables/]

Work Package ^a	= =
Task- 1.3 ^a	= =
Authors ^a	= X.Y.
Dissemination- Level ^a	= =
Status ^a	= =
Due-date ^a	= dd/mm/yyyy ^a
Document-Date ^a	= dd/mm/yyyy ^a
Version- Number ^a	= 1.0 ^a

Quality-Control¶

	Name ^a	Organisation ^a	Date ^a
Editor ^a	dd/mm/yyyy ^a	Name ^a	dd/mm/yyyy ^a
Peer- review- 1 ^a	=	=	dd/mm/yyyy ^a
Peer- review- 2 ^a	=	=	dd/mm/yyyy ^a
Authorised- by ^a (Technical-Coordinator) ^a	=	=	dd/mm/yyyy ^a
Authorised- by ^a (Quality- Manager) ^a	=	=	dd/mm/yyyy ^a
Submitted- by ^a (Project-Coordinator) ^a	=	=	dd/mm/yyyy ^a

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Coordinated by 5G-LOGINNOV Consortium, 2020.¶

Annex 4– e-mail reflector

Distribution lists (email reflectors) with the email addresses of all active contact persons have been created for the WP leaders, the Pilot sites Leaders, the milestones Leaders and the entire consortium based on the inputs provided by WP leaders and Pilot site leaders.

The coordinator is responsible for maintaining these reflectors and creating new ones. WP leaders and Pilot sites leaders shall send an email to request any update in their activity mailing list. For each WP, a mailing group has been created on Project Place, as well as a traditional mailing list. Communicating via Project Place is highly recommended as it generates an Outlook email.

The proposed list of reflectors is:

- 5G-LOGINNOV coordination team: 5G-LOGINNOV_coordination team@mail.ertico.com
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