D1.2 Quality management plan

Dissemination level:	Public (PU)
Work package:	WP1
Task:	T1.2
Deliverable lead:	NOKIA
Version:	V1.0
Submission date:	30/11/2021
Due date:	30/11/2021
Partners:	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101016427

Authors

Authors in alphabetical order		
Name	**Organisation**	**Email**
Markus Wimmer	NOKIA	markus.wimmer@nokia.com
Steffen Schulz	NOKIA	steffen.schulz@nokia.com

Control sheet

Version history			
Version	**Date**	**Modified by**	**Summary of changes**
V0.1	15/11/2021	Markus Wimmer	Draft for peer review
V1.0	30/11/2021	Markus Wimmer	Submitted version

Peer review		
	Reviewer name	**Date**
Reviewer 1	Eirini Liotou (ICCS)	19/11/2021
Reviewer 2	Dimitris Klonidis (UBI)	22/11/2021

Legal disclaimer

Table of Contents

List of tables

ABBREVIATIONS

Abbreviation	Definition
5G-PPP	5G Infrastructure Public Private Partnership
CO	Confidential, only for members of the consortium
DEC	Websites, patents filing, press & media actions, videos
DEM	Demonstrator, pilot, prototype, plan designs
DL	Deliverable Leader
EAB	External Advisory Board
EC	European Commission
GA	General Assembly
MS	Milestone
ORDP	Open Research Data Pilot
PC	Project Coordinator
PMBoK	Project Management Body of Knowledge
PP	Restricted to project partners
PU	Public
QA	Quality Assurance
QC	Quality Control
QMe	Quality Metrics
QMP	Quality Management Plan
R	Document, report
RE	Restricted to a group specified by the consortium
RPN	Risk Priority Number
RQM	Risk & Quality Manager
TC	Technical Coordinator
TMT	Technical Management Team

ToC	Table of Contents
WP	Work Package
WPL	Work Package Leader

Executive Summary

This document is deliverable D1.2 – Quality Management Plan (QMP) of 5G-IANA, 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 and Quality Control activities. Quality Assurance comprises managerial actions aiming at high-quality output, whereas Quality Control is used to verify the quality of the output.

This deliverable complements D1.1 – Project Management Plan. D1.1 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 describes the following elements:

- Introduction to Quality Assurance and Quality Control.
- Description of Quality Assurance and Quality Control roles.
- Quality Assurance activities and procedures, including but not limited to:
  - A definition of the roles and responsibilities of each partner in the consortium with regard to quality issues.
  - Guidelines to define quality metrics associated with technical activities carried out in the project. This part complements the outputs resulting from all technical WPs (from WP2 to WP5).
  - Harmonisation of 5G-IANA's communication elements, such as templates for deliverables, internal or European Commission (EC) reports. This part complements the outputs resulting from WP7 – Dissemination, exploitation, standardisation and liaison activities.
- Quality Control activities and procedures, including but not limited to:
  - A methodology for peer reviewers to guarantee that the project deliverables are of high-quality and meet scientific standards and project objectives.
  - Clear deliverable evaluation criteria to monitor all phases of their development process.

The QMP is structured as follows:

Chapter 1 – Introduction briefly presents 5G-IANA, describes the key concepts of quality management and outlines the QMP structure.

Chapter 2 – 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.

Chapter 3 – Quality Control Activities provides a set of procedures for optimal monitoring of the project quality and production of deliverables.

Chapter 4 – Contingency Plan focuses on the potential problems that may arise in the project and how they can be solved.

Chapter 5 – Conclusion summarises the main elements of the deliverable.

1. INTRODUCTION

1.1. Introduction to 5G-IANA

5G-IANA aims at providing an open 5G experimentation platform, on top of which third party experimenters, i.e., Small and Medium Enterprises (SMEs) in the Automotive-related 5G-PPP vertical will have the opportunity to develop, deploy and test their services. An Automotive Open Experimental Platform (AOEP) will be specified, as the whole set of hardware and software resources that provides the computational and communication/transport infrastructure as well as the management and orchestration components, coupled with an enhanced NetApp Toolkit tailored to the Automotive sector. 5G-IANA will expose to experimenters secured and standardized Application Programming Interfaces (APIs) for facilitating all the different steps towards the production stage of a new service. 5G-IANA will target different virtualization technologies integrating different Management and Orchestration (MANO) frameworks for enabling the deployment of the end-to-end network services across different domains (vehicles, road infrastructure, Multi-access Edge Computing (MEC) nodes and cloud resources). 5G-IANA NetApp toolkit will be linked with a new Automotive Virtual Network Functions (VNFs) Repository including an extended list of ready to use open accessible Automotive-related VNFs and NetApp templates, that will form a repository for SMEs to use and develop new applications. Finally, 5G-IANA will develop a Distributed Artificial Intelligence / Machine Learning (AI/ML) (DML) framework, that will provide functionalities for simplified management and orchestration of collections of AI/ML service components and will allow ML-based applications to penetrate the Automotive world, due to its inherent privacy preserving nature. 5G-IANA will be demonstrated through 7 Automotive-related use cases in 2 5G Stand Alone (SA) testbeds. 5G-IANA will perform a multi-stakeholder cost-benefit analysis that will identify and validate market conditions for innovative, yet sustainable business models supporting a long-term roadmap towards the pan-European deployment of 5G as key advanced Automotive services enabler. The Project Consortium includes 16 beneficiaries. This large Consortium shares responsibilities of tasks divided into eight Work Packages (WPs) across 8 EU countries.

1.2. Introduction to Project Quality Management

This section outlines key concepts about project quality used in this the document. 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 2021. PMBoK results from work 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 1Table 1: Project Quality Management Processes.

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.	The QMP determines the quality requirements, how they will be measured and controlled. In 5G-IANA it is provided with the current deliverable as a standalone document. **Outputs**: The QMP should contain at least: 1. The quality assurance procedures that must be followed during the generation of outcomes and collection of data. 2. The quality control procedures that should apply on the generated outcomes. 3. The management procedures for dealing with potential risks and compliance issues.
Perform Quality Assurance **When:** During the production process, throughout the duration of the project.	Quality Assurance is related to the 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: 1. What are the applicable quality standards? 2. How is quality measured? 3. Who measures it? 4. What is measured? 5. When is it measured? 6. What are the criteria for rejection? Quality Assurance creates and analyses the systems to measure and control quality, in order to create confidence that quality deliverables will be produced. **Outputs**: A continuous quality management system is in place.
Perform Quality Control **When:** After the production process.	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. **Outputs**: Quality is monitored on project outputs. Measures are taken to reach the expected quality, which may result in a change to the QMP.

1.3. Purpose of the deliverable

The QMP is delivered as part of WP1 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 Quality Control, which are carried out through the following activities:

- Liaising with the Technical Management Team (TMT) about the quality status of project results.
- Supporting the Project Coordinator (PC) and the Project Managers with risk management by monitoring and mitigating quality risks.
- Defining 5G-IANA's quality procedures and providing guidelines for the production and peer review of project outputs.
- Supporting the Deliverable Leaders (DLs) in maintaining a high standard of quality in their reports.
- Monitoring the development of the internal reports and deliverables corresponding to project tasks, in liaison with the TMT.
- Supporting the Communication Manager with the production of high-quality presentations and papers from the participants.

1.4. Intended audience

The dissemination level of D1.2 is public (PU) and is meant primarily for *(a)* all members of the 5G-IANA project consortium, and *(b)* the European Commission (EC) services.

This document is intended to serve as an internal guideline and reference for all 5G-IANA beneficiaries, especially the governance bodies such as the General Assembly (GA), the TMT, and the External Advisory Board (EAB).

2. QUALITY ASSURANCE PLAN

Quality Assurance (QA), along with Quality Control (QC), 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-IANA, the QA plan *(a)* specifies tools (Redmine, Quality Registers) and quality metrics; *(b)* defines roles and responsibilities of all parties involved in the quality processes; and *(c)* establishes QA procedures to obtain project deliverables with a high-quality standard.

2.1. Quality assurance tools

2.1.1. Redmine: the platform to share documents and submit deliverables

Redmine, a web-based project management and collaboration platform, is the main document management tool used in 5G-IANA. All draft and submitted deliverables are saved on Redmine. Quality management tracking tools and procedures are also accessible there.

2.1.2. Quality registers

The outputs of the quality management processes operated in 5G-IANA include three documents:

- **Deliverable register**. This file monitors deliverables' writing and submission processes. It is based on the list of deliverables described in Annex I of the Grant Agreement and reported in Section 3.4 and Annex 6.2.
- **Risk register**. All risks identified during the life cycle of the project are recorded here. It is described in Section 4.1 and Annex 6.3.
- **Quality metrics register**. It includes a set of indicators to be monitored during the project and simple, effective methods for measuring project quality performances. It is described in Section 2.1.3 and Annex 6.4.

The editors of these files are, in order of priority: PC < Risk & Quality Manager (RQM) < other Project Managers < Work Package Leaders (WPLs). If changes are made to these documents, they are systematically discussed during TMT meetings.

2.1.3. Quality metrics (QMe)

5G-IANA brings together many different areas of expertise. In this context, it is important to establish a clear list of assessment criteria so that the performance of each WP and each project activity can be evaluated. This is the goal of quality metrics (QMe).

According to PMBoK**,** "*A quality metric specifically describes a project or product attribute and how the control quality process will measure it.*" Quality metrics are used both in the QA process

(when writing deliverables or working on the project) and the QC process (when checking deliverables against quality metrics).

All QMes are fully described in the quality metrics register, which is an Excel file managed by the RQM throughout the duration of the project. For the sake of clarity, it is accessible to all project members on Redmine (Annex 6.4). This file is intended to evolve throughout the project and will naturally consider and aggregate some performance indicators used by project managers and WPLs (e.g., dissemination). Ultimately, this file should help the RQM to get a regular overview of the quality level of a variety of project attributes.

Table 2 below highlights a few QMes, for illustrative purposes.

Table 2: Preliminary Quality Metrics Register

ID	Related WPs	Type	Quality metric	Performance measure	Acceptance criteria
QMe1	All	Governance	Deliverable is submitted to the PC at least 5 working days before the deadline for submitting the deliverable to the EC	QMe1 = deadline: 5 - submission date	QMe1 > 0
QMe2	All	Governance	Respect of the deadline for submitting the deliverable to the EC	QMe2 = deadline - submission date	QMe2 >= 0
QMe3	WP2, WP3, WP4, WP5	Technical dissemination	Number of scientific publications	QMe3 = number of papers in scientific journals and international conferences (by year)	1st year: QMe3 >= 3 2nd year: QMe3 >= 4 3rd year: QMe3 >= 5
QMe4	All	Dissemination	Number of non-scientific publications	QMe4 = number of publications	1st year: QMe4 >= 1 QMe4 >= 2 for the next years of the project
QMe5	All	Dissemination	Number of public presentations	QMe5 = number of presentations	QMe5 >= 5 (annually)
QMe6	All	Dissemination	Popularity of public events	QMe6 = total number of participants / number of events	QMe6 >= 30 (annually) – starting from 2nd year
QMe7	All	Dissemination	Trade shows	QMe7 = number of exhibition stands related to 5G-IANA	QMe7 >= 1 (annually)
QMe8	WP7	Dissemination	Website popularity	QMe8 = number of users per month	1st year: QMe8 >= 50 2nd year: QMe8 >= 80 3rd year: QMe8 >= 100
QMe9	WP7	Dissemination	Social network impact	QMe9 = number of messages with the #5G-IANA hashtag on all social networks (from the start of the project)	QMe9 >= 600 measured at the end of the project
QMe10	WP7	Dissemination	Social network followers	QMe10 = number of followers on all social media accounts (from the start of the project)	QMe10 >= 300 measured at the end of the project
QMe11	WP7	Dissemination	Dissemination activity	QMe11 = number of dissemination materials produced in the project (videos, brochure, etc.)	QMe11 >= 3 (annually)
QMe12	WP7	Dissemination	Press releases & newsletters	QMe12 = number of press releases and newsletters	QMe12 >= 3 (annually)

2.1.4. Milestones

Complementary to the metrics mentioned above, milestones have been defined to ensure that the project progresses and is on schedule. These milestones are listed in the deliverable register file and are regularly checked by the PC and the TMT to ensure their successful completion. The milestones, as of November 2021, are listed in Table 3 below. As with the other registers, updates and additions of milestones can be made by the WPLs at the beginning of their WP.

Table 3: List of milestones

MS	Milestone name	Lead	WP	Due	Means of verification
MS4	Project effective kick-off	ICCS	WP1	M04	Minutes of the kick-off meeting.
MS2	Risk and quality procedures established	ICCS	WP1	M06	All necessary documentation and procedures are finalised by the TMT and adopted by WPLs. D1.1 and D1.2 submitted.
MS3	Mid-term progress report	ICCS	WP1	M21	Every activity report and cost justification for the first half of the Project are delivered and consolidated in accordance with the quality procedures – Submitted to the EC.
MS4	Project successfully completed (Final progress report)	ICCS	WP1	M42	All activities are finished and all activity reports are finished for final review by the EC.
MS5	5G-IANA Specifications defined	LINKS	WP2	M12	All WP2 deliverables successfully submitted.
MS6	First version of the 5G-IANA architecture development completed	UBI	WP3	M21	D3.1 deliverable successfully submitted.
MS7	5G-IANA architecture developed and integrated to the 5G experimentation platform	UBI	WP3	M36	D3.3-D3.4 deliverables successfully submitted and all integration actions were successfully verified.
MS8	First version of the 5G-IANA NetApps toolkit development	NXW	WP4	M25	D4.3 deliverable successfully submitted (also D4.1-D4.2 om M21).
MS9	NetApps toolkit developed (incl. VNFs Repository)	NXW	WP4	M36	All WP4 (D4.3-D4.4) deliverables submitted and all VNFs and NetApps were developed.
MS10	Validation methodology and plan ready	HIT	WP5	M22	D5.2 deliverable successfully submitted.
MS11	5G-IANA UCs validation results available and	HIT	WP5	M40	D5.3 submitted. Demos are achieved and all associated data

MS	Milestone name	Lead	WP	Due	Means of verification
	demonstrations completed				have been correctly collected to conduct final public acceptance assessment.
MS12	Sustainable business models ready	INC	WP6	M42	D6.5 deliverable submitted.
MS13	Communication and Dissemination Strategy ready	VICOM	WP7	M09	Strategy and plan for communication, dissemination and exploitation documented and adopted by the consortium D7.2, D7.4 and D7.6 submitted.
MS14	Final Event	ICCS	WP7	M42	The Final event is successfully organised.

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 contact details, are described in deliverable D1.1.

2.2.1 Operational bodies

Operational bodies are fully detailed in D1.1. The two most important decision-making bodies in the context of quality management are:

- The **Project Coordinator (PC)**, ICCS, is responsible for the successful and smooth running of the entire project and coordinates the Project according to EC rules and the terms of the Grant Agreement and the Consortium Agreement. The PC has full authority over all aspects that may affect the quality of the project and is responsible in particular for: *(a)* chairing 5G-IANA decision-making bodies; *(b)* monitoring and controlling the deliverable drafting and submission processes.

- The **Technical Management Team (TMT)** monitors the operational execution of the project. It is chaired by the PC and is composed of the Four Managers and WPLs (D1.1). The Technical Coordinator (TC) (who coincides with the Technical and Innovation Manager) is also a key person responsible to monitor and align all technical activities across the Project, irrespective of WP/Task and Use Case.

The quality assurance roles in 5G-IANA are distributed to most of the participants according to their level of involvement and responsibilities. Especially, the Risk & Quality Manager (RQM) has an important role in quality management. All roles are summarised in Table 4 below. In addition, for the sake of convenience, the main project contacts that have a role (directly or indirectly) in quality management are listed in Table 5.

Table 4: Quality assurance roles in 5G-IANA

Body	Role in the project	Role regarding quality management
Work Package Leaders (WPLs)	- Act at WP level. - Are responsible for the executive management of the individual WPs. - Are supported by Task Leaders. - Are responsible for the final deliverables of the WP.	- Are part of the TMT.
Task leaders	- Act at task level. - Are responsible for the executive management of the individual tasks. - Are supported by Task Participants.	- Coordinate the preparation, quality control and submission of the deliverables related to their task.
Deliverable leaders (DLs)	- Are either task leaders or members of the TMT in order to ensure the proper communication of their activities. - Must ensure the entire life cycle of deliverables' development.	- Have the full responsibility for the deliverable production process with expected quality standards and for submitting them on time.
Task participants	- Contribute to the tasks to which they are allocated. - Must contribute to the project deliverables resulting from tasks that involve them.	- N/A
Testbed Leaders	- Act at site level. - Are the interfaces between the TMT and local-site teams. - Are responsible for the close linkage of 5G-IANA activities to the trial sites.	- Report to the TMT.
Use Case Leaders	- Responsible for the successful execution of each use case they are assigned with. - Are involved in the technical validation and demonstration of the seven use cases.	- Report to the WPL of WP5 and to the TMT.
Technical & Innovation Manager (UBI) (i.e., Technical Coordinator)	- Coincides with the Technical Coordinator role. - Crucial and active role in the overall coordination of the technical activities. - Acts at project level. - Leads the task related to Innovation Management (T1.2) to ensure that the project coordination develops favourable conditions for innovation and	- Is part of the TMT. - Quality control and overall risk management. - Monitoring and control of the production of deliverables.

	takes necessary actions to make certain that the innovations are effectively exploited after the end of 5G-IANA.	
Data Manager & Protection Officer (VICOM)	- Acts at project level. - Leads the Data Management related task (T1.3) and will ensure project coordination in terms of the collection, storage and handling of evaluation data, as well as their publication as part of the Open Research Data Pilot (ORDP). - Ensures adequate dealing with data privacy and data protection regulations, together with WP8.	- Is part of the TMT.
Risk & Quality Manager (NOKIA)	- Acts at project level. - May be involved at WP level (upon request or through the TMT meetings).	- Leads the Quality assurance and risk management (T1.4), thus ensuring high quality of deliverables and outcomes of the overall project targets. - Supports project coordination in achieving the milestones. - Acts in support to the TMT (in particular WPLs) for implementing the QMP and management of quality processes. - Is part of the TMT.
Communication Manager (VICOM)	- Acts as project level. - Leads the Dissemination and Exploitation WP (WP7) to ensure that the project is well coordinated for achieving excellent outreach with public events, scientific publications and presentations.	- Is part of the TMT.

Table 5: Main contact points having a role in Quality Assurance

Role	Leader	Deputy	Beneficiary
Project Coordination	Angelos Amditis	Eirini Liotou (Day to day project coordinator)	ICCS

Managers			
Technical & Innovation Manager	Dimitris Klonidis	Konstantinos Katsaros	UBI / ICCS
Communication Manager	Andrea Suárez García	Sevi Christoforou	VICOM / ICCS
Data Manager & Protection Officer	Andrea Suárez García	Eirini Liotou	VICOM / ICCS
Risk & Quality Manager	Markus Wimmer	Eirini Liotou	NOKIA / ICCS
Work package leaders			
WP1 - Project Coordination	Angelos Amditis	Eirini Liotou	ICCS
WP2 - Specifications	Edoardo Bonetto	Daniele Brevi	LINKS
WP3 - Architecture	Thanos Xirofotos	Dimitris Klonidis	UBI
WP4 - NetApps toolkit	Francesca Moscatelli	Gino Carozzo	NXW
WP5 - Validation and demos	George Karagiannopoulos	Manuel Fuentes	HIT / 5COMM
WP6 - Market strategy	Theodoros Rokkas	Ioannis Neokosmidis	INC
WP7 - Dissemination	Andrea Suárez García	Sevi Christoforou	VICOM / ICCS
WP8 - Ethics	Eirini Liotou	Andrea Suárez García	ICCS / VICOM

2.2.2 Strategic and decision-making bodies

These bodies are also fully described in D1.1. They have a general role in QA, as explained in Table 6 below.

Table 6: Strategic and decision-making bodies

Body	Role in project	Role regarding quality management
General Assembly (GA)	Ultimate decision-making body of the 5G-IANA consortium, consisting of at least one representative per beneficiary.	Validate actions if the grant agreement is affected.
Steering Committee	Responsible for the proper execution and implementation of the decisions of the GA.	Propose internal quality processes, common templates and communication tools.
External Advisory	Formed by external experts on specific topics who will regularly	Provides 5G-IANA with a high-quality technical expertise.

Board (EAB)	advise project contributors on their work.	

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 Deliverables

Deliverables are official documents that are formally submitted to the EC. They are listed in Section 3.4.

2.3.1.1 General recommendations

All content generated through 5G-IANA must be fully consistent with the scope of the project and with the expected impact of the task with which it is associated. In particular, high quality of text and figures is critical. Some good practices regarding form and style while drafting deliverables are:

- Use of the Project templates. Microsoft Word should preferably be used.
- Purpose of the document and an initial Table of Contents (ToC) defined before starting work on the content of the document.
- A complete Executive Summary of the entire document.
- Proofreading and language check.
- Figures and tables should be relevant and have appropriate titles. Captions should be inserted using the automatic numbering in Microsoft Word.
- Cross-referencing of section numbers must be used to avoid generating errors following text updates.

To ensure high-quality content, DLs and contributors must liaise and communicate efficiently and regularly. Lapses must be relayed to the WPLs as well as the PC. The text should be relevant and must reflect the vision of the project.

2.3.1.2 Deliverable types and dissemination levels

All deliverables have a type and a dissemination level. DLs should consider these key characteristics before the drafting process.

Table 7: 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.

Table 8: 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

2.3.1.3 Deliverable structure

Microsoft Word Templates

All Microsoft Word templates are available on the Redmine platform (Annex 6.5). Their use is mandatory for all deliverables. Deliverables must not override the structure defined in the templates. These templates include a document control sheet (Annex 6.1) that serves as a change tracking system. These templates are structured as follows:

- Cover page
- Control sheet
- Table of contents
- List of figures (if not empty)
- List of tables (if not empty)
- List of abbreviations (if not empty)
- Executive summary
- Introduction
    - Project introduction (required if public deliverable)
    - Purpose of the deliverable (i.e., reference to select the content)
    - Intended audience
- Content
    - A ToC and a high-level description need to be defined before writing
- Conclusion
- Annexes (if not empty)

Naming convention

All deliverables should be named using the following structure: “5G-IANA - DN.N - Name - vX.X.docx”.

2.3.1.4 Deliverable life cycle

WPLs are responsible for the entire monitoring of the activities related to a deliverable, including quality aspects and the respect of deadlines. DLs are responsible for the execution of the activities related to a deliverable. WPLs report the progress to the TMT following the guidelines and timeframe set out in this document. The complete deliverable life cycle is described in Table 9 below. These elements also describe the processes related to the handling of deliverable files and their owners. Peer reviewing activities are defined in the next chapter.

If there is a conflict, problem or need for assistance in any of the steps described below, then the DL can interact with the WPL, which in turn can involve the RQM.

Table 9: Deliverable life cycle & process owners

Deadline	Owner	Actions	Supporting tools
At any time	WPL	→ Responsible for the respect of deadlines and the monitoring of the deliverable progress throughout its life cycle.	Redmine: Deliverable register, e-mails
6 months before deadline	DL	→ Provides deliverable purpose and the audience before any other section.	Redmine: Draft version folder
5 months before deadline		→ Completes ToC – up to Level 3 with high level description. → With all task contributors: 1. Agree on ToC. 2. Share drafting responsibilities between contributors.	
Writing process		→ Monitors progress continuously, corrects bugs and ensures consistency across contributions. → Regularly interacts with WPL. → Iteratively updates: purpose – audience – conclusion – executive summary.	
3 months before deadline	WPL	→ Finds two peer reviewers not contributing to the deliverable with the support of the RQM. A third reviewer may be appointed by the RQM if needed (this may include the RQM him/herself). → Informs peer reviewers about the review date.	Redmine: Deliverable register, e-mails
2 months before deadline	DL	→ Merges input from all contributors and performs final editing of the first draft. → Consolidates the deliverable. The DL may optionally decide to conduct a WP internal review. → Notifies the WPL by e-mail when consolidation is	Redmine: Draft version folder, e-mails

		done.	
1 month before deadline		→ Launches peer review.	
20 days before deadline	Reviewers	→ Send comments to DL.	
5 working days before deadline	DL	→ Takes into account reviewers' comments. → Creates a final version of the deliverable and uploads it to the folder named Final version. → Sends the final version to the WPL, the RQM and the PC.	Redmine: Final version folder, e-mails
2 working days before deadline	PC < RQM < WPL	→ Final check of the deliverable file before submission. → Last-minute changes are managed by the WPL, with the assistance of the RQM.	
Deadline	PC	→ Submits the deliverable to the EC.	EC portal (unless printed copies are requested)

2.3.2 Internal reporting

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 Redmine and the project contact database.

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 D1.1.

Each meeting is led by a Chairperson, who is usually the initiator of the meeting, or appointed by the initiator, for example a WPL. The Chairperson is responsible for producing the meeting minutes using the corresponding template. The Chairperson distributes the meeting minutes to attendees for review within 10 days. If there are any comments, the chairperson introduces them in the document and shares a reviewed version of the minutes. Attendees have again 10 days to provide feedback. If there are no comments, the minutes are considered accepted and they are shared with the PC by the Chairperson, and through Redmine. As an alternative a meeting may be recorded after the consensus of all participants. In this case the record file is uploaded at Redmine within 2 days after the meeting. Meeting categories are defined in D1.1.

The meeting minutes' template is available in Redmine and its use is mandatory for all partners. All meeting minutes' documents should be named using the following structure: "yyyy mm dd - 5G-IANA - meeting name - vX.X.docx".

2.3.3 Dissemination activities

Task Leaders and WPLs have to inform the Communication Manager and the WPLs about intended dissemination activities. A reference to the project (name, grant agreement number) must be made in all communication materials. For a scientific publication, this might be, for instance:

> *"The authors acknowledge support from 5G-IANA, which has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101016427."*

Regarding presentations, Microsoft PowerPoint templates (Annex 6.5) must be used.

Depending on the nature of the dissemination activity, the QMP establishes the following timeframes for internal communication (Table 10):

Table 10: Dissemination activities

Type	Notification	Person to notify	Comment
Scientific or technical publications	60 calendar days in advance	Task and work package leaders	Test beds may be booked for other activities and projects, so early notification is required.
Events involving the presentation of a demonstration or development work related to a testbed site.	at least 60 calendar days in advance	Testbed leaders	These communication activities imply a coordination between testbed and use case leaders, and the TMT.
Press releases, articles, interviews and presentations	at least 7 calendar days in advance	Communication Manager	

Dissemination reporting tool. WP7 leader is responsible for developing the dissemination reporting tool that is shared with all partners. Partners record all results of their dissemination efforts in this tool.

Dissemination guidelines. All the external communication of the project results follows the guidelines established by the EC as stated in article 29 of the Grant Agreement. This article sets mandatory rules regarding the use of the European emblem, the information on the EU funding, the disclaimer excluding Commission responsibility and presents the consequences of non-compliance.

2.3.4 Financial reporting

The financial management is carried out by the PC. Each member of the Consortium must provide every six months a periodic financial report to declare the actual project costs (including the personnel and other costs) incurred during the execution of the project for each WP, explaining the nature of the mentioned costs. WPLs and the PC review the reports and verify that the work has been properly carried out.

At the end of each reporting period (M21, M42), all partners are required to provide a financial statement to the PC. The template will be available on time, financial data are entered manually, and overall figures are generated automatically by predetermined formulas. All partners submit their financial statements to ICCS electronically no later than 30 days after the end of the reporting period. After gathering all partners' inputs, ICCS will fill in the portal session previously opened by the EC. The financial data entered into the portal must be verified accurately by each partner, validated and signed electronically only by the authorised representative (PFSIGN). Afterwards, the PC will submit them to the EC on behalf of the consortium partners.

The due date of the financial reports is 60 days after the end of each reporting period. The established meetings' scheme will ensure the follow up of these reports as a priority task and dedicated meetings (or conference calls) will be set 2 months prior to the end of each reporting period (M21 & M41) to monitor the development of the report and data collection.

3. QUALITY CONTROL ACTIVITIES

3.1. Deliverable life cycle progress

Each step of the processes described in the previous chapter have to be completed according to an established timeframe and corresponds with a percentage of advancement as described in Table 11 below. These percentages can be used as a standard reference to concretely qualify the state of a deliverable.

Table 11: Deliverable life cycle progress (percentage)

Advancement	Name	Description
10%	First draft of the deliverable's ToC completed	Corresponds to the preparation of the first table of contents. It includes the overall deliverable scope, the scope of each section and indicates the partner in charge of preparing each section.
40%	Half of the sections are completed	Corresponds to the completion of 50% or more of the sections drafted in the ToC. This state of advancement has to be reported by the DL to the Task and WPLs, and the WPL reports this to the TMT.
80%	Deliverable content completed	Corresponds to the completion of all the content of the deliverable. This also includes the WP internal review steps, which are the responsibility of the DL. The deliverable is available for peer-review. This state of advancement has to be reported by the leader of the deliverable to the Task and WPLs, and the WPL reports this to the TMT.
90%	Peer review completed	This state corresponds to the completion of the peer review of the deliverable, by two project members that didn't participate in the creation of the document. This step has to be completed 20 days before the submission deadline. The peer-reviewers need to fill Table 13 Table 13: Peer review evaluation table and send it to the DL for consolidation and revision for the final version.
100%	Deliverable submitted to the EC	This state corresponds to the submission of the deliverable to the EC by the PC. The PC will perform a final check and submit the deliverable to the EC according to the established deadline.

3.2. Peer review process

All deliverables will be peer-reviewed by two experts within the consortium. To this matter, the RQM has developed a deliverable register to have a view on all deliverables, their status, and

the reviewers that are allocated. Before this process is carried out, a WP internal review, managed by the DL, is carried out in order to obtain a consolidated version. The peer review process is presented in Table 12 below.

Table 12: Peer Review Process

When	What	Owner	Supporting tools
3 months before the submission deadline	The WPL selects two peer reviewers, with the assistance of the RQM if needed.	WPL	WPL updates the deliverable register file accordingly
3 months before the submission deadline	The WPL notifies the peer reviewers about their assignment with an indicative date to start the review.	DL	E-mail
Any time	Peer reviewers can consult the deliverable register file to see their assignments as well as an overview of the deliverable properties.	Peer reviewers	Redmine
1 month before the submission deadline	The DL uploads the deliverable to be reviewed on Redmine and formally assigns it to reviewers. Reviewers can edit and comment the document.	DL	Redmine, with the "add reviewers" option, deliverable register file
Maximum 20 days before the submission deadline	Each peer reviewer returns a review form to the DL via Redmine. The deliverable itself must be directly commented with the "Track Changes" option in Microsoft Word and sent back to the DL. Peer reviewers may contact the DL or consult the RQM if needed.	Peer reviewers	Redmine If needed: "Track Changes" comments on Microsoft Word
5 working days before the submission deadline	The DL, assisted by the contributors who will focus on their own sections, finalises the deliverable based on the comments received.	DL	Redmine

3.3. Peer review evaluation table

To review a deliverable, each reviewer completes a "review form", stored on Redmine (Annex 6.6). This review form contains:

- The "peer review evaluation table" as shown in Table 13, which may be updated with specific evaluation criteria, depending on the deliverable technical requirements.
- A free evaluation field.

Table 13: Peer review evaluation table

Criteria	Definitely	Satisfactorily	Somewhat	Not at all	Not applicable
Deliverable matches the description of the task it relates to					
Objectives are clear and in line with the planned task activities					
Issues at project level are properly treated (e.g., conflict with other WPs)					
Authors responds to readers' needs (defined through deliverable objectives)					
Technical approaches used are appropriate					
Content is well organised					
Issues raised are relevant					
Achievements are clearly stated					
Contents contribute to the state of the art					
Conclusions (if any) are valid					
Deliverable is complete (no major parts missing)					
Deliverable is formally correct (aligned with the quality management plan)					
Peer reviewers and WPLs are free to add specific evaluation criteria to a deliverable according to its technical content					

3.4. List of deliverables

The complete list of deliverables, with additional information, is available in the deliverable register Excel file on Redmine. Table 14 shows an extract as of November 2021.

Table 14: List of deliverables

Del. No.	Deliverable Name	WP	Lead	Diss. level	Type	Delivery date
D1.1	Project management plan	1	ICCS	PU	R	M06

D1.2	Quality management plan	1	NOKIA	PU	R	M06
D1.3	Innovation management plan	1	UBI	PU	R	M09
D1.4	Data management plan	1	VICOM	PU	ORDP	M09
D1.5	Data management plan V2	1	VICOM	PU	ORDP	M21
D1.6	Innovation management report	1	UBI	PU	R	M42
D2.1	Specifications of the 5G-IANA architecture	2	LINKS	PU	R	M12
D3.1	Initial consolidated report on the 5G-IANA architecture elements	3	UBI	CO	R	M21
D3.2	Initial report on the integration of the 5G experimentation platforms	3	NOKIA	CO	R	M27
D3.3	Final consolidated report on the 5G-IANA architecture elements	3	UBI	CO	R	M36
D3.4	Report on the 5G experimentation platforms integration and testing	3	NOKIA	CO	R	M36
D4.1	First report on 5G-IANA NetApp Toolkit and VNFs Repository development	4	NXW	CO	R	M21
D4.2	First report on intelligent NetApps and 5G-IANA UCs development	4	HIT	CO	R	M25
D4.3	Final report on 5G-IANA NetApp Toolkit and VNFs Repository development	4	BYL	CO	R	M36
D4.4	Final report on intelligent NetApps and 5G-IANA UCs development and integration	4	HIT	CO	R	M36
D5.1	Initial validation KPIs and metrics	5	FSCOM	PU	R	M16
D5.2	Validation methodology	5	FSCOM	PU	R	M22
D5.3	Technical validation and demonstration of the UCs	5	HIT	CO	R	M40
D5.4	Public acceptance assessment	5	VICOM	PU	R	M42
D6.1	Market analysis and initial business models	6	INCITES	PU	R	M18
D6.2	Business models for 5G-enabled Automotive service provisioning	6	INCITES	CO	R	M24
D6.3	5G-IANA micro-projects integration report	6	ICCS	PU	R	M30
D6.4	Techno-economic analysis and sustainability of 5G-IANA business models	6	INCIT	CO	R	M42
D6.5	5G-IANA micro-projects services report	6	ICCS	PU	R	M42
D7.1	Brand identity and guidelines	7	VICOM	PU	DEC	M06
D7.2	Communication strategy and plan	7	VICOM	PU	R	M09
D7.3	Communication strategy and plan V2	7	VICOM	PU	R	M21
D7.4	Communication tools	7	VICOM	PU	DEC	M09
D7.5	Communication tools V2	7	VICOM	PU	DEC	M21
D7.6	Dissemination plan	7	ICCS	PU	R	M09
D7.7	Exploitation plan	7	INCIT	CO	R	M21
D7.8	Report on the dissemination activities	7	ICCS	PU	R	M42

D7.9	Report on international cooperation and liaison activities	7	LINKS	PU	R	M42
D7.10	Exploitation report	7	INCIT	CO	R	M42
D7.11	Standardisation activities, EU policies and regulations recommendations	7	FSCOM	PU	R	M42
D8.1	Ethics requirements	8	ICCS	PU	R	M06

4. CONTINGENCY PLAN

4.1. Risk management

Risk management is led by the PC, the relevant task leaders and the TMT. The RQM monitors risk management processes throughout the project duration to ensure low exposure to risk and the highest possible quality of 5G-IANA outcomes.

Risks are assessed according to their severity, occurrence probability and detectability, as detailed in D1.1. 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: RPN = S x O x 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.

The following measures are foreseen to mitigate these risks:

- Disastrous, severe, moderate: regular monitoring – contingency plans and countermeasures applied by TMT at a very early stage when the risk is identified.
- Slight, or insignificant, or for the ones that cannot be foreseen at this stage: TMT will ensure early identification by way of the regular TMT meetings and the internal project reports provided every six months.

In order to regularly monitor the status of the existing risks, and possibly add new ones, a risk register has been established by the RQM (available on Redmine, see Annex 6.3). The RQM ensures that this file is updated throughout the life cycle of the project. New risks are presented and discussed during TMT meetings, and existing risks are systematically discussed. Particular attention will be given to risks that are assessed as having a high RPN. This procedure ensures a continuous monitoring of the project risks and enables taking preventive and corrective actions.

Table 15 below lists the top 5 risks that are in the risk register as of November 2021. This list is based on D1.1 and will evolve throughout the project.

Table 15: Preliminary list of critical risks for implementation

Potential failure mode (risk)	S	P	O	RPN	Risk mitigation measures	WP	Potential failure mode (risk)
Discrepancies in the technical visions: Project delays, etc.	9	4	4	144	Frequent communication within WPs (through meetings, telcos, etc.) and at the TMT level to resolve issues. Good cooperation between PC, TM, TMT and the Consortium.	WP1 WP2 WP3 WP4	Project Coordinator (ICCS)

Legal/Institutional restrictions imposed in the execution of the trials.	9	3	5	135	Both, the data collection and the 5G-IANA trials will be handled in an ethical manner and based on the National and European legislation. The data collection procedure will be planned within 5G-IANA thoroughly by its GA.	WP5	WP5 Leader (HIT)
Poor match between project outcomes and market needs, that can lead to poor adoption of project outcomes.	7	4	4	112	The market potential is high for the moment; the Technical & Innovation Manager will take input for market needs from WP6 and will guide the other WPs to match the market needs. The exploitation plan will be adapted to match the market needs.	WP6	WP6 Leader (INC)
Frequencies for NOKIA testbed are granted on a half-year basis by German mobile operators and may get retracted.	8	7	2	112	Continuous contacts with mobile operators' authorities. Execution of the demonstrations in a smaller scale. Looking for alternative frequency bands.	WP5	Testbed owner (NOKIA)
Specifications and requirements of 5G-IANA not adequate for the development phase.	4	5	5	100	The specification activities and the development activities are planned with a partial time overlap in the scheduling. This will allow interaction among the two activities and ease the identification of possible not adequate aspects in the specifications.	WP2 WP3 WP4	WP2 Leader (LINKS)

4.2. Non-compliance

Partners shall follow the procedures and guidelines set out in the 5G-IANA Quality Plan and meet the obligations defined in the Grant Agreement and Consortium Agreement. In case of a partner's non-compliance with the Quality Plan, Grant Agreement or Consortium Agreement, WPLs discuss the non-compliance with the partner and together agree upon corrective measures. If the partner fails to comply, the WPL may take the issue to the PC, who will issue a formal warning to the partner. If the partner still does not comply with the agreed corrective measures, the PC takes the issue to the General Assembly. Consequences may involve a re-allocation of the partner's tasks and budgets or the dismissal of the partner from the consortium.

4.3. Grant Agreement amendment

The conditions and procedures for a grant agreement amendment are set in article 55 of the Grant Agreement, and more details are given in D1.1.

Amendments to the contract may be proposed by any partner or group of partners, who then submit a written proposal to the PC. Such a proposal includes:

- Current status of the contract that should be changed.
- Proposed changes.
- Justifications for the amendment.
- Impact of the changes on the project plan.

5. CONCLUSION

This document, the quality management plan (D1.2), covers all procedures, control measures and operating practices intended to ensure that all activities in 5G-IANA are carried out with a high standard of quality. It complements the project management plan (D1.1) and must be carefully examined and 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-IANA.

6. ANNEXES

6.1. Document control sheet

Dissemination level:	Choose an item.
Work package:	WPx
Task:	Tx.y
Deliverable lead:	Organization
Version:	Vx.y
Submission date:	DD/MM/YYYY
Due date:	DD/MM/YYYY

Version history			
Version	**Date**	**Modified by**	**Summary of changes**

Peer review		
	Reviewer name	**Date**
Reviewer 1		DD/MM/YYYY
Reviewer 2		DD/MM/YYYY

6.2. Deliverable register

Deliverable info					Deadlines			Contributors					
Del. No.	Deliverable Name	WP	Dissemination level	Type	Delivery date	Date	Remaining days	Leader	Contact person	Reviewer 1	Reviewer 2	Status	Quality metric QMe1
D1.1	Project management plan	1	PU	R	M06	30/11/2021	1	ICCS	Eirini Liotou (ICCS)	Andrea Suárez García (VICOM)	Dimitris Klonidis (UBI)	Ready for submission	0
D1.2	Quality management plan	1	PU	R	M06	30/11/2021	1	NOKIA	Markus Wimmer (NOKIA)	Eirini Liotou (ICCS)	Dimitris Klonidis (UBI)	Ready for submission	0
D1.3	Innovation management plan	1	PU	R	M09	28/02/2022	91	UBI					
D1.4	Data management plan	1	PU	ORDP	M09	28/02/2022	91	VICOM					
D1.5	Data management plan V2	1	PU	ORDP	M21	28/02/2023	456	VICOM					
D1.6	Innovation management report	1	PU	R	M42	30/11/2024	1097	UBI					
D2.1	Specifications of the 5G-IANA architecture	2	PU	R	M12	31/05/2022	183	LINKS				Initiated	
D3.1	Initial consolidated report on the 5G-IANA architecture elements	3	CO	R	M21	28/02/2023	456	UBI					
D3.2	Initial report on the integration of the 5G experimentation platforms	3	CO	R	M27	31/08/2023	640	NOKIA					
D3.3	Final consolidated report on the 5G-IANA architecture elements	3	CO	R	M36	31/05/2024	914	UBI					
D3.4	Report on the 5G experimentation platforms integration and testing	3	CO	R	M36	31/05/2024	914	NOKIA					
D4.1	First report on 5G-IANA NetApp Toolkit and VNFs Repository development	4	CO	R	M21	28/02/2023	456	NXW					
D4.2	First report on intelligent NetApps and 5G-IANA UCs development	4	CO	R	M25	30/06/2023	578	HIT					
D4.3	Final report on 5G-IANA NetApp Toolkit and VNFs Repository development	4	CO	R	M36	31/05/2024	914	BYL					
D4.4	Final report on intelligent NetApps and 5G-IANA UCs development and integration	4	CO	R	M36	31/05/2024	914	HIT					
D5.1	Initial validation KPIs and metrics	5	PU	R	M16	30/09/2022	305	FSCOM					
D5.2	Validation methodology	5	PU	R	M22	31/03/2023	487	FSCOM					
D5.3	Technical validation and demonstration of the UCs	5	CO	R	M40	30/09/2024	1036	HIT					
D5.4	Public acceptance assessment	5	PU	R	M42	30/11/2024	1097	VICOM					
D6.1	Market analysis and initial business models	6	PU	R	M18	30/11/2022	366	INC					
D6.2	Business models for 5G-enabled Automotive service provisioning	6	CO	R	M24	31/05/2023	548	INC					
D6.3	5G-IANA micro-projects integration report	6	PU	R	M30	30/11/2023	731	ICCS					
D6.4	Techno-economic analysis and sustainability of 5G-IANA business models	6	CO	R	M42	30/11/2024	1097	INC					

6.3. Risk register

Portal Id	Category	Potential failure mode (risk)	Potential effect of failure mode	Risk cause	Risk detection
1	Organisational	Discrepancies in the technical visions: Project delays, etc.	Incompatibility at integration level; Project delays.	Lack of common understanding of Project objectives.	During WP & TMT meetings (telcos); throughout the development phase of the Project.
10	Regulatory	Legal/Institutional restrictions imposed in the execution of the trials.	Non-compliance with open road testing.	Use case requirements' description.	Regulatory and legal compliance.
15	Exploitation	Poor match between project outcomes and market needs, that can lead to poor adoption of project outcomes.	No further development of project outcomes.	Increased competition, project outcomes are not covering market needs anymore.	Input regarding the project results from end-users.
12	Regulatory	Frequencies for NOKIA testbed are granted on a half-year basis by German mobile operators and may get retracted.	This may impact both the availability of carriers, and the available total bandwidth (i.e., max. available throughput rates).	German mobile operators.	NOKIA is in contact with mobile operators.
3	Technical	Specifications and requirements of 5G-IANA not adequate for the development phase.	Delays in the initiation of the rest of the technical works within WP3-WP4-WP5.	Poor coordination, monitoring or common understanding; Insufficient templates used for collection.	During WP2 and TMT meetings (telcos); throughout the development phase of the Project.
4	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.
9	Organisational (Evaluation)	Validation trials are not successful/Data cannot be used.	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.
16	Organisational (Dissemination & Exploitation)	Dissemination and communication have limited impact (stakeholders' engagement, publications, etc.).	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,	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.

Portal Id	S	P	O	RPN	Risk mitigation measures	Relevant WPs	Risk caretaker
1	9	4	4	144	Frequent communication within WPs (through meetings, telcos, etc.) and at the TMT level to resolve issues. Good cooperation between PC, TM, TMT and the Consortium.	WP1 WP2 WP3 WP4	Project Coordinator (ICCS)
10	9	3	5	135	Both, the data collection and the 5G-IANA trials will be handled in an ethical manner and based on the National and European legislation. The data collection procedure will be planned within 5G-IANA thoroughly by its GA.	WP5	WP5 Leader (HIT)
15	7	4	4	112	The market potential is high for the moment; the Technical & Innovation Manager will take input for market needs from WP6 and will guide the other WPs to match the market needs. The exploitation plan will be adapted to match the market needs.	WP6	WP6 Leader (INC)
12	8	7	2	112	Continuous contacts with mobile operators' authorities. Execution of the demonstrations in a smaller scale. Looking for alternative frequency bands.	WP5	Testbed owner (NOKIA)
3	4	5	5	100	The specification activities and the development activities are planned with a partial time overlap in the scheduling. This will allow interaction among the two activities and ease the identification of possible not adequate aspects in the specifications.	WP2 WP3 WP4	WP2 Leader (LINKS)
4	10	5	2	100	All development activities will be closely monitored at various levels (Task, WP, TMT) to ensure that the proposed architectural components are delivered according to the precise specifications. EC review feedback will be adhered to as closely as possible at all stages.	WP1 WP2 WP3 WP4 WP5	Technical Coordinator (UBI)
9	8	4	3	96	Multi-phase validation methodology. Trials and demos are implemented to ensure the data collected are according to expectations. Clear and comprehensive data management plan.	WP5	WP5 Leader (HIT)
16	8	4	3	96	KPIs are clearly defined and monitored. The Dissemination plan includes a sound selection of channels and planned activities to keep all stakeholders in the value chain informed on a regular basis. The plan will be re-evaluated periodically and updated as needed. Encourage the submission of papers around specific targeted events. Identify relevant deliverables that could be candidate topics. Use meetings as internal information channel for reminders.	WP1 WP6 WP7	WP7 Leader (VICOM)

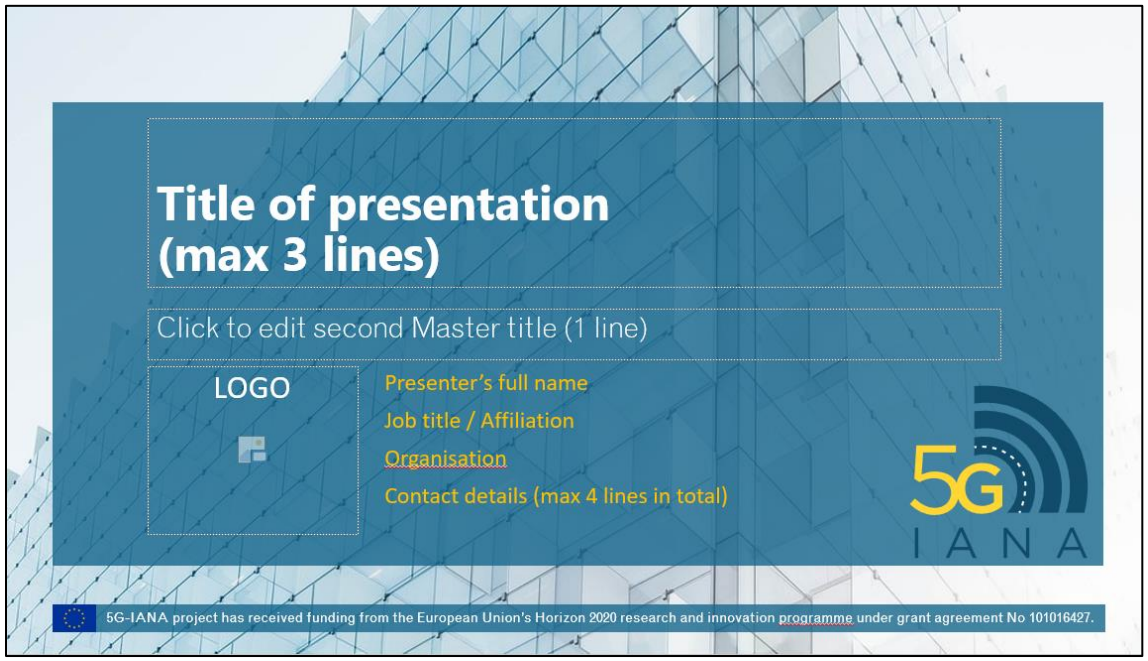
6.4. Quality metrics register

ID	Related WPs	Type	Quality metric	Responsible / Watcher	Performance measure	Acceptance criteria
QMe1	All	Governance	Deliverable is submitted to the PC at least 5 working days before the deadline for submitting the deliverable to the EC	WPL	QMe1 = deadline: 5 - submission date	QMe1 >= 0
QMe2	All	Governance	Respect of the deadline for submitting the deliverable to the EC	ICCS	QMe2 = deadline - submission date	QMe2 > 0
QMe3	WP2, WP3, WP4, WP5	Technical dissemination	Number of scientific publications	UBI	QMe3 = number of papers in scientific journals and international conferences (by year)	1st year: QMe3 >= 3 2nd year: QMe3 >= 4 3rd year: QMe3 >= 5
QMe4	All	Dissemination	Number of non-scientific publications	VICOM	QMe4 = number of publications	1st year: QMe4 >= 1 QMe4 >= 2 for the next years of the project
QMe5	All	Dissemination	Number of public presentations	VICOM	QMe5 = number of presentations	QMe5 >= 5 (annually)
QMe6	All	Dissemination	Popularity of public events	VICOM	QMe6 = total number of participants / number of events	QMe6 >= 30 (annually) – starting from 2nd year
QMe7	All	Dissemination	Trade shows	VICOM	QMe7 = number of exhibition stands related to 5G-IANA	QMe7 >= 1 (annually)
QMe8	WP7	Dissemination	Website popularity	VICOM	QMe8 = number of users per month	1st year: QMe8 >= 50 2nd year: QMe8 >= 80 3rd year: QMe8 >= 100
QMe9	WP7	Dissemination	Social network impact	VICOM	QMe9 = number of messages with the #5G-IANA hashtag on all social networks (from the start of the project)	QMe9 >= 600 measured at the end of the project
QMe10	WP7	Dissemination	Social network followers	VICOM	QMe10 = number of followers on all social media accounts (from the start of the project)	QMe10 >= 300 measured at the end of the project
QMe11	WP7	Dissemination	Dissemination activity	VICOM	QMe11 = number of dissemination materials produced in the project (videos, brochure, etc.)	QMe11 >= 3 (annually)
QMe12	WP7	Dissemination	Press releases & newsletters	VICOM	QMe12 = number of press releases and newsletters	QMe12 >= 3 (annually)

6.5. Templates

Three template categories are available on Redmine:

- Meeting minutes/Various documents (Microsoft Word)
- Deliverables (Microsoft Word)
- Presentations (Microsoft PowerPoint)



6.6. Review form

Criteria	Definitely	Satisfactorily	Somewhat	Not at all	Not applicable
Deliverable matches the description of the task it relates to					
Objectives are clear and in line with the planned task activities					
Issues at project level are properly treated (e.g. conflict with other WPs)					
Authors responds to readers' needs (defined through deliverable objectives)					
Technical approaches used are appropriate					
Content is well organised					
Issues raised are relevant					
Achievements are clearly stated					
Contents contribute to the state of the art					
Conclusions (if any) are valid					
Deliverable is complete (no major parts missing)					
Deliverable is formally correct (aligned with the quality management plan)					