



Satellite and Terrestrial Network for 5G

D1.1

Project Handbook

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List of Acronyms

5GPPP	5G Public-Private Partnership
AB	Advisory Board
CFS	Certificate on the Financial Statements
CA	Consortium Agreement
DoW	Description of Work
EC	European Commission
GA	General Assembly
HYR	Half-Year Report
IR	Internal Report
MoM	Minutes of Meeting
PC	Project Coordinator
PM	Project Manager
SaT5G	Satellite and Terrestrial Network for 5G
SC	Steering Committee
SWP	Sub-Work Package
SWPL	Sub-Work Package Leader
ToC	Table of Contents
TM	Technical Manager
WP	Work Package
WPL	Work Package Leader

Executive Summary

The Project Handbook details the governance and management structure that is going to be followed for the successful management and delivery of SaT5G. It also provides guidance on tools for communication and planning and quality assurance procedures.

The Project Handbook will be updated during the course of the project when appropriate to reflect changes that need to be captured as identified by the General Assembly, Management and Technical Group as well as the Steering Committee.

1 Introduction

This handbook specifies the management structure, procedures and available tools for the implementation of the SaT5G project. The document provides all information required to access the available tools, understand and implement the procedures and clarify roles and responsibilities to be carried out during the project. In particular, the document is organised as follows:

Section 2 specifies the project management structure including roles and responsibilities.

Section 3 describes the project tools for communication, management and planning.

Section 4 describes the quality assurance procedures that will be followed to ensure that all deliverables are consistent and of high quality.

Section 5 details the risk management procedures.

Finally, Section 6 concludes the document.

2 Project Management Structure

The SaT5G project management structure is depicted in Figure 2-1. The roles of each element of the management hierarchy are described in the following subsections.

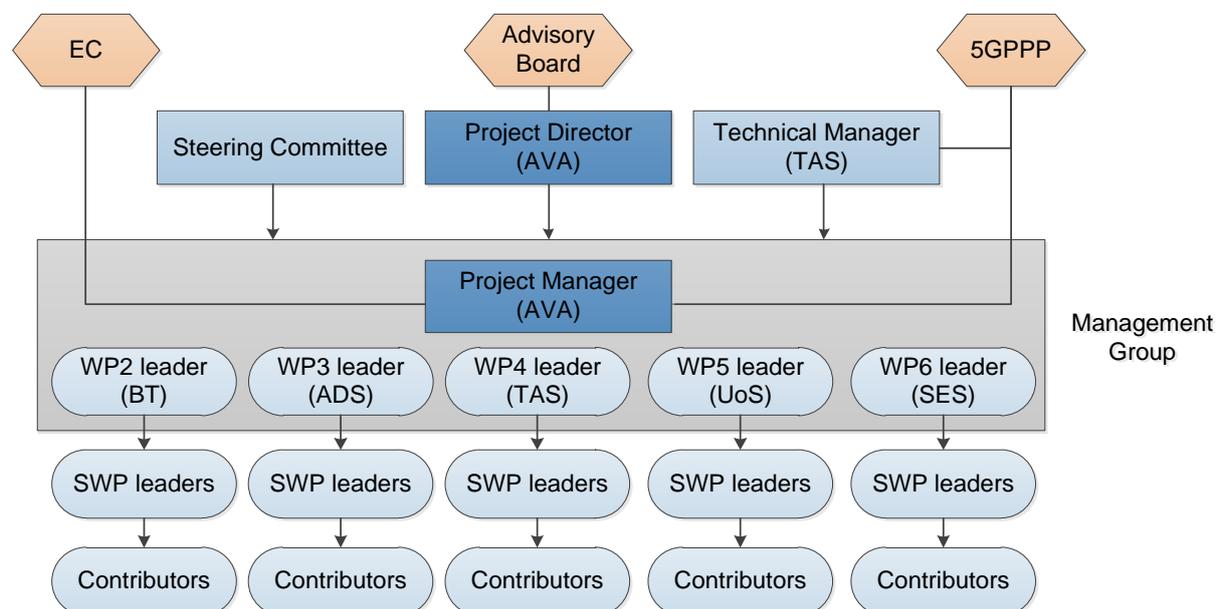


Figure 2-1: Project Management Structure

2.1 Project Coordinator (PC) and Project Manager (PM)

Avanti Communications is the Project Coordinator (PC) and responsible for providing internal project management on behalf of the consortium to ensure the project successfully delivers the required work within the given time and budget.

The PC is responsible for:

- Being the legal entity acting as the intermediary between the partners and the EC;
- Monitoring compliance by the partners with their obligations;
- Keeping the address list of partners and other contact persons updated and available;
- Collecting, reviewing and submitting reports, other deliverables and specific requested documents to the EC;
- Preparing the meetings, proposing decisions and preparing the agenda of General Assembly meetings, chairing the meetings, preparing the minutes of the meetings and monitoring the implementation of decisions taken at meetings;
- Transmitting promptly documents and information connected with the project to any other partner concerned;
- Administering the financial contribution of the EC to the partners;
- Providing the partners (upon request) with official copies or originals of documents that are in the sole possession of the PC when such copies or originals are necessary for the partners to present claims.

The PC will appoint a Project Director, who will chair the General Assembly, Steering Committee, EC Review Meeting, and External Advisory Board meetings; and a Project Manager (PM) who will be responsible for the day-to-day management and will act as the main point of contact for internal and external issues.

The role of the PM includes:

- To be a reference point for all consortium activities;
- To hold responsibility for preparing and submitting management and progress reports to the EC;
- To ensure project deliverables submitted in a timely manner and in accordance with the Description of Work (DoW);
- Coordinate the various stages in the development of the project with the support of Management Group and Work Package Leaders;
- Manage the project budget and EC payments;
- Escalate any project issues and risks for attention of the Project Director and the Steering Committee if needed.

2.2 The Technical Manager (TM)

Thales Alenia Space France has the role of the Technical Manager for the project. The TM responsibilities are:

- Supervising the overall technical progress of the project;
- Coordinating all technical WPs, such as WP 2, 3, 4 and 5;
- Screening, controlling and finally streamlining the development output of the WPs concerning the different research pillars to ensure successful integration into the different test platforms;
- Consolidating all technical results through review of the simulation, validation and demonstration activities;
- Reviewing the technical reports to ensure clarity in presenting the progress beyond state of the art;
- Providing technical relationship and coordination activities with other relevant research projects in 5GPPP;
- Organising and arranging the consolidation of technical results to be promoted towards the targeted standardisation organisations and international fora;
- Representing the project in the 5GPPP Technology Board;
- Taking lead in the coordination of the project participation in the 5GPPP Working Groups.

2.3 The General Assembly (GA)

The General Assembly (GA) is the decision-making body of the consortium with representation from all project partners. The GA is free to act on its own initiative to formulate proposals and take decisions in accordance with the procedures set out in the Consortium Agreement (CA).

The following decisions shall be taken by the GA:

- Proposals for changes to Annexes 1 and 2 of the Grant Agreement to be agreed by EC;
- Modifications to Background IP included in Attachment 1 of the CA;
- Additions to the list of third parties included in Attachment 3 of the CA;
- Withdrawal of a partner from the consortium and the approval of the settlement on the conditions of the withdrawal;
- Identification of a breach by a partner of its obligations under this CA or Grant Agreement;
- Declaration of a partner to be a Defaulting Party and remedies to be performed by a Defaulting Party;
- Termination of a Defaulting Party's participation in the consortium and measures relating thereto;
- Proposal to the EC for a change of the Project Coordinator;
- Proposal to the EC for suspension of all or part of the project;
- Proposal to the EC for termination of the project and the CA.

The GA will have a physical meeting every 6 months to review the progress of the project, deliverables and milestones as well as discuss any problems that have arisen. In the first year of the project the consortium has decided to hold additional GA meetings to ensure coordination between the various work package activities.

The meeting schedule agreed so far by the GA is shown in the table below. This schedule will be reviewed in subsequent GA meetings to confirm dates and locations and ensure it is well aligned with project activities and milestone achievements.

Table 2-1: General Assembly meeting schedule

Meeting	Tentative Date	Tentative Location
GA Meeting 1	26-27 June 2017 (M1)	London, UK
GA Meeting 2	6-7 September 2017 (M4)	Toulouse, France
GA Meeting 3	22-23 November 2017 (M6)	Munich, Germany
GA Meeting 4	Early March 2018 (M10)	Barcelona, Spain (TBC)
GA Meeting 5	Late May 2018 (M12)	Luxembourg City, Luxembourg (TBC)
Review Meeting 1	<i>September 2018 (M16)</i>	<i>Brussels, Belgium</i>
GA Meeting 6	Mid November 2018 (M18)	TBD
GA Meeting 7	Late May 2019 (M24)	TBD
GA Meeting 8	October 2019 (M29)	Surrey, UK (TBC)
Review Meeting 2	<i>February 2020 (M33)</i>	<i>Brussels, Belgium</i>

2.4 Steering Committee (SC)

The Steering Committee (SC) consists of one senior representative from each of the following organisations who are leading work packages (WPs).

The SC role is to provide strategic direction, make strategic decisions for the project and resolve escalated disputes. The SC may also approve GA decisions; however decisions that affect partners who are not represented at the SC will only be sanctioned with agreement from those partners, or by the GA.

The SC meetings are chaired by the Project Director but the PM and TM will be invited to join. These meetings will be a mixture of physical and audio conference meetings; the audio conferences will take place on a monthly basis and the physical meetings about every 6 months and will be co-located with GA meetings.

2.5 Management Group

The day-to-day management of the project will be carried out by the Management Group, comprising all Work Package Leaders (WPLs) and led by the PM.

The Management Group will be responsible for:

- Discussing the progress of every WP;
- Review the project Risk Register to update risks and also capture new ones that need to be tracked;
- Decide on issues that need to be escalated to the SC and GA.

The Management Group will have audio conference calls every two weeks and physical meetings co-located with the GA meetings when needed.

2.6 Technical Group

The Technical Group consists of the TM and representatives from the following partners:

- Technical representative from the PC;
- WP5 Sub-Work Package Leaders (SWPLs) linked to the testbeds (UoS, ZII and UOULU);
- Main contributors to the testbeds (iDR, GLT, QUO);
- WP3 WPL (ADS);
- WP4 SWPLs (TAS, i2CAT, OA, TNO).

The Technical Group will be responsible for:

- Handling of the technical solutions that involve several WPs and/or partners, especially related to the WP3, 4 and 5:
 - Understanding of the technical issues with respect to project goals;
 - Arbitrate technical solutions.
- Handling of external requests (Advisory Board, 5GPPP, EC) having impact of the technical options:
 - Understanding of the technical impacts with respect to the DoW;
 - Arbitrate technical solutions.
- Drive technical excellence within the project through:
 - Consolidating the demonstration goals for WP5;
 - Ensuring deliverables reflect this with clarity on work beyond state-of-the-art.

The Technical Group will have audio conference calls every two weeks and physical meetings co-located with the GA meetings when needed.

2.7 Work Package Leaders (WPLs)

Each WPL will be responsible for:

- Co-ordinating the WP and task activities by organising the work in line with the DoW;
- Leading conference calls and if necessary physical meetings with the WP participants to coordinate and track the work progress;
- Monitoring and reporting periodically on WP and task progress;
- Coordinating production of all WP milestones and deliverables;
- Participating in the Management Group progress calls and meetings to report on their respective WPs.

Audio conference calls will be organised within each WP by the WPL and their frequency will depend on the work that has to be carried out.

2.8 Sub-Work Package Leaders (SWPLs)

The SWPLs will co-ordinate and lead the work in their Sub-Work Package (SWP), liaising closely with the WPLs and SWP contributors.

This will be carried out through informal reporting (e.g. regular telephone conferences) to confirm that plans are being followed, highlighting specific technical progress of all tasks and the contributions of all partners working on the SWP.

SWPLs will attend all technical meetings organised by the WPL and may be invited by the WP to participate in the Management Group meetings.

2.9 External Advisory Board (AB)

The External Advisory Board (AB) is a selection of experts associated with major stakeholders of the SaT5G ecosystem whose role is to provide advice on how best to maximise the potential for SaT5G in standards as well as exploitation beyond the life of the project.

The AB will typically consider (using techniques such as SWOT analysis) topical issues relevant to the project research and the eventual exploitation of the project. The AB will also review the proposed technical solutions and business value propositions corresponding to the various deployment scenarios proposed by the partners.

The PC shall communicate with the AB every six months or when strategic project consultation is needed.

3 Project Communication and Planning Tools

3.1 Project Collaborative Platform

The project will use the online collaboration tool “Projectplace” to support project coordination, virtual meetings and document management and exchange within the team.

A project specific space has been set up and can be accessed at:

<https://service.projectplace.com/#project/1505772904>

All partners will be invited to join Projectplace and gain access to the project space. A separate document providing guidance on how to use Projectplace will be distributed to all partners at a later stage.

3.2 Project Mailing Lists

The following mailing lists will be created for effective communication between the partners:

- sat5g-all@avantiplc.com: for email exchange involving the whole SaT5G team.
- sat5g-sc@avantiplc.com: for email exchange involving the SaT5G SC.
- sat5g-admin@avantiplc.com: for email exchange involving administrative, legal and financial information.
- sat5g-wp2@avantiplc.com: for email exchange involving discussion for WP2.
- sat5g-wp3@avantiplc.com: for email exchange involving discussion for WP3.
- sat5g-wp4@avantiplc.com: for email exchange involving discussion for WP4.
- sat5g-wp5@avantiplc.com: for email exchange involving discussion for WP5.
- sat5g-wp6@avantiplc.com: for email exchange involving discussion for WP6.

There will be separate mailing lists created for the tasks of WP4. There will be no separate mailing lists for the SWPs of other WPs, so for technical discussions that are only relevant to the participants of a single task, the email subject should be preceded by an appropriate heading [Task X.Y], where X.Y represents the task number.

The partners should notify the PM in case members need to be added or removed from the mailing lists during the course of the project.

3.3 Management and Planning Tools

The management and planning tools are tailored to the project needs to ease the planning and tracking of resources, activities and risks during the project. All the tools will be available in Projectplace.

3.3.1 Action Register

The action register is an MSEXcel based tool including a list of actions with assigned responsibilities, description of the actions, status, deadlines and comments to enable the effective tracking of identified actions during the project.

In order to efficiently track the actions, the project will retain an action register per WP and an overall action register that will include actions at the Management Group, Technology Group, GA and SC level.

The template is common for all action registers and a screenshot filled in with two examples is shown in Figure 3-1.

The action registers are available in:

- SaT5G Action Register: Projectplace > Documents > 7. Project Management
- WP2 Action Register: Projectplace > Documents > 5. Work Packages > WP2
- WP3 Action Register: Projectplace > Documents > 5. Work Packages > WP3
- WP4 Action Register: Projectplace > Documents > 5. Work Packages > WP4
- WP5 Action Register: Projectplace > Documents > 5. Work Packages > WP5
- WP6 Action Register: Projectplace > Documents > 5. Work Packages > WP6

The process for updating the action registers is as follows:

- The maintenance of the SaT5G and individual WP action registers is the responsibility of the PM and WPLs respectively. No other member should make changes to the action registers.
- All project members have read access to the action registers.
- The action registers should be revised during every meeting (physical or audio conference). The SaT5G action register will be revised during every Management Group, Technology Group, GA and SC meeting and the individual WP action registers after every WP meeting. The update process entails:
 - The status of all actions already identified in the register is reviewed and updated if applicable. The “Comment” column can be used to provide details on the progress of the action when applicable.
 - New actions identified are added to the register and are an action ID number, responsible partner (or several responsible partners if relevant), the type of action (which identifies the type of activity), the WP (and SWP if applicable) the action refers to, a description of the action, deadline and status (Open). The “Comment” column can be used to explain details related to the action when applicable.
- If during the action register review the responsible for a specific action reports satisfactorily about its completion, the action status is updated to “Completed” and the “Date closed” field is completed. The action that justifies the status change is clarified in the “Comment” field.
- The status of an action that is under the responsibility of a partner not present in the meeting must not be updated in that meeting.
- Completed actions must not be deleted from the action log after their completion, but can be filtered out using the appropriate column filter.
- The responsible partner (or partners) of an action must be a project partner, subcontractor, project officer or combinations of them.
- The possible types of actions are the following:
 - MGT: management actions
 - TECH: actions related to the technical work in the project
- The possible values of the field “Status” are:
 - Open: the action has been identified, but not yet addressed.
 - Ongoing: the action has been already addressed but not yet sufficiently to close the action.
 - Completed: the action has been addressed successfully and is considered as closed.
 - Outdated: the issue that created the action is not anymore relevant.

Action ID	Responsible Partner(s)	Type	WP	SWP	Description	Deadline	Date closed	Status	Comment
1	AVA	MGT	1	1	AVA to organise the kick-off meeting	10/06/2017		Ongoing	
2	TAS	MGT	1	3	TAS to draft a presentation on Standardisation Action Plan for the kick-off meeting	16/06/2017		Open	
3									
4									

Figure 3-1: Screenshot of the SaT5G action register

3.3.2 Risk Register

The risk register is an MSExcel based tool that will be used to manage project risks, according to the procedures set out in Section 5. A screenshot of the risk register is provided in Figure 3-2.

The risk register is available in Projectplace > Documents > 7. Project Management.

The PM is the only project participant allowed to edit the risk register; however, any project participant shall identify risks and communicate them to the PM at any time.

Risk ID	WP	SWP	Date	Risk Description	Probability (1-5)	Impact (1-5)	Severity (P*I)	Mitigation Measure	Risk Owner	Status	Date closed	Notes
1												
2												
3												
4												
5												
6												

Figure 3-2: Screenshot of the SaT5G risk register

3.3.3 Resource Usage Tracker

The resource usage tracker is an MSExcel-based tool to track the resource usage in the project on a quarterly basis. This tool contains a number of interconnected spreadsheets as follows:

- “Description”: it provides a description for every sheet included in the tool and specifies editing writes and change propagation.
- “Timeplan”: it provides an overview of the project plan related to project months up to SWP level.
- “PM_Overview”: it provides an overview of the planned effort (in terms of person-months) per partner as a total and per WP and SWP.
- “1. AVA”: it provides for each project quarter the planned effort share for each SWP and WP for the partner Avanti and empty cells where the partner will insert its actually spent number of person-months per quarter and other direct costs (travel, equipment, other goods and services and subcontracting). The sheet includes an automatic calculation of cumulative planned vs. actually spent effort for each project quarter and generates automatically figures that show how the actually spent effort curve per quarter matches the planned effort curve per quarter.

- There is one sheet named after each partner with the same functionality as the “1. AVA” sheet.
- “Total_Effort_per_WP”: this sheet shows the project planned effort per quarter and WP and SWP and calculates automatically from the partner-dedicated sheets, the cumulative effort spent by the team up to each quarter in each WP and SWP. Additionally, it automatically generates comparative curves between planned vs. actually spent effort per WP in each project quarter.
- “Total_Effort_Overview”: this sheet calculates automatically from the partner-dedicated sheets the planned vs. actually spent effort in each quarter by each partner in each WP and SWP.
- “Total_Direct_Other_Overview”: this sheet provides the planned budget for travel, equipment, goods and other services and subcontracting and has empty cells where each partner shall insert the cumulative actual costs already achieved in the current quarter.

15 days after the end of each quarter, the PM will ask partners to provide the actually spent effort and other direct cost data corresponding to the quarter. This process aims to enable the PC to track the usage of resources effectively and proactively respond to issues. Outputs from the tool will also be used to populate the half-year reports that will be periodically submitted to the EC.

The PM will be responsible for updating the tool using the inputs provided by the partners. The updated tool will be saved in Projectplace > Documents > 7. Project Management.

	Duration	Total Planned PM	Total Actual PM	Actual vs. Planned PMs per Quarter																			
				Q1		Q2		Q3		Q4		Q5		Q6		Q7		Q8		Q9		Q10	
				Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual
WP1	30.00	28.00	0.00	2.80	0.00	2.80	0.00	2.80	0.00	2.80	0.00	2.80	0.00	2.80	0.00	2.80	0.00	2.80	0.00	2.80	0.00	2.80	0.00
1.1	30.00	20.00	0.00	2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00		2.00	
1.2	30.00	0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
1.3	30.00	2.00	0.00	0.20		0.20		0.20		0.20		0.20		0.20		0.20		0.20		0.20		0.20	
1.4	30.00	6.00	0.00	0.60		0.60		0.60		0.60		0.60		0.60		0.60		0.60		0.60		0.60	
WP2	19.00	8.50	0.00	2.88	0.00	2.81	0.00	0.34	0.00	1.88	0.00	0.00	0.00										
2.1	10.00	1.00	0.00	1.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
2.2	8.00	1.50	0.00	0.38		0.56		0.00		0.00		0.00		0.00		0.00		0.13		0.38		0.00	
2.3	8.00	3.00	0.00	0.75		1.13		0.00		0.00		0.00		0.00		0.00		0.38		0.75		0.00	
2.4	8.00	3.00	0.00	0.75		1.13		0.00		0.00		0.00		0.00		0.00		0.38		0.75		0.00	
2.5	15.00	0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
WP3	18.00	4.00	0.00	0.33	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.67	0.00										
3.1	18.00	0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
3.2	12.00	2.00	0.00	0.17		0.50		0.50		0.50		0.33		0.00		0.00		0.00		0.00		0.00	
3.3	12.00	2.00	0.00	0.17		0.50		0.50		0.50		0.33		0.00		0.00		0.00		0.00		0.00	
3.4	12.00	0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
3.5	12.00	0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
WP4	24.00	6.00	0.00	0.00	0.00	0.75	0.00	0.00	0.00														
4.1	24.00	0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.2	24.00	3.00	0.00	0.00		0.38		0.38		0.38		0.38		0.38		0.38		0.38		0.38		0.00	
4.3	24.00	0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.4	24.00	0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.5	24.00	0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.6	24.00	3.00	0.00	0.00		0.38		0.38		0.38		0.38		0.38		0.38		0.38		0.38		0.00	
WP5	24.00	6.00	0.00	0.00	0.00	0.17	0.00	0.50	0.00	0.33	0.00	1.00	0.00	4.00	0.00								
5.1	6.00	1.00	0.00	0.00		0.17		0.50		0.33		0.00		0.00		0.00		0.00		0.00		0.00	
5.2	12.00	0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
5.3	10.00	2.50	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.83		1.67	
5.4	3.00	0.50	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.17		0.33	
5.5	3.00	0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
5.6	2.00	2.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		2.00	
WP6	30.00	11.00	0.00	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00
6.1	30.00	2.00	0.00	0.20		0.20		0.20		0.20		0.20		0.20		0.20		0.20		0.20		0.20	
6.2	30.00	2.00	0.00	0.20		0.20		0.20		0.20		0.20		0.20		0.20		0.20		0.20		0.20	
6.3	30.00	3.00	0.00	0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
6.4	30.00	3.00	0.00	0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Travel	N/A	167,600	N/A																				
Equipment	N/A	110,000	N/A																				
Consum	N/A	130,000	N/A																				
Subc. FCS	N/A	10	N/A																				
				Other Actual Direct Costs (in Euros)																			
				Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10										

Figure 3-3: SaT5G Resource Usage Tracker (example spreadsheet for Avanti)

3.3.4 Dissemination and Standardisation Planning Tool

The dissemination and standardisation planning tools are MSeExcel based tools to plan and track dissemination and standardisation activities. Both tools are saved in Projectplace > Documents > 5. Work Packages > WP6.

All project participants are allowed to enter potential events into the dissemination planning tool, leaving the field “Attending partners” empty and setting the “Status” field as “Proposed”. The proposed

events will be reviewed by the SC, GA and Management/Technical Groups and dissemination activities will be planned. When the project attends an event or has a successful publication, this should be communicated to the WP6.3 leader to update the tool.

Figure 3-4 and Figure 3-5 present the two tabs of the dissemination planning tool that are used to capture conferences/workshops and publications respectively.



Conferences & Workshops													
Date of Event	Conference/Workshop/Event	Location	Priority (L/M/H)	Addressed Group	Type of Contribution	Contributing Partners	Title of Contribution (Tentative)	Attending Partners	Paper/Abstract Due Date	Notification of Acceptance	Camera Ready Due Date	Status	Date

Figure 3-4: Dissemination Planning Tool – Conferences and Workshops



Journals/Megazines/Press											
Journals/Megazines/Press	Priority (L/M/H)	Addressed Group	Type of Contribution	Contributing Partners	Title of Contribution (Tentative)	Paper/Abstract Due Date	Notification of Acceptance	Camera Ready Due Date	Status	Date	

Figure 3-5: Dissemination Planning Tool – Publications

Following the same procedure, partners should identify potential standardisation contributions in accordance to the Standardisation Action Plan and list them in the standardisation planning tool. Figure 3-6 shows a screenshot of the standardisation planning tool. Partners should regularly update the WP6.2 leader about the status of their contributions so that the tool is kept up to date.



Standardisation Activities								
Date of Event	Standardisation Group	Location	Type of Contribution	Contributing Partners	Title of Contribution (Tentative)	Attending Partners	Status	Date

Figure 3-6: Standardisation Planning Tool

4 Quality Assurance

This section includes a plan to achieve high quality project documentation by adhering to the following guidelines:

- Use of specific types of documents that are fit for purpose;
- Use of common convention for naming and versioning of documents;
- Use of document templates by all partners;
- Following a rigorous deliverable review process.

The following subsections expand on these quality assurance guidelines.

4.1 Document Types

Several types of documents will be generated during the project lifetime to serve different purposes. All reports and text documents must be prepared in MSWord version 2010 and above, while presentations must be prepared in MSPowerPoint version 2010 and above. For formal submission of documents and presentations, PDF format is mandatory.

The document types that will be used are:

- **Deliverables:** formal task outputs that capture the results of the work undertaken as part of the various WPs. These documents are part of the contractual deliverables to the EC and should be submitted by the specified deadline through the Participant Portal.
- **Reports to the EC:** management reports that reflect the overall progress of the project and need to be submitted to the EC by the specified deadline through the Participant Portal. These include half-year reports, the period report covering Months 1-13 and the final report of the project.
- **Internal Reports (IR):** documents internal to the consortium that can be used to develop contributions to project deliverables or to facilitate discussions around a specific subject. If the IR is to prepare contributions towards a project deliverable, the Table of Contents of the deliverable should be used with only the relevant sections populated. IRs can also be used as an interim report of a deliverable that is submitted at the end of a WP that runs for a long time. Although interim reports are not formally submitted to the EC, they might be shared with the project officer and the reviewers to demonstrate progress made or used in GA meetings for review and sign off.
- **Presentations:** presentations can be prepared both for internal and external audiences. The presentations that need to be shared with external parties should be in PDF format.
- **Meeting Agendas:** meeting agendas are necessary for the successful implementation of physical and audio conference meetings. A meeting agenda should include the planned schedule and items to be discussed, venue or audio conference details, list of participants and any other relevant information (such as suggested hotels). Draft meeting agendas for physical meetings should be distributed 14 days ahead of the planned meeting.
- **Minutes of Meetings (MoM):** MoM provide a summary of the discussions, decisions made and actions assigned during a project meeting. The MoM will be prepared by the partner chairing the meeting and should be uploaded to Projectplace and shared with meeting participants via email notification within 7 days after the meeting. Actions that have been assigned during the meeting should be summarised in the MoM but also included in the SaT5G or WP specific action register.
- **Innovation Factsheets:** two-page documents that present in a concise way the innovations (technical or business related) that come out of the various project tasks. Each WP will be responsible for creating these factsheets along with the project deliverables. Innovation factsheets will be shared with the project officer and reviewers to provide a snapshot of the project innovations but will also be disseminated in events to external audiences.

- **Publications:** this includes scientific papers in journals and conferences, book chapters, standards contributions, whitepapers, inputs to the 5GPPP WGs etc. These will be tracked in WP6.3 and their format will be externally defined.

4.2 Document Naming and Versioning Convention

Project document names and versioning will follow a common convention so that consortium members are able to identify the latest version of a document and get some essential information about it.

As a general principle, documents shall be named so that the following information can be distinguished:

- project acronym;
- type of document;
- editor;
- version.

The naming conventions for the various document types are presented in Table 4-1 to Table 4-4. Table 4-5 presents the versioning convention that will be used to distinguish between different document updates and versions. The company short names to be applied to the “Editor” field of a report name are those specified in Table 4-6.

Table 4-1: Deliverables and Internal Reports naming convention

ProjectAcronym_ReportNo.Editor.vX.Y [Status]	
ProjectAcronym	SaT5G
ReportNo	<i>For deliverables:</i> Dx.x, as identified in the deliverable list in the DoW <i>For internal reports:</i> IRx.y, where x refers to the WP to which the IR is relevant and y is an integer number to be used as a counter (+1) starting from 1, so that consecutively generated IRs are assigned consecutive values of y.
Editor	Partner short name responsible for editing the deliverable.
vX.Y	version X.Y where X is the major version identifier and Y is the minor version identifier.
Status	D: draft working version; if status is missing then it will be assumed the document is a draft. S: submitted to the EC. F: final version accepted by EC (after implementing potential amendments requested).

Table 4-2: Presentation naming convention

ProjectAcronym_PresentationName.Editor.vX [Status]	
ProjectAcronym	SaT5G
PresentationName	<i>For internal presentations:</i> ‘MeetingAcronym ¹ _WPNo’ for internal meeting presentations, indicating the short name of the relevant meeting and WP (or SWP) number. <i>For external presentations:</i> can be freely assigned.
Editor	Partner short name responsible for editing the presentation.
vX	X is the version identifier.
Status	D: draft working version; if status is missing then it will be assumed the presentation is a draft.

¹ For possible meeting acronyms please refer to Table 4-4.

ProjectAcronym_PresentationName.Editor.vX [Status]	
	F: final version to be used (necessary when the presentation is used for/submitted to external audiences)

Table 4-3: Innovation factsheet naming convention

ProjectAcronym_FS_WPX.Y_FactsheetTitle.vX [Status]	
ProjectAcronym	SaT5G
WPX.Y	Specifies the SWP that has studied the specific innovation.
FactsheetTitle	Describes the content of the innovation factsheet.
vX	X is the version identifier.
Status	D: draft working version; if status is missing then it will be assumed the document is a draft. F: final version for dissemination.

Table 4-4: Meeting agenda and minutes naming convention

ProjectAcronym_MeetingAcronym_Date.DocumentType [Status]	
ProjectAcronym	SaT5G
MeetingAcronym	KOM for kick-off meeting GA for General Assembly meeting followed by the meeting number, e.g. GA1. SC for Steering Committee meetings followed by the meeting number, e.g. SC1. MG for Management Group RM for review meeting, completed by the meeting number, e.g. RM1. For all other WP or internal meetings this can be assigned freely.
Date	Starting date of meeting in ddmmyy.
Document Type	Agenda for meeting agenda MoM for Minutes of meeting
Status	D: draft version; if status is missing then it will be assumed the document is a draft. F: final version

Table 4-5: Document versioning convention

Version identifier	Use of identifier
Major version identifier X	<i>For deliverables and internal reports:</i> The value 0 indicates that the document is a draft. The values 1 and above indicate consolidated versions e.g. submission for red team review, submission to EC etc. <i>For presentations and Innovation Factsheets:</i> Starting from the value 1, the identifier should increase every time the presentation is updated and shared with partners.
Minor version identifier Y	This identifier should be increased for relevant updates to the document, for example when new contributions have been integrated.

Table 4-6: Partner short names

Partner Number	Partner Short Name	Partner Full Name
1	AVA	Avanti Communications Ltd.
2	TAS	Thales Alenia Space France
3	UoS	University of Surrey
4	SES	SES Techcom SA
5	ADS	Airbus Defence & Space SAS
6	OA	OneAccess SA
7	TNO	Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek (TNO)
8	BT	British Telecommunications Public Limited Company
9	ZII	TriaGnoSys GmbH
10	BPK	Broadpeak
11	GLT	Gilat Satellite Networks Ltd.
12	iDR	VT iDirect Solutions Ltd.
13	IMEC	Interuniversitair Micro-Electronicacentrum IMEC VZW
14	i2CAT	Fundacio Privada i2CAT, Internet I Innovacio Digital A Catalunya
15	UOULU	Oulun Yliopisto (University of Oulu)
16	QUO	Quortus Ltd.

4.3 Document Templates

To ensure consistency of all project document outputs specific templates will be used. A template for each type of document presented in the previous section has been created and can be found in Projectplace > Documents > 7. Project Management > Templates. It is mandatory for all partners to follow the project templates.

Information about the various templates is presented in the subsequent subsections.

4.3.1 Deliverables

The deliverable template provides the basic structure to be shared by all deliverables. The elements of this template are:

- Cover page;
- Document history;
- Contributors;
- Table of contents;
- List of figures;
- List of tables;
- List of acronyms;
- Executive summary;
- Introduction;
- Main body of the deliverable split into one or more sections;
- Conclusions;
- References (if needed);
- Annexes (if needed).

The template also includes all pre-set styles that should be followed to ensure common formatting in all deliverables.

The template provides indications to the contributors and editors on the following points:

- **Deliverable No:** it must be edited in the cover page and the headers of the first and second page; it will automatically be populated in the rest.
- **Fields highlighted in yellow:** these are in the cover page of the deliverable and should be manually updated.
- **Actual delivery date:** it should be edited in the cover page.
- **Table of Contents:** it is generated automatically by using the heading formats provided in the document when creating sections and subsections. The Table of Contents must be however updated before saving.
- **List of Figures:** it is generated automatically by using the caption formats for figures provided in the document when creating new figures. The List of Figures must be however updated before saving. Referencing of figures must be done using the cross-reference tool of MSWord.
- **List of Tables:** it is generated automatically by using the caption formats for figures provided in the document when creating new figures. The List of Figures must be however updated before saving. Referencing of tables must be done using the cross-reference tool of MSWord.
- **List of References:** references shall be inserted in this list according to the IEEE conventions in referencing. When a reference is cited in the document body, the cross-reference tool of MSWord must be used.
- Description of expected content in relevant mandatory sections.

4.3.2 Half-year Reports

The half-year reports (HYRs) discuss the progress made in periods of 6 months. The PM will collect inputs from WP/SWP leaders and partners to complete the HYRs in due time.

The template for these reports includes all the mandatory elements of the deliverable template but has the following main body structure:

- 1 *Introduction*
- 2 *Main Progress and Achievements in the Reported Period*
 - 2.1 *WP1 Project Management*
 - 2.2 *WP2 Scenarios for Satellite Integration in 5G*
 - 2.3 *WP3 Integrated Network Architecture Design*
 - 2.4 *WP4 Research to Prototype Development*
 - 2.5 *WP5 Validation and Demonstration*
 - 2.6 *WP6 Dissemination, Standards and Exploitation*
- 3 *Project Status*
 - 3.1 *Status of Project Deliverables*
 - 3.2 *Accomplishment of Project Milestones*
 - 3.3 *Planned vs. Actual Effort*
 - 3.4 *Travel Costs*
 - 3.5 *Plan Deviations*
- 4 *Risk Management*

4.3.3 Periodic Management Reports

The project will deliver two periodic management reports (one per project reporting period) to be submitted within 60 days of the period end. The first periodic management report is due on M15, while the second one is due on M32. The structure of these reports is decided by the EC, but the following content is expected:

Periodic Technical Report

- **Part A** that is generated by the IT system based on the information provided by the project through the continuous reporting modules of the Participant Portal. This part contains:
 - Cover page;
 - A publishable summary;
 - Answers to the questionnaire covering issues related to project implementation and the economic and social impact of the project.
- **Part B** is the narrative part of the report including explanations about the work carried out by the project during the period. This is uploaded to the Participant Portal by the project.

Periodic Financial Report

- Individual financial statements from each partner (as per Grant Agreement Annex 4);
- Explanation of the use of resources and the information on subcontracting and in-kind contributions provided by third parties from each partner for the reporting period concerned;
- A periodic summary financial statement including request for payment (interim or balance depending on period);
- Certificate on the financial statements (CFS) for each partner (applicable for the final report and only for partners that have requested a total contribution of EUR 325,000 or more as reimbursement of actual costs and unit costs).

For the completion of these reports the PM will request inputs from the WP/SWP leaders and partners regarding the project progress but also financial statements and certificates (when needed).

4.3.4 Internal Reports

An empty list of IRs has been generated and made available in Projectplace > Documents > 7. Project Management. This list should be used to register every new IR that is created. The editor of the IR should fill in the register and assign the next available major identifier to the report.

The IR template is similar to the deliverable template and includes the following elements:

- Cover page;
- Document history;
- Contributors;
- Table of contents;
- List of figures;
- List of tables;
- List of acronyms;
- Executive summary;
- Introduction;
- Main body of the IR split into one or more sections;
- Conclusions;
- References (if needed);
- Annexes (if needed).

4.3.5 Recognising EU funding

The consortium should recognise EU funding by including specific text reference as well as the EU emblem in the following cases.

4.3.5.1 *Applications for IPR Protection of Results*

The following standard sentence should be included in each application filed by or on behalf of a partner:

"The project leading to this application has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 761413".

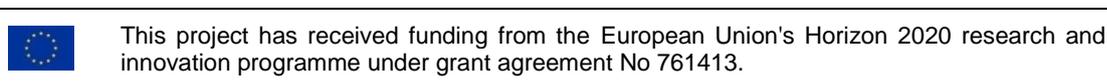
4.3.5.2 *Standards incorporating results*

If results are incorporated in a standard, the beneficiary shall ask the standardisation body to include the following statement in (information related to) the standard:

"Results incorporated in this standard received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 761413".

4.3.5.3 *Dissemination activities*

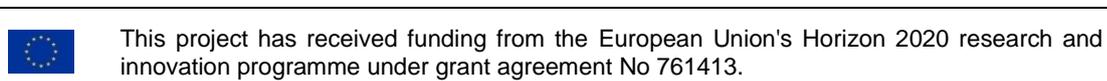
The following must be included in all dissemination activities:



In dissemination activities the consortium should also add a note that the results reflect the author's view and that the Commission is not responsible for any use that may be made of the information it contains.

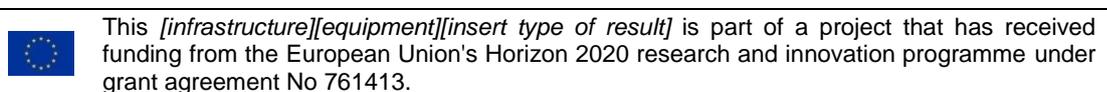
4.3.5.4 *Communication activities*

The following must be included in all communication activities:



4.3.5.5 *Infrastructure, equipment and major results*

The following must be displayed on all infrastructure, equipment and major results funded by the grant:



4.4 *Editing and Submitting Deliverables*

This section refers to all deliverables apart from the HYRs and Periodic Management Reports.

Each deliverable has an assigned editor who is responsible for creating the draft Table of Contents (ToC), assigning responsibilities relating to the deliverable in cooperation with the other task participants, collecting contributions and integrating them in the deliverable. Typically, the editor of the deliverable is the leader of the contributing SWP. For deliverables that rely on contributions from more than one SWP, the editor should be selected by the WP participants.

Contributions to the deliverable by each contributing partner can be delivered as an IR or by directly editing the draft deliverable document that is available on Projectplace. This should be agreed between the editor and contributors.

The following rules apply in the drafting of deliverables:

- The draft ToC is the starting point for all deliverables.
- For deliverables where several issues of the same document will be submitted at different points in time, a single working document will be kept in Projectplace. The version to be submitted will be the current status of the deliverable at the corresponding point of submission, after having passed the quality assurance process.
- When a contributor or the editor is going to update a deliverable the following steps must be followed:
 - First, the document must be locked in Projectplace;
 - The document is edited, applying all changes in change tracking mode;
 - The document is saved and changes are uploaded in Projectplace;
 - The document is unlocked in Projectplace.
- While the document is locked for editing by a partner, no other partner should make changes to the document.
- Every update in a deliverable must be recorded in the history of the document, even if those changes do not imply a version change; in this case, the changes shall be documented in the cell of the document history corresponding to the current version.
- Only the editor is allowed to change the version numbering of the deliverable and the history of the document.
- Documents should be clear and concise to enable easier review. Only the necessary information should be kept within the main body of the deliverable. When it is desirable to provide additional information, this should be done with the use of Annexes at the end of the deliverable.

When a deliverable is ready to be submitted to the EC the PM issues the major version v1.0 (or any subsequent major version if this is a re-submission), converts it to PDF and submits it through the Participant Portal.

4.5 *Deliverable Review Process*

The following measures will be implemented in the project for the purpose of scientific quality assurance of the project results and documentation:

- The technical overview of the deliverables is driven by the TM supported by the Technical Group. The TM or a representative of the Technical Group should be assigned to review deliverables before submission.
- Regular teleconferences within the various WPs will ensure the effective tracking of activities, identification of issues and action plans.
- Each WPL shall review the deliverables generated in the WP under his/her lead, except if he/she was directly involved in the writing of the deliverable.

- Each deliverable should undergo a red team review before submission. The draft deliverable should be completed and sent for red team review no later than 14 days before the submission deadline. The review team should provide their comments in tracked changes mode within 5 working days to the editor. The editor and contributors will then address the comments and proposed changes and prepare the final draft for submission.
- The red team review should consist of 3-4 people who have not worked directly on the deliverable to be reviewed. The partners will be expected to put forward appropriate people to act as reviewers for draft deliverables.

5 Risk Management

Figure 5-1 depicts the overall risk management process that will be followed in SaT5G. The goal of the risk management activities is to identify any risk that might affect the implementation and results of the project, track it and if possible take mitigation action against it.

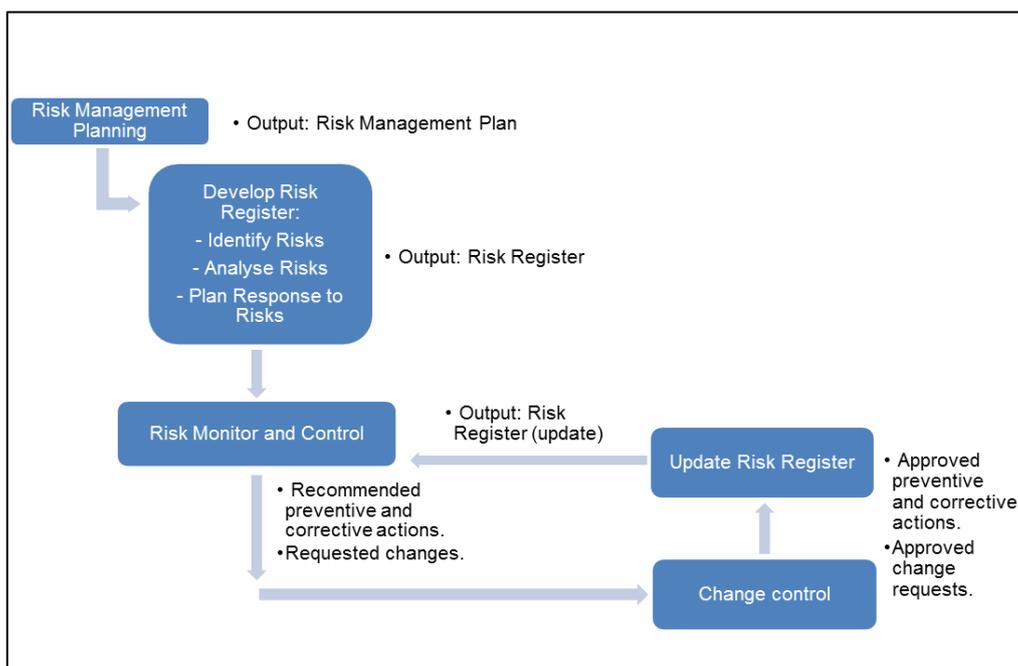


Figure 5-1: Risk Management Process.

5.1 Risk Management Planning

Risk Management Planning is the process of deciding how to approach, plan, and execute the risk management activities. The risk register captures the outcome of all risk management processes.

5.1.1 Definition of the Risk Probability and Impact

The types of risks identified for SaT5G are:

- Technical risks
- Management risks
- External risks

Each risk needs to be analysed and evaluated so that a risk probability and impact rating is assigned to it. For both the risk probability and impact there are 5 available ratings in the project:

Table 5-1: Ratings for risk probability and impact

Rating	Probability	Impact
1	Very Low	Very Low
2	Low	Low
3	Moderate	Moderate
4	High	High
5	Very High	Unacceptable

The risk impact is evaluated in terms of technical, cost and schedule implications and Table 5-2 shows the definition of impact scales.

Table 5-2: Risk impact matrix

Implication	Very Low	Low	Moderate	High	Unacceptable
Technical	Minimal or no impact in the activities	One minor activity impacted	More than one activities impacted with minor implication on testbed	Multiple activities impacted with major implication on testbed	Demo at the end of the project is not feasible
Cost	<2% cost increase	2-5% cost increase	5-10% cost increase	10-15% cost increase	>15% cost increase
Schedule	Minimal or no impact	Not able to meet intermediate deadline	Minor slip in deliverable or milestone deadline	Major slip in deliverable or milestone deadline	Not able to meet project deliverable or milestone

5.2 Development of Risk Register

5.2.1 Risk Identification and analysis

The first step in the risk management process is risk identification. This is done by all project members as they are reviewing documents/deliverables, discussing the progress of the project, engaging with the research community and other projects and following the latest advances in the sector.

When a new risk is identified the PM should be informed so that the risk can be discussed and captured appropriately in the risk register.

Risk analysis is the evaluation of the identified risks to determine the probability and impact rating for each of them and evaluate the risk severity. The severity of a risk is given by the product of its risk probability and risk impact rating. The risks with a severity higher than 9 are considered high and should be given attention.

Table 5-3: Risk severity assessment

		Risk Impact				
		1	2	3	4	5
Risk Probability	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

5.2.2 Risk Response Planning, Monitoring and Control

As soon as a risk has been identified and evaluated, the project needs to plan a response action. The response actions can be divided in four main categories:

- **Avoidance:** measures are taken so that the risk does not materialise;
- **Mitigation:** measures are taken to reduce the probability and/or impact as much as possible;
- **Transfer:** this refers to the transfer of the risk management to another party. Transferring liability for risk is most effective in dealing with financial risk exposure.
- **Acceptance:** in cases when risks have low severity and no measures can be taken against them, the consortium needs to monitor them to ensure that their severity remains low.

The PM in close cooperation with the GA, SC, Management and Technical Groups is responsible for developing and evaluating different risk handling strategies for the identified risks captured in the risk register.

Actions are assigned to various partners as appropriate and the PM is responsible for monitoring and controlling the performance of these actions.

The project should continuously review the risk register and follow up with the actions assigned. This includes both previously identified risks that should be reviewed regularly to update their status and response actions, as well as new risks that need to be analysed and tracked.

6 Conclusion

This document presented the management structure, procedures and available tools for the implementation of the SaT5G project. The contents of this handbook will be reviewed regularly and updated as decided by the PC, GA, Management/Technical Group and Steering Committee.