



H2020 5GASP Project

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Project Management Handbook

Abstract

This Management Handbook is a practical guideline to facilitate the management of the project for all 5GASP participants. Describes document repository, Management Structure and Procedures, Communication and Reporting.

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List of Acronyms

CEM - Community Engagement Manager
DM - Dissemination Manager
EB - Ethical Board
EC - European Commission
EM - Exploitation Manager
GA - General Assembly
IM - Innovation Manager
PCT - Project Coordination Team
PC - Project Coordinator
PIC - Project Implementation Committee
PS - Project Secretariat
QM - Quality Manager
STPM - Scientific and Technical Project Manager
SC - Scientific Coordinator
TC - Technical Committee
TM - Technical Manager
WP - Work Package

Executive Summary

This Management Handbook is a practical guideline to facilitate the management of the project for all 5GASP participants. It sets down and explains all contractual rules and management procedures. It also provides useful advices and management tools, which will help project participants to do what is required in due form and in due time.

1 Document Repository

The project has setup a collaborative workspace based on the ONLYOFFICE ¹software. The link to the document repository has been distributed to the partners together with invitations to individual project participants to join the repository. New accounts for the project partners will be created as needed, including re-arrangement of the existing repository users, which can be requested by contacting the project coordinator at any time. The document repository is only accessible with password.

The document repository includes the following sections:

- Contractual documents - Grant Agreement, Consortium Agreement, etc.
- Deliverables - completed, submitted, reviewed
- WP and task work spaces - to share and work collaboratively on respective documents, draft deliverables, concept papers, etc.
- Dissemination - to store and work together on dissemination items
- Templates & Support Documents - to include deliverable and presentation templates, project and partners' logos, etc.
- Meetings - with agendas and minutes from physical meetings, notes from audio conferences, action points agreed, etc.
- A contacts spreadsheet - containing the contacts (at least email) of all participants

The document repository structure will be extended as needed by the project consortium and individual partners for their work in the project as well as to serve as file sharing platform among the consortium members.

¹ <http://www.onlyoffice.com/>

2 Management Structure and Procedures

A collaborative project requires efficient and flexible management procedures as well as a well-structured project organisation, to ensure division of responsibilities among the partners as required by the project, precisely-defined decision making and self-assessment processes, proper information flow within the consortium, and communication towards the EC and the wider public. The project management structure and procedures, described in detail below, will be implemented in the scope of WP1, providing necessary resources for all related activities.

2.1 Project organization

Project management includes administration, organisation, and technical management. **ITAv** is the coordinator and is responsible for the overall project management. The project management's goal is to guarantee transparency and commitment to all engaged partners and thus facilitate an unobstructed and successful project evolution. It assures that the project will meet its objectives on time, within budget, and with outstanding quality results. The ultimate aim of the management structure is to achieve a flat and flexible hierarchy promoting the active involvement of all consortium members, exploiting in maximum the partners' expertise, and reducing decision-making time, which is crucial for achieving the project objectives.

2.1.1 Project Coordination Team (PCT)

The PCT is responsible for the planning, execution and control of the project. The PCT operates under the supervision of the Project Coordinator and encompasses the following activities:

- Administration and scientific coordination
- Implementation of all action plans
- Establishment of a budget and schedule-controlling system
- Implementation of a quality assurance system
- Guidance on Intellectual Property issues
- Development and maintenance of a communication and reporting attitude
- Development of efficient team structures to minimize the number of meetings while being flexible
- Creation of islands of creativity and adoption of a corporate venturing spirit
- Information sharing among the consortium members

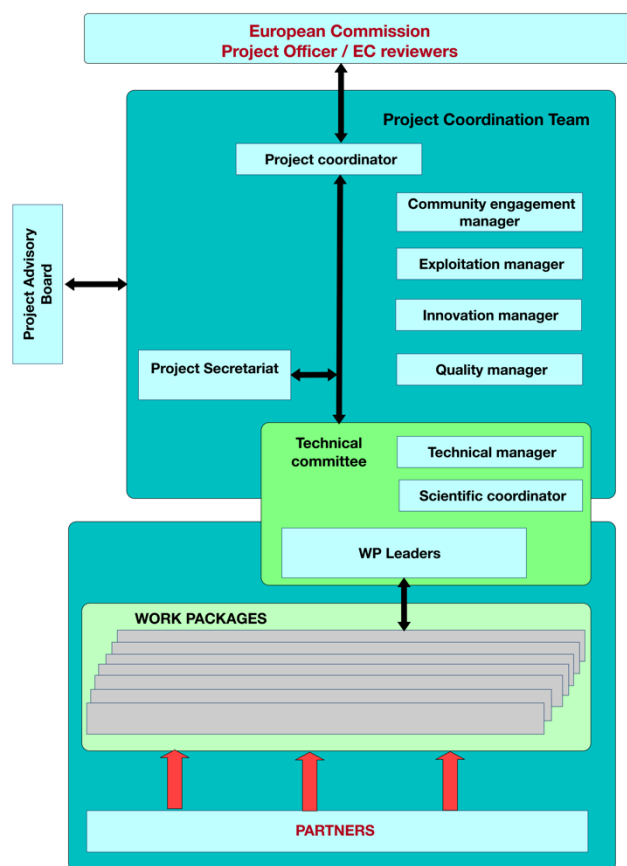


Figure 1 - Management Structure

The **Project Coordinator (PC)** is responsible for the overall management, communication and coordination of the project and assures in collaboration with WP Leaders the overall integration of the work packages. The PC chairs the two main project bodies, the PCT and the Plenary Board and is the only official interaction channel with the European Commission. Role Assigned to: Prof. Diogo Gomes from ITAv.

The **Technical Manager (TM)** chairs the Technical Committee, ensures that the scientific and technological objectives of the project are met and cooperates closely with WP Leaders for the scientific and technology coordination of the project. Role Assigned to: Dr. Christos Tranoris from UPatras.

The **Scientific Coordinator (SC)** will contribute with their extensive academic research experience for defining, validating and observing the progress of the project and overall scientific rigorousness of the project. Role Assigned to: Prof. Dimitra Simeonidou from UNIVBRIS .

The **Community Engagement Manager (CEM)** is responsible for disseminating the 5G open source repository and acts as the interface between the consortium and external open source groups from the international telecommunications' community. Role Assigned to: Cristian Patachia from ORO.

The **Exploitation Manager (EM)** ensures the correct execution of exploitation and business objectives and supports the partners in developing their individual plans. Role Assigned to: Dr Leonidas Lymberopoulos from Modio.

The **Dissemination Manager (DM)** is responsible for the dissemination activities taking place in the context of 5GASP and handles the execution of the whole dissemination plan, in both business and academic fields. Role Assigned to: Dr. António Skarmeta from OdinS.

The **Innovation Manager (IM)** is responsible for cultivating a suitable environment to encourage innovation within the consortium, to monitor and facilitate the innovation processes that will merge the technology with the market, leading to the release of a successful open source repository at the end of the project. The IM works closely with the TM and the CEM in order to combine technical and open source related aspects of the project. Role Assigned to: Vesselin Ardaunov from VMWare.

The **Quality Manager (QM)** is responsible for the implementation of the quality procedures defined in the Quality Plan and the verification of the project results. Role Assigned to: Noam Amram from BLB.

The **Project Secretariat (PS)** supports all partners by providing the following services: Financial Control, including monitoring of the Annual Cost Statements and providing feedback to the partners, tracking and execution of payments and obtaining audit certificates from partners as necessary, External relations, i.e. receiving and responding to all external requests regarding the project and Help Desk, providing feedback to the partners regarding project administrative issues. Role Assigned to: Cláudia Barbosa from ITAv.

2.1.2 Technical Committee

The Technical Committee (TC) is the project's technology driving force. It is led by the TM and consists of all WP Leaders. It is in charge of supervising the project technological progress/achievements, submitting proposals to the PC and Plenary Board upon all relevant technical issues such as: redirection of technical work in an Activity or WP, major transfer of resources across WPs or Partners, technological choices, changes in time plans, substitution or exclusion of an existing Partner, conflict resolution between different technological WPs.

All TC Members have a single vote. In case of equal votes, the vote of the TM is the decisive one.

2.1.3 Plenary Board

The Plenary Board consists of the representatives of all Partners, each having one vote. It is led by the PC, who has the decisive vote in case of equal votes. The Plenary Board meets at least twice a year to review and plan project work. Any partner may raise issues. Minor issues may be discussed and decided within this Board. Major issues will be escalated to the Project Coordination Team level.

2.1.4 Work Package Leaders

Work Package Leaders are responsible for managing their WP as a self-contained entity and integrating their work with the results of other WPs. Their responsibilities include coordinating, monitoring and assessing the progress of the WP to ensure that output performance, costs and timelines are met.

2.1.5 Community Engagement Committee

Coordinated by the CEM this committee will oversight the writing and enforcement of community guidelines that will assure the functioning of our public and open services, namely the NetApp Community² portal and NetApp Store³. Each partner will assign a person to be part of this committee.

2.1.6 5GASP Advisory Group

In order to maximize user influence on project development at all levels, an external Advisory Group will be set up, comprising prospective telecoms, SMEs, open source communities (e.g. ETSI MANO⁴), automotive OEMs (e.g. Navya⁵ or Milla Group⁶), ITS communities (e.g. ERTICO⁷) and other interested stakeholders. The project has contacted already some of these individualities.

2.1.7 Ethical Board

The creation of an Ethical Board (EB) ensures that project activities comply with good practice as well as with legal aspects of ethical, privacy and data protection issues. This implies obtaining expressed/written consent for the participation of stakeholders involved in project hackathons and research activities and providing for participants the opportunity to withdraw from such activities without any infringement of their dignity, privacy, social and professional standing.

In this regard, the ethical board will ensure that data gathering procedures proceed on the basis of consent forms that follow established ethical procedures as set by EU norms (e.g. European Directive 2001/20/EC in relation to informed consent). The EB will also be in charge of verifying the compliance of project activities with the requirements regarding ethical,

² <https://community.netapp.com/>

³ <https://automationstore.netapp.com/home.shtml>

⁴ <https://www.etsi.org/committee/nfv#>

⁵ <https://navya.tech/en/>

⁶ <https://millagroup.fr/>

⁷ <https://ertico.com/>

privacy and data protection issues throughout the project lifetime. Finally, the EB will assess the sensitivity of data contained in all deliverables before publication.

2.2 Project Management and Quality Assurance Activities

2.2.1 Communication and Information Flow

Information flow within the Project is ensured by:

- a. The exchange of emails and technical and business documents;
- b. Notification of relevant new publications;
- c. Reports from meetings, participation at events and external meetings.

All technical documentation generated by the project will be exchangeable in electronic format. Exchange of information will mainly occur by e-mail and file transfer over the Internet. Project communication uses mailing lists, a general mailing list (“all”) and Work-Package lists (“wpX”)

A web project document repository was created as described in section 1. Direct telephone calls will be used for urgent needs only. Urgent correspondence over e-mail will be sent with a request for explicit acknowledgement.

2.2.2 Meetings

The Technical Committee will meet every four months to monitor project progress. Plenary Board meetings will take place once a year. WP technical meetings will take place as often as necessary with a minimum interval of once a month. All meeting arrangements will be communicated to the PS, which will optimize the timing and location of meetings, by organizing more than one meeting in parallel, thus minimizing travel costs. Considering the current **pandemic scenario, meetings will take place online using online tools** such as Zoom. Being mostly a software driven project, integration meetings will be kept to minimum (only prior to public demonstrations), with all integration activities occurring online using distributed software development tools such as the ones being proposed by the project.

2.2.3 Measurement of Project Progress

Six-monthly control reports will be submitted by each partner to the Coordinator by the 1st week of each seventh month. They should list all activities, contributions, publications and meeting attendance details which can help in understanding the claimed effort and cost figures. Annual periodic progress reports will be the main reporting tool to the Commission as specified by the specific Horizon 2020 guidelines.

2.2.4 Quality Assurance

The QM will ensure that:

- a. The project performs well in terms of project management, communication between the consortium, partners’ engagement and commitment.
- b. The project schedule is followed and that any modifications are justified and under control.
- c. Every deliverable is of high quality and conforms to the plan.
- d. All problems are detected in time and resolved effectively.

2.2.5 Code of Conduct

A Code of Conduct will accompany the 5GASP community portal: NetAppCommunity.

5GASP NetAppCommunity will be a harassment-free experience for everyone, regardless of age, body size, visible or invisible disability, ethnicity, sex characteristics, gender identity and expression, level of experience, education, socio-economic status, nationality, personal appearance, race, religion, or sexual identity and orientation.

We pledge to act and interact in ways that contribute to an open, welcoming, diverse, inclusive, and healthy community.

2.2.6 Internal Reviewing Process

Each project deliverable is assigned to one leading responsible partner who assures that the content of the deliverable is consistent with the goals set and the work performed, is of high quality and delivered on time. In addition, each deliverable will be peer-reviewed throughout its development/authoring by three Internal Reviewers, who are not members of the development/authoring team but have expertise in relation to the deliverable. Peer reviewing will be based on pre-defined criteria and will ensure the delivery high quality results.

2.3 Decision making mechanisms

Throughout the project, the consortium will have to agree on and develop technical, scientific and exploitation ideas. Usually, an agreement on a related matter shall be reached first by informal contact, followed by official confirmation via electronic mail, letter or agreed written minutes. For important issues, the agreement may take the form of a short report that needs to be signed by those responsible for decision-making. Non-technical factors, such as resource allocation and contractual terms will also need to be agreed upon and documented in writing. Technical issues/conflicts within given contractual commitments that do not involve a change of contract, a change of budget and/or a change of resources/overall focus will be discussed/solved at the WP level first. Decisions will normally be taken by the responsible team members and organization bodies based on the description of work to be performed, as stated in the Grant agreement, the Consortium Agreement, the Description of Work and the Quality Plan, as communicated regularly, and the individual WPs or Tasks. In case there is a dispute between two or more team members and the decision being taken is unacceptable to partners found in minority positions, an escalation procedure will be followed.

2.4 Innovation Management combined with Community Engagement

To successfully bring 5GASP's creative ideas to life, an Innovation Management process is required to pave the way from concept to prototype development and eventually to the open source community. Innovation management will help the 5GASP consortium to grasp the opportunity and use it to create and introduce a new agile process for interoperable NetApps automated development. Within 5GASP, Innovation Management will not be just a series of activities, but a project culture that will be cultivated by the IM from the first day, creating a suitable environment to encourage innovation, to merge the technology with the NFV market, leading to the launch of a high-end open source codebase at the end of the project. To this end, an understanding of both the market and the technology are needed, which will be managed through the development of multi-functional teams, containing both engineers and business managers, who will comprise the innovation management team. This will be the role of the Community Engagement Committee, under the supervision of the IM and the CEM.

As a general rule, the 5GASP consortium will follow an open innovation approach, where members of the consortium collaborate extensively in their innovation process. Open innovation will help to gain access to important complementary information and will embrace idea harvesting from many sources. All members of the consortium, at every organisational level and with a variety of expertise, are expected to contribute creatively to the proposed development, marketing and community engagement activities. The challenges of this approach, such as finding suitable external communities and bodies, developing relational capabilities will be overcome by the complementary expertise of the consortium partners and its Advisory Board. Open innovation philosophy has a range of techniques to generate new ideas, including brainstorming sessions, virtual prototyping, cross-industry workshops, collaboration with external organisations and projects and a full chain of actors presented in the process. The proposed iterative approach will be realised in short cycles (agile development), allowing new data from the evaluations to be incorporated into the product development process, revising it whenever necessary. Throughout the entire Innovation Process, both the scientific community and the market are monitored in order to identify new opportunities and threats. This will allow the consortium to respond to external or internal opportunities during the project's lifetime and will add to the project's agility to accommodate really innovative solutions that will match emerging trends and needs at the actual time of implementation. Thus, the real potential of the final open source implementation will be discovered as it develops, ensuring its uptake after the end of the project.

2.5 Risk Management

The project management approach presented above provides mechanisms to identify and resolve various potential project risks, which can be considered as particular internal or external factors, ensuring efficient implementation of needed corrective actions. Even it is not possible to predict all possible risks, it is advisable to identify and assess a set of potential risks related to the project, so that the consortium is ready to quickly react and immediately perform corrective activities if required.

The 5GASP project board will ensure the implementation of a contingency plan based on the assessment of the progress of the project. Regular checks will take place as part of the PMB meetings in order to ensure that the network is meeting its planned objectives. In the event of unexpectedly poor performance of the project, a list of possible actions, described in the Contingency Plan paragraph (see Part A), will be triggered by the 5GASP project board, and will be accordingly implemented by the consortium. The actions outlined were conceived based on the broad previous experience of the partners in EU funded projects. They are nevertheless examples of possible measures to implement and will therefore be revised after the first 8 months of the project's lifetime. Where and if necessary, these actions will be modified and augmented.

The risk management strategy of the project will involve the following aspects:

- Risk identification: which risks might affect the project and what are their implications?
- Risk analysis: compile risks into a matrix, assess and prioritize identified risks
- Risk solution: craft and implement solutions to reduce possible impact of the identified risks and ensure the project's objectives are met

Table 1 - Risk Management

Risk description	Likelihood	Impact	WP Affected	Prevention measures / Contingency actions
Pandemic	High	Low	All	We will follow WHO guidelines for prevention and reduce/eliminate all travel falling back into online events such as conference calls, webinars and other online tools.
Unavailability of 5G licenses	Medium	Low	All	In the event of no licenses being available at the test sites, we will fall back to testing in the lab. Having an operator onboard (ORO) is nonetheless assuring that we will have 5G in the Bucharest test site.
Lack of 5G equipment	High	Low	All	If tests begin without commercial availability of end-user equipment's the project will continue to use existing prototypes and tools developed in previous projects.
Feasibility of some of the use-cases	Medium	Medium	All	If some use case is not achievable due to technical limitations, the use-case will be reviewed and adjusted accordingly.
Lack of connectivity	Low	High	All	5GASP depends on all test sites being accessible through the Internet. If for some technical/bureaucratic reason some site loses Internet accessibility in the future, the project can relocate the test site to a new location after all technical options have been ruled out.
Not enough HR	Low	High	All	To prevent such situation, partners have budgeted accordingly their resources in accordance with their tasks. In the unlikely event of lack of HR, partners might reallocate effort to other partners.
Not enough time	Low	Medium	All	To prevent such situation, partners have planned the tasks timely. In the unlikely event that a task can't be completed in the planned period of time, additional resources might be allocated to complete the task.
Delays in tasks' completion due to inability of partners or lack of collaboration	Low	High	All	The PC and the project management team will adopt a proactive approach by continuously identifying all critical paths in the project and by performing the necessary rescheduling and creating minimization actions.
Possibility of a new competitive endeavour with features that undermine the	Medium	High	WP7	The strength and breadth of the collaborative partnership between partners and their international expertise in their individual fields shall contribute to maintain the 5GASP competitive advantage, by racing against time and by performing refinements to overcome competition, if such arises.

5GASP advantages				Market research to keep abreast of all related business development tasks and it shall be treated as a top priority continuous process with regular interim business reports to the EC.
Incomplete requirements not covering all NetApps vertical-specific requirements	Medium	High	WP2, WP3, WP4	The design of the 5GASP open platform will follow an iterative procedure, including continuous feedback from the SMEs-NetApp developers of the consortium.
The evolution of 5G standard groups may diverge from the vision of 5GASP	Low	High	WP7	A number of project partners actively attend and contribute in the relevant industry and standardization meetings in order to monitor and (potentially) influence evolution towards 5G. Any unexpected change will be promptly addressed and faced by the activities carried out in WP7, assisted by the Project Coordination team.
UK loses funding	Low	High	All	The consortium will reevaluate pending tasks and prioritize those essential (and reallocate) and those who will be cancelled.

2.6 Handling of deliverables

Project deliverables will be first agreed on respective task and WP levels and afterwards approved by the PCI and/or PCC, which could involve further internal deliverable reviewers if appropriate, before submission to the EC. Respective task and WP leaders including deliverable editors are responsible for quality and completeness of the deliverables. **Other project publications** (e.g. papers for conferences) can be initiated by any consortium member. After agreement by the Project Board a respective Task Group (e.g. group of authors), can be created to finalise the publication, which should be then approved in accordance with the rules defined in the Consortium Agreement.

The detailed deliverable review process is presented in Figure 2. Accordingly, the review process will start at the latest three weeks before submission deadline of the respective deliverable. However, in order to ensure a more efficient review process and correction of the deliverables in early stage of their creation, the reviewers will be continuously informed about status of the deliverables they are responsible for, so that related principle comments can already be made at this stage and corresponding corrective actions can be performed.

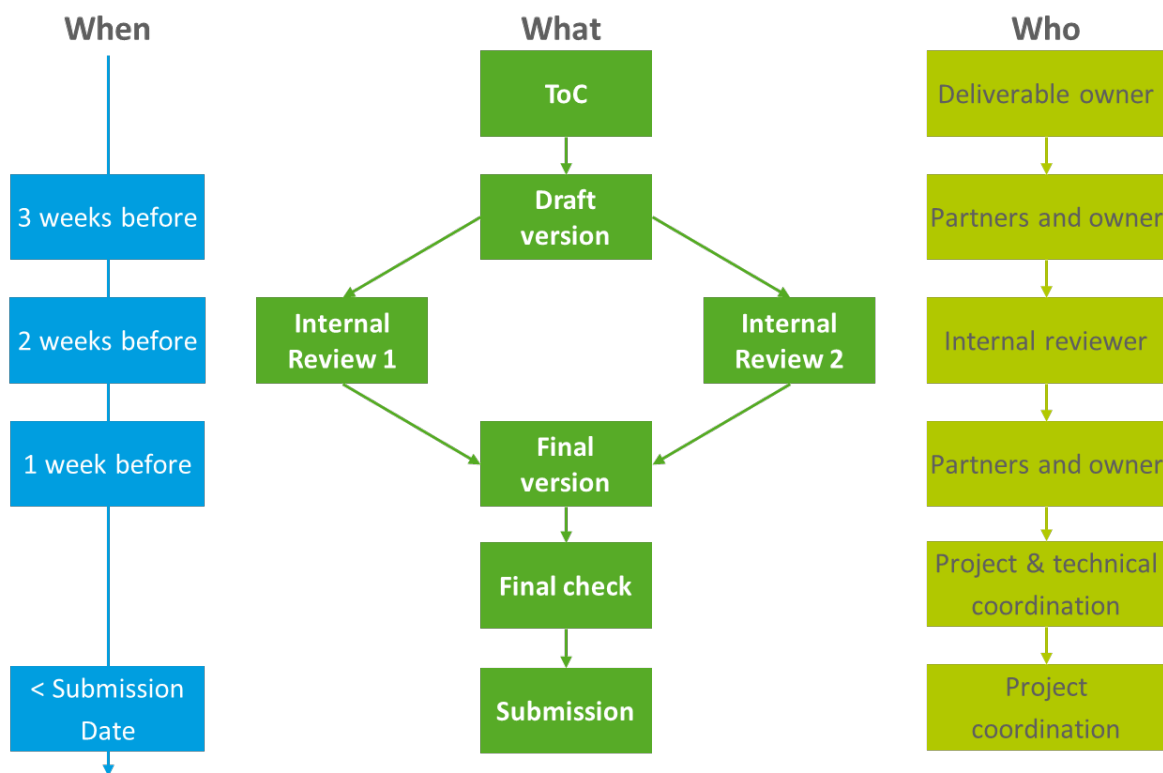


Figure 2 - Deliverable review process

In the document repository, a list of agreed deliverable reviewers will be stored and, of course, updated later on as appropriate.

2.6.1 How to write a deliverable?

The deliverable is the official document containing the results of the respective activities and tasks in the project. This document, or whatever the required format will be, is to be submitted to the EC and to the reviewers. A template for the deliverables is provided in the repository. The use of this template is mandatory for any Deliverable of type “Report”.

2.6.2 Things to do by the contributing partners:

Contributing partners are expected to provide their contributions in the agreed format with the agreed content by the agreed deadline. In case they experience a delay, or cannot provide the expected and agreed content, they should flag this to the responsible editor immediately. The contributing partners are also in charge of revising their contributions according to the comments made in the project-internal review.

2.6.3 Things to do by the Responsible Partner:

The responsible partner should appoint a responsible person as editor of the deliverable.

The responsible editor should organise the deliverable production process. The editor should propose an initial table of content and suggest distribution of contributions among partners, organise the discussion and agreement process concerning the overall scope of the document and its structure, the scope of the individual contributions expected and their schedule. The editor is responsible for keeping the timeline of the production. If there is any delay, the editor should immediately notify the respective WP leader and project coordinator. The editor is

also responsible to ensure that the deliverable is produced in the agreed format adhering to the template specified by the project.

In particular, the editor is responsible to ensure that the list of authors correctly captures all partners and individuals who contributed to the deliverable.

Having the deliverable completed the responsible editor releases the deliverable to the WP leader.

2.6.4 Things to do by the WP-leader:

The WP leader is responsible for monitoring and ensuring that the deliverable production process gets started, and overseeing its production. In case a deliverable needs to be co-ordinated with other deliverables (within the same WP or across different WPs) the WP leader should take an active role in ensuring the necessary co-ordination.

In case of delays the WP leader is responsible to co-ordinate a re-schedule in agreement with the editor, the PC and project management board.

Having received the deliverable from the responsible editor the WP leader checks its quality and that it meets the expectations and contractual commitments.

2.6.4.1 Things to do by the reviewer:

The reviewer serves as the ultimate, final checkpoint of the deliverable, both content wise and also regarding its format.

The reviewer should be available for a limited short time, just before the actual submission to check and review the deliverable. The reviewer should review the deliverable without delay. The reviewer(s) should check that the deliverable meets all contractual obligations and technical expectations, also in the context of the project as a whole. In case the review discovers any formal, or editorial issues or deficiencies regarding the content, it should immediately notify both the WP leader and the responsible editor to seek an improvement, fixing.

2.6.4.2 Things to do by the PC

The coordinator verifies the format of the deliverable and submits it to EC. The coordinator is the only contact with the EC regarding the submission of deliverables. All deliverables pass through the coordinator.

3 Communication

3.1 Physical delivery of documents when necessary

Projecto 5GASP
Instituto de Telecomunicações
Campus de Santiago, Aveiro
3810-193 AVEIRO, Portugal

Note that all communication with EC and Project Officer, physical and electronic, is handled by the Project Coordinator.

3.2 Mailing lists

All 5GASP mailing lists are established in the “5GAPS.eu” domain. For the time being, there are the following lists established:

- all@5gasp.eu - where all persons involved in the project work are included and where further persons will be included on request from the respective project partners' organisations - for the time being, it is the main project communication channel.
- wpX@5gasp.eu - where all persons involved in the X workpackage are included and where discussions pertaining solely to each work-package is to be handled.
- For dissemination purposes, a contact@5gaps.eu list will be established as first project contact point for wide public and linked on the project website.

The mailing lists will be updated regularly, including creation of new lists as required.

The mailing lists are maintained by the PC and hosted at Instituto de Telecomunicações.

Request for subscription to e- mail lists and their creation should be sent to project coordinator.

3.3 Audio bridge

5GASP project uses the Zoom audio-video conferencing system, but is not restricted to it and will use further tools as needed and as convenient. The connection details for the audio-video calls will always be distributed within invitations to the remoter meetings.

4 Reporting

Besides the project periodic reports to the EC, as defined in WP1, the project will provide quarterly activity reports. The activity reports will not include information on resources and expenditures, if not formally requested by EC.

4.1 Tool for quarterly reporting

The reporting will be organised through spreadsheet files assigned to individual partners. Each spreadsheet file has several sheets, 1 per quarter. These files are then periodically processed by the PC in order to create a summary spreadsheet.

The reporting will be required on quarterly base - every three months - latest two weeks after end of the period/quarter. The Work Summary Form, corresponding to a quarterly report is divided in three parts:

- Performed activities and produced results shall be listed as short text statements for each WP the reporting organisation is involved.
- For each involved WP the worked effort in person months (PM) shall be indicated as total figures of all people working in that WP. Additionally a specification of the people and individual efforts shall be given, if appropriate.
- All expenditures for travel and further expenditures such as subcontracts, equipment, and other costs shall be entered - direct costs only (without overhead - indirect costs).

4.2 Periodic reporting to the EC

The 5GASP Grant Agreement defines the following two reporting periods to the EC:

- After project month 12 (M12) and
- After project end (M36)

The periodic reports will be prepared by the PC in accordance with corresponding EC rules/templates and requirements from the Project Officer. Mandatory contributions to the periodic reports are expected from all partners, in particular from WP and Task leaders.

The periodic reports also include costs statements (C forms) from all partners for the reporting period, which are prepared and submitted individually by the consortium members through the respective EC submission system.

The periodic report include project review meeting, for the corresponding period, organised by EC, where all project partners are expected to attend and contribute.

4.3 Reporting on Milestones

Milestones are checkpoints during the course of the project and they have been introduced to check the status of progress of the project. In some cases these milestones also define crucial decision points in the project activities.

For each milestone, STPM has to write a short report to describe the explanation of requirements, challenges, solutions to reach the milestone and decisions taken. When the

milestone is reached, the PIC confirms it and the Project Coordinator submits the milestone report to the European Commission as proof of the milestone achievement.