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assist-iot

D2.1 – Project Management Handbook

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Version	1.0	**Status**	In process
Description	This deliverable will include all necessary project management procedures (reporting, approvals, etc.) to be performed by Consortium members.		
Work Package	WP2		

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Executive Summary

This Handbook is written in the framework of WP2 – Project Coordination and Management of **ASSIST-IoT** project under Grant Agreement No. 957258. The document is a guide to the working procedures, governance structures and available tools to be employed towards the management and implementation of the **ASSIST-IoT** project. Its purpose is to briefly describe the management and coordination framework and the procedural guidelines of the project towards a successful execution. It aims at complementing the information that can be found both in Consortium Agreement and in Grant Agreement.

The main roles which will structure the project are identified and people responsible are appointed in each case: Project Coordinator, Innovation Manager, Ethics Manager, Project Committees, etc. The management and appointment of the people to develop the tasks associated to each role will be performed by the Project Coordination Committee (PCC) and regulated by the Consortium Agreement (CA).

The technical content of the deliverable is devoted to explain thoroughly the communication and reporting tools to be employed by the partners of **ASSIST-IoT** Consortium. Reporting of activities carried out by all participants both for internal monitoring and for official EC evaluation are explained in this document, together with links to relevant files in the common repository of the project and e-mail addresses interesting to have handy. Furthermore, quality assurance mechanisms such as the deliverable approval process are detailed in the document, establishing responsibilities and timing.

Finally, this document is left open to modifications, as it will be used as a guide to the day-to-day work, willing to be improved after management issues happening or under request.

Disclaimer

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List of acronyms

Acronym	Explanation
AB	Advisory Board
ASSIST-IoT	Architecture for Scalable, Self-*, human-centric, Intelligent, Secure, and Tactile next generation IoT
CA	Consortium Agreement
CI/CD	Continuous Integration/Continuous Deployment
CIO	Chief Information Officer
DoA	Description of the Action
EC	European Commission
EM	Ethics Manager
EU	European Union
FP	Framework Programme
GA	Grant Agreement
GRP	Good-Research Practice
ICT	Information and Communication Technology
IEEE	Institute of Electrical and Electronics Engineers
IFR	Internal Financial Report
IM	Innovation Manager
IP	Intellectual Property
IPR	Intellectual Property Rights
IS	Innovation Strategy
ITR	Internal Technical Report
KPI	Key Performance Indicator
N/A	Not Applicable
NGI	Next Generation Internet
OSS	Open Source Software
PC	Project Coordinator
PCC	Project Coordination Committee
PDCA	Plan-Do-Check-Act
PIC	Project Implementation Committee
PMH	Project Management Handbook

PO	Project Officer
PU	Public
RIA	Research and Innovation Action
RP	Reporting Period
SMEs	Small and Medium-sized Enterprises
SotA	State-of-the-Art
SSL	Secure Sockets Layer
SyGMa	System for Grant Management
TC	Technical Coordinator
TL	Task Leader
TOC	Table of Contents
TRL	Technology Readiness Level
WP	Work Package
WPL	Work Package Leader

1. About this document

The main objective of this document is to be the **reference source for consultation** in daily management activities by ASSIST-IoT members. The aim is to assemble all the information related to management and operation activities, in order to standardise every reporting, communication or documentation procedure that will be carried out throughout the entire project. This Project Management Handbook (PMH) may be updated if required, during the development of the project, and its use may be extended to every work package and every partner of the Consortium.

1.1. Deliverable context

Table 1. Deliverable context

Keywords	**Lead Editor**
Objectives	N/A. The objective of this document is not related to the technical development of the project. This deliverable establishes the management framework and the main procedures to correctly configure the project activities.
Exploitable results	N/A
Work plan	This document is developed at the beginning of WP2 "Project Coordination and Management", being useful for every task of the project and a daily reference of overall project planning, coordination, administrative and financial management
Milestones	N/A
Deliverables	Not planned new releases as new deliverables. Nevertheless, this document will be an alive asset, subject to be updated.
Risks	**Planning problems** – This deliverable establishes mechanisms to ensure the quality of the documentation and the processes, facilitating the correct interpretation by the partners so that they know the timing and responsibilities.
	Collaboration issues – This deliverable describes coordination mechanisms, communication tools, and procedures that allow correct decision-making and conflict resolution in the face of any situation that may arise throughout the project.

1.2. The rationale behind the structure

The content of the deliverable is organized in six main sections:

- **Section 2**. The main project governance is detailed, describing the relevant partner contacts, roles and scope of the project bodies into which the structure is divided.
- **Section 3**. This section clarifies and details the formal procedures of meetings, reporting and payment to be performed according to the specified in the GA and CA.
- **Section 4.** The description of the working environment, files repository, availability of templates and documentation management for ASSIST-IoT project is carried out in this section.
- **Section 5.** This section contains an overview of the communication mechanisms and tools to be used during the project (both internal within the Consortium and external for dissemination).
- **Section 6.** This section gathers the information to analysing the quality assurance methods to be executed in several processes of ASSIST-IoT.
- **Section 7.** This section describes ASSIST-IoT's aim to convert creative ideas from opportunities to benefits.

2. Project Governance

This section describes the principal structure of the governance in detail, providing an overview of the Consortium partners that will rule the management and execution actions during the project. Once the structure is detailed, the information of the relevant partner contacts, roles and scope of the project bodies will be known. The identification and definition of roles and responsibilities is further explained in the Consortium Agreement (CA). However, depending on the execution of the project new Task Forces and responsibilities can be assigned by decision of the PCC.

Project bodies will seek the successful implementation of the activities to be carried out. Additionally, these entities will seek to guarantee the proper addressment of ethical concerns, innovation orientation and any transversal aspect to take place in the research and development initiative.

2.1. Consortium management structures

The project will be structured under the following schema:

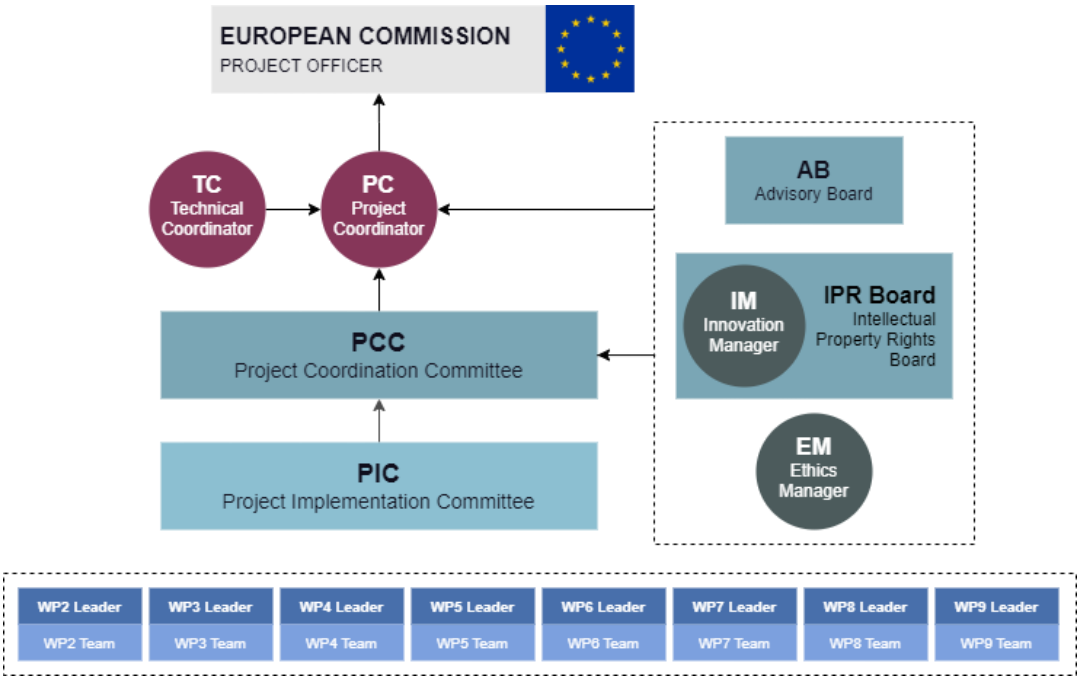

Figure 1. ASSIST-IoT management bodies

The most important parts in the previous figure, and those to be detailed in the next subsection, are:

- Project Coordinator (PC)
- Technical Coordinator (TC)
- Project Coordination Committee (PCC)
- Project Implementation Committee (PIC)
- Innovation Manager (IM)
- Ethics Manager (EM)
- Advisory Board (AB)
- Work Package Leaders (WPL)

2.2. Roles and responsibilities of project bodies

ASSIST-IoT management will implement a simple structure, where all discussions and decisions are made at plenary level, by achieving consensus among partners. Rules for consensus and quorum are detailed in the Consortium Agreement (CA) signed by all partners. ASSIST-IoT establishes the Project Coordination Committee (PCC) as the highest decision-making body, and Project Implementation Committee (PIC), a finer-grained sub-set of partners, to be responsible for implementing and overseeing action plan, and coordination of technical work among work packages.

2.2.1. Project Coordinator

The **Project Coordinator (PC)** oversees the project execution coordinating the different activities that will be carried out during the action. The PC will be responsible, together with the WP Leaders, of the proper management, use of resources and technical objectives achievement in all project activities. In addition, the PC will have overall responsibility for the implementation of the project, ensuring quality, costs, and the planned delivery date. Additionally, the PC will be the intermediary between the ASSIST-IoT Consortium and the European Commission in all the necessary interactions to be carried out.

Regarding the relationship with the rest of the participants, the PC will chair PCC and PIC, will act as conflict mediator according to the clauses in the CA and will have many interfaces within the project bodies to ensure and supervise the day-to-day tasks of ASSIST-IoT.

Therefore, the spot of the PC can be synthesised as the main contact point with the following entities:

- European Commission (EC)
  - Mainly with the Project Officer (PO) and through SyGMa portal
  - Responsible to request and validate all official reporting
- Work Package Leaders (WPL)
  - Carry out the technical supervision of the project
  - Ensure proper use of resources
  - Keep track of partners devotion to task development
  - Ask for status report
- Technical Coordinator (TC)
  - Carry out the technical supervision of the project
  - Conduct key teleconference to reach strategic technical and operative decisions
- Innovation Manager (IM) and Ethics Manager (EM)
  - Drive the project in the specified direction (as in GA) and to ensure being aligned with current legislation and directives
- Advisory Board (AB)
  - Act as the interface between the AB and the rest of the Consortium
  - Conduct the communication, including arranging physical meeting dates

In addition to coordinating all elements of the project, the **PC will be responsible** of/for:

- Monitoring the fulfilment of the obligations of the participants.
- Ensuring timely delivery of documents and other EC requirements.
- Hosting the document repository of the project, ensuring maintenance and update of documentation.
- Keeping members' mailing list and communication up to date.
- Transmitting relevant information in both directions between the Consortium and the funding authority.
- Managing financial contribution and commit to financial tasks.

- Providing the decision-making processes in accordance with the formal procedures described in GA and in this document.
- Providing the Parties, upon request, with official copies or originals of the documents that are in the exclusive possession of the Coordinator when such copies or originals are necessary for the Parties to present claims.
- Organizing meetings and project review preparation procedures that align all partners and the EC.

In ASSIST-IoT, the partner assuming the role of **Coordinator** is **UPV**, and the person holding the charge of **PC** is **Prof. Carlos Enrique Palau Salvador**.

2.2.2. Technical Coordinator

The **Technical Coordinator (TC)** will act as first PC deputy and action representation, including overseeing action dissemination activities. The role of the TC is summarised as follows:

- Supervise the technical execution of the tasks, with permanent contact with the leaders of the WPs. It will inform the PC and the PCC about any technical problems that arise during the project.
- Be on charge of aligning actual development with the technical requirements, objectives and high-technical-standard essence in all technological tasks of ASSIST-IoT.
- Be aware of the technical status of the project at all moments, being able to report upwards, act downwards, identify risks in advance and plan accordingly.
- Be part of the PCC and attend each technical meeting and review.
- Align the technical orientation of the project with the guidelines established by the Innovation Manager.
- Facilitate coordination between use cases.
- Help the WPL in dissemination activities.

In ASSIST-IoT, the partner assuming the role of **Technical Coordinator** is **IBSPAN**, and the person holding the charge of **TC** is **Maria Ganzha**.

2.2.3. Project Coordination Committee

The **Project Coordination Committee (PCC)** makes final decisions on the general policies of the Consortium, modifications or extensions to the Consortium Agreement or action objectives, and all actions related to financial matters. It is chaired by the Project Coordinator.

Their coordination tasks will guide the work and will mean effective communication between all partners. The **tasks and responsibilities** associated with the PCC are:

- To prepare the PCC meetings, including the elaboration of the agenda, proposed decisions and preparation of the minutes.
  - Likewise, the execution of the decisions made within the PCC meetings is ensured.
- To seek consensus among Consortium partners regarding high-level issues that arise during the project.
  - If consensus is not reached, PCC will oversee the application of the voting procedures, decision-making and conflict resolution as specified in the Consortium Agreement (mentioned in 2.3 in this document).
- To monitor the effective execution of the project, especially with regards to timelines, alignment with CA and interaction with the EC.
- To periodically gather information on the progress of the project, coordinating the preparation of reports both for internal concerns and for official reviews.
- To agree on the Amendments of the GA that will be proposed to the EC.

- To accept important changes in the project and consult with the EC on relevant matters related to the entry and exit of partners and financial management.

Other characteristics of the PCC body shall be:

- All ASSIST-IoT Consortium partners must be represented at the PCC to guarantee this point.
- Any partner has the right to summon a PCC session to discuss a specific issue a long as it does not fall under task, WP or basic management competences.
- All PCC members (see table below) must mandatorily attend all PCC sessions. Every person involved in the project is implicitly invited as listener, but only the listed representatives per entity will be able to vote on behalf of the partner.

During the elaboration of this document, the composition of this Committee has been discussed and, at a final stage, it will be represented by the following persons:

Table 2. PCC composition

Lead Person	Partner	Contact
Carlos E. Palau	P01 UPV	cpalau@dcom.upv.es
Miguel Ángel Llorente	P02 PRODEVELOP	mllorente@prodevelop.es
Marcin Paprcycki	P03 IBSPAN	paprzyck@ibspan.waw.pl
Kostas Votis	P04 CERTH	kvotis@iti.gr
Francisco Blanquer	P05 TL	ho.fblanquer@terminal-link.com
Vaios Koumaras	P06 INFOLYSIS	vkoumaras@infolysis.gr
Anna Katarzyna Dąbrowska	P07 CIOP-PIB	andab@ciop.lodz.pl
Piotr Dymarski	P08 MOW	p.dymarski@mostostal.waw.pl
Roel Vossen	P09 NEWAYS	roel.vossen@newayselectronics.com
Konstantinos Naskou	P10 ICCS	konstantinos.naskou@iccs.gr
Hannu Oja	P11 Konecranes	hannu.oja@konecranes.com
Daniel Roettger	P12 FORD-WERKE	droettge@ford.com
Mikel Uriarte	P13 S21SEC GES	muriarte@s21sec.com
Michael Mueller	P14 TwoTronic	michael.mueller@twotronic.com
Zbigniew Kopertowski	P15 OPL	zbigniew.kopertowski@orange.com

2.2.4. Project Implementation Committee

The **Project Implementation Committee (PIC)** is responsible for implementing and overseeing technical achievements, adequation to the action plan, alignment with requirements and coordination of technical work among work packages. The main **activities** of PIC are:

- Definition of a comprehensive and achievable strategy to complete the action objectives.
- Approval of action deliverables and implementation of peer review procedures **if necessary.**
- Guarantee of technical coherence and maximum synergy between WP, with the guidance and supervision of the TC.
- If required, creation of ad-hoc action working groups to tackle specific issues.

- Self-assessment and definition of the corresponding corrective actions.
- Direct contact with WPLs and first level of conflict resolution.

Other **characteristics** of the PIC body shall be:

- The Project Coordinator chairs the PIC sessions.
- The Technical Coordinator will be in charge to lead the technical discussions.
- Meets a minimum of 3-4 times per year, coinciding with Plenary Meetings, as it is detailed in Section 3.1. Other PIC sessions may take place under proper request in advance.
- The TC, PC, IM and any WPL have the right to request a PIC session. The PC will analyse whether to arrange a PIC session or to make use of other management mechanisms.
- Not all ASSIST-IoT Consortium partners have to be represented at the PIC. For specific sessions, certain partners – not part of the PIC – may be called to join the discussion.
- All fixed PIC members (see Table 3) must mandatorily attend all PIC sessions. If the discussion involves a partner which is not in the original composition, this partner must attend the session if it had been arranged following the procedures established in Section 3.1.
- This management body is formed by the following people (this table may variate through the project lifetime):

Table 3. PIC members

Person	Partner	Contact
Carlos E. Palau	P01 UPV	cpalau@dcom.upv.es
Ángel Martínez	P02 PRODEVELOP	amartinez@prodevelop.es
Marcin Paprcycki	P03 IBSPAN	paprzyck@ibspan.waw.pl
Konstantinos Votis	P04 CERTH	kvotis@iti.gr
Vaios Koumaras	P06 INFOLYSIS	vkoumaras@infolysis.gr
Roel Vossen	P09 NEWAYS	roel.vossen@newayselectronics.com
Konstantinos Naskou	P10 ICCS	konstaninos.naskou@iccs.gr

Given the possibility of requiring voting as a method for making decisions, the voting procedure defined in Section 2.3 will be followed.

2.2.5. Innovation Manager

The **Innovation Manager (IM)** will coordinate activities to ensure appropriate protection and exposure of project's exploitable results. This includes preparing and executing an Innovation Strategy (IS), and a go-to-market approach, in sync with dissemination efforts. Protection of results is achieved through the formal IPR management, which supports OSS licensing, and definition of joint exploitation agreements and other legal documents. An **IPR (Intellectual Property Rights) Board** chaired by the IM may be created by the PCC, to assess all IPR relevant decisions, based on the IPR ownership, and to give recommendations on definition of access rights and use of results including licensing.

The IM will report on IPR and Innovation in general, on the Consortium level, the role of Innovation Manager is **Ángel Martinez** from **PRODEVELOP**.

More information about the scope of action of the Innovation Manager in ASSIST-IoT can be found at Section 7 of this handbook.

2.2.6. Ethics Manager

The main ethical concerns, which will be carried out by the **Ethics Manager (EM)** in action are humans, and protection of personal data (some pilots deal with data that must be carefully protected). The EM will advise participants on all ethics issues concerning the action, but especially before pilot execution. In fact, it has been specified that report on activities of the EM must be submitted prior to the pilot deployment.

The EM in **ASSIST-IoT** will be a person from within the Consortium. According to the Grant Agreement, **Konstantinos Votis** (from **CERTH**) will take this role.

The role of the Ethics Manager will be, first, to concentrate on elaborate WP1 deliverables altogether with the Project Coordinator and, then, to lead and conduct the activities of T2.4 (Ethics and Privacy Protection). Likewise, the EM will be at the disposal of the Consortium partners to review, analyse and elaborate documentation related to Ethics issues as well as to mediate if any Ethics conflict would arise.

2.2.7. Advisory Board

The **Advisory Board (AB)** will consist of several members representing academy, large industry, SMEs, standardization bodies. The AB will be responsible for providing feedback on action outputs, and recommendations related to alignment with evolving SotA of concepts and technologies pertinent to action activities.

Generically, AB members are expected to provide technical, ethical and legal guidance, input and feedback on the ASSIST-IoT industrial and technological roadmap, advise on links with relevant interest groups outside ASSIST-IoT, facilitate information about trends on technology and business models in the field and encourage interactions with other projects and initiatives.

More specifically, ASSIST-IoT plans to channel the participation of AB members via meetings. The initial **plan is to meet physically three times** and to report the feedback provided and lessons learnt in deliverables D2.8, D2.9, D2.10. This plan will depend on the mobility restrictions due to COVID-19 in the moment of the meeting arrangement. Travel expenses associated to attendance of these meetings will be covered by the Project Coordinator (as it is indicated in the Grant Agreement). If the physical meetings cannot be held, substitutive virtual meetings will take place, to which AB members will be invited likewise. Besides, more interventions from the Advisory Board are expected to take place in the form of virtual teleconferences during the project.

The AB members cover a relevant cross-section of stakeholders and interested sectors related with ASSIST-IoT: ports, environmental agents, public bodies, leaders in ICT application in transversal domains, etc. Those agreed procedures have been followed to establish the structure of members. Technical, industrial and academic criteria have been applied in order to contact particular people who could contribute significantly to **ASSIST-IoT**. As opinion leaders in their respective fields, AB will provide a valuable input in the ASSIST-IoT project development.

Thus, specialists for the main application domains of ASSIST-IoT are included in the **initial list of Advisory Board members**:

- Konstantinos Karachalios, IEEE Standards Association, Managing Director – expert in standardization.
- Prof. Joydeep Mitra, Michigan State University, Fellow of IEEE – expert in reliability and dependability.
- Jose García de la Guía, TIBA, CIO – expert in Digital Transformation of the port sector.

More members will be added to the Advisory Board during the first three months of the action. According to the agreed by the partners of ASSIST-IoT, a total of 6 members should conform the final Advisory Board. These actions will be carried out in the context of task T2.5.

2.2.8. Work Package Leaders

The actions at work package level will be done by all project partners involved in the WP and will be coordinated by respective WP leaders. Each Work package leader is responsible for monitoring the progress of the assigned

work package. The Project Coordinator will be responsible for monitoring the overall progress of the project from the management perspective whereas the Technical Coordinator must ensure technical control together with WPL:

Particular **responsibilities of the Work Package Leaders** are:

- Monitor performance and progress of work:
  - Ensure horizontal information flow to other WPs
  - Report to Technical Coordinator and PIC about relevant technical issues
  - Report to Project Coordinator (and PCC, if needed) about relevant management issues
  - Supervise the advance of the WP towards meeting their objectives by communicating with task leaders
  - Ensure alignment with global ASSIST-IoT goals.
- Implement of activities within WP tasks
- Arrange periodic and extraordinary teleconferences to monitor the advance of the WP. Initially, it is considered that a monthly teleconference rule will be applied to all WPs. Each WPL will decide to arrange additional teleconferences if needed.
- Contribute and communicate closely with the TC to ensure synergy and technical alignment between all project WPs.
- Report the status of the WP periodically in the bi-weekly Plenary Teleconferences.
- Report the status of the WP at any moment under request of the TC, the PIC, the PC or the PCC.
- Prepare reports under PC request to include in the official reporting towards the periodic review justification.
- Act as intermediate in the communication between Task Leaders (TL) and TC/PIC/PC:
  - Every WP has been structured into several **Tasks** already appointed by Task Leaders that act as coordinators of the execution of tasks, being accountable and having to respond to their respective Work Package Leader. Ad-hoc activities and their leaders can be established/defined by PCC/PIC or WPs.
  - Work on the Task level is organised in the same way as at the WP level under coordination of respective Task Leaders, together with task partners and editors of particular project deliverables.

Table 4. Work Package Leaders

WP	Name	Partner	Contact
WP1 leader	Carlos E. Palau	P01 UPV	cpalau@dcom.upv.es
WP2 leader	Carlos E. Palau	P01 UPV	cpalau@dcom.upv.es
WP3 leader	Konstantinos Naskou	P10 ICCS	konstaninos.naskou@iccs.gr
WP4 leader	Alejandro Fornés	P01 UPV	alforlea@upv.es
WP5 leader	Katarzyna Wasielewska-Michniewska	P03 IBSPAN	katarzyna.wasielewska@ibspan.waw.pl
WP6 leader	Konstantinos Votis	P04 CERTH	kvotis@iti.gr
WP7 leader	Ángel Martínez	P02 PRODEVELOP	amartinez@prodevelop.es
WP8 leader	Roel Vossen	P09 NEWAYS	roel.vossen@newayselectronics.com
WP9 leader	Vaios Koumaras	P06 INFOLYSIS	vkoumaras@infolysis.gr

2.3. Decision-making and conflict resolution

ASSIST-IoT aims to achieve decision-making through consensus among all project partners involved at all levels. Nevertheless, it is possible that partners cannot always agree on particular matters, when a procedure for conflict resolution has to be applied. For this reason, a decision-making procedure and conflict resolution rules are provided to make the appropriate decision-making if necessary.

2.3.1. Decision-making procedure

Instructions for **decision-making** are detailed below, as well as some points of view to consider:

1. When a **management problem** may arise, the first body to consult will be the Work Package Leader, then the PC and, if needed, the PCC via a formal session.
2. When a **technical problem** may arise within a WP, the Task Leader will handle it, consulting the decision with the WPL, who will, if needed, take a prominent role in the process. If the issue is not solve, it could be scaled to the PIC, and then to the PCC and PC.
3. When a **financial problem** may arise, the PC will be directly the body that will deal with it.
4. When an **ethical problem** may arise, the EM will be consulted, leaving the final decision to the PCC and the PC.
5. When an **IPR problem** may arise, it will be managed by IM and, if the problem worsens, the IM together with the PC. In case of need of voting/consensus, a PCC session could be ultimately requested.

Alternatively, for situations where consensus cannot be achieved, defined voting principles can be applied if necessary. To do this, depending on the group on which voting is required, a **voting procedure** has been defined:

- Project Coordination Committee (PCC) – Voting procedure will be specified in Consortium Agreement based on the qualified majority principle (two thirds of the Consortium). This body will oversee the proper management of high-level management issues.
- Project Implementation Committee (PIC) – Decisions are taken by consensus or, if it is not possible, by qualified majority (two thirds of the votes), where all members have one vote. If the decision cannot be taken, the issue will be considered by the PCC. This body will oversee the proper management of high-level technical issues.
- Work Package (WP) – Decisions on the WP level will be made by consensus and, if not possible, by qualified majority principle (two thirds), where each WP partner has one vote.

2.3.2. Conflict resolution rules

A conflict arises if the interests, opinions, and points of view of the individual partners differ to such an extent that contradictions cannot be resolved by their own. In this case, it is important to resolve the conflict quickly and undoubtfully, as the rapid resolution of conflicts and problems is crucial for the efficient progress of the project.

Conflict resolution will be carried out **from lower to higher action levels** (from task to WP level and from WP to action level bodies – TC and PC in that order, and a PCC session if needed), where respective action leaders will act as mediators. In the case of particular difficulties in solving a conflict, a dedicated working group will be set up by the PCC. At last instance, conflicts will be handled according to the Consortium Agreement.

Any conflicts that cannot be resolved through these principles will be handled according to the **terms** defined in the Consortium Agreement.

In summary, the **levels of conflict resolution instruments** to be used when a conflict arises is described below:

- **Extraordinary Task/Work package Meeting**: all persons involved in the Task/Work Package have to take part in the extraordinary Task Meeting.
- **Extraordinary PCC Meeting**: persons from all partners being responsible of the project progress participate to that meeting. Generally, conflicts should be solved in this project management meeting at the latest.

Finally, it is worth to mention the order of documentation to be consulted whenever a conflict arises. Anytime a responsible would doubt on which rules apply, he/she must consult the following assets defining the governance of the project responding to their **priority scale** (in this strict order):

1. EU Grant Agreement 957258 (GA).
2. Consortium Agreement (signed by all partners from ASSIST-IoT Consortium).
3. D2.1 - Project Management Handbook (this document).

The general principles for the project execution are defined in the EU Grant Agreement (GA) both Annex I and Annex II which is called the Description of the action (DoA) - and the Consortium Agreement (CA). The Project Management Handbook does not replace any of these established agreements, nor does it replace any of the EU guidelines for project implementation and documentation. Wherever being any inconsistency between these documents, the previous order of precedence should be applied.

2.4. Key project contacts

In Table 5 a brief reference of main bodies' responsible in ASSIST-IoT is depicted:

Table 5. Key project contacts

Role	Lead Person	Partner	Contact
PC	Carlos E. Palau	P01 UPV	cpalau@dcom.upv.es
TC	Maria Ganzha	P03 IBSPAN	maria.ganzha@ibspan.waw.pl
IM	Ángel Martínez	P02 PRO	amartinez@prodevelop.es
EM	Konstantinos Votis	P04 CERTH	kvotis@iti.gr
WP1 leader	Carlos E. Palau	P01 UPV	cpalau@dcom.upv.es
WP2 leader	Carlos E. Palau	P01 UPV	cpalau@dcom.upv.es
WP3 leader	Konstantinos Naskou	P10 ICCS	konstantinos.naskou@iccs.gr
WP4 leader	Alejandro Fornés	P01 UPV	alforlea@upv.es
WP5 leader	Katarzyna Wasielewska-Michniewska	P03 IBSPAN	katarzyna.wasielewska@ibspan.waw.pl
WP6 leader	Konstantinos Votis	P04 CERTH	kvotis@iti.gr
WP7 leader	Ángel Martínez	P02 PRODEVELOP	amartinez@prodevelop.es
WP8 leader	Roel Vossen	P09 NEWAYS	roel.vossen@newayselectronics.com
WP9 leader	Vaios Koumaras	P06 INFOLYSIS	vkoumaras@infolysis.gr

In addition to the provided table, in the ASSIST-IoT repository there will be an ever-updated database with the following information:

- Representatives and their alternates in the project bodies (PCC, PIC), WP, Task and activity leaders.
- Organizations responsible of administrative and financial matters (reports), as well as a directory to include the contacts and main responsibilities of all the people directly involved in the project work.
- Participation in the different mailing lists and scheduled events.
- A detailed reference to the main contacts of all partners.

The information will be updated as appropriate during the life of the project. The directory will be accessible only by password and the Data Protection directives will be applied at the national level (initially Spain will be the storage location of the server) and at the European level.

3. Formal procedures

3.1. Meetings

The **ASSIST-IoT project meetings** will be mainly held as plenary meeting events, combining meetings of various project bodies at different levels to efficiently use time and resources. They may be aligned with local impact creation events (e.g. conferences or workshops).

Project meetings will be organised three-four times per year, in accordance with project needs. If necessary, individual meetings of particular groups (e.g. at WP level, code-camps, etc.) will be organised as well.

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*Note: Due to the exceptional situation caused by the **COVID-19** outbreak, the organisation of physical meetings will depend on a previous evaluation of the health situation and associated restrictions, being able to modify the nature of physical meetings to meetings by teleconference, with the health of the participants prevailing.*

3.1.1. Plenary meetings

The Plenary Meetings will be attended by representatives of all partners. The Plenary Meetings will be held physically in a venue previously arranged by consensus within the Consortium. All partners are required to attend plenary meetings. Per partner one or more people can attend, depending on the involvement in the tasks and activities discussed at the meeting.

A Kick-Off takes place once at the beginning of the project. ASSIST-IoT Kick-Off meeting **has been conducted online** on November 12th-13th 2020 and its agenda comprised the following items:

- Presentation of the project.
- Presentation of every Consortium partner.
- Presentation of the Project Management Handbook.
- One slot per each WP starting at M1.
- Presentation of H2020 Administrative Framework, performed by the Project Officer.
- Decision on update of corporative image of the project.
- Overview of following technical WPs
- Wrap-up, pending actions and next steps.

During the project, **Internal Plenary Meetings** will take place. These meetings will be – mainly – held as virtual teleconferences and will monitor the advance of the project, the completion of milestones, and the status of the tasks. It is forecasted that relevant decisions will be taken in these events.

Plenary Meetings will be organised by the Project Coordinator, who will be responsible to devise the agenda, manage time, configure invitations of external guests (e.g. AB, members from other EU-funded projects) and chair the whole meeting. The hosting partner (Plenary Meetings are expected to be celebrated at different locations, hosted by the local partner) will manage the venue reservation and co-located events like community meetups with stakeholders.

These meetings involve the whole Consortium and the whole project and will provide time to exchange administrative information as well as inter- and intra-work package related technical issues.

Plenary meetings will comprise, at least, status of the following project issues:

- One slot to review current global status of the project, next milestones ahead and advances pending.

- One slot to review administrative and financial issues and actions ahead.
- One slot per active WP.
- If needed, specific slots addressed to Committee Meetings. The organised committees will meet, taking the appointments of the plenary meetings, with the following conditions:
  - Project Coordination Committee (PCC). PCC meets twice per year, or on request from its members, and is chaired by PC.
  - Project Implementation Committee (PIC). Meets regularly 3-4 times per year (possibly electronically, if needed) and works continuously between meetings. It is chaired by PC. Decisions are taken by consensus or, if it is not possible, by qualified majority (two thirds votes), where all members have one vote. If the decision cannot be taken, the issue will be considered by the PCC.
  - Advisory Board (AB). There will be three AB meetings during the action. However, additional feedbacks may be requested in key junctures of the action.
- Other issues.
- Wrap-up and next steps.

A long-term plan for Plenary Meetings will be provided by the Project Coordinator. However, due to the current COVID-19 pandemic, it is not possible to devise a feasible plan of physical meetings for the moment.

3.1.2. Technical meetings

The technical meetings will be held **under request** from the participants, whenever it will be necessary to analyse or solve a technical aspect under development in the project.

The technical meetings will not require the participation of all the partners, so that only those working groups that are related to the technical development under analysis will be requested to participate.

These meetings may vary in form depending on the nature of the request and the main activity of the participants, so that discussion meetings of technical concepts such as architecture / implementation, decision-making, as well as meetings dedicated to programming or resolution of specific aspects.

These meetings may take place as well within broader Plenary Meetings (see 3.1.1) as specific slots of the agenda or as separated threads of the event.

The Technical Coordinator will be the responsible to oversee the conduction of these meetings, to organise the agenda and to assist participant partners.

3.1.3. Periodic teleconferences

To ensure continuity of all activities, audio/web conferences will be organised at all levels, **as needed**. According to the participants and the purpose of the meeting, regular teleconferences may be:

- **Plenary teleconference meetings** will be held **every two weeks**.
  - All partners must attend to these teleconferences.
  - Decisions taken in these teleconferences will be binding according to the rules set in the Consortium Agreement.
- **WP teleconference meetings** will be held – normally - **once a month**, although other periodicities may be settled by WPs.
  - Partners participating in that WP are mandatory to attend.
  - Task leaders will be requested to report the status of their tasks in these meetings.

3.1.4. Preparation of project meetings

The participant that hosts each meeting is responsible for the organisation of the meeting. This includes the arrangement of a suitable location and necessary equipment for the meeting and also providing information to the rest of the participating partners with regards to preferred accommodation.

Depending of the kind of meeting (see 3.1.1 and 3.1.2), the organisation of the agenda and the chairing of the event will be responsibility of PC or TC.

The organising **Chairman** has the following responsibilities:

- Notice the date of the meeting well in advance (see Table 6).
- Preparation and submission of proposed agenda and meeting objectives, respecting the following timing:
- Keeping the topics of discussion within reasonable time margins.
- Accomplishing with reasonable accuracy the time schedule.
- Dealing with all the main topics included in the agenda.
- Moderating interventions and assuring that every participant has the chance to express his / her opinion, regardless of experience, role and language fluency.
- Proposing breaks (scheduled or improvised) as necessary.
- The chairman for all **Plenary Meetings** is the **Project Coordinator**.
- The chairman for all Technical Meetings is the Technical Coordinator.
- The chairman of PCC sessions is the Project Coordinator.
- The chairman of PIC sessions is the Project Coordinator.
- Meeting agenda will be sent to the concerned participants at least one week before the meeting date.

Table 6. Deadlines for noticing dates and sending the agenda

Type of meeting	Deadline to notice the dates	Deadline to send the agenda
Physical plenary Meeting (includes physical PCC session)	45 calendar days	21 calendar days
Extraordinary PCC session (normally virtual)	15 calendar days	10 calendar days
Technical Meeting and PIC session	14 calendar days	7 calendar days
Plenary Teleconference Meeting	Periodic every 2 weeks. Any change must be noticed 4 days in advance.	3 days
Periodic Teleconference Meeting (e.g. WP, task)	Periodicity arranged internally. Any change must be noticed 4 days in advance.	3 days
Extraordinary teleconference meeting	2 days	1 day

3.1.5. Plenary Meetings documentation

The Agenda of the meeting must be prepared, distributed and stored accordingly, at least, meeting the deadline stated in Table 6. The corresponding Chairman will be responsible for carrying out these actions in time and manner.

Minutes of the meeting **must be prepared within 10 calendar days**. The corresponding Chairman will be again responsible of the preparation of the minutes. These minutes must be succinct but concise, highlighting any decision or relevant statement taken place.

In global Plenary Meetings, the **Project Coordinator** is responsible for compiling the entire meeting minutes and recording general, project level, discussions and decisions, including these from PCC and PIC (supported by TC), whereas the WP Leaders are responsible to provide minutes on the respective WP meetings. The minutes of the meetings will be distributed and made available on the **ASSIST-IoT** repository server. The minutes shall be considered as accepted if, within 15 calendar days from receiving, no Member has sent an objection in writing to the chairperson with respect to the accuracy of the draft of the minutes.

3.2. Project Reviews

Project Reviews will take place **twice in the project;** close to M18 and close to M36. The exact date and location of these meetings will be agreed at least 3 months before the date with the Project Officer (PO).

- The PO will appoint experts to act as reviewers during the meeting.
- Prior to the meeting, the PC will supervise and coordinate the creation and submission of technical and financial reports of the project, including deviations and corrective actions (see 3.3.1).
- All partners must justify the expenses incurred during the period under evaluation (see 3.3.1).
- As a result of the meeting, the EC sends the PC a report evaluating the progress of the project.
- The demonstrations and presentations will be in charge of the ASSIST-IoT partners, previously organized and decided by the PCC.
- The PC, considering the consensus of the PCC, will prepare the agenda and support the WP Leaders (and all agreed presenters) in the preparation of the meeting, following this framework:
  - Prepare the agenda for the preparation of the review and the review meeting.
  - Manage attendance details such as ensuring the registration of all partners.
  - Preside over all review presentations.
  - Ensure minutes of each presentation.
  - Send the EC review report to all partners.

According to the explanations by the Project Coordinator during the Kick-Off Meeting, the unit DG-CONNECT, via the Project Officer, may request ad-hoc reviews to analyse the technical advance of the project. It is foreseen that a “fast” technical review may take place in month M9 or M12 of ASSIST-IoT. In case of materialisation, the Project Coordinator will duly inform all partners respecting the points above and the timing indicated in 3.1.4 and 3.1.5.

3.3. Reporting

3.3.1. Reporting to EC

The coordinator must submit to the European Commission the technical and financial reports set out in this section. These reports include **requests for payment** and must be drawn up using the forms and templates provided in the electronic exchange system.

3.3.1.1. Periodical Report

The coordinator must submit a periodic report within 60 days following the **end of each reporting period**:

- Reporting period 1: from month 1 to month 18.
- Reporting period 2: from month 19 to month 36.

The report must contain both the technical and financial reports.

3.3.1.1.1. Technical report

The technical reporting will consist in an explanation of the work carried out by the beneficiaries.

- An overview of the progress towards the objectives of the action, including milestones and deliverables. This report must include explanations justifying the differences between work expected to be carried out and that actually carried out.

  The report must detail the exploitation and dissemination of the results and must indicate the communication activities.
- A summary for publication by the EC.
- The answers to the 'questionnaire', covering issues related to the action implementation and the economic and societal impact, notably in the context of the Horizon 2020 key performance indicators and the Horizon 2020 monitoring requirements.

3.3.1.1.2. Financial report

- An **'individual financial statement' from each beneficiary**, for the reporting period concerned.

  The individual financial statement must detail the eligible costs (actual costs, unit costs and flat-rate costs) for each budget category.

  The beneficiaries must declare all eligible costs, even if – for actual costs, unit costs and flat-rate costs – they exceed the amounts indicated in the estimated budget. Amounts which are not declared in the individual financial statement will not be taken into account by the European Commission.

  If an individual financial statement is not submitted for a reporting period, it may be included in the periodic financial report for the next reporting period.

  The individual financial statements of the last reporting period must also detail the receipts of the action.

  Each beneficiary must certify that:
  - The information provided is full, reliable, and true.
  - The costs declared are eligible.
  - The costs can be substantiated by adequate records and supporting documentation that will be produced upon request or in the context of checks, reviews, audits and investigations.
  - That all the receipts have been declared (for the last reporting period).

- An **explanation of the use of resources** and the information on subcontracting and in-kind contributions provided by third parties from each beneficiary, for the reporting period concerned.
- A '**periodic summary financial statement**', created automatically by the electronic exchange system, consolidating the individual financial statements for the reporting period concerned and including (only for Reporting period 1) the request for interim payment.

3.3.1.2. Final report

In addition to the periodic report for the last reporting period, the coordinator must submit the final report within 60 days following the end of the last reporting period.

The final report must include both the technical report and the financial report.

3.3.1.2.1. Final technical report

The technical section of the final report must include:

- An overview of the results and their exploitation and dissemination.
- The conclusions of the action.
- The socio-economic impact of the action.

3.3.1.2.2. Final financial report

The financial section of the final report should include:

- A 'final summary financial statement', created automatically by the electronic exchange system, consolidating the individual financial statements for all reporting periods and including the request for payment of the balance, and
- A 'certificate on the financial statements' for each beneficiary, if it requests a total contribution of EUR 325 000 or more, as reimbursement of actual costs and unit costs calculated on the basis of its usual cost accounting practices.

3.3.2. Internal reporting

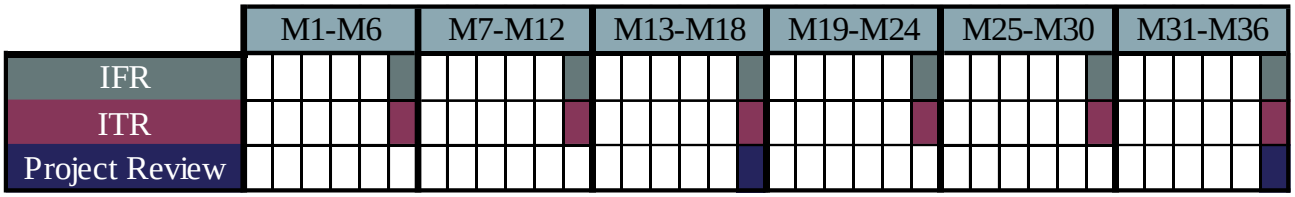
ASSIST-IoT partners commit to periodically report their activities in order to perform a high-quality monitoring. The internal reporting schema proposed is as follows:

1. **Financial reporting**
    a. Summary of the resource consumption in the **period of six months** for project monitoring purposes, consisting of an estimate of efforts spent per task per person and major eligible cost items incurred in the interval.
    b. Any foreseen deviation of the effort or costs foreseen for the next interval.
    c. **PC shall provide a template** for collection of this report to monitor actual effort deviation from internal resources planning.
    d. The template has been provided by the PC and has been made available to the partners in a specific folder in the documents repository (see Section 4.1).
2. **Technical reporting**
    a. Summary of the tasks executed in the **period of six months**. Reporting must be sent to the PC by partners within the first week of the period's following month.
    b. Structure guided by the follow-up calls, and assets to ensure a quality tracking of the work performed.
    c. That document will follow a template to be provided by the PC at the beginning of the project.

i. The template has been provided by the PC and has been made available to the partners in a specific folder in the documents repository (see 4.1).

PC will compile all inputs and generate **half-yearly (every 6 months) reports per WP and globally**. This control action will help understand the project status and apply corrective measures when necessary. The information received within this internal reporting will be used by the PC as input for the production of the periodical report to be generated for the official reviews as reports on the progress of the project.

Table 7. ASSIST-IoT reporting timetable



3.4. Payments

The payments of the funding will be structured and carried out in ASSIST-IoT according to the following guidelines:

1. **Pre-financing.** The aim is to provide the beneficiaries with a float. It remains the property of the EU until the payment of the balance.
    - The amount of the **pre-financing payment will be 80%** of overall project costs (EUR 6.324.117,00 – six million three hundred and twenty-four thousand one hundred and seventeen EURO).
    - The EC will make the pre-financing payment to the coordinator within 30 days, either from the entry into force of the Agreement or from 10 days before the starting date of the action, whichever is the latest.
    - An amount of EUR 395.257,31 (three hundred and ninety five thousand two hundred and fifty seven EURO and thirty one eurocents), corresponding to **5% of the maximum grant amount**, is retained by the EC from the pre-financing payment and **transferred into the 'Guarantee Fund'.**
2. **Interim Payments.** Interim payments reimburse the eligible costs incurred for the implementation of the action during the corresponding reporting periods.
    - The EC will pay to the coordinator the amount due as interim payment within 90 days from receiving the periodic report.
    - Payment is subject to the approval of the periodic report. Its approval does not imply recognition of the compliance, authenticity, completeness, or correctness of its content.
    - The amount due as interim payment is calculated by the EC in the following steps:
        - Step 1 – Application of the reimbursement rates. The reimbursement rate(s) are applied to the eligible costs (actual costs, unit costs and flat-rate costs) declared by the beneficiaries and approved by the EC for the concerned reporting period.
        - Step 2 – The total amount of pre-financing and interim payments must not exceed 90% of the maximum grant amount set out. The maximum amount for the interim payment will be calculated as follows: {90% of the maximum grant amount /minus/ {pre-financing and previous interim payments}}.
3. **Final Payment.** Payment is subject to the approval of the final report. Its approval does not imply recognition of the compliance, authenticity, completeness or correctness of its content.
    - The payment of the balance reimburses the remaining part of the eligible costs incurred by the beneficiaries for the implementation of the action.
    - For each payment (except the pre-financing), the EC will request documentation, both technical and financial, of all partners in order to evaluate the consistency with the work plan in GA and with corresponding regulations. Further to this request, the EC will send approval or will perform the associated corrective actions. Once the European Commission has accepted the corresponding reports, UPV will distribute the corresponding amount to each partner.
        - If the total amount of earlier payments is greater than the final grant amount, the payment of the balance takes the form of a recovery.
        - If the total amount of earlier payments is lower than the final grant amount, the Commission Will pay the balance within 90 days from receiving the final report.
    - The amount due as the balance is calculated by the Commission by deducting the total amount of pre-financing and interim payments (if any) already made, from the final grant amount:

Global considerations:

- Payments will be made to the Coordinator.
- The Coordinator (UPV) must distribute the payments between the beneficiaries without unjustified delay.

4. Collaboration tools

Collaboration tools will be made available to all Consortium partners to build management information services and allow efficient work and communication at various levels, supporting all controlling activities. Tools will be initially deployed by UPV, and will include, among others, mailing lists, repositories, web spaces, audio/video conference bridge, and judiciously selected project management and reporting tools.

4.1. Workspace and repository

After a discussion within the Consortium, **ASSIST-IoT** day-to-day work will be carried out, mainly, by an open-source web-based suite of tools named **ONLYOFFICE**.

This free product is available online and, regarding the interest of it in ASSIST-IoT, allows several functionalities that will be useful during the execution of the project.

The features that are comprised in this suite are the following:

- Document edition
- Mail
- Community
- Calendar
- Customer Relationship Management
- Document management
- Possible to link with Drive, Box, Dropbox, OneDrive, OwnCloud

In **ASSIST-IoT,** this web-based tool will be hosted in UPV's premises, under a sub-domain of the name of the project (https://onlyoffice.assist-iot.eu/). It is hosted with secure protocol web (SSL) to maximise the security of data and to complain with Ethics and quality requirements.

Regarding the daily work of the project, **ONLYOFFICE** is planned to take a major role, as the following features of the execution will be managed through the portal:

- Document edition – The hosting party recommends using only the SPREADSHEET for online edition.
- Repository of versions
- File sharing

In the next sub-sections, some hints about its use in the project are unveiled.

Within the **ONLYOFFICE** portal, each partner will have – a maximum of – **four accounts** (associated to email addresses) to access the platform. through which they will sign into the project document repository.

There has been created a project (**ASSIST-IoT**) where all the documentation has been created.

The Project Coordinator will be in charge of updating the repository appropriately, as well as making backup copies to avoid loss of information.

Figure 2. ASSIST-IoT ONLYOFFICE project

There has been defined a folder structure to be followed as well. All partners will need to comply with this structure to ensure proper document access and storage:

- *Root folder*
    - **Deliverables:** spreadsheet with the information of all deliverables of the project, its status, responsible, reviewers, etc.
    1. *Official Documentation:* Folder that includes all the information that has been made officially binding for the project in front of the EC. This will contain files such as the logo, the Grant Agreement, the budget and the Gantt of the action. This folder will also contain a sub-folder with the latest versions of the deliverables that have been already submitted to the EC via SyGMa portal.
    2. *Work Packages:* Folder to upload day-to-day documentation of the work packages. It will be sub-divided in task folders. It is up to Task Leaders and WP Leaders to manage the documentation inside these repos.
    3. *Meetings*: All information about meetings (agenda, minutes, presentations) will be stored here properly divided into sub-folders. Virtual teleconferences such as the periodic plenary telco will also be considered meetings in this regard.
    4. *Reviews*: Separated into RP1 (Reporting Period #1) and RP2 folders will include all documentation to incorporate in the reports as well as any other relevant information.
    5. *Supporting documentation*: This folder may serve as the hotchpotch to dump any relevant document useful for all partners. Initially, this folder has been created with the following sub-spaces:
        - *Dissemination material* (folder).
        - *Templates*: folder including all templates in .docx: deliverable, deliverable review report, presentation, ITR, IFR, agenda o meeting and minutes of meeting.
        - *Participants_Contacts*: a spreadsheet with contact information of personnel working in the project.

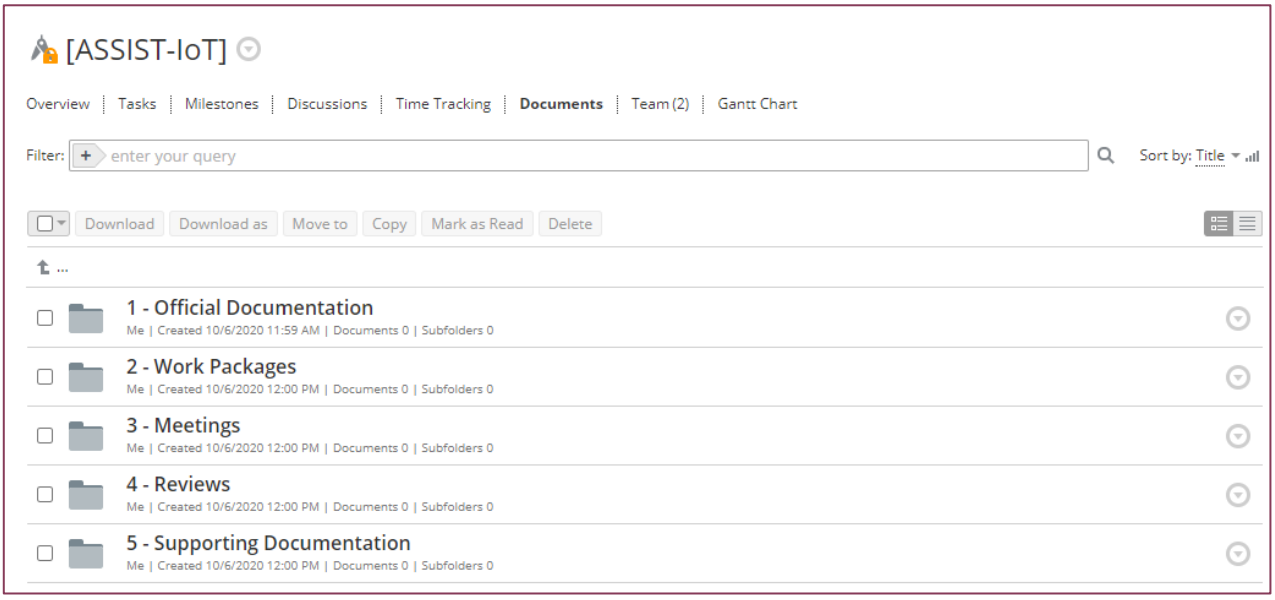


Figure 3. ONLYOFFICE repository structure for ASSIST-IoT

4.2. Documentation praxis

4.2.1. Project Logo

The project logo is available in both low and high resolution (two versions). The logo in raster format with transparency (.PNG) can be found at:

https://onlyoffice.assist-iot.eu/products/projects/tmdocs.aspx?prjID=4#143

Figure 4. ASSIST-IoT project logo

This image must be embedded in every **ASSIST-IoT** document to be released and every communication or dissemination event to be performed within its scope.

4.2.2. Templates and naming instructions

ASSIST-IoT Consortium has established a **particular procedure for the creation of documents within the project**:

Table 8. Naming strategy and templates

Document	Naming strategy	Template
Deliverables	**ASSIST-IoT_DX.Y – [Name]** *Example: ASSIST-IoT_D2.1. – Project Management Handbook*	Appendix A.1
Internal Del. Evaluation	**ASSIST-IoT_DX.Y_ev_[Iterative evaluation number]** *Example: ASSIST-IoT_D2.1_ev_2*	Appendix A.2
Financial Reporting	**ASSIST-IoT_IFR_Mx-My_PXX_[Partner Acronym]** *Example: ASSIST-IoT_IFR_M3-M6_P02_PRODEVELOP*	Appendix A.3
Technical Reporting	**ASSIST-IoT_ITR_Mx-My_PXX_[Partner Acronym]** *Example: ASSIST-IoT_ITR_M3-M6_P03_ICCS*	Appendix A.4
Agenda of meetings	**ASSIST-IoT_Agenda_[Type of Meeting]_YYYYMMDD** *Example: ASSIST-IoT_Agenda_Plenary_20210601*	Appendix A.5
Meetings minutes	**ASSIST-IoT_Minutes_[Type of Meeting]_YYYYMMDD** *Example: ASSIST-IoT_Minutes_WP4_20210601*	Appendix A.6

Where the following legend applies:

- **Type of meeting**: Acronym for the type of meetings (both physical and by other means) that can be conducted in the project:
  - *Plenary*

- *AB* – Advisory Board meeting
- *WP#No* – Work Package meetings
- *TX.Y* – Task meetings

Templates detailed in Table 8 above will be permanently in ASSIST-IoT's own secure repository, both in MS Office and OpenDocument version. Latex templates will be created as per request. The third column in the table indicates where can be found an overview of the document's template. Full version will be properly stored and shared.

4.3. Software development

Rules for the development of code and software will be specified within WP3-WP7. The WP leaders will be responsible for choosing the most appropriate tools or frameworks to carry out the work. Nevertheless, some aspects and technologies have been defined that are recommended for every software development in **ASSIST-IoT**. The options devised at this point (to be decided later in the project are):

a) To use GitLab as the centric tool concentrating both CI/CD development, code repository, etc. As per initial discussions, this tool will be hosted by UPV and will serve for centralising all collaborative development in the project.

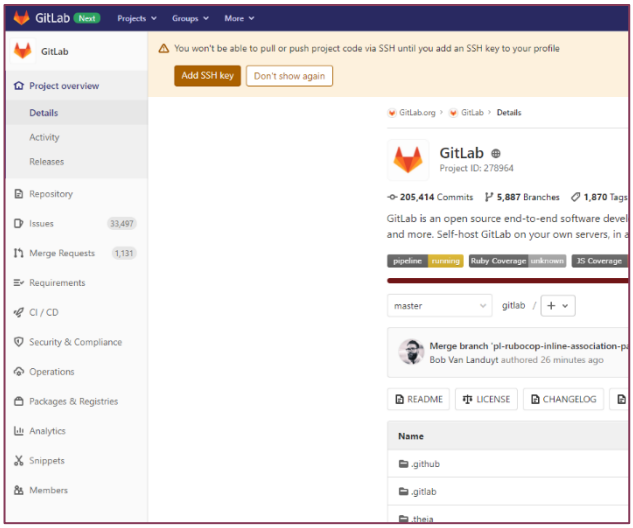


Figure 5. Option a) for collaborative code development in ASSIST-IoT

This scenario a), will likely be encouraged to be adopted by partners from the Technical Coordination since early stages of the project.

b) To create a two-headed management using separated tools. The division would respond to the following schema:

- **Basic tools** (enabling the coordinated development):
  - **Gogs**: Front-end tool for publishing code in a repository by using **git** methodology.
  - **Docker**: Program enabling virtualization in containers for the particular execution of isolated operating systems or software tools, not depending on the host machine.
- **Supporting tools** (adjacent to processes, but not essential for coding):
  - **Slack**: co-working tool, with file sharing, chat and other abilities enhancing coordinated team development.
  - **JIRA:** web-based Project management tool, especially addressed for requirements compilation and monitoring and Agile software development and integration.

The tools just exposed will be available for **ASSIST-IoT**, and WP leaders will be able to choose whether to use them or not, according to their needs and requirements. Considering the nature and purpose of

every tool that will be available for option b), a **feasible development flow for technical software activities** in **ASSIST-IoT** should look like the shown in Figure 6:

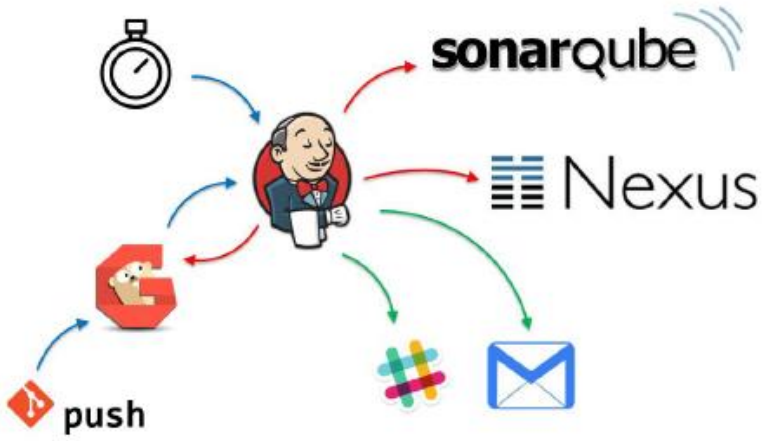


Figure 7. Option b) for collaborative code development in ASSIST-IoT

This scenario – b) - would respond to this flow: (i) Iterative coding, and versioning according to Git techniques, (ii) pushing versions to our git remote server (**Gogs**), (iii) continuous integration, process automation using **Jenkins CI** assistant, publishing the code, and connecting and syncing the updates with the rest of the tools, (iv) making the binaries available for everyone (**Nexus**), (v) inspecting the quality of the code (**SonarQube**) and (vi) informing working teams about the status of the developments and artifacts (**Slack** and Communication Tools such as mail service).

4.4. Links to relevant documents

ASSIST-IoT WP2 (overall coordination and management) presentation at the project Kick-Off Meeting:

https://onlyoffice.assist-iot.eu/Products/Files/doceditor.aspx?fileid=526

All **ASSIST-IoT** presentations made in the Kick-Off Meeting (virtual):

https://onlyoffice.assist-iot.eu/products/projects/tmdocs.aspx?prjID=4#146

Project **Grant Agreement** (GA):

https://onlyoffice.assist-iot.eu/Products/Files/doceditor.aspx?fileid=490

Gantt Chart and **Deliverables** schedule:

https://onlyoffice.assist-iot.eu/Products/Files/doceditor.aspx?fileid=491

Participants Portal:

http://ec.europa.eu/research/participants/portal4/desktop/en/home.html

IT Helpdesk:

https://ec.europa.eu/research/participants/api/contact/indexcontacthd.html

ASSIST-IoT website:

https://assist-iot.eu

5. Communication

5.1. Coordination address for mail delivery

The post address for mail delivery to the PC is the following:

Prof. Carlos E. Palau
ASSIST-IoT Project Coordinator
D. Comunicaciones
ETSI Telecomunicación
Universitat Politècnica de Valencia
Camino de Vera S/N
Valencia 46022
Spain

All communications with the European Commission **must be carried out through the Project Coordinator**. The communication can be confidential or not confidential. When a partner wants to contact the European Commission for a non-confidential communication, this communication is made through the Project Coordinator and all other partners are informed. When a partner wants to contact the European Commission for a confidential communication, he must inform the Project Coordinator accordingly and the communication will not be mentioned to the other partners.

5.2. Communication tools

The ASSIST-IoT action will leverage several tools for communication and dissemination of results, day-to-day issues and official threads. The following list shows all means contemplated in ASSIST-IoT. The subsequent clauses detail those being more relevant for the project:

- External communication and dissemination*:
  - Project website
  - Social networks (Twitter, LinkedIn, Instagram, Facebook and YouTube)
  - Quarterly e-Newsletter
  - Leaflets and posters

*Note: For the inclusion of partners images (such as logos, pictures, and others) linked to project's communication and dissemination activities, an informed consent signed by partners have been put in place and will be properly attached and detailed in the reporting of the actions of WP1 (e.g. D1.2) and task T2.4.

- Internal communication:
  - Mailing lists
  - Audio/teleconference bridge (see below)
  - MS Teams group chat

5.2.1. Project website

The ASSIST-IoT project official webpage is: https://www.assist-iot.eu/.

Within the website of ASSIST-IoT, there is a reserved space for communication, where the **responsible of the dissemination WP (INFOLYSIS)** will update the content with the latest news of the project, including deliverables officially submitted and approved, social networks notifications and other contents.

Furthermore, a specific contact form has been added in the project's website for contacting the PC and the WP9 leader (https://assist-iot.eu/contact/).

5.2.2. Mailing lists

From the beginning of the project, **several mailing lists have been created** for internal communication within particular groups. All lists are established in the **"assist-iot.eu" domain**. At this stage of the project (can be extended later on), the current mailing lists of **ASSIST-IoT** are:

- all-assist-iot-eu@assist-iot.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 internal communication channel.**
- coordinator-assist-iot-eu@assist-iot.eu – the list includes staff from UPV (Coordinator partner) directly involved in the project and should be used for all kind of request to the coordinator by project partners, in order to ensure as fast as possible response and feedback
- legalgroup-assist-iot-eu@assist-iot.eu – used for negotiations linked with the Consortium Agreement with partners legal representatives included.
- ethics-assist-iot-eu@assist-iot.eu – includes the EM and Coordination staff for ethics issues and legal and regulatory compliance concerns.
- innovation-assist-iot-eu@assist-iot.eu – mailing list to be mainly used by the IM with the Participant Contact of all partners in order to conduct and communicate innovation-related activities.
- pcc-assist-iot-eu@assist-iot.eu, mailing list for all the PCC members
- pic-assist-iot-eu@assist-iot.eu, including WP leaders the PC and the TC, members of the PIC.
- wp2-assist-iot-eu@assist-iot.eu – WP2 mailing list, to include consortium members involved in the WP2 work. In the same way, mailing lists for WP3-WP9 (one for each) have been created.
- communication-assist-iot-eu@assist-iot.eu – mailing list that includes those responsible of communication (INFOLYSIS) with the purpose of enabling an agile inbox for suggestions/contributions to the external communication/dissemination channels of ASSIST-IoT.

PC will create additional mailing lists as required by partners, for specific tasks or working groups.

5.2.3. Audio/teleconference bridge

ASSIST-IoT Consortium will use teleconferences for internal communication, especially for follow-up calls, Internal Project Meetings and Work Package status tracking. Though not specifying it as the mandatory tool for every audio communication, ASSIST-IoT Consortium will make use of **Microsoft Teams (MS Teams).** Several links have been created for **ASSIST-IoT** teleconferences in the MS Teams application, one per WP plus an additional one for plenary sessions. The following are the links to the corresponding MS Teams groups:

Table 9. MS Teams links for teleconferences

Topic	Link
ASSIST-IoT Plenary, PCC, PIC and WP2	Link Global
ASSIST-IoT WP3	Link WP3
ASSIST-IoT WP4	Link WP4
ASSIST-IoT WP5	Link WP5
ASSIST-IoT WP6	Link WP6
ASSIST-IoT WP7	Link WP7
ASSIST-IoT WP8	Link WP8
ASSIST-IoT WP9	Link WP9

The various groups consist of MS Teams channels. These might be used for messaging (channel chat) or for conducting teleconferences. As the Groups were created (and are hosted) by UPV, the rest of partners cannot schedule specific telcos within the channel for posterior dates. The only option available for partners (included

as guests in the channel) is to make an instantaneous call. Therefore, in order to arrange telcos for dates to come, UPV suggests partners to just create a calendar event (with their usual email client interface) including the previous links (Table 9) in the description of the meeting. Thus, it will be a matter of proceeding to ring the call on that day and time and the telco will take place. Another option will be asking UPV to schedule the teleconferences on their behalf, but this is discouraged due to efficiency reasons. Nevertheless, for particular communication or short audio meetings, other tools will be accepted such as Skype for Business, among others.

6. Quality assurance

6.1. Self-assessment

The quality assurance and control of ASSIST-IoT will be carried out through various methods including self-assessment, review of recent activities and results of action, the definition of the work plan for the next six months and any adjustments to the work plan. These self-assessment strategies will be made periodically by the PIC and discussed at each plenary meeting of the project.

The monitoring of all action activities will be carried out according to the iterative principle PDCA (Plan-Do-Check-Act), considering all relevant action details and the particularities of EU collaborative actions, including internal action factors, such as the status of particular deliverables and milestones and external factors, such as changes in the research and market areas relevant to the action.

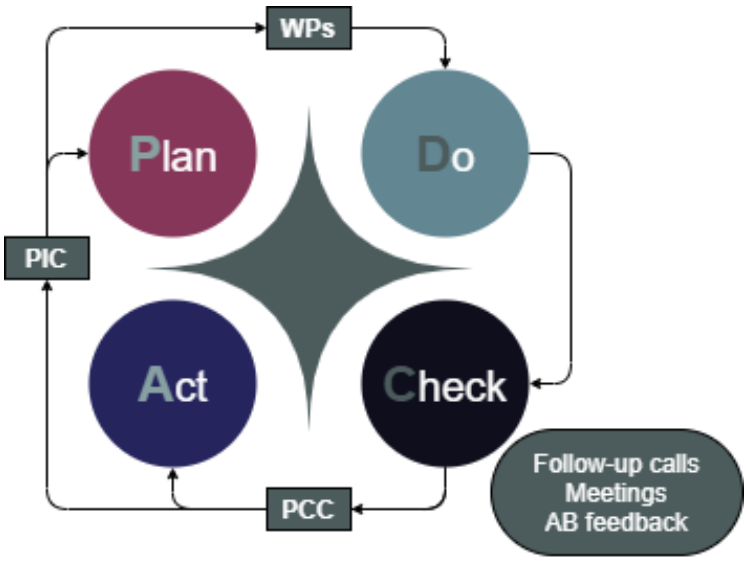


Figure 8. PDCA self-assessment in ASSIST-IoT

Project control is carried out considering various internal factors of the project, such as the status of the deliverables and milestones of the project in particular, the progress of the work in general, the status of the project resources. On the other hand, significant impacts on the project may be caused by various external factors (for example, changes in the relevant research and market areas of the project), which will also be regularly observed by the Project Coordinator, and the PIC – specially through the Technical Coordinator. If necessary, the respective corrective actions can be proposed and implemented according to the same principles.

6.2. Risk management

Project management approach provides mechanisms to identify, prevent and mitigate potential action risks, ensuring efficient implementation of needed corrective actions. Those risks can be caused by either internal or external factors.

As a matter of fact, working on novel concepts related with the NGI approach and its relationship with IoT and, in general, at the frontier of new technologies, implies dealing with substantial risks. Research is not a deterministic activity; percentage of success and temporal requirements for completing parts of work may vary depending on addressed problem. While it is not possible to predict all possible risks, it is advisable to identify and assess an initial set of potential risks related to the action (see Table 10 and 11). It should be noted that this Table has been modified, in comparison with the initial risk summarization provided in the project application. This is caused by the COVID-19 pandemic that materialised to the fullest extent after project submission deadline and introduced a number of new risks that could not have been accounted for earlier. This also indicates how the ASSIST-IoT action plans to, proactively, deal with risks and dynamically react to their appearance.

The following lines compose the initial, top-level ASSIST-IoT strategy to comply with risks. Here, note that the risk management strategy may also be adjusted on the basis of external and internal events that may influence progress of the action. An enhanced version of Risk Management Plan of ASSIST-IoT will be provided via deliverable D2.5 (in M9), which will be updated via deliverables D2.6 (M18) and D2.7 (M27).

In a nutshell, the ASSIST-IoT philosophy for Risk Management includes:

- ***Effective management***: management structures and procedures (as outlined in the GA/CA and this document) ensure that action management can closely supervise delivery of expected results. Here, it should be stressed that the ASSIST-IoT Consortium is composed of majority of organisations, which have already successfully carried out several EU actions. Moreover, they had already worked together (in various groups/configurations), hence they know each-other also personally, which definitely helps in delivering the expected results.
- ***Risk tracking***: Critical risks for implementation will become a "living document", which will be systematically updated to track new, potential contingencies and oversee possible remedies to new, unforeseen and persisting risks. Here, an example of how this process is going to materialize is in this document, where the Table (10) of risks is being updated by newly identified risks.
- ***Contingency planning***: Work plan has been designed for effective contingency planning, in case of major risks. For every risk, specific strategy will be developed considering possible actions to avoid risk (plan for reducing probability of its occurrence) and, in the case of risk materialisation, plan for minimizing its impact on overall objectives. Note that partners (PC, in particular) have experience of successfully dealing with in-project contingencies. Experiences from past problems will be used to formulate risk advance strategies and ways of dealing with materializing risks.
- ***Multiple loosely coupled objectives***: Finally, even if the goal of ASSIST-IoT is to demonstrate full operation of all promised solutions, in case of materialization of most damaging risks, individual results/components can be decoupled and exploited independently, delivering value. Here, the potential actions leading to maximization of value of specific individual results will be consulted with the Advisory Board and the Project Officer.

From the beginning of preparation of project proposal, the Consortium has made an effort to collect the possible technical and management risks that ASSIST-IoT may will face, and has proposed mitigation and contingency plans to minimise their impact on the execution of the action. Moreover, during initial weeks of the project realisation, additional analysis of risks has been performed.

In the next Tables 10 and 11, the risks already identified till the moment of submission of this document, and their associated information, updated on the basis of self- assessment performed during first weeks of the project, are described:

Table 10. Management related risks in ASSIST-IoT

Management related risks	WP	Proposed Risk mitigation measures

Partners related risks – underperforming, leaving the project, key-personnel temporally not available, reorganization distracting day-to-day activities. COVID pandemics increases possibility of materialization of any of these risks. Moreover, partners may be overburdened by the success/failure related to the COVID pandemics (too many/too few activities). Related also to the next risk.	WP2, ALL.	Flexible project management structure and project CA allow a quick shift of resources to alternative partners, and quick inclusion of new partners in the Consortium if necessary. All Consortium partners are involved in related areas with more than one staff member, ensuring an immediate substitution. COVID-related aspects of these risks, and possible mitigation approaches (including importance of the need of efficient communication) have been discussed during the Kick-off meeting and have been acknowledged by the partners.
Planning problems – resources underestimated, project timing not appropriate, deliverables/ milestones delayed.	WP2, ALL	Potential solutions: involvement of other partners, with available resources, rearrangement of resources among partners, change of project plan, as a result of self-assessment activities (in direct communication with the EC / Project Officer), and ensuring timely implementation of corrective actions
Communication issues – lack of direct (personal) contact (due to COVID pandemics travel restrictions) leads to problems in in-depth understanding between partners. Particularly "dangerous" when partners are involved in "joint activities".	All	Potential problems related to / originating from lack of proper communication have been discussed during the Kick-off meeting and acknowledged by all partners. The PC and the TC will pay particular attention to the way partners are communicating / common understanding is achieved. Extra teleconferences (possibly with presence of PC and/or TC) are planned to mitigate effects of materialization of this risk.
Collaboration issues – Consortium cannot agree, WP interaction not satisfactory, coordination not efficient.	WP2	The project management (as described in this Handbook) provides appropriate decision-making and conflict resolution procedures, which will be applied. As the last instance, managements of the affected organisations, including the coordinating organisation, will be involved in problem resolution.
External risks – change of project requirements due to evolution of relevant technology and market landscape. Particularly relevant due to research related to cutting-edge areas.	WP2	The PC/TC/PIC will immediately analyse concrete impact on the project and propose corrective actions in the work plan. Role of Advisory Board is foreseen. Proposed actions, if necessary, will be consulted with the Project Officer.
Advisory Board members are not able to conduct satisfactorily the required assessment and/or advisory roles.	WP2	The Consortium will monitor AB activities assuring that they are aligned with the project, implementing the adequate procedures. AB membership can be adjusted in case some AB member underperforms.

Table 11. Technical risks in ASSIST-IoT

Technical risks	**WP**	**Proposed risk mitigation measures**
The market environment or the user views change making the results obsolete.	WP3, WP9	Robust effort on market analysis in WP2 and development of an appropriate exploitation plan in WP8, including a business analysis, will assure that users' needs and wishes, as well as market trends, are constantly taken into account.

Detailed specification of pilots (performed in WP3) leads to realization that some goals / KPI's may be very difficult to reach.	WP7 WP8	Analysis reaching beyond SotA (T3.1), seeking alternative solutions to be able to reach goals / KPI's. Establishing hierarchy of goals to be able to focus on realizing the most important ones (engineering 80:20 rule). Engaging Advisory Board and/or Project Officer and/or Project Reviewers to adjust the goals and KPIs in a way that will be satisfactory to all parties.
Not enough testing of technical components leading to failures, lack of functionality or dissatisfaction by users.	WP4, WP5, WP6	Design of adequate testing plan (WP5) taking in account information gathered during design (WP2) and monitoring of technical tasks (WP3 and WP4) will avoid this risk.
Problems with including/using results of machine learning / artificial intelligence in self-* mechanisms.	WP4, WP5, WP6	For one side, there will be thorough analysis of mechanisms to be implemented in the architecture and, for the other, within the ASSIST-IoT, three complex pilots with several scenarios will be implemented and thoroughly analysed to prepare a reproducible catalogue of self-* capabilities.
The selected approach of a particular plane/enabler does not fulfil the requirements of the pilots.	WP3, WP4, WP5	Special care must be placed on evaluation of requirements and existing solutions for each plane/enabler. A proof of concept, based on a technology, can be created if its capacity is not fully understood.
Data standardization and interoperability.	WP5	A specific task devoted to data interoperability has been envisioned to avoid this risk, and to create the most adequate data standardization, in order to homogenize the information provided by each pilot.
Unable to measure or compute the KPIs as planned.	WP7, WP8	Due to unexpected factors, ability to extract information and measures for pilots and the project in general, in order to compute the KPIs, can be altered, thus leading to change and adapting the planning of KPIs calculation.
Security, privacy and trust design decisions are not aligned with the IoT market and standard trends.	WP4, WP5, WP6	DevSecOps has been selected as the development methodology, in order to guarantee that security, privacy and trust are considered and in line with the market. Additionally, link with security agents will be kept as part of the impact.
Complexity of interrelations between WP4, WP5 and WP6 leads to managerial problems and negatively influences realization of action outcomes.	WP4, WP5, WP6	TC and PC are aware of the potential problems and will pay extra attention to the progress in interrelated tasks. Potential problems related to the need of on time delivery of results to avoid bottlenecks have been discussed during the Kick-off meeting and acknowledged by all partners. Extra teleconferences (with presence of TC and, possibly, PC) are planned to mitigate effects of materialization of this risk.
Lack of interest in the project results by external stakeholders.	WP9	Targeted dissemination and communication plans for industry and academia will be designed, to raise awareness and increase interest in results. They will be systematically evaluated and adapted, to assure successful result sharing.

6.3. Release of deliverables

One of the main quality mechanisms contemplated to be performed in ASSIST-IoT is the **deliverable review and delivery process**. Deliverables are the main documentation outcome of the project, having significant impact in the dissemination and technical advance exposition. They contain the results of the activities performed within the work packages; are interlinked and are a powerful communication asset among project partners as well. Furthermore, this document will be sent to the EC (and reviewers in Project Reviews) for evaluating the advance of the action. Thus, the deliverable release methodology must be thoroughly analysed and explained in this section.

6.3.1. Approval process of deliverables

First, it is worth to mention that, in order to elaborate deliverables, templates are provided by the PC and will be always available at the **ASSIST-IoT** repository. Whenever a deliverable is tagged with type "Report" (or "Other" containing reports), that template must be used accordingly.

In the approval process of deliverables, the following actors will intervene:

- **Deliverable responsible**: The owner of the deliverable. They have been defined since the elaboration of the proposal and, typically, they are the leaders of the associated task. Only for this actor, **a person must be appointed** in each case to be the responsible.
- **Involved partners**: These partners involved in the writing will be, typically, the ones having participation in the task from which the deliverable emanates. Nevertheless, the Deliverable Responsible will be free to choose a sub-set of the task participants to be the Involved Partners in the elaboration process.
- **Work Package Leader**: As the main responsible for the activity and the outcomes produced within a WP, they are directly involved in their quality review process.
- **Internal reviewers**: For each deliverable, two partners within the Consortium will be picked to be the internal reviewers of the document. The idea is to assign two "independent" members of ASSIST-IoT, providing a kind of "external vision" to the deliverable. They should always be partners not involved in the elaboration of the deliverable, however there might be cases where this non-participation will not be granted. Further details of this process can be found in 6.3.3.
- **PIC**: This project coordination body will be part of the quality review process.
- **PC**: The Project Coordinator is involved in the approval process as the PC is the responsible of the interaction with the EC, thus, the person in charge to effectively submit the document via the EC's SyGMa portal.

All deliverables will start with the **Deliverable Responsible** (see Table 12) providing the *Table of Contents* (TOC) that will include the document. This TOC will be distributed among the **Involved Partners** participating in the elaboration and with corresponding **Work Package leader,** which will be the responsible for monitoring and ensuring that the deliverable production process gets started. In case that a deliverable needs to be coordinated with other deliverables (within the same WP or across different WPs) the WP leader will inform the affected parties in this moment, taking an active role in ensuring the necessary coordination.

Then, the iterative process of writing will take place. During this period, several versions shall be produced by the **Involved Partners**, whose content and structure coordination will be performed by the **Deliverable Responsible**. These versions will be properly stored in the **ASSIST-IoT** repository and will respect the naming and notation agreed. Internal deadlines might also be planned, as well as specific teleconferences might be arranged.

Afterwards (once v0.9 is ready), the **review process** will start. The first stage of reviewing will fall on the **Internal Reviewers**. The outcome of this step is to provide the **Deliverable Responsible** with feedback about the content, style, consistency, impact, adequacy, contractual obligations and technical expectations of the document. In order to formalise this feedback, **the PC has provided a template** for Internal Deliverable evaluation (that can be found in A.2 - and will be permanently available at the project repository) which will

serve as a communication tool between the **Deliverable Leader** and the Internal Reviewers. Finally, after several iterations expected, within which Involved Partners might be called upon new contributions, a **draft version of the deliverable in its final form (v1.0)** will be agreed and sent to the upper level of the approval process hierarchical tree.

The **PIC** will be then contacted to review and bring added value to the content and, especially, concerning alignment with the whole project *leitmotiv*, management and style aspects and regulatory or field-specific issues. Their review is expected to be very quick (as it can be seen in Figure 9), providing prompt feedback, being close to the submission deadline.

Finally, the **PC** will gather the final version to be submitted, will verify the format of the deliverable and, after a final check on every relevant **EC↔ASSIST-IoT** interaction aspect, will upload the document to the SyGMa platform, finishing the process.

Although this methodology will be applied generically to every project deliverable, there are some exceptions that will not follow this structure, due to its own nature:

- WP1 deliverables; Ethic requirements will be elaborated by UPV and reviewed by the Ethics Manager Then, PCC will review its content and will be submitted.
- D2.1 (this document): It must be submitted in M1 and its responsibility of UPV, requesting feedback of confirmation by the PIC to submit it in time and manner.
- D2.2 Data Management Plan: This document will be led by the Project Coordinator and will be reviewed by the PIC and PCC.
- D2.3 and D2.4 (Ethics and Privacy protection manual v1 and v2): These documents will be elaborated within task T2.4, led by the EM. Both will be reviewed only by the PCC prior to be submitted.
- D2.5, D2.6 and D2.7 (Risk Management): The PC will be in charge of leading the document, coordinating the writing and carrying out the most part of it. These deliverables will be reviewed only by the PCC prior to be submitted.

6.3.2. Timeline of quality review process

ASSIST-IoT Consortium has committed (through the GA) **to a due date for each project deliverable**. Then, the approval process must be tied to a clear timing in order to ensure the quality of the deliverable to be submitted. In the next figure, the proposed timeline is shown in the Figure 9:

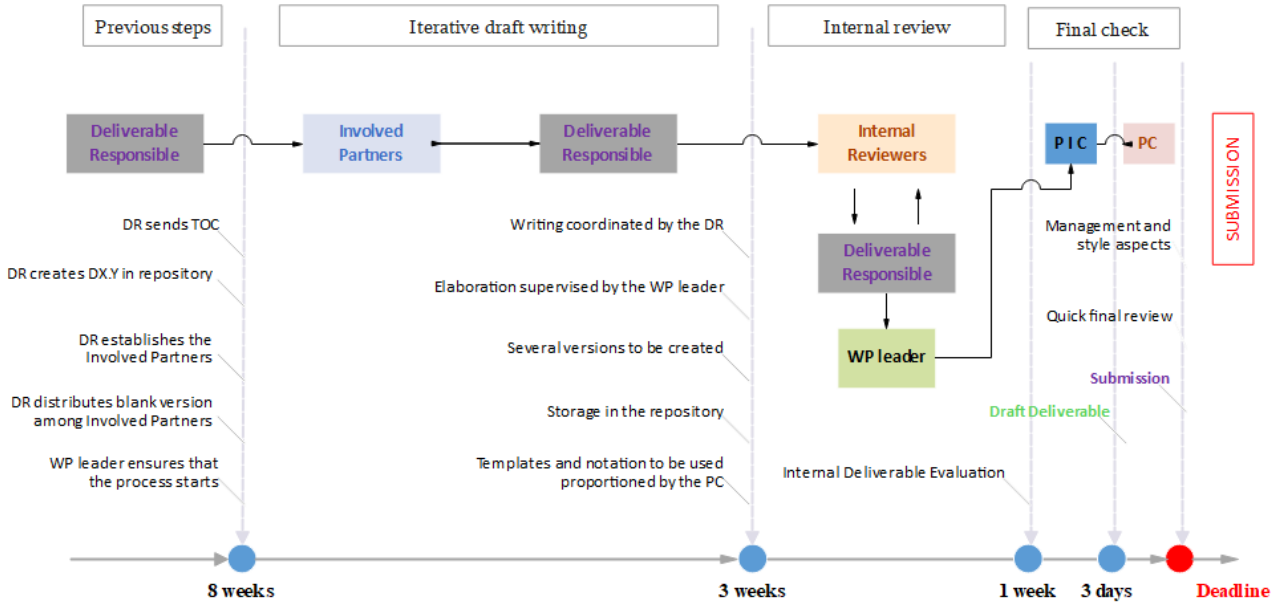


Figure 9. Timeline of deliverable approval process

6.3.3. Preliminary deliverable reviewers

As previously explained, an important part of the quality review process for deliverables will fall on Internal Reviewers from inside the **ASSIST-IoT** Consortium. In Table 12, a preliminary assignment for the review of deliverables have been done according to the following criteria:

- Partners not being involved in the elaboration of the deliverable
- Partners having direct responsibility over other deliverables (amount of work)
- Partners have responsibilities according to their relevance and budget in the project
- In case of iterative deliverables, at least one reviewer has been maintained.

Table 12. Preliminary Internal deliverable reviewers

D.No	Deliverable Name	Resp.	Rev. 1	Rev. 2
D1.1	H - Requirement No. 1	**UPV**	EM	PCC
D1.2	POPD - Requirement No. 2	**UPV**	EM	PCC
D2.1	Project Management Handbook	**UPV**	PIC	
D2.2	Data Management Plan	**UPV**	PIC	PCC
D2.3	Ethics and Privacy Protection Manual v1	**CERTH**	PCC	
D2.4	Ethics and Privacy Protection Manual v2	**CERTH**	PCC	
D2.5	Risk Management v1	**UPV**	PCC	
D2.6	Risk Management v2	**UPV**	PCC	
D2.7	Risk Management v3	**UPV**	PCC	
D2.8	Advisory Board Minutes – First Meeting	**UPV**	ICCS	TL
D2.9	Advisory Board Minutes – Second Meeting	**UPV**	ICCS	TL
D2.10	Advisory Board Minutes – Final Meeting	**UPV**	ICCS	TL
D2.11	First Open Call Report	**UPV**	S21SEC GES	Konecranes
D2.12	Second Open Call Report	**UPV**	S21SEC GES	Konecranes
D3.1	State-of-the-Art and Market Analysis Report	**PRODEVELOP**	CIOP-PIB	MOW
D3.2	Use Cases Manual & Requirements and Business Analysis - Initial	**IBSPAN**	IBSPAN	CERTH
D3.3	Use Cases Manual & Requirements and Business Analysis - Final	**NEWAYS**	IBSPAN	CERTH
D3.4	Legal and Regulatory Constraints Analysis and Specification	**CIOP-PIB**	NEWAYS	INFOLYSIS
D3.5	ASSIST-IoT Architecture Definition – Initial	**UPV**	CERTH	FORD-WERKE

D3.6	ASSIST-IoT Architecture Definition – Intermediate	**PRODEVELOP**	CERTH	FORD-WERKE
D3.7	ASSIST-IoT Architecture Definition – Final	**UPV**	CERTH	FORD-WERKE
D4.1	Initial Core Enablers Specification	**IBSPAN**	MOW	TL
D4.2	Core Enablers Specification and Implementation	**PRODEVELOP**	MOW	TL
D4.3	Final Core Enablers Specification and Implementation	**UPV**	MOW	TL
D5.1	Software Structure and Preliminary Design	**IBSPAN**	TwoTronic	OPL
D5.2	Traversal Enablers Development Preliminary Version	**IBSPAN**	NEWAYS	INFOLYSIS
D5.3	Traversal Enablers Development Intermediate Version	**CERTH**	NEWAYS	INFOLYSIS
D5.4	Software Structure and Final Design	**UPV**	TwoTronic	OPL
D5.5	Traversal Enablers Development Final Version	**IBSPAN**	NEWAYS	INFOLYSIS
D6.1	Devsecops Methodology and Tools	**S21SEC GER**	PRODEVELOP	OPL
D6.2	Testing and Integration Plan – Initial	**CERTH**	INFOLYSIS	MOW
D6.3	Testing and Integration Plan – Final	**CERTH**	INFOLYSIS	MOW
D6.4	Release and Distribution Plan – Initial	**UPV**	TwoTronic	NEWAYS
D6.5	Technical and Support Documentation – Initial	**INFOLYSIS**	NEWAYS	ICCS
D6.6	Technical and Support Documentation – Final	**INFOLYSIS**	NEWAYS	ICCS
D6.7	Release and Distribution Plan – Final	**UPV**	TwoTronic	NEWAYS
D7.1	Deployment Plan and Operational Framework	**PRODEVELOP**	CIOP-PIB	UPV
D7.2	Pilot Scenario Implementation – First Version	**FORD-WERKE**	UPV	IBSPAN
D7.3	Pilot Scenario Implementation – Intermediate Version	**MOW**	UPV	IBSPAN
D7.4	Pilot Scenario Implementation – Final Version	**TL**	UPV	IBSPAN
D8.1	Evaluation Plan	**Konecranes**	CIOP-PIB	S21SEC GES
D8.2	Technical Evaluation and Assessment Report	**NEWAYS**	ICCS	UPV
D8.3	Final Evaluation Report	**NEWAYS**	ICCS	UPV
D9.1	Web Site, Social Media Channels and Communication Support Material	**INFOLYSIS**	PRODEVELOP	Konecranes

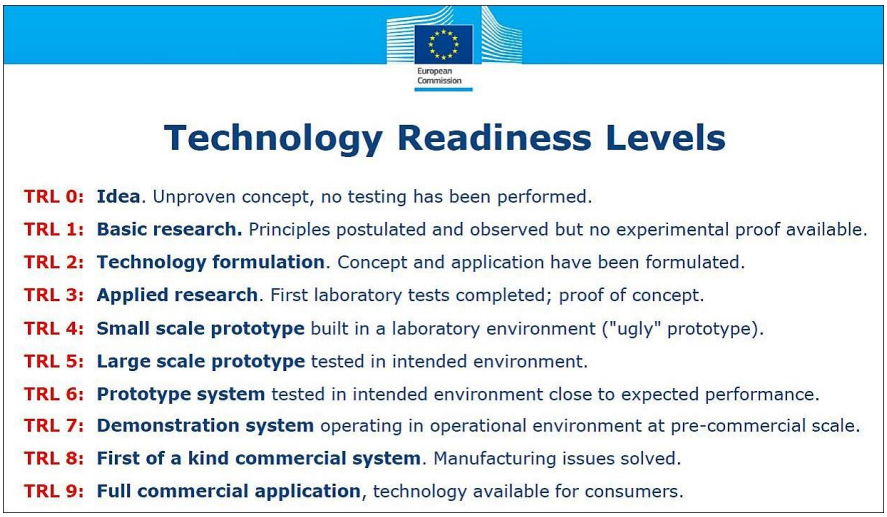
D9.2	Impact Creation Roadmap	**INFOLYSIS**	CIOP-PIB	OPL
D9.3	Report on Contribution to Standardisation and International Fora – Initial	**OPL**	TL	FORD-WERKE
D9.4	Report on Contribution to Standardisation and International Fora – Final	**OPL**	TL	FORD-WERKE
D9.5	Report on Impact Creation Achievements and Plan for the First Period	**IBSPAN**	S21SEC GES	IBSPAN
D9.6	Business Models and Marketing Operations – Initial	**PRODEVELOP**	IBSPAN	Konecranes
D9.7	Business Models and Marketing Operations – Final	**PRODEVELOP**	IBSPAN	Konecranes
D9.8	Final Report on Impact Creation	**INFOLYSIS**	S21SEC GES	IBSPAN

7. Innovation management

What I have learned is that innovation - creating what is both new and valuable - is not a narrowly defined, technical area of competence. Rather, innovation emerges when different bodies of knowledge, perspectives, and disciplines are brought together.

John Kao (Innovation Nation, 2007)

H2020, as the Framework Programme (FP) for Research and Innovation, is an impact-oriented approach being one of its most important purposes to deliver strategic technologies which could drive competitiveness, growth and kick start the economy. On the other hand, the Innovation Management is the process *behind coming up with ideas, turning them into action plans and developing them for the business until they become a reality*. In other words, the Innovation Management is an integral part of this initiative which will serve to turn ASSIST-IoT's creative ideas from opportunities into benefits, making them happen before the project ends. The Technology Readiness Level (TRL) scale was adopted by the European Commission in their FP Horizon 2020 in order to boost innovation providing a common understanding of the technology improvement within a Consortium, while managing and evaluating progress in Research & Development activities. ASSIST-IoT, as a Research and Innovations Actions (RIA), is a collaborative funding research activity relatively upstream of a commercial product, allowing the exploration of new technologies, new methods, new products, or improvements to existing ones. Such kind of projects may include fundamental or applied research, but also **development and new technology implementation**, either at the lab scale or in a simulated environment close to the final one (i.e. pilots or testbeds). Although the TRL required for the RIA calls is usually relatively low (below TLR 6, meaning that the expected outcome of the project is a functional prototype), it is the mission of the ASSIST-IoT Consortium to systematically promote innovations within the staff and to generate real benefits with enough added value that will resolve recurring problems in the industry with creative solutions, increase workforce productivity with new processes and business procedures, improve business performance thanks to a new innovative solution ahead of the competition, etc. For that reason, since the very beginning multiple activities will be carried out in order to clarify the recipients of the creative ideas of ASSIST-IoT through the continuous analysis and review of the innovation, boosting the benefits while minimizing the weak points of the omnipresence of ASSIST-IoT on the market, in both industrial and scientific spaces.



These aforementioned actions will be coordinated, managed and lead by the **Innovation Manager (IM)**, who will leverage project management groups, structures and mechanisms, Consortium members' capacities and work packages and particular task execution, enabling monitoring, controlling and fostering innovation. The IM, with the help not only of the whole Consortium but also the IM deputy, will be in charge of the overall management of all activities related to understanding needs, with the objective of successfully identifying new ideas, and managing them, in order to develop new products and services which will satisfy these needs. The IM will be more than just an enabler so that he will also allow ASSIST-IoT Consortium to effectively respond to external or internal opportunities (e.g. future funding opportunities, investors, venture capital, etc.) constantly developing new suitable exploitation tools and infrastructure. To sum up, the evaluation and realisation of innovation potential of ASSIST-IoT will be guaranteed by the IM, together with the Consortium as well as the deputy IM, through activities defined below. Innovation management will be directly integrated into overall

management architecture, overseeing all Consortium business-related activities. In conclusion, the IM will be responsible for managing all activities related to innovation, from market need through capturing the IP, to market deployment.

The Innovation Strategy Manifest in ASSIST-IoT

1. Innovation management starts at the point of capturing creative work and finishes when a new product or service is deployed.
2. Innovation must be managed and addressed in all stages of the project, not only during the exploitation stage.
3. Having a low Technology Readiness Level (TRL) as starting point is not a strong argument to put the focus just on the idea and not on the market and the business opportunities.
4. Intellectual Property is a valuable asset which must be protected.
5. Dissemination stimulates further research and development as well as increases the likelihood to reach the market.
6. Exploitation of ASSIST-IoT outcomes could be both commercial and research.
7. Proposing just an idea without any credible and viable business plan to achieve its commercialisation in the mid-term is not an option.
8. Continuous Innovation assessment of any deliverable, result, etc. delivered by the ASSIST-IoT Consortium is mandatory in order to demonstrate that outcomes are beyond the state of the art.
9. Realistic, credible, achievable and measurable KPIs will be demonstrated via prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.
10. Any solution will be generated bearing in mind the principal competitors, risks and hazards, in order to avoid the development of a product that already exists on the market.

ASSIST-IoT Project Board

Innovation Manager tools and main activities

Over the last decade, innovators have realized that they needed tools and activities different from traditional project management methodologies and frameworks. They have passionately embraced innovation tools and activities that for the first time help individual innovators figure out what to build, who to build it for and how to create effective prototypes and demos. Such innovation stack will be (1) the **Innovation Strategy** document (i.e. a deliverable which will help running organisational activities contributing to its innovativeness capacity and performance), (2) a set of KPIs that will help monitoring and evaluate the innovation level of the innovation activities carried out within the project and (3) other innovation tools like Customer Development, Design Thinking, User-Centric Design, Business Model Canvas, Kaizen, Continuous Improvement Process, Total Quality Management, plus *hackathons* or Open Innovation spaces (*Improvement and innovation go hand in hand*).

While the most important activity of the IM is to develop new (or improve) products, business models or processes, tasks and fields of action is huge. In ASSIST-IoT the IM with the help and support of the Project Boards has defined four major pillars. In detail:

- Development of the Innovation Strategy and delivery planning of innovation activities such as an innovation roadmap.
- Creation of framework conditions so that ideas are generated everywhere in the Consortium and turned into successful innovations.
- Study and analyse the landscape with respect to SotA, IP, market size, market environment, barriers, risks, segmentation, growth, standards, etc.
- IPR Management and IP protection (e.g. agree IP access, usage rights, foreground, background, etc.)
- Ensure good research practice (GRP) so that training and procedures will be in place.
- Preparation of exploitation and commercialisation strategies (and plans, if appropriate), including the project results. Also, coordination of individual partner´s exploitation plans to avoid conflicts and accommodate the exploitation plan to changes in trends in market, technologies, and society.

- Improves networking (at research, business, and user level) through implemented dissemination activities. The IM will be in charge of carrying out constant communication between the Consortium and rest of the staff, mostly through common events, as targeted conferences, industrial showcases and other meetings.
- Portfolio management and innovation controlling KPIs (e. g. innovation indicators) to manage and assess innovation activities.

8. Conclusion

Every procedure settled in this document has been guided by highest quality considerations, from technical and management point of view, according to **ASSIST-IoT** members.

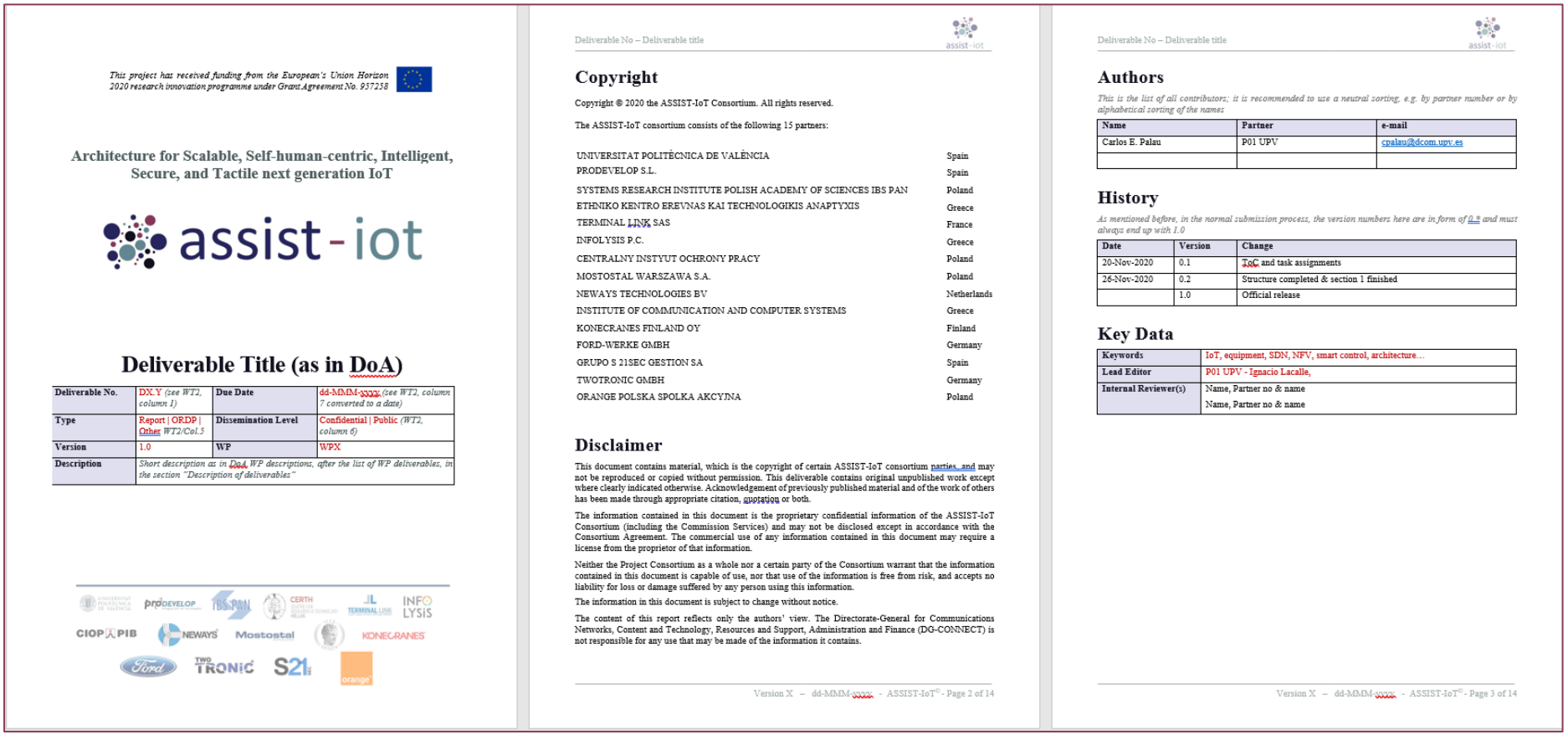
The various discussions taken over during the Kick Off Meeting in November 2020 have led to several decision that have been included in the document. At the moment of its submission, the deliverable D2.1 constitutes the ruling document summarising the "Handbook of practices" of ASSIST-IoT. This deliverable, altogether with the Consortium Agreement conform the basis of interaction between partners throughout all project facets.

Being a guidance in the day-to-day activities of the project, the main conclusion emanating from this deliverable is the intention of being useful and ready to be updated as times as necessary. Future works in other deliverables, execution of particular activities, or particular requests from partners, will contribute to enrich this fundamental document for **ASSIST-IoT** project.

Appendix A - Templates

A.1 - Deliverables

In Figure 10 below, a reference to the template of the document is shown. Full document is available complete and with guidelines in the repository.



This project has received funding from the European's Union Horizon 2020 research innovation programme under Grant Agreement No. 957258

Architecture for Scalable, Self-human-centric, Intelligent, Secure, and Tactile next generation IoT

assist-iot

Deliverable Title (as in DoA)

Deliverable No.	DX.Y *(see WT2, column 1)*	**Due Date**	dd-MMM-yyyy *(see WT2, column 7 converted to a date)*
Type	Report | ORDP | Other *WT2/Col.5*	**Dissemination Level**	Confidential | Public *(WT2, column 6)*
Version	1.0	**WP**	WPX
Description	*Short description as in DoA WP descriptions, after the list of WP deliverables, in the section "Description of deliverables"*		

Deliverable No – Deliverable title

Copyright

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The ASSIST-IoT consortium consists of the following 15 partners:

UNIVERSITAT POLITÈCNICA DE VALÈNCIA	Spain
PRODEVELOP S.L.	Spain
SYSTEMS RESEARCH INSTITUTE POLISH ACADEMY OF SCIENCES IBS PAN	Poland
ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	Greece
TERMINAL LINK SAS	France
INFOLYSIS P.C.	Greece
CENTRALNY INSTYUT OCHRONY PRACY	Poland
MOSTOSTAL WARSZAWA S.A.	Poland
NEWAYS TECHNOLOGIES BV	Netherlands
INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS	Greece
KONECRANES FINLAND OY	Finland
FORD-WERKE GMBH	Germany
GRUPO S 21SEC GESTION SA	Spain
TWOTRONIC GMBH	Germany
ORANGE POLSKA SPOLKA AKCYJNA	Poland

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Deliverable No – Deliverable title

Authors

This is the list of all contributors; it is recommended to use a neutral sorting, e.g. by partner number or by alphabetical sorting of the names

Name	Partner	e-mail
Carlos E. Palau	P01 UPV	cpalau@dcom.upv.es

History

As mentioned before, in the normal submission process, the version numbers here are in form of 0. and must always end up with 1.0*

Date	Version	Change
20-Nov-2020	0.1	ToC and task assignments
26-Nov-2020	0.2	Structure completed & section 1 finished
	1.0	Official release

Key Data

Keywords	IoT, equipment, SDN, NFV, smart control, architecture…
Lead Editor	P01 UPV - Ignacio Lacalle,
Internal Reviewer(s)	Name, Partner no & name Name, Partner no & name

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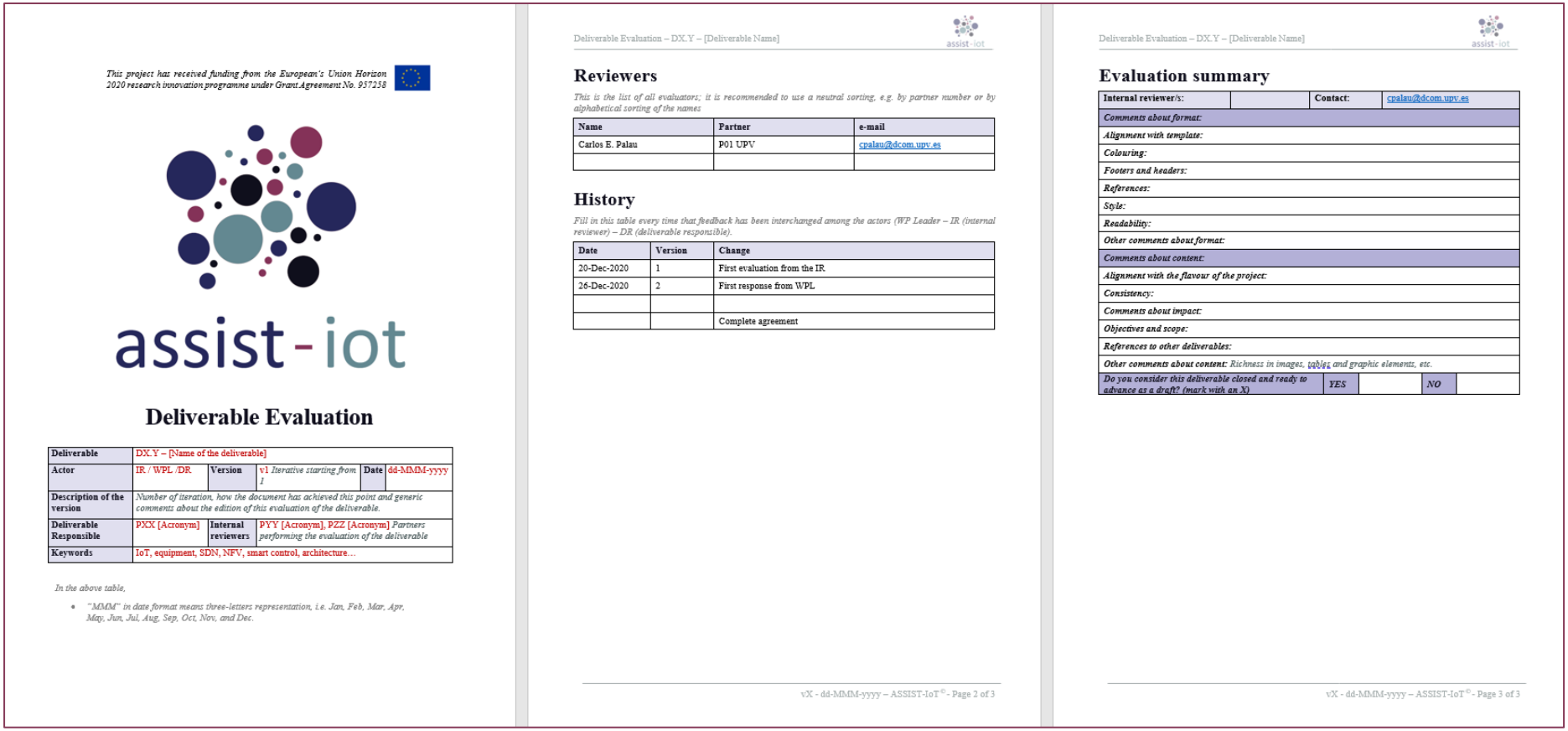
Figure 10. Template for Deliverables

A.2 - Internal Deliverable Evaluation

After the sheets that are exposed in below, a corrected version (with comments and keeping the track changes activated) of the corresponding deliverable will be attached in each new release, in order to enable an effective communication in the quality review of the document.



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Deliverable Evaluation

Deliverable	DX.Y – [Name of the deliverable]				
Actor	IR / WPL /DR	**Version**	v1 *Iterative starting from 1*	**Date**	dd-MMM-yyyy
Description of the version	*Number of iteration, how the document has achieved this point and generic comments about the edition of this evaluation of the deliverable.*				
Deliverable Responsible	PXX [Acronym]	**Internal reviewers**	PYY [Acronym], PZZ [Acronym] *Partners performing the evaluation of the deliverable*		
Keywords	IoT, equipment, SDN, NFV, smart control, architecture…				

In the above table,

- *"MMM" in date format means three-letters representation, i.e. Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, and Dec.*

Deliverable Evaluation – DX.Y – [Deliverable Name]

Reviewers

This is the list of all evaluators; it is recommended to use a neutral sorting, e.g. by partner number or by alphabetical sorting of the names

Name	Partner	e-mail
Carlos E. Palau	P01 UPV	cpalau@dcom.upv.es

History

Fill in this table every time that feedback has been interchanged among the actors (WP Leader – IR (internal reviewer) – DR (deliverable responsible).

Date	Version	Change
20-Dec-2020	1	First evaluation from the IR
26-Dec-2020	2	First response from WPL
		Complete agreement

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Deliverable Evaluation – DX.Y – [Deliverable Name]

Evaluation summary

Internal reviewer/s:		**Contact:**	cpalau@dcom.upv.es
Comments about format:			
Alignment with template:			
Colouring:			
Footers and headers:			
References:			
Style:			
Readability:			
Other comments about format:			
Comments about content:			
Alignment with the flavour of the project:			
Consistency:			
Comments about impact:			
Objectives and scope:			
References to other deliverables:			
Other comments about content: *Richness in images, tables and graphic elements, etc.*			
Do you consider this deliverable closed and ready to advance as a draft? (mark with an X)	***YES***		***NO***

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Figure 11. Template for Internal Deliverable Evaluation

A.3 - Financial Reporting (IFR)

This report must be complimented and sent quarterly from all partners, according to the procedure defined in 3.3.2. This document is provided to the partners in Excel format, and so is stored in the repository. In the next Figure 12 is reflected the content of the table provided to the partners:

ASSIST-IoT Internal Financial Report

Partner: Name of the partner | Period: M1-M3

CONSUMED BUDGET		TOTAL P.M. consumed (estimation)	Name of experts who have worked (PM consumed each)	Brief description of tasks performed
WP1	Ethics requirements			
WP2	Project Coordination and Management			
WP3	Requirements, Specifications and Architecture			
WP4	Core Enabler Design and Development			
WP5	Transversal Enabler Design and Development			
WP6	Testing, Integration and Support			
WP7	Pilots and Validation			
WP8	Evaluation and Assessment			
WP9	Impact Creation			

Additional comments: Any additional comment on PM consumption (deviations, etc.)

ESTIMATION OF EXPENDITURES (1) – TRAVELS	Estimated cost	Names of all travelers	Purpose of the travel and Location	Start date	End date

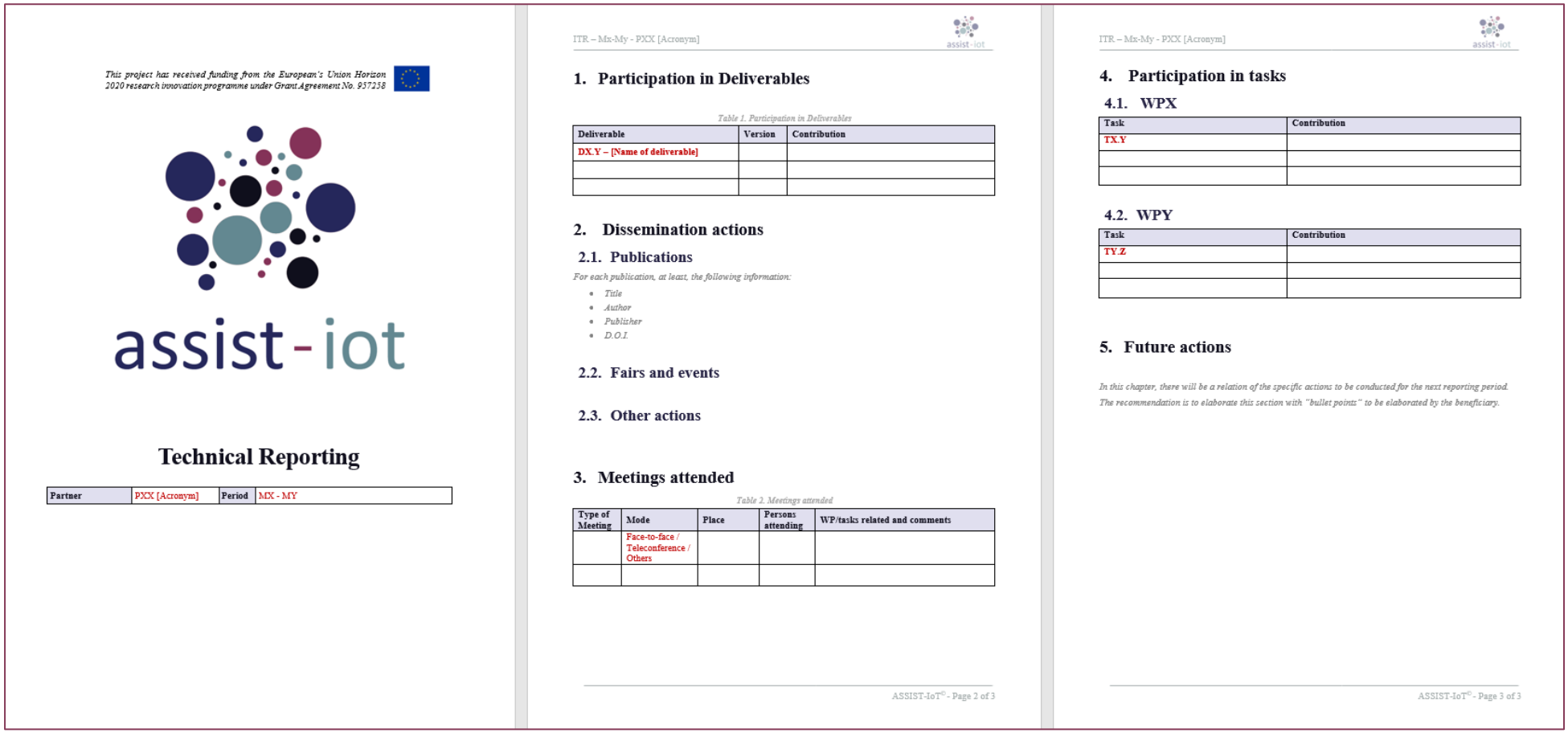
Additional comments: Any issue that has an impact on the project must be reported

ESTIMATION OF EXPENDITURES (2) – OTHER COSTS	Estimated cost	Type of cost (subcontracting, purchased material, etc.)	Explanation	Date

Figure 12. Template for Internal Financial Reporting

A.4 - Technical Reporting (ITR)

This report must be complimented and sent quarterly from all partners, according to the procedure defined in 3.3.2 The full template is available in the repository in the proper format, and in the image below it is shown for the reader to be situated:



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Technical Reporting

Partner	PXX [Acronym]	Period	MX - MY

ITR – Mx-My - PXX [Acronym]

1. Participation in Deliverables

Table 1. Participation in Deliverables

Deliverable	Version	Contribution
DX.Y – [Name of deliverable]		

2. Dissemination actions

2.1. Publications

For each publication, at least, the following information:

- *Title*
- *Author*
- *Publisher*
- *D.O.I.*

2.2. Fairs and events

2.3. Other actions

3. Meetings attended

Table 2. Meetings attended

Type of Meeting	Mode	Place	Persons attending	WP/tasks related and comments
	Face-to-face / Teleconference / Others			

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ITR – Mx-My - PXX [Acronym]

4. Participation in tasks

4.1. WPX

Task	Contribution
TX.Y	

4.2. WPY

Task	Contribution
TY.Z	

5. Future actions

In this chapter, there will be a relation of the specific actions to be conducted for the next reporting period. The recommendation is to elaborate this section with "bullet points" to be elaborated by the beneficiary.

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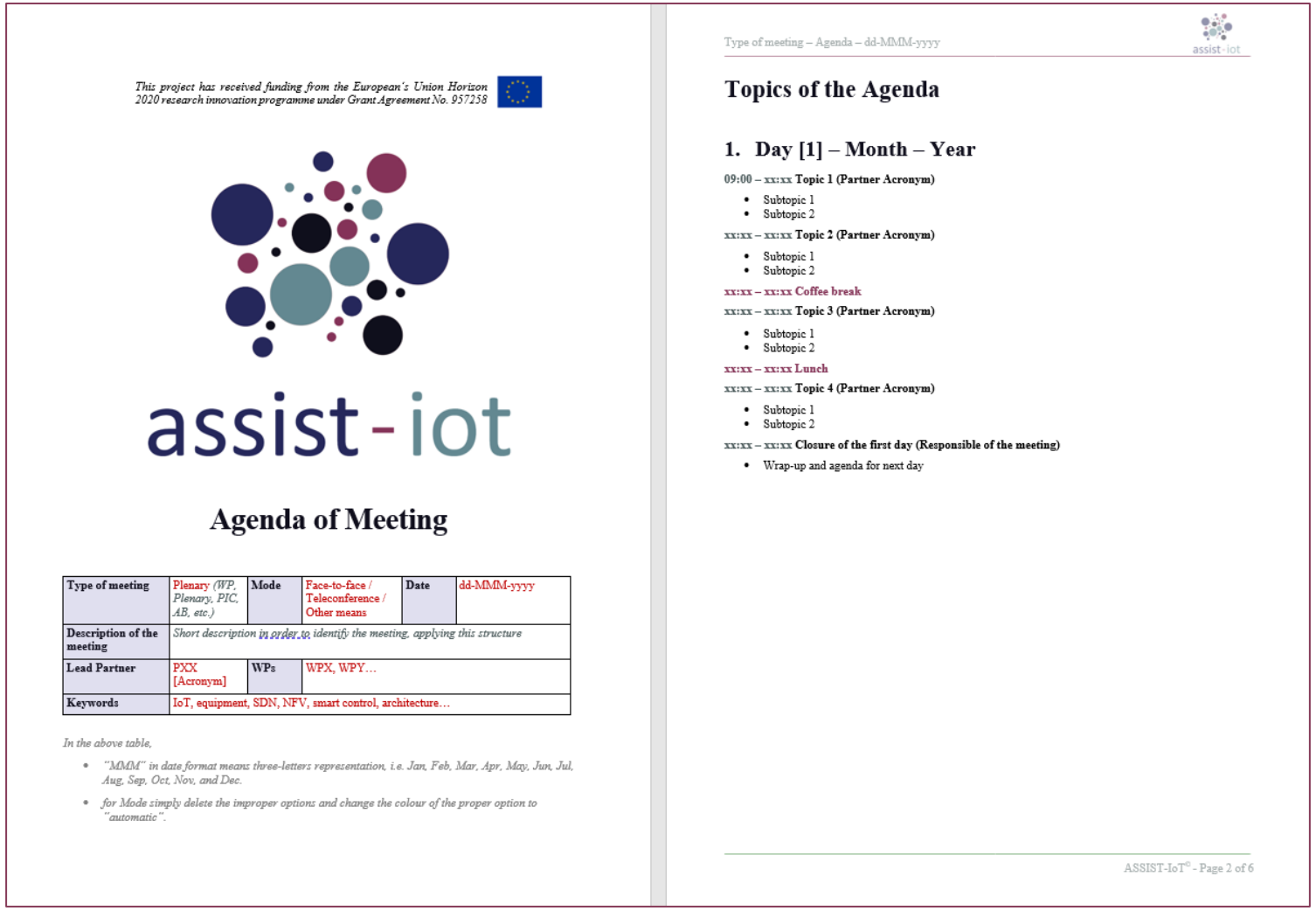
Figure 13. Template for Internal Technical Reporting

A.5 - Agenda of a meeting

In Figure 14 below, a reference to the template of the document is shown. Full document is available complete and with guidelines in the repository:



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Agenda of Meeting

Type of meeting	Plenary *(WP, Plenary, PIC, AB, etc.)*	**Mode**	Face-to-face / Teleconference / Other means	**Date**	dd-MMM-yyyy
Description of the meeting	*Short description in order to identify the meeting, applying this structure*				
Lead Partner	PXX [Acronym]	**WPs**	WPX, WPY…		
Keywords	IoT, equipment, SDN, NFV, smart control, architecture…				

In the above table,

- *"MMM" in date format means three-letters representation, i.e. Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, and Dec.*
- *for Mode simply delete the improper options and change the colour of the proper option to "automatic".*

Type of meeting – Agenda – dd-MMM-yyyy

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Topics of the Agenda

1. Day [1] – Month – Year

09:00 – xx:xx **Topic 1 (Partner Acronym)**

- Subtopic 1
- Subtopic 2

xx:xx – xx:xx **Topic 2 (Partner Acronym)**

- Subtopic 1
- Subtopic 2

xx:xx – xx:xx **Coffee break**

xx:xx – xx:xx **Topic 3 (Partner Acronym)**

- Subtopic 1
- Subtopic 2

xx:xx – xx:xx **Lunch**

xx:xx – xx:xx **Topic 4 (Partner Acronym)**

- Subtopic 1
- Subtopic 2

xx:xx – xx:xx **Closure of the first day (Responsible of the meeting)**

- Wrap-up and agenda for next day

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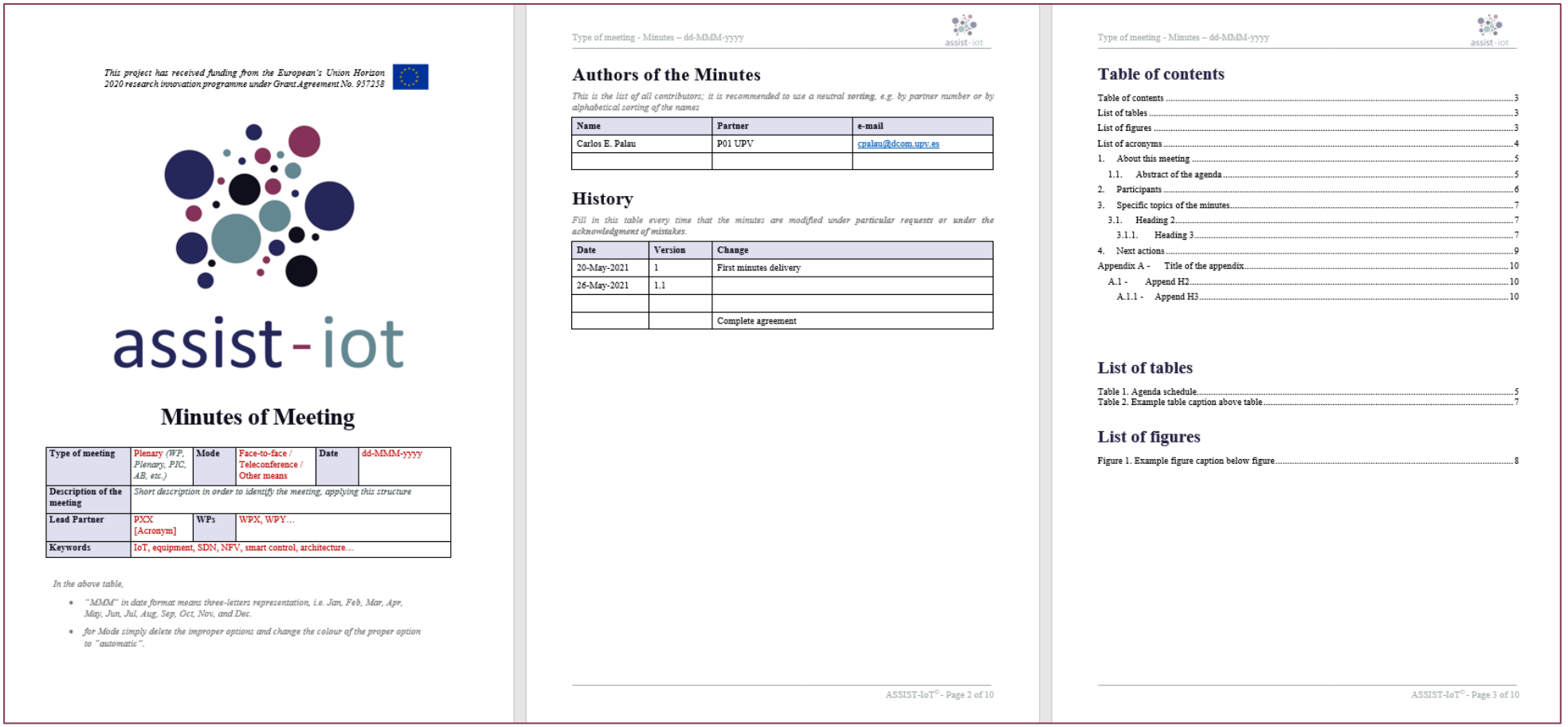
Figure 14. Template for the Agenda of a meeting

A.6 - Meeting minutes

In Figure 15 below, a reference to the template of the document is shown. Full document is available complete and with guidelines in the repository:



This project has received funding from the European's Union Horizon 2020 research innovation programme under Grant Agreement No. 957258

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Minutes of Meeting

Type of meeting	Plenary (WP, Plenary, PIC, AB, etc.)	**Mode**	Face-to-face / Teleconference / Other means	**Date**	dd-MMM-yyyy
Description of the meeting	Short description in order to identify the meeting, applying this structure				
Lead Partner	PXX [Acronym]	**WPs**	WPX, WPY…		
Keywords	IoT, equipment, SDN, NFV, smart control, architecture…				

In the above table,

- *"MMM" in date format means three-letters representation, i.e. Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, and Dec.*
- *for Mode simply delete the improper options and change the colour of the proper option to "automatic".*

Type of meeting - Minutes – dd-MMM-yyyy

Authors of the Minutes

This is the list of all contributors; it is recommended to use a neutral sorting, e.g. by partner number or by alphabetical sorting of the names

Name	Partner	e-mail
Carlos E. Palau	P01 UPV	cpalau@dcom.upv.es

History

Fill in this table every time that the minutes are modified under particular requests or under the acknowledgment of mistakes.

Date	Version	Change
20-May-2021	1	First minutes delivery
26-May-2021	1.1	
		Complete agreement

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Type of meeting - Minutes – dd-MMM-yyyy

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Figure 15. Template for Meeting minutes