

Project Acronym and Title:

# 5GhOSTS - 5TH GENERATION SECURITY FOR TELECOM SERVICES

Deliverable:

# D6.2: COLLABORATION PLATFORM AND QUALITY HANDBOOK


Authors and affiliation:

**Jan Tobias Muehlberg (KU Leuven)**

jantobias.muehlberg@cs.kuleuven.be


**D6.2** Revision: 3




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|---|---|---|
| **PU** | Public | X |
| **CO** | Confidential, only for members of the consortium (incl. the Commission Services) | |
| **CL** | Classified, as referred to in Commission decision 2001/844/EC | |

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| **Approved (Coordinator)** | Jan Tobias Muehlberg | 2019-10-31 |



| **Author(s)** | | |
|---|---|---|
| **Name** | **Organisation** | **E-mail** |
| Jan Tobias Muehlberg | KU LEUVEN | jantobias.muehlerg@cs.kuleuven.be |
| Eddy Truyen | KU LEUVEN | eddy.truyen@cs.kuleuven.be |
| Katrien Janssens | KU LEUVEN | katrien.janssens@cs.kuleuven.be |
| Christoph Baumann | EAB | christoph.baumann@ericsson.com |



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| **Public introduction** |
| --- |
| 5GhOSTS will analyse and improve the security of service-based implementations of 5G networks, relevant to protect the EU's critical communication infrastructure. Starting from the emerging 3GPP's service-based architecture for 5G networks, which includes virtualization of mobile and core network functions, the project aims to improve the security of virtualization technologies: containers, lightweight Virtual Machines and orchestration frameworks. Unlike previous evolutions in the telecommunications sector, the 5th Generation of Telecommunication Systems (5G) presents diverse and novel requirements for technologies such as heterogeneous air interfaces, Software Defined Networking, Network Functions Virtualization, Mobile Edge Computing and Fog Computing, as well as algorithms to optimize the management of such complex networks. As a result, the 5G evolution will mainly built on layers of software services. The telecom industry is migrating to virtualized and orchestrated environments, allowing the deployment of Virtual Network Functions (VNFs) on cloud infrastructure enabling the concept of network slicing. The main motivation driver for this move is sustainability through cost and energy reduction as well as full automation of telecom systems operations facilitating dynamic and scalable adaptation to service demands. State-of-the-art light-weight virtualization and container orchestration frameworks clearly contribute to this driver, but do not meet the stringent security requirements of telecommunication systems. |

| **Executive Report Summary** |
| --- |
| This handbook regards proper day-to-day management and running of the 5GhOSTS project. It aims at promoting quality assurance. The following quality assurance aspects are covered: responsibilities of all those involved in project activities; regular internal and external monitoring processes and activities; reporting procedures; deliverable review and submission procedures; risk assessment and risk management; internal communication flow. |

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# 1.Introduction

This handbook contains information that concerns the proper day-to-day management and running of the 5GhOSTS project. It aims at promoting quality assurance. The following quality assurance aspects are covered in this handbook and are concerned with:

- Responsibilities of all those involved in project activities
- Regular internal and external monitoring processes and activities
- Reporting procedures
- Deliverable review and submission procedures
- Risk assessment and risk management
- Communication flow

Where necessary this handbook makes reference to the relevant project's documents such as the Grant Agreement and Annexes and the Consortium Agreement. When ambiguity of interpretation among these documents arises, this handbook takes a subordinate role. Therefore, priority is given to the documents in the following order:

- Grant Agreement and Annexes (highest priority)
- Commission Rules
- Consortium agreement
- Quality Handbook (lowest priority)

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# 2.The Essentials of the 5GhOSTS Project

Hereafter follows a short introduction referring to the basics of the 5GhOSTS project:

- List of participants
- List of deliverables
- List of Milestones
- Gantt charts

# 3.Project Governance

This section describes the governance structure of the project, and the procedures and recommendations for the correct implementation of the management activities of the project, including the rules to manage the organization and the execution of meetings.

## Management Structure

The 5GhOSTS project is managed by the Joint Supervisory Board and the Project Management Board. The educational and research activities within 5GhOSTS are executed by the Work Package leaders and Task leaders in collaboration with the Joint Supervisory Board.

## Roles and Responsibilities of Project Bodies

The *Joint Supervisory Board (JSB)* is the main strategic decision making body of the 5GhOSTS consortium and consists of representatives from both EAB and KU Leuven. An ESR representative is elected by the ESR's and will represent all ESR's in the JSB (cf. Grant Agreement 3.2.1). The JSB will deliberate on:

- scientific progress and coordination
- joint recruitment of ESR's
- training program and doctoral studies
- budget transfers
- IPR and exploitation strategy
- dissemination activities

As the 5GhOSTS consortium is a small consortium of only two beneficiaries, all decisions will be taken by consensus. The Joint Supervisory Board shall consist of five representatives of each Beneficiary, one representative of each Partner Organisation and one elected representative of the ESRs (cf. D6.1, Consortium Agreement). The JSB of 5GhOSTS includes all ESR supervisors and co-supervisors (cf. Grant Agreement 3.2.1, 3.2.3). The JSB oversees the quality of the research training programme and the supervision of the ESRs. The JSB will ensure the balance between scientific/technological skills and the transferable soft skills with a focus on requirements from both the academic and the non-academic sector.

The *Project Management Board (PMB)*, or the operations team, will follow up on financial management, administration, communication and any day-to day issues. The Project Management Board (PMB) shall be proposed by the Coordinator. It shall be appointed by the Joint Supervisory Board and shall assist and facilitate the work of the Joint Supervisory Board. The Project Management Board shall provide assistance to the Coordinator for executing the decisions of the Joint Supervisory Board. It will follow up on financial management, administration, communication and the day-to-day management of 5GhOSTS (cf. D6.1, Consortium Agreement).

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## Members of Supervisory Board

During the 5GhOSTS kickoff meeting in Leuven on 2019-10-19, the following people have been confirmed to be members of the JSB:

- Dr. Eva Fogelström, EAB (f)
- Dr. Christoph Baumann, EAB (m)
- Dr. Vlasios Tsiatsis, EAB (m)
- Dr. Noamen Ben Henda, EAB (m)
- Dr. Christine Edman, EAB (f)
- Prof. dr. ir. Wouter Joosen, KU Leuven (m)
- Prof. dr. Peggy Valcke, KU Leuven(f)
- Dr. Jan Tobias Mühlberg, KU Leuven (m)
- Dr. Eddy Truyen, KU Leuven (m)
- Dr. Kim Wuyts, KU Leuven (f)
- Dr. Johan Peeters, SecAppDev (m)
- 1 ESR (m/f, to be elected later)

## List of WPs, WP Leaders and Deliverables

| WP Number | WP Title | Lead Beneficiary | Start Month | End Month |
|---|---|---|---|---|
| **1** | Conceptualisation, Use Cases, System Descriptions and Threats | EAB | 1 | 30 |
| **2** | Solution Design and Formal Modelling | EAB | 12 | 45 |
| **3** | Implementation and Verification | KU Leuven | 12 | 40 |
| **4** | Training | KU Leuven | 1 | 46 |
| **5** | Dissemination, Communication and Public Engagement, Exploitation | EAB | 1 | 48 |
| **6** | Management | KU Leuven | 1 | 48 |
| **7** | Ethics requirements | KU Leuven | 1 | 48 |

| Deliverable Number | Deliverable Title | Lead Beneficiary | Type | Dissemination Level | Due Date in Months |
|---|---|---|---|---|---|
| **D1.1** | Data Management Plan | EAB | ORDP | CO | 6 |
| **D1.2** | Use cases and initial conceptualisation of the 4 ESR's research projects, inter-project correlations, | KU Leuven | R | CO | 9 |

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| | | | | | |
|---|---|---|---|---|---|
| | and interdisciplinary common approach | | | | |
| **D1.3** | The trust model for multi-tenant 5G telecom systems running virtualized multi-component services | EAB | R | PU | 18 |
| **D1.4** | Privacy requirements for 5G Telecom Systems running virtualized multi-component services | KU Leuven | R | PU | 18 |
| **D1.5** | Revised architecture and compartmentalisation of a container platform | EAB | R | CO | 24 |
| **D2.1** | State-of-the-art of cryptographic credential management and design of a secure development and operations framework | EAB | R | PU | 24 |
| **D2.2** | Design and formalisation of a security policy framework for selected subsystems and communication and management protocols | KU Leuven | OTHER | CO | 32 |
| **D2.3** | Evaluation of 5GhOSTS tools, technologies in the context of implementing secure, privacy-preserving and trustworthy NFV | KU Leuven | R | CO | 45 |
| **D3.1** | Design and configuration of a base orchestration framework | KU Leuven | R | CO | 18 |
| **D3.2** | Reusable and verified software components for the development of multi-component virtualized services | EAB | OTHER | CO | 32 |
| **D3.3** | Formally secure implementation artifacts that implement cryptographic credential management | KU Leuven | OTHER | CO | 40 |

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|---|---|---|---|---|---|
| **D4.1** | Recruitment report | KU Leuven | R | PU | 5 |
| **D4.2** | Joint training approach I | KU Leuven | R | CO | 6 |
| **D4.3** | Joint training approach II | KU Leuven | R | CO | 36 |
| **D4.4** | Report on local and network activities I | KU Leuven | R | PU | 25 |
| **D4.5** | Report on local and network activities II | EAB | R | PU | 46 |
| **D5.1** | Communication, Dissemination and Exploitation Plan | EAB | R | PU | 6 |
| **D5.2** | Communication, Dissemination and Exploitation Plan: Update I | EAB | R | CO | 24 |
| **D5.3** | Communication, Dissemination and Exploitation Plan: Update II | EAB | R | CO | 42 |
| **D5.4** | Initial setup of communication channels | KU Leuven | OTHER | PU | 2 |
| **D5.5** | Joint publication on “Secure and Privacy Preserving Virtualization Techniques for 5G Telecom Networks” | KU Leuven | R | PU | 40 |
| **D5.6** | Communication and dissemination activities I | EAB | R | PU | 24 |
| **D5.7** | Communication and dissemination activities II | EAB | R | PU | 48 |
| **D5.8** | Potential inputs for policy feedback | EAB | R | PU | 48 |
| **D6.1** | Consortium agreement and bilateral agreements | KU Leuven | R | CO | 2 |
| **D6.2** | Collaboration Platform and Quality Handbook | KU Leuven | OTHER | PU | 2 |
| **D6.3** | Report on project bodies meetings I | KU Leuven | R | CO | 25 |
| **D6.4** | Report on project bodies meetings II | KU Leuven | R | CO | 48 |

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| **D6.5** | Supervisory Board of the network | KU Leuven | R | PU | 2 |
| **D6.6** | Progress Report | KU Leuven | R | CO | 13 |
| **D7.1** | POPD - Requirement No. 1 | KU Leuven | ETHICS | CO | 12 |
| **D7.2** | DU - Requirement No. 2 | KU Leuven | ETHICS | CO | 12 |
| **D7.3** | M - Requirement No. 3 | KU Leuven | ETHICS | CO | 12 |

## Meeting Procedures

The procedures described in this section apply to the meetings of the PMB and JSB are based on Section 6 of the Consortium Agreement. PMB and JSB meetings can be held in a location identified by the Coordinator, through a teleconference system or can be organized by exploiting any other available telecommunication means. The following meetings are foreseen:

- September 2019 in Leuven
- March 2020 in Stockholm
- September 2020
- March 2021
- September 2021
- March 2022
- September 2022
- March 2023

The PMB and JSB meetings will be organised by the Coordinator, in cooperation with the hosting institution.

## Representation in meetings

Any member of the PMB and JSB:

- should be present or represented at any meeting of PMB or JSB;
- may appoint a substitute to attend and vote at any meeting;
- The participation has to be cooperative and aimed at meeting the needs of the project.

The meetings can be Ordinary or Extraordinary and are convened by the Coordinator (chairperson of both PMB and JSB). The Coordinator shall give notice in writing of a meeting and prepare and send the primary agenda to each member as soon as possible and within the minimum number of days preceding the meeting reported in the meeting procedures below. Any member of the PMB or JSB may add an item to the primary agenda by written notification, by email, to all of the other members within the minimum number of days preceding the meeting reported below. However, during a meeting the members present or represented can agree to add a new item to the primary agenda. Any agenda item requiring a decision by the members of the PMB or JSB must be identified as such on the agenda.

## Decision making

The PMB and JSB shall not deliberate and decide validly unless the majority (2/3) of its members are present or represented (quorum).


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Decisions of the PMB will be taken by the majority (3/4) of the votes of Participant present or represented.

Decisions of JSB will be taken by the majority (2/3) of the votes of Participants present or represented (cf. Section 3.3.3.4 of D6.1, Consortium agreement). Defaulting Parties (cf. Section 1.2 of D6.1, Consortium agreement) may not vote (cf. Section 3.3.3.3 of Consortium agreement).

| Kind of Meeting | Frequency | Notice (days preceding the meeting) | Sending of the agenda (days preceding the meeting) | Adding agenda items (days preceding the meeting) |
|---|---|---|---|---|
| **Regular SC meetings** | Every six months (M1, 6, 12,18, 24, 32, 40, 45) | 30 | 10 | 3 |
| **Extraordinary SC meetings** | In the case of an emergency situation, upon written request of the Coordinator | 14 | 5 | 1 |
| **Regular SB meeting** | Every six months (M1, 6, 12,18, 24, 32, 40, 45) | 30 | 10 | 3 |
| **Extraordinary SB meetings** | In the case of an emergency situation upon written request of the Coordinator | 14 | 5 | 1 |

## Format of meeting agenda

A template of the meeting agenda is available on the 5GhOSTS Collaboration Platform. In each Agenda, the following information shall be filled in:

- Project reference
- Date
- Location
- Version draft number
- Points to be discussed

## Format of meeting minutes

The minutes should contain a brief summary of the discussion, the list of participants and a summary of the decisions and of the actions to be taken. Minutes should be written 10 calendar days after the meeting and submitted to the participants for their approval, to be notified within 15 calendar days. No answer means positive answer.

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# 4.Communication

## Communication between the Participants

The Coordinator is responsible for managing the communication within the Participants and arranging the needed internal communication tools.

The majority of day-to-day information will be transmitted by email. Other communication tools that will be used are, e.g., teleconference, document repository.

### Email

The 5GhOSTS' participants will make use of email for the regular information request or provision. For efficient quality assurance in communication, a few tips are given hereafter:

Use a standardised subject: indicate a clear and specific subject in order to let understand immediately that we are dealing with the 5GhOSTS project. So it would be preferable to use subjects like: [Name of the project: subject of the message] i.e. "[5GhOSTS] kick off meeting".

Indicate the deadline in the subject if the topic of the email requires a task to be done within a certain deadline, as follows: [Name of the project: subject of the message – deadline date] i.e.: "[5GhOSTS] deliverable 7.2 - deadline 2020-10-11"

### Mailing lists

The project manager has created and manages specific e-mailing lists for the constructive distribution of emails. At the moment, the project's mailing lists are:

- 5ghostsall@ls.kuleuven.be -- This is a general list for all members of the consortium, including ESRs and external supervisors at partner's sites.
- 5ghostsadmin@ls.kuleuven.be -- This list is used for administrative and strategic discussions amongst the members of the Joint Supervisory Board and the Project Management Board (cf. D6.5 Supervisory Board of the Network).

### Teleconferences

Teleconference platforms as a standard partner communication stream will be extensively used for regular and extraordinary partners meeting (including PMB and JSB meetings). KU LEUVEN and EAB both provide Skype For Business, which may be used as a default for teleconferencing. Other systems may be used on demand.

### Collaboration platform and repositories

The 5GhOSTS SharePoint is accessible to project members at

- https://www.groupware.kuleuven.be/sites/5GhOSTS/

5GhOSTS further utilises the KU LEUVEN's repository service accessible to project members at

- https://dnetcode.cs.kuleuven.be

## External project communication

The consortium has set up a public website, https://5ghosts.eu/, which currently hosts a project description and information about the four open ESR positions. This website will be maintained throughout and beyond the execution time of the project to disseminate results.

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The consortium has further set up a public contact e-mail address fiveghosts@cs.kuleuven.be, which can be used to get in touch with the project team, e.g., for requests about our open positions. Mails to this address are being forwarded to a group of members of the Joint Supervisory Board and the Project Management Board (cf. D6.5 Supervisory Board of the Network).

## Submission of Scientific Publications and Presentations

ESRs discuss content and submission targets of their scientific output with their daily supervisors (KU LEUVEN & EAB). Any external publication or presentation that involves authors employed by Ericsson Research Security needs to adhere to the following review procedure:

For any external submission, a review request, including material to be submitted, shall be sent to:

- one or more expert reviewers selected by the author(s),
- the RA Security Leadership Team: GFTE ER Security LT <PDLERSECUR@pdl.internal.ericsson.com>

The subject line of the email should be formatted as:

- [SEC PAPER REVIEW] <target> <title>, where <target> is the targeted conference/journal, <title> are the first few words of the paper title.

The body of the mail must include full details of the submission (name of conference/workshop/journal, the deadline for submission, etc). The review request should be sent out at least two (2) weeks prior to the external submission deadline. Below, the word *submission material* is used to denote the paper/presentation to be submitted.

- For journals, conferences, and workshop (and other fora with printed proceedings), the submission material consists only of the paper (or abstract). Any form of presentation material (e.g. slides) later used at a conference/workshop does not require separate approval unless it significantly deviates from what was previously submitted for review.
- In cases where there will not be printed proceedings or other forms of printed records, e.g. invited talks, the submission material typically consists only of the presentation material/slides.

The review starts by sending the submission material for review by attaching it to an email, thereby creating a *review request*. It is left to the authors to select the expert reviewer(s) according to their own judgment. The Security LT may also appoint further expert reviewers.

The review request should be sent out at least two (2) weeks prior to the external submission deadline. It is recognized that it may be difficult to have a fully “camera ready” paper or presentation two weeks before the deadline. Therefore, a draft in reasonably complete shape will in most cases be acceptable for review purpose. If it is still not possible to meet this two-week rule, the line manager or head of RA Security may grant an interim approval of the submission which may later be recalled. The interim approval is default: if you at the day of the deadline have not gotten either explicit approval, nor explicit rejection, you may still submit. The interim approval may be later recalled, in which case the submission must be withdrawn.

In all cases, the head of RA Security shall have the final decision on whether the submission material can be approved or not. In case the submission material is not approved, an updated version may of course be re-considered at a later point in time.

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It is generally left to the author(s) discretion to choose a suitable, submission target with good academic/technical standard. In case of uncertainty, the author(s) manager or other technical expert should be consulted.

It is recommended that author(s) at least consider whether submission to some IEEE event/journal is suitable, as IEEE has (for EAB) favorable copy-right agreements.

## Presentations

Affiliates of the partner organisations may present the 5GhOSTS consortium and research results in public. The rules laid out under "Submission of scientific publications and presentations" apply. The opinions and content presented by members of the 5GhOSTS consortium are solely those of the presenters and the consortium cannot be held responsible for the accuracy of the presented materials.

Templates for presentations will be made available through the 5GhOSTS Collaboration Platform.

## Logos and acknowledgements

Presentations and publications by members of the 5GhOSTS consortium, that relate to research activities of the 5GhOSTS project may carry the 5GhOSTS logo. Logos of the beneficiary and partner organisations may be added if those organisations are involved in the research or presentation of the results.

Presentations and publications by members of the 5GhOSTS consortium, that relate to research activities of the 5GhOSTS project must carry the following acknowledgement: "This research has received funding under EU H2020 MSCA-ITN action 5GhOSTS, grant agreement no. 814035."

Acknowledgements of other relevant funding sources may be added to presentations and publications, according to the guidelines of the author's affiliation and host institution. If multiple funding sources are acknowledged in the same publication, it is suggested that these acknowledgements are sorted in order of relevance.

## Open access to scientific publications

The Participants are committed to follow the rules related to open access to scientific publications foreseen by the European Commission (see GA art. 29).

- If publishing in Open Access journal/conferences is foreseen (meaning in most cases ‘paid OA’), always upload the final journal article in KU LEUVEN' Lirias without embargo at publication time; report the link to Lirias (repository link) and the link to the publisher’s page.
- If no publishing in Open Access journal/conference is foreseen, always upload the postprint (the last version after peer review before the final pdf) in KU LEUVEN Lirias and indicate “KU Leuven sets the embargo”. In this way your postprint will be in Open Access following recent Belgian law allowing this for postprints within 6m to 12m after publication, conform EC expectations. Report the link to Lirias as both the repository link and the link to the OA version of the article.
- Extra: Add the project’s acronym as a label to your papers in Lirias so that OpenAIRE will display these as your project’s output

Further instructions are available at
https://www.kuleuven.be/english/research/EU/f/associatienet/horizon2020/strategy/project/OAsupport_H2020

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### Open access to research data

The Participants are committed to follow the rules related to open access to research data foreseen by the European Commission (see GA art. 29).

The Data Management Plan (D1.1, M4) will give detailed instructions on how to manage and store research data and will indicate the cases in which research data can be made publicly available.

# 5. Risk Management and Contingency Plan

## Risk Management

The contingency plan identifies in advance risks for the project and sets appropriate measures to overcome such risks. The plan explains what the risks are and, if any, what measures have to be implemented in order to mitigate this event. WP leaders are in charge of monitoring potential risks within their WP and act consequently. If needed they will immediately notify the Coordinator, who may convene a JSB extraordinary meeting to take appropriate mitigation measures.

## Contingency Plan

| Risk No. | Description of Risk | WP Number | Proposed mitigation measures |
|---|---|---|---|
| R1 | Delay in recruitment | All WPs | Reduced workload in the first and last months of the project to buffer and mitigate delays; potentially delayed deadlines of deliverables |
| R2 | Difficulties of ESRs to define and carry out research according to an interdisciplinary approach | All WPs | Periodical interdisciplinary workshops, with an expert as facilitator, and presence of each ESR; interdisciplinary supervisors team |
| R3 | ML2: "Revised architecture and compartmentalisation of a container platform" cannot be defined in a generic way | WP1, WP2 | Restrict the scope of use cases and ESR projects to a manageable complexity |
| R4 | ML3: "Reusable and verified software components for the development of multi-component virtualized services" is delayed, impacting implementation and extension of the midterm scenario | WP2, WP3 | Solution designs following good software engineering practices will help to mitigate this. The inter-sectoral application scenario can integrate implementation artefacts in several phases |
| R5 | Integration of privacy & data protection (ESRs 2,3) in container runtime is limiting the data processing and data analysis activities (performance, storage size) | WP2, WP3 | Design of privacy and data protection solutions with efficiency in mind and tailoring (when possible) to the data processing context. |
| R6 | The privacy and data protection solutions (ESRs 1-3) are not fully covering the legal requirements due to performance constraints or data being inaccessible in certain processing contexts. | WP1, WP3 | Good communication and collaboration between the technical and legal ESRs for early alignment and detailed definition in the context of the use cases. |
| R7 | Difficulty by one or more ESRs to participate in training events or secondment due to unforeseeable circumstances | All WPs | Participation in streaming will be organized or the activity will be rescheduled, where possible. |
| R8 | A risk for ESR4 lies in strongly diverging national implementations and interpretations of the EU legislative instruments relevant for the analysis. Such divergence should in principle be limited given the strong harmonization efforts of the EU (by using directly binding instruments like Regulations, instead of Directives, in this field and by coordinating activities of regulators through EU bodies like the EDPB and BEREC), but | WP1, WP2 | If legal divergence would be the case, the research may require additional workload, or may be confronted with linguistic challenges (when national interpretations are only available in the national language). In legal science, such risks are usually overcome by selecting a representative sample of countries for the analysis and/or by cooperating with national experts. For this, CiTiP can rely on an extensive network of academic experts and practitioners throughout the EU. |

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| | | | |
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| | cannot be entirely excluded since the EU legislation itself leaves margin for discretion. | | |
| R9 | The consortium faces disruption, e.g. a partner resigns or fails, or key persons voluntarily or under unforeseeable circumstances leave the project. | All WPs | All partners are strongly committed to the project. All partners have strong expertise that will allow them to replace key personnel for the project due to several reasons (e.g. resignation, layoff, illness). |

# 6.Secondments Management

## Annual Mobility Programme and Modifications

Every year, the SC approves the Annual Mobility Program for each ESR for the following year's Annual Mobility Programme. Annual Mobility plans should be agreed between the recruiting institution and host organisation before being approved by the SB and shall comply with the Secondment plan indicated under each Individual Research Project in the Grant Agreement. Approved Annual mobility programs will be available to all Participants in the repository of the project.

## Mobility Facilities

Hosting institution shall ensure appropriate and on time allocation of ESRs in their premises. Appropriate office space, free library and laboratory access, as well as free printing and internet facilities will have to be ensured to the mobility researchers. When housing facilities and dining services for ESRs are available, Hosting institution will give the possibility to researchers, at a reasonable price and easily, to use them. In general, the "equal treatment" principle should be followed so that mobility researchers hosted by a Participant should receive the same "treatment" ensured by that Participant to its Faculty members. Hosting institution will also support ESRs with the management of administrative issues related to visa documents needed to start the mobility scheme.

# 7.Deliverables Management

This section describes the process identified to review the deliverables of the project, the naming convention, the templates for such documents and the quality assurance activities.

## Submission procedure

The project manager has the responsibility of submitting the deliverables to the EC. Before the submission, all deliverables must undergo the following procedure:

- Within the 10th day of the month in which the deliverable must be submitted, the task leader submit the deliverable to his/her WP leader for a quality check. The deliverable must also be submitted to all project partners (KU LEUVEN and EAB) through the PMB to seek approval for publication.
- Within the 20th day of the month, after reviewing the deliverable, the WP leader sends the deliverable to the Coordinator
- The Coordinator within the 28th day of the month sends the deliverable to the PM
- Within the 30th day of the month, the PM submits the deliverable to the EC and upload it to the EC Participation Portal

## Naming, Format, and Templates

Templates for deliverables will be made available through the 5GhOSTS Collaboration Platform.


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# 8. Reporting

This section describes the process identified to deliver project reports, which are documents indicating the progress of the project. Provided that the project lifetime is divided into 2 reporting periods (P1: from M1 to M24 - P2 : from M25 to M48), following the contractual provisions with the EC, the project reports will be as follows:

- 2 Progress reports: they are related to the first half of the reporting period without a financial statement (to be submitted within M13, M37)
- 2 periodic reports (to be submitted within to be submitted within M26 and M50): periodic periods are related to the overall duration of the reporting period and include a financial statement
- 1 final report (to be submitted within M50) about the whole project duration
- researcher declaration (each for every recruitment, within 20 days from the starting date of the recruitment).

## Progress reports and periodic reports: submission procedure

| **Report** | **When** | **Who** |
|---|---|---|
| **Progress Report** | M12 + 30 days | Coordinator |
| **Periodic Report 1**<br>- Periodic Technical Report<br>- Individual Financial Statement | M24 + 60 days | <br>Coordinator<br>Beneficiaries |
| **Periodic Report 2**<br>- Periodic Technical Report<br>- Individual Financial Statement | M48 + 60 days | <br>Coordinator<br>Beneficiaries |
| **Final Report** | M48 + 60 days | Coordinator |

Within the 7th day of the month when the report is due (cf. Table above; the first or second month following the end of period to report, respectively), the task leaders send a task report to his/her WP leader.

After reviewing and collating the task reports and within the 14th day of the month the WP leader sends a WP report indicating the status of the WP activities to the Coordinator. Within the 21st day of the month the Coordinator elaborates the draft of the progress/periodic report and send it to the JSB and PMB members.

Within the 28th day of the month the JSB is convened to discuss and release the report indicating the status of the project activities, elaborated by the Coordinator on the basis of the WP reports. The report released by the JSB will be discussed and approved by the PMB, usually to be held in conjunction with the JSB meeting. Then, within the 30th day of the month, the PM submits the report to the EC and uploads the report in the 5GhOSTS website.

## Researcher declaration

Researcher declarations must be submitted using the Participant Portal within 20 days after ESR's employment contracts. Each Beneficiary is responsible for inserting and submitting researcher declarations related to its own recruited ESRs. The procedure for submitting research declaration and

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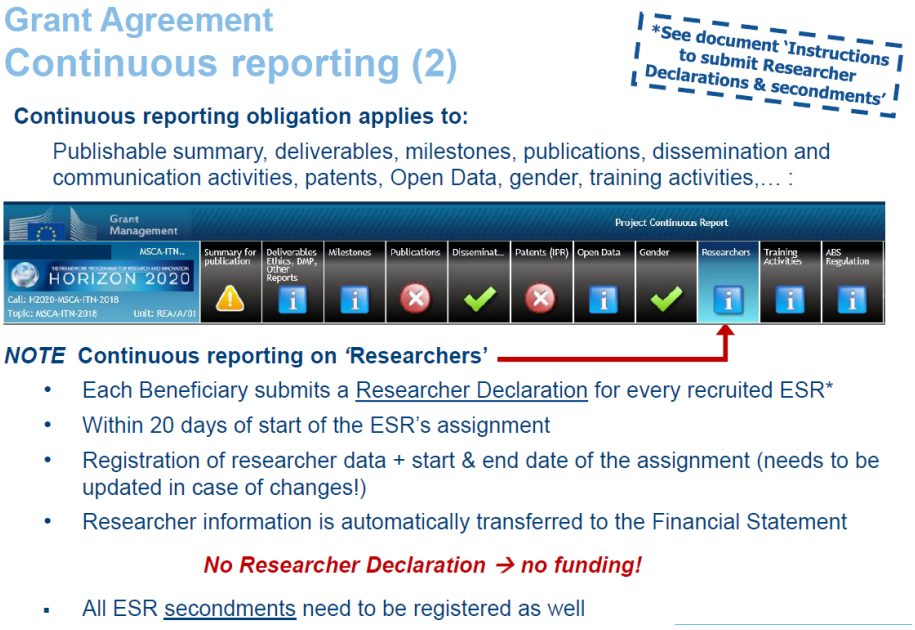
secondments has been shortly presented during the kick-off meeting at September 19 2019:




This presentation and the specific document entitled "Instructions to submit Researcher Declarations & secondments" are made available on the 5GhOSTS Collaboration Platform.

Please note that this procedure is an obligation included in the Grant Agreement (art. 19.1) and that, furthermore, inserted information forms the basis of the financial statement.

## Templates

Templates for progress reports will be made available through the 5GhOSTS Collaboration Platform.

# 9.Financial Monitoring

According to the financial guidelines of the EU Commission, the EU funding is administered by the Beneficiaries, therefore the Beneficiaries remain the sole responsible towards the EU for the management of the funds. That means that:

- the financial reporting will be done by each Beneficiary depending on the number of recruited ESRs;
- each Beneficiary remains responsible for the management of the funds and is responsible for keeping record of eligible costs;
- each Beneficiary is responsible for the appropriate and sound use of the institutional and management costs.

## Financial statements to be submitted to the EC

Complete financial statements must be delivered to the Commission within 60 days after the end of each reporting period (P1: from M1 to M24 - P2 : from M25 to M48).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