Deliverable 7.5: Project Management Plan First Review

WP7, Task 7.2

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Main Author(s):	*TUM, Moritz Roth*

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Abbreviations and Acronyms

Acronym	Description
DoA	Description of Action
DX.Y	Deliverable number Y of the Xth Work-Package
D&C	Dissemination & Communication
EC	European Commission
EU	European Union
H2020	Horizon 2020 (8th Framework Programme for Research of the EU)
ICT	Information Communication Technology
IP	Intellectual Property
IPR	Intellectual Property Rights
MOOC	Massive Online Open Course
OA	Open Access
RTD	Research Technology and Development
WP	Work Package

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1. Publishable Summary

Hydro4U, an interdisciplinary research project funded by the European Commission (Horizon 2020), has 13 partners with research and industry backgrounds in its consortium working together to implement two demonstration small hydropower plants in Central Asia. Furthermore, three planning sites for small hydropower plants in Central Asia are being elaborated. This deliverable provides an overview of the tools and processes that Hydro4U coordinator and the project office at the Technische Universität München have set up to manage the project. The deliverable 7.5 “Project Management Plan First Review” is being submitted as specified in the Hydro4U Description of Action (DoA). The dissemination level of this deliverable is public. The aim of this deliverable is to describe the methods being adopted in the project to manage the work packages, share and store documents, communicate amongst consortium members and mitigate risks associated with the project and its deliverables. This is an updated version of the deliverable 7.1: Project Management Plan, which was submitted on 30.09.2021. For ease of reading, all updates in this deliverable are highlighted in blue font.

1.1. Project Summary (Updated)

Despite considerable potential to satisfy unmet electricity demand and chart a new way forward in cooperative cross-sectoral management of shared waters, small scale hydropower (SHP) is not extensively exploited in Central Asia (CA). Likewise, vast potential to roll out European SHP approaches in other regions, European technologies have not been widely used due mostly to the lack of adaptation to such contexts; successful test cases are scant as their price point is typically far higher than Asian-manufactured competitors. The Hydro4U project will adapt European technologies to CA, demonstrating viability in a forward-looking cross-border Water/Food/Energy/Climate nexus (WP2) and price-competitiveness through design alterations (WP3) based on a prior analysis of unexploited SHP potential in CA (WP1). Hydro4U will install and assess (WP4) 2 demo plants: 1 MW low-head eco-friendly run-of-river plant in KGZ, 2MW medium-head plant in UZ, both with radically reduced planning and construction costs that do not compromise efficiency. These solutions will be fit-for-purpose based on innovation, modularization, standardization and radically simplified structural concepts, with longevity, eco-compatibility and socio-political acceptance (WP3). A replication model will be developed to address all SHP potential (WP5). This will demonstrate EU quality standards and create entry points in developing markets for the entire European SHP industry (WP6). Hydro4U brings together a multidisciplinary team (13 partners, 8 countries (DE, AT, CH,

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LK, ES, BE, CA: UZ, KG, [subsidiary in KZ]) world-renown experts in design of European SHP from industry (GHE, MUHR, HSOL, ILF) to science (TUM, BOKU, KSTU, EV-INBO, SJE, CARTIF), replication (SEZ, CARTIF), exploitation and D&C experts (SEZ), 'boots-on-the-ground' R4D institutes (IWMI, TIIAME) with a legacy of achieving practical impact in the water sector in CA, contributing experience from similar projects in CA and worldwide.

1.2. Project Objectives

- Bringing together industry, politics, science and stakeholders from CA and EU to develop visionary SHP solutions for a climate resilient and sustainable future of CA
- Demonstration and assessment of two sustainable, innovative European small-scale hydropower technologies (FCPS and HSPS) in CA
- Optimizing the sustainability impact of SHPs through a more holistic approach by focusing on long- term solutions in a climate-sensitive, transboundary WFEC nexus context
- Implementation of a GIS-based decision support system covering all CA countries to explore unexploited SHP potentials and determine site-specific HP sustainability
- Development of scalable Water Accounting System to manage water resources in a sustainable way to share energy and agriculture benefits in a climate-sensitive manner under the WFEC nexus context in CA and, thus, contributing to regional cooperation
- Support the competitiveness and sustainable market uptake of European SHP technologies in CA and globally
- Enhancing problem awareness and objectiveness of policy makers and implementers, NGOs and the public

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2. Hydro4U organisational structure (Updated)

The organizational structure of the Consortium shall comprise the following Consortium Bodies:

- The **Coordinator** (CO) is the legal entity acting as the intermediary between the Parties and the Funding Authority. The Coordinator shall, in addition to its responsibilities as a Party, perform the tasks assigned to it as described in the Grant Agreement and this Consortium Agreement.
- The **Project Office** assists the Coordinator.
- **General Assembly (GA)** as the ultimate decision-making body of the consortium
- **Steering Committee (SC)** as the supervisory body for the execution of the Project, which shall report to and be accountable to the General Assembly.
- **The Demonstration Board (DB)**, which is responsible for the technical realization of the demonstration sites
- **The External Expert Advisory Board (EEAB)** will provide feedback, advice and guidance to the main elements of the Hydro4U work and the avenues used to exploit our results

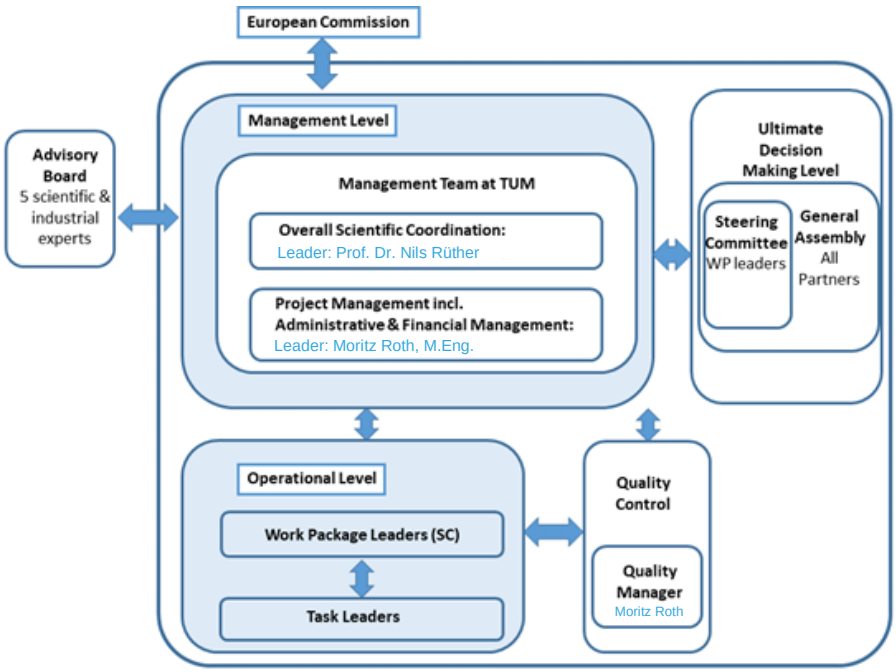

Figure 1 Hydro4U Organizational Structure overview

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Prof. Dr. Nils Rüther took over the scientific coordination from April 2022 because of Prof. Dr. Rutschmann's retirement. Due to the termination of Dr. El Wafa, the tasks were transferred to Moritz Roth, M.Eng., who is the new project manager.

2.1. Roles and responsibilities

To ensure an effective management of the Hydro4U project, three levels will be defined:

- A **management level** consisting of overall management, coordination, monitoring and advisory activities.
- An **operational level** with WP and task leaders.
- The **ultimate decision-making level** of the project – performed by the steering committee (SC) and General Assembly (GA).

The responsibilities and tasks of each level are described in detail below. First, (a) the management level will be performed by TUM, a German university and research organization that is very experienced in coordinating large, international research projects consisting of:

1. **Scientific coordinator** of the project will lead and coordinate the Hyrdo4U project

2. **Demonstration Manager** of the project will coordinate and monitors the implementation of the activities at the demonstration sites

3. **Project Manager** shall be appointed by the Coordinator and shall assist and facilitate the work of the Coordinator for the financial management as well as the day-to-day management of the Project.

The management of project includes responsibility for administrative and financial management

Together, they will be the **central contact point** for the Commission/Agency and represents the consortium (towards the Commission/Agency). They will coordinate and **manage the grant** and will be responsible for the overall monitoring and implementation of all technical tasks and financial control and perform the following **project coordination tasks**:

Technical monitoring: The technical monitoring of the project will focus on the supervision and monitoring of the progress at work package and task level through close exchanges and communications with the WP leaders and ensure that it is implemented properly.

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The Project Management Team will oversee the technical monitoring, i.e. meeting deadlines, reaching milestones and delivering as planned. This Team will apply quick decision-making and problem-solving in case of unexpected delays or the need for flexibility in re-arranging tasks. Technical tasks include:

- Day-to-day project management (information, communication between all partners, facilitating the exchange of documents, optimization of workflow)
- Helpline for partner's questions
- Communication with the European Commission's Project Officer in charge and coordination, support and submission of project reporting
- Organization and moderation of partner meetings (kick-off, mid-term, etc.)
- The coordinator is also responsible to monitor and promote gender equality in the project.

Administrative and financial monitoring: The administrative and financial monitoring will deal with the overall legal and contractual matters of the project and the consortium, ensuring quality and on-time delivery of deliverables and results. An internal Consortium Agreement (CA) (development, update, discussion with the partners and management) will be set up. The Project Management Team will report to the European Commission on an annual basis about the technical as well as the administrative and financial issues. Administrative and financial tasks are:

- Overall legal, contractual and ethical management of the consortium, i.e. ensure signing of the tender contract by all partners
- Preparing, updating and managing the CA between the partners
- Monitoring the financial situation of the project and adjustment of the budget (costs breakdown)
- Budget distribution, controlling and preparation of cost statements
- Support in financial audits (if necessary)
- Inclusion or exclusion of participants/contractors in relation to specific or further requirements. Second, (b) operational level includes:

Steering Committee SC (WP leaders): On the operational level, all WP will be led by one consortium partner, the leader of the WP, who brings the most expertise in the field of the respective activities. These **WP leaders** will assume responsibility for the overall WP and

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the implementation of all tasks contributing to it. WP leaders will provide assistance regarding WP and task-specific issues to all partners involved in their WP. Together with the Project Management Team the task leaders are responsible for the timing, organization, planning and monitoring of costs and quality of deliverables of each task. They also support the coordinator with the collection of reports on the activities performed and results achieved. The responsibilities of the WP leaders include the following activities:

a. Monitor progress against the WP plan and budget
b. Review the technical output of the WP on an ongoing basis
c. Mitigate technical risk identified in the risk register and do risk reporting to the steering committee
d. Report progress and the achievement of milestones to the project coordinator
e. Produce the WP mid-term and final reports
f. Attend management committee meetings and provide WP progress updates

If any problem arises with the implementation of a task in the WP, the WP leader will attempt to resolve the issue in collaboration with the respective task leader. If no solution can be found, the WP Leader will consult the Management Team which will take a decision regarding the further handling of the task.

The **Steering Committee** oversees monitoring the progress in their respective WPs and reporting to the Management Team. The Management Team will ensure a constant information flow with the WP leaders in order to ensure proper operations of the project.

The SC, chaired by the CO, is the principal executing and operating body for the consortium concerning scientific and technical demands of the work plan and monitors the effective and efficient implementation of the project. Therefore, meetings are planned every 6 months where discussions on overall project issues (i.e. finance, IPR including use of background, deviation of the work plan including budget, remedies to be performed by a defaulting party) come to a decision. In addition to the SC members' roles as WP leaders, the SC has the following responsibilities:

a. Preparing and implementing General Assembly decisions
b. Ensuring the comparability and integration of the results of the different work packages and the maximization of synergies,
c. Enhancing communication amongst all partners

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d. Promoting dissemination and exploitation of breakthrough project results.

The Demonstration Board (DB), which is responsible for the technical realization of the demonstration sites, reports to the scientific project coordinator located at TUM, which is also a member of the SC. For each demonstration technology, there is an individual DB with one chairperson each.

Task leaders: Task leaders assume a role like WP leaders, except that the role will be task specific. Task leaders report to their respective WP leader and aid regarding task and subtask specific issues to all partners involved in their task.

If any problem arises with the implementation of a task or subtask in the WP, the task leader will consult the WP leader. In collaboration with the WP leader, a decision regarding the further handling of the task or subtask will be made. If no solution can be found, the Management Team will be involved.

Third, (c) the ultimate decision-making level relates to:

General Assembly (GA): Each **individual partner organization** will nominate a senior and experienced representative entitled with decision making rights of the respective organization. The representative will be the communication party for partner's administrative matters. The responsibility of each individual partner and the partner representative include: a) Monitor and manage the partner in-house scope, b) Monitor and manage work sub- contracted by a partner, c) Communicate technical data and results to the project data platform, d) Communicate progress and achievement of milestones and deliverables to the WP leader e) Implement risk mitigation activities arising from the risk register, f) Attend SC meetings, g) Produce technical reports detailing completed scope of work and h) Produce the audit certificates required by the EC.

The joint key **responsibilities** of the Steering Committee are:

- Producing and updating the CA (where relevant)
- Joint decision making for matters escalated by the WP leaders or the Project Management Team
- Final overall progress monitoring against budget and plan
- Decide on any significant risks brought up by the WP leaders or the Project Management and on the implementation of mitigation measures where necessary

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Meetings of the **Steering Committee and the General Assembly** will be chaired by the project coordinator. Meeting procedures, preparation and follow-up are determined in detail in the CA.

The **decision-making structure** follows a clear and democratic approach with a bottom-up decision-making mechanism: The individual partners are all represented in the Steering Committee, which constitutes the decision- making body of the project and jointly decide on above matters.

Advisory Board: Hydro4U will actively involve an advisory board consisting of representatives of the various target groups. The board will be consulted throughout the phases of the project: 1) within the **research and innovation phase** we need to ensure a wide as possible perspective of the technological and methodological approach. 2) Within the **analysis and demonstration phase** as well as in the **exploitation and transfer phase**, the board will represent the groups relevant for reaching maximum impact.

We will invite selected experts to key meetings (e.g. kick-off, 2nd, …, 5th, final meeting) and have ad-hoc meetings or communications between the management team, WP leaders and the advisory board for feedback and guidance collection.

The Hydro4U Advisory Board will include members from organizations such as selected in M1:

Table 1 Hydro4U`s Advisory Board

Target group represented	Name, Organisation
Academia	Wolfgang Kinzelbach, ETH Zurich Peter Rutschmann, TUM
Industry	Piotr Parasiewicz, Rushing River Institute; Martin Wachsmann, Finance and Marketing Consultant
Policy	Martina Klimes, Stockholm International Water Institute
Associations	Anton Schleiss, Hydropower Europe

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3. Implementation of Work Packages

3.1. Detailed description of action (Updated)

In order to monitor the progress of the work, the following activities were conducted by the coordinator in the first period of the project with the help and support of the steering committee (The WP leaders) and the case study management board:

1. The work packages were defined into detailed tasks and subtasks. The coordinator has made a work breakdown structure for all work packages that details the description of action into manageable units.
2. Different work packages´ tasks and subtasks were assigned to project partners with two different hierarchies (Subtask leaders and involved Partners).
3. Timelines for the different subtasks were created and refined on a subtask level (Excel spreadsheets were used instead of MS project for ease of communication and to ensure that all partners have access to the same software. Please see the Gantt Chart for all the work packages (at a subtask level) including the planned deliverables (A-4)
4. Detailed descriptions of all subtasks (text documents) were created by the partners and coordinated by the WP leaders in order to define in specific what would be conducted by which partner and when.
5. The interactions between work packages, dependencies among subtasks, critical elements and challenges were defined and discussed by affected parties and would be coordinated.

3.2. Deliverables and milestones (Updated)

One of the coordinator's responsibilities is to report to the European Commission the project activities in the form of deliverables and in achieving the milestones specified in the description of action. Some of these deliverables are the sole responsibility of the coordinator and others are prepared by other project partners. For the latter, the coordinator has the responsibility to monitor their progress, collect, review and submit these deliverables.

In order to successfully track the progress of all work packages, the coordinator has created Gantt Charts for all deliverables along with their start date, finish date and the specific resources that are employed in the preparation of these deliverables.

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The Gantt chart for all deliverables and milestones of the project management work package can be found in A-1. So far, 18 deliverables have been submitted and 8 milestones have been achieved. Milestones 1, 2 and 3 have experienced delays.

Reasons:

- MS1: Minor mistake - this milestone will be reached by the submission of deliverable 2.2 according to plan.
- MS2: The two demo sites have been successfully identified. There was some delay because one of the originally proposed demo sites, Badam, turned out to be not suitable for a demo site because of too many hurdles preventing a rapid implementation. This was only identified during the first site visit in Sept. 21. Finding a new demo site, technically suitable for our hydroshaft technology, and suitable for rapid implementation was a challenge and took some time. The new demo site, At-Bashy, is now identified and everything is moving ahead. However, the basic data collection for At-Bashy is somewhat incomplete still, particularly the topographic and bathymetric survey is still missing and will be done in June 2022. Hydrological data including all relevant climate change scenarios have been completed for both demo sites, Shakimardan and At-Bashy. The general situation has been assessed, including field data collection at Shakimardan. The ecological issues are identified. The socioeconomic issues are understood. The general layout of the power plants is identified. The only reason why milestone 2 is not yet fully achieved is the delay regarding the topographic survey and the fish data collection at At-Bashy. This does not cause a delay in moving ahead with the technical planning of the sites. This delay will also lead to a delay of milestone 7. It will be fully achieved for Shakimardan but only partly achieved in time for At-Bashy. This will not cause an overall delay in the project.
- MS3: The installation of the sediment measurement station was originally planned to be installed at the first demo site in Shakimardan (Koksu River). After the field trip in September 2021, we concluded that it does not make sense to install the measurement station there because the existing upstream natural dam prevents sediments from being transported to the demo site Shakimardan. This means that it would not be possible to measure sediment transport at this site. Therefore, we are planning to

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install the measurement station at the second demo site in At-Bashy by December 31, 2022. This site looks more suitable for the installation of the sediment measurement station. The site visit in June 2022 and the assessment of basic data will show if and how the installation can take place in At-Bashy.

3.3. Integration of Demonstration Sites (Updated)

The integration of demonstration sites into the project's description of action is crucial towards the success of Hydro4U. This integration requires extensive knowledge on the individual Demonstration sites especially in terms of site conditions, technical feasibility, data availability along with the needs and preferences of the demonstration sites' stakeholders. The Demonstration Management Board (DB) leader has the responsibility to coordinate the demonstration sites and report to the coordinator within the structure of Hydro4U. To keep all partners responsible for demonstration sites as well as planning sites informed, a Demonstration Board meeting is scheduled once a month. The coordinator prepares the minutes of the meeting.

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4. Reporting

4.1. Periodic Report schedule (Updated)

Hydro4U project has four reporting periods. Table 2 indicates the reporting period schedule

Table 2 Hydro4U Reporting periods, report submission and evaluation

Reporting Period No.	From Month	To Month	Duration	Start date	End date
1	1	18	18	01/06/2021	30/11/2022
2	19	36	18	01/12/2022	31/05/2024
3	37	48	12	01/06/2024	31/05/2025
4	49	60	12	01/06/2025	31/05/2026

Review meetings are planned to take place after the periodic report submission where representatives from project partners should be present. Figure 2 shows the review meetings plan for the project.

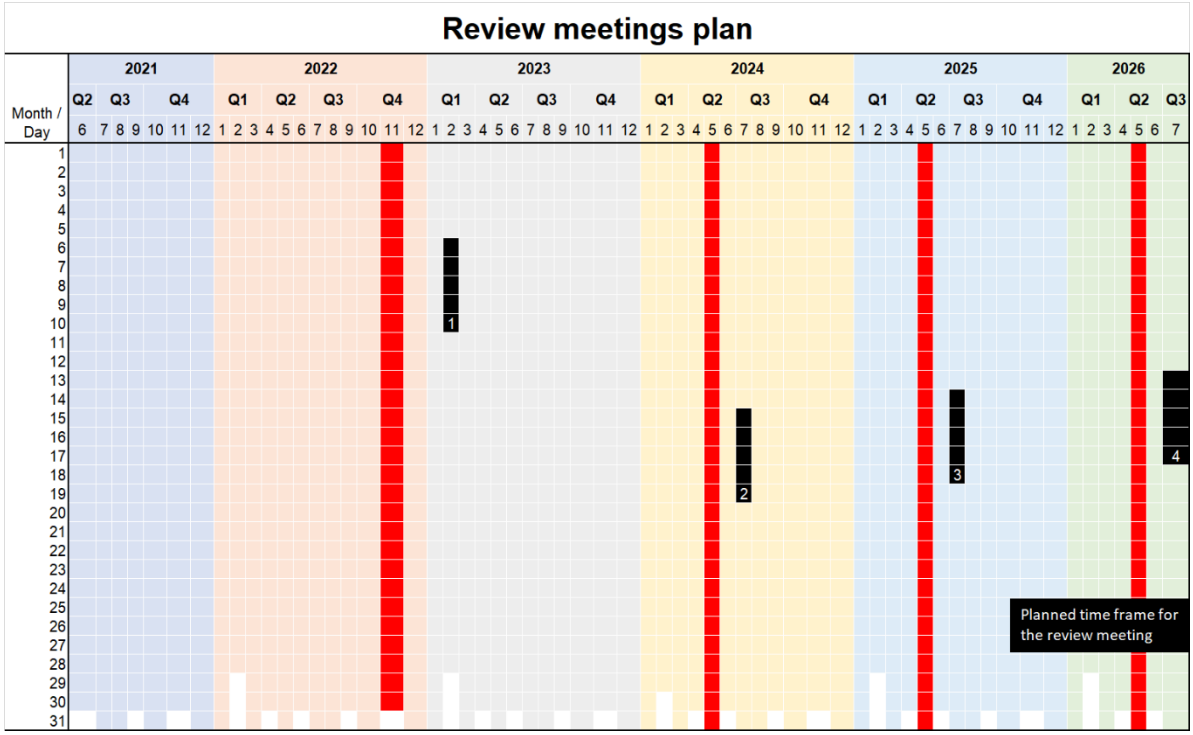

Figure 2 Reporting periods and Review meeting schedule

4.2. Internal reporting (Updated)

To facilitate an efficient tracking of the project's progress and to ease the process of the project's official reporting to the European commission, the coordinator has set an internal reporting mechanism in shorter reporting periods to track the technical implementation of

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the project. Each work package leader would report his/her work package implementation progress at regular intervals (6 months). This process requires each work package leader to document the progress and issues.

Update:

Due to the increasing complexity of the project and also to keep an eye on the risks, two internal reporting schemes were implemented by the coordinator.

1. Internal reporting for partners (e.g. query by gender, PM and budget interim reports, internal reports for partners)
2. WP internal reporting

The two internal reporting systems are described in Table 3.

Table 3 Internal Reporting schemes

Criteria	Internal Reporting for Partners	WP internal Reporting
Purpose	periodically collect information related to the scientific progress of the sub-tasks in each subtask: 1. Brief scientific progress and status of deliverables 2. new or upcoming innovations 3. Deviation from plans or timeline 4. Summary of economy items (Person Months, Costs and Subcontractors)	Periodically collect information from WP leaders for the Work packages that they are responsible for. The WP leaders use the information in the internal reporting for partners to prepare their reports.
Level	Subtask	WP
Responsibility	All Partners	All WP leaders
Frequency	2-4 months (depending on the WP, more frequent for WP3 and 4, especially during the preparation and installation phase of the components)	M20, M26, M38, M50, M56 of the project
Format	Online form https://wiki.tum.de/display/bguwb/Hydro4U+Internal+Reporting+for+Partners	Document (World file)
Template	Online form that is later exported to a spreadsheet (Excel).	A template similar to the EU Periodic Reporting template.

4.3. Financial reporting (Updated)

All Hydro4U partners have the responsibility to report their Direct Personnel Costs, Direct Costs of subcontracting, Other Direct Costs, Travel Costs, Equipment / Infrastructure / Assets and Other Goods and Services in the individual financial statements in the periodic report. As part of the internal reporting mechanism, all Hydro4U partners would send the

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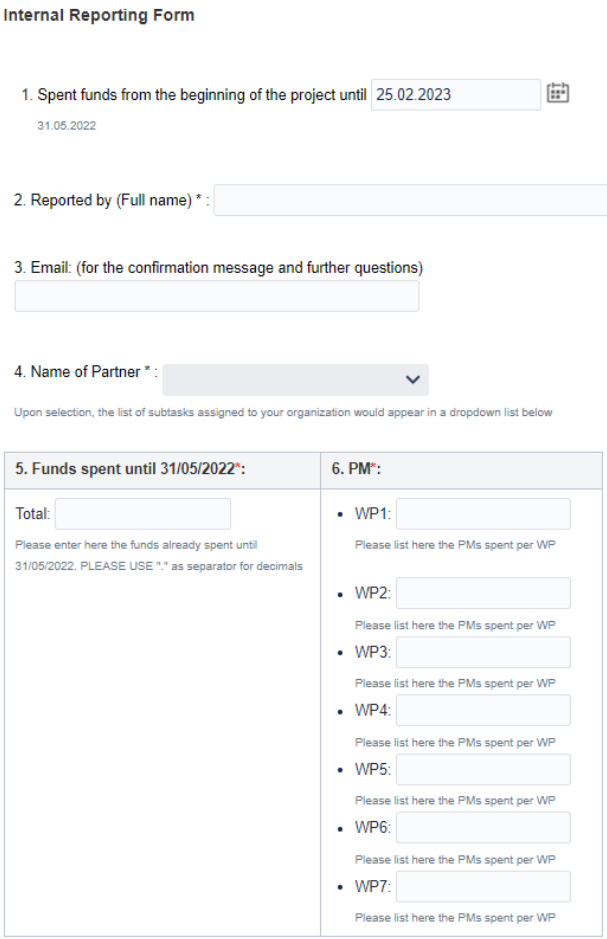
personnel months' effort against work packages periodically (6 months) to the project manager. Figure 3 shows the financial reporting template that was filled by each partner.



Internal Reporting Form

1. Spent funds from the beginning of the project until 25.02.2023
31.05.2022

2. Reported by (Full name) * :

3. Email: (for the confirmation message and further questions)

4. Name of Partner * :

Upon selection, the list of subtasks assigned to your organization would appear in a dropdown list below

5. Funds spent until 31/05/2022*:	6. PM*:
Total: Please enter here the funds already spent until 31/05/2022. PLEASE USE "." as separator for decimals	• WP1: Please list here the PMs spent per WP • WP2: Please list here the PMs spent per WP • WP3: Please list here the PMs spent per WP • WP4: Please list here the PMs spent per WP • WP5: Please list here the PMs spent per WP • WP6: Please list here the PMs spent per WP • WP7: Please list here the PMs spent per WP

Figure 3 Internal reporting form: PM and budget interim reports

The project manager would communicate these reports with the work package leaders for comparison of planned versus actual efforts against work packages. These reports would be used in the reporting to the European Commission.

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5. Communication Management

5.1. Contact Database (Updated)

In order to enhance the communication process and make sure it is as efficient as possible, the Coordinator has established a Contact information database which contains contact information of all Hydro4U members collected from all project members (see A-2). Different roles were assigned to each project member by the partner organization lead representative to enable an efficient communication. The board roles are:

- WP Leader
- WP Leader delegate
- WP Co-leader
- DB Leader
- DB Member
- Advisory Board Member

While the project roles are:

- Responsible for Contact database update
- Partner team leader
- "Emergency contact“: Availability for immediate response
- Responsible to deal with Financial issues
- Responsible to deal with project management /administrative issues
- Responsible to deal with contract issues
- Responsible for dissemination & communication issues
- Responsible for exploitation issues
- Team member

The database has been updated by the 13 partners and is therefore up to date (100%). When new employees join or leave the project, the database is adjusted accordingly.

5.2. Data sharing (Updated)

For the purpose of data sharing among Hydro4U partners, the Hydro4U coordinator has chosen the Sync+Share platform. Sync+Share is a secure, easy to use platform that resembles the famous commercial platform Dropbox but it is operated by Leibniz

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Supercomputing Centre (conforming with the German data protection law and the European Union Data Protection Directive (Directive 95/46/EC on 24 October 1995). It provides services for storing project documents and document versioning among team members. Different accessibility rights are given to different Hydro4U boards and partners.

The LRZ Sync+Share would be also integrated to the project's website to ensure an easy access to the platform. For the transfer of large amounts of data (up to 100 GB) between the partners, the GigaMove2.0 platform of RWTH Aachen University is used to ensure a high level of data protection for sensitive data.

5.3. Project meetings (Updated)

The project has three types of standard meetings for the different project boards:

- General Assembly (GA) meetings
- Steering Committee (SC) meetings
- Demonstration Board (CSMB) meetings

Specific rules regarding frequency, meeting documentation (minutes), agenda, and partner notification of meetings can be found in D7.4.

5.4. Communication with EEAB

The External Expert Advisory Board is an important part of the project. Their feedback on the project structure, implementation and progress are important for the success of Hydro4U. In order to enhance the communication with the EEAB, the coordinator has set up a periodic feedback process where the board sends an EEAB recommendation report or holds a recommendation presentation after each meeting they attend documenting all their comments and recommendations on the project activities. The coordinator's responsibility is to study the report/presentation and set up actions when appropriate to address the issues that were highlighted in the EEAB report. All these actions would be documented in an Action Report. These reports are disseminated and shared with all other partners. Specific points and remarks that are included in the EEAB report and that are not addressed in the action report will be forwarded to the specific people whose work is directly related to these remarks.

5.5. Other means of communication (Updated)

The Hydro4U coordinator has set up a communication plan that includes other means of communication with all partners. Table 4 shows these communication means and more details can be found in D7.3 Communication Strategy among the partners.

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Table 4 Hydro4U other Communication means

Communication	Description	Frequency	Format	Recipient/attendees
WP leaders meeting	Virtual internal meetings for all work package leaders. In this meeting, we update on the following: -Current status of the WP activities -Points for discussion regarding interaction among different WP's	Every two weeks	Conference call	Work package leaders
WP leaders periodic meeting highlights	An unofficial meeting documentation recording the highlights and actions following each WP leaders meeting	Monthly	Electronic document	Work package leaders
DB meeting	Virtual meeting where all partners participate who are working on a demonstration and/or planning site.	Monthly	Conference call	All Partners involved
Internal Project Calendar	A calendar that contains all project events, communication and dissemination activities	Updated monthly	Electronic calendar	All Hydro4U Partners
Sync+Share data sharing platform	A data sharing platform	Total Project duration	Platform	All Hydro4U Partners
GigaMove2.0	File sharing platform (up to 100GB)	Total Project duration	Platform	All Hydro4U Partners
Project management help desk	The coordinator's project office acts as an internal help desk for all inquiries and clarifications regarding the project's implementation, reporting and regulations	Total Project duration	Other	All Hydro4U Partners

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6. Ground Rules of the project

6.1. Changes and Amendments

Any proposed changes to Annexes 1 and 2 of the Grant Agreement has to go through a change management process (Figure 4). This process has been put in place adhering to the horizon 2020 regulations and to ensure that changes are properly managed and monitored without having any negative impact or deviation from the project's objectives. Changes could originate by any of the beneficiaries or the coordinator (see A-3). In both cases, the project officer has to be directly involved in the process. Changes have to be properly documented and updated by the coordinator in the changes log.

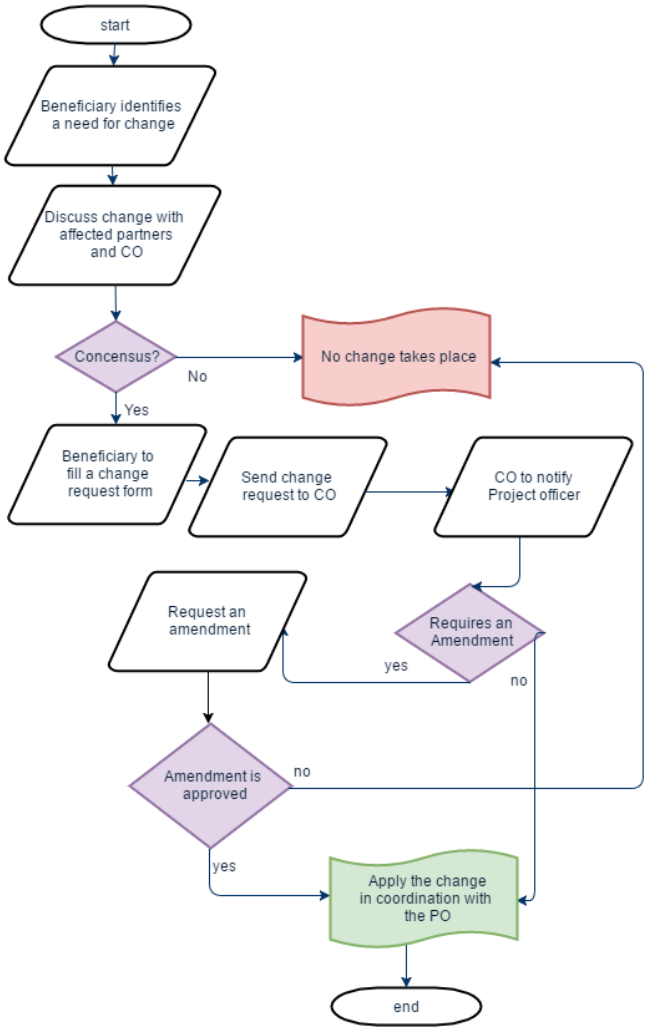

Figure 4 Hydro4U Change process

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6.2. Publication procedure (Updated)

During the Project and for a period of 1 year after the end of the Project, the dissemination of own results by one or several parties including but not restricted to publications and presentations, shall be governed by the procedure of Article 29.1 of the Grant Agreement subject to the following provisions.

The following procedure has been put in place:

Before dissemination of any results, a notification to all partners must be done. The method would be to inform the lead representative of all Hydro4U partners by sending an email to a mailing list that reaches all partners' representatives in Hydro4U. The title of the email should be "Hydro4U: Planned publication notice: …Name of Publication..."

The email should include the following:

1) Abstract/Research highlights
2) Article Authors
3) Involved Partners in Hydro4U
4) If applies:
    a) Data used for analysis
    b) Test Case/Laboratory involved
    c) Other sufficient information on the results it will disseminate (according to the nature of the publication)

Please check the article below regarding dissemination (Article 8.4.2.1 from the Consortium Agreement).

"8.4.2.1 During the Project and for a period of 1 year after the end of the Project, the dissemination of own Results by one or several parties including but not restricted to publications and presentations, shall be governed by the procedure of Article 29.1 of the Grant Agreement subject to the following provisions. Prior notice of any planned publication shall be given to the other Parties at least 30 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Coordinator and to the Party or Parties proposing the dissemination within 15 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted."

An objection is justified if:

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a) the protection of the objecting Party's results or background would be adversely affected.

b) the objecting Party's legitimate interests in relation to the results or background would be significantly harmed.

The objection has to include a precise request for necessary modifications.

If an objection has been raised the involved Parties shall discuss how to overcome the justified grounds for the objection on a timely basis (for example by amendment to the planned publication and/or by protecting information before publication) and the objecting Party shall not unreasonably continue the opposition if appropriate measures are taken following the discussion.

6.3. Risk management

A detailed risk assessment was performed during the proposal phase (1.3.5 in the Grant Agreement). This risk assessment will be monitored in order to ensure that the risks are mitigated during the course of the project. Unforeseen risk that might arise during the course of the project will be monitored and documented in the risk register on the EC portal.

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7. Summary

This deliverable presents the project management plan adopted by the Hydro4U coordination team to manage the project. The methods and tools used to manage the project, monitor the project's implementation, communicate internally and to control the risks associated with the project have been presented. The project management plan would be continuously updated and developed during the project's lifecycle. This deliverable act both as a management guide and a communication tool with the project partners, the coordinator and the European Commission to ensure that the project is on track towards achieving its objectives. In the current review, the project management plan was reviewed and updated based on the current information and developments that took place within the first period of the project.

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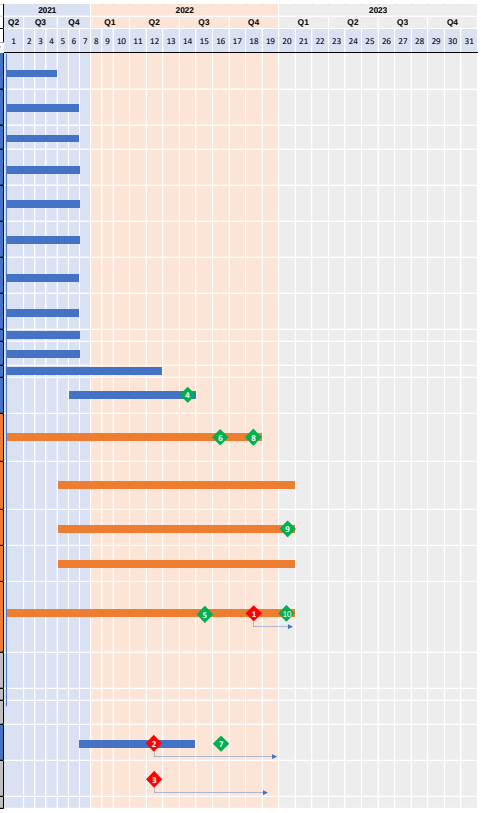
8. Annex

A-1 Project management Deliverables and Milestones (Updated)

WP No	Del. rel. No.	Del. No.	Deliverable Title	Lead beneficiary	Type	Receipt Date	Approval Date	Status
WP7	D7.1	1	Project Management Plan	TUM	Report	30 Sep 2021	01 Oct 2021	Approved
WP8	D8.1	2	A - Requirement No. 1	TUM	Ethics	29 Nov 2021	03 Dec 2021	Approved
WP7	D7.2	3	Data Management Plan	TUM	ORDP: Open Research Data Pilot	29 Nov 2021	08 Dec 2021	Approved
WP1	D1.1	4	Tabular summary and fact sheets on relevant (geo)data	BOKU	Other	29 Nov 2021	03 Dec 2021	Approved
WP3	D3.1	5	Report and technology optimization potential matrix for FCPS and HSPS	TUM	Report	29 Nov 2021	03 Dec 2021	Approved
WP4	D4.1	6	Inception report for DAs	SJE	Report	30 Nov 2021	08 Dec 2021	Approved
WP6	D6.1	7	Exploitation & IP Plan	SJE	Report	30 Nov 2021	03 Dec 2021	Approved
WP6	D6.2	8	Dissemination and Communication Strategy Plan	SEZ	Report	29 Nov 2021	03 Dec 2021	Approved
WP7	D7.3	9	Internal Project Communication Strategy	TUM	Report	29 Nov 2021	03 Dec 2021	Approved
WP7	D7.4	10	Planning and organization of the different board meetings	TUM	Report	29 Nov 2021	03 Dec 2021	Approved
WP5	D5.1	11	Hydro4U Replication plan. 1st release	CARTIF	Report	30 May 2022	27 Jun 2022	Approved
WP3	D3.2	12	Description of both optimized solutions (respecting IP- rights of each partner)	TUM	Report	31 Jul 2022	06 Sep 2022	Approved
WP2	D2.1	13	Institutional analysis for introduction of new policy and institutional harmonization to enable optimal benefit sharing mechanisms in crossborder context	IWMI	Report	30 Nov 2022		Submitted
WP1	D1.2	14	Calibrated hydrologicalhydraulic model of key mountain rivers in Central Asia, including first order hydraulic irrigation infrastructure with current and future climate runs	HSOL	Report	26 Jan 2023		Submitted
WP1	D1.3	15	GIS-based maps of hydropower potential	BOKU	Other	31 Jan 2023		Submitted
WP1	D1.4	16	First technical report	BOKU	Report	31 Jan 2023		Submitted
WP2	D2.2	17	Situational analyses for DS and TC that serve as templates for investigating the nexus linkages between SHP and the irrigation sector in CA in the context of small-scale transboundary rivers and large interstate canals	IWMI	Report	31 Jan 2023		Submitted
WP3	D3.3	18	Detailed Design Report of the SHP site BADAM and SHAKIMARDAN	ILF	Report			Pending
WP7	D7.5	19	Project management plan first revision	TUM	Report			Pending
WP3	D3.4	20	Delivery of both FCPS and HSPS equipment packages	GHE	Demonstrator			Pending
WP4	D4.2	21	Design draft for DAs	SJE	Report	31 Jul 2022	06 Sep 2022	Approved
WP4	D4.3	22	Report on sustainability	SJE	Report			Pending
WP5	D5.2	23	Hydro4U Replication plan. 2nd release	CARTIF	Report			Pending



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A-2 Hydro4U Contact

The online form can be found here.

Background:

This registration form is best viewed on a desktop

This is a contact form that needs to be filled by all project members which defines the roles of each member in the project for ease of communication and facilitation.

1. All contact data will be kept, accessed and maintained by the technical University of Munich (TUM),
2. The contact data of the lead representatives (name and email) of all partners will be shared by TUM to all project memebers
3. The contact data of the dissemination and exploitation secertariats (name and email) will be shared by TUM to Steinbeis

All the contact details will be used exclusively within the project Hydro4U and will not be shared with any third parties

Partner Acronym *	Other:
First Name *	
Last name *	
Email *	
Tel. Number *	Format: +49176900001111
Mobile number (Optional)	Optional
Organistation *	
Position in organisation	
Department	
Address (department)	
City/Town	
post code	
country	
website (Department)	
Board Member	Multiple selection is possible
ROLE in project *	Multiple selection is possible
Comments	Any comments or remarks

* Mandatory fields

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A-3 Change request forms (Updated)

Request for change: Insert Title of change here

To:	
From:	
Partner Organization:	
Date:	

1. **Description of change**
2. **The reason for change**
3. **Which partners would be affected by the change?**
4. **Which work packages/tasks would be affected by or related to the change?**
5. **Which Deliverable or milestone would be affected by the change?**
6. **The type of change (Budget shift, Shift within cost items, change of delivery date, etc..)**
7. **Changes in the Grant Agreement Annex I and II (before and after table)**

Page #	Before	After

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Budget shift | Before/After												
	personal costs			other direct costs					indirect costs			
	direct personnel costs	direct personnel costs (SME owner, natural persons without salary)	direct costs of subcontracting	travel	equipment	other goods and services	total	in-kind contribution	overhead (25%)	Budget	EC contribution in %	EC contribution
ex. Before	45,850.00 €			69,200.00 €	0.00 €	92,665.00 €	161,865.00 €		51,928.75 €	259,643.75 €	100%	259,643.75 €
ex. After	57,050.00 €			112,200.00 €	6,950.00 €	31,515.00 €	150,665.00 €		51,928.75 €	259,643.75 €	100%	259,643.75 €
Before							0.00 €		0.00 €	0.00 €		0.00 €
After							0.00 €		0.00 €	0.00 €		0.00 €

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A-4 Gantt Chart of the work packages (Updated)

WP/ Task		LEADER	Start	End	TUM S	TUM E
WP 1 – Analysis of unexploited SHP potential in CA		BOKU	1	60		
T1.1	Acquisition of (geo)data	BOKU	1	6		
T1.2	GIS- and model-based determination of the SHP potential in CA	BOKU	5	20		
T1.3	Development of a decision matrix for hydropower type-specific decision support	BOKU	15	25		
T1.4	Assessment of HP development scenarios in CA	BOKU	23	40		
T1.5	Development of a model structure for a screening tool to analyse site-specific hydropower conditions in CA	BOKU	18	40	35	40
T1.6	Scale-based application and validation of the screening tool at case studies	BOKU	41	50	41	46
T1.7	Establishment of a web-based application for decision support	BOKU	48	60		
WP2 – Accountability and Benefits Sharing in the Context of the Water-Food-Energy-C		IWMI	1	60		
T2.1	Quantification of shared benefits and trade-off analyses from SHP	IWMI	1	20	?	?
T2.2	Innovative objective, facts-based WEF monitoring and accounting system for SHP	HSOL	1	34	?	?
T2.3	Co-developoment of integrated cross-border policies for sustainable benefits sharing	IWMI	10	60	?	?
T2.4	Scenario-based Impact Assessment of the sustainability of SHP in CA considering the SDGs	BOKU	30	55	?	?
WP 3 – Optimization and Demonstration of innovative Hydropower Equipment		GHE	1	36		
T3.1	Analysis of technology optimization potential	TUM	1	6		
T3.2	Optimization and Design of the small hydro solutions	GHE	6	14		
T3.3	Verification and assessment of the sites for the demonstration activities and detailed project design	TUM	1	24		
T3.4	Manufacturing of the SHP equipment	GHE				
T3.5	Realization of the Demonstration Activities	ILF				
WP 4 – Technical planning, sustainability and assessment		SJE	1	58		
T4.1	Identification of SHP demo sites and basic data acquisition	SJE	1	6	1	6
T4.2	Hydrologic scenarios for SHP development at the demo sites	SJE	2	6		
T4.3	Assessment strategy integrating environmental, financial and socio-economic sustainability	SJE	5	12	7	12
T4.4	Demo-site design development and optimization	SJE	7	22	10	34
T4.5	Key performance indicators	SJE	25	30		
T4.6	Validation of regional with site specific model results	SJE	25	30	25	30
T4.7	Demo-site implementation	SJE	31	50	37	38
T4.8	Assessment of the operation	SJE	48	60	48	51
WP 5 – Replication of sustainable SHP potential		CAR	1	60		
T5.1	Hydro4U replication plan	CAR	1	48	45	46
T5.2	Assessment of hydropower development scenarios beyond the project timeframe	BOKU	12	42		
T5.3	Feasibility studies and planning at test cases	SJE	24	48	31	44
T5.4	Hydro4U Replication Guideline	CAR	36	60	47	48
WP 6 - Dissemination, Communication and Exploitation		SEZ	1	60		
T6.1	Exploitation and IP Support	SEZ	1	60		
T6.2	Towards Market uptake	SEZ	7	54		
T6.3	Support exploitation impact	SEZ	19	60		
T6.4	Enable policymakers, practitioners, academia and scholars to make SHP, WEFC Nexus and cross-border cooperation thinking a reality with HYDRO4U project results	IWMI	13	60		
T6.5	Dissemination and Communication Plan & Strategy	SEZ	1	12		
T6.6	Printed Dissemination Materials	SEZ	30	54		
T6.7	Digital Dissemination Materials	SEZ	30	54		
T6.8	Events	SEZ	1	60		
WP 7 - Management of the project		TUM	1	60		
T7.1	Project coordination and management	TUM	1	60		
T7.2	Project monitoring and controlling	TUM	1	60		
T7.3	Administrative and financial coordination	TUM	1	60		
T7.4	Knowledge management and communication	TUM	1	60		
T7.5	Quality and risk management	TUM	1	60		

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