MetaCities Excellence Hub in South-Eastern Europe

D1.1: Technical management and project quality handbook

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Table of Contents

1 Executive Summary 6
2 Introduction 7
2.1 Mapping METACITIES outputs 7
2.2 Deliverable Overview and Report Structure 8
3 METACITIES Excellence Hub 9
3.1 Project description and Excellence Hub Scope 9
3.2 Consortium partners and contacts 9
3.3 Cluster-based structure 10
3.4 Quadruple Helix 11
3.4.1 Research Institutes 11
3.4.2 Universities 12
3.4.3 Industrial partners 12
3.4.4 Governmental Organisations 12
3.4.5 Social partners 13
4 Management structure 14
4.1 Management responsibilities 14
4.1.1 Project Coordinator (PC) 14
4.1.2 General Assembly 15
4.1.3 Executive Management Board (EMB) 15
4.1.4 Work Package Leaders (WPLs) 16
4.1.5 Task Leaders (TLs) 16
4.1.6 Cluster coordination and leadership 16
4.1.7 Innovation Manager (IM) 17
4.1.8 Exploitation Manager (EM) 17
4.1.9 Quality Manager (QM) 17
4.1.10 Ethics Manager (EtM) 18
4.2 Monitoring the technical progress of the project in accordance with the contractual schedule 19
4.2.1 List of deliverables and WPs related to technical developments 19
4.3 Management information and procedures 20
4.4 Preparation and organisation of meetings 21
4.4.1 Notice of a meeting 21
4.4.2 Sending the agenda 21
5 Decision processes 22
5.1 Decisions without a meeting 22
5.1.1 Voting rules and quorum 22
5.1.2 Veto rights 22
6 Internal Communication and Document Management 24
6.1 Communication channels 24
6.2 Mailing lists 24
6.3 Resources/documents 24
6.3.1 File Format and Naming 25
6.4 Open Access (OA) to Scientific Publications 26
6.5 Collaborative document editing 26
6.6 Financial Reports 27
6.7 Reports 27
6.8 Periodic and Final Report 27
7 Quality Assurance 28
7.1 People 28
7.2 Report Oriented Deliverables Quality Procedures 29

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7.2.1 Quality Criteria 29
7.2.2 Quality Assurance Procedures 29
7.3 Software Oriented Deliverables Quality Procedures 33
7.3.1 Quality Criteria 33
7.3.2 Quality Procedures 33
8 Risk Management 35
8.1 Projects' Risks Management Approach 35
8.2 Projects' Risks Identification 38
9 Conclusions 41
10 References 42
Annex 1: Peer Review Scoring Template 43
Annex 2: Assignment of Deliverables to Peer Reviewers 45
Annex 3: User Acceptance Test Plan 46
Annex 4: Risk Registry 47
Annex 5: Presentation and Deliverable Templates 48

Table of Figures

Figure 3-1: METACITIES Excellence Hub members 10
Figure 6-1: ownCloud- METACITIES project repository. 25
Figure 7-1:Deliverables QA Procedures Diagram 30
Figure 8-1: Risk Management Process 38
Figure 8-2:Risk management, risk actions focus and prioritization. 39

List of Tables

Table 2-1: Adherence to METACITIES GA Deliverable & Tasks Descriptions 7
Table 3-1: Consortium partners list 9
Table 3-2: Partner complementarity matrix based on main project contributions 11
Table 4-1: WP leaders names and contact emails 16
Table 4-2: WP leaders names and contact emails 17
Table 4-3: Deliverable List 19
Table 4-4 Responsibilities in producing reports and minutes. 20
Table 6-1: Documents Naming Templates. 25
Table 7-1: Key contacts and Roles 28
Table 7-2 : Report Oriented Deliverables – Quality Criteria 29
Table 7-3 : Report Oriented Deliverables – Quality Criteria 31
Table 7-4 : Project's Milestones 32
Table 8-1: Work Packages And Tasks For The Metacities Project 35
Table 8-2 : Risk Classification, Risk Definition and Handling Processes. 39

Glossary of terms and abbreviations

Abbreviation / Term	Description
Bu	Bulgaria
CA	Consortium Agreement
CY	Cyprus
DMP	Data Management Plan
DK	Denmark
DTs	Digital Twins
EMB	Executive Management Board
EC	European Commission
EM	Exploitation Manager
EtM	Ethics Managers
GA	Grant Agreement
GR	Greece
IM	Innovation Manager
IoT	Internet of Things
IPR	Intellectual Property Rights
MST	Management Support Team
PC	Project Coordinator
QH	Quadruple Helix
QM	Quality Manager
RP	Reporting Period
SDO	Standard Developing Organization
SME	Small Medium Enterprise
WP	Work Package

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1 Executive Summary

This Deliverable, D1.1 (Technical Management and Quality Handbook), is related to the first Work Package (WP1) of METACITIES project and will be submitted to the European Commission on M6 (June 2023). This report addresses the tasks requirements of T1.2 and 1.3 and concerns the Technical Management plan and the Quality Handbook.

The document entails a description of the key roles and management bodies of the METACITIES Excellence Hub and project, and overall management and technical management structure as described in Task 1.2. It also describes the technical management model, procedures and roles.

In this report, the Quality Assurance procedures that should be considered and followed by each partner within the METACITIES project are defined. Its main objective is to provide project participants with a practical handbook outlining quality criteria, corrective mechanisms and deliverables' review processes. These procedures were established to ensure that high-quality outputs will be achieved, and appropriate corrective actions will be taken during the project's lifecycle, when necessary.

This Deliverable is also related to the Risk Management of the Project. A Risk Management plan has been identified and reported, including a risk library with potential risks, processes and procedures to be followed in order to ensure that proactive measures are taken to mitigate risks that could jeopardize the planned project outcomes. Last but not least, this report presents a list of templates, which were produced in order to facilitate the project's smooth execution and ensure outcomes' high-quality and uniformity.

2 Introduction

2.1 Mapping METACITIES outputs

This section presents the METACITIES Grand Agreement (GA) commitments, as extracted from the formal deliverable and task description, in respect to their outputs and work to be performed. The purpose is to aid the reviewer in finding the specific sections of the document where the respective tasks' requirements are addressed but also to guide the author through and serve as a check list to address everything that is needed to be addressed.

Table 2-1: Adherence to METACITIES GA Deliverable & Tasks Descriptions

METACITIES GA Component Title	METACITIES GA Component Outline	Respective Document Chapter(s)	Justification
TASKS			
Task 1.2 Technical and scientific management (UPAT)	Execution of overall technical management of the project, including: (a) Monitor the technical progress of the project and per WP to ensure that the objectives are met; (b) Prepare technical project reviews; (c) Monitor the flow of technical information among the WPs to develop a common understanding and technical coherence, avoiding any deviation that may result from a lack of synchronization between the technical activities; (d) Inform the PC in case of any deviation in the technical directions or delays in the developments; (e) Review technically the deliverables to ensure that they are compliant with the quality procedures defined; (f) Provide support to external project affairs, compiling the material from WPs.	Chapters 3-6	The project's scope as well as the Excellent Hubs scope are described in Chapter 3. The management structure and the technical progress monitoring are descripted in Chapter 4. The decision processes are presented in Chapter 5 and the information and document management in Chapter 6.
Task 1.3 Quality assurance and risk management (EBOS)	This task will implement the quality assurance procedures with particular focus on monitoring review activities and submitting quality review reports. A quality plan within the Project Quality Handbook (deliverable D1.2A) will specify the quality procedures, internal and external peer reviews, control, monitoring and reporting activities to be implemented in the project to ensure the best-known quality standards are met. This task will implement the plan, monitor potential risks, processes and procedures for risk management and provide reporting by all partners in each WP, covering both the project operational risks and the framework level barriers/risks. Monitor the progress to ensure that proactive measures	Chapters 7-8	Quality assurance criteria and processes are described along with responsible people and information about Project workspace, file naming and formatting. Templates identified are also included in Annexes 1-5, along with a list with the Peer Reviewers per Deliverable. The Project's risk monitoring and management process is described, along with the risk plan including a risk library with identified risks and mitigation actions in Annex 4.

	are taken to mitigate risks which could jeopardize the planned project outcomes.		
DELIVERABLE			
Deliverable D1.1 – A: Technical management and project quality handbook Technical Management and project quality handbook. Initial (A) version is a project operations and quality handbook.			

2.2 Deliverable Overview and Report Structure

This deliverable presents the overall administrative project management of the Coordination and Support Action METACITIES Project (https://metacities-hub.com/). Most of the content described in here has been largely defined in the METACITIES Consortium Agreement (CA) signed by all partners. Also, part of the content has been submitted as GA. More specifically, this document describes the management and quality control procedures of the project, which are meant to facilitate co-operation within the consortium and assure the quality of the technical work being carried out. This deliverable is purposed to provide a set of practical guidelines to all consortium members on how to set up the working procedures and rules for the consortium partners, defines document templates, means of communication and control, etc.

3 METACITIES Excellence Hub

3.1 Project description and Excellence Hub Scope

METACITIES' overall objective is to establish an Excellence Hub for future cities and regions in Southeast Europe, built upon Digital Twins and metaverse technologies, through cross-border collaboration focusing on innovation and engaging all different categories of actors of the Quadruple Helix. The project is a Coordination and Support action and focuses on creating strong research and innovation ties among partners through cross boarder collaboration. Specific domains with strong social footprint are selected as reference implementations in each region in order to guide and validate the proposed framework and efficiently coordinate the input from the different actors, academic, business, public authorities and societal actors, comprising the three participating clusters, Cyprus, Greece and Bulgaria.

3.2 Consortium partners and contacts

The consortium partners are enlisted in the Table 3-1 below.

Table 3-1: Consortium partners list

No.	Participant organisation name	Short name	Contact person/email
1	UNIVERSITY OF PATRAS (Coordinator)	UPAT	Spyros Denazis
2	UNIVERSITY OF PELOPONNESE	UoP	Nikolaos Voros
3	P-NET NEW GENERATION EMERGING NETWORKS & VERTICALS	P-NET	Christos Tranoris
4	HELLENIC AMERICAN EDUCATION CENTER	HAEC	Didoe Prevedourou
5	BUSINESS PROCESS MANAGEMENT	BPM	Cathy Christidou
6	MUNICIPALITY OF PATRAS	MPAT	Petros Ganos
7	ROAD SAFETY INSTITUTE	RSI	Vasiliki Myllona
8	CYENS CENTER OF EXCELLENCE	CYENS	Vasos Vasileiou
9	EBOS TECHNOLOGIES LIMITED	EBOS	Ioanna Iannou
10	UNION OF CYPRUS MUNICIPALITIES	UCM	Angelso Thrasyvoulou
11	UNION OF CYPRUS CONSUMERS	CCA	Virigina Christou
12	BURGAS MUNICIPALITY	BUR	Boyan Popunkyov
13	INNOVATION SYSTEMS BURGAS	ISBUR	Daniela Ivanova
14	SOUTHEAST DIGITAL INNOVATION HUB	DGHUB	Sotir Sotirov
15	REGION OF WESTERN GREECE	RWG	Dimitris Karagiannis
16	YODIWO	YDW	Alekos Maniatopoulos
17	TECHNICAL UNIVERSITY OF SOFIA	TUS	Vladimir Poulkov

18	FOUNDATION CLUSTER INFORMATION AND COMMUNICATION TECHNOLOGIES	ICTC	Peter Statev
19	AARHUS UNIVERSITY	AU	Albena Dimitrova Mihovska
20	DEPUTY MINISTRY OF RESEARCH, INNOVATION AND DIGITAL POLICY (ASSOCIATE PARTNER)	DMRID	Eleni Poulli
21	PRIMETEL	PRT	Filitsa Charalampous

3.3 Cluster-based structure

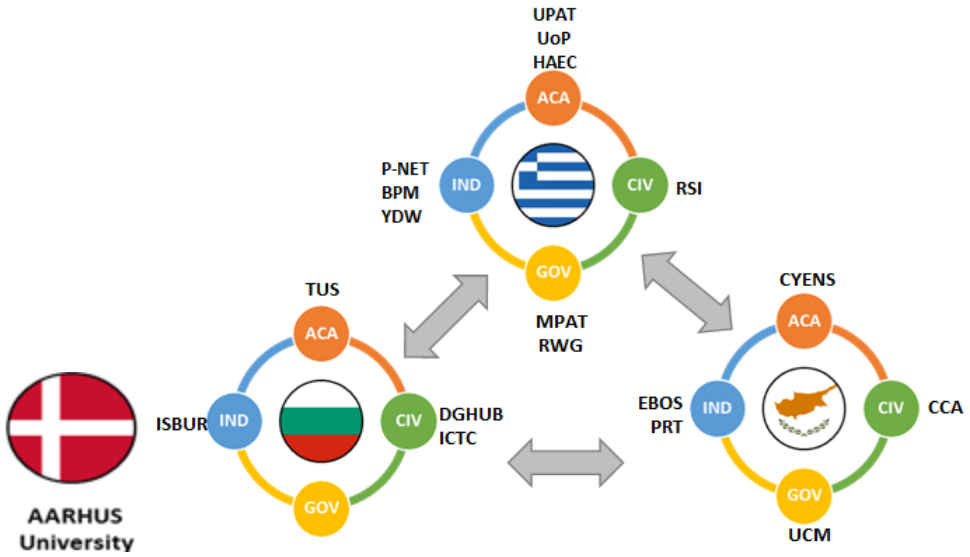

FIGURE 3-1: METACITIES EXCELLENCE HUB MEMBERS

The METACITIES consortium involves three widening countries, Bulgaria, Greece and Cyprus, and includes three place-based R&I ecosystems and an academic partner (19) Aarhus University-AU) from a non-widening country (DK). Specifically, the three ecosystems are regionally confined in the area of Burgas (BG), Patras (GR) and Cyprus (CY).

The QH approach is followed and therefore each ecosystem includes partners representing all four main actors: academia, business, public authorities, societal actors. In particular, the consortium comprises of 21 organisations from 4 EU member states that together form a complete group uniting the necessary interdisciplinary knowledge, expertise, skills, and resources. AU participates with a consulting role on technical (i.e., 5G/6G, Smart Cities DTs), and innovative green business modelling and sustainability aspects. All partners have been carefully selected to provide complementary skills and competences, which adequately cover all the project objectives and activities, starting from the definition of the METACITIES collaboration toolbox, to its application in the joint R&I project on smart cities' digital twins and metaverse environments, to experimentation and testing, to business, investment and sustainability planning, to impact maximization through wide dissemination and communication, exploitation, capacity building, engagement, clustering and exchanges of staff and

practices. Apart from each partner's skills, technical competence and expertise, excellent past collaborations have also been considered while forming the HUB. The size of the consortium is justified by the core competences and skills of each partner, to achieve the goals of the project. Table 3-2 provides the diversity of expertise and contributions per partner to project's approaches and outcomes.

Table 3-2: Partner complementarity matrix based on main project contributions

Partner **Expertise domain /** **Main contribution area in Smart Cities**	UPAT	UOP	P-NET	HAEC	BPM	MPAT	RSI	CYENS	EBOS	UCM	CCA	BUR	ISBUR	DGHUB	RWG	YDW	TUS	ICTC	AU	DMRID	PRT
Application development	✓	✓	✓						✓				✓			✓					
DT technologies	✓	✓						✓					✓				✓				
Metaverse technologies								✓								✓					
5G and beyond technologies	✓		✓					✓	✓										✓		✓
Smart City Platforms	✓	✓	✓					✓	✓				✓			✓					✓
Policy maker/regulator						✓						✓			✓					✓	
Digital transformation				✓	✓	✓				✓		✓	✓	✓				✓			
Education and training	✓	✓		✓			✓				✓						✓		✓		
Technology adapter						✓					✓	✓			✓						
Business Plans				✓	✓				✓										✓		✓
Legal, Ethics, Gender							✓			✓				✓							
Exploitation, Innovation			✓		✓			✓	✓				✓				✓	✓	✓		✓
Dissemination, Communication	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

3.4 Quadruple Helix

The composition of the consortium with respect to each expertise domain and the quadruple helix are presented below.

3.4.1 Research Institutes

CYENS is a Centre of Excellence that focuses on Interactive media, Smart systems and Emerging Technologies and with current research and innovation activities in 5G, Internet of Things (IoT), Smart Cities, Digital Twins (DTs) and eXtended Reality (AR/VR). Visual Sciences, Human Factors and Design, and Communications and Artificial Intelligence are the three Research Pillars integrated in a tight synergy that provides a unique interdisciplinary research perspective. HAEC, a higher and lifelong education provider in Greece, participates in METACITIES with its business and IT research divisions. Its primary contribution centres around fostering cross-border R&I collaboration, QH implementation, and sustainability.

3.4.2 Universities

UPAT (NAM group) main expertise lies with the lifecycle management of experiments over digital infrastructures as well as the deployment and operation of experimental facilities. UOP participates with the Embedded System Design and Applications Lab (ESDA Lab). The lab is specialized in embedded and cyberphysical system design and is a validated Digital Innovation Hub of EC. TUS is the biggest technical university in Bulgaria with top quality BSc, MSc, PhD students and engineering faculties. TUS will exploit its involvement related to the development and the implementation of the DT pilots of one or more public buildings in Burgas by developing relevant research programs and implementing appropriate AI/ML algorithms that can be used to detect patterns and to solve problems regarding energy efficiency. AU has strong activities in both 6G and green business modelling. AU already has an established long-term cooperation with TUS and HAEC in the area of 6G and business model innovation and will seeks to strengthen this collaboration further into new research ideas and projects.

3.4.3 Industrial partners

YDW is a commercial Small and medium-sized enterprise (SME) that is very active in the Smart City/ Smart Building vertical markets, that provides an AI/IoT based smart city platform. The company is headquartered in Sweden, with R&D for Smart City / IoT platform and Applications, as well as sales based in Greece. YDW as a commercial SME with a proven track record in developing Smart City solutions, will support the pilot and PoC activities. EBOS' role, as an innovative ICT SME, is focused on contributing towards the long-term R&I strategy and vision for the use of DT, metaverse, 5G and beyond technologies, and leading the elicitation of the socio-techno-economic requirements. ISBUR is an active member of the Burgas IT ecosystem and main actor and technical partner in implementation of smart city and digital transformation projects for the Municipality. ISBUR will have the role of provider of hosting data processing, know-how and expertise related to DT city demonstration pilot, based on expansion of the functionalities and scope of data coverage. P-NET is a private company recently incorporated as a Competence Center in the Region of Western Greece. It is a cluster of 22 partners-shareholders representing established companies, SMEs, public and private higher and lifelong education institutions, research organizations. P-Net will be primarily involved in experimentation and piloting activities. BPM is a Greek SME business consulting firm. BPM addresses its clients' needs related to business, people, funding, organisation and society and provides customized services, using international state of the art methodologies, best practices, know-how and expertise. BPM will organise and participate in project activities concerning Strategic and Action Planning, as well as Investment and Sustainability Plans. BPM will also contribute to the Networking of Innovation Clusters, to Business and Sustainability Planning, as well as to the Mobilisation of resources for funding. PTL as a major Telecommunications Provider in Cyprus and a company traditionally successfully involved in EU R&D, will play a significant role in understanding EU and regional trends in services for DT and Smart Cities and influencing the design of offered services to the applications providers. PTL will benefit from its collaboration with the π-net, which includes major research and innovation players from the Greek ecosystem.

3.4.4 Governmental Organisations

Municipalities of Patras (MPAT) and Burgas (BUR), the Union of Cyprus Minicipalities (UCM), the Region of Western Greece, and the Deputy Ministry of Research and Innovation and Digital Policy (DMRID), are all policy makers in each cluster region that will exploit the METACITIES results by both incorporating the methodologies and joint strategies and the PoC/pilots.

3.4.5 Social partners

RSI has an outstanding experience in training and awareness raising campaigns on road safety devoted to different targets. RSI will develop comprehensive programmes to improve road user behaviour, specially designed for the needs of each road user group, according to METACITIES research and following best practices, using the DT to evaluate various scenarios. CCA is a non-government, non-profitmaking association, provides education through the Schools for Adult Consumers which operate on a weekly basis and represents the interests of consumers in Parliamentary Committees, and bodies for consumer's issues and media. CCA will provide the social perspective in the CY cluster. DGHUB is a fully-operational DIH and a candidate EDIH. The organization is an EEN node. The ICT Cluster Burgas, ICTCB, is an important participant in the digital ecosystem of Burgas with more than 100 members directly involved in the ICT and other key enabling technologies.

4 Management structure

The METACITIES Project is based on a **management structure** required by a medium-sized project in an international context. The organization of the project and Excellence Hub management covers various aspects: strategic, technical and logistic issues. At the highest level of the project management is the General Assembly, chaired by the Project Coordinator (PC) and consisting of one representative from each of the consortium partners. The General Assembly will have overall executive level responsibility for the project, and will meet every six (6) months in specific coordination meeting. The GA will be consulted for policy and economic decisions.

Scientific and Technical Management of the project will be carried out by the Executive Management Board (EMB), and it will be done in conjunction with the Work Package leaders (WPLs), who will be responsible for the day-to-day technical management at their own sites. Furthermore, and due to the geographical distribution of partners in clusters (BG, CY, GR) a Local based Ecosystem Management Board (L-EMB) that comprises two people from two organizations per cluster, has been mobilized in order to coordinate the technical work on a per cluster basis.

The Executive Management Board (EMB) as the supervisory body for the execution of the Project which shall report to and be accountable to the General Assembly:

- support the Project Coordinator (PC) in preparing meetings with the Funding Authority and in preparing related data and deliverables, and
- prepare the content and timing of press releases and joint publications by the consortium or proposed by the Funding Authority in respect of the procedures of the Grant Agreement (GA) Article 29.

The day-to-day project management and progress monitoring will be performed by the Project Coordinator (PC). The PC shall be the intermediary between the Parties and the Funding Authority and shall perform all tasks assigned to it as described in the METACITIES GA as well as in the Consortium Agreement (CA).

4.1 Management responsibilities

This section presents the different responsibilities and roles according to the CA.

4.1.1 Project Coordinator (PC)

The PC in METACITIES is **managing the technical and administrative content of the project**. In METACITIES, PC is Prof Spyros Denazis (UPAT). The PC's responsibilities will be to:

- monitoring compliance by the Parties with their obligations and the plan described in GA,
- collecting, reviewing to verify consistency and submitting reports and deliverables (including financial statements and related certifications) and specific requested documents to the EC,
- forwarding documents and information related to METACITIES to any Parties concerned,
- administering the financial contribution of the Funding Authority and ensuring the financial tasks are performed
- providing, upon request, the Parties with official copies or originals of documents which are in the sole possession of the Coordinator when such copies or originals are necessary for the Parties to present claims.
- Overviewing the technical progress of the project

- Ensuring overall technical management of the project
- keeping the address list of Members/Beneficiaries and Associated partners and other contact persons updated and available,

4.1.2 General Assembly

The General Assembly is the ultimate decision-making body of the consortium. More specifically, the mission of the General Assembly within the project is:

- Content, finances and intellectual property rights
- Proposals for changes to Annexes 1 and 2 of the GA to be agreed by the EC.
- Changes to the Consortium Plan including Consortium budget.
- Modifications to Attachment 1 (Background Included) and Attachment 3 (List of Third Parties for simplified transfer of the CA).

Evolution of the Consortium:

- Entry of a new Party to the consortium and approval of the settlement on the conditions of the accession of such a new Party.
- Withdrawal of a Party from the consortium and the approval of the settlement on the conditions of the withdrawal.
- Identification of a possible breach by a Party of its obligations.
- Recommendation to the PC of remedies to be performed by a Defaulting Party.
- Recommendation to the PC and the Funding Authority about termination of a Defaulting Party's participation in the consortium and measures relating thereto.
- Proposal to the Funding Authority for a change of the PC.
- Proposal to the Funding Authority for suspension of all or part of the Project.
- Proposal to the Funding Authority for termination of the Project and the CA.

4.1.3 Executive Management Board (EMB)

The Executive Management Board (EMB) is and coordinated by the PC, Prof Spyros Denazis (UPAT), and will include all WPLs and Cluster leaders and Managers as discussed in this section. The EMB will supervise the project's scientific and technical issues and will act to resolve any issues to ensure the consecution of the expected results. The PC, will also schedule, call and chair the Technical meetings. The PC will be the one responsible for monitoring and maintaining smooth communication and cooperation between the WP leaders and resolve any issues that might arise at the technical level. The PC is also responsible for maintain the deliverables' schedule and foresee any problem that may occur in this area and try to resolve them beforehand.

Decisions will normally be taken by the responsible partners (Work Package Leaders or Task Leaders) based on the Description of Work to be performed, as stated in the Contract, the CA and the individual Work Package or Task description. In case there is a dispute between two or more partners and agreement will be sought by informal communication. In case no agreement is reached, the Conflict Resolution procedure will be resorted to.

4.1.4 Work Package Leaders (WPLs)

Each work package (WP) is led by one partner. Each partner has designated a representative from its organisation that will act as a WPL contact point. WPLs will be responsible for the coordination and management of individual WPs. In the table below you can see the names and the affiliations of the assigned WP leaders. WPL tasks will be the following:

- Lead and monitor the project's technical progress and involve the partners whenever it is necessary.
- Ensure the tasks under their responsibility are carried out timely and with the expected quality with the assistance of task leaders
- Monitor and report on completed and starting tasks. Advise on complementarity of tasks with other tasks and WPs.
- To prepare progress reports in due time as requested by the PC.
- To report any deviation from scheduled activities (due to any unexpected event or risk) which may affect the results and the timely delivery of results

Table 4-1: WP leaders names and contact emails

WP	WPL(s)	Contact person	E-mail
WP1	**UPAT**	**Spyros Denazis**	**sdena@upatras.gr**
WP2	**TUS**	**Vladimir Poulkov**	**vkp@tu-sofia.bg**
WP3	**CYENS**	**Vasos Vassiliou**	**vasosv@cyens.org.cy**
WP4	**PTL**	**Filitsa Charalambous**	**filitsas@gmail.com**
WP5	**BPM**	**Maria Koumarianou**	**koumarianou@bpm.gr**
WP6	**HAEC**	**Prevedourou Didoe**	**dprevedourou@hauniv.edu**

4.1.5 Task Leaders (TLs)

Task leaders will be responsible for the activities performed in her/his task coordinating the technical work, making the technical decisions belonging to her/his own task. The TLs should report to the WPL on the progress of the task at the frequency they decide among themselves. During the first year of the project bi-weekly meetings are being set to that respect.

4.1.6 Cluster coordination and leadership

Each of the local based ecosystems have appointed responsible persons for the coordination of the activities within the METACITIES Excellence Hub. These people are in charge of ensuring that both technical and business perspectives of the cluster work will be reflected in the Excellence Hub work and vice versa.

TABLE 4-2: WP LEADERS NAMES AND CONTACT EMAILS

Cluster	Cluster Leader	Contact person(s)
BG	ISBUR/ICTC	Daniela Aleksieva Peter Statev
CY	eBOS/CYENS	Ioanna Ioannou /Christophoros Christophorou
GR	UPAT/BPM	Spyros Denazis/ Cathy Christidou

4.1.7 Innovation Manager (IM)

The role of Innovation Manager (IM) was initially taken by UPAT and the responsible person is Tanya Politi (tpoliti@upatras.gr). Her role is to foster innovation within the project and ensure the work is directed to the commercial needs of the market. In the kick off meeting however it was decided that they will be two Innovation Managers that will jointly take up the tasks below. The second innovation Manager is AU and the responsible person is Albena Dimitrova Mihovska amihovska@btech.au.dk.

The tasks of the IMs are:

- Monitor the scientific and technological developments of the project as well as the events and the state of the art relevant to the METACITIES technology;
- Identify the enhancements in the value proposition of the applications investigated as use cases, and generalize the added value solutions that METACITIES brings to the ICT and the Smart Cities/Smart regions;
- Identify creative individuals in each of the partners' teams that can contribute to boost innovation in the project, i.e. identify champions for each of the technology areas within the METACITIES.
- Investigate market needs in selected areas of the project, where its impact can be maximized.
- Prepare the innovation plan (D1.4) and also interface with WC with respect all Innovation **related matters**

4.1.8 Exploitation Manager (EM)

The Exploitation Manager (EM) will be responsible for ensuring that partners are continuously monitoring exploitation opportunities individually, and together where such opportunities come up, as discussed in WP6 and plans within. Also, EM will produce a plan for the exploitation of knowledge, with annual updates to the plan for the whole Excellence Hub and support each partner individually. This plan will be reported in WP6 deliverables. EM responsible person is Cathy Christidou (BPM).

4.1.9 Quality Manager (QM)

The Quality Manager (QM) will be responsible for quality control of both the technical work and the deliverables to the EC. The role is assigned to Ioanna Ioannou (eBOS). The QM initiates the quality control procedures and could request action and/or additional reports, if there are any issues with respect to quality of work. As described in this deliverable, a quality procedure is in place, distributed and explained to all partners from the very beginning. Every deliverable, prior to its submission to the

EC, will be the subject of a peer review by persons not directly involved in the creation of that deliverable. The QM, along with the PC, will make a final check of the deliverable for consistency and presentation.

4.1.10 Ethics Manager (EtM)

METACITIES Excellence Hub is committed to adhere to and promote the highest ethical, fundamental rights and legal standards, as recognized at the EU and International level, in the project's activities and outcomes. Although the scope of the HUB is not directly related to the development of AI algorithms but may be used in the context of Proof-of-Concept implementations, the consortium nevertheless will ensure that all ethical, legal, privacy, social and safety issues related to the project activities are identified and taken into account, in compliance with Applicable national and international regulations. Serving this purpose, the Ethics Manager (EtM) is responsible for regulatory and contractual obligations related to privacy and ethical issues deriving from the usage of data and will ensure that this use is in accordance with the ethics and privacy requirements described here and in other WP1 deliverables, or any other applicable regulations applicable to this matter.

The Ethics Manager oversees and promotes the ethics is UPAT (Odysseas Koufopavlou) together with RSI (Danae Stavrou). Both organisations will work together to promote ethics to that respect.

4.2 Monitoring the technical progress of the project in accordance with the contractual schedule

The consortium has put together a very detailed Gannt chart that entails all deliverables and milestones and has been included in the GA. Below the reader can find the list of all deliverables as stated in the GA.

4.2.1 List of deliverables and WPs related to technical developments

Table 4-3: Deliverable List

Deliverables

Grant Preparation (Deliverables screen) — Enter the info.

The labels used mean:

Public — fully open (⚠ automatically posted online)
Sensitive — limited under the conditions of the Grant Agreement
EU classified —RESTREINT-UE/EU-RESTRICTED, CONFIDENTIEL-UE/EU-CONFIDENTIAL, SECRET-UE/EU-SECRET under Decision 2015/444

Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D1.1	A: Technical management and project quality handbook	WP1	1 - UPAT	R — Document, report	PU - Public	6
D1.2	B: Technical management and project quality handbook	WP1	1 - UPAT	R — Document, report	PU - Public	24
D1.3	C: Technical management and project quality handbook	WP1	1 - UPAT	R — Document, report	PU - Public	48
D1.4	A: Report on Innovation, IPR management and DMP	WP1	1 - UPAT	R — Document, report	SEN - Sensitive	6
D1.5	B: Report on Innovation, IPR management and DMP	WP1	1 - UPAT	R — Document, report	SEN - Sensitive	24
D1.6	C: Report on Innovation, IPR management and DMP	WP1	1 - UPAT	R — Document, report	SEN - Sensitive	48
D2.1	METACITIES cross-border R&I strategy	WP2	17 - TUS	R — Document, report	PU - Public	12
D3.1	A: Requirements and Specification of the ODTF	WP3	2 - UOP	R — Document, report	PU - Public	8
D3.2	B: Requirements and Specification of the ODTF	WP3	2 - UOP	R — Document, report	PU - Public	24

Deliverables

Grant Preparation (Deliverables screen) — Enter the info.

The labels used mean:

Public — fully open (⚠ automatically posted online)
Sensitive — limited under the conditions of the Grant Agreement
EU classified —RESTREINT-UE/EU-RESTRICTED, CONFIDENTIEL-UE/EU-CONFIDENTIAL, SECRET-UE/EU-SECRET under Decision 2015/444

Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D3.3	A: Instantiation of smart cities digital twins and transition to Metaverse Environment	WP3	8 - CYENS	R — Document, report	PU - Public	30
D3.4	B: Instantiation of smart cities digital twins and transition to Metaverse Environment	WP3	8 - CYENS	R — Document, report	PU - Public	48
D4.1	A: Report on PoC studies, demos and pilots	WP4	3 - P-NET	R — Document, report	PU - Public	42
D4.2	B: Report on PoC studies, demos and pilots	WP4	3 - P-NET	R — Document, report	PU - Public	48
D5.1	A: Business, Investment and Sustainability Plans	WP5	5 - BPM	R — Document, report	PU - Public	30
D5.2	B: Business, Investment and Sustainability Plans	WP5	5 - BPM	R — Document, report	PU - Public	48
D6.1	Project website and social media presence	WP6	9 - EBOS	DEC —Websites, patent filings, videos, etc	PU - Public	1
D6.2	A: Dissemination, Engagement and Knowledge Transfer	WP6	4 - HAEC	R — Document, report	PU - Public	6
D6.3	B: Dissemination, Engagement and Knowledge Transfer	WP6	4 - HAEC	R — Document, report	PU - Public	26
D6.4	C: Dissemination, Engagement and Knowledge Transfer	WP6	4 - HAEC	R — Document, report	PU - Public	48

4.3 Management information and procedures

- **Technical Meetings,** which are regularly held within a 3-4 months period, for a maximum of up to 10 (physical) meetings within the 48 months the project runs. These meetings are suitable for assessing the evolution of the project and to advance future agreements towards achieving the targeted objectives.
- **WP meetings** (virtual). Each WP leader regularly organizes specific WP virtual meetings at the frequency agreed upon within the WP.
- **Monthly management phone calls**, also known as EMB calls, which will be organized by the PC. The purpose of these calls is to evaluate the current status of the project and the progress of each WP, in terms of organization, and to achieve a fast alignment of the work. As well, the attendees will review the status of each WP and will advance risks and issues which may occur at a cluster level.
- **Monthly cluster management phone calls**, also known as BG/CY/GR cluster calls, which will be organized by each cluster leader. The purpose of these calls is to evaluate the current status of the project in terms of organization, and to achieve a fast alignment of the work. As well, the attendees will review the status of each WP and will advance risks and issues which may occur. In some cases, physical meetings will be sought to facilitate cooperation at cluster level.

Reports and minutes will be generated as outcomes of these interactions with the responsibilities mentioned below.

TABLE 4-4 RESPONSIBILITIES IN PRODUCING REPORTS AND MINUTES.

Interaction type	Responsible
Technical Meetings	Partner hosting the Meeting
WP meetings	WP leaders
Monthly EMB phone calls	PC
Monthly Cluster management phone calls	Cluster leader

4.4 Preparation and organisation of meetings

4.4.1 Notice of a meeting

The chairperson of a Consortium Body (consortium, WP, cluster etc) will create doodle polls for establishing suitable dates and times for the majority of the body members. Also, the chairperson shall give notice in writing of a meeting to each Member of that Consortium Body as soon as possible and no later than the minimum number of days preceding the meeting as indicated below depending on whether the meeting is ordinary or extraordinary. The General assembly members will be notified 45 days before the meeting (which can be 15 if this is extraordinary) and the EMB members at least two weeks before the meeting.

4.4.2 Sending the agenda

The chairperson of a Consortium Body shall prepare and send each Member of that Consortium Body a written (original) agenda and link no later than the minimum number of days preceding the meeting as indicated below.

General Assembly	14 calendar days, 7 calendar days for an extraordinary meeting
Executive Management Board	7 calendar days

Any agenda item requiring a decision by the Members of a Consortium Body must be identified as such on the agenda.

Any Member of a Consortium Body may add an item to the original agenda by written notification to all of the other Members of that Consortium Body up to the minimum number of days preceding the meeting as indicated below.

General Assembly	10 calendar days, 5 calendar days for an extraordinary meeting
Executive Board	2 calendar days

During a meeting the Members of a Consortium Body present or represented can unanimously agree to add a new item to the original agenda. Any decision may also be taken without a meeting if the PC circulates to all Members of the Consortium Body a written document which is then agreed by the defined majority of all Members of the Consortium Body. Such document shall include the deadline for responses.

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5 Decision processes

Decisions will only be binding once the relevant part of the Minutes has been accepted according to Section 6.3 of the CA.

5.1 Decisions without a meeting

Any decision may also be taken without a meeting if:

a) the Coordinator circulates to all Members of the General Assembly a suggested decision with a deadline for responses of at least 10 calendar days after receipt by a Party and

b) the decision is agreed by a majority of two-thirds (2/3) of the votes of all Parties.

The Coordinator shall inform all the Members of the outcome of the vote. A veto according to Section 5.1.2 may be submitted up to 15 calendar days after receipt of this information. The decision will be binding after the Coordinator sends a notification to all Members. The Coordinator will keep records of the votes and make them available to the Parties on request.

5.1.1 Voting rules and quorum

The General Assembly shall not deliberate and decide validly in meetings unless two-thirds (2/3) of its Members are present or represented (quorum).

If the quorum is not reached, the chairperson of the General Assembly shall convene another ordinary meeting within 15 calendar days. If in this meeting the quorum is not reached once more, the chairperson shall convene an extraordinary meeting which shall be entitled to decide even if less than the quorum of Members is present or represented.

- ✓ Each Member present or represented in the meeting shall have one vote. Associated Partners are excluded from certain decisions of the General Assembly according to Section 6.2
- ✓ A Party which the General Assembly has declared according to Section 4.2 to be a Defaulting Party may not vote.
- ✓ Decisions shall be taken by a majority of two-thirds (2/3) of the votes cast.

5.1.2 Veto rights

- A Party which can show that its own work, time for performance, costs, liabilities, intellectual property rights or other legitimate interests would be severely affected by a decision of the General Assembly may exercise a veto with respect to the corresponding decision or relevant part of the decision.
- When the decision is foreseen on the original agenda, a Party may only veto such a decision during the meeting.
- When a decision has been taken on a new item added to the agenda before or during the meeting, a Party may veto such decision during the meeting or within 15 calendar days after receipt of the draft minutes of the meeting.
- When a decision has been taken without a meeting a Party may veto such decision within 15 calendar days after receipt of the written notice by the chairperson of the outcome of the vote.
- In case of exercise of veto, the Parties shall make every effort to resolve the matter which occasioned the veto to the general satisfaction of all Parties.

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- A Party may neither veto decisions relating to its identification to be in breach of its obligations nor to its identification as a Defaulting Party. The Defaulting Party may not veto decisions relating to its participation and termination in the consortium or the consequences of them.
- A Party requesting to leave the consortium may not veto decisions relating thereto.

6 Internal Communication and Document Management

Although the main decisions should be taken within project meetings, daily internal communication is very important for tracking the progress of the project.

6.1 Communication channels

Although other channels may be used, the following communication channels are being used:

- E-mail (please use METACITIES as a reference on Subject field especially if you do not use the Metacities mailing list): e.g. [METACITIES] – (rest of the subject field)
- Letter.
- Webex/zoom, telephone, MS Teams and Skype.
- Website
- Ownclowd (see below): repository that enables the exchange of files /documentation and co-working/co-editing space.

6.2 Mailing lists

The project has set up the following mailing list

(METACITIES) <metacities@lists.esdalab.ece.uop.gr>

Also, all the email addresses are kept at a log file in the ownCloud platform.

6.3 Resources/documents

UPAT has established a collaborative space in ownCloud (https://owncloud.patras5g.eu/), which enables the sharing of information and files among project partners. ownCloud complies with all security and General Data Protection Regulation (GDPR [2]) requirements, and partners use it as the primary location for uploading and storing various files related to the METACITIES project, including Deliverables, Meeting Minutes, Workshop Photos, working documents, and videos. All project partners have dedicated access to the platform, and no unauthorized individuals outside the Consortium have access. Figure 6-1 illustrates a snapshot of the METACITIES project's ownCloud, which includes a specific file structure for uploading and storing files. Each Work Package (WP) has its own dedicated folder, where relevant information will be uploaded. Deliverables will be uploaded to the dedicated “Deliverables" folder. Additionally, partners can access and download necessary template files (such as the Deliverable template, presentation template etc.) from the "Template" folder.

FIGURE 6-1: OWNCLOUD- METACITIES PROJECT REPOSITORY.

6.3.1 File Format and Naming

All documents exchanged between partners should be in a format that can be easily edited or amended. Therefore, it is recommended to use file types that are compatible with MS Office. To ensure a consistent method of identifying official project documents, a naming template has been established and is presented in the table below, along with an example for each document type.

Table 6-1: Documents Naming Templates.

Document Type	Naming Template	Example
Deliverables	ProjectName DeliverableNo DeliverableTitle Version (Lead Partner)	METACITIES D1.1A Technical Management and project quality handbook V1 (eBOS)
Agendas	ProjectName MeetingID MeetingLocation MeetingDate Agenda Meetings' identifiers: • **KoM**=Kick Off Meeting	METACITIES KoM Telco 10.12.2021 Agenda

	• **PM**=Project Meeting (concerns regular General Assemblies/Penaries) • **TM**=Technical Meeting • **RM**=Review Meeting • **Telco**=Online meeting (Teams, etc.)	
Minutes following the organization of a physical meeting or a telco	ProjectName MeetingID MeetingLocation MeetingTitle MeetingDate Minutes Version	METACITIES TM Telco WP2_Progress 22.02.2023 Minutes v0.2
Presentations	ProjectName MeetingID PresentationTitle MeetingDate Partner	METACITIES WP2 Progress_Overview 22.02.2023 UPAT

Annexes provide screenshots of the document templates as listed below:

- **Annex 1:** Peer Review Scoring Template
- **Annex 2**: Assignment of Deliverables to Peer Reviewers
- **Annex 3:** User Acceptance Test Plan
- **Annex 4:** Projects' Risks Library and Mitigations
- **Annex 5:** Presentation and Deliverable Templates

6.4 Open Access (OA) to Scientific Publications

The Excellence Hub will maximise the visibility and exploitation of the project results and its long-term impact, by providing as many as possible publicly available results that can be easily accessed and reused. All details are discussed in deliverable D1.4 Report on Innovation, IPR management and DMP part of which is the "Data Management Plan" (DMP), which will be released as an early deliverable.

OA data repositories will be setup by the consortium/clusters right from the start of the project. However, partner hosted repositories, as well as external repositories will be used to ensure maximum visibility, serve as backups, and ensure availability well after the end of the project. Regarding scientific publications, they will be published under the OA paradigm to the largest possible extent and in accordance to the quality standards defined by the project. Since numerous publications are expected during the course of the project, the project's approach will be to exploit both "gold" and "green" OA practices.

6.5 Collaborative document editing

For editing and collaborating simultaneously on the documents that are produced, the Consortium will use the **onlyoffice** collaborative document platform. Through this accessing and editing the stored files in two ways: via a web interface (i.e., viewing and editing documents through a web browser) or using a client for computers and mobile devices (i.e., accessing the documents via the local file system, synchronised with the central storage).

Language used will be English.

6.6 Financial Reports

The PC is responsible for sending one financial report per reporting period year, as well as for every Periodic Report to the EC. It is the responsibility of each partner/beneficiary to send their financial statements (comprise both Financial reports and Financial issues of the progress reports) in due time to the PC. The consortium should send a draft version of their financial statement to the PC in order to review it and provide feedback. All consortium partners will submit their Financial Statements (Form C) periodically (Month 15 and Month 30 and final in month 48). It should be noted here that an internal procedure has been set up by the PC for a 6month reporting period for internal purposes and monitoring of all procedures and expenditure by the consortium. A Form C describes cost declarations for a Beneficiary in a consortium. It contains information such as:

- Information about the Beneficiary;
- The declaration of costs;
- The declaration of receipts;
- The declaration of cost details (cost, explanation, work package);
- The optional declaration of interest from the pre financing;
- The requested EC contribution;
- The optional audit certificate declaration.

The LEAR of each organization/beneficiary and associated partner has already nominated a person authorised to sign Form C for their entity (FSIGN. Once Beneficiary Form Cs have been created and completed, the FSIGN electronically signs and submits Form C to the Project coordinator, the PC can submit them to the EC Project Officer. After submission by the coordinator of the Forms C package to the Commission, a digitally signed e-Receipt is issued on each Form C and another one is issued for the whole package.

6.7 Reports

According to the GA reporting will be divided, in principle, into the following 'reporting periods' (RP):

- RP1: from month 1 to month 15.
- RP2: from month 16 to month 30.
- RP3: from month 31 to month 48.

6.8 Periodic and Final Report

The PC must submit a periodic report within 60 days following the end of each reporting period. The periodic report must include the Periodic technical Periodic financial report' as stated in the GA. 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 the 'final technical report' and the 'final financial report' which will in turn comprise a 'certificate on the financial statements' for each beneficiary and for each linked third party, 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.

7 Quality Assurance

To ensure that the Deliverables meet an acceptable level of quality in both their content and presentation, the quality plan and procedures must be defined. This necessitates that the Deliverables adhere to the following criteria:

- They must be consistent with the work description to ensure that the outcomes align with the Grant Agreement.
- They must be consistent with the project plan to ensure that the results contribute to the project's overall objectives, as determined by the project's coordination team.
- They must be clear and easily understandable.

Further details about the quality standards and the initial procedures for Deliverables can be found in Chapters below.

7.1 People

Within the scope of T1.3 (Quality Assurance), the Quality Manager (eBOS) in collaboration with the WP1 (Project Management) Leader and Project Coordinator (UPAT), monitor the quality of METACITIES Deliverables throughout the project. However, a team effort is essential in order to ensure high quality and the best possible project's outputs. The key contacts and roles of the respective individuals are shown in Table 7-1.

Table 7-1: Key contacts and Roles

Roles	Partner	Contact Person	Contact Email
Project Coordinator	UPAT	Spyros Denazis	sdena@upatras.gr
Quality Assurance & Risk Manager	eBOS	Ioanna Ioannou	ioannai@ebos.com.cy
Technical Manager	UPAT	Spyros Denazis	sdena@upatras.gr
D&C Manager	eBOS	Ioanna Ioannou	ioannai@ebos.com.cy
Exploitation Manager	BPM	Cathy Christidou	christidou@bpm.gr
Ethics Manager	UPAT/RSI	Odysseas Koufopavlou Danai Stavrou	odysseas@ece.upatras.gr dstavrou.ioas@gmail.com
Innovation Manager	UPAT AU	Tanya Politi Albena Dimitrova Mihovska	tpoliti@upatras.gr amihovska@btech.au.dk
Work Package Leaders	Each WP Leader		
Deliverable Owner/Author	Each Deliverable leader		
Peer Reviewer(s)	All partners will serve as peer reviewers for Deliverables that fall within their area of expertise. List of Deliverables is presented in the Annex 2 of the existing Deliverable		

7.2 Report Oriented Deliverables Quality Procedures

7.2.1 Quality Criteria

It is important to plan and prepare the content of the Deliverable carefully from the beginning to ensure it covers all necessary aspects. **Annex 1: Peer Review Scoring Template**, contains a scoring template that should be used during the peer review process. This template provides specific criteria for reviewers to evaluate each type of Deliverable thoroughly. Reviewers will refer to these criteria, which are summarized in the Table 7-2 below, to assess the quality of the Deliverable accurately. The criteria outlined in the scoring template, can assist reviewers to provide detailed feedback and suggestions to the author of the Deliverable. This feedback can then be used to improve the content and quality of the Deliverable before submission. Ultimately, thorough planning and careful evaluation during the peer review process will lead to high-quality Deliverables that meet the project's objectives.

Table 7-2 : Report Oriented Deliverables – Quality Criteria

Quality Criteria	
Quality of Content	The Deliverable fulfills its main objective and addresses the required aspects.
	References are appropriate and complete.
	Methodology is properly justified.
	Results are useful and valuable to the project and comply to the Grant Agreement (GA).
	Conclusions are justified.
	No Plagiarism.
	No syntax or grammatical mistakes. In addition, use of UK-English as preferable language.
Readability	The document is easy to read.
	Appropriate and common-used fonts are used.
Structure	Easy visualize where key points are addressed.
	Easy identify WP Tasks as described to the GA.
	The document structure is logical and appropriate.
Follow the Template	Template has been applied properly.
	Figures, graphics, statistic, and screenshots are legible and clearly readable.
	Document length is less than 100 pages. There might be an exception in case where many figures are included in the document.
	Proper citation of references and papers is essential in academic writing. References to scientific papers and other types of papers should follow the Harvard format and be listed in a separate section titled "References."
	Definition of terms.

7.2.2 Quality Assurance Procedures

The following actions are considered cornerstones in ensuring the successful results of the QA procedures:

7.2.2.1 Progress Monitoring and Reporting

The process of monitoring and reporting the project's progress will occur on a monthly basis, aligned with the WP Leaders reporting process, through teleconferences between the Quality Manager, WP Leaders, and the coordinator. Besides reporting on the status of each Task, WP Leaders will also be

responsible for reporting on the status of Deliverables within their WP to identify potential issues or delays early on. It is the responsibility of each WP Leader to monitor the work done or to be done by the Task Leaders.

Every six months, a progress reporting document will be completed by each partner, providing information such as personnel costs, other costs, and work done justification. The progress reporting will provide an explanation of the work carried out by the beneficiaries and an overview of the progress to monitor technical activities by the Technical Leader and the project Coordinator. The objective is to prepare for periodical reporting to the EC and handle issues as quickly as possible. Attention points, deviations from the plan, issues, and risks also need to be reported. For risks, it is necessary to highlight the potentially problematic event, probability of occurrence, impact, and required support from the coordinator or PBM. The report will be editable for one week after submission, and no further changes can be applied by partners thereafter.

7.2.2.2 Quality Assurance and Peer Reviews

During the submission month, consortium partners will act as Peer Reviewers and have the responsibility of reviewing the Deliverables. Each organization will define the responsible individual for this process. All beneficiaries, except for the author and the Quality Manager (eBOS), will serve as Peer Reviewers. In general, all reviews must be completed two weeks prior to the final Deliverable submission. Two peer reviewers will handle the peer review process for each Deliverable, and it should be completed one month prior to the final submission of the Deliverable. The selection criteria for the two peer reviewers of each Deliverable are as follows (Figure 7-1):

- The **first Peer Reviewer** most of the times is selected to be the WP Leader, who has an overall visibility of all the Tasks under the respective WP. If the WP Leader and the Author are the same partner, then another partner relevant to the Task or WP and with the appropriate knowledge will be selected as a peer reviewer.
- The **second Peer Reviewer** should be a partner who is relevant to the Task or WP and possesses the appropriate knowledge.

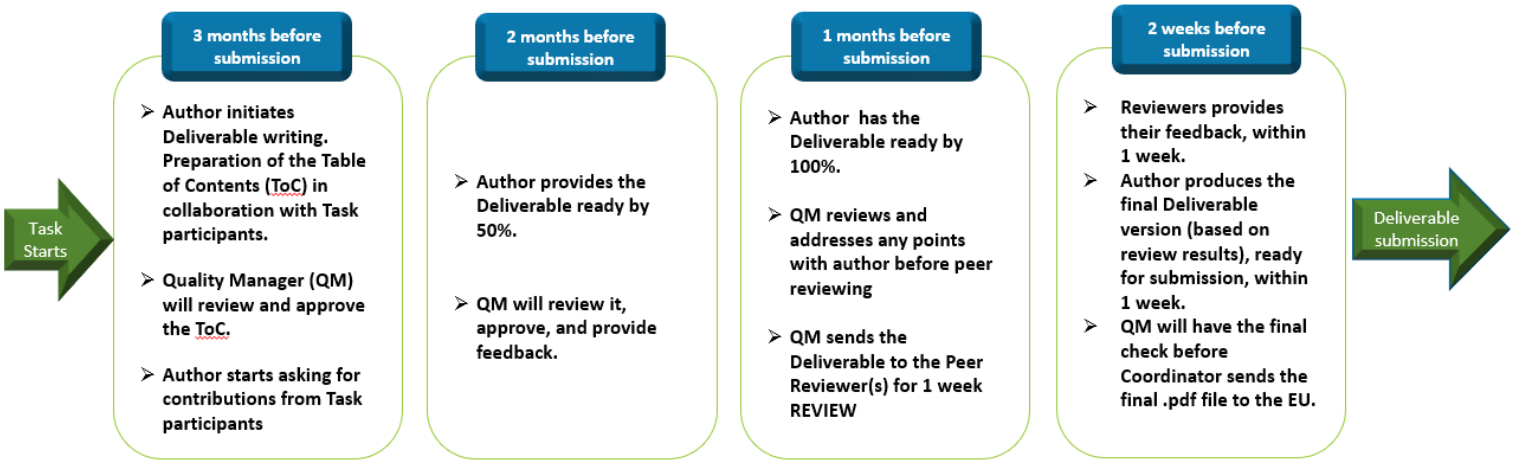

FIGURE 7-1:DELIVERABLES QA PROCEDURES DIAGRAM

The list of Peer Reviewers assigned to each Deliverable, along with their respective submission dates, can be found in **Annex 2: Assignment of Deliverables to Peer Reviewers** of the existing document. Annex 1, the "Deliverables Peer Review Scoring Template," outlines quality standards for reports and

prototypes, which should be adhered to during the Peer Review process. Upon completion of scoring sheets and comments, the document should be sent to the Deliverable owner/author for necessary revisions, as well as to the Quality Manager, and uploaded to the project's repository under the appropriate Deliverable folder. In addition, Peer Reviewer can make corrections to document using track changes. The Deliverable document, with all changes and comments, should be sent to the QM as part of the peer review process. The quality procedures are comprised of three stages, as presented in Table 7-3. Figure 7-3 illustrates an example of the Quality Assurance deadlines and checkpoints for the respective Deliverable.

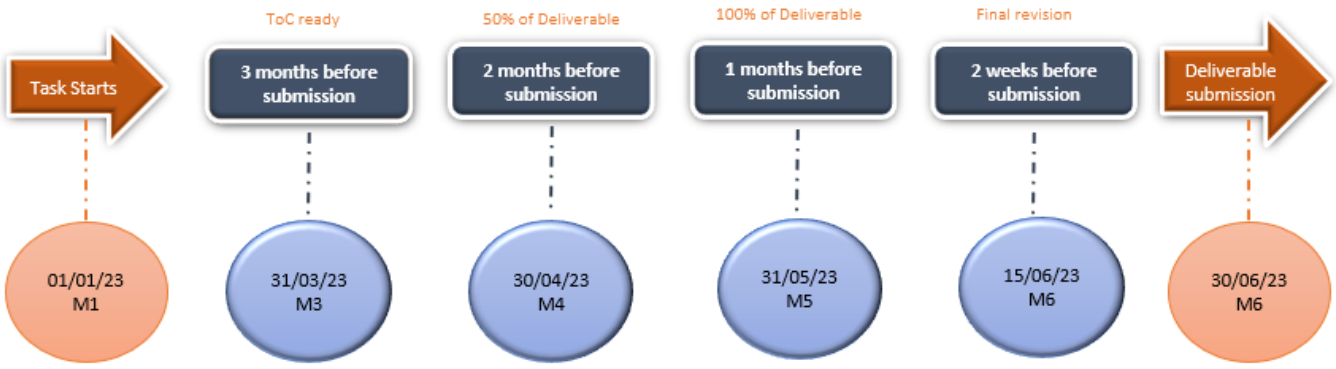

FIGURE 7-3: QUALITY PROCEDURES EXAMPLE

Table 7-3 : Report Oriented Deliverables – Quality Criteria

QA Stages & Procedures		Description
Stage 1: Checking the planned content	3 Months before the submission	The lead author should begin writing the Deliverable and collaborate with the WP Leader to prepare the Table of Contents (ToC), and gather input from other partners involved in the writing process. The Quality Manager will review the document and identify any potential delays.
Stage 2: Checking the actual content	2 Months before the submission	The individual responsible for the Deliverable should provide a document that is 50% complete two months before the due date of the Deliverable. The Quality Manager will be in charge of monitoring and identifying any potential delays.
	1 Month before the submission	One month before the Deliverable is due, the Author should provide the final (100%) deliverable version for review.
Stage 3: Final adjustments.	Submission Month	The assigned peer reviewer(s) and the QM will review the document within one week. The lead Author will then have one week to make any necessary modifications or corrections and provide a final version of the Deliverable. The QM will perform a final check and then the coordinator will send the .pdf version of the document to the PO.

7.2.2.3 Milestones Monitoring

The Milestones, as identified in the DoA, are a part of report-oriented Deliverables and are directly linked to one or more Deliverables and Tasks. The Quality Assurance procedures and monitoring for the report-oriented Deliverables, as described earlier, will also apply to the Milestones. The successful completion of the milestones is crucial for the project's success. The figure below lists the milestones with their respective due dates. All the information mentioned in this section also applies to the Software-Oriented Deliverables (Section 7.3 of the existing document).

TABLE 7-4 : PROJECT'S MILESTONES

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
1	Online Presence	WP6	EBOS	Submission of deliverable D6.1; KOM minutes to PO	1
2	DMP v1.0 completed	WP1	UPAT	Submission of D1.5 and D1.8	6
3	WP2 completed	WP2, WP6, WP1	TUS	Submission of D1.1, D2.1, D6.2	12
4	ODTF completed	WP3	UOP	Submission of D3.2	24
5	Smart cities DT completed	WP3, WP5, WP6	BPM	Submission of D3.3, D5.1, D6.3	30
6	PoCs and pilot demos completed	WP4	P-NET	Submission of D4.1	42
7	Project completed	WP3, WP5, WP6, WP1, WP4	UPAT	Submission of D1.4, D1.7, D3.4, D4.2, D5.2, D6.4	48

7.2.2.4 Issue Reporting and Escalation

Lead Authors and WP leaders have the responsibility of reporting any issue immediately to the Quality Manager to ensure the smooth progress of the process. The multiple checkpoints and milestones of the QA process described previously offer the opportunity to the Quality Manager to address possible technical, business or other kind of obstacles and ensure the successful and on-time submission of the Deliverables. If an issue is detected or reported in any of the QA stages, relevant proactive actions should be taken:

- The Quality Manager communicates and discusses the problem with the deliverable's lead author and the WP leader to find possible solutions and avoid any delays.
- If the problem cannot be effectively addressed, the Quality Manager must contact the project's coordinator to inform them about the issue.
- In case the problem cannot be solved, then the project coordinator has the responsibility of communicating the situation with the Project Officer.

7.3 Software Oriented Deliverables Quality Procedures

In software-oriented output, quality criteria serve the same purpose as reporting generated outputs, which is to ensure that technically-oriented deliverables meet certain standards. However, the scope of this quality plan does not include enforcing software or hardware development practices. As the responsible partners are experts in their respective fields, they are the ones who decide on the relevance and appropriateness of these practices. Therefore, it is the partners' responsibility to select the most suitable practices and approaches based on the requirements of their tasks.

7.3.1 Quality Criteria

The aim of this process is to guarantee that the Software deliverables meet a sufficient level of quality. These Software deliverables can take various forms, such as a software application (e.g., KPI Visualisation System), application infrastructure (e.g., Database), interfaces between applications or information sources (APIs), a website, or a cloud environment. However, this quality plan does not intend to dictate software development practices as it is assumed that the responsible partners are experts in their respective fields. Therefore, partners are encouraged to consider practices such as using source code management and GitLab[2] version control, implementing continuous integration and test-driven development, utilizing bug tracking systems, making early-stage prototypes readily available for feedback, and keeping a risk log for the task.

7.3.2 Quality Procedures

Quality procedures and plans must also be established for software-oriented deliverables in order to ensure that proactive measures are taken to mitigate risks that could jeopardize the planned outcomes of the project. The goal is for the delivered software to meet the needs of the tasks and field trials, while fully aligning with the objectives of the project plan. To achieve the required targets, a list of key elements has been studied and identified for ensuring the quality of the technical output itself.

7.3.2.1 Progress Monitoring and Reporting

Progress monitoring for the anticipated implementation and delivery of a technical output will take place monthly via teleconference between the WP Leaders, QM, and the Coordinator. Each WP Leader is responsible for monitoring the tasks and the work that has been or will be done by the Task Leaders. It is the responsibility of each WP Leader to establish the task monitoring process within their respective WP.

7.3.2.2 Quality Assurance and Peer Reviews

The report-oriented deliverable that accompanies a technical solution (e.g., Digital Twin) undergo peer reviews using the same rules and procedures as outlined previously. User Acceptance Tests are an essential part of the quality procedures and controls at the project level, where relevant partners and end-users will test, validate, and approve the technical result. Annex 3 includes, the “User Acceptance Test (UAT) Plan Template” that needs to be fulfilled during this review process. This template has specific parameters that are taken into consideration during the review of the technical output which is in turn used as a quality metric for reporting. Based on this template, the technical provider should also provide the testing instructions by defining the below:

- Testing scenarios (test cases)
- Constrains for testing
- Assumptions (if any)
- Criteria for testing
- Possible risks

On the other hand, the tester (the partner who performs the testing) along with the QM, need to follow the above-mentioned instructions, perform the test and report the results in the document (UAT Template).

The QA stages and their descriptions are as follows:

- **One month after the task started:** At this stage, the technical provider must define the requirements, implementation plan, and test scenarios in collaboration with the WP leader and cluster/Proof of Concept partners. All information should be documented in a report-oriented deliverable, which will be reviewed and approved by the Quality Manager.
- **Three months before completion:** The technical provider should have 50% of the technical-output ready for testing by the Quality Manager. The results will be documented in the report-oriented deliverable, and the source code for all implemented components will be stored on GitLab with history of updates and commits. The technical provider may make modifications based on the test results.
- **Two months before completion:** At this stage, the technical provider should have 80% of the software prototype ready for testing. The Quality Manager and Use Cases partners will perform tests, and the results will be documented in the report-oriented deliverable. The technical provider may make modifications based on the test results.
- **One month before completion:** The technical provider should have 100% of the software ready for testing by the Quality Manager and Use Case partners. After the completion of tests, the results will be documented in the report-oriented deliverable, and Peer Reviewers will review the final version of the report-oriented deliverable. The technical provider may make modifications based on the test results.
- **Completion month:** During this stage, the technical provider will make final modifications based on any pending requests from the final users who performed the UATs. The final version of the report-oriented deliverable will be submitted to the EC by the Coordinator.

8 Risk Management

Risks in both the internal and external environment of the project, which could potentially disrupt project progress or bring it to a halt, are identified and managed through risk management. It is crucial that the risk function remains in contact with project activities and developments to identify early signs of risk-generating elements. Risk management is an ongoing activity that continuously monitors the project and manages various elements to minimize or remove risks completely. Due to the ever-changing nature of various factors, risk management needs to be a dynamic process, and identifying risks only at the beginning may leave the project exposed. A consistent result is ensured by relying on tools and practices, but above all, risk management must be based on a certain plan to keep the consortium informed on an agreeable framework of handling the risks. The Risk Management Strategy comprises the Risk Management Plan, the design of Risk Analysis and mitigation actions, Risk monitoring and control, clear communication framework and role identification.

8.1 Projects' Risks Management Approach

The alignment of the management framework with the project's objectives and scope is achieved through the design of the Risk Management Plan. The plan's effectiveness is contingent upon the identification of key components that align with project progress and produce timely and satisfactory results. The main objective is to promptly identify risks involved and design realistic and effective mitigation actions to reduce or even eliminate the expected impact. In the case of METACITIES these risks may relate to technological aspects, results and innovation. The risk analysis will cover all the aspects and work stages of the project and will span across work packages in an effort to cover all possibilities. Table 8-1 summarizes the work packages structure of the project.

TABLE 8-1: WORK PACKAGES AND TASKS FOR THE METACITIES PROJECT

WP	Tasks	Start Month	End Month
WP1 – Project management and coordination	T1.2 Technical and scientific management	1	48
	Task 1.3 Quality assurance and risk management	1	48
	Task 1.4 Open Science, Data Management and IPR Strategy	1	48
WP2-Joint Cross-border Research and Innovation Strategy	T2.1 Long-term R&I Vision and Strategy	1	12
	T2.2 Conceptual Model of the QH Approach	1	12
	T2.3 Methodology and Action Plan	1	12
	T2.4 Milestones & Key Indicators to track progress and impact	1	12
	T3.1 Elicitation of socio-techno-economic requirements	1	8

WP3-Joint Research and Innovation Project			
	T3.2 Specification of the Open Digital Twin Framework	1	24
	T3.3 Instantiations of specific smart city digital twins	10	30
	T3.4 Transition of the digital twins to metaverse environments	18	48
WP4 PoCs, Demos, Pilots and Assessments	T4.1 PoC Studies and Feasibility Assessment	25	42
	T4.2 Design and Execution of small-scale Pilots, Demonstrators	31	48
	T4.3 Design of large-scale pilots	37	48
WP5 Business, Investment and Sustainability Plans	T5.1 Green Business Model of the Excellence Hub	13	48
	T5.2 Business, Investment and Sustainability Plans	13	48
	Task 5.3 Guidelines and Recommendations for Cross-Border Collaboration	25	48
WP6 Dissemination, Engagement and Knowledge Transfer	T6.1 Dissemination and communication activities	1	48
	T6.2 Knowledge Transfer and Capacity Building	7	48
	T6.3 Business, Civic Engagement and Clustering Activities	7	48
	Task 6.4 Resource Sharing, Staff Mobility, Exchange of Best Practices	7	48

The **necessary tools** to identify the risks involved and their impact are:

I. A **risk registry** will be utilized to document all potential risks, outlining the risks involved and the specific time frames in which they are identified. This will serve as a dynamic risk library that is continuously updated throughout the project, allowing for the reporting of new risks and the exclusion of old ones as the project progresses. The registry contains the following details:
   - Work package and task description relevant to the risk
   - Description of the risk
   - Anticipated impact based on risk identification and analysis
   - Mitigation actions to minimize the impact before the risk occurs
   - The risk trigger (the event/ activity which will alarm the initiation of a risk materializing and thus enable timely reaction- prevention)
   - The risk owner to designate responsibilities to specific party avoiding misunderstandings and ensuring better monitoring

For better management the risks are usually categorized as per WP to enable easier monitoring.

Annex 4: Risk Registry provides a sample template that will serve as the Risk Registry to be used for the project. Frequent meetings and update reports are essential to effectively manage the progress of any actions taken to address identified risks. The frequency of these meetings will depend on the severity of the risks and their expected impact. In cases where volatile circumstances result in higher severity risks, more frequent meetings may be necessary. Standardized reports will be used to facilitate quick referencing of tasks and status updates, enabling clear and smooth flow of information between team members. Additionally, action plans and checklists will be followed up on to ensure that planned activities are executed within specified parameters.

The project monitoring structure will involve continuous evaluation and risk identification to ensure the risk registry remains up-to-date. The results of risk audits will be evaluated, and assessments will be communicated to all involved parties along with any decisions and actions taken. Specific tasks will be assigned to team members to ensure effective implementation of these actions.
The involvement of all partners is critical to the success of the project. Open communication and effective governance are essential to ensure that all parties are working towards a common goal. The following aspects will be addressed in detail:

- **Communication:** There will be open and transparent communication channels established between all involved parties. Regular meetings and progress reports will be used to keep everyone informed of project developments, risks, and opportunities.
- **Collaboration:** Collaboration between partners and parties will be encouraged to promote knowledge sharing, problem-solving, and innovation. Collaborative approaches will be used to address complex issues and maximize project outcomes.
- **Governance:** Effective governance structures will be established to ensure that the project is managed in a transparent and accountable manner. Roles and responsibilities will be clearly defined, and mechanisms for decision-making, risk management, and conflict resolution will be put in place.

In brief, the **Risk Management Framework**, as illustrated in the figure below:

1. **Establishing the context of the risk:** This involves defining the boundaries of the project and identifying the internal and external factors that may impact the project's objectives.
2. **Identification of risks with adverse effects or impacts:** This task involves identifying potential risks that may have an adverse impact on the project and developing contingency plans and actions to mitigate these risks.
3. **Analysis of the risk, categorization, Probability of occurrence and impacts:** This task involves analyzing the identified risks, categorizing them based on their severity and probability of occurrence, and assessing their potential impacts on the project.
4. **Evaluation and quantification of the risks, significance:** This task involves evaluating and quantifying the identified risks to determine their significance and prioritize them for risk management.
5. **Risk monitoring and control and the related documentation:** This task involves monitoring and controlling risks as they arise and documenting any changes to the risk management plan.
6. **Planning the best way to deal with the risk:** This task involves developing a risk management plan that outlines the strategies and actions to mitigate risks and minimize their impact on the project.

7. **Risk monitoring and managing outcomes, minimizing negative impact:** This task involves monitoring the effectiveness of the risk management plan and managing any outcomes that arise from identified risks, with the goal of minimizing their negative impact on the project.

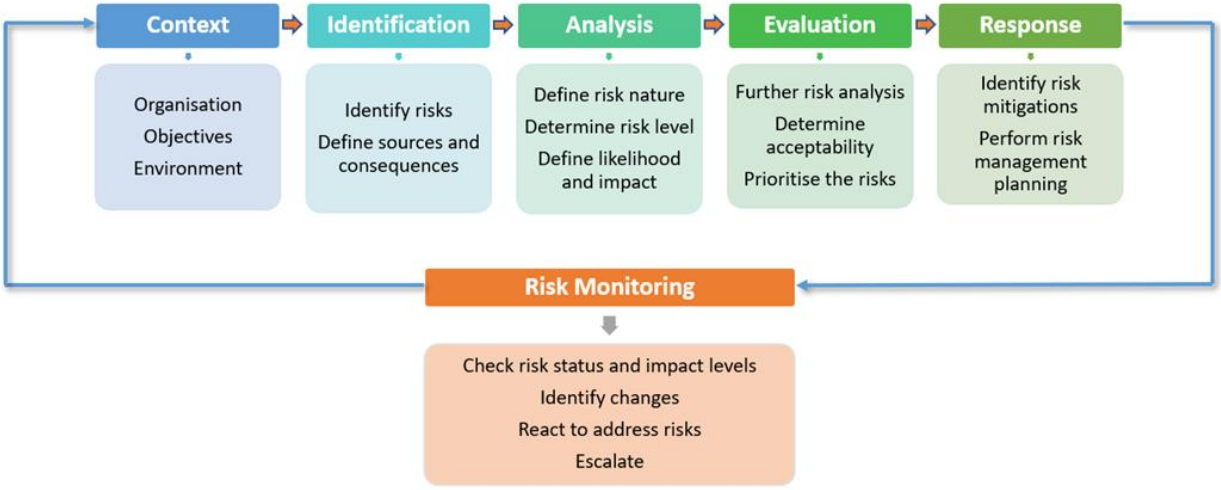

FIGURE 8-1: RISK MANAGEMENT PROCESS

8.2 Projects' Risks Identification

To effectively manage risks, METACITIES places great emphasis on identifying and monitoring all potential risk factors, with the aim of minimizing their impact on the project. The process of risk identification and monitoring is an iterative one, with ongoing evaluation to ensure risks are identified and addressed in a timely manner. Risk analysis is a critical component of this process and involves evaluating risk attributes and prioritizing risks based on their severity. This involves calculating the probability of a risk occurring and assessing its impact on the project. In fact, the concept of risk encompasses both these components.

As per Boehm's risk definition[3], [4]risk refers to the possibility of loss or injury and is further defined as risk exposure, which is a function of the probability of a risk event and its overall impact, such as damage or opportunity. Therefore, risk exposure (RE) can be expressed as RE = P * RI, where P is the probability of an undesirable outcome and RI is the risk impact due to that outcome.

The risk analysis framework of the project includes a categorization of risks based on their likelihood of occurrence (low, medium, and high) and their impact (low, medium, and high). Risks that fall under the categories of medium-consequence, moderate, and high-critical, catastrophic are those that potentially have serious effects on the success indicators of a project component, work package, technology component, or demonstrator. To handle risks, the project follows four patterns of action: low risk, moderate risk, high risk, and extreme risk. Each pattern of action determines who manages

the risk, who is informed, and when the risk escalates to the next level (see **Error! Reference source not found.**-2 and Figure 8-2 below).

		Likelihood				
		Rare (<5%)	Unlikely (5-25%)	Possible (25-50%)	Likely (50-75%)	Almost certain (>75%)
Consequence - Impact	Catastrophic - Critical	High	High	High	Extreme	Extreme
	Major	Moderate	Moderate	High	High	Extreme
	Moderate	Low	Moderate	Moderate	High	High
	Minor	Low	Low	Moderate	Moderate	High
	Insignificant	Low	Low	Low	Moderate	Moderate

FIGURE 8-2:RISK MANAGEMENT, RISK ACTIONS FOCUS AND PRIORITIZATION.

TABLE 8-2 : RISK CLASSIFICATION, RISK DEFINITION AND HANDLING PROCESSES.

Risk Classification	Definition	Handling Process
Not Significant to Minor	Risks that potentially can seriously affect the success indicators of a project component.	Monitor the risk and manage it using standard routine procedures
Medium-Consequence, Moderate	Risks that potentially can seriously affect the success indicators, e.g., of a particular work package or a technology component, or a demonstrator.	The risk management process foresees that the risk owner (typically a task leader) will manage the risk and the technical leadership team is informed.
High-Critical, Catastrophic	Risks with high impact are the risks that potentially can seriously affect the success indicators of the whole project.	The risk owner (typically a work package leader) manages risk, the technical project leader and the project management is informed and the risk escalates to the project management board. If a risk is identified as a catastrophic one, then the Project Management Board has to manage the risk escalation to the Project Officer level.

The risk mitigation involves the strategy to reduce the possibility or the impact of a risk. The Risk mitigation process tries to eliminate or resolve the risk items from the identified risks agenda. Some examples of risk mitigation strategies based on Williams, A. Laurie, "An Introduction to Software Engineering" [5] are:

- **Risk avoidance**. Focusing on avoiding the risks. An example of a risk avoidance strategy is the decision to not develop a product or a particularly risky feature.
- **Risk protection**. The organization takes precautions to be ensured, should the risk become a reality. Alternately, a team can employ fault-tolerance strategies to provide reliability and insurance.

- **Risk planning and risk mitigation actions often come with an associated cost**. Risk planning frequently involves cost/benefit analysis to decide whether the benefits accrued by the risk management steps outweigh the costs associated with implementing them.

9 Conclusions

This report entails all the administrative and project management procedure that are set for the Coordination and Support Action METACITIES Project (https://metacities-hub.com/). This project aims at delivering an Excellence Hub in the SEE in the subject of Smart Regions and Cities, and the partners (beneficiaries and associated partners) represent the whole spectrum of the quadruple helix model in three local based ecosystems of SEE namely: Bulgaria, Cyprus and Greece. All procedures defined in this report has been adjusted to the special nature of this consortium and the ambitious objectives of the project.

Most of the content described in here has been largely defined in the METACITIES Consortium Agreement (CA) signed by all partners. Also, part of the content has been submitted as GA. More specifically, this document describes the management and quality control procedures of the project, which are meant to facilitate co-operation within the consortium and assure the quality of the technical work being carried out, while maintaining all social and economic benefits for the local ecosystems involved. This deliverable is purposed to provide a set of practical guidelines to all consortium members on how to set up the working procedures and rules for the consortium partners, defines document templates, means of communication, etc.

10 References

[1] METACITIES CA – Consortium Agreement

[2] "General Data Protection Regulation (GDPR) – Official Legal Text." https://gdpr-info.eu/ (accessed Feb. 13, 2023).

[2] "Source Code Management | GitLab." https://about.gitlab.com/stages-devops-lifecycle/source-code-management/ (accessed Mar. 13, 2023).

[3] B. Boehm, "Software risk management," *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, vol. 387 LNCS, pp. 1–19, 1989, doi: 10.1007/3-540-51635-2_29/COVER.

[4] R. Stern and J. Arias, "Review of Risk Management Methods," vol. 4, no. 1, 2011, Accessed: Mar. 13, 2023. [Online]. Available: http://www.qaiindia.com/Training/

[5] A. L. Williams, *An Introduction to Software Engineering*, Seventh Edition. NCSU CSC326 Course Pack.

Annex 1: Peer Review Scoring Template

METACITIES Peer Review Sheet for Deliverables

Deliverable Number	
Deliverable Name	
Version	
Review result	

Score Values	
OK, perhaps some minor comments	
Is of reasonable quality, needs some re-work	
Needs substantial rework or additional work	

	Name	Organisation	Email	Phone
Deliverable Author				
Reviewer				

Content						
#	Criteria	Explanation	Score	Explanation of Score by Reviewer	Suggested improvements	Response from Author/Writer
1	Main objective of the deliverable	Does it set out to do what it says in DOW? Are objectives clearly and simply stated and in line with the Description of Work (description of the Task). Further is it clear how these objectives are relevent to the overall targeted results of the project as a whole.				
2	References and building on previous work	Have they overlooked any state of the art, previous work, related projects, regulations or best practices Does the report include and make use of relevant and necessary references?				
3	Methodology	Was the work, development, trial, experiment or study conducted in a sensible way? Are the Methods/procedures appropriate and correct?				
4	Conformance of Results	Did the deliverable do what was promised? Is the aim of the deliverable achieved? Do the findings and results of the work match the objectives as described in the Description of Work and are these results clearly described in the deliverable.				
5	Usefullness of results	Is the deliverable (and associated results) actually useful to downstream tasks or customers. Is it clear that the results are useful and relevent? Is it clear how results can be accessed Are plans realistic and actionable? Is it clear that they are not committing downsteam tasks to something impossible. For example KPI targets which cannot be reached or measured.				
6	Conclusion	Is there a conclusion chapter and does it make sense? The conclusion chapter reflects all described main important issues in the report. The conclusions are well based, relevant and applicable.				
7	Plagarism	There is no plagarism and previous work or work of others is clearly identified as such.				

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Presentation, Structure and readability						
#	Criteria	Explaination	Score	Explaination of Score by Reviewer	Suggested improvements	Response from Author/Writer
Readability						
8	Readability	Can you understand it easily? Is the document easy to read and understandable.				
9	Language	Are there any obvious spelling or grammar mistakes? Is the English in the deliverable good? Is the writing style clear, consise and accessible?				
Structure						
10	Consistency with Description of work	Can the reader easily tell (e.g. by looking at the table of contents) where in the document each point in the DOW is addressed? Is it clear that the deliverable reflects the description of work?				
11	Structure	Is the structure of the deliverable logical and easy to follow? If you feel it is not, please suggest changes to the structure to make it more accessible.				
Conformance to template						
12	Template	Is the document template properly applied?				
13	Graphics	Are figures and tables legible and referred to in the text?				
14	Length	Is deliverable less than 100 pages in total?				
15	Referencing	Are the papers and other sources correctly cited and referenced?				
16	Terms	Are terms defined in the glossary? Unusual technical terms and acronyms should be added to the glossary. Ideally they should also defined in text the first time they are used unless this reduces readability or they are well known.				
17	Nomenclature	Are mathematical symbols defined?				
Overall conclusion						
#	Criteria	Explaination	Score	Explaination of Score by Reviewer	Suggested improvements	Response from Author/Writer
18	Quality	Green - The deliverable can be submitted as is but could be improved if the issues raised are addressed. Amber - The issues raised must be addressed before submission. Red - There are substantive issues with the deliverable they need to be addressed and it will require a second review.				
Any other remarks/comments						

Annex 2: Assignment of Deliverables to Peer Reviewers

Deliverables	Type	Dissmin. Level	WP No	WP leader	Author	Due month	Calendar date	M-3 ToC	M-2 50%	M-1 100%	Peer1	Peer2
								End of Month				
D6.1 Project website and social media presence	DEC	PU	6	HAEC	EBOS	1	Jan-23				UPAT	UoP
D1.1A Technical Management and project quality handbook	R	PU	1	UPAT	UPAT	6	Jun-23	Mar-23	Apr-23	May-23	YDW	HAEC
D1.4A Report on Innovation, IPR management and DMP	R	SEN	1	UPAT	UPAT	6	Jun-23	Mar-23	Apr-23	May-23	MPAT	P-NET
D3.1A Requirements and Specification of the Open Digital Twin Framework	R	PU	3	CYENS	UoP	8	Aug-23	May-23	Jun-23	Jul-23	CYENS	TUS
D2.1METACITIES cross-border R&I collaboration toolbox	R	PU	2	TUS	TUS	12	Dec-23	Sep-23	Oct-23	Nov-23	UCM	ICTC
D6.2A Dissemination, Engagement and Knowledge Transfer	R	PU	2	HAEC	HAEC	12	Dec-23	Sep-23	Oct-23	Nov-23	RSI	BUR
D3.2B Requirements and Specification of the Open Digital Twin Framework	R	PU	3	CYENS	UoP	20	Aug-24	May-24	Jun-24	Jul-24	CYENS	TUS
D1.2B Technical Management and project quality handbook	R	PU	1	UPAT	UPAT	24	Dec-24	Sep-24	Oct-24	Nov-24	YDW	HAEC
D1.5B Report on Innovation, IPR management and DMP	R	SEN	1	UPAT	UPAT	24	Dec-25	Sep-25	Oct-25	Nov-25	MPAT	P-NET
D3.3A Instantiation of smart cities digital twins and transition to Metaverse Environments	R	PU	3	CYENS	CYENS	30	Jun-25	Mar-25	Apr-25	May-25	UoP	ISBUR
D5.1A Business, Investment and Sustainability Plans	R	PU	5	BPM	BPM	30	Jun-25	Mar-25	Apr-25	May-25	ICTC	DGHUB
D6.3B Dissemination, Engagement and Knowledge Transfer	R	PU	2	HAEC	HAEC	30	Jun-25	Mar-25	Apr-25	May-25	RSI	BUR
D4.1A PoCs, Demonstrators and Pilots Reports	R	PU	4	PRT	P-NET	42	Jun-26	Mar-26	Apr-26	May-26	PLT	CCA
D1.3C Technical Management and project quality handbook	R	PU	1	UPAT	UPAT	48	Dec-26	Sep-26	Oct-26	Nov-26	YDW	HAEC
D1.6C Report on Innovation, IPR management and DMP	R	SEN	1	UPAT	UPAT	48	Dec-26	Sep-26	Oct-26	Nov-26	MPAT	P-NET
D3.4B Instantiation of smart cities digital twins and transition to Metaverse Environments	R	PU	3	CYENS	CYENS	48	Dec-26	Aug-26	Sep-26	Oct-26	UoP	ISBUR
D4.2B PoCs, Demonstrators and Pilots Reports	R	PU	4	PLT	P-NET	48	Dec-26	Sep-26	Oct-26	Nov-26	PLT	CCA
D5.2B Business, Investment and Sustainability Plans	R	PU	5	BPM	BPM	48	Dec-26	Sep-26	Oct-26	Nov-26	ICTC	DGHUB
D6.4C Dissemination, Engagement and Knowledge Transfer	R	PU	2	HAEC	HAEC	48	Dec-26	Sep-26	Oct-26	Nov-26	RSI	BUR

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Annex 3: User Acceptance Test Plan

MetaCities Excellence Hub in South-Eastern Europe

User Acceptance Test Plan

Title

Document Summary Information			
UAT ID			
Related Deliverable			
Responsible Partner			
Partners for Testing			
Document Date		Version	

1. UAT Scope (In Scope – Out of Scope)

UAT - In Scope	UAT - Out of Scope
In Scope *List features that are tested.*	Out of Scope *List features that are not tested.*

2. UAT Assumptions and Constraints

UAT Assumptions
Assumption *List the UAT assumptions.*

UAT Constraints
Constraint *List the UAT constraints.*

3. UAT Risks

Description	Probability High|Med|Low	Impact High|Med|Low	Mitigation
Risk *List the risks of UAT.*	*How likely is the risk to occur?*	*What is the impact of the risk on the UAT?*	*Steps to avoid the risk.*

4. UAT Team Roles & Responsibilities

Name	Roles	Responsibilities
Name *List names of people involved in testing.*		
Name *Add more rows if needed.*		

5. UAT Entry Criteria

ID	Criteria
5.1	Entry Criteria *Factors that must be present to enable the start of the UAT. Example: Testing environment/ data is available.*

6. UAT Requirements-Based Test Cases

ID	Test Cases
6.1	Test Case *Identify the test cases along with the expected results.* *Example:* *Test Procedure:* *Login with a corporate user account.* *Username: ###* *Password: ###* *Expected Results:* *An error will be displayed for the wrong credentials.*

7. UAT Test Results

ID	Test Cases	Pass/Fail	Tested By	Date Tested
	Test Case *Name the test case.* *Example:* *Test Procedure:* *Login with a corporate user account.* *Username: ###* *Password: ###* *Expected Results:* *An error will be displayed for the wrong credentials.*			mm/dd/yyyy
	Test Case *Add more rows if needed.*			

8. Document Signatures

Role	Name	Signature	Date
Service Owner			
Project Manager			
Others (if needed)	*Add more rows if needed.*		

9. Addendums & Appendices

Include any additional documents.

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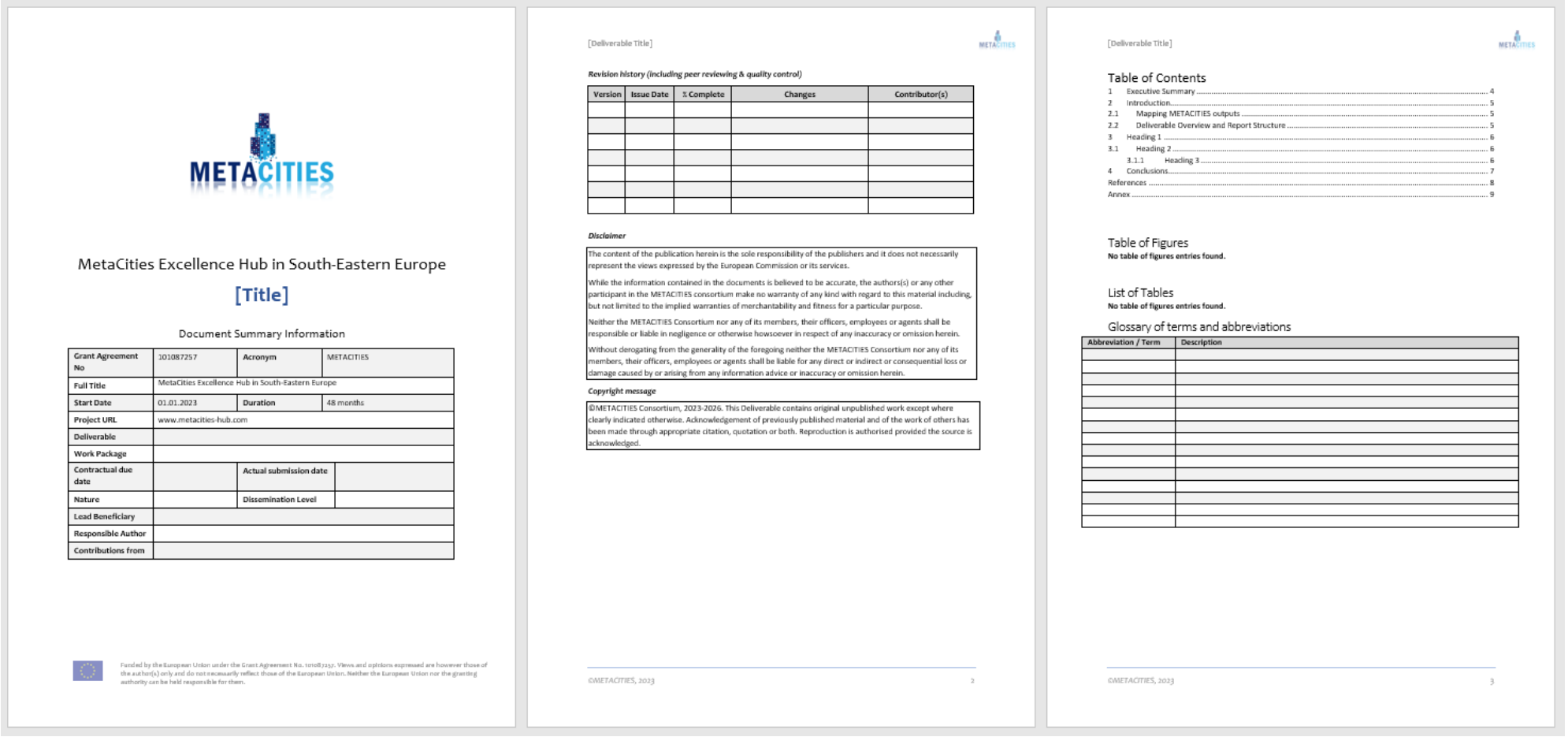
Annex 4: Risk Registry

No	Risk Description	WP affected	Risk Impact *(impact of the risk if occurs)*	Risk Probability *(likehood of the risk*	Severity *(Rating based on impact and*	Risk Trigger	Risk Owner	Mitigation Actions	Mitigation Status *(N/A, On-going, Closed)*	Outcome *(Did the risk occur?/Action plan description)*	Date risk occurred	Date risk closed	Risk reported by *(name (organisation))*
	As per GA												
1	Underestimated partner resources	All	Medium	Low	Medium	Expenses cannot be covered and planned work cannot be completed	All	The PMB will adopt the following flow to ensure that planned work can be completed: (i) re arrange resources among the partners, (ii) commit further internal resources of organisations; (iii) re-plan work on the activities.					
2	Project milestones or deliverables are delayed	All	Medium	Medium	Medium	Unappropriate schedule, task delays	All	A constant monitoring of the project status will be performed in the scope of QARMactivities, to ensure that causes of milestones or deliverables delay are recognized in early stages, ensuring timely and effective implementation of necessary corrections.					
3	One or more partners leaving the consortium	All	High	Low	Medium	-	All	The General Assembly (GeA) will re-allocate uncovered project activities to other partners, since the consortium is structured in a way that if a partner leaves the consortium, another partner can undertake the missing skills and workload.					
4	One or more partners not being able to fulfil allocated tasks	All	High	Low	Medium		All	4 partners(i.e., UPAT, UOP, CYENS, EBOS) are assigned with the leadership of 3 tasks each. All these partners have successfully undertaken the assigned roles in numerous previously funded research projects.					
5	Overspending by one or more partners	All	Low	Medium	Medium	-	All	This situation will be detected in due time via management reports. PMB will undertake proper actions, e.g., re-balancing of budget among partners or supporting actions delivered by consortium partners to help solve the issue.					
6	Unsatisfactory interaction between tasks within the same WP and amongst WPs	All	High	Low	Medium	-	All	The regular synchronisation of the work amongst WPs (including tasks within WPs) will be performed in the scope of project management activities, so that such eventualities would not occur or be timely identified, allowing the implementation of corrective actions without significant impact on the project plan. If problems continue, PC together with the WP leaders will analyse problems in interactions					
7	Agreement amongst partners difficult to be achieved	All	Medium	Low	Medium	-	All	The collaboration spirit in the consortium targets to achieve consensus among all partners on open issues, and the ExB will work in this direction. To avoid too long consensus making processes, which might affect the project plan, management procedures for decision-making and conflict resolution will be applied.					
8	Consortium resistance to organizational changes	All	Medium	Medium	Medium	-	All	Detailed analysis of the causes for the organizational resistance to distinguish between structural and behavioral issues. Involvement of partner's operational units to maintain focus and to streamline efforts towards a common goal of achieving the project's objectives.					
9	Higher than planned management effort	All	Medium	Medium	Medium	-	WP1	The PMB has substantial and proven experience in the coordination of RIA projects involving many partners and complex research goals. The PC served as project coordinator and in various decision-making positions in several projects					
10	Small scale pilots do not meet the requirements and expectations	WP4	Medium	Medium	Medium	Requirements not captured properly	WP4,WP3	The performance objectives of each small-scale pilot will be properly captured in requirements, producing all the appropriate technology and application extensions, solution optimizations and tuning so that reliable performance impact indicators are produced as needed.					
11	Snowball effects in case of delays due to unforeseen factors	All WPs	Medium	High	High	-	-	The consortium will employ all means for remote collaboration; therefore, the work in closed offices and workspaces will be reduced to the minimum possible degree. For the cases that face-to-face meetings are unavoidable, the participants will take all the necessary healthcare precautions and conform with the necessary protocols					

Annex 5: Presentation and Deliverable Templates



MetaCities Excellence Hub in South-Eastern Europe

[Title]

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Table of Contents

1 Executive Summary 4
2 Introduction 5
2.1 Mapping METACITIES outputs 5
2.2 Deliverable Overview and Report Structure 5
3 Heading 1 6
3.1 Heading 2 6
3.1.1 Heading 3 6
4 Conclusions 7
References 8
Annex 9

Table of Figures

No table of figures entries found.

List of Tables

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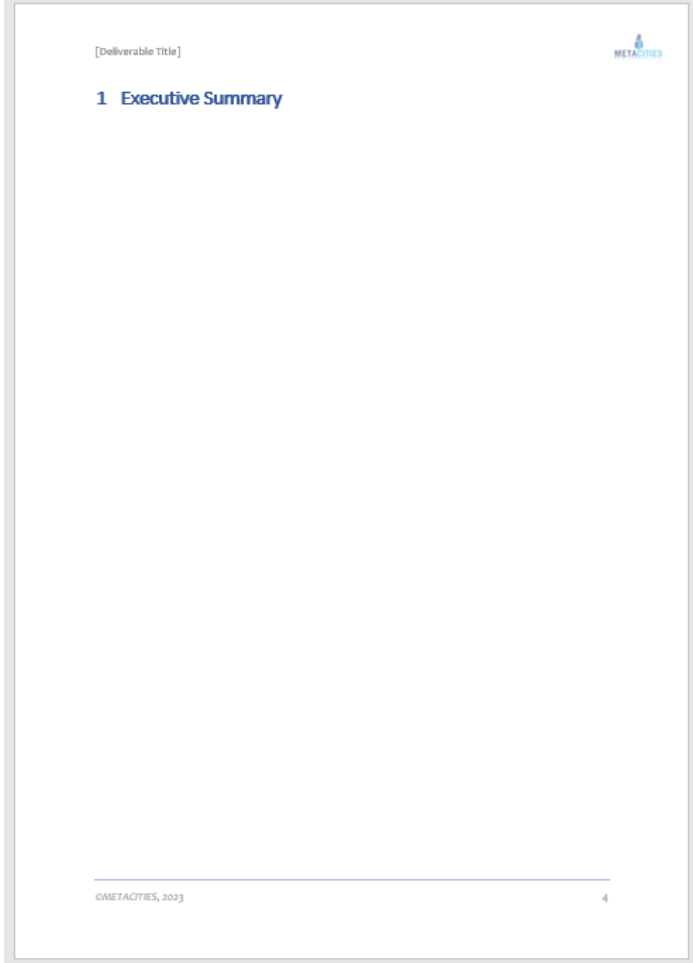
Glossary of terms and abbreviations

Abbreviation / Term	Description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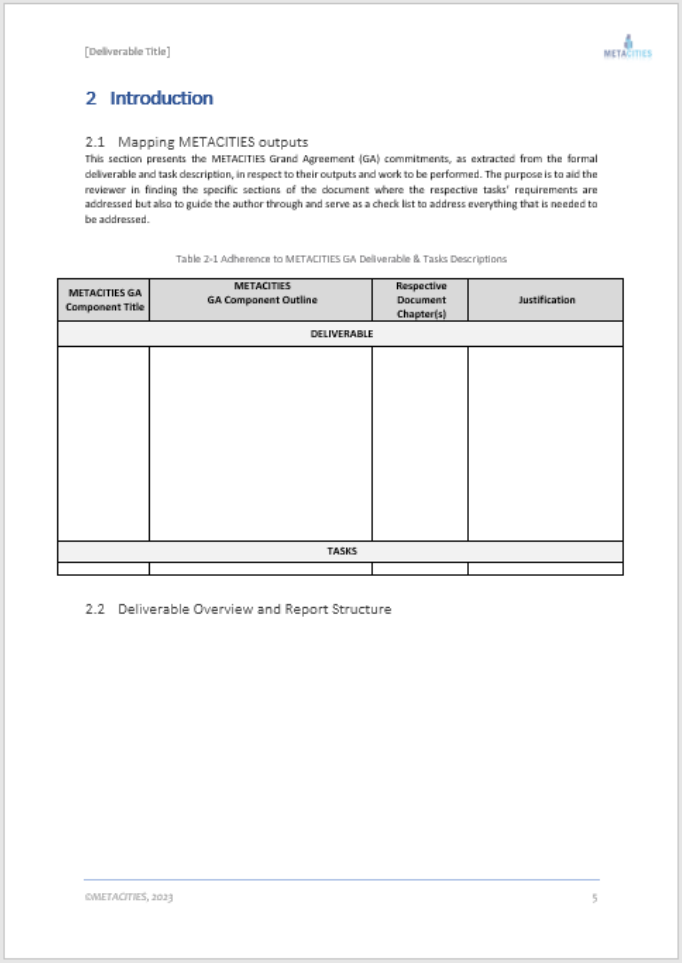
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2 Introduction
2.1 Mapping METACITIES outputs
This section presents the METACITIES Grand Agreement (GA) commitments, as extracted from the formal deliverable and task description, in respect to their outputs and work to be performed. The purpose is to aid the reviewer in finding the specific sections of the document where the respective tasks' requirements are addressed but also to guide the author through and serve as a check list to address everything that is needed to be addressed.
Table 2-1 Adherence to METACITIES GA Deliverable & Tasks Descriptions
METACITIES GA Component Title
METACITIES GA Component Outline
Respective Document Chapter(s)
Justification
DELIVERABLE
TASKS
2.2 Deliverable Overview and Report Structure
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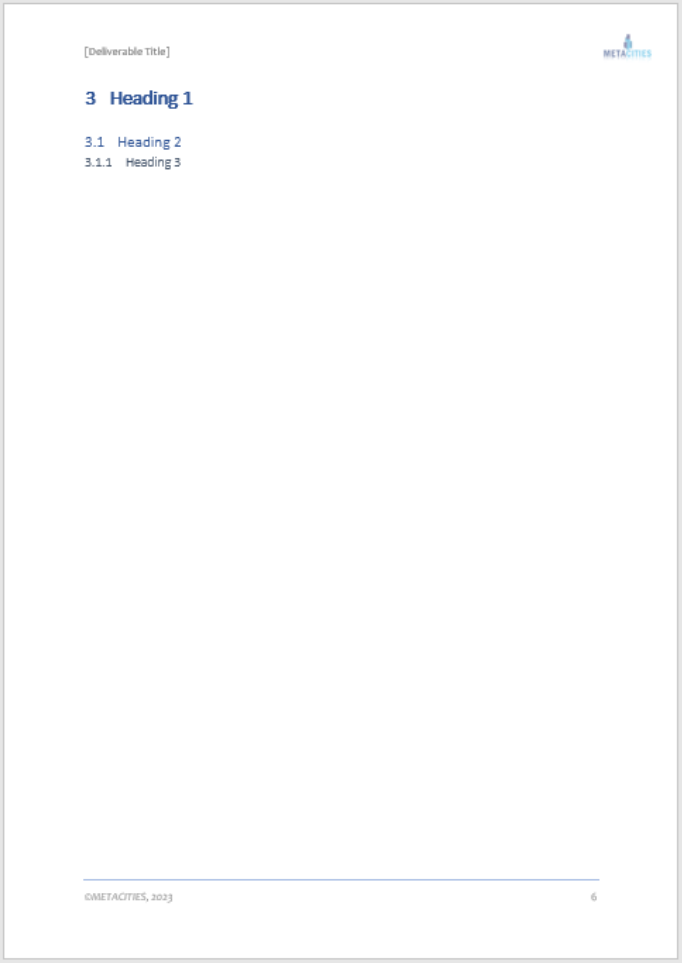
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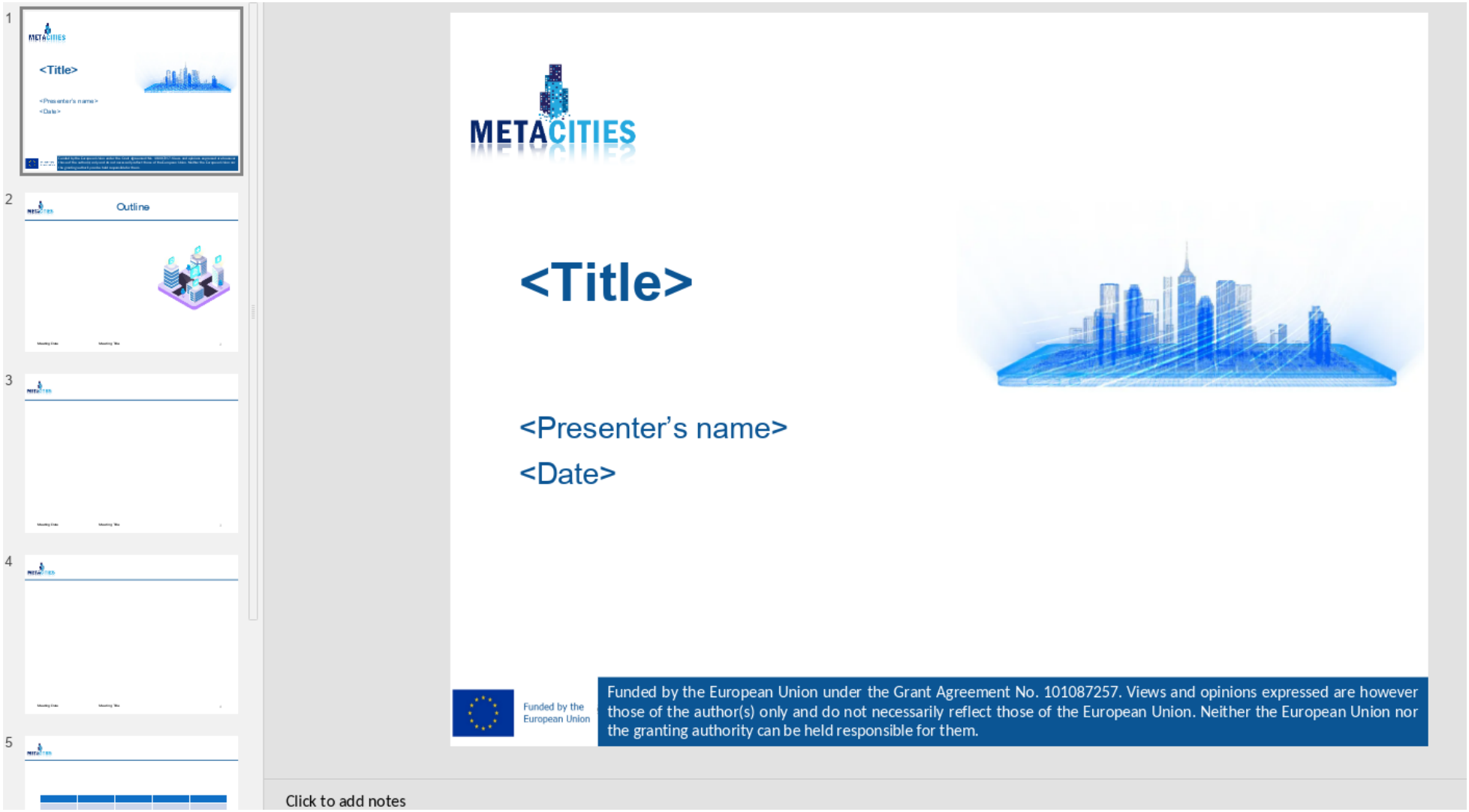
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