"Building the Next Generation Personal Data Platforms"

G.A. n. 871370

DELIVERABLE D8.4

INTERIM REPORT OF THIRD YEAR (M19-M24)

Document Information

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WP8 – Project Coordination and Management

Task 8.1 & 8.2 Project and Technical Management

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RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Approvals

	Name	Entity	Date
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List of abbreviations and acronyms

Abbreviation	Meaning
G.A.	Grant Agreement
CA	Consortium Agreement
GA	General Assembly
PB	Project Board
PC	Project Coordinator
PrO	Project Office
IR	Interim Reports

Disclaimer

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▪ **Project technical description per WP**

WP1 – Platform specification and demonstration

- **Technical activities description:**

NEC led the work in WP1.
WP1 requirements have been mapped to technical requirements, setting the minimum functionality that should be implemented during PIMCity to ensure the success of the project. All partners have participated and contributed to this effort – which has been summarized into D1.1 and later updated in D1.2.
At the same time KUL has contributed to the definition of the project legal requirements; in particular, KUL has identified the key relevant legal frameworks (drafted Chapter 3, D1.1, T1.1 - detailed in D7.1 and 7.2) and helped partners to familiarize with the key legal issues and potentially relevant legal concepts and requirements stemming from the EU privacy, data protection and intellectual property law.
This effort has led to the creation and submission of D1.1 - including the requirements for the project (with the contribution of all partners), its revision after the remarks obtained during the mid-project review, and D1.2 which details the final requirements and design.

From month 6 to month 18 WP1 has been inactive as planned in the Grant Agreement and project Gantt.

From month 19 to month 21, WP1 activity was focused on the D1.2 and D1.3. D1.2 presents the redefinition of the requirements, all partners of the PIMCity project reviewed the original requirements to ensure they are still up to date and according to D1.1 (the updated version after the review meeting). Moreover, the main novel contribution to the deliverable is the addition of the requirements for the online advertising ecosystem. IAB and TapTap worked together to gather those requirements. The consortium, in agreement with the project officer, decided to reschedule the submission of D1.2 until the commission accepts the revised version of D1.1.
On the other hand, D1.3 starts the design of the different demonstrators. All partners worked together to define the three different demonstrators. In particular, WIBSON lead the design of the continuous-testing demonstrator, Ermes the design of the B2B demonstrator and NEC the design of the B2C demonstrator.
Starting on month 21, the work of WP1 has focused on the development of the 3 different demonstrators of the project, in synergies with WP5. All partners are working on such demonstrators.

- **Deliverables/Milestones status:**

Deliverable/Milestone due:
- D1.2 Requirements redefinition due at M21 (31/08/2021) and rescheduled after approval of D1.1

Deliverable/Milestone completed:
- D1.1 PIMCity requirements and specifications rejected after Review Report and definitively approved at M24 (30/11/2021); D1.2 Requirements and redefinition to be submitted in the shortest delay accordingly
- D1.3 Demonstrator design due at M21 (31/08/2021), submitted on 21/09/2021

The deliverables submission lead to the achievement of MS6: Requirements redefinition and design of the demonstrators at M21

- **Problems and remedial actions: N.A.**

- **Dissemination activities (if any): N.A.**

WP2 – Tools to improve data subjects privacy

- **Technical activities description:**

POLITO led the work in WP2.
The partners finalized the implementation of the four PDK modules included in WP2. We have followed the design choices defined during the first phase and started from initial implementation we have already accomplished. We implemented new features and bugfixes when needed.

POLITO finalized the definition of the interaction patterns between the WP2 and implemented various enhancements in the light of the integration of the modules in EasyPIMS and their use in the PIMCity Demonstrators. We focused on the standardization of components, integrated authentication via the KeyCloak platform deployed on the development infrastructure and run extensive testing.
The partners involved in the WP2 met periodically to discuss the various aspects of the module design and implementation. During such meetings, we discussed all the design choices related to architectural design and integration issues. We also had periodic meetings to check the progress status of the implementation of the modules and discuss the technical details and problematics when found. POLITO, WIBSON/GRANDATA and ERMES collaborated for the implementation of the PDK modules included in the tasks they lead. Beside refining the requirements for each module (see D1.1 and D2.2), the partners have proceeded with the implementation of the modules, implementing new functionalities and fixes in the light of the PIMCity Demonstrators.
During this period, the technical partners received continuous feedback regarding the users' point of view (AUI), and the legal aspects (KUL). This cooperation has been fundamental to reach the design and implementation of the PDK modules from the technical and operation points of view, taking into accounts all the possible usage and legal aspects.

- **Deliverables/Milestones status:**

Deliverable/Milestone due date: N.A.

Deliverable/Milestone completed:
- D2.1 *Design of tools to improve user's privac*y rejected after Review Report and definitively approved at M24 (30/11/2021)
- D2.2 *Final design and preliminary version of the tools to improve user's privacy* rejected after Review Report and definitively approved on 02/12/2021

- **Problems and remedial actions: N.A.**

- **Dissemination activities:**

List of published papers and presentations/talks done during the reporting period, under the scope of this WP and related to this project:
POLITO has accomplished the following dissemination activities:
- Run a survey to investigate users' perception of risk while browsing associated to web tracking and behavioral advertising
- Submitted 3 papers on international journals:
  - *Towards website domain name classification using graph based semi-supervised learning* - Computer Networks;

- o α-MON: Traffic Anonymizer for Passive Monitoring - IEEE Transactions on Network and Service Management;
- o *z-anonymity: Zero-Delay Anonymization for Data Streams* - 2020 IEEE International Conference on Big Data (Big Data))
- and 1 paper published on the ArXiv pre-print platform titled *The Internet with Privacy Policies: Measuring The Web Upon Consent*
- Published a Press Release via the PoliTO institutional channels to disseminate the PIMCity PDK
- Gave a Tutorial titled "Privacy Preserving Data Processing" by Luca Vassio and Martino Trevisan during the *2021 IFIP Performance international conference* (https://www.performance2021.deib.polimi.it/tutorials/) [November 2021]
- Participated to *Zero Party Data workshop* to present the PDK modules related to WP2 [July 2021]
- Presentation of the project during the B*DVA workshop on Data Platform Projects* [November 2021]

WP3 – Understanding the new data economy

- ### Technical activities description:

UC3M, IMDEA and GRANDATA have collaborated towards obtaining the final implementation of the three components of the PDK developed within the *WP3: Data Valuation Tools from Market Perspective (DVTMP), Data Valuation Tools from End User Perspective (DVTUP) and Trading Engine (TE)*. In particular:

- A stand-alone application and interface for the DVTMP module has been implemented (https://easypims.pimcity-h2020.eu/marketplace/auValuator/demo/ui)

- The DVTMP module has been extended including a submodule for LinkedIn Marketing platform that allows to make estimations of the audiences value in LinkedIn.

- A new module with a ML predictor is being develop to perform audice value prediction without the need of requesting information to the marketing platforms.

- The different tools (DVTMP, DVTUP, TE) has been dockerized and deployed in the Polito infrastructure.

- The different tools have developed an authorization controlled based on Open Authentication 2.0 to secure their communications with other PDK modules.

- Currently all modules are being intensively tested and debugged.

Moreover, UC3M, IMDEA and GRANDATA have collaborated towards integrating their modules leveraging the Open API interfaces developed in WP5.

Other partners involved in the WP has revised the developed tools and provided continous technical (TID), legal (KUL) feedback as well as feedback from the user (AUI) and industry (IAB, TAPTAP) perspective.

In addition, to the definition of each tool, these partners have worked on defining the integration between them to guarantee their interoperability and integration in the PDK component. In addition, partners such as TID, AUI, IAB and KUL have provided feedback and requirements (see Deliverable D1.1) from technical (TID) and legal perspectives (KUL) as well as the vision from users (AUI) and stakeholders (IAB). The outcome of this joint effort is the Deliverable D3.2, already submitted at M12.

After that, UC3M, IMDEA and GRANDATA have worked in refining the design of the DVTMP, DVTUP and TE, respectively. Moreover, they have released a first version of each of the tools available in the project Gitlab repository. The rest of partners involved in the WP have provided invaluable feedback for the design and implementation of these tools from technical (TID), end-users (AUI), industry (IAB) and legal perspective (KUL). WIBSON has replaced GRANDATA and taken its responsibilities in the project and WP3 starting April 1st 2021. Similarly, TAPTAP joined the Consortium in spring 2021, contributing to WP3 reviewing the work done and providing their feedback from technical and business perspective.

IMDEA carried out the final implementation steps, testing and debugging of DVTUP's API.
UC3M created a stand-alone application and an interface for the DVTMP module (https://easypims.pimcity-h2020.eu/marketplace/auValuator/demo/ui) and the Partner dockerized and deployed it on the project servers. At the same time, UC3M developed and integrated the LinkedIn submodule to the DVTMP module, then it added an Authorization controller to the module to secure the communication with the Trading Engine and started the integration between the DVTMP and TE.

On the other hand, TID shed light in the real-world deployment of Service Workers, by conducting the first large scale analysis of the prevalence of Service Workers in the wild in push ad advertising. It proposed a novel, graph-based methodology to detect administration of sites on the web by exploiting thread-related publisher-specific ad IDs to investigate patterns of web monetisation via digital advertising.
Finally, it proposed a privacy-preserving tool for displaying to end-users in a simple and intuitive manner their advertising value as seen through RTB.

WIBSON started the integration and testing the D-TE module in the EasyPIMS ecosystem in the light of the PIMCity Demonstrators. Then it continued implementation of D-TE, adding bug fixes and modifications and it integrated D-TE with other PDKs to perform a data transaction.

- ## Deliverables/Milestones status:
Deliverable/Milestone due date: N.A.

Deliverable/Milestone completed:
- D3.3 *Final design and preliminary version of the data valuation tools and trading engine* due at M18 (31/05/2021), submitted on 15/06/2021

- ## Problems and remedial actions: N.A.

- ## Dissemination activities:
List of published papers and presentations / talks done during the reporting period, under the scope of this WP and related to this project.

UC3M has accomplished the following dissemination activities:

- José González-Cabañas, Patricia Callejo, Pelayo Vallina, Ángel Cuevas, Rubén Cuevas, Antonio Fernández Anta. *How resilient is the open web to the COVID-19 pandemic?*. Telematics and Informatics. Volume 64, 2021.

- José González-Gabañas, Angel Cuevas, Rubén Cuevas, Juan López-Fernández, David García. *Unique on Facebook: formulation and evidence of (nano)targeting individual users with non-PII data*. Proceedings of the 21st ACM Internet Measurement Conference. November 2021. Pages 464–479

- José González-Cabañas; Rubén Cuevas, Ángel Cuevas, Martin Maier. *Digital Contact Tracing: Large-Scale Geolocation Data as an Alternative to Bluetooth-Based Apps Failure*. Electronics 2021, 10, 1093.

WP4 – Tools for improved data management

- **Technical activities description:**

TID led the work on WP4.

The WP partners used the requirements defined in D1.1 and contributed to update them in D1.2. We built on them to provide a first round of design for each tool proposed. There is strong collaboration between TID and the rest of WP4 partners, and this was capitalized during this process for the design definition of WP4 tools. Partners collaborated to decide on data usage, what is to be demonstrated, how, interactions of modules with each other, how the API of each module could be designed, and how each module could also be embedded within the rest of the infrastructure of PDK and EasyPIMs.

LST and TID collaborated closely to define data aggregation pipelines based on k-anonymity, and how these can be reused inside the Data Portability Control tool. Furthermore, TID and IMDEA collaborated towards building a meaningful solution for data governance and watermarking. In addition, NEC, IMDEA, LST and GRANDATA/WIBSON collaborated strongly to define how their individual tools will work together and provide necessary functionalities required in T4.4 regarding knowledge extraction from users' data. Consultation from user (AUI), companies and advertisers (IAB) and legal (KUL) aspects was received during this period, for finalizing the design of the tools. In-depth and repeated discussion and collaboration was also performed for building the deliverable D4.1, in a concise and clear fashion, and in alignment with the other technical deliverables D2.1 and D3.2.

All WP4 partners collaborated closely to finalize the design of the tools for improved data management and deliver a preliminary version of each tool. This was conducted and reported in the D4.2 deliverable, in a similar concise and clear fashion and in alignment with other technical deliverables D2.2 and D3.3. Next, all WP4 partners collaborated to define communication interfaces in an open standard compatible with the specification described in D5.1.

During this period, NEC, IMDEA, LST and TID worked independently to deliver updates to the tools for improved data management. More particularly, NEC separated the User Profiling System to have an internal engine that can retrain the models without the need of stopping the system. IMDEA implemented data watermarking techniques for text URL data with an OpenAPI using both centralized (Postgres) and decentralized technology (IPFS) and developed a synthetic data generator for the Quantified Self dashboard. LST continued the implementation of the Data Aggregation component according to the requirements and contributed, together with IMDEA, to the implementation of the Quantified Self dashboard. TID provided support for new sensors and data exports to the Data Portability Control tool. At the same time, KUL provided continuous legal advice during biweekly project conference calls.

- **Deliverables/Milestones status:**

Deliverable/Milestone due date:

- D4.3: *Release of tools for improved data management*, due on 28th Feb 2022

Deliverable/Milestone completed:

- D4.2 *Final design and preliminary version of the tools for improved data management* rejected after Review Report and definitively approved on 02/12/2021

- **Problems and remedial actions: N.A.**

- **Dissemination activities:**

List of published papers and presentations/talks done during the reporting period, under the scope of this WP and related to this project:

TID has accomplished the following dissemination activities:
- Submitted 1 paper on an international conference. *Measuring ad value without bankrupting user privacy* [July 2021]
- Published 2 articles in "Proceedings of the Web Conference 2021" (WWW '21).
  - Emmanouil Papadogiannakis, Panagiotis Papadopoulos, Nicolas Kourtellis, and Evangelos P. Markatos. 2021. *User Tracking in the Post-cookie Era: How Websites Bypass GDPR Consent to Track Users*.
  - Agarwal Vibhor, Vekaria Yash, Agarwal Pushkal, Mahapatra Sangeeta, Set Shounak, Muthiah Sakthi Balan, Sastry Nishanth, Kourtellis Nicolas. 2021. *Under the Spotlight: Web Tracking in Indian Partisan News Websites*
- Published 2 articles in 13th ACM Web Science Conference 2021 (WebSci '21):
  - Yash Vekaria, Vibhor Agarwal, Pushkal Agarwal, Sangeeta Mahapatra, Sakthi Balan Muthiah, Nishanth Sastry, and Nicolas Kourtellis. 2021. *Differential Tracking Across Topical Webpages of Indian News Media.*
  - Manolis Chalkiadakis, Alexandros Kornilakis, Panagiotis Papadopoulos, Evangelos Markatos, and Nicolas Kourtellis. 2021. *The Rise and Fall of Fake News sites: A Traffic Analysis*.
- Participated to Zero Party Data workshop to present the PDK modules related to WP4 [July 2021]

NEC has accomplished the following dissemination activities:
- Talk in the human behaviour modelling workshop explaining how the user profiling ins performed in PIMCity: https://www.rayuela-h2020.eu/events/workshop-on-human-behaviour-modelling/

WP5 – Platform design and integration

• Technical activities description:

WP5 started at M13. During the initial phase of WP5, the partners have focused on two aspects: first, they worked at the design of the fundamental components building the EasyPIMS platform. Second, they designed and developed the integration tools needed to guarantee interoperability and orchestration among PDK components.

More in detail, the first aspect required the partners to propose the first design for the Personal Data Avatar (PDA), the Transparency Tags (TTs), the Open APIs and the Cloud Controller:

• NEC led the design of PDA which has finally been presented in D5.1. The document describes how all user interfaces built within the project will be ultimately integrated in a unique web app whose implementation is led by LSTECH.

• ERMES led the design of TTs. Supported by IAB, WIBSON, AUI, POLITO and KUL, ERMES has proposed several design proposals which have been reviewed by different stakeholders representing all the communities involved in the project (users, data buyers, lawyers, tech experts, etc.).

• ERMES also led the design of Open APIs, i.e., the web interfaces PDK components must provide to enable their usage, interoperability and integration. ERMES first analyzed the technical requirements needed by all PDK components. Then, ERMES defined the guidelines and best practices for the design and development of Open APIs. Finally, all partners followed such instructions and built the Open APIs for their components. The description of such guidelines, together with the Open APIs design of each component is available in D5.1.

The code developed so far for the Open APIs is available online as open source on the project's official Gitlab repository.

• FASTWEB and ERMES led the design of the Cloud Controller. This module will be responsible for governing and authorizing user-to-machine and machine-to-machine interactions of all components deployed in EasyPIMS. The design of the Cloud Controller is tightly coupled to Open APIs since they must use the same authentication and authorization protocols and tools.

• POLITO has collaborated in defining the requirements of the cloud infrastructure and hosted the development environment based on a set of virtual machines. POLITO contributed to the definition of the Open APIs and maintained the project repository on the GitLab platform.

• AUI supported the design of the elements that will be used by the user through the Personal Data Avatar (PDA) and Transparency Tags (TTs) and therefore AUI has paid special attention to make the design and implementation simple, understandable and secure from the end users' perspective.

In addition, partners defined the design principles, which will drive the building of the physical and virtual infrastructure hosting EasyPIMS and its components.

This process was led after by ERMES and required all partners involved in technical activities (POLITO, NEC, LSTECH, FASTWEB, UC3M, IMDEA, WIBSON) to meet periodically and discuss the various aspects and choices of design. In particular, the partners agreed to build a virtual infrastructure on top of the data center hosted at POLITO facilities.

The technical partners received continuous feedback regarding the users' point of view (AUI, WIBSON), the legal aspects (KUL), and data buyers' perspective (IAB). Such interactions have been key to take into accounts all the requirements and expectations for all possible stakeholders.

Finally, since M19, ERMES monitored the implementation and deployment activities related to WP5. In particular:

- ERMES defined the development roadmap to the first (alpha) release of EasyPIMS platform, which is expected for the end of M25/beginning of M26.

- POLITO worked at the design and deployment of InfraDev infrastructure, i.e., the virtual platform based on OpenStack made available by POLITO to host the deployment of all PIMCity components. This platform is being used to develop and finalize the components and finally to demonstrate the activities of the project during the First Review Meeting held in September. For this, POLITO prepared also the website https://easypims.pimcity-h2020.eu that collects all the information about the PDK, including videos, documentations, and software repositories.

- ERMES has led the implementation of authorization mechanisms based on OAuth2.0 to integrate in most of PIMCity components. All partners responsible for some components have participated this task.

- LST started the development of the User Dashboard, I.e., EasyPIMS' user interface. For this, LST has cooperated with all providers of component. ERMES has assisted LST in the gathering of information needed for the development.

- WIBSON started the development of the Data Marketplace, I.e., EasyPIMS' interface for data butyers, and its integration with the Trading Engine. For this, WIBSON has cooperated with all providers of component interacting with the Trading Engine.

• **Deliverables/Milestones status:**

Deliverable/Milestone due date: N.A.

Deliverable/Milestone completed:

- D5.1 *Design of the cloud controller, open APIs, PDA, TT and data Marketplace* rejected after Review Report and definitively approved on 30/11/2021

- **Problems and remedial actions: N.A.**

- **Dissemination activities: N.A.**

WP6 – Exploitation and dissemination

- **Technical activities description:**

AUI leads this WP and PIMCity partners have focused on the following tasks:

- production of articles and papers of technical scientific interest,

- dynamization of social networks,

- participation in events and generation of communities interested in PIMS.

Please find below a detailed description:

Papers
Considering dissemination in the scientific community, the Consortium has presented 25 journal and conference papers in total. All appear in top journal and venues like WWW, ACM IMC, IEEE Big Data, PETS, ACM CCR, IEEE TNSM, ACM TOMPECS. All details can be found in D6.4 which covers the second year effort in the exploitation and disseminations the consortium produced.

Social networks
During this time the Consortium worked on the publication of its own- and third-party contents related to the PIMCty project and we have opened our the PIMCity project on YouTube. This table summarizes the monitoring data and activity in each of the networks in which PIMCity is present:

	Web	**Facebook**	**Twitter**	**Youtube**	**Linkedin**
Followers	1.261	1.261	323	113	177
Post	60	120	172	18	100

Events

- **EURODIG 2021, Workshop 3.** *Data Sovereignty and Trusted Online Identity:* Online identities are the key for many digital services. Identification is essential to everything from identifying with health or government services, to traveling, to participating in social media. But who should control those IDs and how can we minimize the personal data exchanged to a minimum that is needed for the services? A session within the European Internet Governance Forum aimed at data protection experts, public administrations and companies interested in privacy and the exploitation of personal data).

- **Zero Party Data,** Workshop organized by PIMCity project partners addressed to an audience of Companies and entrepreneurs interested in developing or implementing business models based on personal data with the PIM philosophy, advertising industry and technical experts. The session focuses on a technical explanation of the PIMCity Project and its different PDKs modules: how they work and how they can be used in different applications.

- **WORKSHOP ON HUMAN BEHAVIOUR MODELLING, NEC** presented the PIMCity project in the Workshop on human behavior Modelling organized by the H2020 Rayuela project.

- **IGFSpain: Workshop 5 EUROPEAN STRATEGY FOR PERSONAL DATA.** This panel will address the topic from the perspective of the new regulation in the EU regulatory framework (Data Privacy Act), the

new business models and tools for its implementation (PIMS), the challenges and opportunities of the single European data space for companies and entrepreneurs (IAB Spain) and the role of Data Protection Agencies in this new context (EDPS). Addressed to regulators, researchers, companies, developers and entrepreneurs interested in business proposals, regulation and exploitation of personal data of European citizens. The European Data Protection Supervisor will be present on the panel.

- **2021 IFIP Performance Conference:** POLITO presented a tutorial on Privacy-Preserving Data Processing. The tutorial was recorded, YouTube videos are already online.

- **BDVA workshop (Data Platform Workshop):** Prof. Mellia gave a presentation to the event, scheduled on November 23rd, 2021 and presented the project

AUI has established contacts with different organizations (BDVA, EDS, AEPD, MyDATA, DGCONNECT, SEDIA) to present the project and see possibilities of collaboration. We are in the process of creating a forum of organizations of people (users, professionals, women, people with disabilities, etc.) interested in having a voice in matters related to personal data (regulation, standardization, exploitation, etc.) to which 9 organizations have already subscribed.

Through the Association (AUI), the Consortium has established contacts with different organizations (BDVA/DIRO, EDPS, AEPD, MyDATA, DGCONNECT, SEDIA, INTERNET GOVERNANCE FORUMS) to publicize the PIMCITY project and to collaborate with them to make the results reach the maximum number of people and organizations and to offer them the possibility of participating as betatesters in the coming year.

- ## Deliverables/Milestones status:

Deliverable/Milestone due date:

- D6.4 - *Second year dissemination and exploitation report* due at M24 (30/11/2021) will be submitted soon
- Deliverable/Milestone completed: N.A.

- ## Problems and remedial actions (NA)
- ## Dissemination activities (if any)

At the communication level we are working on presenting a session on PIMS at the next edition of the CPDP 2022 privacy congress, on enabling the creation of a Dynamic Coalition on PIMS to work with stakeholders within the Internet governance forums and on a dissemination plan that will allow us to get a good number of betatesters for the project.

WP7 – Data management, legal and ethical requirements

- ## Technical activities description:

WP7 focused on the legal and ethical aspects of the project.

Firstly, KUL led the activities and involved the project partners in the preparation (update) of the Deliverable 7.3 (report on responsible research and innovation).

Secondly, KUL has continuously monitored data processing activities and provided legal support on a daily basis (primarily via email and during teleconferences (via Microsoft PowerPoint presentations). For example, KUL Provided legal advice for the implementation of the Privacy Policy for the EasyPIMS website (https://easypims.pimcity-h2020.eu/), with reference to the appropriate implementation of website privacy

policies, on legal requirements for consent management, advised to enter into data processing agreements, where relevant, including but not limited.

Guided by KUL, the project partners have monitored their Data Management Plan (DMP) and the Data Protection Impact Assessment (DPIA); the initial versions of these documents were provided in the form of deliverable D7.1. Project partners will take into account all the developments appearing in the course of work on the project and update these documents in the form of final deliverables by the end of the project.

- **Deliverables/Milestones status:**

Deliverable/Milestone due date:

- D7.4 Periodical update of the DMP and RRI and societal impact (midterm report) due at M27 (28/02/2022)

Deliverable/Milestone completed: N.A.

- **Problems and remedial actions:** Not all of the project partners have contributed to D7.1 and D7.3. Expected to be remedied by the end of the project.
- **Dissemination activities (if any): N.A.**

WP8 – Project Coordination and Management

- **Technical activities description:**

The Project Office and the Coordinator:

- Followed the day-to-day project management and deliverables/documents submission to the Funding Agency
- Organized regular **conference calls on bi-weekly basis** (agenda, invitation, presentation, minutes, etc.) in order to keep the Consortium updated
- Organized the **4th plenary meeting** - held remotely on MsTeams and in presence in Madrid- on July 20th, 2021 (agenda preparation, presentation, minutes, etc.)
- POLITO is organizing the **General meeting scheduled on Dec. 13th -15th 2021** in Madrid
- Updated the documents available on the collaboration tool among Partners (Ms TEAMS)
- Asked information to partners, prepared and submitted the 1st Periodic Report (technical description and financial form); supported the Partners with the **1ST PERIODIC REPORT** preparation
- In collaboration with the PO and EC, organized the rehearsal meeting (September 7th, 2021) and the **1st REVIEW MEETING** (September 9th, 2021) held remotely
- Supported the parners to implement the actions required after the Review meeting and the financial assessment. Submitted the updated deliverables and the 1st Periodic Report updated
- Supported Partners in respecting the deadlines for deliverables submission
- Uploaded publications on the Participant Portal and collecting them in order to publish such publications on the project website, in coordination with of the partner.

- **Deliverables/Milestones status:**

Deliverable/Milestone due date:

- D8.4 *Interim Report of third year* due at M24 (30/11/2021), current deliverable

Deliverable/Milestone completed: N.A.

- **Problems and remedial actions (if applicable): N.A.**
- **Dissemination activities:**
  Project website https://www.pimcity-h2020.eu is constantly updated for official dissemination in representation of the Consortium (content and image coordination between AUI and POLITO).

WP9 – Ethical requirements (POLITO)

- **Technical activities description:**

POLITO prepared and submitted the deliverables according to EC assessment (Review meeting), starting from the collaboration and support of KUL and other involved partners (es. GRANDATA)

- **Deliverables/Milestones status: N.A.**
- **Problems and remedial actions (if applicable): N.A.**
- **Dissemination activities (if any): N.A.**

▪ Effort spent during the period

During the third period reported (M19-M24), the project experienced some delays, mainly due to:

✓ The restrictions linked to COVID-19 outbreak. As face-to-face meetings were limited, the project planned to have conf-calls on bi-weekly basis in order to keep the Consortium updated

✓ Some activities will be done later, as soon as the technical implementation comes to expected results. From that moment on, it will be required integration among WPs.

A summary of PMs is following. Please note that the number of PMs expected considers the total number of PMs per Partner and each WP duration according to the last amendment approve. For this reason, it is an average purely indicative.

According to this, an amount of 517,70 PMs was expected to be spent by the Consortium for the period from M1 to M124. According to actual figures, the Consortium spent less, around 511 PMs.

The overall situation is detailed in the table available in the following page, where PMs are detailed per WPs and partners.

▪ Conclusions about overall project development

Activities have proceeded without relevant problems - with some slowdown due to the COVID-19 pandemic, summer break and changes in Consortium composition.

The Project Management Office and Coordinator managed the issues within WP8 and successfully handled them. The Project Coordinator and Technical Coordinator also did their best effort in order to keep Partners updated and coordinated despite of problems and delays linked to COVID-19 outbreak and summer break.

Main deviation:

- NEC has reported less PMs than expected, as during the last period NEC spent less effort as WP1 activities stopped according to project Gantt from M6 to M18. NEC is forecasting a significant effort to carry on all the activities linked to WP1, WP2 and WP5 integration, review and editing.
- FASTWEB had to deal with project team turnover and will be more involved in upcoming months.
- WIBSON and TAPTAP joined the Consortium only last April 2021 and will devote more effort in upcoming months.

PMs table follows, with details about Partners and WPs.

Participant	WP1 Starts M1 - End M(33)		WP2 Starts M3 - End M(27)		WP3 Starts M1- End M(27)		WP4 Starts M4 - End M(27)		WP5 Starts M(13)- End M(30)		WP6 Starts M1 - End M(33)		WP7 Starts M1- End M(33)		WP8 Starts M1- End M(33) (and Ethics WP9)		Total	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
POLITO	5,09	6,03	22,00	24,66	0,00	0	0,00	0	10,00	11,8	6,55	8,55	2,91	2,92	14,55	25,65	61,09	79,61
NEC	13,8	5,95	17,60	14,67	0,00	0	10,50	15,75	6,67	13,66	2,91	0,05	1,45	0	6,55	0,58	59,48	50,66
ERMES	11,64	8,48	12,32	17,55	0,00	0	6,13	1,58	14,00	15,78	2,18	2,85	1,45	1,26	0,73	1,02	48,45	48,52
IMDEA	5,08	3,95	0,00	0,00	19,56	26,13	8,75	11,83	6,67	7,21	6,55	8,08	1,45	1,26	0,73	0,51	48,78	58,97
UC3M	5,08	6,96	5,28	5,62	24,00	27,13	0,00	0	7,33	9,9	5,09	4,79	1,45	1,67	0,73	0,67	48,97	56,74
TID	8,72	7,92	5,28	5,29	5,33	4,96	20,13	21,35	4,67	4,63	2,91	1,31	1,45	1,04	0,73	1,08	49,22	47,58
FASTWEB	11,64	4,00	0,00	0,00	0,00	0	0,00	0	14,67	4,2	2,18	0,70	1,45	0,60	0,73	0,50	30,67	10,00
LSTECH	3,64	3,15	0,00	0,00	0,00	0	18,38	22,00	16,00	6,7	1,45	1,00	1,45	0,80	0,73	0,90	41,65	34,55
KUL	5,08	3,75	3,52	1,7	0,89	0,67	1,75	0,5	1,33	0,5	3,64	2,3	17,45	19,71	0,73	0,96	34,39	30,09
AUI	6,56	4	2,64	2,6	2,67	2,97	3,50	3,5	2,67	2,4	15,27	16	1,45	1	0,73	0,5	35,49	32,97
IAB SP	5,08	4,7	2,59	2,67	2,59	2,95	3,45	3,6	2,67	2,83	4,07	5,94	1,36	1,76	0,68	0,77	22,49	25,22
WIBSON	6,91	8,81	1,45	1,72	5,09	5,05	1,45	1,06	11,43	10,63	2,35	1,88	0,24	0,42	0,24	0,38	29,16	29,95
TAPTAP	2,18	2,4	0,00	0,00	0,00	0,00	0,00	0	4,00	2,5	0,94	0,5	0,47	0,5	0,24	0,1	7,83	6,00
Total	90,50	70,10	72,69	76,48	60,13	69,86	74,03	81,17	102,10	92,74	56,09	53,95	34,06	32,94	28,06	33,62	517,7	510,86

PMs per WP M1-M24 (Dec 2019-Nov 2021)

PMs per Partner M1-M24 (Dec 2019-Nov 2021)

Planned
Actual