



*HORIZON-CL4-2022-RESILIENCE-01-10 - Innovative materials for advanced (nano)electronic components and systems*

# MatEI

## **PZT and Graphene MATerials innovations for advanced opto-Electronic applications in AR and biosensing**

Start date of the project: 01/01/2023

Duration: 42 months

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### **= Deliverable D7.2 = Submission of Project Management Handbook**

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## MatEI

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**Executive Summary**

Sound project management is crucial for ensuring project progress and leads to the fulfilment of project goals. A challenging project like MatEI requires an effective and well-defined management scheme, which ensures a flawless flow of research and knowledge between the various Work Packages. As part of project management, decision-making procedures regarding project outcomes, as well as administrative, technical, and scientific coordination, must be established. Efficient project management increases project impact by ensuring effective dissemination and communication of the results and determining the most appropriate routes of exploitation for the generated know-how.

This document describes the project management and quality assurance scheme of MatEI, which will be followed during the project to achieve the set objectives. The arrangements described in this document will be continuously assessed and could be modified in the future if another approach is considered more efficient.

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## 1. Introduction

The deliverable D7.2 *Project Management Handbook* is part of task T7.1 *Day-to-day management via S&T coordination*. The content of this document is based on the project management and implementation procedures described in Annex I of the Grant Agreement (Description of Action, DoA) and the Consortium Agreement (CA) signed between the project partners.

The purpose of this document is to describe the project management, procedures, and quality assurance scheme, which will be followed during MatEI project to successfully achieve its objectives. The proposed management system will ensure a flawless flow of research and knowledge between various Work Packages (WPs) and provide mechanisms to take decisions that will affect the project outcomes as well as administrative, technical, and scientific coordination of the project.

Moreover, a well-defined project management structure will ensure effective dissemination and communication of the results achieved during the project and help to select the most appropriate routes of exploitation for the generated know-how.

## 2. Consortium organizational structure and roles in the project

The consortium organization is described below and depicted in Figure 1.

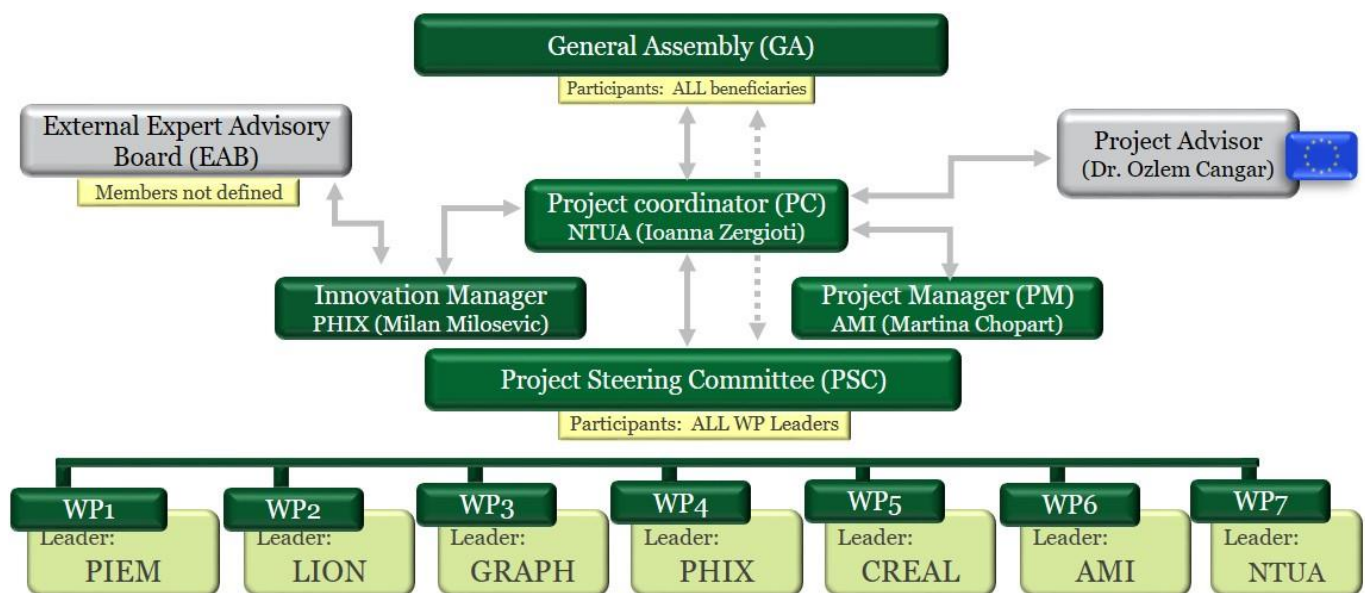


Figure 1: MatEI organizational chart

The organizational structure and the rights and duties of the operational bodies responsible for decision-making in MatEI project are described in Section 6 of the CA, entitled Governance Structure. The External Advisory Board (EAB) will be established for delivering strategic advice regarding technology development, regulatory context, certification activities, exploitation, and dissemination activities.

### 2.1. Project Coordinator (PC)

On behalf of the National University of Athens (NTUA), Ioanna Zergioti will act as the MatEI **Project Coordinator** responsible for the overall coordination and technical monitoring of activities. She will be assisted in the management tasks by the Project Manager (PM), the Work Package Leaders (WPLs), and their deputies, as well as the General Assembly (GA), which will be empowered to make high-level decisions on every aspect of the project.

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The coordinator follows the project throughout its lifecycle, on a day-to-day basis. She gathers the necessary information from Work Package Leaders for efficient communication both with HaDEA (technical activities, financial and final reports, audits, etc.) and within the consortium (consortium meetings, schedules, reports, progress reports, etc.). The PC will be the sole interface between HaDEA and the consortium, and the contact point for communication with other projects in the Horizon Europe program. She is also responsible for distributing the financial support received from HaDEA amongst the partners.

Should any major problem arise, the PC has the possibility to call for a meeting/teleconference of the Project Steering Committee (PSC) or for an extraordinary meeting of the GA.

### 2.2. Project Manager (PM)

Martina Chopart (AMIRES s.r.o. - AMI) will have the role of **Project Manager (PM)**, supporting the Project Coordinator and Work Package Leaders in their administrative, financial, dissemination, and communication roles. Project Manager will take care of project amendments, monitoring and timing of technical deliverables and milestones, timely and high-quality reporting, as well as crosschecking the partners' budgets and costs (e.g. preparing and reviewing cost statements, distribution of funding, etc.). The PM is responsible for proper information flow between the General Assembly and Project Coordinator on the one side and Work Package Leaders and partners on the other (e.g. by preparing and distributing minutes of meetings (see template in Annex 1), informing partners of decisions taken, to-do lists, deadlines, etc.). Furthermore, the PM coordinates the project meetings and is responsible for dissemination and communication (e.g. webpages, press releases, leaflets, newsletters) and exploitation planning (support to Innovation Manager and liaising with industrial partners).

### 2.3. Work Package Leaders (WPLs) and Project Steering Committee (PSC)

The structure of the work plan is divided into 7 Work Packages (WPs). For each WP, a **Work Package Leader (WPL)** has been nominated. WPLs are responsible for controlling the progress of the scheduled work within the Work Package in terms of technical achievement, planned deliverables, and expenses. WPLs inform the General Assembly and other WPLs about project progress. Other tasks of the WPLs are:

- collecting information (e.g. technical, strategic) needed to prepare periodic progress reports and transmitting them to (1) the Project Manager for information and monitoring and (2) the Project Coordinator for processing the information and inputs;
- transmitting information from the Project Coordinator to the partners involved in the Work Package;
- managing topic-oriented meetings and reporting all related matters to the Project Coordinator (e.g. planning, costs, etc.);
- enabling a fluid upstream and downstream exchange of information and maintaining a regular contact between the Project Coordinator, Project Manager, and Work Package Leaders.

All WPLs form the **Project Steering Committee (PSC)**, which acts as a managerial decision-making body for the project and is responsible for supporting the Project Coordinator. In the event of technological change which cannot be addressed directly by a Work Package Leader, the PSC will investigate and advise on appropriate actions. Furthermore, the Work Package Leader(s) will implement any recommended actions and will make decisions in those cases where it is not necessary to refer to the General Assembly. Reaching a consensus will be aimed wherever possible. If a consensus cannot be reached, decisions will be taken after a simple majority vote. The PSC meets at least two times per year to perform the internal assessment of the project and to assure the conformity and the quality of all project deliverables. Monthly teleconferences of all PSC members are scheduled for the entire

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project duration. Other partner teleconferences (e.g. on WP level) and other *ad-hoc* partner meetings are encouraged. The members of the Project Steering committee are found in **Table 1**.

*Table 1 List of MatEI Work Package leaders and members of the Project Steering Committee*

WP	WP name	WP leader	Partner
1	Specifications and design architecture of OEIC components and process flows	Paul Muralt	PIEM
2	Si3N4 chip platform development and chip manufacturing	Erik Schrauder	LION
3	Advanced materials synthesis and integration on the OEIC platform	Amaia Zarutza	GRAPH
4	Processes for high-throughput die bonding and assembly	Karol Obara	PHIX
5	Demonstration of the integrated optoelectronic components in two use cases (Light-field AR display, Biosensors)	Julien Gamet	CREAL
6	Dissemination, Communication and Exploitation of the project's outcomes	Martina Chopart	AMI
7	Project Management and S&T Coordination	Ioanna Zergioti	NTUA

#### 2.4. Task Leaders (TL)

The work to be implemented in each Work Package is divided into tasks. Every task is being managed by a **Task Leader (TL)**, who is responsible for carrying out the work planned in the task. Task Leaders communicate with their respective Work Package Leaders on a regular basis. They provide inputs for drafting project progress reports. The list of all tasks is part of the Description of Action.

#### 2.5. Dissemination Manager (DM)

As several communication and dissemination activities are planned to be undertaken during the project lifetime, the role of **Dissemination Manager** has been established, which will be filled by the Project Manager and Leader of WP6 – Martina Chopart (AMI).

The aim is to assure that the results of the project will be communicated to a variety of stakeholders (from general public, to technology experts or public authorities) and disseminated to the European research and industrial community. In MatEI, dissemination will target all important stakeholders in the field of optics, optoelectronics, photonics and advanced materials.

Specific communication activities will address the general public, scientific community, technicians, experts, media, policy makers, industries, end-users, etc. The Dissemination Manager will be responsible for the setup of the procedures to allow all communications & dissemination activities to be quality assured, including both the content and layout. In particular, she will check that:

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1. All messages to be transmitted outside of the consortium are suitable for the people addressed, are relevant for the industry (when applicable), and follow gender neutral language
2. Scientific papers and publications contain sufficient reference to the project.

The DM will be in regular contact with project partners, coordinate all the dissemination activities and keep records of them. In collaboration with the Innovation Manager (see 2.6), DM will ensure that no project publication is jeopardising the potential protection of generated intellectual property (e.g. patent, product design) and further industrial application.

### 2.6. Innovation Manager (IM)

Milan Milosevic (PHIX) will take on the role of the **Innovation Manager (IM)**, which has been set up to guarantee proper institutionalization of developing new market perspectives as well as accompanying the process from new project specific concepts to marketability. Assisted by the Intellectual Property Right (IPR) managers of MatEI partners and AMI, he will closely cooperate with the use case owners (CREAL, SURF), to oversee the overall exploitation and commercialization potential, as well as the IPR management.

Innovation Manager will regularly review relevant IPR developments (i.e. recently published patent application, granted patents) and will advise the consortium about the continuation of research activities, e.g. in case of changes of prior art and IP protection. Any proposed and performed tasks should allow the consortium to fully exploit its knowledge and provide the maximum freedom to operate to the members with respect to prior art.

### 2.7. General Assembly (GA)

The General Assembly (GA) is a decision-making body of the consortium on the strategic level, established at the beginning of the project. The GA consists of key senior representatives from each partner organization. It acts and makes decisions in line with what is stated in the Consortium Agreement and Description of Action.

The tasks of the GA are as follows:

- being responsible for project strategy and exploitation;
- monitoring of project progress, its achievements, and costs;
- supervision of technical developments;
- coordination of dissemination actions and exploitation activities;
- making agreements on contract changes/amendments if required (e.g. budgets, resources, plans, etc.);
- solving problems with a potential impact on project strategies, resources, and objectives, defining the necessary contingency plans;
- keeping track of medium- and long-term objectives.

The GA meets at least once a year and is chaired by the Project Coordinator, who is assisted by the Project Manager. The minutes of the GA meetings serve as deliverables in WP7 to be submitted to HaDEA in M2, M13, M25, and M37.



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### 2.8. External Expert Advisory Board (EEAB)

Establishing an **External Expert Advisory Board** is one of the first steps to ensure optimal communication, dissemination and exploitation routes for the MatEl project. The aim of inviting industry experts to assist with their expertise is to increase the visibility for the project and to ensure a participative approach, interacting since early stages of the project with wide range of stakeholder groups. The EEAB can provide inputs to the project and be the first to receive all the newest updates about the results. The existence of the EEAB will increase the pan-European concept of this project and will provide desirable feedback from other closely related European and national activities in the field of photonics, optoelectronics and advanced materials. The EEAB will thus provide synergies with European R&D and industrial activities.

The foreseen EEAB *modus operandi* is as follows:

- the EEAB provides strategic advice to the MatEl consortium in technology development, regulatory context, certification activities, ethics, exploitation, and dissemination activities during the project;
- the members sign a Non-Disclosure Agreement before the first EEAB meeting. They or their organizations are not legally bound by any contract between partners (Consortium Agreement), or by the Grant Agreement signed with the European Commission;
- members of the EEAB will be invited to participate in annual meetings with all consortium partners during the project;
- The EEAB members shall be allowed to participate in General Assembly meetings upon invitation but have not any voting rights.

The EEAB membership will remain open to allow for the opportunity to recruit additional board members to advise on specific stages of the project, as new needs are identified. For instance, by involving a patient representative before clinical trials.

## 3. Internal management procedures

Several internal management procedures have been established to ensure smooth implementation of the project and timely awareness and reaction to potential problems.

### 3.1. Communication

To make communication easier within the main consortium bodies, the following mailing lists have been set up:

- [all@project-matel.eu](mailto:all@project-matel.eu) – all participants
- [ga@project-matel.eu](mailto:ga@project-matel.eu) – General Assembly members
- [psc@project-matel.eu](mailto:psc@project-matel.eu) – PSC members (WP Leaders)

In order to easily share files and documents related to the project, an online cloud-based platform (OwnCloud) is used. The full contact list with the project participants was created and is regularly updated on the OwnCloud platform by the Project Manager.

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### 3.2. Decision making

It can be expected that most decisions will be taken by consensus of all the partners. It is the role of the Project Coordinator to identify and resolve potential conflicts in a proactive manner in collaboration with the Work Package Leaders. All cases will be discussed among the conflicting parties in good faith. However, in case of a serious conflict where the Project Coordinator is unable to mediate between the conflicting parties, each partner can ask the General Assembly in writing to organise a conflict resolution meeting. The GA will organise such an extraordinary meeting within 7 calendar days<sup>1</sup>, following the receipt of a written request. Attempts for arbitration will be performed in increasing order of authority, from the level of the Work Package Leaders to the General Assembly level. During the meeting, agreement will be sought by dialogue and mutual concession. In case of a failure to find an agreement, the GA will make the final decision. The voting rules are described in Section 6 of the CA.

### 3.3. Project planning

In order to achieve the project objectives, the structure of the work plan is divided into 7 WPs, each targeting different objectives, tasks and expected results. The Description of Action thoroughly describes the project plan and its implementation and includes a list of deliverables and milestones. Overview of project workflow is in the Gantt Chart and Pert diagram in Annex 7 and Annex 8.

### 3.4. Gender Dimension

MatEI consortium is devoted **to achieving gender equality and will follow the SAGER principles and recommendations**<sup>2</sup> in project implementation. An exhaustive gender analysis will be continuously undertaken, considering not only women's and men's biological characteristics, but also social and cultural factors. Gender dimension will be integrated to all activities of the project. e.g., research design, study implementation and scientific reporting, as well as communication and dissemination activities.

Gender aspects will be considered by all consortium partners and monitored by the Project Coordinator and Project Manager. Any significant issues or deviations will be reported to the Project Steering Group.

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<sup>1</sup> The CA mentions "extraordinary meeting" and announcement at least 7 days in advance.

<sup>2</sup> <https://ease.org.uk/communities/gender-policy-committee/the-sager-guidelines/>

### 3.5. Progress monitoring and reporting

#### 3.5.1. Project deliverables

Progress made in reaching the deliverables in each WP will be regularly assessed by integrating all inputs from the Work Package Leaders and Project Coordinator. The progress of the project will be assessed at two levels with the help of general indicators: (1) objectives, milestones, deliverables, and (2) the appropriate use of budget. On top of that, a regular check by the IM will ensure that the generated know-how has the potential to be commercialized in the form of products and services.

All deliverables generated by the persons in charge will be checked and controlled in this sequence: WPL > PM > PC > Submission to HaDEA > HaDEA Project Officer (or reviewer) as summarised in Figure 2.

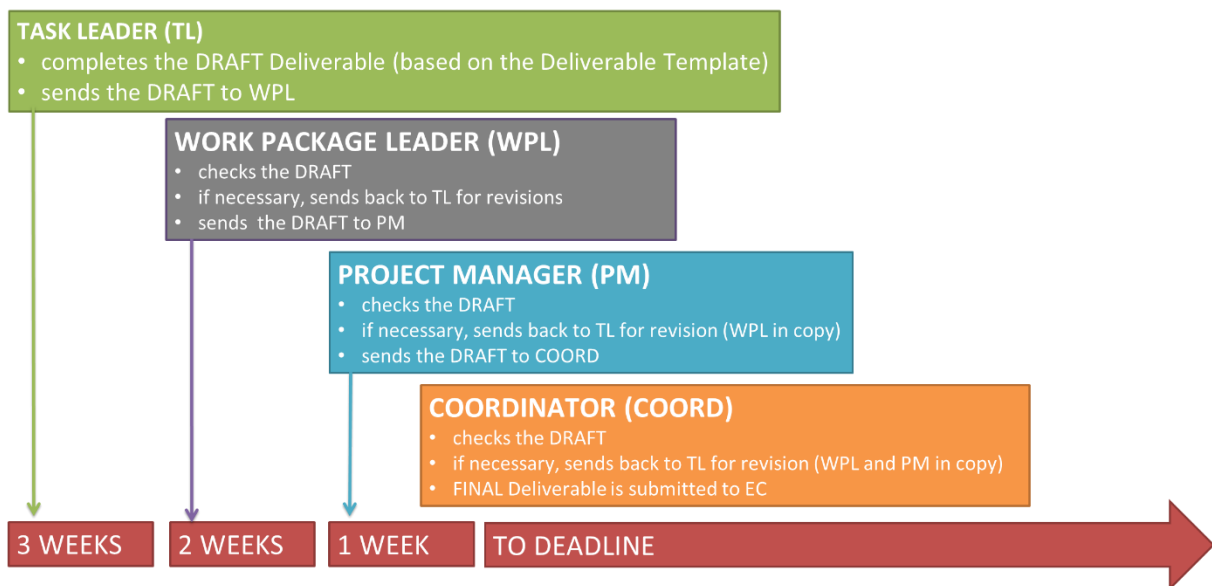


Figure 2: Procedure for quality assurance of Deliverables

The first draft of the deliverable should be ready approximately one month before the submission date. Complete adherence with deadlines will be required to submit deliverables on time. Template for the deliverables is available for partners in Annex 2.

Moreover, the Project Steering Committee will conduct the internal quality assessment of milestones and deliverables that are based on the quantified objectives detailed in the Description of Action and within the Work Package description. It is foreseen that the 6 months periodicity for the PSC meeting will facilitate internal assessment of the project and ensure conformity with requirements and quality of all project deliverables. The Work Package Leaders are responsible for monitoring progress in their own WP, to identify risks, and to rapidly inform the PSC if any changes with regard to the Description of Action occur.

#### 3.5.2. Internal reports

The internal reporting will consist of financial reporting, person-months reporting and technical reporting. The reporting templates are available in Annex 3, Annex 4 and Annex 5. The procedure is described below.

##### Financial, Person-months reporting:

- Every 6 months, periodic internal activity report; official reporting towards the EC in M18, M30 and M42.

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- Any changes or problems should be immediately communicated to the Project Coordinator and Project Manager.
- Partners will be reminded about the reporting deadline 1 month in advance.

The aim of the biannual activity report is to give an overview of the main activities and results obtained by individual partners during the previous period of the project in order to monitor project development over the preceding 6 months and prepare a summary activity report on project progress per Work Package. To enable this, internal templates will be provided to partners.

Reporting towards the EC is scheduled in M18, M36 and M42. The Periodic Reports (M18, M36, M42) have to be submitted within 60 days from the end of the reporting period. These will include requests for payment and must be drawn up using the forms and templates provided in the electronic exchange system. They must be submitted electronically via the Participant Portal.

The periodic report consists of the following parts:

- Technical event report:
  - Explanation of work carried out, including a publishable summary
  - Overview of progress
  - Deliverables check (according to the timetable in the list of Deliverables).
  - Milestones check (according to the timetable in the list of Milestones)?
- Financial event report:
  - Explanation of the use of resources
  - Financial statement from each beneficiary and third party
  - Periodic summary financial statement.

If a partner does not provide the data, the Project Coordinator will submit the statement without it, which means zero claimable costs for the partner concerned.

The Final report which is to be submitted electronically via the Participant Portal in M42 consists of:

- a periodic report;
- a final publishable summary report;
- a plan for the use and dissemination of results to spread awareness
- a report covering the wider societal implications of the project.

### 3.5.3. Project risks

Project risks will be constantly assessed and evaluated during the whole project duration. The methodology to be followed for risk contingency consists of four steps:

1. Risk identification: areas of potential risk will be identified and classified.
2. Risk evaluation: the probability of events will be determined, and the consequences associated with their occurrence will be examined.
3. Risk response: methods will be produced to reduce or control the risk.
4. Risk control and report: lessons learnt will be documented.

All risk management issues will be documented in the Periodic Reports.

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**3.5.4. Data Management Plan**

MatEI, in line with the Horizon Europe requirements, will propose a Data Management Plan six months after the project start. This document, to be completed as deliverable D7.3, is part of Task 7.1 (*Day-to-day management via S&T coordination*)

The data management plan will cover mandatory open science practices, namely:

- Open science publication.
- Making data “as open as possible, as closed as necessary”. For instance, data collected in research facilities will be made open access, while data collected at industrial facilities will remain closed in order to allow for commercial exploitation.

MatEI DMP (Data Management Plan) follows the EU guidelines and describes the data management procedures according to the **FAIR** principles. This way project research data are ***findable, accessible, interoperable and reusable***, allowing thus for maximum knowledge circulation and return of investment.

At the time of proposal preparation, the following types of data were expected to be collected:

- Advanced Materials: chemical formulas, protocols, models, waste, recycling indicators formulas, text, numerical, KPIs
- Materials characterization: SEM, dielectric impedance/admittance, spectroscopy, XRD, RAMAN, etc.
- Laser Transfer, Laser soldering, Optical Microscopy, AFM, SEM, TEM: Profiles, images, videos, graphs
- Assembly and packaging designs and models: Designs, algorithms, applications
- Performance evaluation and testing of demonstrations: Spectra, images, graphs, raw numerical

### 3.6. Publication procedure

A fair and transparent procedure for the submission of an abstract, paper, or other external publication will be implemented, in line both with the GA and the CA. The framework is defined in the Consortium Agreement Article 8.4 Dissemination of Results and Article 29 of the Grant Agreement.

Prior notice of any planned publication should be given to other consortium members at least 45 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Project Coordinator and to the consortium member proposing the dissemination within 30 calendar days after receipt of the notice. If no objection is made within the time limit, the publication is permitted (see also Figure 3).

The EU emblem with a funding statement should always be included in the publication.

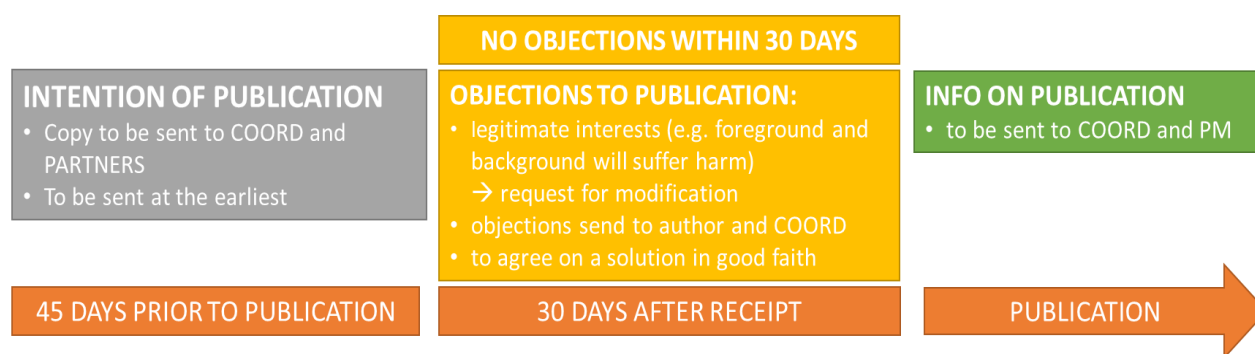


Figure 3: Information and timeline of intention of publication

### 3.7. Project meetings

As already mentioned above in the respective chapters dedicated to consortium bodies, the General Assembly should meet at least once a year, whilst the Project Steering Committee should meet biannually. Moreover, Work Package Leaders will communicate monthly via teleconferences for the duration of the respective work package. Other partner teleconferences and exclusive partner workshop meetings are encouraged. If needed, an *ad-hoc* meeting can be scheduled to discuss any relevant issues. To save time and resources, operational meetings could also be held by teleconferencing systems, arranged according to availability.

The Project Manager will inform participants at least 2 months in advance about the agenda and location of any physical meeting. In case of an online meeting, the participants will be informed at least 4 weeks in advance. *Table 2* shows the MatEI management meetings and communication.

With a view to the uncertainty connected to global health threats, but also to save time and resources, operational meetings may be performed by using a teleconferencing system (e.g. MS Teams, Zoom), arranged according to the nearest possible availability and based on the schedule summarised in *Table 2*.

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Table 2: MatEI management meetings and communication

Management level		General Assembly	External Advisory Board	Ethics Advisory Board	Project Steering Committee	Work Packages and Tasks
Periodicity	Responsibility	PC	PC	PC	PC	WPLs and TL
Annually		X	X	X		
Bi-annually					X	
Monthly					Online	Online

### 3.7.1. Travel costs guidance for the partners

To support the partners in managing the costs of travel, brief recommendations on travel costs have been prepared and shared with the consortium. The below should be considered as guidance compiled based on the EU requirements to support the partners. However, partners have been reminded that ultimately, it is the granting authority who will assess the claimed costs and decide whether these are eligible or not. If the European Commission will not consider the costs eligible, they cannot reimburse them.

#### *Budget*

All partners have a travel budget allocated within the grant budget to cover the costs of transport, accommodation, and subsistence for project related meetings (PSC meetings, GA meetings etc.) and events (workshops, conferences, trainings etc.) for the team. Partners can find the budget for their organization in the Grant Agreement or Participant Portal, and it is allocated for the whole course of the project – 4 years.

#### *Pricing*

For the costs to be eligible by EC rules, they should be reasonable, justified, and must comply with the principles of sound financial management i.e., be in line with good housekeeping practice when spending public money and not be excessive. For instance, travel policies should be based on organization's travel policy and not upgraded by using grant money.

#### *Combined travel (different endpoint)*

Costs of a combined travel (i.e., where the end point of travel is different from the start) can be charged to the action ONLY up to the cost that would have been incurred if the travel would have been made exclusively for the action (i.e. up to the theoretical cost of travelling directly back to the start point).

This is under the condition that:

- it is the usual practice of the beneficiary to pay for such travels (e.g., travels combining professional and personal reasons)
- it has been an actual cost for the beneficiary

In terms of record keeping, the beneficiary must keep evidence not only of the actual cost of the subsequent travel leg(s), but also of the cost of the theoretical direct return travel after the end of the work for the action.

#### *Hosting events and meetings*

Bigger partners are expected to host at least one meeting for the project (PSC or annual consortium meeting). The

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costs for the venue, catering, and social events (within reason) should be covered by the host from their grant budget.

In case of questions, partners are invited to consult the Grant Agreement and [Annotated Grant Agreement](#) or contact the Project Manager and Project Coordinator.



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### **4. Conclusions**

The proposed project management and quality assurance procedures will be followed throughout MatEI project to achieve its objectives smoothly and successfully. The organizational structure of the consortium, operational bodies, and roles in the project are established and internal procedures have been set up. The management scheme will be followed over the course of the project and will be modified if another approach is deemed more efficient. MatEI consortium believes that the proposed processes will enable the project to achieve its objectives.

### **5. Degree of progress**

The deliverable is 100% fulfilled.

### **6. Dissemination level**


The Deliverable 7.2 is sensitive, available only for members of the consortium and the Commission Services. Access is limited under the conditions of the Grant Agreement.

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7. Annexes

In the sections below, the report templates are shown (7.1 to 7.3), the financial reporting templates (7.4 & 7.5), the presentation templates (7.6) as well as the project PERT diagram showing the interactions between the work packages (7.7), the project Gantt chart (7.8), the detailed breakdown of person months per WP per partner (7.9) and the complete MatEI contact list (7.10).

7.1. Annex 1: MatEI Meeting Minutes Template



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**MatEI**

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Duration: 42 months

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**= Minutes =**

**XX Meeting**  
**Date, Place**

Dissemination level	
PU	Public
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HORIZON-CL4-2022-RESILIENCE-01-10
GA number: 101091774

MatEI

**AUTHOR**

Author	Institution	Contact (e-mail)

**DOCUMENT CONTROL**

Document version	Date	Change
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V1.0		First/final version

**VALIDATION**

Reviewers	Validation date
Work Package Leader	
Project Manager	Martina Chopart
Project Coordinator	Ioanna Zergioti

**MEETING PARTICIPANTS**

Partner No.	Institution	Name	Contact (e-mail)

**EXCUSSED**

Partner No.	Institution	Name	Contact (e-mail)

**MEETING GUESTS**

Name	Institution	Contact (e-mail)

Reference of the xx meeting, date, place  
Page 2 of 4

HORIZON-CL4-2022-RESILIENCE-01-10
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MatEI

- 1. Introduction**  
Text (objective of the meeting)
- 2. Agenda**  
Text
- 3. Minutes**  
Text
- 4. Decisions taken**  
Text (if applicable)
- 5. Deviations and identified risks**  
Text (if applicable)
- 6. To-do List**

Item	Who	WP	What	Due date

- 7. Appendix**  
(if applicable)

Reference of the xx meeting, date, place  
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MatEI

7.2. Annex 2: MatEI Deliverable Template

<div style="display: flex; justify-content: space-around; align-items: center;"> </div> <p style="text-align: center; font-size: small; margin-top: 20px;">HORIZON-CL4-2022-RESILIENCE-01-10 - Innovative materials for advanced (nano)electronic components and systems</p> <h2 style="text-align: center; margin: 20px 0;">MatEI</h2> <p style="text-align: center; font-weight: bold; margin: 0;">PZT and Graphene MATerials innovations for advanced opto-Electronic applications in AR and biosensing</p> <p style="text-align: center; font-size: x-small; margin: 5px 0;">Start date of the project: 01/01/2023 Duration: 42 months</p> <hr style="border: 0.5px solid black; margin: 20px 0;"/> <p style="text-align: center; font-size: large; font-weight: bold; margin: 0;">= Deliverable DX.X =</p> <p style="text-align: center; font-weight: bold; margin: 0;">Deliverable Title</p> <p style="text-align: center; font-size: x-small; margin: 5px 0;">Due Date: DD/MM/YYYY Date Submitted: DD/MM/YYYY Responsible TL: Task Leader's name, Organization's name Version: XX</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small; margin-top: 10px;"> <thead> <tr> <th colspan="2">Dissemination level</th> </tr> </thead> <tbody> <tr> <td>PU</td> <td>Public</td> </tr> <tr> <td>SE</td> <td>Sensitive, limited under the conditions of the Grant Agreement</td> </tr> <tr> <td>Classified R-UE/EU-R</td> <td>EU RESTRICTED under the Commission Decision No2015/444</td> </tr> <tr> <td>Classified C-UE/EU-C</td> <td>EU CONFIDENTIAL under the Commission Decision No2015/444</td> </tr> <tr> <td>Classified S-UE/EU-S</td> <td>EU SECRET under the Commission Decision No2015/444</td> </tr> </tbody> </table> <div style="display: flex; align-items: center; margin-top: 20px;"> <p style="font-size: x-small; margin: 0;">This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101091774.</p> </div>	Dissemination level		PU	Public	SE	Sensitive, limited under the conditions of the Grant Agreement	Classified R-UE/EU-R	EU RESTRICTED under the Commission Decision No2015/444	Classified C-UE/EU-C	EU CONFIDENTIAL under the Commission Decision No2015/444	Classified S-UE/EU-S	EU SECRET under the Commission Decision No2015/444	<div style="display: flex; justify-content: space-between; font-size: x-small; margin-bottom: 10px;"> <span>HORIZON-CL4-2022-RESILIENCE-01-10</span> <span>GA number: 101091774</span> </div> <p style="text-align: center; font-size: x-small; margin-bottom: 10px;">MatEI</p> <hr style="border: 0.5px solid black; margin-bottom: 10px;"/> <p><b>AUTHOR</b></p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>Author</th> <th>Institution</th> <th>Contact (e-mail)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p><b>DOCUMENT CONTROL</b></p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>Document version</th> <th>Date</th> <th>Change</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td>V0.1</td> <td> </td> <td>First draft</td> </tr> <tr> <td>V1.0</td> <td> </td> <td>First/final version</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p><b>VALIDATION</b></p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>Reviewers</th> <th>Validation date</th> </tr> </thead> <tbody> <tr> <td>Work Package Leader</td> <td> </td> </tr> <tr> <td>Project Manager</td> <td>Martina Chopart</td> </tr> <tr> <td>Project Coordinator</td> <td>Ioanna Zergjoti</td> </tr> </tbody> </table> <p><b>DOCUMENT DATA</b></p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tbody> <tr> <td style="background-color: #e0e0e0;">Keywords</td> <td> </td> </tr> <tr> <td style="background-color: #e0e0e0;">Point of Contact</td> <td>Name:  Partner:  Address:  Phone:  E-mail:   </td> </tr> <tr> <td style="background-color: #e0e0e0;">Delivery date</td> <td>XX/XX/202X</td> </tr> </tbody> </table> <p><b>DISTRIBUTION LIST</b></p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>Date</th> <th>Version</th> <th>Recipients</th> </tr> </thead> <tbody> <tr> <td>XX/XX/202X</td> <td>V0.1</td> <td>Project Coordinator</td> </tr> <tr> <td>XX/XX/202X</td> <td>V1.0</td> <td>EC, Project Partners</td> </tr> </tbody> </table> <p><b>DISCLAIMER</b></p> <p style="font-size: x-small; margin-top: 5px;">Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or European Commission. Neither the European Union nor the granting authority can be held responsible for them.</p> <p style="text-align: right; font-size: x-small; margin-top: 20px;">Deliverable Title Page 2 of 5</p>	Author	Institution	Contact (e-mail)				Document version	Date	Change				V0.1		First draft	V1.0		First/final version				Reviewers	Validation date	Work Package Leader		Project Manager	Martina Chopart	Project Coordinator	Ioanna Zergjoti	Keywords		Point of Contact	Name: Partner: Address: Phone: E-mail: 	Delivery date	XX/XX/202X	Date	Version	Recipients	XX/XX/202X	V0.1	Project Coordinator	XX/XX/202X	V1.0	EC, Project Partners
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1. Introduction.....	5														
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2.1. Heading 2.....	5														
2.1.1. Heading 3.....	5														
3. Conclusions.....	5														
4. Degree of Progress.....	5														
5. Appendix.....	5														

MatEI

7.3. Annex 3: MatEI Technical Reporting Template

HORIZON-CL4-2022-RESILIENCE-01-10		GA number: 101091774
MatEI		
<b>TEMPLATE FOR 6M TECHNICAL REPORTING</b>		
<p>The goal of this template is to give an overview of main activities and results obtained during the last period of the project by <u>individual partners</u> in order to monitor the project development in the last 6 months and prepare a summary activity report on the project progress.</p> <p><b>Thank you in advance for the cooperation!</b></p> <p><i>For each task you were (are) active in, please, fill in the following table:</i></p>		
<b>Task X<sub>n</sub>: Task name</b>		
Personnel involved (names):		
<b>RTD OVERVIEW</b>		
Performed activities:	<p><i>You should prepare this table for each task you participated in separately, even if your contribution was minimal and some fields are not applicable/left blank. Simply copy-paste the table as many times as necessary and keep them all in one single document.</i></p>	
Important results achieved:		
Cooperation with other partners? Other results achieved from co-work?		
Transfer of materials/samples:		
Pictures showing the important results (e.g. new know-how generated):	<p><i>Please include a reference to the text/description for each picture/photo.</i></p>	
<b>DELIVERABLES AND MILESTONES</b>		
DEL delivered:		
MIL passed:		
<b>RISK MANAGEMENT</b>		
Any changes in comparison with DoA:		
Identified risk and risk mitigation plan:		
<b>OVERALL EVALUATION</b>		
Overall evaluation of the task progress incl. quantitative assessment (percentage)		
<b>PLANS FOR THE FOLLOWING 6 MONTHS</b>		
Plans for the following 6M (including DEL to be delivered):		
6M activity report Page 1 of 1		

MatEI

7.4. Annex 4: MatEI Financial Reporting Template

Direct Costs				
	WP (optional)	Cost category	Description	Amount (EUR)
1				
2				
3				
4				
5				
6				
7				
8				
9				
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36				
37				
38				
39				
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41				
42				
43				
44				
45				
46				
47				
48				
49				
50				0.00

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Summary		
<b>Direct costs</b>		<b>Funding rate</b> 100%
A.1 Personnel costs (actual costs)		<b>Amount (EUR)</b> 0.00
A.1 Personnel costs (unit costs)		0.00
A.4 Personnel - SME owners, natural persons (unit costs)		0.00
B Subcontracting		0.00
C.1 Travel and subsistence		0.00
C.2 Equipment		0.00
C.3 Other goods, works and services		0.00
D.1 Financial support to third parties		0.00
D.2 Internally invoiced goods and services		0.00
<b>TOTAL direct costs</b>		<b>0.00</b>
E Indirect costs	<b>Flat rate</b> 25%	<b>Amount (EUR)</b> 0.00
<b>TOTAL ELIGIBLE COSTS</b>		<b>Amount (EUR)</b> 0.00
Maximum EU contribution		<b>Amount (EUR)</b> 0.00
<b>Requested EU contribution</b>		
<b>Revenues</b>		<b>Amount (EUR)</b> 0.00

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7.5. Annex 5: MatEI PM Reporting Template

Personal costs																									
Partner name:		Non-profit: <input type="checkbox"/> NO		Project type: <input type="checkbox"/> RIA		Funding rate: 100%		Reporting period: <input type="checkbox"/> M1 - M6																	
Effort reporting																									
WP no.	Person-Months per period																		Total PMs spent	Total PMs expected	Total PMs planned (according to DuA)	Remaining PMs			
	M1-M6		M7-M12		M13-M18		M19-M24		M25-M30		M31-M36		M37-M42		M43-M48		M49-M54						M55-M60		
	Spent	Expected	Spent	Expected	Spent	Expected	Spent	Expected	Spent	Expected	Spent	Expected	Spent	Expected	Spent	Expected	Spent	Expected					Spent	Expected	
WP1																						0.0	0.0		0.00
WP2																						0.0	0.0		0.00
WP3																						0.0	0.0		0.00
WP4																						0.0	0.0		0.00
WP5																						0.0	0.0		0.00
WP6																						0.0	0.0		0.00
WP7																						0.0	0.0		0.00
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00

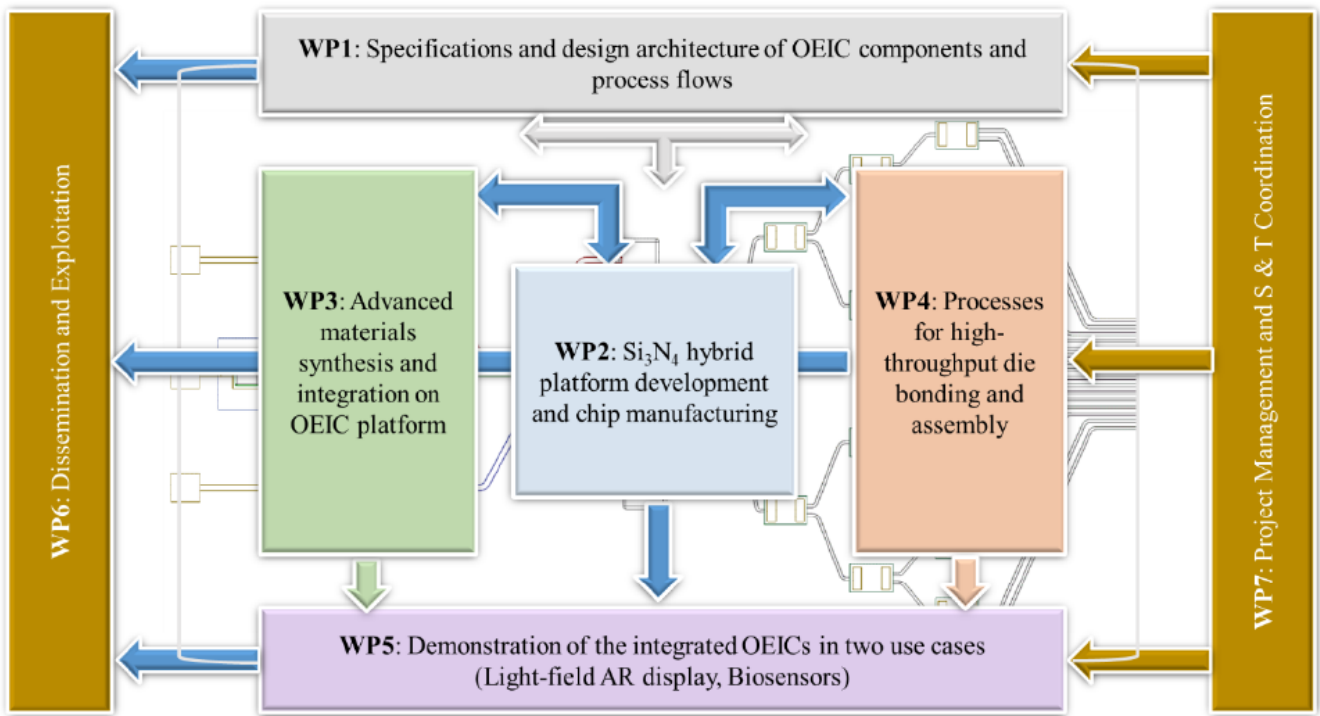
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7.6. Annex 6: MatEI Presentation Template



MatEI

7.7. Annex 7: MatEI PERT Diagram



MatEI

7.8. Annex 8: MatEI Gantt Chart

MatEI	Task name	WP Leaders	YEAR 1												YEAR 2												YEAR 3												YEAR 4																													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42																								
<b>WP1 Specifications and design architecture of OEIC components and process flows</b>		<b>PIEM</b>																																																																		
T1.1	OEIC specifications and testing protocols		MS1.1				MS1.2				D1.1																																																									
T1.2	Process design for advanced material integration on OEIC						D1.2																																																													
T1.3	End-use application requirements and specifications						D1.3																																																													
T1.4	Laser soldering, chip bonding and assembly specifications						D1.4				D1.5																																																									
<b>WP2 Si<sub>3</sub>N<sub>4</sub> chip platform development and chip manufacturing</b>		<b>LION</b>																																																																		
T2.1	Chip design and waveguide simulation						D2.1																																																													
T2.2	Advanced Si <sub>3</sub> N <sub>4</sub> chip platform development and compatibility testing						D2.2																																																													
T2.4	Hybrid platform customization for application 1: Light source for light-field AR display										D2.3				D2.4																																																					
T2.5	Hybrid platform customization for application 2: disposable Covid-19 sensor (PDs)														D2.5																																																					
<b>WP3 Advanced materials synthesis and integration on OEIC platform</b>		<b>GRAPH</b>																																																																		
T3.1	Graphene synthesis and upscaling						D3.1				D3.2																																																									
T3.2	PZT & AlScN industrial grade upscaling and top-down processing on OEICs										D3.2																																																									
T3.3	Wafer scale transfer and integration of Graphene using LIFT														D3.3																																																					
T3.4	PZT & AlScN GHz frequency engineering on Si <sub>3</sub> N <sub>4</sub> platform for up to 1 GHz														D3.4																																																					
<b>WP4 Processes for high-throughput die bonding and assembly</b>		<b>PHIX</b>																																																																		
T4.1	LIFT process optimization for AuSn deposition on chip						MS4.1				MS4.2				MS4.3																																																					
T4.2	Soldering process development: alignment and laser soldering										D4.1																																																									
T4.3	Iterative optimization of the OEIC components hybrid integration and interfacing										D4.5				D4.6				D4.7																																																	
T4.4	OEIC dicing and packaging/ interconnection														D4.7																																																					
<b>WP5 Demonstration of the OEIC components in two use cases</b>		<b>CREAL</b>																																																																		
T5.1	Modular package development										MS5.1-3																																																									
T5.2	Back end assembly of the hybrid chip										D5.1				D5.2																																																					
T5.3	Demonstration and validation in light-field AR display application																		D5.3																																																	
T5.4	Demonstration and validation in Detection of covid-19 antibodies																						D5.4																																													
<b>WP6. Dissemination and Exploitation</b>		<b>AMI</b>																																																																		
T6.1	Dissemination and communication activities		D6.1		D6.2						D6.6																																																									
T6.2	IPR management and exploitation strategies						D6.3																																																													
T6.3	Commercialisation roadmaps for MatEI's applications														D6.7																																																					
T6.4	Life cycle analysis and end of life strategy for devices and materials										D6.5																																																									
<b>WP7 Project Management and S&amp;T coordination</b>		<b>NTUA</b>																																																																		
T7.1	Day-to-day management via S&T coordination		D7.1		D7.2		D7.3				D7.6				D7.7				D7.8																																																	
T7.2	Handling of financial and administrative aspects						D7.4								D7.5				D7.9																																																	
T7.3	Risk management																																																																			