



**EUROPEAN COMMISSION**  
Research Executive Agency

Marie Skłodowska-Curie Research and Innovation Staff Exchange



## **ANNEX 1 (part A)**

**RISE**

**NUMBER — 872735 — AERAS**

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# 1.1. The project summary

Project Number <sup>1</sup>	872735	Project Acronym <sup>2</sup>	AERAS
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## One form per project

### General information

Project title <sup>3</sup>	A CybEr range tRaining platform for medicAl organisations and systems Security
Starting date <sup>4</sup>	01/12/2019
Duration in months <sup>5</sup>	48
Call (part) identifier <sup>6</sup>	H2020-MSCA-RISE-2019
Topic	MSCA-RISE-2019 Research and Innovation Staff Exchange
Fixed EC Keywords	Complexity and cryptography, electronic security, privacy, biometrics, E-learning, user modelling, collaborative systems, Bioinformatics, e-Health, medical informatics
Free keywords	Cyber Range Security Training, Risk Assessment, modeling and impact reduction, exercise and simulations

### Abstract <sup>7</sup>

AERAS aims to develop a realistic and rapidly adjustable cyber range platform for systems and organisations in the critical healthcare sector, to effectively prepare stakeholders with different types of responsibility and levels of expertise in defending high-risk, critical cyber-systems and organizations against advanced, known and new cyber-attacks, and reduce their security risks. The platform will be a virtual cyberwarfare solution enabling the simulation of the operation and effects of security controls and offering hands-on training on their development, assessment, use and management.

The platform will be based on an evidence-based approach where virtual cyberwarfare and simulations are configured according to evidence regarding: (i) the occurrence of cyber threats, and (ii) the effectiveness of the operation of the internal and external system defence mechanisms. Evidence will be collected by multi- faceted real-time monitoring and assessed according to Cyber Range Security Assurance (CRSA) models specifying potential cyber-attacks, the security mechanisms used against them, and the methods for assessing their effectiveness. The AERAS solution will be delivered at TRL-7 and validated through two different pilots in the healthcare sector: (i) a hospital medical systems pilot; and (ii) a public health systems pilot.

## 1.2. List of Beneficiaries

Project Number <sup>1</sup>	872735	Project Acronym <sup>2</sup>	AERAS
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### List of Beneficiaries

No	Name	Short name	Country	Project entry month <sup>8</sup>	Project exit month
1	UNIVERSITA DEGLI STUDI DI MILANO	UMIL	Italy	1	48
2	CITY UNIVERSITY OF LONDON	CITY	United Kingdom	1	48
3	TECHNOLOGIKO PANEPISTIMIO KYPROU	CUT	Cyprus	1	48
4	SPHYNX TECHNOLOGY SOLUTIONS AG	STS	Switzerland	1	48
5	AEGIS IT RESEARCH UG (HAFTUNGSBESCHRANKT)	AEGIS	Germany	1	48
6	PANEPISTIMIAKO GENIKO NOSOKOMEIO IRAKLEIOU	PAGNI	Greece	1	48
7	PANEPISTIMIO PATRON	UPAT	Greece	1	48

## 1.3. Workplan Tables - Detailed implementation

### 1.3.1. WT1 List of work packages

WP Number <sup>9</sup>	WP Title	Lead beneficiary <sup>10</sup>	Start month <sup>12</sup>	End month <sup>13</sup>
WP1	Project Management	1 - UMIL	1	48
WP2	Requirements & Platform Design	3 - CUT	1	12
WP3	AERAS Models & Model-driven Cyber Range programmes creation	4 - STS	6	40
WP4	Key Components Development	2 - CITY	9	40
WP5	Platform Integration, Pilots, and Validation	1 - UMIL	24	48
WP6	Communication, Dissemination, Impact Creation	5 - AEGIS	1	48
WP7	Ethics requirements	1 - UMIL	1	48

### 1.3.2. WT2 list of deliverables

<b>Deliverable Number<sup>14</sup></b>	<b>Deliverable Title</b>	<b>WP number<sup>9</sup></b>	<b>Lead beneficiary</b>	<b>Type<sup>15</sup></b>	<b>Dissemination level<sup>16</sup></b>	<b>Due Date (in months)<sup>17</sup></b>
D1.1	Project quality plan	WP1	1 - UMIL	Report	Confidential, only for members of the consortium (including the Commission Services)	3
D1.2	Progress Report Year 1	WP1	1 - UMIL	Report	Confidential, only for members of the consortium (including the Commission Services)	13
D1.3	Progress Report Year 3	WP1	1 - UMIL	Report	Confidential, only for members of the consortium (including the Commission Services)	37
D1.4	Midterm Meeting	WP1	1 - UMIL	Report	Confidential, only for members of the consortium (including the Commission Services)	18
D2.1	Healthcare Pilots & Cyber Range Training Requirements Analysis Report	WP2	2 - CITY	Report	Public	6
D2.2	Platform Requirements and Technology Analysis Report	WP2	4 - STS	Report	Public	9
D2.3	AERAS Platform Initial Reference Architecture	WP2	3 - CUT	Report	Public	12
D3.1	CRSA Models and CRSA-driven Cyber Range programme specification language	WP3	4 - STS	Report	Public	24
D3.2	AERAS Models and CRSA-driven Cyber Range programme V1	WP3	2 - CITY	Report	Public	28
D3.3	AERAS Models and CRSA-driven Cyber Range programme V2	WP3	4 - STS	Report	Public	40
D4.1	AERAS Cyber Range Tools – V1	WP4	3 - CUT	Report	Public	28
D4.2	AERAS Monitoring, Assessment and	WP4	1 - UMIL	Report	Public	28

<b>Deliverable Number<sup>14</sup></b>	<b>Deliverable Title</b>	<b>WP number<sup>9</sup></b>	<b>Lead beneficiary</b>	<b>Type<sup>15</sup></b>	<b>Dissemination level<sup>16</sup></b>	<b>Due Date (in months)<sup>17</sup></b>
	Adaptation mechanisms – V1					
D4.3	AERAS Cyber Range Tools – V2	WP4	5 - AEGIS	Report	Public	40
D4.4	AERAS Monitoring, Assessment and Adaptation mechanisms – V2	WP4	2 - CITY	Report	Public	40
D5.1	Initial Prototype of integrated AERAS platform	WP5	1 - UMIL	Report	Public	34
D5.2	AERAS Evaluation Framework and Pilot Set Up Guidelines	WP5	2 - CITY	Report	Public	34
D5.3	AERAS initial prototype pilot validation report	WP5	7 - UPAT	Report	Public	36
D5.4	Final Prototype of integrated AERAS platform	WP5	1 - UMIL	Report	Public	44
D5.5	AERAS final prototype pilot validation report	WP5	6 - PAGNI	Report	Public	46
D5.6	Final AERAS evaluation report	WP5	1 - UMIL	Report	Public	48
D6.1	Dissemination and Communication Plan	WP6	5 - AEGIS	Report	Public	12
D7.1	H - Requirement No. 3	WP7	6 - PAGNI	Ethics	Confidential, only for members of the consortium (including the Commission Services)	12
D7.2	POPD - Requirement No. 4	WP7	6 - PAGNI	Ethics	Confidential, only for members of the consortium (including the Commission Services)	1
D7.3	POPD - Requirement No. 9	WP7	6 - PAGNI	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6

### 1.3.3. WT3 Work package descriptions

<b>Work package number</b> <sup>9</sup>	WP1	<b>Lead beneficiary</b> <sup>10</sup>	1 - UMIL
<b>Work package title</b>	Project Management		
<b>Start month</b>	1	<b>End month</b>	48

#### Objectives

Co-ordinate all project activities, produce a quality assessment and monitoring plan for the project and ensure compliance with it, plan and facilitate communication within the consortium, and report on project progress and use of resources. WP1 will be implemented without secondments (as it is not related to research and training activities), through the contribution of additional PMs of effort from own resources of the partners.

#### Description of work and role of partners

**WP1 - Project Management** [Months: 1-48]

**UMIL**

Description of work and partners' role:

Task 1.1 - Project coordination & quality management [Duration: 01-48; Leader: UMIL]. Project coordination from an administrative perspective, interactions with external bodies including the EU, internal communications, and risk and quality management.

Task 1.2 - Project scientific and technical management [Duration: 01-48; Leader: UMIL]: Setting up and maintaining a coherent scientific and technical direction in the project, and appointing and running an external Scientific Advisory Board (SAB) to obtain feedback on project outcomes.

#### Participation per Partner

<b>Partner number and short name</b> <sup>10</sup>
1 - UMIL
2 - CITY
3 - CUT
4 - STS
5 - AEGIS
6 - PAGNI
7 - UPAT

#### List of deliverables

<b>Deliverable Number</b> <sup>14</sup>	<b>Deliverable Title</b>	<b>Lead beneficiary</b>	<b>Type</b> <sup>15</sup>	<b>Dissemination level</b> <sup>16</sup>	<b>Due Date (in months)</b> <sup>17</sup>
D1.1	Project quality plan	1 - UMIL	Report	Confidential, only for members of the consortium (including the Commission Services)	3
D1.2	Progress Report Year 1	1 - UMIL	Report	Confidential, only for members of the consortium (including	13



**List of deliverables**

<b>Deliverable Number<sup>14</sup></b>	<b>Deliverable Title</b>	<b>Lead beneficiary</b>	<b>Type<sup>15</sup></b>	<b>Dissemination level<sup>16</sup></b>	<b>Due Date (in months)<sup>17</sup></b>
				the Commission Services)	
D1.3	Progress Report Year 3	1 - UMIL	Report	Confidential, only for members of the consortium (including the Commission Services)	37
D1.4	Midterm Meeting	1 - UMIL	Report	Confidential, only for members of the consortium (including the Commission Services)	18

**Description of deliverables**

Deliverables in WP1 will define the quality assessment and the monitoring of project activities. A project quality plan will be produced to define the overall process for deliverables' production and reviewing, and general progress reports will be released to describe project achievements and progression.

D1.1 : Project quality plan [3]

Quality plan defining deliverable reviewing and approval process, ethics compliance procedures and standards/ processes for producing project deliverables and publications

D1.2 : Progress Report Year 1 [13]

Report of project's activities for the first year.

D1.3 : Progress Report Year 3 [37]

Report of project's activities for the third year.

D1.4 : Midterm Meeting [18]

This deliverable reports the activities of the secondments and the progress of the project as presented during the mid-term meeting

**Schedule of relevant Milestones**

<b>Milestone number<sup>18</sup></b>	<b>Milestone title</b>	<b>Lead beneficiary</b>	<b>Due Date (in months)</b>	<b>Means of verification</b>
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<b>Work package number</b> <sup>9</sup>	WP2	<b>Lead beneficiary</b> <sup>10</sup>	3 - CUT
<b>Work package title</b>	Requirements & Platform Design		
<b>Start month</b>	1	<b>End month</b>	12

### Objectives

Gather and analyse all requirements derived from the pilots; define and analyse the system requirements of the envisioned AERAS integrated platform; identify and provide critical updates in terms of available tools and technologies, arising in the period between proposal submission and project's initiation; design the initial architecture of the AERAS integrated platform.

### Description of work and role of partners

#### WP2 - Requirements & Platform Design [Months: 1-12]

##### CUT

Task 2.1 Healthcare Cyber Security Risk Management, and CSLAs requirements [PMs: 8, Duration: 01- 06: Leader: CITY]. Define and analyse the basic requirements for cyber security risk management, Threat analysis, as well as pertinent CSLA requirements within the healthcare sector. The work will consider different heterogeneous system deployments in the sector, as well as typical collaborations between healthcare stakeholders and responsibility-sharing for security/privacy.

Task 2.2 Cyber Range training requirements [PMs: 8, Duration: 01-06: Leader: AEGIS]: Define and analyse the cyber range training requirements, with input from key asset owners and stakeholders responsible for training/awareness programmes in the pilots. Also analyse and incorporate security training requirements stemming from standards (such as ISO 27001, IEC 62443) and from professional certifications such as ISACA CISA/CISM and the ISC2 CISSP.

Task 2.3 Specification of platform requirements & technology updates [PMs: 8, Duration: 03-09: Leader: STS]: Analyse the system requirements of the envisioned AERAS integrated platform and update the state of the art and practice on the key technology areas for AERAS from the one in this document with new work done between the proposal submission and project start.

Task 2.4 AERAS Architecture Design [PMs: 12, Duration: 06-12: Leader: CUT]: Develop and specify the initial version of the reference architecture for the AERAS platform, defining: (1) the platform components; (2) their interfaces and information flows; and (3) their functionalities. This task will provide guidelines for the following WPs, while any subsequent amendments to the initial architecture will be handled in T5.1 and documented in D5.1.

### Participation per Partner

<b>Partner number and short name</b> <sup>10</sup>
1 - UMIL
2 - CITY
3 - CUT
4 - STS
5 - AEGIS
6 - PAGNI
7 - UPAT

### List of deliverables

Deliverable Number <sup>14</sup>	Deliverable Title	Lead beneficiary	Type <sup>15</sup>	Dissemination level <sup>16</sup>	Due Date (in months) <sup>17</sup>
D2.1	Healthcare Pilots & Cyber Range Training Requirements Analysis Report	2 - CITY	Report	Public	6
D2.2	Platform Requirements and Technology Analysis Report	4 - STS	Report	Public	9
D2.3	AERAS Platform Initial Reference Architecture	3 - CUT	Report	Public	12

### Description of deliverables

Deliverables in WP2 will describe the general requirements derived from the pilots. The final deliverables of WP2 will contain the definition of the AERAS platform initial reference framework.

D2.1 : Healthcare Pilots & Cyber Range Training Requirements Analysis Report [6]

Requirements of the AERAS solution from the perspective of healthcare organisations and actors as arising in the project pilots and the wider domain from Task 2.1, as well as requirements pertaining to cyber range training in the healthcare domain and their relation to existing standards from Task 2.2.

D2.2 : Platform Requirements and Technology Analysis Report [9]

Platform requirements and an updated state of the art and practice for key technological building blocks.

D2.3 : AERAS Platform Initial Reference Architecture [12]

Initial definition of the AERAS platform.

### Schedule of relevant Milestones

Milestone number <sup>18</sup>	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	Requirements Release	2 - CITY	6	Requirements Release - Means of Verification: D2.1
MS2	Initial Reference Architecture Definition	3 - CUT	12	Initial Reference Architecture Definition - Means of Verification D2.3

<b>Work package number</b> <sup>9</sup>	WP3	<b>Lead beneficiary</b> <sup>10</sup>	4 - STS
<b>Work package title</b>	AERAS Models & Model-driven Cyber Range programmes creation		
<b>Start month</b>	6	<b>End month</b>	40

### Objectives

Develop a language and tool support for specifying CRSA models and programmes; develop reference CRSA models and programmes for the AERAS pilots; develop methodological and tool support for adapting CRSA models and programmes for new cyber threats and cyber-system changes; develop methodological and tool support for tailoring CRSA programmes to the needs of individual trainees.

### Description of work and role of partners

#### **WP3 - AERAS Models & Model-driven Cyber Range programmes creation** [Months: 6-40]

##### **STS**

Task 3.1 CRSA language definition and tool support [PMs: 16, Duration: 06-24: Leader: STS]: Develop the CRSA model specification language, based on schemes for specifying security assurance models for continuous and incremental certification, such as CUMULUS's XML schema. These will be extended to enable the specification of other parts of CRSA models, e.g., the cyber security assurance model (including CSLAs), and the emerging threats and incidents submodel. As part of these specifications, the language will need to support the specification of possible ways of simulating and emulating cyber-system components in order to realise a CRSAdriven CRST programme.

Task 3.2 CRSA-driven Cyber Range program development [PMs: 24, Duration: 09-40: Leader: STS]: Develop reference CRSA models and CRST programmes for the pilots. These models will use the Language developed in Task 3.1, so that they are in an executable form. Their development will be based on analysis of existing security assurance profiles (e.g., commoncriteriaportal.org/pps) and/or CPA commercial product assurance security schemes) for the targeted systems of the pilots, known threats for the different types of components of these systems, and the security controls that these systems use. The specification of CRST programmes (e.g., targeted trainee groups for particular types of threats and security mechanisms) will be driven by the pilot and cyber range requirements produced by T2.1 and T2.2.

Task 3.3 Adaptation of CRSA models to changes in threat landscape [PMs: 28, Duration: 09-40: Leader: STS]: Develop systematic procedures and tool support for adapting CRSA models/CRST programmes for new threats and/or changes in the targeted systems. Adaptation may need to cover different scenarios, including (i) changes in the type/scope of the attacks covered by CRSA models/programmes, (ii) the security controls available/in-use against these attacks, (iii) the type of response expected from trainees. The tool developed to support the adaptation process will offer: (a) basic forms of analysis of the impact that certain changes in some part of the programme will have on other parts (these will be based on the key relations between threats, attacks, system assets, risks, security controls that are specified in CRSA models/programmes); and (b) checks about the completeness (coverage) and consistency of the entire specification of CRSA models/programmes when some parts of them change (e.g., whether security controls for a threat are defined and if these controls depend on a component that is simulated in some other CRSA model).

Task 3.4 Hybrid Cyber Security Risk Analysis Models [PMs: 28, Duration: 09-40: Leader: CITY]: This task will focus on the definition of hybrid cyber security risk analysis models. These models will assess the possibility of occurrence of the different types of risks specified in the assurance models, by considering the cyber-system operations, adversary attacks, and the actions of the organisation stakeholders. The models will be hybrid as they will combine different types of assessment including pre-deployment assessments (static analysis, inspection, simulation, static testing) with post-deployment assessments (runtime monitoring and testing).

### Participation per Partner

<b>Partner number and short name</b> <sup>10</sup>
1 - UMIL
2 - CITY
3 - CUT
4 - STS

Partner number and short name <sup>10</sup>
5 - AEGIS
6 - PAGNI
7 - UPAT

#### List of deliverables

Deliverable Number <sup>14</sup>	Deliverable Title	Lead beneficiary	Type <sup>15</sup>	Dissemination level <sup>16</sup>	Due Date (in months) <sup>17</sup>
D3.1	CRSA Models and CRSA-driven Cyber Range programme specification language	4 - STS	Report	Public	24
D3.2	AERAS Models and CRSA-driven Cyber Range programme V1	2 - CITY	Report	Public	28
D3.3	AERAS Models and CRSA-driven Cyber Range programme V2	4 - STS	Report	Public	40

#### Description of deliverables

WP3 deliverables will define the structure of the CRSA model and the AERAS cyber-range programme specification language.

D3.1 : CRSA Models and CRSA-driven Cyber Range programme specification language [24]

Describe the specification language of CRSA models used to specify an organisation's infrastructure layers

D3.2 : AERAS Models and CRSA-driven Cyber Range programme V1 [28]

First version of the AERAS CRSA models (T3.2), and first version of the developed procedures supporting the dynamic and adaptive CRSA models, along with the first version of the hybrid risk analysis models (T3.4).

D3.3 : AERAS Models and CRSA-driven Cyber Range programme V2 [40]

Final version of D3.2

#### Schedule of relevant Milestones

Milestone number <sup>18</sup>	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS3	CRSA Language Definition	4 - STS	24	CRSA Language Definition - Means of Verification D3.1
MS4	AERAS Models & Components Release – V1	2 - CITY	28	AERAS Models & Components Release – V1 - Means of verification: D3.2, D4.1, D4.2
MS6	AERAS Models & Components Release – V2	1 - UMIL	40	AERAS Models & Components Release – V2 - Means of verification: D3.3, D4.3, D4.4

<b>Work package number</b> <sup>9</sup>	WP4	<b>Lead beneficiary</b> <sup>10</sup>	2 - CITY
<b>Work package title</b>	Key Components Development		
<b>Start month</b>	9	<b>End month</b>	40

### Objectives

Develop tools for the key enabling capabilities of the AERAS platform: (1) the Cyber Range tools; (2) the visualization tools; (3) the real-time trainee performance assessment and the CRSA programme evaluator; (4) the cyber system and CSLAs monitoring capabilities; and (5) the CRST programme adaptation mechanisms.

### Description of work and role of partners

#### WP4 - Key Components Development [Months: 9-40]

##### CITY

Task 4.1 Cyber Range & Simulation tools [PMs: 24, Duration: 09-40: Leader: CUT]: This task will focus on developing the Component Emulator, CRST Programme Generator, and Cyber System Simulator tools, as described in Sect. 2.1.5. In developing them, the task will take advantage of QEMU and Open Nebula. The capabilities of the emulation tools will be expanded to achieve automated generation and interconnection of emulated cyber-system components and attacks based on CRSA models.

Task 4.2 Visualisation tools [PMs: 24, Duration: 09-40: Leader: AEGIS]: The main target of this task is to design and develop a user-friendly visualisation environment for the AERAS training platform (i.e., the Visualiser tool in Sect. 2.1.5). This environment will help the trainees get a clear view of the cyber-system status and Attacks upon it and update this view in real time. It will also provide real-time customisation of the provided views. Visualisation will cover all the layers in the implementation stack of a cyber-system, use appropriate metaphors for different types of attacks and system components, and enable zoom-in and out views. The development will be based on the Advanced Visualization Toolkit of AEGIS.

Task 4.3 Real time trainee assessment & Cyber Range programmes Evaluation [PMs: 20, Duration: 09-40: Leader: UMIL]: This task will be concerned with the development the Trainee & Programme Performance Evaluator component of Sect. 2.1.5; i.e., the mechanisms for the evaluation of the effectiveness of CRST programmes and the programme and the individual trainee levels, in order to inform the continuous improvement of such programmes. Information regarding the above will also be collected from the real cyber-system where AERAS is deployed, the monitoring components developed in the context of Task 4.5.

Task 4.4 Real time Cyber Security Assurance Models, and CSLA monitoring [PMs: 20, Duration: 09-40: Leader: CITY]: This task deals with developing the AERAS Cyber System Continuous Monitoring Aggregator and its subcomponents (Training Performance Monitor, CSLA Monitor and Cyber System Multi-Layer Monitor), along with the Cyber System Real Rime Risk Evaluator, as defined in Sect. 2.1.5. The continuous monitoring components and aggregator will be based on the monitoring platform of CITY. The Cyber System Real Rime Risk Evaluator will incorporate hybrid risk assessment mechanisms as necessary to support hybrid risk assessment models (see Task 3.4) and will be developed based on the security analytics engine of STS.

Task 4.5 CRST programmes adaptation mechanisms [PMs: 20, Duration: 09-40: Leader: UMIL]: Develop the Programme Adaptor component of Sect. 2.1.5, which includesthe mechanisms to suggest adaptations to CRST programmes in response to evidence from trainee performance monitoring and the cyber system security status monitoring. Adaptations will be both at programme and individual trainee levels. The task will identify generic adaptation actions at both levels (e.g., to increase the attack rate and decrease the expected response time in training programmes, introduce multiple attacks, eliminate/add CSCs). The identification of appropriate actions at each level will be determined based on performance data collected as defined above. The selection of actions can be based on either monitoring information (e.g., a trainee can easily or cannot reach certain levels).

### Participation per Partner

#### Partner number and short name <sup>10</sup>

1 - UMIL

2 - CITY

Partner number and short name <sup>10</sup>
3 - CUT
4 - STS
5 - AEGIS
6 - PAGNI
7 - UPAT

#### List of deliverables

Deliverable Number <sup>14</sup>	Deliverable Title	Lead beneficiary	Type <sup>15</sup>	Dissemination level <sup>16</sup>	Due Date (in months) <sup>17</sup>
D4.1	AERAS Cyber Range Tools – V1	3 - CUT	Report	Public	28
D4.2	AERAS Monitoring, Assessment and Adaptation mechanisms – V1	1 - UMIL	Report	Public	28
D4.3	AERAS Cyber Range Tools – V2	5 - AEGIS	Report	Public	40
D4.4	AERAS Monitoring, Assessment and Adaptation mechanisms – V2	2 - CITY	Report	Public	40

#### Description of deliverables

WP4 deliverables will deal with the definition and releasing of AERAS cyber range tools and mechanism.

In particular, the development will follow an iterative process that will result in two subsequent versions of the tools and of the monitoring, assessment and adaption mechanisms deliverables.

D4.1 : AERAS Cyber Range Tools – V1 [28]

This document will describe the initial specification and implementation of the AERAS Cyber Range and simulation tools (from Task 4.1) and the visualization components (from Task 4.2).

D4.2 : AERAS Monitoring, Assessment and Adaptation mechanisms – V1 [28]

This document will provide the initial design of methods and mechanisms for assessing the performance of the Cyber Range trainees and the CRST evaluation (from Task 4.3). It will also include the initial specification and implementation of the cyber-system, and CSLA monitoring (from Task 4.4), as well as the communication interfaces and adaptation mechanisms that enable the adaptation of the AERAS platform, driven by feedback received from the corresponding internal components (from Task 4.5).

D4.3 : AERAS Cyber Range Tools – V2 [40]

Final version of D4.1.

D4.4 : AERAS Monitoring, Assessment and Adaptation mechanisms – V2 [40]

Final version of D4.2.

**Schedule of relevant Milestones**

<b>Milestone number<sup>18</sup></b>	<b>Milestone title</b>	<b>Lead beneficiary</b>	<b>Due Date (in months)</b>	<b>Means of verification</b>
MS4	AERAS Models & Components Release – V1	2 - CITY	28	AERAS Models & Components Release – V1 - Means of verification: D3.2, D4.1, D4.2
MS6	AERAS Models & Components Release – V2	1 - UMIL	40	AERAS Models & Components Release – V2 - Means of verification: D3.3, D4.3, D4.4



<b>Work package number</b> <sup>9</sup>	WP5	<b>Lead beneficiary</b> <sup>10</sup>	1 - UMIL
<b>Work package title</b>	Platform Integration, Pilots, and Validation		
<b>Start month</b>	24	<b>End month</b>	48

### Objectives

(a) Integrate all the tools and components defined in WP2 and developed in WP3 and WP4, in order to provide the integrated AERAS platform; test and ensure the quality of the platform; (b) define a framework of criteria for evaluating AERAS and visiting pilot sites for establishing baseline values for said evaluation; evaluate the proposed platform in terms of effectiveness, innovation, user experience and acceptance potential; (c) validate the benefits provided (to all involved stakeholders) by the developed platform and healthcare applications under a well-defined set of pilot environments, based on the identified target measures and assessment criteria.

### Description of work and role of partners

#### **WP5 - Platform Integration, Pilots, and Validation** [Months: 24-48]

##### **UMIL**

Task 5.1 Integration of tools and components and testing of integrated AERAS platform [PMs: 24, Duration: 24-44: Leader: UMIL] The focus will be on the integration, and delivery of the core AERAS platform. It will also develop the necessary mechanisms for securing the operation of the integrated platform itself. The integration will be in two phases and will involve the core AERAS tools and components developed in WP3 and WP4. The integration process will be driven and enabled by the architecture defined in WP2. This architecture may need to be refined to reflect and accommodate the exact implementations of components in WP3 and WP4. Any architecture amendments will accompany the two releases of the platform. The integrated version of the framework will provide the basis for evaluating the effectiveness of the AERAS approach in real life scenarios and trial applications in the healthcare domain targeted by the project.

Task 5.2 Pilots Evaluation Methodology & Setup [PMs: 16, Duration: 24-34: Leader: CITY]: Develop and specify the evaluation methodology and the associated KPIs that will be used to assess AERAS in the two pilots and beyond them. Define appropriate evaluation criteria that reflect the KPIs of the project, and the full set of requirements identified in WP2 for both the AERAS platform and its usage scenarios. The development of the evaluation methodology will cover: (i) controlled experiments for evaluating TRLs of the developed mechanisms of the AERAS platform, (ii) trial applications of the AERAS platform in the healthcare domain, and (iii) a cross checking methodology to assess the generality of the AERAS platform and approach in other vertical, critical domains. The exact pilot environment for each of the pilots will be specified alongside an AERAS Platform deployment plan for each pilot. The task will also prepare and submit ethics approval applications as required for carrying out the trials by each of the health sector partners. These partners will be responsible for preparing and submitting these applications based on the methodology developed. The task will also produce pilot execution plans (set of scenarios for each pilot, actors involved, overall time plan etc.). Pilot preparation activities will also be focused on: (i) preparation of guidelines and documentation to support pilot partners in organising the evaluation process, and (ii) visits to pilot sites to establish baseline values needed to evaluate the comparative (before/after) KPIs defined.

Task 5.3 Pilot validation - Smart Hospital Environment [PMs: 16, Duration: 28-48: Leader: UPAT]: Deploy the AERAS platform in the smart hospital environment pilot (UPAT's premises; see Sect. 2.1.5) and operate in realistic conditions within the organisational and technical environment of the specific pilot. For this purpose, the task will also provide all the necessary integration between the AERAS platform and the pilot. End-users will be directly involved in the pilot and will be trained in addressing advanced cyber security attacks through the AERAS cyber range platform, using the relevant CRSA programmes developed in WP3. The pilot will validate and evaluate the platform in 2 phases which will use the initial and final prototype of the integrated AERAS platform, respectively. Two separate reports of the outcomes of these two evaluation phases will be produced. The evaluation will cover all criteria specified in D5.2.

Task 5.4 Pilot validation - Healthcare Authority [PMs: 16, Duration: 28-48: Leader: PAGNI]: Same as Task 5.3 but for Pilot 2 (PAGNI; see Sect. 2.1.5).

### Participation per Partner

Partner number and short name <sup>10</sup>
1 - UMIL
2 - CITY
3 - CUT
4 - STS
5 - AEGIS
6 - PAGNI
7 - UPAT

#### List of deliverables

Deliverable Number <sup>14</sup>	Deliverable Title	Lead beneficiary	Type <sup>15</sup>	Dissemination level <sup>16</sup>	Due Date (in months) <sup>17</sup>
D5.1	Initial Prototype of integrated AERAS platform	1 - UMIL	Report	Public	34
D5.2	AERAS Evaluation Framework and Pilot Set Up Guidelines	2 - CITY	Report	Public	34
D5.3	AERAS initial prototype pilot validation report	7 - UPAT	Report	Public	36
D5.4	Final Prototype of integrated AERAS platform	1 - UMIL	Report	Public	44
D5.5	AERAS final prototype pilot validation report	6 - PAGNI	Report	Public	46
D5.6	Final AERAS evaluation report	1 - UMIL	Report	Public	48

#### Description of deliverables

The integration activities executed in WP5 will release the initial and final prototypes of the AERAS framework, along with evaluation and pilot set up guidelines.

D5.1 : Initial Prototype of integrated AERAS platform [34]

Initial version of the integration AERAS platform involving all the components of WP3 and WP4 developed until M30. It will also include the results of the quality assurance and technical testing on the initial prototype of the integrated AERAS platform

D5.2 : AERAS Evaluation Framework and Pilot Set Up Guidelines [34]

Define the refined set of KPIs, criteria and methodology to evaluate the AERAS platform. Provide detailed guidelines and documentation to support the piloting phase. Also includes the ethics approval applications.

D5.3 : AERAS initial prototype pilot validation report [36]

Initial report on the validation of the initial AERAS prototype in the context of each pilot environments covered in the project.

D5.4 : Final Prototype of integrated AERAS platform [44]

Final version of the integration AERAS platform involving all the components of WP3 and WP4 developed until M42. It will also include the results of the quality assurance and technical testing on the final prototype of the integrated AERAS platform

D5.5 : AERAS final prototype pilot validation report [46]

Final report on the validation of the final AERAS prototype in the context of each pilot environments covered in the project.

D5.6 : Final AERAS evaluation report [48]

Final evaluation report of the AERAS platform, extending the results of the individual pilot evaluations with cross-cutting issues, trends and effectiveness results, spanning all pilots, as well as the applicability of the solution to different critical domains.

#### Schedule of relevant Milestones

Milestone number <sup>18</sup>	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS5	AERAS Prototype Integration and Pilot validation	7 - UPAT	36	AERAS Prototype Integration and Pilot validation - Means of verification: D5.1, D5.2, D5.3
MS7	Final AERAS Platform Pilot validation	6 - PAGNI	46	Final AERAS Platform Pilot validation - Means of verification: D5.4, D5.5

<b>Work package number</b> <sup>9</sup>	WP6	<b>Lead beneficiary</b> <sup>10</sup>	5 - AEGIS
<b>Work package title</b>	Communication, Dissemination, Impact Creation		
<b>Start month</b>	1	<b>End month</b>	48

### Objectives

To raise awareness about the project concept, developments and findings to all key stakeholders; to develop the dissemination and communication strategy of the project, including social presence, participation in EU events, collaboration with other related projects; and implement it. WP6 will be implemented without secondments (as it is not related to research and training activities), through the contribution of additional PMs of effort from own resources of the partners.

### Description of work and role of partners

**WP6 - Communication, Dissemination, Impact Creation** [Months: 1-48]

**AEGIS**

Task 6.1 Dissemination & Communication activities [Duration: 01-48: Leader: CUT]: Planning and carrying out the dissemination and communication activities of the project, as outlined in sections 3.3.1 and 3.4, respectively.

Task 6.2 Impact creation & Exploitation activities [Duration: 06-48: Leader: AEGIS] Planning and carrying out activities for assessing and enabling the impact and exploitation potential of AERAS based on the approach discussed in Sect. 3.

### Participation per Partner

<b>Partner number and short name</b> <sup>10</sup>
1 - UMIL
2 - CITY
3 - CUT
4 - STS
5 - AEGIS
6 - PAGNI
7 - UPAT

### List of deliverables

<b>Deliverable Number</b> <sup>14</sup>	<b>Deliverable Title</b>	<b>Lead beneficiary</b>	<b>Type</b> <sup>15</sup>	<b>Dissemination level</b> <sup>16</sup>	<b>Due Date (in months)</b> <sup>17</sup>
D6.1	Dissemination and Communication Plan	5 - AEGIS	Report	Public	12

### Description of deliverables

the deliverable in WP6 will describe the general communication and dissemination strategy of the project.

Specific dissemination, exploitation, and communication activities will be described in the interim (end of year 2) and final (end of year 4) project reports.

D6.1 : Dissemination and Communication Plan [12]

Description of the planned dissemination and communication activities and channels

Schedule of relevant Milestones

<b>Milestone number<sup>18</sup></b>	<b>Milestone title</b>	<b>Lead beneficiary</b>	<b>Due Date (in months)</b>	<b>Means of verification</b>
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<b>Work package number</b> <sup>9</sup>	WP7	<b>Lead beneficiary</b> <sup>10</sup>	1 - UMIL
<b>Work package title</b>	Ethics requirements		
<b>Start month</b>	1	<b>End month</b>	48

### Objectives

The objective is to ensure compliance with the 'ethics requirements' set out in this work package.

### Description of work and role of partners

**WP7 - Ethics requirements** [Months: 1-48]

**UMIL**

This work package sets out the 'ethics requirements' that the project must comply with.

### List of deliverables

<b>Deliverable Number</b> <sup>14</sup>	<b>Deliverable Title</b>	<b>Lead beneficiary</b>	<b>Type</b> <sup>15</sup>	<b>Dissemination level</b> <sup>16</sup>	<b>Due Date (in months)</b> <sup>17</sup>
D7.1	H - Requirement No. 3	6 - PAGNI	Ethics	Confidential, only for members of the consortium (including the Commission Services)	12
D7.2	POPD - Requirement No. 4	6 - PAGNI	Ethics	Confidential, only for members of the consortium (including the Commission Services)	1
D7.3	POPD - Requirement No. 9	6 - PAGNI	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6

### Description of deliverables

The 'ethics requirements' that the project must comply with are included as deliverables in this work package.

D7.1 : H - Requirement No. 3 [12]

All required opinions/approvals by ethics committees and/or competent authorities for the research with humans must be obtained before starting the relevant activity, kept on file and submitted upon request.

D7.2 : POPD - Requirement No. 4 [1]

The host institution must confirm that it has appointed a Data Protection Officer (DPO) and the contact details of the DPO are made available to all data subjects involved in the research. For host institutions not required to appoint a DPO under the GDPR a detailed data protection policy for the project must be submitted as a deliverable.

D7.3 : POPD - Requirement No. 9 [6]

The beneficiary must evaluate the ethics risks related to the data processing activities of the project. This includes also an opinion if data protection impact assessment should be conducted under art.35 General Data Protection Regulation 2016/679. The risk evaluation and the opinion must be submitted as a deliverable.

Schedule of relevant Milestones

<b>Milestone number<sup>18</sup></b>	<b>Milestone title</b>	<b>Lead beneficiary</b>	<b>Due Date (in months)</b>	<b>Means of verification</b>
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### 1.3.4. WT4 List of milestones

<b>Milestone number<sup>18</sup></b>	<b>Milestone title</b>	<b>WP number<sup>9</sup></b>	<b>Lead beneficiary</b>	<b>Due Date (in months)<sup>17</sup></b>	<b>Means of verification</b>
MS1	Requirements Release	WP2	2 - CITY	6	Requirements Release - Means of Verification: D2.1
MS2	Initial Reference Architecture Definition	WP2	3 - CUT	12	Initial Reference Architecture Definition - Means of Verification D2.3
MS3	CRSA Language Definition	WP3	4 - STS	24	CRSA Language Definition - Means of Verification D3.1
MS4	AERAS Models & Components Release – V1	WP3, WP4	2 - CITY	28	AERAS Models & Components Release – V1 - Means of verification: D3.2, D4.1, D4.2
MS5	AERAS Prototype Integration and Pilot validation	WP5	7 - UPAT	36	AERAS Prototype Integration and Pilot validation - Means of verification: D5.1, D5.2, D5.3
MS6	AERAS Models & Components Release – V2	WP3, WP4	1 - UMIL	40	AERAS Models & Components Release – V2 - Means of verification: D3.3, D4.3, D4.4
MS7	Final AERAS Platform Pilot validation	WP5	6 - PAGNI	46	Final AERAS Platform Pilot validation - Means of verification: D5.4, D5.5



### 1.3.5. WT5 Critical Implementation risks and mitigation actions

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
1	Project schedule is partly not appropriate	WP1, WP2, WP3, WP4, WP5, WP6, WP7	The project management will continuously monitor performed work vs. project plan (see WP1 and Sect. 3.2) and are entitled to perform corrective actions – change of the project plan – if necessary, which also apply for this case (see also below). In crucial cases, the PM will work on the plan adaptation in close cooperation with the EC.
2	Project milestones or deliverables are delayed	WP1, WP2, WP3, WP4, WP5, WP6, WP7	In the scope of project management monitoring activities (see Sect. 4.2.1 above), detailed analysis will be done on both global project and lower (WP/Task) project implementation levels. Thus, it will be ensured that such cases are recognized in early stages, ensuring time
3	Not satisfactory interaction among WP's and tasks	WP1, WP2, WP3, WP4, WP5, WP6, WP7	The regular synchronisation of work among WP's (as well as among tasks within WP's) will be performed in the scope of project management activities (Sect. 3.2), so that these cases should not occur or should be timely recognized allowing implementation of corrective actions without significant impact on the project plan. If the problems continue, the PM together with STIPM and WP leaders will analyse problems in interactions and propose additional procedures for improvement of the interactions.
4	Necessary coordination level is not achieved	WP1, WP2, WP3, WP4, WP5, WP6, WP7	Like it will be done for monitoring of the technical project activities, including analysis of work done and implementation of the corrective actions, the project coordination and management will be observed as well. Thus, if necessary the responsible management bodies will propose the corrective actions improving overall project coordination. If needed, management of the Coordinator organisation will be involved to solve the problems.
5	Problems in integrating components in a common platform	WP5	A four-staged cycle approach will be followed for the implementation, with two integrated prototype release and piloting phases, to ensure efficient integration; AERAS technical partners have significant expertise in platforms' integration.
6	The training platform is not user-friendly	WP4, WP5	Advanced visualisation techniques will be utilized by highly experienced partners in this area (AEGIS) to ensure the training platform is user-friendly. Moreover, the tight collaboration and interaction with the end-users (PAGNI, AMRC) and the early pilot preparation will ensure such risks will be addressed on time if materialised.
7	Prototype Architecture not compatible with Pilot sites	WP5	While the baseline architecture is defined relatively early (D2.3, M12), this will be revised in the integration phase (see Task 5.1), while the early preparation for the piloting phase and the

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
			early prototype validation (T5.4-T5.5) will ensure timely adaptations, if needed.
8	Difficulties in validating defined KPIs	WP5	To ensure proper validation of all AERAS KPIs, these will be considered when defining the testing specifications (T5.3), but also during the Pilots' preparatory (T5.2), and validation (T5.5-T5.6) activities
9	Not enough stakeholders are reached to exploit AERAS & ensure sustainability	WP6	Specific tasks (T6.1, T6.2) focus on stakeholders' engagement; all AERAS partners have existing communication channels to ensure the project's sustainability. Moreover, the dissemination activities will be used to approach stakeholders and get early feedback on the suitability and attractiveness of the platform, adjusting the final release accordingly.
10	Delay in the implementation of secondments	WP1, WP2, WP3, WP4, WP5, WP6, WP7	Secondments' implementation will be monitored by a designated person at the level of each participant. At project level, the Coordinator will organise Skype meetings every 1-2 months to discuss the monitoring of secondments and collect any information about possible identified delays at participants' level, both at sending and hosting institutions. On the other hand, each Participant takes responsibility that the secondments take place as planned and reports immediately or maximum 2 months prior to the scheduled secondment any possible deviation to the Coordinator. Once a potential delay is identified, action plans will be agreed at Consortium level or by the Steering Committee (where is the case). The Coordinator will inform REA about the solution found. For secondments in third countries, the beneficiary will identify in time the human resources to be seconded and the necessity of visa. In order to avoid visa issues, administrative support and follow-up needs to be put in place several months prior to the scheduled secondment, so that the visa is obtained on time. A chapter specifically dedicated to this risk and the method to implement upfront monitoring and continuous reporting will be included in the Consortium Agreement and in the Partnership Agreement accordingly.
11	Withdrawal of participants	WP1	If possible, another participant from the consortium will carry out the tasks/WP of the withdrawing one. If not, a new entity with the same specific expertise could be included in the project upon agreement of REA.

*1.3.6. WT6 Summary of project effort contribution*

	<b>WP1</b>	<b>WP2</b>	<b>WP3</b>	<b>WP4</b>	<b>WP5</b>	<b>WP6</b>	<b>WP7</b>
1 - UMIL	✓	✓	✓	✓	✓	✓	✓
2 - CITY	✓	✓	✓	✓	✓	✓	
3 - CUT	✓	✓	✓	✓	✓	✓	
4 - STS	✓	✓	✓	✓	✓	✓	
5 - AEGIS	✓	✓	✓	✓	✓	✓	
6 - PAGNI	✓	✓	✓	✓	✓	✓	
7 - UPAT	✓	✓	✓	✓	✓	✓	

### *1.3.7. WT7 Tentative schedule of project reviews*

No project reviews indicated

## 1.4. List of Partner Organisations

No Partner Organisations indicated

## 1.5. Secondments

### 1.5.1. Summary of secondments per Participant

Partner number	Partner short name	Country	EU/AC or TC	Academic sector	Total Number of secondments	Total Researcher Months Period 1	Total Researcher Months Period 2	Total Researcher Months Overall	Total Researcher Months (%)
1	UMIL	Italy	EU/AC	Yes	12	30.00	18.00	48.00	15.38%
2	CITY	United Kingdom	EU/AC	Yes	12	28.00	20.00	48.00	15.38%
3	CUT	Cyprus	EU/AC	Yes	12	24.00	24.00	48.00	15.38%
4	STS	Switzerland	EU/AC	No	15	28.00	32.00	60.00	19.23%
5	AEGIS	Germany	EU/AC	No	6	9.00	15.00	24.00	7.69%
6	PAGNI	Greece	EU/AC	No	12	18.00	30.00	48.00	15.38%
7	UPAT	Greece	EU/AC	Yes	9	8.00	28.00	36.00	11.54%
<b>TOTAL</b>					<b>78</b>	<b>145.00</b>	<b>167.00</b>	<b>312.00</b>	<b>100.00%</b>

### 1.5.2. Summary of secondments funded by EU per Beneficiary

(secondments from the Beneficiary and from funded Partner Organisations to the Beneficiary)

Partner number	Partner short name	Country	Number of secondments funded by EU	Researcher Months funded by EU Period 1	Researcher Months funded by EU Period 2	Researcher Months funded by EU Overall
1	UMIL	Italy	12	30.00	18.00	48.00
2	CITY	United Kingdom	12	28.00	20.00	48.00
3	CUT	Cyprus	12	24.00	24.00	48.00
4	STS	Switzerland	15	28.00	32.00	60.00
5	AEGIS	Germany	6	9.00	15.00	24.00
6	PAGNI	Greece	12	18.00	30.00	48.00
7	UPAT	Greece	9	8.00	28.00	36.00
<b>TOTAL</b>			<b>78</b>	<b>145.00</b>	<b>167.00</b>	<b>312.00</b>

### 1.5.3. Secondments plan

Overview of secondments

Staff member ID	Staff member profile	Sending Org. (Short Name)	Sending Org. (Country)	Sending Org. (Region)	Sending Org. (Academic Sector)	Seconded to Org. (Short Name)	Seconded to Org. (Country)	Seconded to Org. (Region)	Seconded to Org. (Academic Sector)	Work package number	Secondment Starting month	Duration of secondment (researcher-months)
1	ER	UMIL	IT	EU/AC	yes	STS	CH	EU/AC	no	WP2	7	4
1	ER	UMIL	IT	EU/AC	yes	AEGIS	DE	EU/AC	no	WP4	16	4

Staff member ID	Staff member profile	Sending Org. (Short Name)	Sending Org. (Country)	Sending Org. (Region)	Sending Org. (Academic Sector)	Seconded to Org. (Short Name)	Seconded to Org. (Country)	Seconded to Org. (Region)	Seconded to Org. (Academic Sector)	Work package number	Secondment Starting month	Duration of secondment (researcher-months)
1	ER	UMIL	IT	EU/AC	yes	PAGNI	EL	EU/AC	no	WP4	31	4
2	ER	UMIL	IT	EU/AC	yes	PAGNI	EL	EU/AC	no	WP3	9	4
2	ER	UMIL	IT	EU/AC	yes	AEGIS	DE	EU/AC	no	WP3	15	4
2	ER	UMIL	IT	EU/AC	yes	STS	CH	EU/AC	no	WP5	24	4
3	ER	UMIL	IT	EU/AC	yes	AEGIS	DE	EU/AC	no	WP3	6	4
3	ER	UMIL	IT	EU/AC	yes	PAGNI	EL	EU/AC	no	WP4	20	4
3	ER	UMIL	IT	EU/AC	yes	STS	CH	EU/AC	no	WP3	32	4
4	ESR	UMIL	IT	EU/AC	yes	STS	CH	EU/AC	no	WP4	14	4
4	ESR	UMIL	IT	EU/AC	yes	PAGNI	EL	EU/AC	no	WP5	24	4
4	ESR	UMIL	IT	EU/AC	yes	AEGIS	DE	EU/AC	no	WP5	28	4
5	ER	CITY	UK	EU/AC	yes	STS	CH	EU/AC	no	WP2	8	4
5	ER	CITY	UK	EU/AC	yes	AEGIS	DE	EU/AC	no	WP4	19	4
5	ER	CITY	UK	EU/AC	yes	PAGNI	EL	EU/AC	no	WP5	27	4
6	ER	CITY	UK	EU/AC	yes	AEGIS	DE	EU/AC	no	WP4	15	4
6	ER	CITY	UK	EU/AC	yes	PAGNI	EL	EU/AC	no	WP5	28	4
6	ER	CITY	UK	EU/AC	yes	STS	CH	EU/AC	no	WP5	40	4
7	ER	CITY	UK	EU/AC	yes	STS	CH	EU/AC	no	WP3	9	4
7	ER	CITY	UK	EU/AC	yes	AEGIS	DE	EU/AC	no	WP3	20	4
7	ER	CITY	UK	EU/AC	yes	PAGNI	EL	EU/AC	no	WP4	37	4
8	ER	CITY	UK	EU/AC	yes	STS	CH	EU/AC	no	WP4	9	4
8	ER	CITY	UK	EU/AC	yes	PAGNI	EL	EU/AC	no	WP3	15	4
8	ER	CITY	UK	EU/AC	yes	AEGIS	DE	EU/AC	no	WP4	25	4
9	ER	CUT	CY	EU/AC	yes	PAGNI	EL	EU/AC	no	WP2	3	4
9	ER	CUT	CY	EU/AC	yes	AEGIS	DE	EU/AC	no	WP4	9	4
9	ER	CUT	CY	EU/AC	yes	STS	CH	EU/AC	no	WP5	30	4
10	ER	CUT	CY	EU/AC	yes	STS	CH	EU/AC	no	WP3	11	4
10	ER	CUT	CY	EU/AC	yes	AEGIS	DE	EU/AC	no	WP4	31	4
10	ER	CUT	CY	EU/AC	yes	PAGNI	EL	EU/AC	no	WP5	45	4
11	ER	CUT	CY	EU/AC	yes	STS	CH	EU/AC	no	WP3	15	4
11	ER	CUT	CY	EU/AC	yes	AEGIS	DE	EU/AC	no	WP5	33	4
11	ER	CUT	CY	EU/AC	yes	PAGNI	EL	EU/AC	no	WP4	37	4
12	ESR	CUT	CY	EU/AC	yes	STS	CH	EU/AC	no	WP3	9	4
12	ESR	CUT	CY	EU/AC	yes	PAGNI	EL	EU/AC	no	WP4	20	4
12	ESR	CUT	CY	EU/AC	yes	AEGIS	DE	EU/AC	no	WP3	29	4
13	ER	STS	CH	EU/AC	no	CITY	UK	EU/AC	yes	WP2	9	4

Staff member ID	Staff member profile	Sending Org. (Short Name)	Sending Org. (Country)	Sending Org. (Region)	Sending Org. (Academic Sector)	Seconded to Org. (Short Name)	Seconded to Org. (Country)	Seconded to Org. (Region)	Seconded to Org. (Academic Sector)	Work package number	Secondment Starting month	Duration of secondment (researcher-months)
13	ER	STS	CH	EU/AC	no	UMIL	IT	EU/AC	yes	WP3	26	4
13	ER	STS	CH	EU/AC	no	CUT	CY	EU/AC	yes	WP4	37	4
14	ER	STS	CH	EU/AC	no	UPAT	EL	EU/AC	yes	WP2	6	4
14	ER	STS	CH	EU/AC	no	CITY	UK	EU/AC	yes	WP3	16	4
14	ER	STS	CH	EU/AC	no	UMIL	IT	EU/AC	yes	WP3	25	4
15	ER	STS	CH	EU/AC	no	CUT	CY	EU/AC	yes	WP4	14	4
15	ER	STS	CH	EU/AC	no	CITY	UK	EU/AC	yes	WP5	32	4
15	ER	STS	CH	EU/AC	no	UPAT	EL	EU/AC	yes	WP5	39	4
16	ESR	STS	CH	EU/AC	no	UMIL	IT	EU/AC	yes	WP4	20	4
16	ESR	STS	CH	EU/AC	no	CUT	CY	EU/AC	yes	WP4	26	4
16	ESR	STS	CH	EU/AC	no	UPAT	EL	EU/AC	yes	WP3	37	4
17	ER	AEGIS	DE	EU/AC	no	UPAT	EL	EU/AC	yes	WP2	1	4
17	ER	AEGIS	DE	EU/AC	no	CITY	UK	EU/AC	yes	WP4	15	4
17	ER	AEGIS	DE	EU/AC	no	CUT	CY	EU/AC	yes	WP4	25	4
18	ESR	STS	CH	EU/AC	no	UMIL	IT	EU/AC	yes	WP4	9	4
18	ESR	STS	CH	EU/AC	no	UPAT	EL	EU/AC	yes	WP5	21	4
18	ESR	STS	CH	EU/AC	no	CITY	UK	EU/AC	yes	WP3	29	4
19	ESR	AEGIS	DE	EU/AC	no	CUT	CY	EU/AC	yes	WP5	24	4
19	ESR	AEGIS	DE	EU/AC	no	UMIL	IT	EU/AC	yes	WP3	31	4
19	ESR	AEGIS	DE	EU/AC	no	UPAT	EL	EU/AC	yes	WP5	45	4
20	ER	PAGNI	EL	EU/AC	no	UMIL	IT	EU/AC	yes	WP2	1	4
20	ER	PAGNI	EL	EU/AC	no	CITY	UK	EU/AC	yes	WP3	21	4
20	ER	PAGNI	EL	EU/AC	no	CUT	CY	EU/AC	yes	WP4	31	4
21	ER	PAGNI	EL	EU/AC	no	CITY	UK	EU/AC	yes	WP2	3	4
21	ER	PAGNI	EL	EU/AC	no	UMIL	IT	EU/AC	yes	WP4	9	4
21	ER	PAGNI	EL	EU/AC	no	CUT	CY	EU/AC	yes	WP4	30	4
22	ESR	PAGNI	EL	EU/AC	no	UMIL	IT	EU/AC	yes	WP4	23	4
22	ESR	PAGNI	EL	EU/AC	no	CITY	UK	EU/AC	yes	WP4	32	4
22	ESR	PAGNI	EL	EU/AC	no	CUT	CY	EU/AC	yes	WP3	37	4
23	ESR	PAGNI	EL	EU/AC	no	CUT	CY	EU/AC	yes	WP5	26	4
23	ESR	PAGNI	EL	EU/AC	no	UMIL	IT	EU/AC	yes	WP3	33	4
23	ESR	PAGNI	EL	EU/AC	no	CITY	UK	EU/AC	yes	WP5	40	4
24	ER	UPAT	EL	EU/AC	yes	STS	CH	EU/AC	no	WP2	3	4
24	ER	UPAT	EL	EU/AC	yes	AEGIS	DE	EU/AC	no	WP5	33	4
24	ER	UPAT	EL	EU/AC	yes	AEGIS	DE	EU/AC	no	WP3	37	4



Staff member ID	Staff member profile	Sending Org. (Short Name)	Sending Org. (Country)	Sending Org. (Region)	Sending Org. (Academic Sector)	Seconded to Org. (Short Name)	Seconded to Org. (Country)	Seconded to Org. (Region)	Seconded to Org. (Academic Sector)	Work package number	Secondment Starting month	Duration of secondment (researcher-months)
25	ER	UPAT	EL	EU/AC	yes	AEGIS	DE	EU/AC	no	WP3	27	4
25	ER	UPAT	EL	EU/AC	yes	AEGIS	DE	EU/AC	no	WP5	31	4
25	ER	UPAT	EL	EU/AC	yes	STS	CH	EU/AC	no	WP4	37	4
26	ER	UPAT	EL	EU/AC	yes	STS	CH	EU/AC	no	WP3	21	4
26	ER	UPAT	EL	EU/AC	yes	STS	CH	EU/AC	no	WP3	32	4
26	ER	UPAT	EL	EU/AC	yes	STS	CH	EU/AC	no	WP4	37	4

Plan for reporting period 1

Staff member ID	Secondment Starting month	Duration of secondment (researcher-months)	Period 1																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	7	4																								
1	16	4																								
1	31	4																								
2	9	4																								
2	15	4																								
2	24	4																								
3	6	4																								
3	20	4																								
3	32	4																								
4	14	4																								
4	24	4																								
4	28	4																								
5	8	4																								
5	19	4																								
5	27	4																								
6	15	4																								
6	28	4																								
6	40	4																								
7	9	4																								
7	20	4																								
7	37	4																								
8	9	4																								
8	15	4																								

Staff member ID	Secondment Starting month	Duration of secondment (researcher-months)	Period 1																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
8	25	4																								
9	3	4																								
9	9	4																								
9	30	4																								
10	11	4																								
10	31	4																								
10	45	4																								
11	15	4																								
11	33	4																								
11	37	4																								
12	9	4																								
12	20	4																								
12	29	4																								
13	9	4																								
13	26	4																								
13	37	4																								
14	6	4																								
14	16	4																								
14	25	4																								
15	14	4																								
15	32	4																								
15	39	4																								
16	20	4																								
16	26	4																								
16	37	4																								
17	1	4																								
17	15	4																								
17	25	4																								
18	9	4																								
18	21	4																								
18	29	4																								
19	24	4																								
19	31	4																								
19	45	4																								

Staff member ID	Secondment Starting month	Duration of secondment (researcher-months)	Period 1																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
20	1	4	█	█	█																					
20	21	4																					█	█	█	
20	31	4																								
21	3	4			█	█	█	█																		
21	9	4								█	█	█	█													
21	30	4																								
22	23	4																						█	█	
22	32	4																								
22	37	4																								
23	26	4																								
23	33	4																								
23	40	4																								
24	3	4			█	█	█	█																		
24	33	4																								
24	37	4																								
25	27	4																								
25	31	4																								
25	37	4																								
26	21	4																					█	█	█	
26	32	4																								
26	37	4																								

Plan for reporting period 2

Staff member ID	Secondment Starting month	Duration of secondment (researcher-months)	Period 2																							
			25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
1	7	4																								
1	16	4																								
1	31	4								█	█	█	█													
2	9	4																								
2	15	4																								
2	24	4	█	█	█	█																				
3	6	4																								

Staff member ID	Secondment Starting month	Duration of secondment (researcher-months)	Period 2																							
			25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
3	20	4																								
3	32	4																								
4	14	4																								
4	24	4																								
4	28	4																								
5	8	4																								
5	19	4																								
5	27	4																								
6	15	4																								
6	28	4																								
6	40	4																								
7	9	4																								
7	20	4																								
7	37	4																								
8	9	4																								
8	15	4																								
8	25	4																								
9	3	4																								
9	9	4																								
9	30	4																								
10	11	4																								
10	31	4																								
10	45	4																								
11	15	4																								
11	33	4																								
11	37	4																								
12	9	4																								
12	20	4																								
12	29	4																								
13	9	4																								
13	26	4																								
13	37	4																								
14	6	4																								
14	16	4																								

Staff member ID	Secondment Starting month	Duration of secondment (researcher-months)	Period 2																							
			25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
14	25	4	█	█	█																					
15	14	4																								
15	32	4									█	█	█	█												
15	39	4																█	█	█	█					
16	20	4																								
16	26	4		█	█	█	█																			
16	37	4														█	█	█	█							
17	1	4																								
17	15	4																								
17	25	4	█	█	█	█																				
18	9	4																								
18	21	4																								
18	29	4						█	█	█	█															
19	24	4	█	█	█	█																				
19	31	4									█	█	█	█												
19	45	4																					█	█	█	
20	1	4																								
20	21	4																								
20	31	4										█	█	█	█											
21	3	4																								
21	9	4																								
21	30	4							█	█	█	█														
22	23	4	█	█	█																					
22	32	4										█	█	█	█											
22	37	4														█	█	█	█							
23	26	4		█	█	█	█																			
23	33	4										█	█	█	█											
23	40	4																	█	█	█	█				
24	3	4																								
24	33	4											█	█	█	█										
24	37	4														█	█	█	█							
25	27	4			█	█	█	█																		
25	31	4										█	█	█	█											
25	37	4														█	█	█	█							

Staff member ID	Secondment Starting month	Duration of secondment (researcher-months)	Period 2																							
			25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
26	21	4																								
26	32	4																								
26	37	4																								

## **1. Project number**

The project number has been assigned by the Commission as the unique identifier for your project. It cannot be changed. The project number **should appear on each page of the grant agreement preparation documents (part A and part B)** to prevent errors during its handling.

## **2. Project acronym**

Use the project acronym as given in the submitted proposal. It can generally not be changed. The same acronym **should appear on each page of the grant agreement preparation documents (part A and part B)** to prevent errors during its handling.

## **3. Project title**

Use the title (preferably no longer than 200 characters) as indicated in the submitted proposal. Minor corrections are possible if agreed during the preparation of the grant agreement.

## **4. Starting date**

Unless a specific (fixed) starting date is duly justified and agreed upon during the preparation of the Grant Agreement, the project will start on the first day of the month following the entry into force of the Grant Agreement (NB : entry into force = signature by the Commission). Please note that if a fixed starting date is used, you will be required to provide a written justification.

## **5. Duration**

Insert the duration of the project in full months.

## **6. Call (part) identifier**

The Call (part) identifier is the reference number given in the call or part of the call you were addressing, as indicated in the publication of the call in the Official Journal of the European Union. You have to use the identifier given by the Commission in the letter inviting to prepare the grant agreement.

## **7. Abstract**

## **8. Project Entry Month**

The month at which the participant joined the consortium, month 1 marking the start date of the project, and all other start dates being relative to this start date.

## **9. Work Package number**

Work package number: WP1, WP2, WP3, ..., WPn

## **10. Lead beneficiary**

This must be one of the beneficiaries in the grant (not a third party) - Number of the beneficiary leading the work in this work package

## **11. Person-months per work package**

The total number of person-months allocated to each work package.

## **12. Start month**

Relative start date for the work in the specific work packages, month 1 marking the start date of the project, and all other start dates being relative to this start date.

## **13. End month**

Relative end date, month 1 marking the start date of the project, and all end dates being relative to this start date.

## **14. Deliverable number**

Deliverable numbers: D1 - Dn

## **15. Type**

Please indicate the type of the deliverable using one of the following codes:

R Document, report  
DEM Demonstrator, pilot, prototype  
DEC Websites, patent filings, videos, etc.  
OTHER  
ETHICS Ethics requirement  
ORDP Open Research Data Pilot

## **16. Dissemination level**

Please indicate the dissemination level using one of the following codes:

PU Public  
CO Confidential, only for members of the consortium (including the Commission Services)  
EU-RES Classified Information: RESTREINT UE (Commission Decision 2005/444/EC)  
EU-CON Classified Information: CONFIDENTIEL UE (Commission Decision 2005/444/EC)  
EU-SEC Classified Information: SECRET UE (Commission Decision 2005/444/EC)

**17. Delivery date for Deliverable**

Month in which the deliverables will be available, month 1 marking the start date of the project, and all delivery dates being relative to this start date.

**18. Milestone number**

Milestone number: MS1, MS2, ..., MSn

**19. Review number**

Review number: RV1, RV2, ..., RVn

**20. Installation Number**

Number progressively the installations of a same infrastructure. An installation is a part of an infrastructure that could be used independently from the rest.

**21. Installation country**

Code of the country where the installation is located or IO if the access provider (the beneficiary or linked third party) is an international organization, an ERIC or a similar legal entity.

**22. Type of access**

VA if virtual access,  
TA-uc if trans-national access with access costs declared on the basis of unit cost,  
TA-ac if trans-national access with access costs declared as actual costs, and  
TA-cb if trans-national access with access costs declared as a combination of actual costs and costs on the basis of unit cost.

**23. Access costs**

Cost of the access provided under the project. For virtual access fill only the second column. For trans-national access fill one of the two columns or both according to the way access costs are declared. Trans-national access costs on the basis of unit cost will result from the unit cost by the quantity of access to be provided.