

Host and Resource Provision Agreement **for the implementation of the** **AnaEE-ERIC Data and Modelling Centre (DMC)**

Between

The Analysis and Experimentation on Ecosystems - European Research Infrastructure Consortium,

Established by the EU Commission Implementing Decision N° 2022/289 of 22 February 2022, having its headquarter and statutory seat at 1 avenue de la Terrasse, 91190 Gif-sur-Yvette, France, represented by its Director General, Dr. Michel Boër, hereinafter referred to as "AnaEE-ERIC", in its own name and in the name of its Data and Modelling Centre, hereinafter referred to as "DMC",

And

The Consiglio per la Ricerca in Agricoltura e l'Analisi dell'Economia Agraria (Council for Agricultural Research and Economics),

A public research institution under the legislative decree on 29th October 1999 n. 454 and law 23rd December 2014 n. 190 (art. 1, par. 381) whose registered office is at Via della Navicella 2/4, Rome, ZIP Code 00184, Italy, represented by its President, Prof. Andrea Rocchi, hereinafter referred to as "CREA",

Hereinafter collectively referred to as the "Parties".

Considering

- the Commission Implementing Decision (EU) 2022/289 of 22 February 2022 setting up the Analysis and Experimentation on Ecosystems ERIC (AnaEE-ERIC), notified under document C(2022) 933,
- the Statutes of AnaEE-ERIC published in the Official Journal of the European Union of 24 February 2022,
- The Rules of Operation as approved by the Assembly of Members of AnaEE-ERIC on the 21 June 2022,
- The Scientific and Technical Document of AnaEE-ERIC version 7.2, date 11 November 2020,

- the Italy's application on the 14th March 2017 to host the Data and Modelling Centre (DMC) of AnaEE-ERIC,
- The letter of the *Ministero delle politiche agricole, alimentari e forestali* on the 11th September 2020, to request the setting-up of the Analysis and Experimentation on Ecosystem infrastructure as a European Research Infrastructure Consortium (AnaEE-ERIC).
- that the overarching objective of the DMC is to fulfil the goals presented in Article 3.e, Article 6.5, and Article 6.6 of the Statutes and to implement the data policy principles in Article 11.3 of the Rules of Operation,

The parties hereby agree on the resources that CREA makes available to AnaEE-ERIC for the purpose of hosting its Data and Modelling Centre, hereafter referred to as “DMC”. DMC is a part of AnaEE-ERIC (art.3.2; 21.2 of the Statutes) which shall be hosted by CREA, as stated in article 4.2.3 of the AnaEE-ERIC Rules of Operations and the Scientific and Technical Document.

1. General Terms and conditions of the Agreement

1.1. Italy has committed to pay a host premium contribution as stated in Article 30.2 and Annex III, Table 2, of the AnaEE-ERIC Statutes.

1.2. According to Annex III of the AnaEE statutes, “A minimum of 50% Host Premium Contribution during the Operational Phase is expected when AnaEE-ERIC is approved. The rest of the expenditures of the Central Services shall be covered by annual Membership fee contributions (hereafter said Membership Fee) towards AnaEE-ERIC”. The host premium will be provided in kind by CREA after the approval of the type of expenses and verification of the expenses by the AnaEE-ERIC Assembly of Members, according to article 31.3 of the statutes.

1.3. The terms and conditions related to the use and the provision of facilities for the Data and Modelling Centre, and their associated costs are specified in this Agreement and its Annexes.

2. Resources made available to AnaEE-ERIC by CREA

The hosting of DMC by CREA is achieved through the provision of premises, staff and services made available to AnaEE-ERIC by CREA.

2.1. The provision of premises

2.1.1. DMC is hosted by CREA. Its representative venue will be located Via della Navicella 2/4, Rome, Italy, whereas its operative offices and premises will be located in CREA institutional branches (“Centri”) by common agreement in the best interest of the operations of DMC.

2.1.2. The description of premises and the inventory of fixtures and furniture made available to AnaEE-ERIC is annexed to this Agreement (Annex 1).

2.1.3. CREA will apply to staff, visitors or suppliers involved in DMC activities the same services, facilities, and safety and security policies applied to its personnel, visitors, and suppliers.

2.1.4. CREA will provide a list of its staff working for AnaEE-ERIC DMC.

2.2. The provision of services

2.2.1. CREA will grant the same availability of services and facilities to staff involved in the operation of DMC as those available to its employees including Internet and IT support, legal assistance, video-conference equipment, postal charges, use of photocopiers and printers, electricity, water, cleaning and security of the premises.

2.2.2. The provision of in-kind services by CREA to AnaEE-ERIC is described in annex 2 to this Agreement. This annex specifies the nature of the service(s) provided, the resources required for their implementation, the means of verification, and the estimated duration of the service provided. This annex is re-evaluated each year.

2.3. The provision of staff

2.3.1. Personnel working at DMC are either seconded to AnaEE-ERIC by CREA or provided in-kind. Seconded staff made available to AnaEE-ERIC by CREA to carry out the mission of the DMC will be under the authority of the Director General of AnaEE-ERIC or their delegate. In-kind personnel, in their time-quota devoted to AnaEE (annex 3), will carry out DMC activities (annex 2) under the supervision of the Head of DMC and the coordination of the Director General or their delegate.

2.3.2. The Head of DMC is recruited by CREA in coordination with AnaEE-ERIC as a temporary position, hired according to the Italian employment law and the AnaEE-ERIC Employment Policy, and seconded to AnaEE-ERIC. The position will be renewable year by year, with a maximum limit of 35 months except in case of prior termination of this host agreement (art. 7).

2.3.3. The secondment of staff to AnaEE-ERIC is regulated by specific secondment contract specifying the percentage of time and rules applicable to the staff concerned.

2.3.4. The levels and job profiles for permanent Staff working at DMC are set out in annex 3 to this Agreement. This annex can be updated jointly by the parties.

2.3.5. In the case of temporary positions (for the implementation of an EU project for instance), positions will be based on the needs of AnaEE-ERIC for DMC to fulfil its obligations, in agreement with the Director General of AnaEE-ERIC.

2.3.6. In the case of a direct recruitment of a staff, the procedure shall be carried out according to the Italian law and the AnaEE-ERIC Employment Policy. The whole process will be supervised jointly by AnaEE-ERIC and CREA.

2.3.7. In accordance with article 10 of the Statutes and article 11.5.5 paragraphs 1 and 3 of the AnaEE-ERIC Rules of Operations (RoO), the same rules apply to jobs held on secondment as to jobs directly employed by AnaEE-ERIC; in particular, recruitment on a competitive basis on the sole basis of expertise and relevance to the position, regardless of gender, disability, or supposed minority status.

3 - The valorisation of the resources made available to AnaEE-ERIC by CREA

3.1. The resources made available to AnaEE-ERIC by CREA represent an in-kind contribution by Italy to the budget of AnaEE-ERIC, in accordance with Articles 17 and 31 paragraph 3, as well as Annex III of the AnaEE-ERIC statutes.

3.2. This in-kind contribution is valued and is limited to the specific contribution for hosting the AnaEE-ERIC DMC (host premium).

3.3. According to Article 31, paragraph 3 of the AnaEE-ERIC Statutes, In-kind contributions shall be considered only when in the form of effective and quantifiable contribution to AnaEE-ERIC, including seconded personnel to AnaEE-ERIC, and agreed by the Assembly of Members.

4 – Intellectual property rights

4.1. All Intellectual Property Rights (IPR) which are owned by a party shall remain vested in that party. The BioMA platform will be used for developing models as part of DMC services. BioMA is an intellectual property of CREA.

4.2 IPR from the developments by the DMC shall be the property of AnaEE-ERIC. If in the core mission of AnaEE-ERIC, these developments will be usually open source and will give appropriate credit to DMC staff that participated in any phase of the development.

4.3 IPR from common or shared developments by AnaEE-ERIC and CREA will be settled in separate agreements. Any further specific development to the core BioMA platform will remain property of CREA. Any components developed by third parties using BioMA will give appropriate credit to BioMA and its developers; any commercial purposes must be agreed in advance with CREA.

4.4 Data hosted by the DMC will remain the property of the owner but shall be accessible as openly as possible following the data policy statement in the statutes, A temporary limitation to free access (embargo period) can be implemented.

5. Payment terms and conditions

5.1 The Head of DMC is seconded to AnaEE-ERIC as full-time personnel (art. 2.3.2). AnaEE-ERIC will reimburse their annual gross salary (Annex 3), no later than the 31st of January each year, according to their monthly salary slips, after reception of the invoice.

5.2. Invoices related to the resources and salaries provided by CREA for DMC, as well as appropriate justifications for the expenses claimed, shall be addressed to the AnaEE-ERIC Central Hub on a yearly basis by the 31st of January of the following year, so as to meet the obligations related to the AnaEE-ERIC financial year (articles 28 and 29 of the Statutes).

5.3. The invoice must clearly indicate the contributions (cash and/or in-kind) made by CREA (Host Premium), and the remaining cash contribution expected from AnaEE-ERIC.

5.4. A financial report indicating any contributions received and expenses made for DMC, in cash and/or in-kind, for the preceding financial year shall be developed each year by DMC and addressed to admin@anaee.eu by the head of DMC, by the 31st of January of each year. This financial report will be provided under the draft template in annex 5, which could be reviewed and updated without this being interpreted as an amendment to this Agreement.

6. VAT exemptions

According to article 33 of the AnaEE-ERIC Statutes, VAT exemptions based on Articles 143(1)(g) and 151(1)(b) of Council Directive 2006/112/EC and in accordance with Articles 50 and 51 of Council Implementing Regulation (EU) No 282/2011 shall be applied to purchases of goods and services by AnaEE-ERIC which are for the official and exclusive use by AnaEE-ERIC, provided that such purchase is made solely for the non-economic activities of AnaEE-ERIC in line with its activities. VAT exemptions shall be limited to purchases exceeding the value of EUR 300.

7. Duration

7.1. This agreement takes effect on the day of its last signature and it is valid, except for its annexes, which are subject to annual re-negotiation as per Article 2.2.2, throughout CREA's membership period. The current agreement is therefore valid until 23 February 2027. The present host agreement is renewable by written agreement in accordance with the financing model set out in Annex III of the Statutes.

7.2 In case a party doesn't intend to renew the agreement, it informs the other party at least six months prior to the end of this agreement. Should this occurrence happen, AnaEE-ERIC is entitled to download the data acquired and software developed during this agreement except for the BioMA platform and any further development to it since the signature of this host agreement. CREA will provide adequate support in a timely manner for the data migration.

7.3. Within the Host Premium Contribution funds assignment, as stated in article 1 the Parties agree on and shall mutually recognize the preparatory activities undertaken from the 1st of January 2022 until the expiry of this agreement. This mutual acknowledgement is made without any exchange of funds.

7.4. Any modification of this agreement shall be the subject of an amendment concluded by mutual agreement between the Parties.

8. Dispute Resolution

8.1. The Parties shall endeavour to solve amicably any dispute that may arise from the interpretation or execution of the clauses set out therein.

8.2. In accordance with Article 36 paragraph 1 of the statutes, in case the dispute persists, the Assembly of Members of AnaEE-ERIC meets as soon as possible to find a way to resolve the dispute in good faith and amicably.

8.3. In accordance with Article 36, paragraph 2 of the Statutes, the Court of Justice of the European Union shall have jurisdiction over litigation among the Members in relation to AnaEE-ERIC, between Members and AnaEE-ERIC, and over any litigation to which the European Union is a party.

In two original copies, signed digitally using a certified signature system, or manually.

For AnaEE-ERIC

For CREA

Date:

Date:

Dr. Michel Boër
Director General

Prof. Andrea Rocchi
President

Annexes

Annex 1: Description of premises and inventory of fixtures and furniture made available to AnaEE-ERIC by CREA

Annex 2: Description and evaluation of the services provided to AnaEE-ERIC by CREA

Annex 3: Provision of staff: levels and job profiles for permanent positions at DMC

Annex 4: Estimation of annual costs for DMC

Annex 5: Financial Report template for the DMC

Annex 1

Description of premises and inventory of fixtures and furniture made available to AnaEE-ERIC by CREA

- Formal address of the institutional branch of CREA hosting the DMC:
 - CREA-IT, Via della Pascolare, 16, 00015 Monterotondo (Rome), Italy
- Address of representative premises DMC can access:
 - Via della Navicella 2/4, 00184 Rome, Italy
- Address of DMC office: to be defined (see art. 2.1.1)
- The premises available to DMC representative address, subject to request for availability, are:

Premise	Address	Surface area (m ²)
Access to meeting room	Via della Navicella 2/4, 00184 Rome, Italy	~30
Access to common facilities	Via della Navicella 2/4, 00184 Rome, Italy	~30

- The premises allocated to DMC office are:

Premise	Address	Surface area (m ²)
Office DMC	CREA-IT Branch TBD	15+
Office Staff 1	CREA-IT Branch TBD	15+
Access to meeting room	CREA-IT Branch TBD	~30
Access to common facilities	CREA-IT Branch TBD	15+

- The premises allocated to CREA in-kind personnel adhere to Italian national regulations for welfare in the workplace and are distributed remotely in different branches of CREA. Video-conferencing, cloud I.T. facilities, common office applications, postal charges, use of photocopiers and printers, electricity, water, cleaning and security of the premises are fully provided by CREA.

Annex 2

Description and evaluation of the services provided to AnaEE-ERIC by CREA

Description and evaluation of the services provided to AnaEE-ERIC by CREA:

1. nature of the service(s) provided,
2. the resources required for their implementation,
3. the means of verification,
4. the estimated duration of the service provided

This annex is re-evaluated each year.

- **Data and Metadata repository Hosting**

The DMC hosts on its cloud the AnaEE repository wherein all AnaEE's research data and its metadata are supposed to be stored and preserved over time.

The repository is based on state-of-the-art data lake technologies, making it scalable, highly available and fault tolerant.

This service is instrumental towards achieving the goal of "ensuring large international access, across platforms research projects, improved and harmonized measurements and data, links between data and models, open access to data and syntheses" stated in the AnaEE's statute.

Required resources: storage space, IT personnel with adequate formation.

Verification: the AnaEE repository is online and can be accessed through the Data and Metadata catalogue and its APIs. In addition, the DMC personnel can provide inspectors with additional information under request.

Duration of service: 1 Year

- **Data and Metadata Catalogue hosting**

The DMC hosts on its cloud the AnaEE data and metadata catalogue through which researchers can browse, access, and upload datasets and their metadata. The Data Catalogue is compliant with the current FAIR requirements and policies expressed by the ENVRI community and the EOSC association. This service is instrumental towards achieving the FAIRness objectives outlined in the Rules of Operation and the DMC mission, Ensuring visibility of and access to AnaEE data expressed in the STD.

Required resources: Web server, data and metadata repository, IT personnel with adequate formation

Verification: the Data and Metadata catalogue and its APIs are online at data.anaee.eu. In addition, the DMC personnel can provide inspectors with additional information under request.

Duration of service: continuous through the DMC period of operation

- **API Services Catalogue hosting**

The DMC hosts on its cloud the AnaEE API services catalogue through which researchers can browse, access, and consume computing services which offer a Web API. The API services catalogue provides AnaEE users and partners/stakeholders with a single-entry point to the various computing services such as real-time data access, models, and data quality verification services AnaEE hosts on its cloud. This service is instrumental to provide users with an easily accessible (i.e. through the Internet, with no need to install/configure software packages on their computer) implementation of models and therefore to the fulfilment of the DMC missions Ensuring visibility of and access to AnaEE data, Improving data quality and data analysis, Facilitating access to a range of modelling solutions and to model factories, and Modelling ecosystem responses along environmental gradients via multi-site experiments expressed in the STD.

Required resources: Web server, reverse proxy, IT personnel with adequate formation.

Verification: the API Services catalogue and its APIs are online at developer.anaee.eu. In addition, the DMC personnel can provide inspectors with additional information under request.

Duration of service: 1 Year

- **Data and Services onboarding for Installations**

The DMC will aid the installation managers who have data assets and/or other services to publish on the AnaEE catalogues. The DMC personnel will provide clear instructions for the onboarding and dedicated assistance where needed. The DMC personnel will curate in the AnaEE DMP a section on onboarding procedures which will serve as reference and organise periodical training events for installation managers. This service is instrumental in fulfilling statement 11.3.8. Of the Rules of Operation (As a general rule regarding Data Access, Data generated as part of AnaEE-ERIC Data shall be made available through Open Access to any person or any organisation requesting such Data).

Required resources: Catalogue of Data and Metadata, catalogue of API services, Research scientist with adequate formation.

Verification: onboarding procedures outline will be included in the DMP, moreover training events will be notified to the Central Hub.

Duration of service: 1 Year

- **DMP authoring and revision**

The DMC will take charge of the DMP revision process outlined in Section 1.3 of the DMP itself. The DMC will periodically review both the AnaEE community feedback on services and data assets and the requests of external requirement providers. Whenever a new data management requirement would emerge, the DMC personnel will implement the necessary changes and assess their impact on the overall data management process, taking corrective actions where needed. This service is instrumental towards achieving the DMC mission of “Preparing and maintaining the AnaEE Data Management Plan” expressed in the STD.

Required resources: Data manager with adequate formation

Verification: the DMP will be made available on anaee.eu

Duration of service: 1 Year

- **BioMA models integration and catalogue publication**

The DMC will host and manage containerized versions of the BioMA models developed by the BioMA platform and expose them as RESTful APIs on the API services catalogue.

This service is instrumental towards achieving the DMC mission of “Facilitating access to a range of modelling solutions and to model factories” expressed in the STD.

Required resources: Catalogue of API services, BioMA models specification and/or reference implementation, IT personnel with adequate formation, modelling scientist with adequate experience.

Verification: the BioMA API Services are online at developer.anaee.eu. In addition, the DMC personnel can provide inspectors with additional information under request.

Duration of service: 1 Year

- **Data quality control Services development, integration, and catalogue publication**

The DMC will publish through the API services catalogue tools for data quality control and gap filling based on the current best practices. These tools will target primarily weather data and its Essential Climate Variables such as air temperature, relative humidity, solar radiation, and precipitation; however, the DMC will consider the development of further tools for different ECVs. This service is instrumental towards achieving the Improving data quality and data analysis mission expressed in the STD

Required resources: Catalogue of API services, quality procedures specification and/or reference implementation, IT personnel with adequate formation, modelling scientist with adequate experience.

Verification: the data quality control API Services are online at developer.anaee.eu. In addition, the DMC personnel can provide inspectors with additional information under request.

Duration of service: 1 Year

- **Training material authoring, hosting, and maintenance**

The DMC will curate training material for AnaEE users including API documentation, and make available such material on its online services (namely the data and API services catalogue) and/or public repositories such as Zenodo or GitHub. Upon the release of new models and/or other API services, the DMC will organise training events for platform managers and other AnaEE personnel.

Required resources: Catalogue of Data and Metadata, catalogue of API services, BioMA models services, data quality control services, Research scientist with adequate formation

Verification: API specifications will be published on developer.anaee.eu, training materials will be uploaded on public repositories, moreover, training events will be notified to the Central Hub.

Duration of service: 1 Year

Annex 3

Provision of staff: levels and job profiles for permanent positions at DMC

This annex is re-evaluated each year

- **Head of DMC**

Profile: Data and modelling scientist

Expertise:

- Comfortable with European research infrastructures
- Excellent IT skills in modelling platforms, DB management and use, programming
- Experience in enable a suitable environment for scientific data to be Findable, Accessible, Interoperable and Reusable (FAIR)
- Expertise in project management; lead, or participation to a large European project would be an asset.
- Knowledge of the domain of AnaEE-ERIC (environmental sciences, life sciences, bio-informatics, etc.) would be an asset

Tasks:

- Manage CREA DMC team
- Communication, join conferences and meetings to disseminate AnaEE-ERIC activities; organization of events, summer schools, training sessions
- Participation in AnaEE-ERIC activities and management duties
- Coordination of DMC activities towards external researchers
- Provide national platforms with guidelines and operational tools (thesaurus, ontologies, etc.) to implement metadata and data standardization.
- Project management (Horizon Europe and following framework programs)

Competences:

- Has an established reputation based on research excellence in their field
- Makes a positive contribution to the development of knowledge, research and development through co-operations and collaborations
- Identifies research problems and opportunities within their area of expertise
- Identifies appropriate research methodologies and approaches
- Conducts research independently which advances a research agenda
- Can take the lead in executing collaborative research projects in cooperation with colleagues and project partners
- Publishes papers as lead author, organises workshop or conference session

Hired full time (100%), Euraxess level R2 “Recognised Researcher” or R3 “Established Researcher”, Italian “Primo ricercatore/Primo tecnologo”) level 2. Annual expected gross salary: ~€68,000.00.

Recruited by CREA in direct coordination with AnaEE-ERIC according to the Italian employment policy, seconded to AnaEE-ERIC.

Other DMC staff

7 people, supplied by CREA as in-kind personnel, will follow DMC activities grouped in three teams:

- Scientific team
 - Two “**Data stewards**”: curate the AnaEE data catalogue, scout Research Installations for candidate data sets, verify data quality, provide support for harmonization, and guarantee the respect of FAIR data best practices. Provide training for Research Installation data stewards.
 - A “**Data scientist**”: curates data ingestion and cleaning pipelines, investigates model soundness and applicability, and provides research installations with support for data exploitation.
- Technical team
 - Two “**Cloud solutions engineers**”: manage the cloud IT infrastructure, guaranteeing adequate scaling, security, resilience, and compliance to EOSC requirements.
 - A “**DevOPS engineer**”: uses various developer operations tools and strategies to provision and manage infrastructure, automate processes, perform system administration, and manage security.
- Administrative team
 - An “**Administrative responsible**”: yearly financial reporting to AnaEE-ERIC, advisory for project proposal drafting

Full justification of the personnel costs addressed to the AnaEE-ERIC Central Hub on a yearly basis (art 5.2).

CREA will notify AnaEE-ERIC of replacement personnel to substitute any member of the DMC staff, in case of unforeseeable events (e.g. prolonged sickness, retirement, resignation or any other exceptional cause), within 30 days. CREA commits to grant efficient communication between temporary staff assigned to DMC AnaEE-ERIC projects and the staff assigned to the DMC.

Annex 4: Estimation of annual costs for DMC

Estimation of annual costs for DMC					
Cost Category	Unit	No of Units	Unit rate in €	Total cost €	
Personnel					
Data and modelling scientist and Head of DMC	PM	12	5,807.54	69,678.42	
Data Scientist	PM	4.8	4,591.72	22,040.26	
Data Stewart 1	PM	1.5	10,010.75	15,016.13	
Data Stewart 2	PM	1.5	4,924.70	7,387.04	

Cloud solutions engineer 1	PM	1.5	4,497.78	6,746.67
Cloud solutions engineer 2	PM	1.5	4,591.72	6,887.58
DevOPS engineer	PM	1.5	4,591.72	6,887.58
Administrative responsible	PM	1.0	5,224.12	5,224.12
Travel and subsistence				
Travel cost (staff)	travel			11,300.00
Estimation of annual lump sum for indirect operational costs				40,791.95
Consumables	item			0.00
Energy, water, cleaning, security....				0.00
Office space				0.00
Renting of cloud services				12,000.00
Total annual costs foreseen				203,959.75

Annex 5: Financial Report template for the DMC

AnaEE-ERIC DMC Year Financial Report					
YEAR income and expenses for the Data and Modelling Centre (DMC) hosted by CREA in Italy					
YEAR Income (cash and in-kind)					
Income Categories	In cash	In-kind	Total	Justification provided (Yes/No)	Comments (if any)
Host Premium contribution provided by CREA	€0.00	€0.00	€0.00		
Contribution received from the Central Hub	€0.00	€0.00	€0.00		
Any other contribution received	€0.00	€0.00	€0.00		
Total income	€0.00	€0.00	€0.00		€0.00
YEAR Expenses made (cash and in-kind)					
Expenses Categories	In cash	In-kind (by CREA)	Total	cost Justification provided by CREA?	Comments (if any)
Human Resources (salaries, social charges, job advertisement...)	€0.00	€0.00	€0.00		
Travel and subsistence	€0.00	€0.00	€0.00		
Office management (running costs, furniture, procurement, subscriptions...)	€0.00	€0.00	€0.00		
Outsourcing & Services	€0.00	€0.00	€0.00		
Outreach and communication	€0.00	€0.00	€0.00		
Total expenses	€0.00	€0.00	€0.00		€0.00
YEAR Balance (cash and in-kind)					
Balance (Expenses-Income)	In cash	In-kind	Variation	Missing or amount to be reimbursed	Comments (if any)
Host Premium from CREA	€0.00	€0.00	€0.00	€0.00	
Contribution from CH	€0.00	€0.00	€0.00	€0.00	
Any other contribution received	€0.00	€0.00	€0.00	€0.00	
Total	€0.00	€0.00	€0.00	€0.00	€0.00