CALL FOR PROPOSALS

AND GUIDE FOR APPLICANTS

Call reference: EUBA-EFSA-2025-PLANTS-05
Call title: Generic simulation models for climate suitability analysis of new and emerging plant pests
Budget Line: 3210-RASC
Project/process code: 04.01.27 – Plant health risk assessment

Restricted to the list of competent organisations established by the Authority's Management Board in application of article 2 the Commission Regulation (EC) No 2230/2004 laying down detailed rules for the implementation of European Parliament and Council Regulation (EC) No 178/2002 with regard to the network of organisations operating in the fields within the Authority's remit.

Brief description of the call objectives and key messages: EFSA seeks to boost its capacity to assess plant pests and diseases risks in the EU under current/future climates. This call seeks organisations to develop/adapt models for climate suitability analysis and risk of pest establishment, integrated into EFSA's Databricks platform. Lot 1 focuses on physiologically-based models for insect pests. Lot 2 targets process-based models. Solutions must meet EFSA's technical requirements and enhance evidence-based plant health risk assessment.

INDICATIVE PROCEDURE TIMETABLE

Milestone	Date[1]	Comments
Launch date	27/11/2025	Date of call publication on EFSA's website and Funding & Tender portal.
Deadline for applicants to raise clarification questions to EFSA	19/05/2026	If, after having read this Call for proposals and guide for applicants, you have any questions, you may address them to EFSAProcurement@efsa.europa.eu by indicating the Call reference.
Deadline for EFSA to reply to clarification questions	21/05/2026	Question and answers will be published with the Call documents in the Funding & Tender portal, which the applicants are requested to consult regularly.
Deadline for submission of proposals	27/05/2026 At 17:00 (CET/CEST)	Applicants can submit proposals by following the instructions in section 3.1 of this call for proposals. All applications must be submitted through the EU Funding and Tenders portal, following the instructions provided. Hard copy paper applications will not be accepted.
Notification of the evaluation results	July 2026	Estimated *Attention: outcome of the present call will be communicated to all applicants to the e-mail address indicated in their proposal. Accordingly, applicants who have submitted proposals under the present call are strongly invited to check regularly the inbox in question.*
Grant agreement(s) signature	August 2026	Estimated

[1] All times are in the time zone of the country of the EFSA.

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ANNEXES
Annex 1: Draft grant agreement
Annex 7: Technical description of EFSA datalake

Documents to be submitted with proposals (to be downloaded from the EU Funding and Tender portal Submission Service, see section 2 'Selecting proposal')

Annex 2: Administrative Declaration

Annex 3: Declaration on honour on exclusion criteria

Annex 4: Declaration on honour on selection criteria

Annex 5: Selection criteria template

Annex 6: Award criteria template

1. GRANT OPPORTUNITY AND CONDITIONS[2]

1.1 LEGAL FRAMEWORK

Article 36 (1) of the Regulation (EC) 178/2002[3] of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety, stipulates that the Authority shall promote the European networking of organisations operating in the fields within the Authority's mission. The aim of such networking is, in particular, to facilitate a scientific cooperation framework by the coordination of activities, the exchange of information, the development and implementation of joint projects[4], the exchange of expertise and best practices in the fields within the Authority's mission. The list of competent organisations designated by the Member States, which may assist EFSA with its mission, is approved and regularly updated by EFSA's Management Board. The full list of Article 36 organisations can be found here.

EFSA's founding regulation was amended by Regulation (EU) 2019/1381 of the European Parliament and of the Council of 20 June 2019 on the transparency and sustainability of the EU risk assessment in the food chain.

The Commission Regulation (EC) 2230/2004 of 23 December 2004 laying down detailed rules for the implementation of the European Parliament and Council Regulation (EC) 178/2002 with regard to the network of organisations operating in the fields within the EFSA's mission specifies in Article 4 that tasks may be entrusted by the Authority to organisations on the list of competent organisations.

The present call specifically focuses on the below tasks defined in Article 4(3):

1. producing scientific data or works contributing to the risk assessment tasks, including assessment tasks in the field of human nutrition in relation to Community legislation, for which the Authority is responsible; this type of task must correspond to precise problems identified in the course of the work of the Authority, and in particular that of its Committee and permanent Scientific Panels, and must not duplicate Community research projects or data or contributions which it is the industry's duty to provide, especially in the context of authorisation procedures;

Article 5(2) of the Commission Regulation (EC) 2230/2004[5] of 23 December 2004 specifies that the financial support to the networking organisations shall take the form of subsidies (grants) awarded in accordance with the EFSA's financial regulation and implementing rules.

The present Call for proposals and guide for applicants (hereinafter referred to as "the Call") is procedurally governed by Title VIII of Regulation (EU, Euratom) 2024/2509 of the European Parliament and of the Council of 23 September 2024 on the financial rules applicable to the general budget of the Union (recast) (OJ L, 2024/2509, 26.9.2024[6]).

[2] The applicant is reminded that this Call and guide for applicants contains a selection of the most important conditions for the grant implementation. For the full set of conditions, the applicant is invited to consult the draft grant agreement in Annex 1 of this Call.

[3] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:031:0001:0024:EN:PDF

[4] Project is frequently referred to in this Call as "action", in line with EU Financial Regulation terminology.

[5] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:379:0064:0067:EN:PDF

[6] http://data.europa.eu/eli/reg/2024/2509/oj

This call is based on EFSA Founding regulation[7] and EFSA's 2025 Work Programme for grants and operational procurements as presented in Annex XII of the Programming Document 2025-2027, available on the EFSA's website[8].

1.2 BACKGROUND AND OBJECTIVES OF THE CALL

BACKGROUND

The mission of the EFSA Plant health and pesticides residues (PLANTS) Unit is to provide the EU risk managers (the European Commission, the European Parliament and the EU Member States) with risk assessment, scientific advice, and scientific and technical assistance on plant health and on pesticides residues.
This call addresses the EFSA plant health risk assessment activities to support the EU Plant Health Law, Regulation (EU) 2016/2031[9], amended by Regulation (EU) 2024/3115[10], on the protective measures against pests of plants. In this context, the EFSA Plant Health Risk Assessment Team (PLH-RA) develops pest risk assessments following the international standards defined by the International Plant Protection Convention (IPPC). A pest risk assessment aims at analysing the risk of entry, establishment, spread, and impact of emerging and established plant pest and diseases.

This call focuses on the analysis of the risk of establishment.
The analysis of the risk of establishment considers the availability of plant hosts in the area under assessment and the availability of climate and environmental conditions suitable for the persistence, growth, and development of the pests of concern. The analysis of the availability of plant hosts can be supported by e.g. remote sensing analysis techniques, and/or land use and cover maps and/or crop and forest statistical data, etc. The analysis of climate suitability can be supported by geospatial analysis based on agrometeorological indices (e.g. degree-days, number of frost days, number of days with minimum/maximum temperature below/above specific threshold, etc), and/or by different models which vary in complexity and methodology, from climate matching techniques to process-based and physiologically based population dynamics models. Some examples of how climate suitability analyses were conducted by EFSA can be found in these recent Scientific Opinions:

- ***Pest risk assessment of* Leucinodes orbonalis *for the European Union* (EFSA Panel on Plant Health, 2024)[11], including the application of the model CLIMEX**

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[7] Regulation (EC) 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety, as amended by Regulation (EU) 2019/1381 of the European Parliament and of the Council of 20 June 2019 on the transparency and sustainability of the EU risk assessment in the food chain.

[8] https://www.efsa.europa.eu/sites/default/files/2025-01/programming-document-2025-2027.pdf

[9] Regulation (EU) 2016/2031 of the European Parliament of the Council of 26 October 2016 on protective measures against pests of plants, amending Regulations (EU) No 228/2013, (EU) No 652/2014 and (EU) No 1143/2014 of the European Parliament and of the Council and repealing Council Directives 69/464/EEC, 74/647/EEC, 93/85/EEC, 98/57/EC, 2000/29/EC, 2006/91/EC and 2007/33/EC. OJ L 317, 23.11.2016, p. 4–104.

[10] Regulation (EU) 2024/3115 of the European Parliament and of the Council of 27 November 2024 amending Regulation (EU) 2016/2031 as regards multiannual survey programmes, notifications concerning the presence of regulated non-quarantine pests, temporary derogations from import prohibitions and special import requirements and establishment of procedures for granting them, temporary import requirements for high-risk plants, plant products and other objects, the establishment of procedures for the listing of high-risk plants, the content of phytosanitary certificates and the use of plant passports, and as regards certain reporting requirements for demarcated areas and surveys of pests and amending Regulation (EU) 2017/625 as regards certain notifications of non-compliance

[11] https://efsa.onlinelibrary.wiley.com/doi/full/10.2903/j.efsa.2024.8498

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- ***Assessment of the probability of introduction of*** **Thaumatotibia leucotreta** ***into the European Union with import of cut roses*** **(EFSA Panel on Plant Health, 2023)[12], including the application of a physiologically based demographic model**
- ***Risk assessment of*** **Phlyctinus callosus** ***for the EU*** **(EFSA Panel on Plant Health, 2024)[13], including the development of agrometeorological indices based on the ecophysiology of the pest**

In addition, in a recent work funded by EFSA, the generic process-based model by Magarey et al. (2004) was used to analyse the climate suitability of the Citrus Black Spot disease (*Phyllosticta citricarpa*)[14].

OBJECTIVES OF THE CALL

The objective of the call is to identify organisations that EFSA can entrust with the development and/or integration, and deployment of new or existing generic models within the EFSA cloud-based Databricks platform[15]. These includes:

- **Lot 1: Generic physiologically-based insect population dynamic models, and**
- **Lot 2: Generic correlative and process-based models**

These models, combined with data on host plant availability, will support EFSA in assessing the risk of potential establishment for plant pests and pathogens in the EU under current and future climate conditions.

Lot 1 – Generic physiologically-based population dynamics model for insect plant pests

These models simulate the biological and eco-physiological processes at the basis of population dynamics, both in space and time. They quantify the potential population abundance and geographical distribution based on the mechanistic understanding of their life history traits (e.g. population growth, development, mortality, reproduction).

Lot 2 – Generic correlative and process-based models for climate suitability analysis for plant pests and diseases

In the context of this call, process-based models refer to simplified mechanistic models that estimate the climatic suitability for the development and persistence of plant pest and diseases. These models do not simulate or quantify population abundance but rather assess how favourable or stressful environmental conditions are for the establishment of a species.

Such models typically use physiologically based thresholds or response functions to represent the effects of temperature, moisture, or other abiotic factors on species-specific processes such as development rates, survival during adverse conditions (e.g., overwintering), infection progress, phenological development. The outputs often combine multiple favourable and stressful components or indicators to indicate overall potential for pest or pathogen presence or activity under given climatic conditions.

This lot include also the development and testing of correlative approaches for analysing environmental similarities (considering for instance, climate, host plants availability, environmental patterns, landscape configuration, etc…) between regions where these organisms are currently present and the area under assessment. It also covers the development of solutions for running Species Distribution Models (SDMs) informed by process-based models and/or by physiological and climate indicators.

12 https://www.efsa.europa.eu/en/efsajournal/pub/8107
13 https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2024.8832
14 https://www.nature.com/articles/s41598-022-22775-z
15 https://www.databricks.com/

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The proposed model solutions (Lot 1 and 2) should include routines for sensitivity analysis, model calibration and validation, summary analysis of model outputs, and uncertainty analysis.

1.3 TASKS, DELIVERABLES, REQUIREMENTS, TIMELINES, MEETINGS AND PAYMENTS

The following tables, valid for both Lot 1 and Lot 2, is a proposal illustrating the minimum requirements for the workplan, tasks, and deliverables. A more detailed workplan is expected to be produced by the beneficiary which will be selected with this procedure in deliverable 1. Deadlines and dates of interim meetings can be adjusted accordingly.

Work Package / Objective	Tasks	Deliverables	Deadline
WP1: Scoping and Planning	Task 1: Engage with stakeholders to define objectives, expectations, clarify EFSA's climate suitability needs	Deliverable 1 (D1): Inception report and project plan with objectives, milestones, and KPIs	4 months from kick-off meeting
	Task 2: Outline project methodology, scope, and deliverables		
WP2: Model development and/or adaptation	Task 3: Develop or adapt simulation model(s) aligned with EFSA's climate suitability goals identified in Task 1	Deliverable 2 (D2): Technical report describing models, assumptions, sensitivity analysis, calibration/validation process, and case study results	20 months from kick-off meeting
	Task 4: Perform model sensitivity analysis, and calibration, validation, and uncertainty analysis using selected case studies		
WP3: Model integration in Databricks	Task 5: Integration and deployment of model on EFSA Databricks environment	Deliverable 3 (D3): Operational model in EFSA Databricks and report including result of model testing	30 months from kick-off meeting
	Task 6: Test the functionality and performance of the deployed solution		
	Task 7: Technical documentation for model integration, deployment, maintenance, and updates	Deliverable 4 (D4): Model manual and technical documentation	
WP4: Training and Capacity Building	Task 8: Prepare training materials and deliver a capacity-building session.	Deliverable 5 (D5): Training material and Workshop at EFSA premises	34 months from kick-off meeting
Final reporting and Deliverables	Task 9: Final report with key findings and recommendations	Deliverable 6 (D6): Final project report	35 months from kick-off meeting
Subcontracting is allowed for non-core tasks only. Core tasks for this project are: T1, T2, T3, T4, T7, T8. Non-core tasks include IT support for code refactoring, integration, and deployment in the EFSA cloud environment based on the Databricks® platform, i.e. tasks: T5 and T6. IT subcontractor may also be partially involved in T8 for any technical details related to Deliverable 3. Please also refer to section 1.7 'Possibility of implementing contracts and subcontracting'.			

No.	Meetings	Purpose	Deadline for finalisation
1	Kick-off meeting: physical meeting in Parma – one day[16] or teleconference The presence at the kick-off meeting of a beneficiary's staff member responsible for administrative/finance issues of the project is advised as this will facilitate understanding by the beneficiary of the grant principles, related financial reporting requirements and significantly ease the financial management of the grant agreement, both for EFSA and the beneficiary.	The kick-off meeting is regarded as the start of the project and must take place no later than 1 month after the signature of the grant agreement. At this meeting, details of the project will be discussed and the objectives, the final report structure, deliverables and timeframe will be clarified. Minutes of the meeting shall be taken and provided to EFSA by the beneficiary.	2 months after entry into force of agreement
2	Interim meeting 1 (Deliverable 1): half day teleconference	Discuss deliverables 1 as well as any problems or difficulties encountered during the project. Minutes of the meeting shall be taken and provided to EFSA by the beneficiary.	5 months from kick-off meeting
3	Interim meeting 2 (end of first year): half day teleconference	Discuss the progress of the project as well as any problems or difficulties encountered during the project. Minutes of the meeting shall be taken and provided to EFSA by the beneficiary.	12 months from kick-off meeting
4	Interim meeting 3: half day teleconference	discuss the progress of the project and to discuss any problems or difficulties encountered during the project. Minutes of the meeting shall be taken and provided to EFSA by the beneficiary.	18 months from kick-off meeting
5	Interim meeting 4 (Deliverable 2): physical meeting in Parma – two days	discuss deliverable 2 and more in general the progress of the project, as well as any problems or difficulties encountered during the project. Minutes of the meeting shall be taken and provided to EFSA by the beneficiary.	25 months from kick-off
6	Interim meeting 5 (Deliverables 3 and 4): physical meeting in Parma – one/half day[17] / teleconference	discuss deliverable 3 and 4 as well as any problems or difficulties encountered during the project. Minutes of the meeting shall be taken and provided to EFSA by the beneficiary.	31 months from kick-off
7	Final meeting: physical meeting in Parma – two days to close the project	Closure of the project	36 months from kick-off meeting
No.	**Payments**		**Linked to EFSA approval of deliverable No.**
1	Pre-Financing payment as specified in the draft grant agreement (Annex 1 of the Call for Proposals), Data Sheet section 4.2 Periodic reporting and payments.		N.A.

[16] One day = 8 hours, half day = 4 hours

[17] One day = 8 hours, half day = 4 hours

2	Interim payment, as specified the draft grant agreement (Annex 1 of the Call for Proposals), Data Sheet section 4.2 Periodic reporting and payments.		2
3	Payment of the balance as specified in the draft grant agreement (Annex 1 of the Call for Proposals), Data Sheet section 4.2 Periodic reporting and payments.		6

Additional meetings

The beneficiary will periodically (2 times per year) present the progress of the project at the Plant Health Panel Plenaries. The beneficiary should organise all the additional meetings and/or workshops needed to complete the tasks. In particular, iterative meetings should be organised during WP2 to ensure that the model meets EFSA modelling requirements and stakeholders objectives.

Technical requirements:

- **The simulation model will be implemented as part of a 'model space' deployed on the EFSA scientific DAta MAnagement (DAMA) Databricks Platform. Models will have access to foundation datasets shared by a data space. Each model shall be released following the EFSA Azure DevOps governance. ANNEX 1 includes a description of the EFSA Architecture and the development methodology and technology. In particular, the beneficiaries will develop their modelling solution in the SEED System (Annex 1, Section 5).**
- **The model code shall be developed in Python according to predefined requirements covering the overall design. The most important are:**
  - **the code shall be integrated on a Notebook template**
  - **the model signature shall follow a predefined format**
  - **the model code shall contain metadata descriptors for the input, output and compute needs**
  - **the model shall support *MLflow* integration and be executable on Databricks**
- **Code quality: model code must be well-documented, readable and commented to ensure transparency, reproducibility, and ease of maintenance. EFSA uses automatic tools for the enforcement of code quality. The contractor is expected to fix issues highlighted by the tools.**
- **Parameter and run metadata: the model must include structured documentation of all parameters used in simulations, including their definitions, value ranges, units, and justifications for selected values**
- **Each outbound connection is subjected to EFSA internal revision**

Full technical support and additional documentation will be provided to the contractor by EFSA staff and/or EFSA scientific contractors prior and during the deployment phase.

Modelling requirements:

- ***Separation of components*: The model code should maintain clear separation between data input, processing/elaboration, output generation**
- ***Integration with gridded climate data*: The model must support seamless integration with gridded climate data, in particular the Copernicus ERA5-Land and AgERA5 used by EFSA**
- ***Modularity:* the proposed solution should be designed in a modular way allowing future extensions and/or updates and/or replacement without extensive reworking**
- ***Temporal resolution:* The model should operate at hourly or daily time step**
- ***Spatial resolution*: 0.1°, consistent with the ERA5-Land and AgERA5 dataset**
- ***Model testing and evaluation*: the solution should include routines for model calibration and validation, uncertainty analysis**

Model deployments and the technical requirements may be fulfilled either by the proponent or by an IT sub-contractor designated by the proponent. To ensure compliance with the EFSA IT architecture and Databricks environment, and to ensure a smooth transition of the model software from the development environment to a production environment, during deployment phase, the beneficiary and its IT sub-contractor should interact with:

- **EFSA IT Department and/or their IT contractors**
- **EFSA PLH Scientific Officers, and/or scientific contractors**
- **EFSA Information Security Officer**

Deliverables must be drafted in English and may be subject to publication at EFSA's discretion.

Please note that all reporting, minutes, outcome of the discussions could be submitted at EFSA's discretion to EFSA's Panel and Working Group members. Use of the grant deliverables may be subject to publication, subject to the terms and conditions set out in the draft grant agreement (Annex 1 of the call for proposals).

1.4 INFORMATION ON THE GRANT AGREEMENT

Applicants should note that the draft grant agreement is published with the call for proposals. If any applicant should have specific comments on the provisions of the draft grant agreement, these must be raised in a clarification, prior to the deadline for receipt of proposals so that a clear and transparent reply may be published for the benefit and information of all applicants.

The total amount EFSA has available to award grants under this call for proposals is € 750,000.00. Applicants should note that in the Funding and Tender opportunities portal submission service under Administrative Form (Part A) there is an obligatory field regarding the budget (section 3). Applicants must insert the total budget in the 'Requested grant amount' field.

1.4.1 Direct Agreement

This Call for proposals aims to conclude a Direct Agreement for the performance of the tasks described in these specifications for a fixed duration. The Agreement can be signed between the Authority and one or several partners.

The budget EFSA has available is 750,000.00 €.
The budget for lot 1 is: 350,000.00 €
The budget for lot 2 is: 400,000.00 €

The maximum duration of this Direct Agreement is 3 years from the kick-off meeting.

EFSA intends to fund 2 proposals following this Call, one per each lot. However, EFSA reserves the right not to award all the funds available at any cost, e.g. if the quality of submitted proposals will not be satisfactory.

Please note that EFSA reserves the right not to award any grant and/or to cancel the whole grant procedure at any time before the signature of the grant agreement without any compensation to be paid to the applicant.

OPTION FOR FNLC DIRECT AGREEMENT

Lot 1 – value of deliverables

	D1	D2	D3	D4	D5	D6
Total (€)	30,000.00	120,000.00	135,000.00	21,000.00	29,500.00	14,500.00

Lot 2 – value of delivrables

	D1	D2	D3	D4	D5	D6
Total (€)	30,000.00	132,000.00	173,000.00	21,000.00	29,500.00	14,500.00

One direct grant agreement will be signed for each separate lot.

You may submit a proposal for one or more lots, but your proposal should indicate clearly for which lot you are applying. In case you decide to apply for several lots, a separate proposal for each lot must be provided. Proposals for each lot will be individually evaluated by EFSA according to the award criteria indicated in section 2.5.

1.5 ELIGIBLE ORGANISATIONS

To be eligible, applicants must be on the list of competent organisations designated by the Member States in accordance with Article 36 of Regulation (EC) 178/2002 and Commission Regulation (EC) 2230/2004. This list is regularly updated by EFSA Management Board and is available for consultation using this link: Competent Organisation List

In order to achieve the main objective of the call, proposals can be submitted by **one eligible organisation or by a consortium of eligible organisations.** In case of a consortium, one of the partners must be identified in the proposal as the consortium leader. The applicant (consortium leader) is responsible for identifying consortium partners.

If you are searching for consortium partners, please contact your Focal Point at the following address: https://www.efsa.europa.eu/en/partnersnetworks/eumembers (**section: Focal Points members and observers).**

1.6 ROLES AND RESPONSIBILITIES

For proper understanding of this call it is important to have clarity on the terminology regarding involved organisations and their roles.

Proposals submitted by a sole applicant:

- **The Applicant** submits the proposal to EFSA. There can be only one applicant in the proposal.

As soon as the grant agreement is signed, the applicant becomes the beneficiary. The beneficiary is liable for the technical implementation of the project as described in the proposal which becomes Annex 1 of the grant agreement.

The beneficiary:

- Communicates with EFSA;
- Receives and answers all claims EFSA might have in relation to the implementation of the project;
- Requests and reviews any documents or information required by EFSA and verifies their completeness and correctness before passing them to EFSA;

- **Informs EFSA of any event that is likely to substantially affect the implementation of the project;**
- **Submits the deliverables and reports to EFSA;**
- **Requests and receives payments from EFSA.**

Proposals submitted by consortium:

- **The Applicant submits the proposal to EFSA on behalf of the consortium. The applicant is the leading entity of the consortium.**

- **The Partner is the other entity in the consortium. There can be a minimum of one partner or more partners.**

Once the grant is awarded, the grant agreement is signed between EFSA and the applicant (leading entity of the consortium).

Partners do not sign the grant agreement directly but instead sign a mandate (template provided by EFSA) authorising the applicant to sign the grant agreement and any future amendments on their behalf.

As soon as the grant agreement is signed, the applicant becomes the Coordinator and partner/s become co-beneficiary/ies. The coordinator and co-beneficiary/ies are referred to as the beneficiaries. The beneficiaries are jointly and severally liable for the technical implementation of the project as described in the proposal which becomes Annex 1 of the grant agreement. If a beneficiary fails to implement its part of the project, the other beneficiaries become responsible for implementing that part.

The coordinator has the following important roles:

- **Takes part in implementing the project;**
- **Monitors the action is implemented properly;**
- **Act as intermediary for communication between the consortium and EFSA;**
- **Receives and answers all claims EFSA might have in relation to implementation of the project;**
- **Requests and reviews any documents or information required by EFSA and verifies their completeness and correctness before passing them to EFSA;**
- **Informs EFSA and the partner/s of any event that is likely to substantially affect implementation of the project;**
- **Submits the deliverables and reports to EFSA;**
- **Requests and receives payments from EFSA and distributes the funds to partner/s without unjustified delays.**

The coordinator may not delegate the above-mentioned tasks to the co-beneficiary/ies or subcontract them to any third party.

The other beneficiary/ies:

- **Take part in implementing the project;**
- **Forward to the coordinator the data needed to draw up reports, financial statements and other documents required under the grant agreement;**
- **Inform the coordinator of any event or circumstances likely to substantially affect or delay the implementation of the project.**

1.7 IMPLEMENTING CONTRACTS AND SUBCONTRACTING

Implementation contracts:

Where the implementation of the project requires the award of procurement contracts (implementation contracts), e.g. purchase of services and/or goods or equipment necessary for the implementation of the action, the beneficiary must award the contract to the entity offering the best value for money or the lowest price (as appropriate), avoiding conflicts of interests. The beneficiary is expected to clearly document the tendering procedure and retain the documentation for the event of an audit.

Entities acting in their capacity as contracting authorities within the meaning of Directive 2014/24/EU[18] must comply with the applicable national public procurement rules.

Sub-contracting:

Sub-contractors are not consortium partners and are not party to the grant agreement. They do not have any contractual relationship with EFSA. Subcontractors are entities contracted by the beneficiary to carry out some specific tasks or activities. Subcontracting is allowed under these conditions:

- **Core tasks must not be subcontracted. Only ancillary and assistance tasks can be subcontracted.**
- **Subcontracts must be awarded to the entity offering best value for money or the lowest price (as appropriate), avoiding conflicts of interests;**
- **Subcontracting must only cover the implementation of a limited part of the action;**
- **Recourse to subcontracting must be justified having regard to the nature of the project and what is necessary for its implementation;**
- **Recourse to subcontracting during project implementation, if not envisaged from the outset in the proposal, is subject to prior authorisation in writing by EFSA. Approval may be granted as long as it does not entail a change to the grant agreement which would call into question the decision awarding the grant or be contrary to the equal treatment of applicants. No amendment is needed;**
- **The conditions applicable to the beneficiaries under Articles II.6 (*Confidentiality and security*), II.7 (*Processing of Personal Data*), II.8 (*Visibility of Union Funding*) of the grant agreement are also applicable to the subcontractor.**

1.8 GRANT PRINCIPLES

The financial help provided by EFSA under this Call is a grant governed by the EU Financial Regulation referred to in part 1.1. Accordingly, the grant awarded following this Call must comply with the following principles:

The form of grant awarded under this Call is based on financing not linked to the costs of the relevant operations in accordance with Article 125 (1)(a) of the EU Financial Regulation. Grants financed in this way require the fulfilment of conditions set out in sector specific rules of Commission decisions or the achievement of results measured by reference to previously set milestones or through performance indicators.

The present call for proposals comes with an innovative and simplified grant management, where the grant amounts paid to the partner are based on the pre-defined sums which are not linked to the actual costs of the action. This means there is no need for co-financing from the partner, and no need for completion of estimated budgets or timesheets to record the work. The agreed sums are set at a level designed to stimulate the mutually convenient partnership creation. The payment of agreed sums

[18] **Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC (OJ L 94, 28.3.2014, p. 65-242)**

from EFSA will be carried out based on the acceptance by EFSA of the delivered work. If you have questions on this grant form, during the application period, please raise any clarification questions to EFSAProcurement@efsa.europa.eu.

The financial support provided by EFSA under this Call is a grant governed by the EU Financial Regulation referred to in part 1.1. Accordingly, the grant awarded following this Call must comply with certain grant principles established in the EU Financial Regulation, specifically:

- **Non-retroactivity: A grant may be awarded for a project which has already begun only where the applicant can demonstrate in the grant application the need to start the action before the grant agreement is signed. In accordance with Article 196 of the Financial Regulation. The tasks entrusted by EFSA should not be performed before the signature of the grant Agreement.**

Article 183(3) of the EU Financial Regulation specifically states that the following grant principles are NOT applicable where the grant takes the form of financing not linked to the costs pursuant to article 125(1)(a):

- **Co-financing: In accordance with Article 193 of the Financial Regulation, grants shall involve co-financing.**
- **No-profit: In accordance with Article 195(3)(d) of the Financial Regulation, grants shall not have the purpose or effect of producing a profit within the framework of the project for the applicant or partner.**
- **Non-cumulative: In accordance with Article 194(3) of the Financial Regulation, in no circumstances shall the same costs be financed twice from the EU budget.**

1.9 ESTIMATED BUDGET AND ELIGIBLE COSTS

For the submission of a proposal under this Call for proposals, no estimated budget is required.

1.10 PUBLICITY

All beneficiaries are expected to follow the rules on visibility of EFSA funding set out in Article 17 of the grant agreement.

According to Article 38 of the EU Financial Regulation EFSA is bound to publish information on recipients of its grants at its website. Such publication shall take place no later than 30 June of the year following the financial year in which the grants were awarded and shall cover these data of the beneficiaries:

- **name of the beneficiary**
- **address of the beneficiary**
- **subject of the grant**
- **amount awarded**

With regards to publications of EFSA outputs that are integrating the preparatory work delivered in the context of this grant, the beneficiary could be mentioned in authorship lists indicating the affiliation to its organisation.

1.11 PROTECTION OF PERSONAL DATA IN RELATION TO GRANT PROCEDURES AND ANTIFRAUD STRATEGY

Processing of personal data by EFSA

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Information on the processing of personal data by EFSA in the context of this grant procedure is available in the Privacy Statement on the EFSA website as well as in Article 15 of the draft grant agreement. Any personal data included in the Agreement must be processed by EFSA in accordance with Regulation (EU) No 2018/1725.[19]

Applicants should note that personal data as applicant or selected beneficiary may be registered in the Early Detection and Exclusion System (EDES) if you are in one of the situations mentioned in Article 138 of the Financial Regulation. For more information see the Privacy Statement on: http://ec.europa.eu/budget/explained/management/protecting/protect_en.cfm#BDCE).

Processing of personal data by the beneficiary
In case the implementation of activities under the grant agreement resulting from this call entails the processing of personal data, the beneficiary shall comply with the relevant rules in Article 15 of the Grant Agreement (Annex 1) as a data processor of EFSA.

Antifraud Strategy
Frauds involving EU funds have a particularly high impact on EFSA's and the EU's reputation. The current EFSA Anti-Fraud Strategy ("the Strategy") was adopted on 14 October 2021. In case of award of an EFSA contract/grant agreement, it is obligatory for the Project Manager to follow the EFSA Anti-Fraud Module. It is the responsibility of the beneficiary to make sure the training has been followed before start of grant agreement implementation.
IT support for access to the module please contact: servicedesk@efsa.europa.eu
Request on the topic of anti-fraud please contact: ethics-integrity@efsa.europa.eu

1.12 PUBLIC ACCESS TO DOCUMENTS

In the general implementation of its activities and for the processing of grant procedures in particular, EFSA observes Regulation (EC) N° 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents.

1.13 OPEN ACCESS

EFSA is committed to the publication of grant outputs in the Knowledge Junction in order to improve transparency, reproducibility and evidence reuse. The Knowledge Junction runs on the EU-funded Zenodo research-sharing platform where uploaded items receive a unique Digital Object Identifier to make them citable. Any part of the output resulting from the action under this grant may be published (at EFSA's discretion) on the Knowledge Junction with attribution to the beneficiary.

1.14 HUNGARIAN PUBLIC INTEREST TRUSTS ESTABLISHED UNDER HUNGARIAN ACT IX OF 2021

Following the Council Implementing Decision (EU) 2022/2506, as of 16th December 2022, no legal commitments (including the grant agreement itself as well as subcontracts, purchase contracts, financial support to third parties etc.) can be signed with Hungarian public interest trusts established under Hungarian Act IX of 2021 or any entity they maintain.
Affected entities may continue to apply to calls for proposals. However, in case the Council measures are not lifted, such entities are not eligible to participate in any funded role (beneficiaries, affiliated entities, subcontractors, recipients of financial support to third parties).

[19] Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC

In case of multi-beneficiary grant calls, co-applicants will be invited to remove or replace that entity. Tasks and budget may be redistributed accordingly.

1.15 USE OF ARTIFICIAL INTELLIGENCE SYSTEMS AND MODELS FOR DRAFTING THE OFFER AND IN DELIVERING SERVICES

Applicants must clearly indicate in their application whether Large Language Models, such as ChatGPT, were utilised in the preparation of their proposal.

The use of the AI systems/models in the frame of implementation of this grant is allowed, however the applicant must specify such intention in their proposal in the description of the proposed methodology.

1. Requirements for AI system / model, in case those are proposed by the applicant:

The beneficiary using AI system/model in the implementation of this grant must adhere to Regulation (EU) 2024/1689 (hereafter: 'the AI Act')[20] . This regulation is already in force, however it becomes applicable in a gradual way. This regulation also stipulates the obligations of deployers of high-risk AI systems (Article 26). Under no circumstances may the prohibited AI practices (outlined in article 5 of the AI Act) be applied during the implementation of this grant.

A mandatory requirement for the use of AI system / model, and irrespective when relevant provisions of the AI Act become applicable, must be the compliance of the applicant/beneficiary with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data. In particular, Art. 24 of the EUDPR and Art. 22 of the GDPR provide data subjects with the right not to be subject to decisions based solely on automatic processing including profiling, hence confirming the need for ensuring human oversight and validation for all activities and deliverables under the present contract.

2. Information required for award criteria:

EFSA, as the contracting authority, is committed to ensuring that the quality of outsourced outputs/deliverables is not compromised by the use of Artificial Intelligence systems/models. As you prepare your proposal, please note that EFSA requires assurance that your reliance on AI technologies will not jeopardize the quality of outputs/deliverables to be provided to EFSA in the future in case your proposal is selected.

Due to the inherent risks associated with AI technologies, EFSA must have confidence in the ability of applicants to manage these risks effectively and in a trustworthy manner. To this end, applicants are requested to provide evidence that the use of AI systems/models will not only maintain, but ideally enhance, the quality of outputs/deliverables provided to EFSA.

[20] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act), OJ L, 2024/1689, 12.7.2024 - https://eur-lex.europa.eu/eli/reg/2024/1689/oj

By addressing this requirement, you will help EFSA to assess your ability to deliver high-quality outputs/deliverables while leveraging AI technologies in a responsible and controlled manner.

Accordingly, if the applicant intends to use AI system/model in grant implementation, the proposal must specify the following information:

- **The purpose of the use of AI system/model;**
- **At which stage / for which output/deliverable AI system/model is to be used;**
- **The added value expected from the use of AI system/model compared to relying on traditional IT systems;**
- **The risks linked with the use of AI system/model and the mitigating measures put in place by the applicant;**
- **The indication on how the human oversight and quality validation will be guaranteed.**

This information will be assessed in section 2.5 award criteria, under methodology, risk management and measures to guarantee quality of deliverables.

3. Other transparency requirements in use of AI:

For the sake of transparency, should generative AI systems/models such as Large Language Models (ChatGPT) have been employed in producing deliverables for EFSA, EFSA requires that the beneficiary inserts in the deliverable an explicit mention acknowledging the use of such AI systems/models and confirming human oversight and validation. This requirement applies to all deliverables in written or audio-visual formats, including but not limited to reports, images, videos and soundtracks.

The applicant must clearly indicate in their proposal whether generative AI systems/models such as Large Language Models (e.g. ChatGPT), were utilised in the preparation of their proposals.

INTRODUCTION OF NEW AI SYSTEMS/MODELS DURING GRANT IMPLEMENTATION

Introducing AI systems/ models into the grant implementation, if it was not part of the initial methodology explicitly foreseen in the call for proposals or in the application submitted by the beneficiary, equals to a change of the agreed delivery methodology. Therefore, any change is treated as any other methodology change: the beneficiary, before starting to use such AI systems/models in the grant implementation must first inform EFSA in writing of its intention to use AI systems/models. The beneficiary shall provide EFSA with the following information:

- **The purpose of the use of AI system/model and of the added-value compared to initially proposed implementation method;**
- **At which stage of the process and/or for which specific tasks the AI system/model is to be used;**
- **The risks linked with the use of AI system/model and the mitigating measures put in place by the beneficiary;**
- **The indication on how the beneficiary will guarantee the human oversight and quality validation.**

Only if EFSA agrees in writing to such a change of methodology, the beneficiary can start to use AI system/model for the implementation of the grant.

EFSA will only endorse request if the following conditions are met:

- **EFSA receives convincing reassurance that the change of methodology will not have negative effect on quality of the outputs/deliverables;**
- **The change does not substantially alter the initial proposal.**

EFSA reserves the right to refuse beneficiary's requests to use AI systems/models.

2. SELECTING PROPOSALS

The Evaluation Committee established by EFSA specifically for this call will evaluate the submitted proposals in five steps:

1. **Verification of submission requirements (2.1)**
2. **Eligibility criteria (2.2)**
3. **Exclusion criteria (2.3)**
4. **Selection criteria (2.4)**
5. **Award criteria (2.5)**

If the proposal fails at any step it is automatically excluded from further evaluation. EFSA may contact the applicant during the evaluation process if there is a need to clarify certain aspects or for the correction of clerical mistakes.

2.1 VERIFICATION OF SUBMISSION REQUIREMENTS

The following will be verified:

- **proposal was submitted within the deadline for submission of proposals;**
- **administrative data for grant application form is duly signed by the authorised representative of the applicant;**
- **proposal is complete and includes all the supporting documents.**

2.2 ELIGIBILITY CRITERIA

Criterion No. 2.2	Requirements and requested evidence
1	**Eligibility criteria**
	The following requirements will be verified:
	• At the day of deadline for submission of proposals, the applicant and in case of consortium also its partner/s are on the list of competent organisations designated by the Member States in accordance with Art 36 of Regulation (EC) 178/2002 and Commission Regulation (EC) 2230/2004; • Applicant and in case of consortium also its partner/s are involved in the execution of the project; • Subcontracting, if any, is justified in the proposal.
	Requested evidence:
	ADMINISTRATIVE DECLARATION Annex 2, available to download in the Funding and Tenders Portal under Part B Templates. The applicant and partner(s) (if applicable) must complete and sign the form. The applicant must upload the signed form in the relevant field under Part B and Annexes of the Funding and Tenders Portal.

2.3 EXCLUSION CRITERIA

Criterion No. 2.3	Requirements and requested evidence
2	**Exclusion criteria**
	The following requirements will be verified:
	The applicant and partner/s must sign a declaration on their honour certifying they are not in one of the exclusion situations referred to in the Articles 138(1) of EU Financial Regulation.
	Requested evidence:
	THE DECLARATION ON HONOUR ON EXCLUSION CRITERIA **Annex 3, available to download in the Funding and Tenders Portal under Part B Templates. The applicant and the partner(s) (if applicable) must complete and sign separate forms. The applicant must upload the form in the relevant field under Part B and Annexes of the Funding and Tenders Portal. If applying in consortium, the consortium leader must convert all declarations on honour on exclusion for all partners into one single pdf and upload the single document in the relevant field under Part B and Annexes of the Funding and Tenders Portal.**

2.4 SELECTION CRITERIA

A) Financial capacity

Criterion No. 2.4A	Requirements and requested evidence
1	**Financial capacity**
	The purpose of the selection criteria is to verify the financial capacity of the applicant and in case of consortium also of its partner/s.
	The applicant and in case of consortium also its partner/s must have stable and sufficient financial resources to: • **maintain their activity throughout the period during which the project is being carried out.** **If the Authority considers that financial capacity is weak, it may:** – **request further information;** – **decide not to give pre-financing;** – **decide to give pre-financing paid in instalments;** – **decide to give pre-financing covered by a bank guarantee;** – **where applicable, require the joint and several financial liability of all the co-beneficiaries.** **If the EFSA Authorising Officer considers that the financial capacity is insufficient, the application may be rejected.**
	Requested evidence:

	Documents to be provided by the applicant: **DECLARATION ON HONOUR ON SELECTION CRITERIA** **Annex 4, available to download in the Funding and Tenders Portal. Only the applicant (or consortium leader if applicable) is required to complete and sign the form. The applicant must upload the form in the relevant field under Part B and Annexes of the Funding and Tenders Portal.** • **SIMPLIFIED FINANCIAL STATEMENT available here** **only required for private bodies if the grant requested from EFSA is >60.000 €. The template published with the Call should be completed for at least the last two closed financial years.** • **LETTER OF COMMITMENT:** **applicable only when another public body financially contributes to the project (body other than EFSA, applicant or in case of consortium, its partners); to be signed by the contributing public body; it serves to confirm its commitment to financially contribute to the project; no template is provided by EFSA.** **The applicant must convert the Declaration on honour on selection criteria, the Simplified Financial statement (if applicable) and the letter of commitment (if applicable) into one single pdf and upload the single document in the relevant field under Part B and Annexes of the Funding and Tenders Portal.**

B) Professional and operational capacity

Criterion No. 2.4.B	Requirements and requested evidence
1	**Professional and operational capacity:**
	Requirements and requested evidence:
	The applicant or in case of a consortium, the consortium as a whole (including possible subcontractors, if applicable), must have the professional resources, competencies and qualifications necessary to complete the proposed project: **1. Requirements for the organisation:** **The applicant must have extensive and demonstrable experience (at least 5 years) in:** **- development and application of physiologically-based population dynamic models (for Lot 1), and of process-based models (for Lot 2), applied in the context of agricultural and/or environmental studies, insect pest and diseases, alien species.** **- Programming in Python (at least two years) and software development with working knowledge of DevOps principles and tools, demonstrated through relevant project experience (at least two years)** **- Geospatial data analysis and mapping (at least two years)** • **EVIDENCE REQUESTED FOR REQUIREMENT 1:** **evidence of a recently finalised scientific and/or R&D research project (within the last 5 years) and of a new or ongoing scientific and/or R&D research project relevant to the topics of this grant, showing evidence of requirement 1 above.** **2. Requirements for the team of experts:** **Experts involved in the tasks should prove a University degree at post-graduate level (minimum master degree) and the team of experts should cover the following fields:** **a. Model development**

b. Simulations of pest and disease development
c. Programming in Python (at least two years) and software development with basic working knowledge of DevOps principles and tools, demonstrated through relevant project experience (at least two years)
d. Geospatial data analysis and mapping

- **EVIDENCE REQUESTED FOR REQUIREMENT 2:**

Detailed CVs of the Project team members proposed for the assignment, showing evidence of requirement 2 above, including a brief description of the expertise and a list of publications relevant to the project for each person proposed. If individual team members are not yet assigned for the proposed project, applicants should provide details of the staff profiles necessary for the project.
EFSA strongly recommends submitting the CVs in the EU CV format which can be accessed here.
LIST OF PROJECT TEAM MEMBERS NAMES –the applicant should also summarise in one page, the names of the proposed individual project team members and the profile covered.

3. Requirements for the team of experts:

The team of experts must have overall/each expert individually an excellent level of spoken and written standard UK English. For non-native speakers, this should be demonstrated by an Official certificate of English proving a C1 level OR at least 3 years of work in an English-speaking environment etc. and /or an extensive list of scientific papers in English;

- **EVIDENCE REQUESTED FOR REQUIREMENT 3:**

• Detailed CVs of the Project team members proposed for the assignment, showing evidence of requirement 3 above. EFSA strongly recommends submitting the CVs in the EU CV format which can be accessed here.
• Official certificate of English proving a C1 level where applicable

4. Environmental management (the answers to this section are for information purposes and will not be considered under any criteria, neither selection nor award criteria):

Environmental protection is an integral part of EFSA's governance. EFSA has established, implemented and maintains a certified environmental management system in accordance with the international standard ISO 14001 and the European EMAS regulation. Environmental impacts of EFSA's activities are identified, managed and monitored in order to improve environmental performance. This commitment to environmental sustainability requires us to consider a life-cycle perspective when purchasing our services.

For this reason, we are asking you some information on the environmental management of your activities, to be provided filling in Annex 5 (Selection criteria - Information on environmental management).

- **EVIDENCE REQUESTED FOR REQUIREMENT 4:**
  Annex 5 – Selection criteria, Information on environmental management

For requirements 2.4.B a template (Annex 5) is available to download in the Funding and Tenders Portal. The applicant must upload the completed

	template (a single pdf document of all requirements including CVs), in the relevant field under Part B and Annexes of the Funding and Tenders Portal.
	DoIs do not need to be provided with your proposal at this stage. • **DECLARATION OF INTERESTS (DoIs)** **The beneficiary will provide Individual Declaration of Interests (DoIs) of subcontractors not working for organisations included in the Art. 36 list and which are members of the project team having influence and/or control over scientific outputs, prior to and as a condition of grant agreement signature.** **The Individual Declarations of Interests is available here under *Conflict of interest forms applicable to contracts/grants signed from June 2025.*** **Please refer to EFSA's Independence policy and the Decision of the Executive Director on Competing Interest Management for more detailed information.** **DoIs do not need to be provided with your proposal at this stage.**

2.5 AWARD CRITERIA

Criterion No. 2.5	**For the award criteria a template (Annex 6) is available to download in the Funding and Tenders Portal. The applicant must upload the completed template (a single pdf document of all criteria) in the relevant field under Part B and Annexes of the Funding and Tenders Portal.** **The award criteria serve to assess the quality of the proposals in relation to the objectives of the Call. The following award criteria are applicable in this call.**
1	**Overall quality and relevance of the proposal.** • **Clarity, coherence, and structure of the proposal, including how well objectives, methodology and implementation plans are articulated** • **Relevance of the technological solution proposed including, if applicable, the use of any AI component for the tasks outlined.** • **Feasibility of implementation within the project duration and resource constraints.** • **Identification and assessment of inherent key risks (technological, scientific, operational) and analysis of proposed mitigation strategies. This includes, if applicable risks specifically related to the use of AI models/systems and measures to ensure human oversight and quality validation of deliverables produced with the use of AI.** • **Overall potential of the proposal to support EFSA's mandate in pest establishment risk assessments under current and future climate scenarios.** **MAX 20 POINTS**

2	**Scientific and modelling methodological soundness and quality** • Scientific soundness and methodological rigor of the proposed modelling approach(es). • Relevance to the specific objectives and tasks of the call, including the suitability of the models for pest establishment assessment • Appropriateness and clarity of calibration, validation, sensitivity analysis, and uncertainty quantification methods • Use of good modelling standards and practices to ensure transparency, robustness, and reproducibility • Ability to generate meaningful, risk-relevant indicators and outputs (summary analytics) for policy support under varying climate and host distribution scenarios • Fulfilment of temporal resolution requirements (hourly or daily). **MAX 40 POINTS**
3	**Technical Requirements Compliance** • Compliance with EFSA's technical requirements (e.g. Python, DevOps, metadata descriptors, MLflow, Databricks integration). • Clarity and adequacy of plans for code documentation, modularity, metadata structure, and parameter transparency. • Capability to handle and integrate climate datasets (e.g., ERA5-Land, AgERA5), spatial resolution (0.1°), and gridded input/output workflows • Scalability, performance, and maintainability considerations for future updates or extension of the model **MAX 40 POINTS**

In order to be considered for a reserve list, the proposal must:

- **score a minimum of 70 points out of maximum possible 100 points; and**
- **for criteria 1, 2, 3, score at least 70% of the points attributed to that criterion.**

Proposals which have satisfied these quality thresholds will be ranked in a reserve list. The reserve list will be valid for six months form the signature of the feedback letter.

2.6 PROCESS FOLLOWING THE ASSESSMENT AGAINST AWARD CRITERIA

The applicant(s) will be notified, once the evaluation has been finalized, whether they are placed on the reserve list or not.

EFSA reserves the right to invite the 1st ranked applicant on the reserve list, to adapt its proposal based on the evaluators' comments in accordance with article 203(5) EU FR.

Following the successful conclusion of the adaptation phase, the award decision will be taken by EFSA. Subsequently, the grant agreement will be prepared.

If the 1st ranked applicant fails to adapt its proposal, EFSA reserves the right to reject the proposal. The budget made available in this way may be used for a project of the next ranked applicant on the reserve list.

3. SUBMITTING PROPOSALS

3.1 SUBMISSION MODALITIES

You must submit your proposal electronically via the EU Funding & Tenders Portal before the time limit for receipt of proposals (indicated on page 2 of this call). A webinar showing step-by-step the use of the EU funding and Tender Portal for Grant submission on a pilot EFSA call is available at this link (from minute 15:39 to minute 45:55).

Registration in the Participant Register

Applicants submitting a proposal must be registered in the Participant Register - an online register of organisations and natural persons participating in European Commission's calls for tenders or proposals.

On registering, each participant obtains a Participant Identification Code (PIC, 9 - digit number) which acts as its unique identifier in the Participant Register. A participant needs to register only once – the information provided can be further updated or re-used by the participant in other European Commission's calls for tenders or calls for proposals.

At any moment during the grant procedure the Research Executive Agency Validation Services (hereafter the EU Validation Services) may contact the participant and ask for supporting documents on legal existence and status.

The requests will be made through the register's messaging system to the e-mail address of the participant's contact person indicated in the register. It is the responsibility of the participant to provide a valid e-mail address and to check it regularly.

The documents that may be requested by the EU Validation Services are listed in the EU Grants and Tenders Rules on Legal Entity Validation, LEAR appointment and Financial Capacity assessment. Please note that a request for supporting documents by the EU Validation Services in no way implies that the grant application has been successful.

Submitting your proposal

The EU Funding & Tenders Portal allows applicants to respond to calls for proposals by preparing applications electronically in a structured and secured way and submitting proposals electronically.

To find more information on submitting your proposal, please read carefully the information on the page Submit a proposal – electronic submission system. On the same page useful links to the User guide of the submission system and an FAQ on proposal submission are provided.

Make sure you submit your application on time: you are advised to start completing your application early. To avoid any complications with regard to late receipt/non-receipt of applications within the deadline, please ensure that you submit your application several hours before the deadline. It is not possible to submit an application after the deadline.

3.2 LANGUAGE OF THE PROPOSAL AND THE SUPPORTING DOCUMENTS

Proposals may be submitted in any official language of the European Union. However, as EFSA`s working language is English, the submission of proposals in English would speed up the evaluation process.

Please note that some supporting documents (e.g. CVs) are required. These supporting documents are an integral part of the proposal. If these supporting documents are in a language other than English, in order to facilitate and speed up the evaluation, it would be appreciated if a reliable translation of the relevant parts of the documents into English is provided with the proposal.

3.3 EXPECTED DURATION OF PROCEDURE

In accordance with Article 197(2) of the Financial Regulation, the maximum time-limits for the procedure are as follows:

- **All applicants will be informed of the decision regarding their application within 6 months of the deadline for submission of proposals.**
- **Signature of the grant agreement will take place within 3 months from the date the successful applicant/s has/have been informed of the decision on their application.**

Annex to: call for proposals ref. EUBA-EFSA-2025-PLANTS-05

Annex 7 - EFSA Azure Cloud DataLake Architecture

A.1. Introduction

EFSA's Azure Cloud architecture is heavily inspired by the data mesh paradigm and its underlying principles. The data mesh paradigm advocates the need of organizing the data platform architecture – on the highest level – around business domains instead of segmenting the architecture alongside a technological axis. By treating the organizational axis as primary and the technological axis only as secondary, data ownership gets aligned with the business areas responsible for producing the data. In addition, this avoids building a central, enterprise-wide monolithic platform which is known not to scale well when the number of sources and/or consumption use cases increases and to make a central bottleneck of the IT team responsible for maintaining this monolithic platform.

This document aims at describing the EFSA Azure Cloud DataLake platform and governance offering an overview of the building blocks that collaborates to realize the SEED architecture.

A.2. Logical View

A.2.1. Technical Domains

One of the core principles of data mesh is adhering to a decentralized domain-driven design. Domains are areas where knowledge, processes and activities come together. They reflect the main business capabilities of the organisation, and they have a clear and Long-term ownership.

EFSA Technical Domains are:

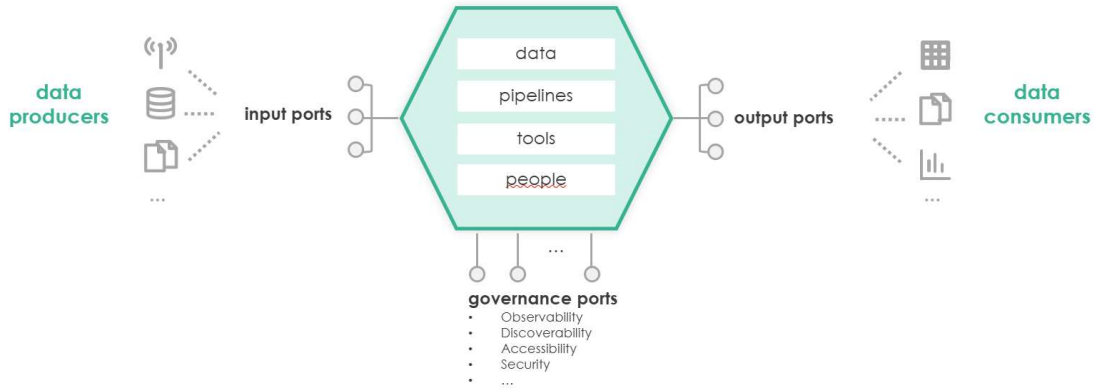
- Domain 1: Administrative Risk Assessment (TRI)
- Domain 2: Bio-informatics (WGS)
- Domain 3: Scientific Data (DAMA)

These domains are segregated on Azure by means of separate landing zones (i.e. Azure subscriptions) PROD and NONPROD.

A.2.2. Data Products

Within these domains data ownership is organised around data products. A data product can be loosely defined as a set of data or functionalities which are stored, processed and served with a high functional cohesion.

A data product encapsulates data, metadata, code and the infrastructure required to serve data and functionalities with a clear and governed ownership.

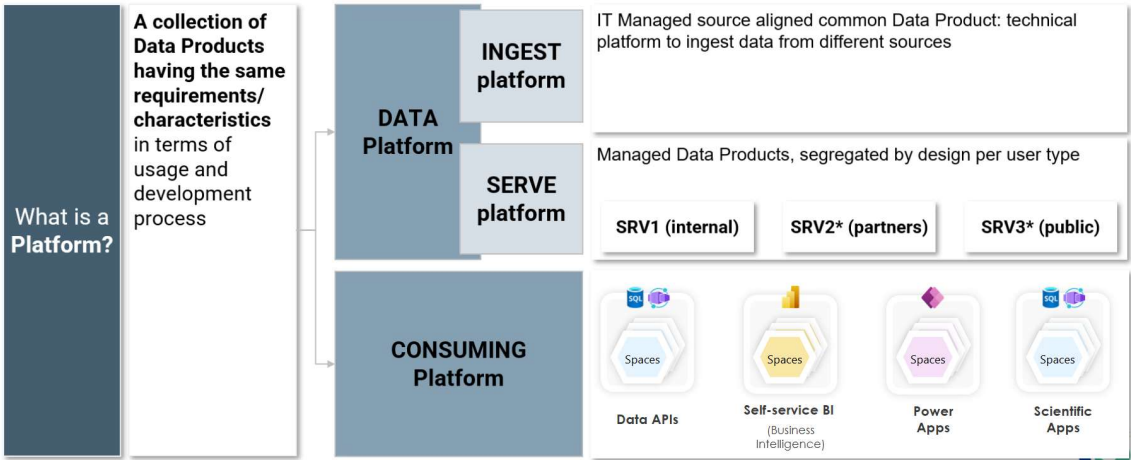


A data product is implemented using dedicated resources, managed and provisioned independently and encapsulates both prototyping as well as industrialization activities and resources.

EFSA Data Products approach has been realized using platforms and spaces having well defined responsibilities and roles.

A.2.3. EFSA Platforms

The picture below shows which are the key EFSA platforms:



The Ingest Data Platform is composed by Source Aligned Data Products that retrieve data from external sources systems and applications to Azure, for use in downstream operational applications and/or analytical use cases. The primary goal of this capability is to integrate data as-is from various external sources (i.e. systems/ applications).

The ingestion is implemented with automated data offloading pipelines that extract data from external system and store it on the Azure data lake. Data are stored in an interoperable format to facilitate downstream data consumption by other parties. No transformation is done in the Ingest Data Platform that is a very technical platform aimed only at replicating original data.

The Serve Data Platforms are composed by Data Products enabling the development of use-case specific pipelines which implement the necessary data transformation and/ or harmonization logics. The governance has been designed to support self-service data consumption: product

development and release is decentralized to the solution business owners (in a BAU - Business As Usual - mode).

EFSA created 3 different Serve Data Platforms with the same tech capabilities and building blocks, but with a different governance differentiated by users:

- Srv1: citizen development for internal members (staff, or contractors);
- Srv2: collaboration between certified partners and internal members;
- Srv3: collaboration environment with the public.

The foundational technologies that realize both the Serve and Ingest Platforms are:

- Databricks Delta Lake framework to ensure a reliable and standardized access to data
- Unity Catalog, to govern and control access to data and models
- Delta Share to securely distribute data

A.2.4. EFSA Spaces

A Space is a collection of resources, tools and data having a strong functional cohesion and a clear ownership.

Spaces have been created to guarantee a secured, governed and self-service access to data and models. In a Space data is organized, isolated and managed, models are created, executed and audited.

In a Space the owners can build, deploy, and manage data, models and other resources within the governed EFSA Azure Databricks platform.

Four different types of spaces are available:

- Data Space: for data modelling, storage and management
- Model Space: to create and govern statistical or AI models and algorithms using the MLflow platform
- Runtime Space: to orchestrate, audit and control model execution
- User Space: for a governed self-service data exploration

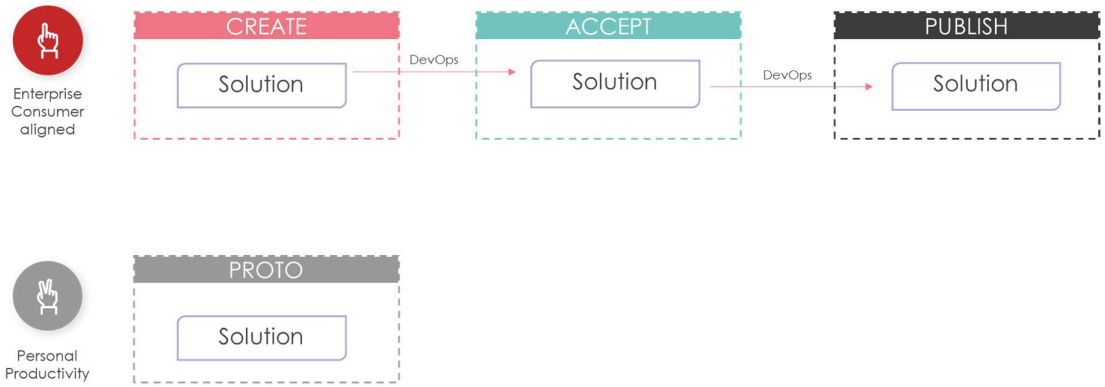
A *Space* is built to bundle code, metadata, infrastructure in one package. To establish a clear separation between development, testing and production, the overall design exists of 3 different environments, as described below:

- CREATE: where developers build models and data pipelines. Once a software release is ready, the solution can be published to the ACCEPT environment.
- ACCEPT: where a set of test users test the last iteration of the component coming from CREATE. Once a component has been thoroughly tested and approved, it can be deployed to the PUBLISH environment.

- **PUBLISH: the live, operational space where the approved version of the component runs and is used by end-users.**

A *PROTO* environment is available to allow developers to experiment and test: the environment is free, not segregated and shall not contain or have access to private data.

The diagram below illustrates the environment set-up:



As shown in the diagram, the deployment of solutions between environments is handled through a DevOps pipeline. Approvers need to give their approval before the solution can be imported in the target environment (ACCEPT & PUBLISH).

Within an environment, security roles manage the permissions, privileges, and actions users and groups can perform. Users can have multiple security roles assigned, inheriting the union of all the privileges and access levels.

EFSA Identity Management System (Azure EntraID) Security Groups are used to control the Space access and actions:

- **Space - CREATE: for Developers that will develop the component on CREATE**
- **Space - ACCEPT: Users who will test the component in ACCEPT**
- **Space - PUBLISH: Read only access for Developers/Tester for troubleshooting in PUBLISH**
- **Gatekeeper – ACCEPT: Users who approve import of solutions in ACCEPT, coming from CREATE**
- **Gatekeeper – PUBLISH: Users who approve import of solutions in PUBLISH, coming from ACCEPT**

The Gatekeeper role behaves differently in Srv1, Srv2, Srv3:

  - **Srv1: the environment is dedicated to internal development, one horizontal role for each Gatekeeper type approves all the pipelines belonging to the same technical domain (DAMA, TRI, WGS).**

- **Srv2 and Srv3: collaborative environments on which specific roles for solution (space) can complement the horizontal role where segregation is required due to collaboration with external partners or guests.**

A.2.5. Unity Catalog

All access to data and models is protected by the Databricks Unity Catalog.

Unity Catalog is a governance solution for data assets including files, tables, AI and statistical models. The service sits between the end users, being data consumers and/or data producers and the data products or assets. It serves multiple purposes like access control, user management (for access), audit logging, automatic lineage derivation, functionality to discover data, etc.

Within the architecture, Unity Catalog is used to:

- **Offer role-based read access to specific set of production data:**
  - **Each Space is linked to a specific scope of pre-mounted production data.**
  - **Data is accessible in read-only mode from within all zones (create, accept, and publish).**
  - **Data is shared in a federated way by making use of views in Unity Catalog through the Delta Share protocol.**
- **Offer role-based access to execute models (Mlflow integrated with the Unity Catalog)**
- **Offer a protected environment to register models created in a Model Space**
- **Offer a protected environment to serve data processed in a Data Space**

A.3. Infrastructure View

EFSA Azure environment is structured across multiple subscriptions, each serving distinct operational and strategic purposes. These subscriptions are logically grouped based on their functional responsibilities, enabling clear separation of concerns, optimized governance, and scalable resource management.

The grouping is defined as follows:

Legacy Subscriptions

These subscriptions host workloads and resources associated with legacy systems. They typically include applications and services that are either in the process of being modernized or maintained for backward compatibility and business continuity.

Horizontal Subscriptions

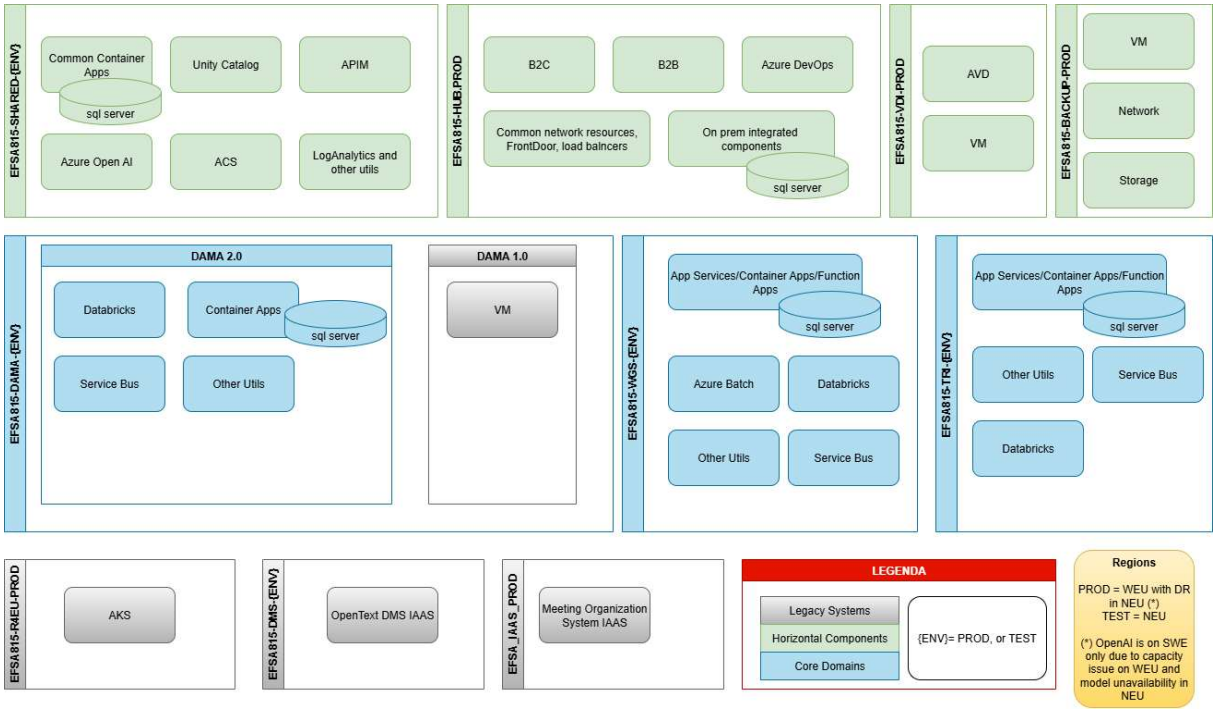
This group encompasses shared services and cross-cutting infrastructure components such as networking, identity management, monitoring, and security. These subscriptions provide foundational capabilities that support workloads across multiple business domains.

Business Domain Subscriptions

These are aligned with specific business domains. Each subscription is tailored to the operational needs of its respective domain, facilitating autonomy, cost tracking, and targeted policy enforcement.

This topology supports a hub-and-spoke architecture, where the HUB subscriptions often act as the hub, and business domain or legacy subscriptions function as spokes. Governance is enforced through management groups, Azure Policy, and role-based access control (RBAC), ensuring compliance, security, and operational efficiency across the cloud estate.

Here below a picture of the EFSA Azure Cloud Landscape:



A.3.1. EFSA Azure Private Link Architecture

EFSA adopted a network design that leverages Azure Private Link to enable private, secure access to Azure services and customer-hosted services over the Microsoft backbone network, without exposing traffic to the public internet.

Azure Private Link enables private connectivity from virtual networks to Azure platform services, customer-owned services, or Microsoft partner services. This is achieved by mapping a Private Endpoint to a specific resource, such as an Azure Storage Account, SQL Database, or Web App.

Key Components of the architecture are:

- **Private Endpoint: a network interface that connects you privately and securely to a service powered by Azure Private Link. It uses a private IP address from your VNet, effectively bringing the service into your virtual network.**
- **Private Link Service: enables you to create your own service behind a Standard Load Balancer and expose it privately to consumers in other VNets or tenants.**
- **DNS Integration: custom DNS configurations required to resolve the service's public DNS name to the private IP address of the Private Endpoint.**

A.4. Development View

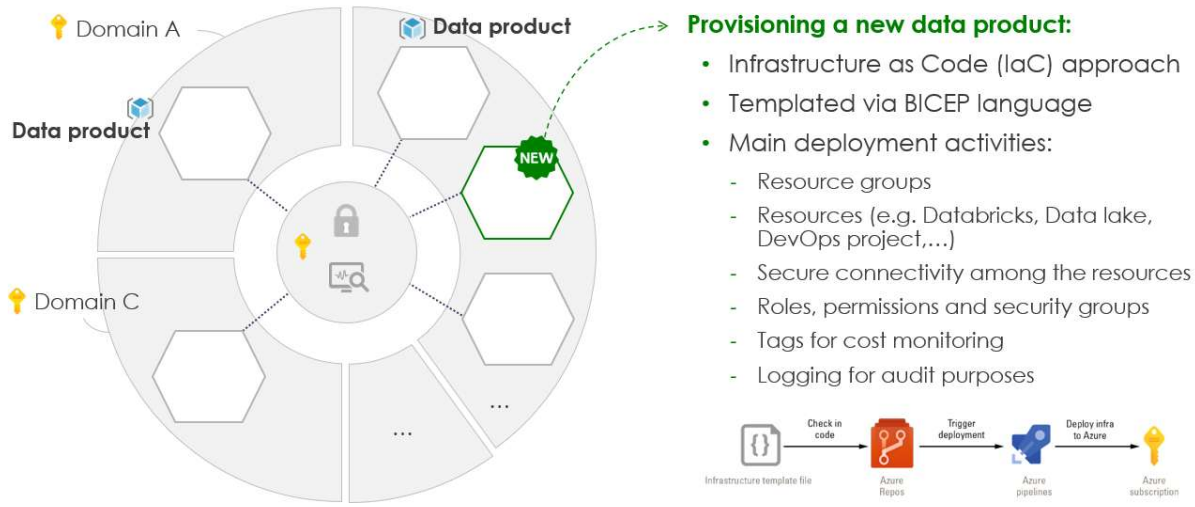
A.4.1. Infrastructure as Code

EFSA uses Infrastructure as Code (IaC) to define and deploy Azure resources for applications and data products: the infrastructure on which the source code is distributed is defined as code as well through Bicep and Terraform templates.

This approach ensures:

- **Consistency across environments (e.g., development, testing, production)**
- **Reduced human error**
- **Improved security, as deleted resources can be quickly restored by redeploying the code**

This process is further clarified in the diagram below:



As shown in the picture above, a combination of modules is packaged as a *Space* template. Using a pipeline in Azure DevOps (see next section for more details) the space template will be instantiated to deploy a running instance of the same.

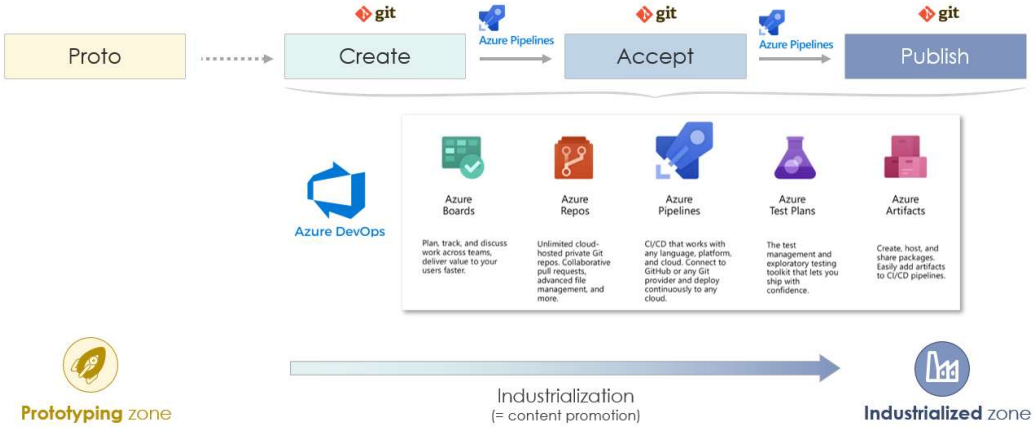
A.4.2. Azure DevOps

DevOps is a methodology to integrate and automate the work of software development (Dev) and IT operations (Ops) as a means for improving and shortening the systems development life cycle.

Azure DevOps is a set of tools offered by Microsoft for developers to collaborate on software development projects, whether it is building an application or a data product. It offers a variety of capabilities, including version control, continuous integration and delivery, agile project management, and testing. These features help teams to manage their development projects more efficiently and effectively.

Azure DevOps facilitates industrialization activities. It helps in automating the necessary deployments by using predefined CI/CD pipelines which include the necessary approval gates.

The lifecycle of a Space is described below:



Each Space has a separate project in Azure DevOps, under the already existing EFSA DevOps organisation.

Azure Repositories store and manage all source code (data pipeline scripts, code, algorithms, configuration files, parameter files and others) using Git as distributed version control system.

A.4.2.1. Industrialisation using CI/CD pipelines

Azure Pipelines allow you to deploy code or other artifacts in a standardised, controlled way. Pipelines manage the CI/CD part: continuous integration (combining the source code and building artifacts) and continuous deployment (deploying the built artifacts).

Pipelines are defined using the YAML syntax or through the user interface (Classic). It is made up of one or more stages. It can be thought of as a workflow that defines how your test, build, and deployment steps are run. Stage runs can be 'gated' to allow only key engineers to deploy infrastructure and application code to the environments.

One or more approval gates can be installed in a CI/CD pipeline, requiring explicit approval from one or more parties before code is built and or deployed to a specific environment (e.g. created, accept or publish).

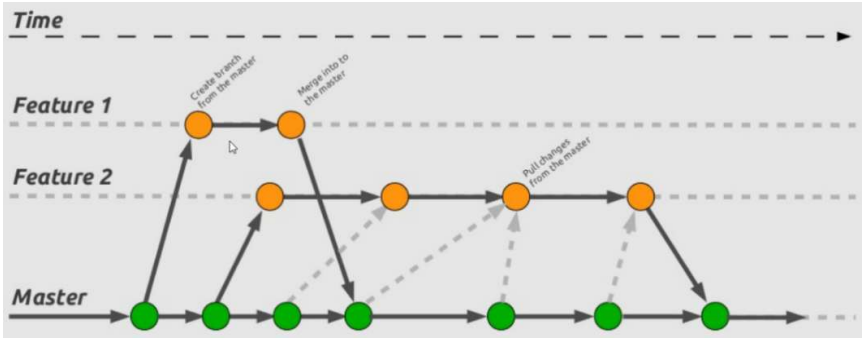
A.4.2.2. Simultaneous development

Each developer in an application or data product is expected to work on his own version of the code and develop his/her features / data flow / ... separately from other developers. At some point, this code, developed separately, must be integrated into the overall code base. This code

block will go through a quality control process (policies) before it is integrated into the platform. This process consists of:

- peer reviews of code via pull requests,
- verification of build statuses
- ensuring that all automated tests have passed.

An important aspect of continuous integration is having a pragmatic branching strategy. A branching strategy determines how to handle the different versions of code on which each developer is working on their new changes. The strategy must be ready to support not only new features for the main code base but also fixes and upgrades to already implemented versions in production.

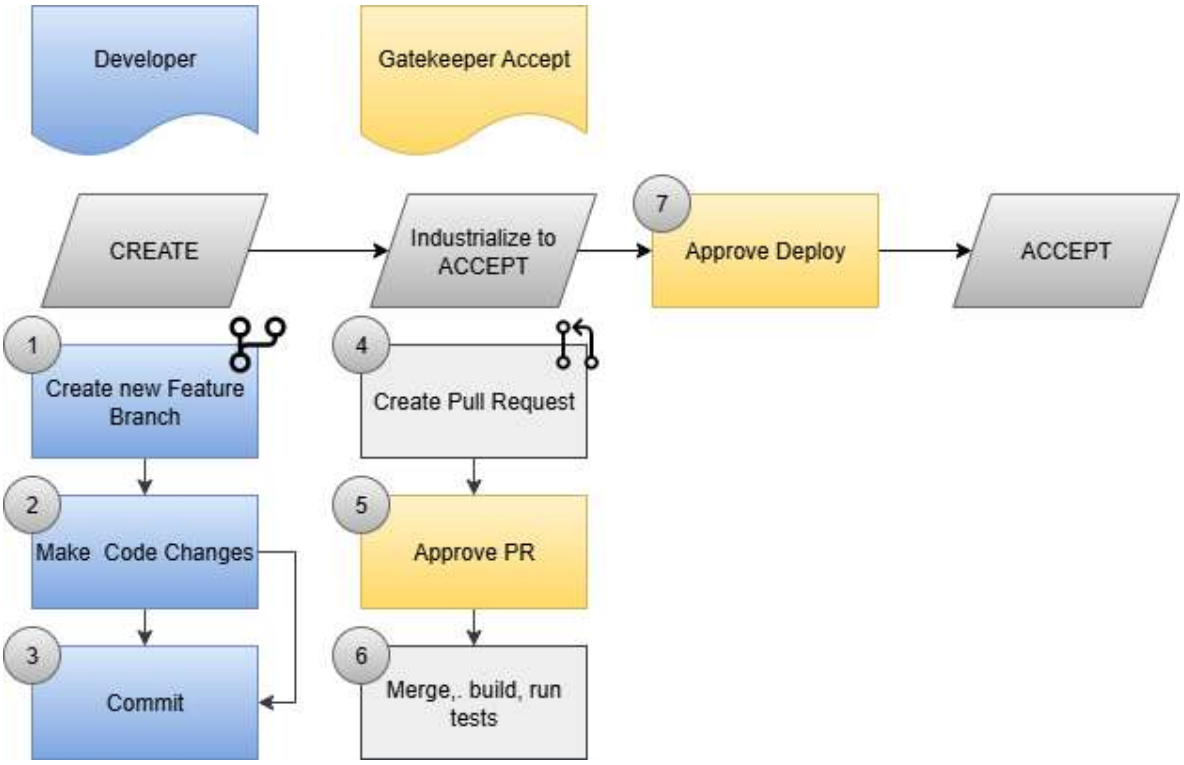


The master branch is where all quality-tested code eventually comes together as an initial stable version. Direct commits/pushes in the master branch are disabled: it is only possible to add new code through pull requests.

A pull request to dev branch, once approved, triggers a pipeline to package the Space artifacts.

A.4.2.3. EFSA Development Process and CI/CD

The general process EFSA is using to industrialize content in a Space is explained schematically below:



Developers work in their own feature branches testing their artifacts on the Create environment.

A commit on the DEV branch allows them to run a packaging CD pipeline to generate the final artifact and run integration test.

To deploy the code on other environments Developers shall create a Pull Request to the master branch: a member of the group "Gatekeeper accept" must approve it.

This triggers the CD pipeline to deploy the code on Accept.

- **There, acceptors and tester can validate the code: deployment on the Publish environment can be triggered to be approved "Gatekeeper accept".**

A.4.2.4. Developers and VDI and Access to Secured Networks

The EFSA network design restricts the access to resources exposed via Private Link (back ends and persistence layers) to trusted network zones. Developers are asked to operate from a secure, managed environment (the virtual desktop) that resides within the trusted network boundary (e.g., a subnet with access to Private Endpoints).

They need to connect to a VDI session hosted in Azure through Azure Virtual Desktop. The VDI environment is deployed in a subnet with access to Private Endpoint so that the user can reach services (e.g., databases, APIs) via Private Link, ensuring all traffic remains within the secure Azure backbone.

A.5. SEED

A.5.1. Logical View

The SEED System is a modular computational framework based on a producer-consumer paradigm, designed to support the deployment and orchestration of heterogeneous analytical models. This architecture enables producers to develop and deploy models that integrate foundational geospatial datasets—such as those provided by Copernicus or other authoritative sources—with user-supplied parameters and input datasets.

Models operate within the consumer environment, the SEED Marketplace that offers a standardized execution environment. The system supports:

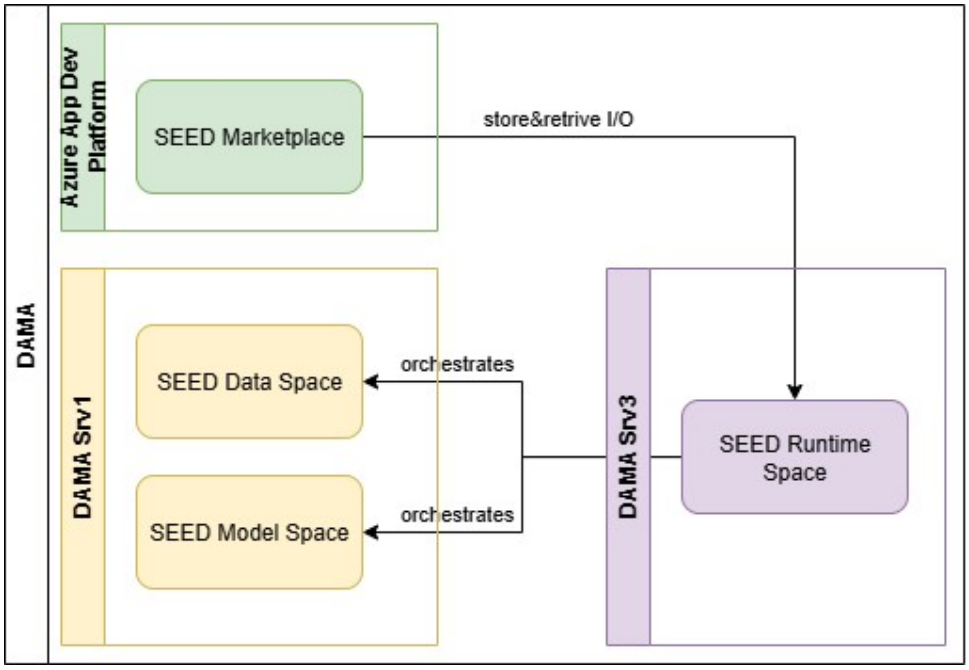
- **Dynamic model configuration, allowing users to define variable parameters at runtime;**
- **Multi-source data integration (foundational and ancillary datasets);**
- **Result dissemination, including:**
    - **Interactive visualization through embedded display modules,**
    - **Export capabilities for offline analysis or reporting,**
    - **Chaining of outputs as inputs to downstream models, enabling complex multi-stage processing pipelines.**

The system is distributed in the EFSA Scientific Data Subscriptions (DAMA). The SEED consumer platform is built by a user interface, the Marketplace, deployed as a Front End/Back End/Persistence stack (Azure Container Apps and SQL instances).

The producer platform is built on top of the EFSA governed Azure Databricks environment and consists of three spaces:

- **DAMA Srv1 SEED Data Space: for the curation and management of foundational datasets**
- **DAMA Srv1 SEED Model Space: to support the creation, testing and deployment of heterogenous geospatial model**
- **DAMA Srv3 SEED Runtime Space: to orchestrate, audit, control and execute model with inputs coming from the public**

Here below is a high-level picture:



A.5.2. Model Developers View

The SEED Modelers are asked to work within Databricks in the DAMA Srv1 SEED Model Create Space through AZURE VDIs. They will start working on their own feature branch: all foundational datasets will be available for testing in their Databricks Workspace.

Once migrated to DAMA Srv1 SEED Model Accept, models are registered in Mlflow and can be tested in an integrated environment through the DAMA Srv3 SEED Runtime Accept space.