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# aerOS

EUROPEAN IOT-EDGE-CLOUD

## GUIDE FOR EVALUATORS to aerOS Open Call #1



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# 1. Introduction

The goal of this document is two-fold: first, it outlines the requirements for interested candidates to evaluate aerOS Open Calls applications, and it also explains how to actually apply for such evaluation opportunity. Second, it intends to be a first, quick reference for the evaluators of aerOS’ Open Calls’ applications, facilitating the understanding of the whole process and the criteria of evaluation, while providing some guidelines on how to perform them, among other relevant administrative aspects.

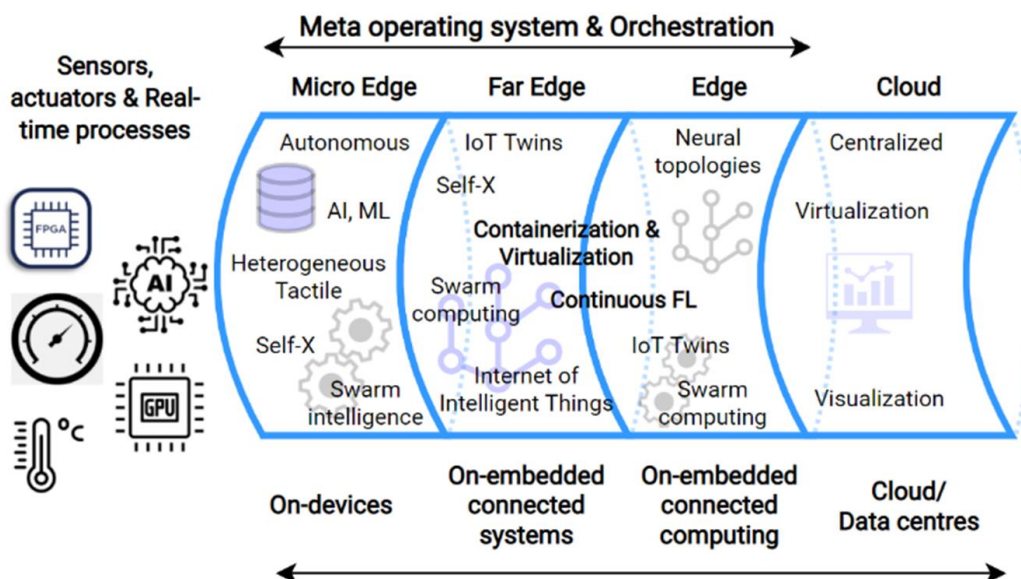
Each proposal received in aerOS Open Calls (both round #1 and #2) will be evaluated by 3 independent evaluators with appropriate profiles and backgrounds. Expertise required lies on IoT, edge computing, cloud computing, smart networking, cybersecurity, data privacy, data governance, logistics and transportation, energy, agriculture, smart buildings or orchestration in distributed systems.

External experts must be independent from the applicants and cannot be Consortium partners employees, permanent collaborators nor board members. Also, evaluators must not have conflicts of interest with the assigned proposals to be evaluate.

## 2. aerOS Open Calls in a nutshell

### 2.1. aerOS in a nutshell

Transition to software-driven components and systems requires efficient integration of a variety of new vertically agnostic technologies and services. It requires data strategy, trusted data exchange frameworks, frugal AI on the (far) edge, and containerisation and virtualisation across complex value chains. Besides, collective decentralised decision-making, and system / network federation must be exploited to govern data exchange within models, applications and services across the IoT edge-cloud continuum. Here, meta operating system has to (among others) provide flexible orchestration mechanisms for combining and efficiently utilising the heterogeneous Infrastructure Elements (IEs) comprising the IoT edge-cloud continuum. In particular, it should support exposed standardised services APIs, hardware abstraction, cross-domain resource orchestration, and explainable/decentralised frugal AI. Moreover, aerOS will allow for distributed data management to make user-side applications more intelligent and proactive, and to provide foundation for hyper-distributed applications and services, closer to data sources and event-generating processes without sacrificing aggregated data analysis and insights. Additionally, aerOS will leverage concept of services as a “unifying abstraction”, across resources (i.e., any physical or virtual IoT edge-cloud continuum resource, from device to far-edge, edge or cloud); across multiple infrastructure domains and service levels, supporting federation. Several aspects of aerOS will utilise the (semi)autonomous approaches, in particular these will include mechanisms for self-adaptation and self-healing of the Infrastructure Elements, based on self-observation.



aerOS is being carried out by a Consortium of 27 partners from 11 European countries, specialised in IoT, edge and cloud S/W and H/W technologies as well as in the verticals where the solution will be tested.

aerOS overarching goal is to design and build a virtualised, platform-agnostic meta operating system for the IoT edge-cloud continuum. As a solution, to be executed on any Infrastructure Element within the IoT edge-cloud continuum – hence, independent from underlying hardware and operating system(s) – aerOS will: (i) deliver common virtualised services to enable orchestration, virtual communication (network-related programmable functions), and efficient support for frugal, explainable AI and creation of distributed data-driven applications; (ii) expose an API to be available anywhere and anytime (location-time independent), flexible, resilient and platform-agnostic; and (iii) include a set of infrastructural services and features addressing cybersecurity, trustworthiness and manageability. aerOS will: (a) use context-awareness to distribute software task (application) execution requests; (b) support intelligence as close to the events as possible; (c) support execution of services using “abstract resources” (e.g., virtual machines, containers) connected through a smart network infrastructure; (d) allocate and orchestrate abstract resources, responsible for executing service chain(s) and (e) support for scalable data autonomy.

To validate the architecture, supporting tools, and the methodology, aerOS will be instantiated in five real-world pilots with several scenarios to demonstrate feasibility of action results for future IoT: (i) manufacturing; (ii) computing near renewable energies, (iii) mobile agricultural machinery, (iv) smart maritime ports and (v) energy-efficient smart buildings.

More information can be found online at project’s website here: <https://aeros-project.eu/>

## 2.2. Technical objectives of the project

The objectives of the project are listed below:

- O1. Design, implementation and validation of aerOS for optimal orchestration.
- O2. Intelligent realisation of smart network functions for aerOS.
- O3. Definition and implementation of decentralised security, privacy and trust.
- O4. Definition and implementation of distributed AI components with explainability.
- O5. Specification and implementation of a Data Autonomy strategy for the IoT edge-cloud continuum.
- O6. Definition, deployment, and evaluation of real-life use cases.
- O7. Global ecosystem creation, maximisation of impact and Open Call conduction.

More information can be found online at project’s website here: <https://aeros-project.eu/objectives>

## 2.3. aerOS Open Calls

aerOS has reserved a total of 900.000 € for supporting third parties enhance the scope of the project by joining the project via Open Calls. aerOS will perform **two rounds of Open Calls** where research entities and SMEs around Europe are summoned to:

- Validate and improve technical components of the aerOS meta operating system;
- Bring external actors (developers, domain experts, entrepreneurs, etc.) to create new solutions leveraging aerOS;
- Promote the visibility of aerOS architecture and outcomes on the market;
- Gathering new inputs from IoT, edge, network and industrial experts
- Extend application base of aerOS to other verticals outside the ones included in the proposal (domain-agnostic).

**First round** of Open Calls aims at funding **innovative proposals** that will **enhance aerOS’s objectives framed** (mandatorily) **within one** (out of its five) **pilot(s)**. In particular, Open Call proposals are expected to address **one specific challenge out of a list** of possible challenges formulated.

More information can be found in the [Guidelines for Applicants](#).

### 3. How to apply for aerOS Open Call evaluation

In the two following sub-sections there is the explanation on how to become an evaluator of aerOS Open Calls and how to behave if the candidacy is accepted.

#### 3.1. Eligibility criteria and application process

In order to be eligible as an evaluator of aerOS Open Calls, individuals must comply with the following:

- Must be resident of an EU member or associated state.
- Must be able to demonstrate background/expertise on any of the mentioned fields: IoT, edge computing, cloud computing, smart networking, cybersecurity, data privacy, data governance, logistics and transportation, energy, agriculture, smart buildings or orchestration in distributed systems.
- Must not have any conflict of interest with the assigned applicants.
- Must be able to sign a contract with Universitat Politècnica de València (UPV).

For applying to be an evaluator of aerOS Open Calls, the candidates **must submit via email** to the address [ [iglaub@upv.es](mailto:iglaub@upv.es) ] the following documentation **before January, 31<sup>st</sup>, 2024, 7pm CET**:

- CV of the candidate
- Written confirmation that they have:
  - Read carefully this Guideline of Evaluators
  - Read the [Guideline for Applicants](#)
  - Captured the relevant information about aerOS technical components ([D3.1](#) and [D4.1](#)).

If an evaluator is selected, they will be requested to fill and submit the following documents in a very short period of time (1 week):

- Sign a contract with UPV – a template will be provided on **February, 2<sup>nd</sup>**.
- Provide the [Financial Identification Form](#) with endorsing proof of ownership of the bank account (either receipt with identification of owner or an ownership certificate issued by the bank).
- Submit the Certificate of Fiscal Residence of the appropriate country (requisite for the Open Call Coordinator to issue the payment).

Please, note that we will communicate whether evaluators have been selected, and how many applications have been assigned to them, once the aerOS Open Call application (round #1) is completed. This will take place between February 1<sup>st</sup> and February 5<sup>th</sup>.

#### 3.2. Evaluators obligations

The evaluator commits to observe and follow the obligations below:

- The evaluator acts in their own name, nor representing their contractor or employer.
- The evaluator signing the contract confirms to adhere to the no conflict of interest and confidentiality principles, and commits to apply the highest quality standards in their work
- If any evaluator has any **conflicts of interest** with any of their appointed applications, they must declare it via email to the aerOS Open Call Coordinator (Ignacio Lacalle – UPV – [iglaub@upv.es](mailto:iglaub@upv.es)) with no delay.

*Here, note that conflict of interest appears in any circumstance where impartial and objective may be put into question. Impartiality is compromised if the evaluator holds any kind of family, emotional life, or political or economic, or any other direct or indirect personal interest with the applicant. For further information, please refer to the [official EU explanation of CoI in managing EU budget](#).*

- Evaluators cannot contact the applicants
- Evaluators cannot disclose any information about the applicants, the process, results nor any other information associated to aerOS Open Call evaluation.

## 4. aerOS Open call #1 evaluation

### 4.1. Evaluation basics

Received proposals will be evaluated and will be given a score upon which will be accepted or rejected to receive funding. The process will be as follows:

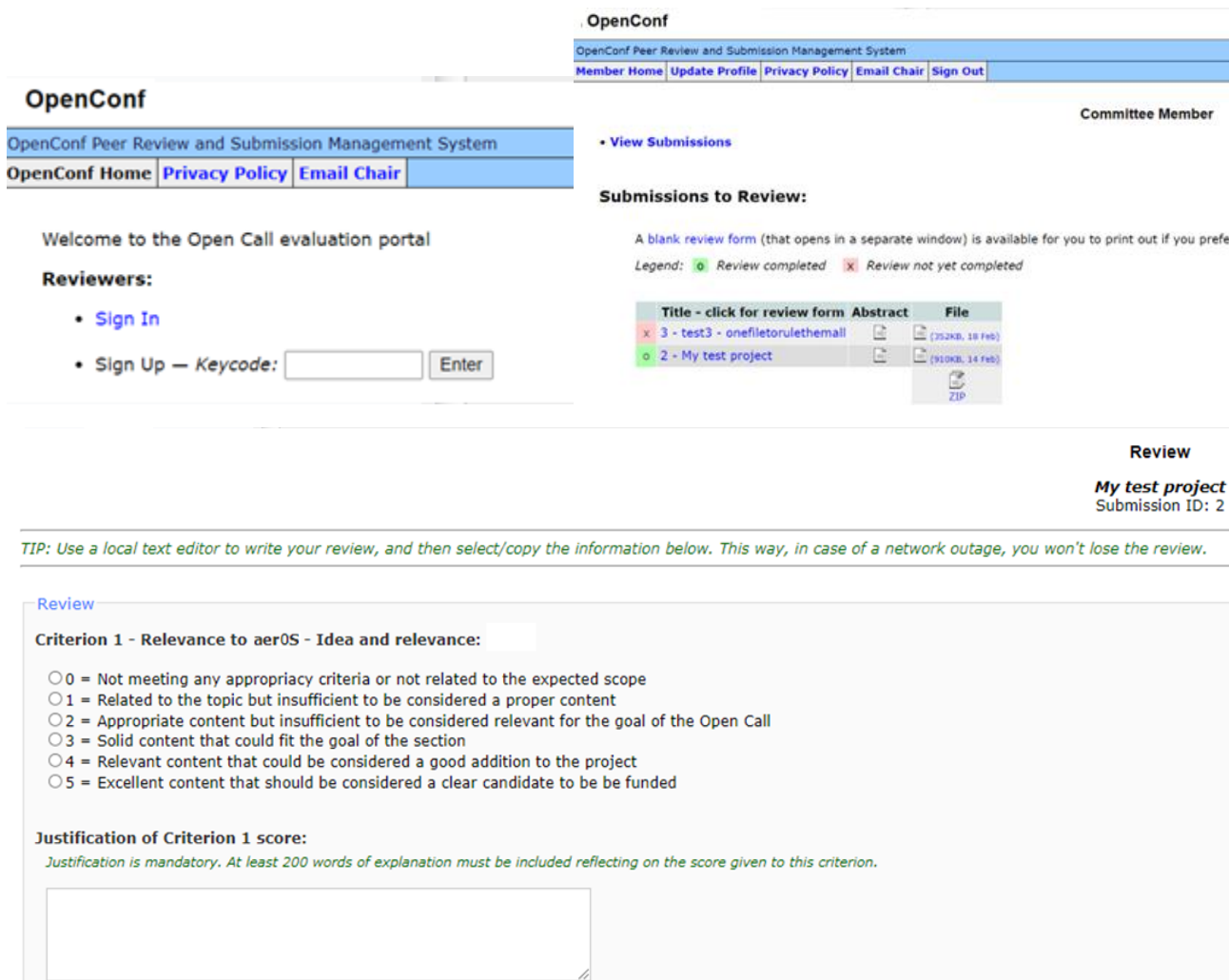
- All proposals will be pre-screened by a selected group of aerOS members to check eligibility and minimum quality compliance based on the criteria exposed in **Error! No se encuentra el origen de la referencia.**
- A selected Expert Evaluation team will be selected per each proposal. This team will be composed of two external experts (with experience in the related fields) and an observer to guarantee impartiality. The selected experts will sign a declaration of confidentiality concerning the evaluation process and the content of the proposals they evaluate. They will also declare their absence of any conflict of interest for the assigned tasks.
- Every expert (two per proposal) will give a score (using a specific form) to each of the evaluation criteria (see the image at the right). The evaluation will need to be based on: i) Relevance to aerOS (min. 3 out of 5); (ii) Impact and sustainability (min 3 out of 5); (iii) Technical excellence (min 3 out of 5); (iv) Quality of implementation (min 3 out of 5) (v) Quality of the team (min. 4 out of 5), and 19 as a global threshold over 25.
- Afterwards, the two evaluators will meet (selected group of aerOS members will be present) and will reach a consensus evaluation on the quality of each proposal. The result of that agreement (comments and scores) will be reflected on the Evaluation Summary Report (ESR), which will be agreed by both.
- ESRs will be ranked and will go through a final evaluation by a committee formed by PCC (Project Coordination Committee) members of aerOS and two external observers to guarantee impartiality. Applying criteria here will be:
  - **(For the 1<sup>st</sup> Open Call):** Balance on pilots. Each pilot will have, at least (if possible), one project assigned.
  - Adequacy to aerOS goals and technology stack.
  - Ranking stands: In case of applications receiving an equal score the criteria will be marks in criteria 1, criteria 3, criteria 4, criteria 2 and criteria 5.
- Notifications on funding or rejections will be sent out to applicants, together with any feedback, by **March, 31<sup>st</sup>, 2024**. Slight delays might be experienced.
- Once the Open Call evaluation is finalised, representatives of the selected proposals will be invited to sign a Collaboration Agreement (final version included in the application package) with UPV to become third party. During the Collaboration Agreement signing process, the selected applicants will have to provide all relevant documentation concerning their legal and financial status (including mandatorily providing PIC – Participant Identification Code), as well as any amendments in their technical proposals according to the comments received by the evaluators during the evaluation process, if applicable.

More information can be found in the [Guidelines for Applicants](#).

## 4.2. Evaluation tool and process

The evaluation will be carried out using a customized deployment of the tool [OpenConf](#). The server hosting the tool is owned by and located in the premises of the Open Call Coordinator (UPV), counting with enough security measures.

After a sign up process, evaluators will be granted access to the platform, which will be accessed via user and password.



The screenshot displays the OpenConf web interface. At the top, there is a navigation bar with links: Member Home, Update Profile, Privacy Policy, Email Chair, and Sign Out. Below this, the user is identified as a "Committee Member". The main content area is titled "Submissions to Review:" and includes a legend: a green circle for "Review completed" and a red 'x' for "Review not yet completed". A table lists two submissions:

Title - click for review form	Abstract	File
<span style="color: red;">x</span> 3 - test3 - onefiletorulethemall		(752KB, 18 Feb)
<span style="color: green;">o</span> 2 - My test project		(910KB, 14 Feb)

Below the table, there is a "Review" section for "My test project" with Submission ID: 2. A tip is provided: "TIP: Use a local text editor to write your review, and then select/copy the information below. This way, in case of a network outage, you won't lose the review." The review form includes a "Criterion 1 - Relevance to aerOS - Idea and relevance:" section with radio buttons for scores 0 to 5, and a "Justification of Criterion 1 score:" section with a text area for a mandatory 200-word explanation.

Through this portal, evaluators will be able to access to the proposals that they were assigned to. There, the actual evaluation, including a score and enough justification of the ranking, will be performed.

Evaluators will have 3,5 weeks to proceed with the evaluations. After this time, all evaluators should have given a score and an Evaluation Summary Report (ESR) to their assigned proposals. After this time, evaluators will be called upon to agree among each other (virtual meetings, or email discussions) the final score to be given to each proposal. Such discussion must derive into a final ESR that will be shared with the applicants.

A webinar will be scheduled for **February, 6<sup>th</sup>, 2024, 5pm CET**, with extensive explanation of how to access the tool, perform the reviews, generate the ESRs, etc. **The attendance to this webinar is mandatory for all the evaluators.** Recording of the session will be shared afterwards.

## 4.3. Instructions for evaluating proposals

As indicated in [Evaluation basics](#), all proposals will be given a score that will result from the sum of 5 sub-scores, one associated to each of the evaluation criteria. Every criterion will have an associated score between 0 and 5. In order for evaluators to properly assess the score to be given, here below are some instructions. Note that there are explicit references to the structure of the proposals that will be received; the template can be found [here](#).

### Criterion 1: Relevance to aerOS

*Sections of the proposal that feed this criterion: 3 (Relevance to aerOS)*

- If the proposal has made a genuine effort to understand aerOS structure, goals and technological motto
- If the relation/integration with aerOS technical components have been clearly indicated
- If it provides added value to one of the pilots of the project (either sticks to a defined challenge or clearly shows benefits to the use cases).

### Criterion 2: Impact and sustainability

*Sections of the proposal that feed this criterion: 4 (Impact and sustainability)*

- If there are KPIs and those are realistic, quantitative and with proper baseline
- If the proposal has enough support by the applicant beyond the action (e.g., it will feed a production line of the entity, it will create research lines, it will trigger the foundation of a spin-off...).
- If it identifies conferences, fairs, congresses and journals to apply, and if it indicates how many actions to undertake

### Criterion 3: Technical Excellence

*Sections of the proposal that feed this criterion: 2 (Idea)*

- If the idea of the project is clear and the applicant has a clear pathway to achieving objectives
- If the project goes beyond the state of the art in the technologies used from a sectoral perspective
- If the results are clearly identified, are tangible and are feasible

### Criterion 4: Quality of implementation

*Sections of the proposal that feed this criterion: 5 (Implementation), 7 (Other relevant aspects)*

- If the proposed project proposes a sound approach and whether the proposed methodology is credible
- If it indicates well enough the activities to undertake, if they are well connected and substantially contribute to meet the objectives.
- If the proposal showcases the resources to be employed (e.g., edge computing elements, necessary data, cloud infrastructure, machines/robots, connectivity means...). Here, quantification is also relevant.
- If protection to personal data, IPR, relevant regulation, and ethics concerns are addressed. If gender balance is highlighted at some point.

### Criterion 5: Quality of the team

*Sections of the proposal that feed this criterion: 6 (Team)*

- If the team is cross-functional with a strong enough background and skills base.
- If roles, background, technical profile and overall experience complement each other to properly execute the activities of the project (considering the Gantt and tasks description before).
- If dedication of the team is appropriate.



After analysing to which extent do proposal successfully answer the previous questions, the evaluator must assign a score to each criterion. The scoring escalates from 0 to 5, having the following interpretation:

0. *Not meeting any appropriacy criteria or not related to the expected scope*
1. *Related to the topic but insufficient to be considered a proper content*
2. *Appropriate content by insufficient to be considered relevant for the goal of the Open Call*
3. *Solid content that could fit the goal of the action*
4. *Relevant content that could be considered a good addition to aerOS*
5. *Excellent content that should be considered a clear candidate to be funded*

Apart from giving a score to the criteria, each evaluator must fulfil a text box **with a minimum of 200 words** justifying the evaluation in each case. These comments will be shared with the peer evaluator of the proposal, and will also be included in the final report (ESR) to be circulated to the applicants.

Considering the previous, the evaluators must stick to certain standards whenever writing their comments on the boxes. The aerOS Open Call Coordinator requests all evaluators to observe and act bearing in mind the following:

- Direct and concise language must be used, allowing applicants to easily understand the reasons of a given score.
- Provide examples on how the proposal could be improved (bear in mind that aerOS will have another round of Open Calls later)
- Provide feedback in positive terms, avoiding bad intentions or exposing pejorative arguments.
- Make an effort to differentiate minor and major shortcomings.
- Whenever signalling a shortcoming, be specific on what was missing or which part should have explicitly enhanced/modified.

## 4.4. Timeline summary

The following figure aims at illustrating the whole process, including timing and deadlines of the different steps. Applicants will be asked to stick to the indicated dates.

- Opening of Open Call application submission window: October 1<sup>st</sup>, 2023
- **Opening of Open Call Evaluation application – January, 9<sup>th</sup>, 2024**
- **Closing of Open Call Evaluation application – January, 31<sup>st</sup>, 2024**
- Closing of Open Call submission = Deadline for applications: January 31<sup>st</sup>, 2024
- **Start of Open Call EVALUATION – February, 7<sup>th</sup>, 2024**
- **Deadline for completing Open Call EVALUATION – March, 1<sup>st</sup>, 2024**
- **Deadline for completing Open Call CONSENSUS – March, 8<sup>th</sup>, 2024**
- Communication of the results: March, 31<sup>st</sup>, 2024
- Expected start of action: 3<sup>rd</sup>/4<sup>th</sup> week April 2024<sup>1</sup>
- Expected end of action: 3<sup>rd</sup>/4<sup>TH</sup> week November 2024<sup>1</sup>

### -JANUARY-

M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

### -FEBRUARY-

M	T	W	T	F	S	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

### -MARCH-

M	T	W	T	F	S	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

<sup>1</sup> These dates may vary depending on the speed of reaction, signature process and associated paperwork.

## 4.5. Payment procedure

Here below can be found the information necessary for evaluators to request the associated payment to the evaluations. In agreement with the budget reserved by the project, every single review will be remunerated with **80 EURO**.

The bank account of the evaluator will need to be provided via the Financial Identification Form requested after confirmation of selection (see 3.1). Please be aware that the bank account details indicated in the application must be the same as those on the invoice/receipt (if included there).

All invoices/receipts need to be issued in line with your national law and contain as a minimum:

- The date of issue;
- Your company/personal data including TAX ID/VAT NO/EU-VAT NO (it should be active);
- The total amount in EUR coherent with the contract;
- Your bank account details (coherent with the Financial Identification Form).
- The description provided by aerOS Open Call Coordinator via e-mail;
  - *Universitat Politècnica de València legal data provided below:*
  - *UNIVERSITAT POLITÈCNICA DE VALENCIA (UPV)*
  - *VAT number ESQ4618002B*
  - *Camino de Vera, s/n, 46022 VALENCIA, SPAIN*

**Note about taxes:** The invoices must not include VAT, except from evaluators with fiscal residence in Spain, that must incorporate 21% of VAT.

The payment instalment will only be ordered given that:

- You signed the contract with UPV (see model to be fulfilled here).
- You provided the Financial Identification Form (see model here).
- You provided the Certificate of Fiscal Residence of the proper country.
- You confirmed no Conflict of Interest with any of the assigned reviews.
- You have completed all evaluations and consensus meetings, and that all ESRs have been provided to the Open Calls Coordinator.