*Call for Expression of Interest*

**IN ORBIT DEMONSTRATION/VALIDATION**

**EXPERIMENTS NEEDING AGGREGATION**

*Application Package*

**Part I: Application and Compliance Matrix**

*The application should not exceed 30 pages.*

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| * 1. **Name of the proposed actions**
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| * 1. **Applicant: Entity(ies) making the proposal and type (e.g. individual, consortium, industry, research centre, university)**
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| Name of organisation(s) (Experiment provider) |  |
| Country (ies) |  |
| Person(s)[[1]](#footnote-1) responsible for implementation |  |
| Phone(s) |  |
| Email(s) |  |

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| * 1. **Executive summary**
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| * 1. **Objective of the proposed experiment**
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| * 1. **Themes** *(e.g. Earth observation, Telecommunication, Navigation, Space Science, Technology, Space environment, quantum, connectivity)*
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| * 1. **Type of experiment** *(e.g. instrument, equipment, technologies, system experiment, mission concepts)*
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| * 1. **Justification of the need for IOD/IOV***Explain the necessity of the flight demonstration with respect to other options on ground and/or in space.*

*Provide an overview of the exploitation plan following the IOD/IOV opportunity* |
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| * 1. **Previous space application/heritage of the proposed experiment**
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| * 1. **Funding plan of the experiment up to flight model delivery and associated tasks***Detailed description of the experiment funding plan in terms of:*
* *funding for development, including amount, date of availability of funds and remaining conditional clauses, if any, for the obtaining of these funds,*
* *risk margin for, inter alia, potential additional qualification requirement or interfaces definitions required by the spacecraft, funding party(ies) demonstrated by letter(s) of intent)*
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| * 1. **Detailed development plan**

*Describe the development plan, activities and related schedule from the current status up to flight model delivery including:** *Plan to raise the TRL and justification of the initial TRL,*
* *Remaining development activities,*
* *Model philosophy,*
* *Design,*
* *Models definition and manufacturing (Engineering Model, etc.),*
* *Tests and qualification status up to flight readiness (Manufacturing Assembly Integration Testing/ Validation plan).*

*An associated risk log should be included if any significant risk still remains with the development and schedule.*  |
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| * 1. **Policy relevance***Describe the relevance of the proposed IOD/IOV mission with respect to EU/ ESA activities*
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| * 1. **Complementarity***Describe how your Experiment is complementary to other existing/ planned actions within EU, ESA, EU Member States/ associated countries or industry and consistent with Union and ESA technology programs and trends.*
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| * 1. **Detailed description of the experiment and justified compliance with interface**

*Interface control documents and budgets (mechanical, electrical, data, thermal) as input to the spacecraft requirements**Please note that values provided for each experiment in the proposals are considered as values with margins, i.e. no additional margin is allocated.* |
| 1. **Technical presentation of the IOD/IOV experiment**

*Present the technical specifications, components, sources of supply.*1. **Preliminary engineering drawings of the experiment**

*Provide the preliminary engineering drawing of the experiment;**Indicate the required volume including all appendages, baffles etc.**As a guideline,:* * *Small satellites in the range of 150 kg have a typical volume of around ½ m3 with half of the volume available for the total payload to be shared between the Experiments.*
* *Cubesat missions with a volume of 3U or 6U format.*
1. **Functional description of the experiment**

*The platform shall only be required to provide simple command & control & telemetry interfaces and the Experiment ensure autonomous functionalities.*1. **Total mass of the experiment; mass breakdown, margins**

*Provide the overall mass of the experiment including possible appendages, brackets, thermal hardware etc.**As a guideline:* * *Small satellites in the range of 150 kg: typical mass allocated to the payload for small spacecraft is in the range of 70 kg to be shared between the experiments*
* *Cubesat missions with a volume of 3U or 6U format: typical mass for cubesat missions is limited to a few kg.*
1. **Field of view (if applicable)**

*Provide viewing direction, external surface and unobstructed field of view required by the experiment.*1. **Experiment Pointing and alignment requirements (if applicable)**

*Specify experiment requirements such as pointing accuracy possibly detailed in terms of absolute/relative and performance/knowledge errors including stability requirements (e.g. thermo-elastic) and compatible with currently available small sat and cubesat platform.*1. **Experiment Mechanical Interfaces**

*Indicate current qualification mechanical environment. As the Experiment will be launched on an EU manufactured launcher, it shall be compliant with the relat*1. **Thermal Interfaces**

*Describe thermal interface of the experiment with the platform. The experiment shall preferably be thermally decoupled from the platform and have a typical operational range of -10C to +50C.*1. **Electrical interfaces: average and peak power consumption for each mode of operation. Time profile.**

*Provide the power required by the experiment in the various modes and the average power requirement.**For small sat Experiment, typical average power available to the complete payload (including all Experiment’s) is in the order of 50 W with a typical peak power up to 30 W per experiment can be provided. The power duty cycle for the Experiment will be determined depending on the overall demand. The power will be provided by one switched power line and should be considered non regulated (battery regulated bus). Details specification of the power interface will be provided at spacecraft selection.**For cubesat Experiment this is reduced to few W.*1. **Interface with data handling. Bit rates of the experiment for different modes of operation, time profile, time reference/synchronisation required, etc.**

*The Experiment will be interfaced with the avionics of the spacecraft with data links. One link will be used for the commanding and housekeeping of the Experiment (typical data bus for small satellite platform or cubesat standard interface) and if required one high bit rate link will be provided for data collection with a maximum typical data rate of 100 Mb/s. Using these links the Experiment will have access to a minimum of TBD Gbit for data storage. Details specification of the interfaces will be provided at spacecraft selection. Data will be dumped to a primary ground station at TBD location.**Note: other specific interface should be generated by the experiment itself (self-standing experiment) as it cannot be guaranteed to be provided by the spacecraft.*1. **Exploitation plan**

*Describe the exploitation of the in orbit data stemming from the experiment and identify any specific ancillary data requirements.*1. **Operations scenario and mission phases**

*Provide description of the experiment operational scenario, modes of operations*1. **Additional environment requirements**

*Describe any requirement beyond the following typical environment:** *Contamination and cleanliness requirements (standard ISO 8)*
* *Experiment magnetic cleanliness < 0.5 Am2*
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| * 1. **Mission needs***Describe:*
* *the preferred orbit(s), typical orbits can be found on the EU launchers user manuals,*
* *mission constraints,*
* *mission duration,*
* *induced constrains on the spacecraft and other payloads,*
* *other specific needs as applicable*
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| * 1. **Innovation** *Describe the innovative character of the proposed experiment in terms of:*
* *European technology non-dependence, and*
* *Industrial competitiveness and related commercial market (business case following IOD/IOV opportunity), or*
* *Scientific breakthrough and related scientific application and/or exploitation.*
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| * 1. **Please use this space to provide any other comments or additional information.**
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| * 1. **Compliance matrix***Please provide a declaration of compliance to the constraints and requirements listed in §9 (Constraints and Requirements) of this document. Please provide rationale in case of partial and non-compliance.*
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| * 1. **Signature of organisation/partnership representatives:**
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| The signature certifies that the provided data result from the entity's commitments. In addition, the entity engages itself to inform immediately the Commission (by email to DEFIS-IOD-IOV@ec.europa.eu if any changes occur.At any stage of the experiment development, the entity may be requested to provide additional information to the Commission if necessary. |
| Name |
| Position |
| Date |

**Part II: Commitment on Flight Model delivery**

The undersigned, ………………………, in my capacity as…………………….. confirm the availability of the funding required for the Flight Model development and delivery within one year following this application for the In orbit Demonstration/ Validation (IOD/IOV) experiment …………………….

I acknowledge that failure to comply with the timely delivery of the Flight Model, as indicated in the planning, may result in an exclusion of the IOD/IOV Experiment from this initiative.

Date ………………

Place ………………

Signature ………………

**Part III: Declaration of honour on exclusion criteria and absence of conflict of interest**

*(To be filled out by the applicant and signed by its legal representative.)*

I, the undersigned:

 for natural persons: in my own name

or

 for legal persons[[2]](#footnote-2): representing the following entity:

[**insert full official name**]

[insert full official address]

[insert VAT registration number]

**hereby confirm**

that (subject to the additional declarations below):

1 — The **information** provided for action[**insert project number**] **—** [**acronym**] is **correct** and **complete**.

2 — The information concerning the legal status in the [Participant Register](https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/how-to-participate/participant-register) for me/my organisation is correct and complete.

3 — I/my organisation commit to comply[[3]](#footnote-3) with the **eligibility** criteria and all other conditions set out in the call conditions — for the entire duration of the action.

4 — I/my organisation:

* are committed to participate in the action
* have stable and sufficient sources of funding to maintain the activities throughout the action and to provide any counterpart funding necessary
* have or will have the necessary resources needed to implement the action
* acknowledge to be fully responsible for my affiliated entities which participate in the action
* for actions involving EU classified information (EUCI): acknowledge that any sensitive information or material that qualifies as EU classified information under Commission Decision [2015/444](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:JOL_2015_072_R_0011&qid=1427204240846&from=EN)[[4]](#footnote-4) must be handled in accordance with specific rules and follow the instructions given by the EU

5 — For applicants from non-EU countries: I/my organisation

* undertake to comply with the obligations under the agreement and to:
* respect generalprinciples (including fundamental rights, values and ethical principles, environmental and labour standards, rules on classified information, intellectual property rights, visibility of funding and protection of personal data)

6 — I/my organisation:

* are NOT subject to an **administrative sanction** (i.e. exclusion or financial penalty decision)[[5]](#footnote-5)

I/my organisation (or persons with unlimited liability for debts):

* are NOT in one of the following **exclusion situations**[[6]](#footnote-6):
	+ - * **bankrupt**, being wound up, having the affairs administered by the courts, entered into an arrangement with creditors, suspended business activities or subject to any other similar proceedings or procedures
		- in breach of **social security** or **tax** obligations

I/my organisation (or persons having powers of representation, decision-making or control, beneficial owners or persons who are essential for the award/implementation of the action):

* are NOT in one of the following **exclusion situations**[[7]](#footnote-7):
	+ - guilty of grave professional **misconduct**[[8]](#footnote-8)
		- committed fraud, corruption, links to a **criminal** organisation, money laundering, terrorism-related crimes (including terrorism financing), child labour or human trafficking
	+ shown significant deficiencies in complying with main obligations under an **EU** procurement **contract**, grant agreement, prize, expert contract, or similar
	+ guilty of **irregularities** within the meaning of Article 1(2) of Regulation No 2988/95
	+ created under a different jurisdiction with the intent to circumvent fiscal, social or other legal obligations in the country of origin (including creation of another entity with this purpose).

7 — I/my organisation are NOT subject to a **conflict of interest** in connection with this Call and will notify — without delay — any situation which could give rise to a conflict of interests.

8 — I/my organisation have NOT and will NOT, neither directly nor indirectly, grant, seek, obtain or accept any advantage in connection with this Call that would constitute an illegal practice or involve **corruption**.

9 — I/my organisation have **not received** any **other EU grant** for the same purpose and will give notice of any future EU grants related to this actionAND of any EU operating grant(s)[[9]](#footnote-9) given to my organisation.

10 — I/my organisation are aware that **false declarations** may lead to rejection, suspension, termination of the action.

SIGNATURE

For the applicant

[function/forename/surname]

[electronic signature]

Done in [English] on [electronic time stamp]

**Part IV – Legal Entity form**

Please download relevant forms: <https://ec.europa.eu/info/publications/legal-entities_en>

1. Where the application is being made by a group, one lead person should be identified. [↑](#footnote-ref-1)
2. This includes ‘entities without legal personality’ under Article 197(2) of Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council of 18 July 2018 on the financial rules applicable to the general budget of the Union, amending Regulations (EU) No 1296/2013, (EU) No 1301/2013, (EU) No 1303/2013, (EU) No 1304/2013, (EU) No 1309/2013, (EU) No 1316/2013, (EU) No 223/2014, (EU) No 283/2014, and Decision No 541/2014/EU and repealing Regulation (EU, Euratom) No 966/2012 (‘[EU Financial Regulation](https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32018R1046&qid=1535046024012)’) (OJ L 193, 30.7.2018, p. 1). [↑](#footnote-ref-2)
3. ‘Commit to comply’ means complying now and for the duration of the grant. [↑](#footnote-ref-3)
4. See Commission Decision 2015/544/EU,Euratom of 13 March 2015 on the security rules for protecting EU classified information (OJ L 72, 17.3.2015, p. 53). [↑](#footnote-ref-4)
5. See Article 136 [EU Financial Regulation](https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32018R1046&qid=1535046024012). [↑](#footnote-ref-5)
6. See Articles 136 and 141 [[EU Financial Regulation](https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32018R1046&qid=1535046024012)n](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R1046&qid=1535027117240&from=EN). [↑](#footnote-ref-6)
7. See Articles 136 and 141 [[EU Financial Regulation](https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32018R1046&qid=1535046024012)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R1046&qid=1535027117240&from=EN). [↑](#footnote-ref-7)
8. Professional misconduct includes: violation of ethical standards of the profession, wrongful conduct with impact on professional credibility, false declarations/misrepresentation of information, participation in a cartel or other agreement distorting competition, violation of IPR, attempting to influence decision-making processes or obtain confidential information from public authorities to gain an advantage. [↑](#footnote-ref-8)
9. See Article 180 [EU Financial Regulation](https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32018R1046&qid=1535046024012). [↑](#footnote-ref-9)