



Open Call for Tender for PROJECT TEAM EXPERTS

Starting date: 2023-08-16

Deadline for tenders: 2023-10-13

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I Introduction

I.1 General

The European Commission intends to identify areas for an EU STM legislation and then propose a legislation. This project will analyze stakeholders' needs, and from this will identify relevant rules of the road, will address the short-term needs to improve the handling of space traffic towards by increasing interoperability by providing concrete coordination standards for adoption, and will bring dedicated pre-standardization studies and proposal for a standard to international fora reinforcing the European position.

Following the acceptance by the European Commission of a proposal from CEN, as prepared by the CEN/CLC/JTC 5 Secretariat, funding is available for establishing two teams (1. Rules of the Road and 2. Data exchanges format) of paid experts for this project.

1. Rules of the Road is covered by another call (Project Team 1).

Recruiting these experts has been delegated by the CEN Director General to the secretariat of CEN/JTC5 (held by DIN), and to AFNOR/BNAE.

I.2 Context



As strategic high-tech sector, space has long been a domain reserved for public authorities. However, one has been witnessing, for a decade, the emergence of the "New Space" phenomenon, which is reflected in the proliferation of commercial space players, the growth of private investment in this sector, or the appearance of new national, economic, and industrial actors.

The dynamism of space initiatives over the past ten years, particularly in the United States with private US investors linked, for a good proportion, to the digital market (Communication, Geo-localization, Internet of Things ...) calls for increased vigilance regarding the use and exploitation of space.

In this context, the congestion of space is becoming a matter of concern, which is urgent to tackle, since the increasing number of debris and growing number of new space actors poses a direct threat to space operations safety and to space sustainability. This threat manifests itself on one side as the short-term risk associated with the operations of many satellites in limited orbital neighborhoods that hence require coordination, and on the other hand unabated growth of space debris due to limited adherence to mitigation practice.

From these considerations emerges the need to coordinate this growing activity by considering the increasing density of space traffic in Low Earth Orbit (LEO), and beyond, especially by better managing space traffic through the elaboration of Space Traffic Management (STM) rules of the road and associated implementations.

II Objectives

II.1 General

The development of a Space Traffic Management standard should resolutely be oriented towards the limitation of collision risks and therefore space debris creation which would end up making our space "unbreathable", depriving us of services that have become essential for the preservation of our planet Earth and the people thereon.

As per the definition given in the Joint Communication on an EU Approach for Space Traffic Management (dated 15.02.2022), STM can be defined as "the means and rules to access, conduct activities in, and return from outer space safely, sustainably and securely".

The following topics are therefore relevant for the definition of a STM related standards and services:

- Space Situational Awareness (SSA) activities, including Space Surveillance and Tracking (SST),
- Space debris mitigation and remediation,
- Management of space orbits and radio spectrum,
- Entire life cycle of space operations including launch, in-orbit operations, and end-of-life de-orbit operations,
- Re-entry phase of spacecraft into the airspace (both controlled and uncontrolled)

During the last two decades tremendous strides have been made in addressing both governmental and commercial capabilities related to SSA, but it is largely down to the individual operator how the derived products are used. Whilst encounters between active spacecraft were relatively uncommon, this setup proved to be sufficient as long as the SSA activities focus on improving the accuracy of the data. However, in case of encounter between active spacecraft, a new communication dimension is added to ensure measures to reduce the risk associated with close approach can be reduced effective. The latter can include tracking, among others, collision risk assessments, maneuver coordination, and close proximity operations. Time is of the essence to ensure that 1) a common baseline can be found and 2) the data needed to establish this baseline effectively exchanged as part of operational processes to avoid accidents on orbit.

The process of bringing new technical rules of the road has however to be carried out in a prudent manner and in coordination with European industry possibilities with the constant concern that this new standard does not harm, but rather enhances, their competitiveness with international players.

The following objectives are thus identified for this activity:



OBJ1: Deliver a “rules of the road” standard coordinated with the European space industry that cover aspect of operational safety in a congested environment by Q4 2025 (Project Team 1).
OBJ2: Deliver data exchange formats to enable efficient “rules of the road” implementation by covering space surveillance sensor calibration data and maneuver coordination by Q4 2025 (Project Team 2).
OBJ3: Address the mid-term needs of STM, not covered under the urgent needs of OBJ1 and 2, by means of a roadmap delivered by Q4 2025 (Project Team 1).

II.2 Deliverables

For this Call the following deliverables are expected:

Deliverable No	Deliverable Name	Due Date (month number)	Description
D4.1	Data exchange message on sensor calibration	M27	A final data exchange format for sensor calibration aligned with CCSDS data exchange standards.
D4.2	Data exchange message on manoeuvre coordination	M27	A final data exchange format for manoeuvre coordination aligned with CCSDS data exchange standards.

III Execution

III.1 General organization

Project management

- Coordination,
- Contracts management,
- Selection process,
- Administrative support,
- Assessment of the deliverables,
- Documentation of project progress and finalize reports.

Task leaders

- Organizing and carrying out the work placed under his responsibility, under the supervision of the WP leader.
- Elaborating the deliverables expected as outputs of their task.
- Answering to the requests expressed by the WP leader.
- Attending the meetings organized by the WP leader.
- If needed attending JTC5/WGs meetings.

Experts

The role of the experts on data standards and data formats is to build upon existing standards and best practices as, e.g. used for the CCSDS Blue Books, in order to develop, prototype, and finalise a data exchange format for sensor calibration and a data exchange standards for manoeuvre coordination.

A *steering committee* will be created to coordinate the works done by the different experts within the different WPs and for high level discussions among the main stakeholders. The secretariat of the Steering Committee is provided by DIN. This steering committee will be constituted by:

- A representative from CEN/CENELEC Management Center (CCMC)
- A representative from BNAE
- A representative from DIN
- A representative from European Space Surveillance and Tracking (EUSST)
- A representative from European Space Agency (ESA)
- Representatives from the European Commission (EC)

III.2 General tasks

The '*Selected candidates*' will be responsible for the execution of the projects which involves the tasks described below.

The development of documents from the initial assessment to applicable standards is carried out by essential institutions of the European space community. The coordination of work packages 1 to 4 is divided between the two NSBs AFNOR (BNAE by delegation) and DIN. The technical work is performed by major European bodies and is monitored and supported by a steering committee of European stakeholders.

The coordinative and technical work will converge in CEN/CLC/JTC 5.

This approach was chosen to be able to draw on a wealth of experience in European space standardization and on structures that have grown over many years.

The project will be spread into four different Work Packages.

WP 1 will cover the general administrative work and is not part of this call for tenders.

WP2, WP3 (covered by Project Team 1) and WP4 (covered by Project Team 2) will focus on the technical work to be performed.

WP4 will be dedicated to data standards and data format.

Task 4.1: Development of data exchange format for sensor calibration

- Collect user perspectives and derive use cases from space surveillance system operators and users in the EU, as well as the ExpertCentre technology developed in ESA's Space Safety Programme. Care shall be applied to ensure the completeness w.r.t. to all ground sensor types available within the EU, including radar, active and passive optical systems, passive RF, as well as space based systems under development.
- Develop a message format that is compatible with other widely adopted data exchange formats in the domain. E.g. for this the extension of the proposed Observation System Data Message (OSDM) of CEN/CLC/JTC 5/WG 2 shall be considered as a possible baseline,
- Prototype an implementation to exchange with the stakeholder community and early adopters.
- Collect and critically assess implementation aspects for the adoption of the message format in space surveillance systems.

Task 4.2: Development of data exchange for manoeuvre coordination

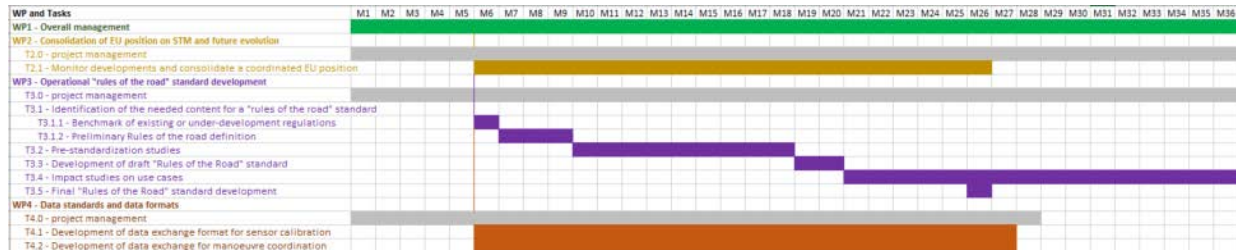
- Involve the spacecraft user community and space surveillance data providers in the EU to review use cases and constraints.
- Link with the technology developments conducted by ESA under the Space Safety Programme, especially for Collision Risk Estimation and Automated Mitigation (CREAM), and beyond in Europe.
- Develop a message format that is compatible with other widely adopted data exchange formats in the domain, considering at least as key content
 - Manoeuvring capabilities of spacecraft,
 - Manoeuvring constraints for platform, instrument, operations, and timelines,
 - Extensions for indicating preferred manoeuvre options as precursor for negotiation schemes,



- Aspects for ensuring data integrity.
- Prioritisation for the execution and criteria for aborting and coordinating.
- Prototype an implementation to exchange with the stakeholder community and early adopters. Collect and critically assess implementation aspects for the adoption of the message format in spacecraft operations and space surveillance systems

III.3 Timeframe

The detailed timeframe for all tasks (Project Team 1 + 2) is given below.



IV Financial support

The European Commission and EFTA have decided to provide financial support this project. The financial support from the European Commission and EFTA is based on the SMP 'Single Market Programme Regulation' (including its Financing Decision) and the MGA (Multi or mono beneficiary(ies) Grant Agreement). Unless specified otherwise, costs of external subcontractors such as laboratories are generally funded at 100%, with approx. 95% being borne by EC and 5% by EFTA. Costs have to qualify as eligible as defined in [MGA\(Multi or mono beneficiary\(ies\) Grant Agreement\)](#) and also in compliance with [EC Financial Regulation](#), and be justified. The payment is usually divided into several instalments after completion of defined milestones and approval of the interim/final reports and the justification of costs. The subcontractors shall fulfil the conditions of the *MGA(Multi or mono beneficiary(ies) Grant Agreement)*, including those relating to liability, ownership of results, confidentiality, conflict of interests, publicity, evaluation, assignment, checks and audits.

The subcontractors' costs shall be justified with copies of the relevant invoices. All relevant evidence shall be kept in view of future payments (reports, work, drafts and deliverables, contracts & invoices, time sheets, tickets, boarding cards, hotel invoices, attendance lists with signatures, meeting agendas & reports, invoices for any consumables, purchase orders, etc...).

Costs incurred before the Grant Agreement is signed and before the selection procedure is finalized, will not be considered as eligible for EU financial support.

V Selection criteria

V.1 General criteria for WP leaders and task leaders

The tenderer shall demonstrate:

- Reliability in terms of technical resources and quality control
- Reliability in terms of sufficient resources to perform the tasks within the period of tasks foreseen by the contract.
- Expertise in the field of drafting reports, surveying techniques, and drafting recommendations
- Capacity to carry on analytical reporting.
- Linguistic abilities to draft reports in English Language
- Proven experience in organizing technical and coordination meetings.
- Tenderers must demonstrate sufficient ability and means available to carry out their tasks, notably in terms of human and technical resources available and of quality systems in place.
- The tenderer must have a proven successful track record of projects relevant to this call in the last 5 years.

V.2 Specific criteria for technical and professional capacity

Experts will be recruited to conduct technical work within the WP that cannot be dealt by CEN/CENELEC JTC5 technical body. The rules for recruiting, funding, and functioning of the experts will follow the CEN/CENELEC Guide 19 which includes the best value for money principles.

The following specific capabilities are required for the experts:

- Knowledge of existing or under development standards and guidelines in particular in the domain of Space Traffic management
- Knowledge of current space environment, debris situation and New Space activities
- Ability to conduct in-depth studies to support and justify the work performed

Technical expertise is needed in the field:

- Space Situational Awareness (SSA) activities, including Space Surveillance and Tracking (SST),
- Space debris mitigation and remediation,
- Management of space orbits and radio spectrum,
- Entire life-cycle of space operations including launch, in-orbit operations, and end-of-life de-orbit operations,
- Re-entry phase of spacecraft into the airspace (both controlled and uncontrolled)

The criteria for selecting subcontractors will be based on the principle “best-value-for-money”, the contract with the subcontracts will include clear tasks and expected results to be fulfilled by the subcontractors.

V.3 Criteria for financial and economic capacity

Tenderers shall demonstrate:

- Sufficient economic and financial capacity to guarantee continuous and satisfactory performance throughout the envisaged lifetime of the contract.
- Sufficient financial capacity in relation to the pre-financing foreseen under the contract (where relevant)
- Reliability of the mitigating measures presented to cover possible deficiencies in the evidence presented for the above criteria.

In addition, the tenderers shall provide:

- Sufficient turnover in relation to the volume of tasks under this contract
- Positive equity or at least a guarantee of a third party to cover the problem of negative equity.

VI Award criteria

The selection of the most suitable candidate will be made on the basis of the following criteria:

a) Documented experience (70%) (*the list below is given by way of example*):

- number of years performing relevant activity;
- (typical) annual activity / number of relevant activities;
- experience with comparable projects on the development and validation of test methods;
- Industrial and academic background of the relevant personnel involved;
- general project management and communication skills of the relevant personnel involved;
- years of experience in European and/or International standardization work of the relevant personnel involved;
- experience in the management of task groups (working groups);

b) Organisation (demonstration of the ability to carry out the project, (20%) (*the list below is given by way of example*):

- infrastructure (equipment, description of the monitoring site, etc.);
- planning/organisation of the development and validation of test methods;
- established analytical quality system;
- ability to submit agreed deliverables at specified dates and detailed cost estimations.



c) Price (10% of the overall total points)

The candidate who will reach the highest score will be considered as the best value for money offer and hence should be the candidate selected to perform the expected activities (unless force majeure).

VII Eligibility criteria

The following candidates will be excluded:

- Candidates who were the subject of a non-likely judgment of recourse for a professional infringement
- Candidates who are in an irregular tax situation or in an irregular special taxation situation
- Candidates who provide incomplete or erroneous information.
- Candidates who submit their application after the submission deadline.
- Candidates with any conflict of interest.

VIII Tenders

VIII.1 General Terms and conditions for the submission of tenders

Tenders shall cover all tasks described in the sections above.

A selection committee will be constituted in order to evaluate the tenders, select the tenderers and award the contract(s).

The selection committee will be constituted by:

- the Chair of CEN-CENELEC/JTC 5, Space;
- the Secretary of CEN-CENELEC/JTC 5;
- a representative of BNAE;
- a representative from the CEN - CENELEC Management Centre.

Participation in tendering procedures is open on equal terms to all natural and legal persons from one of the EU Member States and to all natural and legal persons in a third country which has a special agreement with the Communities in the field of public procurement on the conditions laid down in that agreement.

Operators in third countries which have signed a bilateral or multilateral agreement with the Communities in the field of public procurement must be allowed to take part in the tendering procedure on the conditions laid down in this agreement. The selection committee refuses tenders submitted by operators in third countries which have not signed such agreements for the present call for tender.

Submission of a tender implies acceptance of the terms and conditions set out in this invitation to tender, in the tendering specifications and in the draft contract and, where appropriate, waiver of the tenderer's own general or specific terms and conditions. It is binding on the tenderer to whom the contract is awarded for the duration of the contract.

Once the tender has been accepted, it shall become the property of the Selection Committee and the Selection Committee shall treat it confidentially.

Expenses incurred in preparing and submitting tenders shall not be reimbursed.
Variants are not allowed.

VIII.2 No obligation to award the contract

This invitation to tenders is in no way binding on DIN. DIN's contractual obligation commences only upon signature of the contract with the successful tenderer.

Up to the point of signature, the contracting authority may either abandon the procurement or cancel the award procedure. This decision must be substantiated and the candidates or tenderers notified.



No compensation may be claimed by tenderers whose tender has not been accepted, including when the Selection Committee decides not to award the contract.

VIII.3 Joint Offers

A joint offer is a situation where an offer is submitted by a group of tenderers. If awarded the contract, the tenderers of the group will have an equal standing towards AFNOR and DIN in executing a supply, service or works contract.

A joint offer shall explicitly specify the different responsibilities of each member of the group with respect to the different tasks described in this specification.

AFNOR or DIN will not request consortia to have a given legal form in order to be allowed to submit a tender, but reserves the right to require a consortium to adopt a given legal form before the contract is signed if this change is necessary for proper performance of the contract. This can take the form of an entity with or without legal personality but offering sufficient protection of the AFNOR's contractual interests (depending on the Member State concerned, this may be, for example, a consortium or a temporary association).

The documents required and listed in the present specifications must be supplied by every member of the grouping.

The offer has to be signed by all members of the group.

Each member of the group will have a separate contract with AFNOR covering the tasks he is responsible for in the joint offer. BNAE will be responsible for verifying the correct execution of the contracts.

It is possible to apply for a work package as a consortium. If a consortium is formed, one institute needs to be identified as the leader of the consortium and the division of labour between the consortium members should be clearly described and justified. In this case, only the leader of the consortium would sign the contract with the contractor and ensure that all tasks are fulfilled and is responsible for the justifications and expenses of the consortium members. It is essential however that all members of the consortium are properly identified within the offer.

VIII.4 Form and content of the tender: general

Tenders must be signed by the tenderer(s) or his (their) duly authorized representative(s). Tenders must be perfectly legible so that there can be no doubt as to words and figures.

Tenders must be clear and concise, with continuous page numbering, and assembled in a coherent fashion (e.g. bound or stapled, etc.).

Tenders must be written in English language.

Tenders must include the following information:

- All the information and documents requested by DIN in order to assess the tender. In order to help tenderers presenting a complete tender, a checklist of the documents to submit is provided in section 6.6. This checklist does not need to be included in the tender but we encourage to use it in order to ease the assessment of the tenders;
- The price in euros;
- One specimen signature of an authorized representative on the legal entity form and a statement confirming the validity of the tender (preferably in blue ink), the tender must provide evidence of the authorization to sign in name of the tenderer;
- The name of a contact person in relation to the submission of the bid.

VIII.5 How to submit a tender

Tenders should be sent by legal representative, i.e. to be considered, any possible association has to be formalized according to the local legislation before submitting the tender. Working teams,



partnerships and other groups of people, particularly under the aegis of an institute qualify as contractors for the service contracts awarded in the course of this CfT (Call for Tender). Partnerships or joint ventures and other legally binding co-operations regardless of their organizational form qualify as well, provided they are recognized entities under the applicable national laws. Potential candidates may come from the public sector as well as from the private industry. It is essential however that the qualifications and experience of the individual fulfilling the tasks are properly described.

Evidence of timely submission by post or courier service will be constituted by the date of dispatch, the postmark or the date of the deposit slip. In the case of hand-delivery, the signed and dated receipt will serve as evidence.

Late delivery will lead to the non-admissibility of the tender and its rejection from the award procedure for this contract. Offers sent by e-mail or by fax will also be non-admissible. Envelopes found open at the opening session will also lead to non-admissibility of the tender. Consequently, tenderers must ensure that their bids are packed in such a way as to prevent any accidental opening during its mailing.

Tenders for data standards and data format (WP4) shall be sent to **Justus Heese-Gärtlein, Standardization Project Manager, DIN**, as soon as possible, to be received at the latest by **2023/10/13**.

DIN e. V.
Mr Justus Heese-Gärtlein
Am DIN-Platz
Burggrafenstraße 6
10787 Berlin
justus.heese-gaertlein@din.de

The tender shall be in English and contain:

- Curriculum Vitae of each relevant person participating in the project, demonstrating the necessary expertise for the 'Advertised position';
- Any required accreditation certificates;
- A schedule and a description of the execution of the tasks which will be carried out in the project such;
- A table in the format given in Annex A with detailed information on the costs;
- Appropriate documentation to prove the economic and financial capacities;
- Any further documents to prove the qualification required in the above Clauses on Selection and Award criteria;
- A signed declaration, by which the candidate(s) certifies not to be subject to one of the exclusion criteria as described in Clause "Eligibility criteria" and the veracity of the adjoining documents.

Candidates may apply for more than one role. In case of multiple applications candidates shall state their priorities.

Regarding question concerning the information provided in this call for tender or in case of need for clarification or additional information please contact Mr Justus Heese-Gärtlein (justus.heese-gaertlein@din.de).

If due to queries or other reasons supplementary information to this call for tender is required, this will be published on the website of the [[DIN-NL](#)].

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VIII.6 Structure of the tender



All tenders must be presented in five sections:

- Section one: Administrative information – Presentation of the tender
- Section two: Evidence relating to the exclusion criteria
- Section three: Evidence relating to the selection criteria
- Section four: Technical Proposal – Addressing technical specifications and award criteria
- Section five: Financial Proposal

VIII.6.1 Administrative information

Whichever type of bid is chosen (joint bid or sole contractor), the tender must stipulate the legal status and role of each legal entity in the tender proposed and the monitoring arrangements that exist between them and, failing this, the arrangement they foresee to establish if they are awarded the contract.

A **Legal Entity Form** is to be signed by a representative of the tenderer authorized to sign contracts with third parties. There is one form for individuals, one for private entities and one for public entities.

A **Financial identification form** shall be duly filled in and signed by an authorized representative of the tenderer and his or her banker.

The Legal Entity Form **must be accompanied by all the information** indicated in the form.

All tenderers must provide their legal entity files as well as the necessary evidence.

VIII.6.2 Technical proposal

Tenderers must include in their bids the technical proposal addressing all aspects detailed in the specifications set out in sections above.

The technical proposal must respond to these technical specifications and provide, as a minimum, all the information needed for the purpose of awarding the contract.

Please note that, to grant equal treatment of all tenders, it is not possible to modify offers after their submission in relation to the technical and financial proposals. As a consequence, incompleteness in this section can only result in negative impact for the evaluation of award criteria. Please note also, that proposals deviating from the technical specifications may be rejected for non-conformity.

The technical specifications and the tenderer's bid shall be integral parts of the contract and will constitute annexes to the contract.

VIII.6.3 Financial proposal

The tenderer's attention is drawn to the following points:

- Prices must be expressed in euros.
- Prices should be quoted free of all duties, taxes and other charges, i.e. also free of VAT
- Since this invitation to tender relates to several lots (tasks within Work packages), tenderers must indicate a separate price for each of the lots they propose providing. They may indicate any price reduction they are prepared to grant in the event of being awarded a contract either for all the lots or for a specified group of lots, this reduction will, however, not be taken into account to award the contracts in each lot but will be taken into account for establishing the contract when relevant.
- Prices shall not be conditional and be directly applicable by following the technical specifications.
- Prices shall be fixed and not subject to revision.

The reference price for the award of the contract shall consist of two amounts:

a) The amount in payment of the tasks executed

For each category of staff to be involved in the project, the tenderer must specify:

- The total labour costs.



- The daily rates and total number of days (man-days) each member of staff will contribute to the project.
- Other categories of costs, except for the costs specified under point b) below, indicating the nature of the cost, the total amount, the unit price and the quantity. Flat-rate amounts should be avoided. If, exceptionally, they are used, specimen quotations for the flat-rate amounts must be provided.

b) The amount corresponding to the reimbursable expenses.

NOT APPLICABLE