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| --- |
| ToR STF 695 (Ref. Body ISG CDM) |
| Version: 1.0 |
| Author: ISG CDM – Date: 2024-10-28 |
| Last updated by: ETSI Secretariat – Date: 2024-10-29 |
| page 1 of 15 |

Terms of Reference –Specialist Task Force Proposal

STF 695 (ISG CDM)

CISE Data Model Release 2 (Domain Extension)

Summary information

|  |  |  |  |
| --- | --- | --- | --- |
| Approval status | Approved by ISG CDM (doc ref: CDM(24)054002) | | **YES** |
| Approved by Board#149 (24-26 September 2024) | | **YES** |
| Reference Body | ISG CDM | | |
| ETSI Funding | **Maximum budget : 51.500 EUR** | | |
| Minimum of 4 ETSI Members Support | **YES** | | |
| Time scale | **From** | 2025-01-01 | |
| **To** | 2025-04-30 | |
| Work Items | Adapting Generic Underwater Application Language (GUWAL) to CISE and qualifying it through the ETSI CDM Testing Platform | | |
| Board priority | [ETSI STF funding criteria](https://portal.etsi.org/STF/STFs/Funding/ETSIbudget.aspx)   |  |  | | --- | --- | | **Priority Criteria** |  | | Maintenance of standards in mature domains |  | | Innovation in mature domains | X | | Emerging domains for ETSI | X | | Horizontal activities (quality, security, etc.) |  | | Societal good / environmental |  | | | |

Part I – STF Technical Proposal

# Rationale & Objectives

The business case for funding this action is motivated by the following considerations:

* **Background and Objective**: The CISE Data Model Release 2 aims to extend the existing model to encompass additional domains, allowing for a more comprehensive and interoperable Common Information Sharing Environment (CISE). This is crucial for enhancing information exchange and collaboration across various sectors, such as telecommunications, transportation, and maritime safety and security.
* **Relation with ETSI Strategy**: The CDM outputs align with ETSI strategic goals of promoting interoperability, facilitating innovation, and driving market adoption of standardized solutions. By exploiting the adaptation of legacy systems to the standardized data model, ETSI continues to be at the forefront of shaping industry standards that support seamless integration and connectivity in diverse domains.
* **Interest for ETSI Members**: ETSI members stand to benefit significantly from the standards published within ISG CDM. These standards provide a common framework for data exchange, reducing complexity and costs associated with interoperability challenges. By adhering to these standards, ETSI members can ensure compatibility with other systems and seize new opportunities for collaboration and market expansion.
* **Need for an STF**: An STF is required to accomplish a very specific task, i.e. that of adapting protocols and communication patterns adopted in the underwater domain to the CISE Data and Service Model in force. The task force brings together experts from various backgrounds to collaboratively develop and refine the adaptation to the data model, ensuring it meets the diverse needs of stakeholders across different industries. Without the focused effort and coordination provided by an STF, achieving consensus, and delivering a robust, interoperable data model would be significantly more challenging.

In summary, funding this action through an STF is essential for advancing cross-domain interoperability, supporting ETSI strategic objectives, benefitting ETSI members, and ensuring the successful development of standards that facilitate seamless information exchange across multiple domains.

## Rationale

The proposal outlines one key activity: integrating an underwater network adopting GUWAL into the CISE architecture via spezification of a prototype adaptor.

Those activities can be outlined as it follows:

* **Objective:** Enable seamless communication between an underwater network using GUWAL and the CISE architecture.
* **Steps:** Define data mapping, develop GUWAL adaptor spezification,

These activities aim to advance interoperability, support ETSI strategic objectives, benefit members, and ensure successful development and integration of standards within the CISE architecture.

## Objectives of the work to be executed

It is intended to start the activities around the Work Item 012 “GUWAL for CISE” to find a correct mapping between the GUWAL protocol and the CISE Data and Service Models.

## Previous funded activities in the same domain

The ISG CDM has received funding from EISMEA for STF 637 “CISE Data Model” in 2022/24 to develop a dedicated Testing Platform and a Testing Suite; it has also received funding for the extension of the data model beyond the maritime domain (i.e. STF 672). Both actions have been completed.

No previous funded activities in the underwater domain and/or Critical Undersea Infrastructure (CUI) standardisation.

## Market impact

The implementation of the GUWAL adaptor for integration into the CISE architecture is expected to have a significant impact on the standards developed, particularly in terms of enhancing interoperability and expanding CISE capabilities. Background information on the expected impact:

1. **Enhanced Interoperability:**

* This action will outline how a GUWAL adaptor will enable seamless communication between underwater networks using GUWAL and the CISE architecture.
* By providing a standardized interface, the adaptor ensures compatibility and interoperability between diverse systems and protocols.
* This enhances data exchange capabilities across multiple domains, including telecommunications, transportation, and security, leading to improved collaboration and information sharing.

1. **Expanded Market Opportunities:**

* Integration with the CISE architecture opens new CISE opportunities for underwater network operators and other stakeholders.
* Underwater networks play a critical role in global communications infrastructure, supporting civilian and defence operations.
* Access to the CISE architecture facilitates participation in collaborative initiatives, such as maritime surveillance, environmental monitoring, and disaster response.
* Concrete figures of market volume: The submarine network equipment market was valued at approximately $20 billion in 2021 and is projected to grow at a Compound Annual Growth Rate (CAGR) of around 6% from 2022 to 2028, reaching over $30 billion by 2028 (source: Global Market Insights).
* Examples of market opportunities: Increased demand for protection of Critical Undersea Infrastructure (CUI), underwater communication connectivity, growing investments in undersea cable infrastructure, and rising applications in offshore energy production and scientific research.

1. **Standardization Impact:**

* The development and adoption of standards for GUWAL integration into the CISE architecture establish a common framework for data exchange and interoperability.
* These standards contribute to industry-wide best practices, reduce complexity, and promote market adoption of interoperable solutions.
* ETSI involvement in standardization efforts ensures global recognition and compatibility with other telecommunications standards and protocols.

In summary, implementing the GUWAL adaptor spezification for integration into the CISE architecture is expected to significantly impact standards development by enhancing interoperability and expanding market opportunities in the underwater network sector. The standardized approach fosters collaboration, innovation, and growth, leading to a more interconnected and resilient global communications infrastructure.

## Consequences if not agreed

If this request for an STF is not accepted, several consequences may arise:

1. Work Impediment or Delay: the progress toward establishing an underwater-ready CISE-Network could be impeded or significantly delayed. This could result in missed deadlines and prolong the time to Full Operational Capability (FOC) for the CISE-Network in such applications.
2. Potential Shift in Leadership: If ETSI (European Telecommunications Standards Institute) does not take the lead, other standard organizations may step in to fill the void. This could lead to fragmentation in standards development and interoperability issues within the domain of the CISE-Network.
3. Damaged ETSI Member Interests: ETSI members may be harmed by a fragmented market resulting from the lack of standardized protocols and procedures for the CISE-Network. This fragmentation could lead to increased costs, inefficiencies, and missed opportunities for collaboration and innovation within the domain.
4. Missed Opportunities: Failure to establish the Standards for the CISE-Network could mean that ETSI members miss the opportunity to enter a new domain or market segment. This could have long-term implications for competitiveness and growth within the telecommunications and maritime industry.
5. Time to Market Deadlines: Depending on industry and regulatory timelines, there may be specific deadlines for bringing the CISE-Network to FOC. Failure to meet these deadlines could result in missed opportunities, loss of market share, and potential regulatory penalties.

In summary, the consequences of not accepting the STF for the CISE-Network and operational phase could include work impediment or delay, potential shifts in standardization leadership, damage to ETSI member interests, missed opportunities for market entry, and failure to meet time to market deadlines. These consequences could have significant impacts on industry stakeholders and for the CISE stakeholders.

# Relation with ETSI strategy and priorities

|  |  |
| --- | --- |
| **Priority Criteria** | **Rationale** |
| Maintenance of standards in mature domains |  |
| Innovation in mature domains | X |
| Emerging domains for ETSI | X |
| Horizontal activities (quality, security, etc.) |  |
| Societal good / environmental |  |

# ETSI Members Support

|  |  |  |
| --- | --- | --- |
| **#** | **ETSI Member** | **Supporting delegate** |
| 1 | Fraunhofer | Dimitri Sotnik |
| 2 | TRAFICOM | Kaisu Heikonen |
| 3 | CNIT | Paolo Pagano |
| 4 | IBM Deutschland | Joachim Beckh |

# Deliverables

## Base documents

|  |  |  |
| --- | --- | --- |
| **Document** | **Title** | **Status** |
| ETSI CDM 002 V1.2.1 | CDM System Requirements | Published |
| ETSI CDM 003 V1.2.1 | CDM Architecture | Published |
| ETSI CDM 004 V1.2.1 | CDM Service Model | Published |
| ETSI CDM 005 V1.6.3 | CDM Data Model | Published |

## New deliverables

|  |  |  |  |
| --- | --- | --- | --- |
| **Deliv.** | **Work Item code**  **Standard number** | **Working title**  **Scope** | **Expected date for publication** |
| D1.1 | CDM 012 | GUWAL for CISE | April 2025 |

# Maximum budget

## Task summary/Manpower Budget

|  |  |
| --- | --- |
| **Task short description** | Budget (EUR) |
|
| Project Management (T0) | 5.000 |
| GUWAL adaptor implementation (T1) | 45.000 |
| **TOTAL** | 50.000 |

## Travel budget

* (eventual) F2F participation to three plenary CDM sessions: 500 Eur each, 1 500 Eur total.

## Other budget line

No other budget will be required.

Part II – Details on STF Technical Proposal

# Tasks, Technical Bodies and other stakeholders

## Organization of the work

The experts in the Specialist Task Force will be responsible for the overall execution of the work, i.e.:

* design CDM 012 V1.1.1
* providing the required (progress) reports to ISG CDM
* making sure that the work progresses according to the agreed timeline

The work will be supervised and validated by ISG CDM. No steering group will be necessary.

Participation in at least 3 ISG CDM meetings is envisaged.

## Tasks for which the STF support is necessary

Integrating an underwater network adopting the Generic Underwater Application Language (GUWAL) into the Common Information Sharing Environment (CISE) architecture involves:

Integration of GUWAL into CISE Architecture:

1. **Define Data Mapping:** Determine the data elements and message formats used by the GUWAL protocol. Map these elements to corresponding fields within the CISE data model, ensuring alignment with existing standards and protocols.

## Other interested ETSI Technical Bodies

None

## Other stakeholders

EU Commission Services (DG MARE, DG MOVE), EDA, EMSA, CISE Stakeholder Group), EU Member States, a.o..

Part III: Execution of Work

# Work plan, time scale and resources

## Task description

|  |  |
| --- | --- |
| **Task 0 (T0)** | **Project Management** |
| **Objectives** | Overall management of the STF project in consideration of priorities, deadlines, quality check |
| **Input** | ETSI secretariat for the STF management, ISG CDM for the supervision of the work, review and approval of the output |
| **Output** | STF progress report (D0.1) and final report (D0.2) to ISG CDM |
| **Interactions** | ETSI Secretariat, ISG CDM stakeholders |
| **Resources required** | Management skills. |

|  |  |
| --- | --- |
| **Task 1 (T1)** | **GUWAL specifications in CISE** |
| **Objectives** | Enable integration of the underwater domain application language GUWAL, used by several European navies and industry for communication through underwater acoustics, into the CISE architecture enhancing the capabilities of a situation report, and also to extend the CISE Network range through the underwater information domain covering critical undersea infrastructure. |
| **Input** | ETSI CDM 002 V1.2.1  ETSI CDM 003 V1.2.1  ETSI CDM 004 V1.2.1  ETSI CDM 005 V1.6.3  STANAG 1481 (Identification of friendly submarines) |
| **Output** | CDM 012 (D1.1) |
| **Interactions** | Consultation with and guidance by ISG CDM on methodology of work and desired output  Consultation with stakeholders listed under 6.4. |
| **Resources required** | Expertise in CISE Architecture, Data and Service models, in STANAG 1481 and in the GUWAL protocol. |

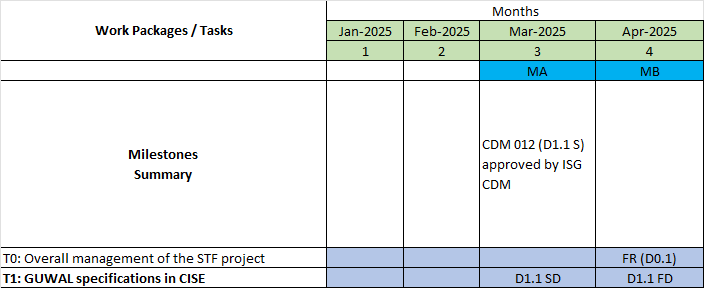
## Milestones

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **A** | T1 delivers stable results | **31.03.2025** |
| Reference Body Deliverable | Stable Draft CDM 012 (D1.1 S) available for review by ISG CDM. |
| ETSI Deliverable |  |

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **B** | T0 and T1 completed (i.e. end of the project) | **30.04.2025** |
| Reference Body Deliverable | All Final Drafts approved by ISG CDM and accepted by the ETSI Secretariat for publication |
| ETSI Deliverable | STF Final Report#2 (D0.1) approved by ISG CDM |

## Task summary

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Code** | **Task / Milestone** | Target Date | | Estimated Cost (EUR) |
| From | To |
|  | Start of work |  |  |  |
| T0 | Overall management of the STF project | 01.01.25 | 30.04.25 | 5 000 |
| T1 | GUWAL specifications in CISE | 01.01.25 | 31.03.25 | 45 000 |
| Milestone A | T1 delivers stable results. |  | 31.03.25 |  |
| Milestone B | Project completed. Deliverable published |  | 30.04.25 |  |
|  |  |  |  |  |
| **TOTAL** | | | | **50 000** |



# Expertise required

## Team structure

The STF will be composed of two experts.

One participant for each of the following competences:

|  |  |
| --- | --- |
| **Priority** | **Qualifications and competences** |
| High | Experience in GUWAL and in CISE |
| High | Project Management Skills |

Part IV: STF performance evaluation criteria

# Performance Indicators

|  |  |
| --- | --- |
| **Select relevant Performance indicators applicable for these ToR (X)** | |
| Contribution from ETSI Members to STF work | |
| Direct financial contribution (co-funding) |  |
| Support to the STF work (e.g., provision of test–beds, organization of workshops, events) |  |
| Steering Group meetings (number of meetings / participants / duration) |  |
| Number of delegates directly involved in the review of the deliverables | x |
| Contributions/comments received from the reference Reference Bodies | x |
| Contributions/comments received from other Reference Bodies |  |
|  |  |
| **Contribution from the STF to ETSI work** | |
| Contributions to Reference Body meetings (number of documents / meetings / participants) | x |
| Contributions to other Reference Bodies |  |
| Presentations in workshops, conferences, stakeholder meetings |  |
|  |  |
| **Liaison with other stakeholders** | |
| Stakeholder participation in the project (category, business area) |  |
| Cooperation with other standardization bodies |  |
| Potential interest of new members to join ETSI |  |
| Liaison to identify requirements and raise awareness on ETSI deliverables | x |
| Comments received on drafts (e.g. on WEB site, mailing lists, etc.) | x |
|  |  |
| **Quality of deliverables** | |
| Approval of deliverables according to schedule | x |
| Respect of time scale, with reference to start/end dates in the approved ToR | x |
| Comments from Quality review by Reference Body | x |
| Comments from Quality review by ETSI Secretariat | x |
|  |  |

Time recording

For reporting purposes, the STF experts shall fill in the time sheet provided by ETSI with the days spent for the performance of the services.

During the activity, the STF Leader shall collect the relevant information, as necessary to measure the performance indicators. The result will be presented in the Final Report.

# Document history

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Date** | **Author** | **Status** | **Comments** |
| 1.0 | 2024-10-29 | ETSI Secretariat | Final | Update following Board#149 budget, revised version approved by ISG CDM on 28/10/2024 |

Annex I Response to the Request for Proposals  
CfE – STF 695 (REFERENCE BODY ISG CDM) Deadline: 13 December 2024

**If you are an ETSI Member \***

**ETSI membership status (Indicate your status):**

 Full

 Associate

 Observer

**If you are not an ETSI Member \***

Please indicate:

**Full name of the ETSI member supporting the application (list of ETSI members on etsi.org):**

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Official contact name of the ETSI member supporting the application:**

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Note: A formal confirmation of the support from the Official contact is required (e.g. by e-mail sent to STFLINK@etsi.org) and an “ETSI Member Support Letter” will be required if you are selected.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Contractor information \*** | | | | |
|  | | | | |
| **Contractor name \*:**  *Indicate the Company/Organization Name* | |  | | |
|  | | | | |
| **Contact person for the technical aspects** | | **Contact person for Decision on ETSI financial offer to this project (if any)** | | |
| Title |  | Title |  | |
| First name |  | First name |  | |
| Last name |  | Last name |  | |
| Role |  | Role |  | |
| e-mail |  | e-mail |  | |
| Phone |  | Phone |  | |
|  | | | | |
|  | | **Yes** | | **No** |
| Do you or any employee of your Company/Organization hold an elected or appointed position in the Reference Body requesting the STF 695 creation? | | o  Indicate in which position:  ----------------------------------- | | o |
| **If you are self-employed candidate:**  Do you currently have other contracts in progress with ETSI? | | o | | o |

All fields marked with an asterix (\*) are mandatory

**1.1 Introduction**

A short presentation of the technical structure responsible for this activity, e.g.:

* Business area, number of employees, link to WEB site,
* Department(s)/team(s)/experts in charge of the technical activities related to this Project,
* Reference to products/services of your Company/Organization or supporting Member to which the standards developed by this Project will apply,
* Motivation for your Company/Organization or supporting Member to participate in this Project.

**1.2 Proposed approach**

**Proposed contribution to tasks & related cost**

Identify the tasks to which your Company/Organization is proposing to contribute by filling-in the table below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TaskNo** | **Tasks Description** | **Max Budget Allocated in Euro** | **Amount in Euro (mandatory)** | **% of whole Task (mandatory)** |
| 00 | Project Management | 5 000€ | . | . |
| 01 | GUWAL specifications in CISE | 45 000€ | . | . |
|  | **TOTAL** | **50 000€** |  |  |

**Amount in Euro (mandatory)**: Indicate the price offered for your contribution to the task(s)

**% of whole task (mandatory)**: Indicate to which percentage of the execution of the whole task your offer corresponds

Provide a description of the proposed approach, competences, reference to related activities:

* Explain which part of the task is corresponding to the requested percentage that your Company/Organization will handle,
* Explain the scope that your Company/Organization will cover,
* Explain your approach to the management of the quality and,
* Explain your approach to the management of the risks and their mitigation,
* Describe and justify the proposed costs to achieve this project objectives.

Annex II Terms and Conditions  
CfE – STF 695 (REFERENCE BODY ISG CDM) Deadline:  13 December 2024

**2.1 Submission of Proposals**

All proposals in response to this CfE shall be submitted before the deadline indicated in thisCollective Letter, using exclusively the WEB application on the ETSI Portal at the following address: <https://portal.etsi.org/cfe>.

Proposals shall be composed of Curriculum Vitae of the proposed service providers’ personnel and the Annex I of this CfE duly filled-out.

Proposals that will be partial or incomplete at the deadline will not be accepted.

The Terms and Conditions in this Annex will apply.

**2.2 Modification and Withdrawal of Proposals**

Applicants may, without prejudice to themselves, modify or withdraw their proposal by written request, provided that the request is received by ETSI prior to the due date and time, at the address to which their proposal was submitted. The applicant may submit a new proposal provided that such new proposal is received prior to the deadline for responding which is specified in this Collective Letter.

**2.3 Assessment of Proposals**

The ETSI Director-General, in consultation with the Reference Body Chairman, is responsible for the selection of the service providers that will be contracted to perform this Project work. The ETSI Director-General and the Reference Body Chairman may be assisted by a Selection Panel to assess the applications received and make the final decision.

As per article 1.10.4 of the ETSI Directives, the Director-General may discard proposals that could be identified as creating potential conflict of interest.

The ETSI Secretariat will only communicate to the applicants the result of the selection (accepted or not accepted). Should applicants need more information on the rationale for the selection, they must address a formal request to the ETSI Director-General.

The following evaluation criteria will be applied to all proposals, in order of priority:

* Evidence that the applicant has the necessary structure and expertise to ensure delivery
* Reference to current or previous activities in the specific technical domain of this project
* Critical review of the most efficient way to achieve the objectives in this Project ToR
* Effective proposed approach/methodology for the execution of the tasks
* Implementation schedule
* Clear pricing policy

Compliance with the first two (2) criteria is mandatory.

Proposals that are not considered compliant with these criteria will be discarded.

Priority will be given to technical quality of the proposals. Pricing considerations will be taken into account to ensure that the best value for money is achieved. Compatibility with the maximum budget allocated to this Project will be verified before placing a Service Contract.

Following the assessment process, ETSI reserves the right to grant contracts to other than the cheapest proposals, to accept or reject any offer completely or in part, or to reject all proposals, without providing the reasons. If no offer is accepted, ETSI may decide to abandon the work or proceed in any other manner ETSI may select.

**2.4 IPR and confidentiality Agreements**

The information provided in this CfE, as well as the fact that the applicant has received the CfE, is considered confidential and protected under copyright laws. The applicant may not discuss, share, or use the information in this CfE for any purpose other than the response to this CfE.

ETSI will not disclose the content of any proposals to other applicants or any other party, with the exception of the persons involved in the assessment process described in §2.3 above.

However, ETSI reserves the right to make use of the information provided in this proposal to improve this project definition for the purpose of this CfE or any other manner in which ETSI may decide to proceed to select the service providers.

If successful, the applicant will be required to sign a Service Contract, which includes IPR and Confidentiality clauses aligned with the relevant policies in the ETSI Directives.

**2.5 Preparation cost**

ETSI will not be responsible for any costs or expenses that the applicant may incur in preparing and/or submitting the proposal.

**2.6 Service Contract**

A Service Contract will be proposed to the applicants that will be selected to perform the work.

Details on the Terms and Conditions of this contract can be found on the ETSI Portal, at the following address: <https://portal.etsi.org/STF/STFs/Contracts.aspx>