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| --- |
| ToR STF 688 (Ref. TC ITS) |
| Version: 3.1 |
| Author: Paul Spaanderman – Date: 2024-03-08 |
| Last updated by: ETSI Secretariat – Date: 2024-06-21 |
| page 1 of 4 |

Terms of Reference – Specialist Task Force Proposal

STF 688 (Ref. Body TC ITS)

ITS Radio Resource Management

Summary information

|  |  |  |
| --- | --- | --- |
| Approval status | Approved by Ref. Body ITS (doc ref: ITS(24)000031) | **YES** |
| Approved by Board#148 (5-7 June 2024) | **YES** |
| Reference Body | Ref. Body TC ITS |
| ETSI Funding | **Maximum budget : 90 200 EUR** |
| Minimum of 4 ETSI Members Support | **YES** |
| Time scale | **From** | 2024-08-05 |
| **To** | 2025-08-31 |
| Work Items  | TR 104 073: “Intelligent Transportation systems; Radio Resource Management Study; Release 2” |
| Board priority | [ETSI STF funding criteria](https://portal.etsi.org/STF/STFs/Funding/ETSIbudget.aspx)

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

 |

Part I – STF Technical Proposal

# Rationale & Objectives

## Rationale

Today, European C-ITS Day 1 services have been deployed by both European Authorities and Market stakeholders. These C-ITS Day 1 services are mainly realised based on ETSI ITS Release 1 standards. Currently, ETSI TC ITS develops C-ITS Release 2 standards.

Day 1 C-ITS services have relaxed needs for wireless spectrum bandwidth: The dissemination of the release 1 message types (CAM, DENM, SPATEM, MAPEM and IVIM) is realized in a single 10 MHz channel, which is regarded to be sufficient for Release 1 road traffic scenarios. This 10 MHz channel is one of the seven 10 MHz channels currently designated for ITS in the 5.9 GHz band with an overall bandwidth of 70 MHz. Currently, C-ITS Release 2 standardisation is on the way supporting the dissemination of additional advanced message services, including Collective Perception (CP), Parking Availability (PA), Vulnerable Road User (VRU) protection including eBikes, Diagnosis, Logging and Status (DLS), Automated Vehicle Marshalling (AVM) among others. According to C2C-CC[[1]](#footnote-1) and 5GAA[[2]](#footnote-2) reports, these services do not only come on top of the existing C-ITS service, but some of them are expected to generate more data due to larger message rate with larger messages. Therefore, it is required that Release 2 services use the full spectrum and utilize this spectrum efficiently.

Within the highly dynamic C-ITS safety environment, each ITS-S exchanges information with a specific set of other ITS-Ss at one given moment, while at the next moment it will exchange information with a different set of ITS-Ss. Furthermore, from a service perspective, safety-related situations manifest and dissolve sporadically. The high variability of the information exchange has been identified as non-deterministic.

To realize C-ITS Release 1 systems, ETSI developed a set of ITS Release 1 specifications. This set incorporates conservative limits pertaining to radio spectrum usage. To enable advanced C-ITS services beyond Release 1, enhancements to the current C-ITS system are necessary, including updates to certain limitations to improve spectrum efficiency.

In Release 1 ITS-S, the internal management of message dissemination is handled at the functional level (Application or Facilities layer) independently by each application. Consequently, Release 1 applications lack awareness of the actual transmission opportunities available at any given time. Hence, these applications are unable to respond to fluctuations in channel occupancy from a functional perspective, which is essential for ensuring safety. Furthermore, as multiple Release 1 safety applications can be active in an ITS-S, they also do not know the dissemination requirements from other active applications active in the same ITS-S. This aspect becomes even more critical, when Release 2 applications get included.

Hence, to facilitate the robust realization of Release 2 safety-related C-ITS services, a radio resource management mechanism is necessary. This mechanism ensures that applications are appropriately constrained when necessary and are provided with accurate information regarding the underlying transmission capabilities. As this issue must be handled by each ITS-S independently of the others, a ITS-S internal functionality is needed that provides information about the available transmission capabilities to each specific active application.

Since this functionality affects the transmission behavior of an ITS-S, it significantly influences the operation of the entire ITS system, wherein numerous ITS-Ss may be active. Achieving interoperability at the ITS system level necessitates the establishment of consistent resource management functionalities across all ITS-Ss. This entails defining a standardized set of ITS-S internal interface principles and parameters.

The message dissemination possibilities are contingent upon the transmission capabilities within the radio channel(s), which are defined by both static properties and dynamic states within the channel(s). It is essential to communicate these capabilities to the higher layers in an ITS-S so that applications can make informed dissemination decisions.

Establishing these principles and parameters, which expand upon the existing concept for multi-channel operation (MCO), is essential to ensure the predictability of ITS radio usage behavior for all ITS stations. It also fosters interoperability among internal functionalities.

## Objectives of the work to be executed

This project intends to:

1. identify the Radio Resource Management related functional requirements
2. identify the possible extended transmission capabilities in the ITS allocated radio spectrum;
3. identify the static properties and dynamic states for possible radio channel configurations;

The project should meticulously define all relevant Radio Resource Management related higher application and service requirements and identify ITS release to Radio Resource capabilities. Results should lead to the realization of a comprehensive Radio Resource Management approach aiming to enable the stable and robust operation of Release 2 (advanced) applications and backward-compatible Release 1 applications and message services in a follow-up STF. The final method should enhance spectrum efficiency.

This project will explore the Release 2 ITS-S services related communication requirements to identify the resource management parameters. It will outline the lower layer aspects for Release 2, specifically as these provide the capabilities and control parameters which can be used at higher layers by a ITS Release 2 Resource management functionality to be defined and specified in an follow-up STF.

In this STF, it is recommended to define the full set of Resource management related functional parameters and realize lower layer analyses, define the lower layer parameter, update capability CBR limitations so that an ITS Resource management functionalities can be defined and specified.

To realize the objectives of the project effectively, the following key study elements are to be considered:

1. Release 2 ITS-S Services Analysis:
	* Conduct a comprehensive analysis of Release 2 ITS-S services to identify key dynamic parameters in the channel.
	* Develop management process approaches and determine relevant control parameters to monitor and manage dissemination behavior effectively.
2. Congestion Control Optimization:
	* Investigate optimization opportunities to establish improved Congestion Control (CC) limits for both 10 and 20 MHz channels within the 5.9 GHz ITS band.
3. Adjacent Channel Interference Management:
	* Utilize the findings from congestion control optimization to identify possibilities for setting CC limits for adjacent channel interference and multiple channel technology independent usage models.

Realizing these objectives will allow us to define ITS CBR management and ITS Resource management for the purpose of realizing a more spectrum efficient use, advanced stable and more robust Release 2 ITS systems in a follow-up STF. It is advised to start the second STF when this STF has progressed up to Milestone B of the project.

## Previous funded activities in the same domain

The Technical Committee for ITS has benefitted from STF support financed by the EU commission during the period from March 2020 till June 2022 for STF585. An effort of 1,065 resource-units realized the following documents: ETSI TR 103 439; ETSI TS 103 696; ETSI TS 103 697; ETSI TS 103 141; ETSI TS 102 636-8-1 and TS 103 695.

## Market impact

## The ETSI ITS Release 1 specifications support the initial deployment of Day-1 services, which primarily include CAM and DENM. Currently, ETSI ITS Release 2 service standards are being developed and a concept for Multi-Channel Operation has been defined. However, so far, the standards do not detail how to manage the dissemination in the currently used channel or in multiple channels of multiple services that include Release 2 services such as Collective Perception (CP), Parking Availability (PA), Vulnerable Road User (VRU) Diagnosis, Logging and Status (DLS), Automated Vehicle Marshalling (AVM). This needs to ensure to have a predictable and robust data transmission support. Release 2 services as the ones above mentioned are expected to be introduced into the market in the coming years.

New features will be integrated into vehicles, motorcycles, trucks, eBikes, public transport, emergency vehicles, road infrastructure and VRU equipment. These features include services that will support business cases of interest. Currently there are several R&D projects in Europe actively realizing interoperability for these services such as in projects such as TransAID, MAVEN, Imagine, Shuttle2x, PODIUM and ConnRAD. To realize interoperability and a robust ITS safety related data exchange in a spectrum efficient way for ITS Release 2, improvement of the control of the lower layer functionalities with robust operating resource management is required. This should be also of benefit for other applications utilizing (partly) the same frequency band such as Urban Rail applications.

## Consequences if not agreed

Without proper standards in place – standards that need to cover communication aspects at all layers from the application to the physical layer – there is a conceivable risk that a plethora of non-standardised proprietary solutions will appear on the market with obvious consequences, possibly destabilizing the ITS system operation and by that harm the realization of interoperability and conformity. This may in turn lead to increased risk of road fatalities and no improvement of traffic efficiency. In addition, there might be integration problems and consequently the risk of reinvestment in the related deployed infrastructure and market products at a later stage in order to upgrade or re-engineer the deployed solutions to the required standards with obvious consequences in terms of costs and the risk of reducing trust by the end users.

# Relation with ETSI strategy and priorities

|  |  |
| --- | --- |
| **Priority Criteria** | **Rationale** |
| Maintenance of standards in mature domains | The work of the STF will grant backward compatibility with the channel usage made in Release 1. |
| Innovation in mature domains | The work will grant efficient use of multiple channels with flexibility for future evolutions. |
| Emerging domains for ETSI | The activity of the STF aims at better supporting the dissemination of messages from services that are currently being defined in ETSI (e.g., collective perception services, manoeuvre coordination services). |
| Horizontal activities (quality, security, etc.) | - |
| Societal good / environmental | The realization of mechanisms for an efficient use of multiple ITS channels is necessary to enable full effectiveness of C-ITS towards safer and more efficient traffic management. |

# ETSI Members Support

|  |  |  |
| --- | --- | --- |
| **#** | **ETSI Member** | **Supporting delegate** |
| 1 | FBConsulting | Friedbert Berens, Paul Spaanderman |
| 2 | Fraunhofer IVI | Andreas Festag |
| 3 | KAPSCH | Dieter Smeely |
| 4 | CNIT | Alessandro Bazzi |
| 5 | UMH | Miguel Sepulcre |
| 6 | Eurecom | Jérôme Härri |
| 7 | Toyota | John Kenney |
| 8 | CommSignia | András Váradi |
| 9 | Volkswagen | Teodor Buburuzan |
| 10 | Huawei Technologies Sweden AB | Francisco da Silva |
| 11 | YunexTraffic | Thomas Ritter |
| 12 | FSCOM | Yann Garcia |
| 13 | Cadzow | Scott Cadzow |
| 14 | Denso | Tim Leinmueller |
| 15 | IAV | Daniel Hermann |
| 16 | BNETZ | Kai Achtmann |
| 17 | BMF | Jasja Tijink |
| 18 | Volvo Technology Corporation | Katrin Sjöberg |
| 19 | xFlow | Fmubeena Ishaq |
| 20 | Anemone Technologies | Niels Peter Skov Andersen |
| 21 | NXP | Vincent Martines |
| 22 | Ericsson GmbH, Eurolab | Yunpeng Zang |
| 23 | Bosch | Florian Schiegg |
| 24 | Hyundai | Michele Rondinone |
| 25 | LGE  | Minsung Kwak |

# Deliverables

## Base documents

|  |  |  |
| --- | --- | --- |
| **Document** | **Title** | **Status** |
| None |  |  |

## New deliverables

|  |  |  |  |
| --- | --- | --- | --- |
| **Deliv.** | **Work Item code****Standard number** | **Working title****Scope** | **Expected date for publication** |
| D1 | DTR/ITS-246 ETSI TR 104 073 | Working title: Radio Resource Management StudyScope: Identifying a Radio Resource Management (RRM) ITS-S solution, enabling highly dynamic data exchanging services to operate in a robust, interoperable, and backward compatible way with existing ITS Release 1 operating services in the 5.9 GHz ITS allocated band. It includes setting the relevant principles and parameters for the resource management functionalities operating at the different layers.  | 2025-08-14 |

# Maximum budget

## Task summary/Manpower Budget

|  |  |
| --- | --- |
| **Task short description** | Budget (EUR) |
|
| Project leadership and Study report rapporteur-ship | 20.200,- |
| Release 2 service analyses and identification of key parameters. Identification of resource management approaches and relevant control parameters. | 35.000,- |
| Find optimization possibilities for the Congestion Control (CC) limits and what those should be for adjacent channels. | 35.000,- |
| **TOTAL** | 90.200,- |

Note: In 1.3, 3 Key studies are identified. 2 are realized in one Task as those activities are interrelated.

## Travel budget

No travel budget.

## Other budget line

No other budget.

Part II – Details on STF Technical Proposal

# Tasks, Technical Bodies and other stakeholders

## Organization of the work

A team led by a leader will realize the work under control of ETSI TC ITS plenary level.

The team leader will ensure the realisation of the work according to the timeline and report at each ETSI TC ITS meeting (4x year) the progress of the work and status of the document. The planning of deliverables is synchronized with the ETSI TC ITS meeting schedule. The team leader will organise at least physical meetings at ETSI synchronized with the ETSI TC ITS meeting schedule but when required will organize additional physical meetings. The team will meet biweekly.

To enable interested ETSI members to comment or contribute, drafting sessions will be organized during the phase between mature draft and final draft document status. To enable ETSI external organisations to provide comments or contributions LS-outs will be arranged to collect their contributions.

There will be no other ETSI internal review groups organized. It is of no relevance to align with other technical committees.

## Tasks for which the STF support is necessary

The following task have been identified.

* Release 2 ITS-S services analysis for the identification of key channel dynamic parameters to monitor and manage the dissemination behavior of applications. To identify possible management process approaches and relevant control parameters.
* To find optimization possibilities to set better Congestion Control (CC) limits for a single 10 and 20 MHz channels in the 5.9 GHz ITS band. Based on that, to identify the possibilities of setting the CC limits for adjacent channel interference limits and the different multiple channel technology independent usage models.

## Other interested ETSI Technical Bodies

There are no other Technical Committees involved in this activity.

## Other stakeholders

There is no relation with documents or standards from other SDO’s. Therefore, there is no contact required with those bodies.

There are at least 4 external organisations for which this work may be of relevance: CEPT; C-Roads; 5GAA and C2C-CC.

Part III: Execution of Work

# Work plan, time scale and resources

## Task description

|  |  |
| --- | --- |
| **Task #0** | **Project Management** |
| **Objectives** | To realize the project in time with a qualitative result. Organize the communication with internal and external stakeholders as identified in clause 6 and manage the team and its meetings. |
| **Input** | The ToR. |
| **Output** | Quarterly Status Reports to ETSI TC ITS. |
| **Interactions** | Direct interaction through the reports and document status for consulting and approval in ETSI TC ITS.Through drafting sessions and comment resolution with ETSI TC ITS members.Through LS-out to relevant external organisation. |
| **Resources required** | A Senior project leader with standardisation experience. |
| **Task #1** | **Services and management process analyses Study** |
| **Objectives** | Release 2 ITS-S services analyses for identification of key channel dynamic parameters to monitor and manage the dissemination behavior of applications. Identify possible management process approaches and relevant control parameters. |
| **Input** | Available ITS Release 1 and ITS Release 2 ETSI higher layer documents and available related publications. |
| **Output** | Two or more clauses in the TR 104 073, at least one for service analysis and one for management process.  |
| **Interactions** | Additionally, to what is referenced for Task 0, direct contact with different universities for additional feedback. |
| **Resources required** | Senior level of system engineering, requirement management, facilities layer service definition and information dissemination protocols. |
| **Task #2** | **Congestion Control (CC) limits Optimization Study** |
| **Objectives** | To find optimization possibilities to set better Congestion Control (CC) limits for a single 10 MHz and 20 MHz channels in the 5.9 GHz ITS band. Based on this result, to identify the possibilities of setting the CC limits for adjacent channel interference limits and the different multiple channel technology independent usage models. |
| **Input** | Available ITS Release 1 and ITS Release 2 ETSI lower layer documents and available related publications. Technology reference specifications. |
| **Output** | Two or more clauses in the TR 104 073, at least one for the CC limits and one for the adjacent channel CC limit dynamics. |
| **Interactions** | Additionally, to what is referenced for Task 0, direct contact with technology suppliers, radio implementers, spectrum managers, and profiling organisations 5GAA, C-Roads and C2C-CC. |
| **Resources required** | Senior level of Radio technics and spectral behaviour in AdHoc networks and cellular networks. |

## Milestones

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **A** | **Early Draft Approved** | 2024-11-01\* |
| TR 103 073 | Early approved by ETSI TC ITS#56 |
| ETSI Deliverable | Progress Report A approved by ETSI TC ITS#56 |
| **B** | **Stable Draft Approved** | 2025-04-01\* |
| TR 103 073 | Stable Draft approved by ETSI TC ITS#58 |
| ETSI Deliverable | Progress Report B approved by ETSI TC ITS#58Tasks #1, #2 and #3 completed. |
| **C** | **Final Draft Approved** | 2025-08-01\* |
| TR 103 073 | Final Draft approved by ETSI TC ITS#59 |
| ETSI Deliverable | Final Report C approved by ETSI TC ITS#59Tasks #0and #4 completed. |
| **D** | **Deliverable published, STF Closed** | 2025-08-31 |

\*) Milestone dates under the assumption that the work starts 2024-07-01

## Task summary

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **Task / Milestone**  | Target Date | Estimated Cost (EUR) |
| From | To |
|  | Start of work |  |  |  |
| T0 | Project Management | 2024-08-05 | 2025-07-31 | 20.200,- |
| **Milestone A** | **Early Draft Approved** |  |  |  |
| T1 | Services and management process analyses Study, Early Draft | 2024-08-05 | 2025-03-31 | 17.000,- |
| T2 | Congestion Control (CC) limits optimization Study and identification of possible settings and channel usage. Early Draft | 2024-08-05 | 2025-03-31 | 17.000,- |
| **Milestone****B** | **Stable Draft Approved** |  |  |  |
| T1 | Services and management process analyses Study, Mature Draft | 2025-04-01 | 2025-07-31 | 18.000,- |
| T2 | Congestion Control (CC) limits optimization Study and identification of possible settings and channel usage. Mature Draft | 2025-04-01 | 2025-07-31 | 18.000,- |
| **Milestone****C** | **Final Draft Approved,**  |  |  |  |
| **Milestone D** | **Deliverable published, STF closed** |  |  |  |
|  | **90,200,-** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Task/ Mil.** | **J** | **F** | **M** | **A** | **M** | **J** | **J** | **A** | **S** | **O** | **N** | **D** |  | **J** | **F** | **M** | **A** | **M** | **J** | **J** | **A** | **S** | **O** | **N** | **D** |
| T0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MA |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MB |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MC |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# Expertise required

## Team structure

Up to 5 participants to ensure the following mix of competences:

|  |  |
| --- | --- |
| **Priority** | **Qualifications and competences** |
| High | Senior Project manager |
| High | Senior Radio technology and Spectrum expert |
| High | Senior Radio implementation expert |
| High | Senior System and Functionalities layer expert |
| High | Senior Radio and Data Simulation expert |

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) | x |
| Support to the STF work (e.g., provision of test–beds, organization of workshops, events) |  |
| Steering Group meetings (number of meetings / participants / duration) | x |
| 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 | x |
|  |  |
| **Liaison with other stakeholders** |
| Stakeholder participation in the project (category, business area) | x |
| Cooperation with other standardization bodies | x |
| Potential interest of new members to join ETSI | x |
| 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** |
| 3.1 | 2024-06-21 | ETSI secretariat | Final | Update before CL publication |

Annex I Response to the Request for Proposals
CfE – STF 688 (REFERENCE BODY ITS) Deadline: 22 July 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 688 creation? | oIndicate 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:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tasks No** | **Tasks Description** | **Max Budget Allocated in Euro** | **Amount in Euro (mandatory)** | **% of whole Task (mandatory)** |
| 00 | Project Management | 20 200 | . | . |
| 01 | Services and management process analyses Study | 35 000 | . | . |
| 02 | Congestion Control (CC) limits Optimization Study | 35 000 | . | . |
|  |  | **90 200** |  |  |

**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 688 (REFERENCE BODY ITS) Deadline: 22 July 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>

1. <https://www.car-2-car.org> [↑](#footnote-ref-1)
2. <https://5gaa.org> [↑](#footnote-ref-2)