|  |
| --- |
| ToR TTF T010 (TC INT) |
| Version: 0.6 |
| Author: TC INT – Date: 2020-07-13 |
| Last updated by: ETSI Secretariat – Date: 2022-05-19 |
| page 1 of 15 |

Terms of Reference –Testing Task Force Proposal

TTF T010(Ref. Body TC INT)

“Network Interoperability Test Description for emergency services over VoLTE”

Summary information

|  |  |  |  |
| --- | --- | --- | --- |
| Approval status | Approved by TC INT#49 | | **YES** |
| Reference Body | Ref. Body TC INT | | |
| ETSI Funding | **Maximum budget :ETSI FWP :**  **87 000 EUR manpower cost 2 500€ travel cost** | | |
| Minimum of 4 ETSI Members Support | **YES** | | |
| Time scale | **From** | 2022-09-01 | |
| **To** | 2024-01-15 | |
| Work Items | PWI\_INT\_2101\_v1 Network Interoperability Test Description for emergency services over VoLTE; Part 1: Test Purposes  PWI\_INT\_2102\_v1 Network Interoperability Test Description for emergency services over VoLTE; Part 2: Test Descriptions  PWI\_INT\_2103\_v1 Network Interoperability Test Description for emergency services over VoLTE; Part 3: ATS&PIXIT | | |
| TTF Roadmap reference | TTF2020 | | |

Part I –TTF Technical Proposal

# Rationale & Objectives

## Rationale

As 4G/5G networks can deliver mobile broadband with greater data capacity and lower latency, the mobile industry has adopted a globally interoperable IP-based voice and video calling solution for LTE, known as VoLTE, which also enables development of new innovative communication services. VoLTE can leverage the world’s largest mobile user community (the Mobile Subscriber Integrated Services Digital Network, or MSISDN), as well as traditional telecommunication principles like guaranteed end-to-end QoS, **support for emergency and regulatory services**, global interoperability and mobility, interconnect, and international roaming.

In early implementations, emergency calls for VoLTE were handled by circuit switch fallback (CSFB), in which the devices fall back to overlapping 2G/3G access. 3GPP standardized SRVCC (Single Radio Voice Call Continuity) to provide easy handovers from LTE network to 2G/3G network. SRVCC is also defined for emergency calls over LTE (enhanced SRVCC) so that both SIM- and SIM-less VoLTE calls can be transferred to overlapping 2G/3G coverage in case users move out of LTE coverage.

The best alternative to deliver emergency call over LTE depends on the radio coverage of the LTE network and the overlapping 2G/3G accesses. As the 4G/5G network is gradually built out and it provides equal coverage as 2G/3G networks, it will be better to handle the emergency calls in the 4G/5G network, as the VoLTE service will be more reliable and faster than the CSFB service. It should also be noted that mobile network operators are currently starting to take 3G networks out of service which may weaken the reliability of the CSFB service.

Latest 3GPP standards define that a dedicated and default bearer is established for IMS signalling and VoLTE calls. Any UE can make an emergency call, provided the network supports it, and no subscription authorization is required for the UE in a home subscriber server (HSS). A mobility management entity (MME) for the emergency configuration data, defined by 3GPP, allows an emergency APN to be defined. This ensures the call is prioritized and enables the call to be routed to the correct PSAP.



**Figure 1: Reference 3GPP architecture for emergency services.**

Test procedures must ensure that VoLTE emergency calls are maintained with sufficient quality while concurrently enabling testing of call routing to the PSAP, re-bid by PSAP for precise location after call routing, updating precise position requests, PSAP call back, and more. Therefore, end-to-end VoLTE interoperability testing which validates successful/failed end-2-end test scenarios for regular VoLTE services, may not be sufficient, as they do not involve dedicated emergency services network entities such as E-CSCF, LRF, EATF, and PSAP, and features specific for emergency services. Testing the VoLTE NG112 over IMS requires extensive validation of behaviour of dedicated emergency services network entities, as well as the SIP protocol profile at multiple reference points within the network architecture, e.g. for the Gm, Mw, Ic and ISC reference points and the Diameter protocol profile for Cx/Dx, S6a, S9, Sh/Dh, Rf/Ro, Gx, and Rx. For majority of reference points, the conformance test specifications have been developed. TB INT has developed test specification ETSI TS 103 397 which defines the VoLTE and ViLTE interconnect, interworking and roaming test specification with QoS/QoE for basic call and supplementary services. In addition, under the supervision of the TB INT, the ETSI STF574 and TTF T006 have developed and validated VoLTE/ViLTE interoperability test descriptions over 4G/early 5G in physical/virtual environments. Based on expressed interests of ETSI members, it seems reasonable to extend the interoperability test specifications to cover interworking test specifications for support of emergency services over VoLTE interconnect between different network domains and to check correctness of internal behaviour of dedicated emergency services entities through multiple reference points.

## Objectives of the work to be executed

VoLTE and ViLTE multipart interoperability test specifications TS 103 653 (-1, -2 and -3) are available. It seems reasonable to extend the interoperability test specifications to cover Emergency services (i.e. Emergency call, NG eCall) over VoLTE between different network domains and check correctness of internal behaviour.

Following the methodologies developed and used by ETSI this means the production of a document covering the dynamic interworking review (Abstract Test Suite from existing Test Descriptions and Test purposes). The result would be a complete set of monitoring test suite for emergency interworking over all relevant interfaces.

ETSI members of the above mentioned trials have expressed their interest in test specifications related to the SIP protocol profile for different reference points as defined in ETSI TS 124 229 and also declared their willingness to review the outputs of this TTF and the possibility to validate the outputs of this TTF against their interworking components.

TC INT will follow and manage/monitor all the TTF activities and will inform all identified interested bodies via liaison statements at regular intervals.

An administration task will be maintained handling the progress reports of the TTF and the representation at the TC INT meetings during the lifetime of the TTF.

## Previous funded activities in the same domain

STF394

Revision of TS 186 011-1/-2 to 3GPP Rel.8 and production of TS 102 901 for RCS Rel.2, 45 000€

STF414

Revision of TS 186 011-1/-2 to 3GPP Rel.9 and of TS 102 901 to RCS-e and production TS 103 029 (IMS-EPC interworking), 48 000€

STF453 - update of IMS NNI Test Specifications for 3GPP R9 RCS 5.1 and IMS&EPC

STF574 – VoLTE/ViLTE interoperability test description over 4G/early 5G in physical/virtual environments, 159 000€

TTF006 – Validation of VoLTE/ViLTE interoperability test description over 4G/early 5G in physical/virtual environments, 91 000€

## Consequences if not agreed

VoLTE/ViLTE networks are currently being deployed in telecoms networks during the progression towards fully VoLTE/ViLTE compliant network architectures. The interoperability of the vendors have been resolved at the home network before the emergency service launching. Most fails of the Emergency service happen in the visiting networks. Thorough emergency interoperability testing will fill the gap between various devices towards visiting networks in case of emergency services in roaming.

# ETSI Members Support

|  |  |  |
| --- | --- | --- |
| **#** | **ETSI Member** | **Supporting delegate** |
| 1 | Telecom Italia | Giulio Maggiore |
| 2 | Orange France | Tayeb Benmeriem |
| 3 | Iskratel | Tadej Dragaš |
| 4 | Fraunhofer Fokus | Axel Rennoch/Marius Corici |
| 5 | University of Gottingen | Dieter Hogrefe |
| 6 | Spirent Communications | Dirk Tepelmann |
| 7 | Huawei | Fabio Faoro |

# Deliverables

## Base documents

|  |  |  |
| --- | --- | --- |
| **Document** | **Title** | **Current Status** |
| ETSI TS 124 229 (V15.4.0) | IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3 | Published |
| ETSI TS 123 167  (V15.6.0) | IP Multimedia Subsystem (IMS) emergency sessions | Published |
| ETSI TS 129 165 (V15.5.0) | Inter-IMS Network to Network Interface (NNI) | Published |
| ETSI TS 129 228 (V15.1.0) | Multimedia (IM) Subsystem Cx and Dx Interfaces; Signalling flows and message contents | Published |
| ETSI TS 129 229 (V15.0.0) | Cx and Dx interfaces based on the Diameter protocol; Protocol details | Published |
| ETSI TS 132 260 (V15.0.0) | Telecommunication management;Charging management;IP Multimedia Subsystem (IMS) charging | Published |
| ETSI TS 132 299 (V15.4.0) | Telecommunication management; Charging management; Diameter charging applications | Published |
| ETSI TS 129 214 (V15.4.0) | Policy and charging control over Rx reference point | Published |
| ETSI TS 129 212 (V15.4.0) | Policy and Charging Control (PCC); Reference points | Published |
| ETSI TS 129 272 (V15.5.0) | Mobility Management Entity (MME) and Serving GPRS Support Node (SGSN) related interfaces based on Diameter protocol | Published |
| ETSI TS 129 215 (V15.1.0) | Policy and Charging Control (PCC) over S9 reference point; Stage 3 | Published |
| ETSI TS 129 328 (V15.4.0) | IP Multimedia (IM) Subsystem Sh interface; Signalling flows and message contents | Published |
| ETSI TS 129 329 (V15.1.0) | Sh interface based on the Diameter protocol; Protocol details | Published |
| IETF RFC 8147 | Next-Generation Pan-European eCall | Published |
| GSMA IR.88 | LTE and EPC Roaming Guidelines | Published |
| GSMA IR.92 | IMS Profile for Voice and SMS | Published |

Table 1: Base documents

Following table contains test specifications which are useful as input for the preparation of new documents.

|  |  |  |
| --- | --- | --- |
| **Document** | **Title** | **Current Status** |
| ETSI TS 103 653-1  (based on 3GPPTM Rel 15) | VoLTE/ViLTE interoperability test description over 4G/early 5G in physical/virtual environments; Part 1: Test Purposes & PICS | Published |
| ETSI TS 103 653-2  (based on 3GPPTM Rel 15) | VoLTE/ViLTE interoperability test description over 4G/early 5G in physical/virtual environments; Part 2: Test Descriptions | Published |
| ETSI TS 103 653-3  (based on 3GPPTM Rel 15) | VoLTE/ViLTE interoperability test description over 4G/early 5G in physical/virtual environments; Part 3: Abstract Test Suite | Published |
| ETSI TS 103 683  (based on 3GPPTM Rel 14) | Next Generation eCall High Level Application Protocol (HLAP) Interoperability Testing | Published |

Table 2: Test specifications

## New deliverables

*Working titles sufficient for part I. Complete with full WI reference when final ToR are submitted*

|  |  |  |  |
| --- | --- | --- | --- |
| **Deliv.** | **Work Item code**  **Standard number** | **Working title** | **Expected date for publication** |
| D1 | DTS/INT-00182  ETSI TS 103 795-1 | Network Interoperability Test Description for emergency services over VoLTE; Part 1: Test Purposes | 15.01.2024 |
| D2 | DTS/INT-00183  ETSI TS 103 795-2 | Network Interoperability Test Description for emergency services over VoLTE; Part 2: Test Descriptions | 15.01.2024 |
| D3 | DTS/INT-00184  ETSI TS 103 795-3 | Network Interoperability Test Description for emergency services over VoLTE; Part 3: ATS&PIXIT | 15.01.2024 |

# Maximum budget

## Task summary/Manpower Budget

|  |  |
| --- | --- |
| **Task short description** | Budget (EUR) |
|
| Project Management | 6 000 |
| VoLTE Test Purposes   * Definition of test configurations * Definition of TSS * Definition of TPs in TDL-TO | 3 000  3 000  12 000 |
| VoLTE Test Descriptions   * Definition of TDs * Step-by-step test execution procedures * Definition of expected message flows | 6 000  12 000  18 000 |
| VoLTE ATS&PIXITS   * Definition of specific test configurations * Templates: New templates development * Development of end-to-end test functions * Implementation of test cases based on Test Purposes and Test Descriptions * Production of PIXIT tables | 3 000  6 000  3 000  12 000  3 000 |
| **TOTAL** | 87 000 |

## Travel budget

|  |  |
| --- | --- |
| **Expected travels** | **Cost estimate** |
| Travel to three INT meetings | 2 500€ |
| **Total cost** | **2 500**€ |

## Other budget line

None

Part II – Details on TTF Technical Proposal

# Tasks, Technical Bodies and other stakeholders

## Organization of the work

The work of the TTF starts with the analysis of the emergency session scenarios over VoLTE. Requirements, test purposes and test descriptions have to be defined based on standards from Table 1 under clause 3.1. Test descriptions will be produced from the E2E VoLTE Emergency sessions over 4G/early 5G view perspective and references to test purposes will be identified. The test description document will later on serve as a base document for the coding of the dynamic behaviour into test cases using the formal notation TTCN-3 and the production of the PIXIT proforma, which contains questions related to the practical aspects of testing. TTCN-3 coding shall re-use already existing libraries (IoT, SIP, IMS, DIAMETER) and based on new test requirements develop new additional functionality thereby capitalizing on previously made investments made into TTFs.

A feedback loop will be installed to process findings of the later steps into the outputs of the earlier steps.

TC INT will follow and manage/monitor all the TTF activities and will inform all identified interested bodies via liaison statements at regular intervals.

An administration task will be maintained handling the progress reports of the TTF and the representation at the TC INT meetings during the lifetime of the TTF.

## Other interested ETSI Technical Bodies

* 3GPP CT1
* 3GPP CT3
* 3GPP SA3
* ETSI TC MTS

## Other stakeholders

* GSMA NG

Part III: Execution of Work

# Work plan, time scale and resources

## Task description

|  |  |
| --- | --- |
| **Task #1** | **Project Management** |
| **Objectives** | Provision of progress reports for the TC INT meetings #53 through to #56. Presentation of reports and TTF outputs during said meetings. Scheduling of common sessions, administration of TTF resources.  Processing of feedback comments received from the stakeholders.  The TTF leader will perform all actions required by this task. |
| **Input** | None |
| **Output** | Three TTF progress reports and one final report. |
| **Interactions** | Presence at all TC INT meetings during the TTF’s lifetime. |
| **Resources required** | Costs: 6 000 EUR |

|  |  |
| --- | --- |
| **Task #2** | **VoLTE Test purposes** |
| **Objectives** | Creation of the Test purpose document for VoLTE emergency interworking based on ETSI TS 124 229 and ETSI TS 123 167 Rel15 and other documents under clause 3.1.  Task will be split in following subtasks:  2.1. Definition of TPs in TDL-TO  2.2. Definition of TSS  2.3. Definition generic test configurations |
| **Input** | ETSI TS 124 229  ETSI TS 123 167  ETSI TS 129 165  ETSI TS 129 228  ETSI TS 129 229  ETSI TS 132 260  ETSI TS 132 299  ETSI TS 129 214  ETSI TS 129 212  ETSI TS 129 272  ETSI TS 129 215  ETSI TS 129 328  ETSI TS 129 329  IETF RFC 8147 |
| **Output** | DTS/INT-00182 |
| **Interactions** | Presentation of a skeleton draft at INT#53 (Nov 2022), an early draft at INT#54 (Mar 2023), a stable draft at INT#55(Jun 2023) and a final draft for approval at INT#56 (Nov 2023). |
| **Resources required** | Costs: 18 000 EUR |

|  |  |
| --- | --- |
| **Task #3** | **Test descriptions** |
| **Objectives** | Creation of human readable test description document for VoLTE emergency interworking based on DTS/INT-00182, ETSI TS 124 229 and ETSI TS 123 167 (3GPP Rel15) and other documents under clause 3.1. Task will be split in following subtasks:  3.1. Definition of TD templates  3.2. Step-by-step test execution procedures  3.3. Definition of expected message flows  a) Data  b) Graphic - Message Sequence Chart (MSC) |
| **Input** | DTS/INT-00182 (Test purposes)  ETSI TS 103 653-1  ETSI TS 124 229  ETSI TS 123 167  ETSI TS 129 165  ETSI TS 129 228  ETSI TS 129 229  ETSI TS 132 260  ETSI TS 132 299  ETSI TS 129 214  ETSI TS 129 212  ETSI TS 129 272  ETSI TS 129 215  ETSI TS 129 328  ETSI TS 129 329  IETF RFC 8147  GSMA IR.88  GSMA IR.92 |
| **Output** | DTS/INT-00183 |
| **Interactions** | Presentation of a skeleton draft at INT#53 (Nov 2022), an early draft at INT#54 (Mar 2023), a stable draft at INT#55 (Jun 2023) and a final draft for approval at INT#56 (Nov 2023). |
| **Resources required** | Costs: 36 000 EUR |

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| **Task #4** | **ATS&PIXIT** |
| **Objectives** | Implementation of all test descriptions defined in DTS/INT-00183 into TTCN-3 code and production of PIXIT proforma for each observation point. Task will be split in following subtasks:  4.1. Definition of specific test configurations  a) Schematic  b) In TTCN-3  4.2. Templates: Analysis and conversion of exiting templates  4.3. Development of end-to-end test functions  4.4. Implementation of test cases based on Task 2 and 3  4.5. Production of PIXIT tables |
| **Input** | DTS/INT-00182 (Test purpose)  DTS/INT-00183 (Test description)  ETSI TR 102 788 V.1.1.1 |
| **Output** | DTS/INT-00184 |
| **Interactions** | Presentation of a skeleton draft at INT#54 (Mar 2023), an early draft at INT#55(Jun 2023) and a final draft for approval at INT#56 (Nov 2023). |
| **Resources required** | Costs: 24 000 EUR |

## Milestones

**Milestone A – Approval of progress report A**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **A** | Approval of progress report A | *2022-11-30* |
| *Reference Body Deliverable* | Presentation of an skeleton drafts of D1 and D2. |
| *ETSI Deliverable* | Presentation of progress report A for approval at INT#53*(Nov 2022).* |

**Milestone B – Approval of progress report B**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **B** | Approval of progress report B | *2023-03* |
| *Reference Body Deliverable* | Presentation of a early draft of D1 and D2 and skeleton draft of D3. |
| *ETSI Deliverable* | Presentation of progress report B for approval at INT#54 (Mar 2023). |

**Milestone C – Approval of progress report C**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **C** | Approval of progress report C. | *2023-06* |
| *Reference Body Deliverable* | Presentation of a stable draft of D1 and D2 and early draft of D3. |
| *ETSI Deliverable* | Presentation of final report for approval at INT#55 (Jun 2023). |

**Milestone D – Approval of Deliverables D1, D2 and D3, and Final Report**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **D** | Approval of progress report D. | *2023-11* |
| *Reference Body Deliverable* | Final Draft for approval of D1, D2 and D3. Final Drafts have to be made available at least two weeks before the start of INT#52. |
| *ETSI Deliverable* | Presentation of final report for approval at INT#56 (Nov 2023). |

**Milestone E – Deliverables published, TTF closed**

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **E** | Deliverables D1, D2 and D3 published, TTF closed. | *2024-01* |
| *Reference Body Deliverable* | Final Draft for approval of D1, D2 and D3. Final Drafts have to be made available at least two weeks before the start of INT#52. |
| *ETSI Deliverable* | None |

## Task summary

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Code** | **Task / Milestone** | Target Date | | Estimated Cost (EUR) |
| From | To |
|  | Start of work | Sep 2022 |  |  |
| T1 | Project Management | Sep 2022 | Nov 2023 | 6 000 |
| T2 | VoLTE emergency network interoperability test description over 4G/early 5G in physical/virtual environments; Part 1: Test Purposes | Sep 2022 | Nov 2023 |  |
| T2.1 | Definition of TPs in TDL-TO | Sep 2022 | Nov 2023 | 12 000 |
| T2.2 | Definition of TSS | Sep 2022 | Nov 2023 | 3 000 |
| T2.3 | Definition generic test configurations | Sep 2022 | Nov 2023 | 3 000 |
| T3 | VoLTE emergency network interoperability test description over 4G/early 5G in physical/virtual environments; Part 2: Test Descriptions | Sep 2022 | Nov 2023 |  |
| T3.1 | Definition of TD template | Sep 2022 | Nov 2023 | 6 000 |
| T3.2 | Step-by-step test execution procedures | Sep 2022 | Nov 2023 | 12 000 |
| T3.3 | Definition of expected message flows   1. Data 2. Graphic (MSC) | Sep 2022 | Nov 2023 | 18 000 |
| M A | D1 and D2 skeleton draft available  Progress Report A to be approved at TC INT#53 |  | 30 Nov 2022 |  |
| T4 | VoLTE emergency network interoperability test description over 4G/early 5G in physical/virtual environments; Part 3: ATS&PIXITS | Mar 2022 | Nov 2023 |  |
| T4.1 | Definition of specific test configurations   1. Schematic 2. InTTCN-3 | Mar 2022 | Nov 2023 | 3 000 |
| T4.2 | Templates: Analysis and new templates development | Mar 2022 | Nov 2023 | 6 000 |
| T4.3 | Development of end-to-end test functions | Mar 2022 | Nov 2023 | 3 000 |
| T4.4 | Implementation of test cases based on T2 and T3 | Mar 2022 | Nov 2023 | 12 000 |
| T4.5 | Production of PIXIT tables | Mar 2022 | Nov 2023 | 3 000 |
| M B | D1 and D2 early draft, D3 skeleton draft available  Progress Report B to be approved at TC INT#54 |  | 31 Mar 2023 |  |
| M C | D1 and D2 stable draft available, D3 early draft available and Progress Report C to be approved at TC INT#55 |  | 30 Jun 2023 |  |
| M D | Final Report and final drafts D1,D2 and D3 to be approved TC INT#56 |  | 30 Nov 2023 |  |
| M E | Deliverables published, TTF closed |  | 15 Jan 2024 |  |
|  | | | | **87 000** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Task/ Mil.** | **2022** | | | | | | | | | | | |  | **2023** | | | | | | | | | | | | | **2024** |
| **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** | **J** | |
| T1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| T2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| T3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| MA |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| T4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| MB |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  | |
| MC |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  | |
| MD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  | |
| ME |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X | |

# Expertise required

## Team structure

The following experts are required to perform the work. The actual number of experts and mix of skills may depend on the actual applications received and will be decided when setting up the TTF.

Number of experts required: 2 – 3

|  |  |
| --- | --- |
| **Priority** | **Qualifications and competences** |
| High | Knowledge of LTE, EPC and IMS architecture |
| High | Knowledge of Emergency services |
| High | Expertise of SIP, Diameter protocols |
| High | Experience in analysing of protocols and writing of test purposes in TDL-TO |
| High | Experience in writing of test descriptions |
| High | Expertise in interoperability and conformance testing |
| High | Knowledge in implementing Abstract Test Suites in TTCN-3 |
| High | Expertise is required in the QoS area and on wireless technologies |
| High | Expert knowledge in validating interoperability test specification |
| High | Expert knowledge in codec and adaptation layer development in C++/Java |

Part IV: TTF performance evaluation criteria

# Performance Indicators

|  |  |
| --- | --- |
| **Select relevant Performance indicators applicable for these ToR (X)** | |
| Contribution from ETSI Members to TTF work | |
| 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 Bodies | X |
|  |  |
| **Contribution from the TTF to ETSI work** | |
| Contributions to Reference Body meetings (number of documents / meetings / participants) | 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 |
|  |  |

# Document history

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Date** | **Author** | **Status** | **Comments** |
| 0.5 | 2021-07-07 | Giulio Maggiore | Final | Approved by TC INT |
| 0.6 | 2022-05-19 | ETSI Secretariat |  | Update before CL publication |

Annex I Response to the Request for Proposals  
CfE – TTF T010 (TC INT) Deadline: 28/06/2022

|  |  |
| --- | --- |
| **Contractor name \***  *Indicate the Company/Organization Name* |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Contractor information \*** | | | | |
| **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 TTF T010 creation? | | 🞏  Indicate in which position:  ----------------------------------- | | 🞏 |
| **If you are self-employed candidate:**  Do you currently have other contracts in progress with ETSI? | | 🞏 | | 🞏 |

**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 the TTF,
* Reference to products/services of your Company/Organization to which the standards developed by the TTF will apply,
* Motivation for your Company/Organization to participate in the TTF.

**1.2 Proposed approach**

**Proposed contribution to tasks & related cost**

Identify the tasks to which your Company/Organization is proposing to contribute and provide a description of the proposed approach, competences, reference to related activities:

* 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 the project objectives.

Annex II Terms and Conditions  
CfE – TTF T010 (TC INT) Deadline: 28/06/2022

**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 the TTF 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 the TTF 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 TTF 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 the 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>

Annex I Response to the Request for Proposals  
CfE – TTF T010 (TC INT) Deadline: 28/06/2022

|  |  |
| --- | --- |
| **Contractor name \***  *Indicate the Company/Organization Name* |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Contractor information \*** | | | | |
| **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 TTF T010 creation? | | 🞏  Indicate in which position:  ----------------------------------- | | 🞏 |
| **If you are self-employed candidate:**  Do you currently have other contracts in progress with ETSI? | | 🞏 | | 🞏 |

**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 the TTF,
* Reference to products/services of your Company/Organization to which the standards developed by the TTF will apply,
* Motivation for your Company/Organization to participate in the TTF.

**1.2 Proposed approach**

**Proposed contribution to tasks & related cost**

Identify the tasks to which your Company/Organization is proposing to contribute and provide a description of the proposed approach, competences, reference to related activities:

* 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 the project objectives.

Annex II Terms and Conditions  
CfE – TTF T010 (TC INT) Deadline: 28/06/2022

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