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| --- |
| ToR TTF T027 (Ref. Body ISG MEC) |
| Version: 0.9 |
| Author: ETSI (LVZ) – Date: 2022-04-15 |
| Last updated by: ETSI Secretariat – Date: 2022-12-06 |
| page 1 of 19 |

Terms of Reference –Testing Task Force Proposal

TTF T027 (Ref. Body ISG MEC)

Maintenance and development of MEC APIs conformance test suites

Summary information

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| --- | --- | --- | --- |
| Approval status | Approved by Ref. Body (doc ref: MEC(22)000313r1) | | **YES** |
| Reference Body | Ref. Body ISG MEC | | |
| ETSI Funding | **Maximum budget : 120 000 EUR** | | |
| Minimum of 4 ETSI Members Support | **YES** | | |
| Time scale | **From** | 2023-01-02 | |
| **To** | 2024-09-30 | |
| Work Items | - RGS/MEC-DEC32-2v321ApiTest  - RGS/MEC-DEC32-3v321ApiTest | | |
| TTF Roadmap reference | 2023 | | |

Part I –TTF Technical Proposal

# Rationale & Objectives

## Rationale

The MEC standards have been designed to facilitate interoperability in a multi-vendor, multi-network and multi-service environment. As a first step all the MEC standards need to be validated and MEC products need to ensure that compliance with MEC base specifications is met.

In particular, the MEC APIs specified by ETSI MEC ISG are the heart of the MEC standards and enable interoperability and portability of MEC applications among deployment types, vendor solutions and operation domains. Conformance to the protocols is the fundamental to enable interoperability.

ISG MEC is contributing great efforts in making the MEC APIs fit and available to the industry: the availability of machine readable descriptions for the protocols (using the OpenAPI and Protobuf description formats), making available the MEC Sandbox and leading the MEC PoCs and MDTs campaigns.

Having an up to date, complete and easily accessible conformance test suite is essential to support applications and system developers.

Complementary to the availability of the MEC Sandbox to learn and experiment with the logic of the MEC APIs, the MEC API Conformance test suites provide syntactical and protocol-level correctness, thus providing solid ground to foster the ecosystem.

## Objectives of the work to be executed

A set of API conformance test suites has been developed in 2021 and 2022 by ISG MEC as part of WIs MEC-DEC 032-1, 032-2 and 032-3.

The test suites have been successfully validated during the MEC Plugtests and in the validation activity within TTF T012 workplan.

As base specifications are updated and new APIs are added, the objective of the work proposed is mainly two-fold. First, maintain and update the currently available test suites. This consists in:

* Update the test suites when new versions of the specification are available,
* Implement fixes and improvements, collecting feedback from users and reported issues,
* Maintaining and revising the integrate the TTCN-3 MEC Test System into the Hive-Tap architecture to provide a permanent MEC API Conformance testing tool

Second, develop test suites for new specifications and specifications that were not in scope of previous work, or not available for testing.

The activity should be executed between January and September 2024.

## Previous funded activities in the same domain

### Specialist Task Force 587: MEC Sandbox Scenarios and Interface Development

<https://portal.etsi.org/STF/STFs/STF-HomePages/STF587>

STF587 developed the first version of the MEC Sandbox, with its final delivery in December 2020.

The results included:

* Macro Network Scenario configurations set in Monaco for 4G and 5G
* MEC Sandbox web-portal user interface
* Sandbox backend realized via the AdvantEDGE open source edge emulator (<https://github.com/InterDigitalInc/AdvantEDGE>)
* Implementations of MEC Services, including MEC-012, MEC-013, and MEC-028 (depending on OpenAPI availability)

### Specialist Task Force 551: MEC Testing Framework

<https://portal.etsi.org/STF/STFs/STFHomePages/STF551>

The MEC Testing Framework defines a methodology for the development of interoperability and conformance test strategies, test systems and the resulting test specifications for MEC standards. The MEC Testing Framework has been published and is available at:

<https://www.etsi.org/deliver/etsi_gr/MEC-DEC/001_099/025/02.01.01_60/gr_MEC-DEC025v020101p.pdf>

### Specialist Task Force 569: MEC API Conformance Test Specifications

<https://portal.etsi.org/STF/STFs/STFHomePages/STF569>

MECDEC-032, part 1, v2.1.1: Test Requirements and Implementation Conformance statements (ICS)

Stable draft: <https://docbox.etsi.org/ISG/MEC/Open/>

MECDEC-032, part 2, v2.1.1: Test Suite Structure and Test Purposes (TSS&TP) written in TDL-TO

Stable draft: <https://docbox.etsi.org/ISG/MEC/Open/>

MECDEC-032, part 3, v2.1.1: Test Scripts developed into Abstract Test Suites (ATS)

Stable draft: <https://forge.etsi.org/rep/mec/gs032p3-robot-test-suite> & <https://forge.etsi.org/rep/mec/gs032p3-ttcn-test-suite>

The resulting set of specifications enables testing activities in the many industrial contexts and segments where MEC technology is relevant. In order to have reached this objective, best practices and tools from both the telecommunications and IT communities have been applied. The output contains Tests Scripts in both TTCN-3 and Robot Framework languages. Collaboration with the Edge Task Force within the GCF is already at a mature state, which it is anticipated will lead to the establishment of a MEC API-focused certification programme.

### Testing Task Force 012: MEC API Conformance Test Specifications

<https://portal.etsi.org/STF/STFs/STFHomepages/T012>

MECDEC-032, part 1, v3.1.1: Test Requirements and Implementation Conformance statements (ICS)

Publication (2022-04-26): https://www.etsi.org/deliver/etsi\_gs/MEC-DEC/001\_099/03201/03.01.01\_60/gs\_MEC-DEC03201v030101p.pdf

MECDEC-032, part 2, v3.1.1: Test Suite Structure and Test Purposes (TSS&TP) written in TDL-TO

Publication (2022-04-04): <https://www.etsi.org/deliver/etsi_gs/MEC-DEC/001_099/03202/03.01.01_60/gs_MEC-DEC03202v030101p.pdf>

MECDEC-032, part 3, v3.1.1: Test Scripts developed into Abstract Test Suites (ATS)

Publication (2022-04-05): https://www.etsi.org/deliver/etsi\_gs/MEC-DEC/001\_099/03203/03.01.01\_60/gs\_MEC-DEC03203v030101p.pdf & <https://forge.etsi.org/rep/mec/gs032p3-robot-test-suite> & <https://forge.etsi.org/rep/mec/gs032p3-ttcn-test-suite>

The resulting set of specifications enables testing activities in the many industrial contexts and segments where MEC technology is relevant. In order to have reached this objective, best practices and tools from both the Telecommunication and IT communities have been applied. The output contains Tests Scripts in both TTCN-3 and Robot Framework languages. Collaboration with the Edge Task Force within the GCF is already at a mature state, which it is anticipated will lead to the establishment of a MEC API focused certification programme.

## Current funded activities in the same domain

### Specialist Task Force 625: MEC Sandbox Feature Enhancement, Maintenance, and User Support

<https://portal.etsi.org/STF/STFs/STFHomePages/STF625>

The objective was to maintain and enhance the MEC Sandbox environment (<https://try-mec.etsi.org/>), which is publicly accessible and running on the ETSI Forge website for demonstrating and experimenting with the MEC service APIs.

The MEC Sandbox environment is also used to validate MEC API Conformance test suites. It is also used as the main MEC Platform for supporting the ETSI MEC Hackathons.

## Consequences if not agreed

MEC equipment is currently being deployed in experimental trials with the progression towards fully operational deployment. Thorough conformance testing will increase the level of confidence that equipment from various suppliers will interoperate. This in turn will reduce implementation and rollout times. Not providing timely validated and reliable test specifications would ultimately delay the deployment of MEC APIs and services.

Moreover, the adoption of MEC APIs on behalf of Open Source Projects, while most welcome and key to broad deployment of MEC systems, may lead to fragmentation in the implementations and “dialects” in the protocols utilized.

# ETSI Members Support

|  |  |  |
| --- | --- | --- |
| **#** | **ETSI Member** | **Supporting delegate** |
| 1 | InterDigital, Inc. | Robert Gazda |
| 2 | ZTE Corporation | Lijuan Chen |
| 3 | Huawei Technologies France | Alice Li |
| 4 | Intel Corporation (UK) Ltd | Dario Sabella |
| 5 | Apple France | Walter Featherstone |
| 6 | FSCOM | Yann Garcia |

# Deliverables

## Base documents

|  |  |  |
| --- | --- | --- |
| **Document** | **Title** | **Status** |
| ETSI GS MEC 002 3.1.1 | Multi-access Edge Computing (MEC);  Use Cases and Requirements | To be Published  2022-10 |
| ETSI GS MEC 003 3.2.1 | Multi-access Edge Computing (MEC);  Framework and Reference Architecture | To be Published  2022-09 |
| ETSI GS MEC 009 3.2.1 | Multi-access Edge Computing (MEC); General principles for MEC Service APIs | Published |
| ETSI GS MEC 010-2 3.1.1 | Multi-access Edge Computing (MEC); MEC Management; Part 2: Application lifecycle, rules and requirements management | To be Published  2023-04 |
| ETSI GS MEC 011 3.1.1 | Multi-access Edge Computing (MEC);  Edge Platform Application Enablement | To be Published  2022-08 |
| ETSI GS MEC 012 2.2.1 | Multi-access Edge Computing (MEC);  Radio Network Information API | Published |
| ETSI GS MEC 013 3.1.1 | Multi-access Edge Computing (MEC);  Location API | To be Published  2022-10 |
| ETSI GS MEC 014 2.1.1 | Mobile Edge Computing (MEC);  UE Identity API | Published |
| ETSI GS MEC 014 3.1.1 | Mobile Edge Computing (MEC);  UE Identity API | To be Published 2023-04 |
| ETSI GS MEC 015 2.2.1 | Mobile Edge Computing (MEC);  Bandwidth Management and Multi-access Traffic Steering service | To be Published  2022-08 |
| ETSI GS MEC 016 2.2.1 | Mobile Edge Computing (MEC);  UE Application API | Published |
| ETSI GS MEC 021 3.1.1 | Multi-access Edge Computing (MEC); MEC Application Mobility Service API | To be Published  2022-11 |
| ETSI GS MEC 028 2.3.1 | Multi-access Edge Computing (MEC);  WLAN Information API | Published |
| ETSI GS MEC 029 2.2.1 | Multi-access Edge Computing (MEC);  Fixed Access Information API | Published |
| ETSI GS MEC 030 3.1.1 | Multi-access Edge Computing (MEC);  MEC V2X API | To be Published  2022-09 |
| ETSI GS MEC 033 2.1.1 | Multi-access Edge Computing (MEC);  IoT API | To be Published  2022-07 |
| ETSI GS MEC 040 3.1.1 | Multi-access Edge Computing (MEC);  Federation enablement APIs | To be Published  2023-02 |
| ETSI GR MEC-025 2.1.1 | Multi-access Edge Computing (MEC); MEC Testing Framework | Published |
| RGS/MEC-DEC32-1APIConformance 3.2.1. | Multi-access Edge Computing (MEC); API Conformance Test Specification Part 1: Test Requirements and Implementation Conformance Statement (ICS) | To be Published |
| RGS/MEC-DEC32-2APIConformance 3.2.1 | Multi-access Edge Computing (MEC); API Conformance Test Specification Part 2: Test Purposes (TP) | To be Published |
| DGS/MEC-DEC32-3APIConformance 3.2.1 | Multi-access Edge Computing (MEC); API Conformance Test Specification; Part 3: Abstract Test Suite (ATS) | To be Published |

NOTE 1: The status of “To be published” indicates the MEC GS will be published in time to be considered in this TTF.

NOTE 2: The actual publication dates may change.

## New deliverables

|  |  |  |  |
| --- | --- | --- | --- |
| **Deliv.** | **Work Item code**  **Standard number** | **Working title** | **Expected date for publication** |
| D1 | RGS/MEC-DEC32-2v321ApiTest | Multi-access Edge Computing (MEC); API Conformance Test Specification Part 2: Test Purposes (TP) | Sept 2024 |
| D2 | RGS/MEC-DEC32-3v321ApiTest | Multi-access Edge Computing (MEC); API Conformance Test Specification; Part 3: Abstract Test Suite (ATS) | Sept 2024 |

# Maximum budget

## Task summary/Manpower Budget

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| --- | --- | --- |
| **Task#** | **Task short description** | Budget (EUR) |
| **T0** | Project Management | CTI |
| **T1** | Test Purposes development for MEC 033 and MEC 040 | 10 000 |
| **T2** | Test Purposes maintenance and updates for MEC 010-2 to MEC 015 | 10 000 |
| **T3** | Test Purposes maintenance and updates for MEC 016 to MEC 030 | 10 000 |
| **T4** | Test Cases development for MEC 033 and MEC 040 | 10 000 |
| **T5** | Test Cases development for MEC 010-2v311, MEC 011v311 and MEC 028v231 | 15 000 |
| **T6** | Test Cases maintenance and updates for MEC 016 to MEC 030 | 15 000 |
| **T7** | Maintaining and revising the Test Purposes and Test Suites | 15 000 |
| **T8** | Maintaining and revising the integration to Hive-Tap for future events (Plugtests) | 15 000 |
| **T9** | Full review and Validation | 20 000 |
| TOTAL | | **120 000** |

## Travel budget

No travel expected.

## Other budget line

NA.

Part II – Details on TTF Technical Proposal

# Tasks, Technical Bodies and other stakeholders

## Organization of the work

The team is expected to work remotely and in presence, autonomously and by organizing recurrent team meetings. Weekly status update meetings are recommended.

Contributions to the target deliverables are to be submitted to MEC DECODE meetings for acceptance, according to the working procedures of ISG MEC.

The developed test purposes and test cases are expected to be developed and made available using ETSI Forge, according to the applicable working procedure and following the conventions used in previous activities, notably by ETSI TTF 012.

A Steering Group will be formed to guide the work and to provide feedback. The SG will meet at least monthly or more often if required. Interested delegates from ISG MEC will compose the SG.

## Other interested ETSI Technical Bodies

* ETSI ISG NFV – for dissemination
* ETSI TC MTS – for dissemination and consultation

## Other stakeholders

* 5GAA (5G Automotive Association) – for dissemination
* Global Certification Forum (GCF) – for dissemination
* GSMA OPG – for dissemination

Part III: Execution of Work

# Work plan, time scale and resources

## Task description

|  |  |
| --- | --- |
| **Task 0** | **Project management** |
| **Objectives** | Plan the work of the TTF members, ensuring that the timescales of the TTF deliverables are met |
| **Input** | 1. NA |
| **Output** | 1. Report to ISG MEC and MEC DECODE WG as appropriate on the work of the TTF 2. Draft progress report and final report as required |
| **Interactions** | Attending ISG, WG and TTF meetings, presentation of the TTF activity |
| **Resources required** | * Project management and team leadership * Communication skills |

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| **Task 1** | **Test Purposes development for MEC 033 and MEC 040** |
| **Objectives** | Develop, document, and contribute test purposes for the target APIs. |
| **Input** | * ETSI GS MEC 033v211 * ETSI GS MEC 040v311 * ETSI GS MEC-DEC 032-1v321 * OpenApi definitions for the target APIs |
| **Output** | * Test purposes available at ETSI Forge in TDL-TO format * Tabular description of test purposes contributed and approved to the target deliverables |
| **Interactions** | * Approval of contributed Test Purposes by MEC DECODE WG * Consultation with Steering Group |
| **Resources required** | * Expertise in test purpose development and documentation * Expertise in TDL-TO |

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| **Task 2** | **Test Purposes maintenance and updates for MEC 010-2 to MEC 015** |
| **Objectives** | Develop, document, and contribute test purposes for the target APIs. |
| **Input** | * ETSI GS MEC 010-2v311 * ETSI GS MEC 011v311 * ETSI GS MEC 012v221 * ETSI GS MEC 013v311 * ETSI GS MEC 014 3.1.1 * ETSI GS MEC 015 2.2.1 * ETSI GS MEC-DEC 032-1v321 * OpenApi definitions for the target APIs |
| **Output** | * Test purposes available at ETSI Forge in TDL-TO format * Tabular description of test purposes contributed and approved to the target deliverables |
| **Interactions** | * Approval of contributed Test Purposes by MEC DECODE WG * Consultation with Steering Group |
| **Resources required** | * Expertise in test purpose development and documentation * Expertise in TDL-TO |

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| **Task 3** | **Test Purposes maintenance and updates for MEC 016 to MEC 030** |
| **Objectives** | Develop, document, validate contribute test cases for the target APIs in TTCN-3 and Robot Framework languages. |
| **Input** | * ETSI GS MEC 016v221 * ETSI GS MEC 021v311 * ETSI GS MEC 028v231 * ETSI GS MEC 029v221 * ETSI GS MEC 030v311 * ETSI GS MEC-DEC 032-1v321 * OpenApi definitions for the target APIs |
| **Output** | * Test cases available at ETSI Forge in TTCN-3 and Robot Framework format * Contribution linking to the developed Test Cases approved by MEC DECODE WG * Report on the validation of the test cases |
| **Interactions** | * Review Approval of contributed Test Purposes by MEC DECODE WG * Consultation with Steering Group |
| **Resources required** | * Expertise in test case development and documentation * Expertise in TTCN-3 and Robot Framework |

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| **Task 4** | **Test Cases development for MEC 033 and MEC 040** |
| **Objectives** | Develop, document, validate contribute test cases for the target APIs in TTCN-3 and Robot Framework languages. |
| **Input** | * ETSI GS MEC 033v211 * ETSI GS MEC 040v311 * ETSI GS MEC-DEC 032-1v321 * Develop Test Purposes from Task 1 * OpenApi definitions for the target APIs |
| **Output** | * Test cases available at ETSI Forge in TTCN-3 and Robot Framework format * Contribution linking to the developed Test Cases approved by MEC DECODE WG * Report on the validation of the test cases |
| **Interactions** | * Review Approval of contributed Test Purposes by MEC DECODE WG * Consultation with Steering Group |
| **Resources required** | * Expertise in test case development and documentation * Expertise in TTCN-3 and Robot Framework |

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| **Task 5** | **Test Cases maintenance and updates for MEC 010-2 to MEC 015** |
| **Objectives** | Develop, document, validate contribute test cases for the target APIs in TTCN-3 and Robot Framework languages. |
| **Input** | * ETSI GS MEC 010-2v311 * ETSI GS MEC 011v311 * ETSI GS MEC 012v221 * ETSI GS MEC 013v311 * ETSI GS MEC 014 3.1.1 * ETSI GS MEC 015 2.2.1 * ETSI GS MEC-DEC 032-1v321 * Develop Test Purposes from Task 2 * OpenApi definitions for the target APIs |
| **Output** | * Test purposes available at ETSI Forge in TDL-TO format * Tabular description of test purposes contributed and approved to the target deliverables |
| **Interactions** | * Approval of contributed Test Purposes by MEC DECODE WG * Consultation with Steering Group |
| **Resources required** | * Expertise in test purpose development and documentation * Expertise in TDL-TO |

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| **Task 6** | **Test Cases maintenance and updates for MEC 016 to MEC 030** |
| **Objectives** | Develop, document, validate contribute test cases for the target APIs in TTCN-3 and Robot Framework languages. |
| **Input** | * ETSI GS MEC 016v311 * ETSI GS MEC 021v311 * ETSI GS MEC 028v231 * ETSI GS MEC 029v221 * ETSI GS MEC 030v311 * ETSI GS MEC-DEC 032-1v321 * Develop Test Purposes from Task 3 * OpenApi definitions for the target APIs |
| **Output** | * Test cases available at ETSI Forge in TTCN-3 and Robot Framework format * Contribution linking to the developed Test Cases approved by MEC DECODE WG * Report on the validation of the test cases |
| **Interactions** | * Review Approval of contributed Test Purposes by MEC DECODE WG * Consultation with Steering Group |
| **Resources required** | * Expertise in test case development and documentation * Expertise in TTCN-3 and Robot Framework |

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| **Task 7** | **Maintaining and revising the Test Purposes and Test Suites** |
| **Objectives** | Review, fix, improve the test purposes and test cases based on reported issues. |
| **Input** | * Base documents * Issues reported to MEC workspace on ETSI Forge: <https://forge.etsi.org/rep/groups/mec/-/issues> |
| **Output** | * Report on the maintenance activities execute, on the ETSI Forge issue tracker and summarized to MEC DECODE WG |
| **Interactions** | * Consultation with Steering Group * Interaction with reporters of issues and users of the test specifications |
| **Resources required** | * Expertise in test case development and documentation * Expertise in TTCN-3 and Robot Framework |

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| **Task 8** | **Maintaining and revising the integration to Hive-Tap** |
| **Objectives** | Maintenance of MEC Test System (ROBOT Framework and TTCN-3) into Hive-Tap platform for future events (e.g. Plugtests). |
| **Input** | * A first integration was done partially in 2019 for the NFV-MEC Plugtests, and only for Robot Test suites. |
| **Output** | * A permanent access to the MEC TTCN-3 Test System for the Plugtests participants |
| **Interactions** | * Consultation with Steering Group * Interaction with CTI |
| **Resources required** | * Expertise in TTCN-3 * Expertise in python * Expertise in virtualization |

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| **Task 9** | **Full review and validation of the Test Suites** |
| **Objectives** | Review of all documents, Test Suites review and validation against the available MEC Implementations (including the ETSI MEC sandbox).. |
| **Input** | * Base documents * Test Suites developed by the TTF Team |
| **Output** | * Report on the maintenance activities execute, on the ETSI Forge issue tracker and summarized to MEC DECODE WG |
| **Interactions** | * Consultation with Steering Group * Interaction with reporters of issues and users of the test specifications |
| **Resources required** | * Expertise in test case development and documentation * Expertise in TTCN-3 and Robot Framework |

## Milestones

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| --- | --- | --- |
| **Milestone** | **Description** | **Cut-Off Date** |
| **A** | Contributions available with Draft of TP for MEC 033v2.1.1 and MEC 040v3.1.1.  Report on maintenance progress | 2023-04-01 |
| Reference Body Deliverable | Early Draft available to MEC ISG DECODE WG |
| ETSI Deliverable | Progress Report approved by MEC ISG DECODE WG |

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| **Milestone** | **Description** | **Cut-Off Date** |
| **B** | Contributions approved with TP for ETSI GS MEC 010-2v311, ETSI GS MEC 011v311, ETSI GS MEC 012v221, ETSI GS MEC 013v311, ETSI GS MEC 014v311, ETSI GS MEC 015v221, ETSI GS MEC 021v311, ETSI GS MEC 028v231, ETSI GS MEC 029v221 and ETSI GS MEC 030v311  Report on maintenance progress | 2023-09-30 |
| Reference Body Deliverable | Early Draft available to MEC ISG DECODE WG. |
| ETSI Deliverable | Progress Report approved by MEC ISG DECODE WG. |

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| **Milestone** | **Description** | **Cut-Off Date** |
| **C** | Contributions available with Draft of TC for all MEC standards as described in Task 1, 2 and 3  Report on maintenance progress | 2024-01-02 |
| Reference Body Deliverable | Early/Stable Draft available to MEC ISG DECODE WG |
| ETSI Deliverable | Progress Report approved by MEC ISG DECODE WG. |

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| **Milestone** | **Description** | **Cut-Off Date** |
| **D** | Contributions approved with TP and TC for all MEC standards as described in Task 1, 2 and 3.  Report on maintenance progress  Complete, final Deliverables approved | 2024-05-01 |
| Reference Body Deliverable | Final Draft Deliverables approved by MEC ISG. |
| ETSI Deliverable | Final Report approved by MEC ISG. |

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| **Milestone** | **Description** | **Cut-Off Date** |
| **E** | Deliverables published, TTF closed | 2024-09-30 |
| Reference Body Deliverable |  |
| ETSI Deliverable | Deliverables published, TTF closed |

## Task summary

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| --- | --- | --- | --- | --- |
| **Code** | **Task / Milestone** | Target Date | | Estimated Cost (EUR) |
| From | To |
|  | Start of work |  |  |  |
| T0 | Project management | 02/01/2023 | 01/10/2024 | 0 |
| T1 | Test Purposes development for MEC 033 and MEC 040 | 02/01/2023 | 31/03/2023 | 10000 |
| Milestone A | Contributions available with Draft of TP for MEC 033vxxx and MEC 040vxxx. Progress Report#1 approved by MEC ISG DECODE WG | 01/04/2023 | |  |
| T2 | Test Purposes maintenance and updates for MEC 010-2 to MEC 015 | 01/04/2023 | 30/09/2023 | 10000 |
| T3 | Test Purposes maintenance and updates for MEC 016 to MEC 030 | 01/04/2023 | 30/09/2023 | 10000 |
| Milestone B | Contributions approved with TP for ETSI GS MEC 010-2v311, ETSI GS MEC 011v311, ETSI GS MEC 012v221, ETSI GS MEC 013v311, ETSI GS MEC 014 3.1.1, ETSI GS MEC 015 2.2.1, ETSI GS MEC 021v311, ETSI GS MEC 028v231, ETSI GS MEC 029v221 and ETSI GS MEC 030v311.  Progress Report#2 approved by MEC ISG DECODE WG | 30/09/2023 | |  |
| T4 | Test Cases development for MEC 033 and MEC 040 | 01/10/2023 | 31/12/2023 | 10000 |
| T5 | Test Cases maintenance and updates for MEC 010-2 to MEC 015 | 01/10/2023 | 31/12/2023 | 15000 |
| T6 | Test Cases maintenance and updates for MEC 016 to MEC 030 | 01/10/2023 | 31/12/2023 | 15000 |
| Milestone  C | Contributions available with Draft of TC for all MEC standards as described in Task 1, 2 and 3.  Progress Report#3 approved by MEC ISG DECODE WG | 02/01/2024 | |  |
| T7 | Maintaining and revising the Test Purposes and Test Suites | 02/01/2024 | 30/04/2024 | 15000 |
| T8 | Maintaining and revising the integration to Hive-Tap for future events (Plugtests) | 02/01/2024 | 30/04/2024 | 15000 |
| Milestone  D | Contributions approved with TP and TC for MEC 010-2v311, MEC 011v311 and MEC 028v231.  Complete, final Deliverables approved  Final Report approved by MEC ISG. | 01/05/2024 | |  |
| T9 | Full review and Validation | 01/05/2024 | 30/09/2024 | 20000 |
| Milestone  E | Deliverables published, TTF closed | 01/10/2024 | |  |
|  | | | | **120000** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Task/ Mil.** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** |
| T0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MA |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MB |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MC |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T8 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ME |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# Expertise required

## Team structure

Up to three contractors to ensure the following mix of skills:

|  |  |
| --- | --- |
| **Priority** | **Qualifications and competences** |
| High | Expert knowledge of all base standards mentioned above in clause 6.1 |
| High | Proven experience in conformance testing |
| High | Expertise in TTCN-3, development workflow and tooling   * expert knowledge of TTCN-3 (ES 201 873); * expert knowledge in codec and adaptation layer development in C++/Java/Python |
| High | Expertise in the Robot Framework language, development workflow and tooling |
| High | Expertise in software development best practices, including Content Version Management using GIT |
| High | Expertise in ETSI HIVE-TAP development and Integration |

Part IV: TTF performance evaluation criteria

# Performance Indicators

Contribution from ETSI Members to STF work

* Monthly Steering Committee meetings
* Contributions/comments received from the reference ISG

Contribution from the STF to ETSI work

* Contributions to ETSI Forge and DECODE WG meetings throughout 2023
* Presentations in workshops, conferences, stakeholder meetings

Liaison with other stakeholders

* Comments received on tests
* Propose resolution to comments received on the DECODE WG mailing list and implement and approve the resolutions in the GSs and Forge

Quality of deliverables

* Approval of deliverables according to schedule
* Respect of time scale, with reference to start/end dates in the approved ToR
* Comments from quality review by ISG
* Comments from quality review by ETSI Secretariat

Time recording

For reporting purposes, the TTF experts shall fill in the timesheet provided by ETSI with the days spent for the performance of the services

During the activity, the TTF 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** |
| 0.1 | 2022-04-16 | ETSI (LVZ) | Initial draft | Initial draft |
| 0.2 | 2022-05-03 | ETSI (LVZ) | Draft | Update Clauses 1 to 6 |
| 0.3 | 2022-05-05 | ETSI (LVZ) | Draft |  |
| 0.4 | 2022-05-10 | ETSI (LVZ) | Draft | Fixed some typos + budget increased |
| 0.5 | 2022-06-10 | ETSI (LVZ) | Stable Draft | Final review for approval by MEC-DECODE at MEC#30 |
| 0.6 | 2022-06-22 | ETSI (LVZ) | Stable Draft | Final review for approval by MEC at MEC#248-Tech |
| 0.7 | 2022-11-07 | ETSI Secretariat | Final | Update before CL publication |
| 0.8 | 2022-11-23 | ETSI Secretariat | Final | Final check before CL publication |
| 0.9 | 2022-12-06 | ETSI (LVZ) | Final | Editorial changes |

Annex I Response to the Request for Proposals  
CfE (22)\_3904 TTF T027 (REFERENCE BODY ISG MEC) Deadline: 09/12/2022

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **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 TTF T027 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:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **TasksNo** | **Tasks Description** | **Max Budget Allocated**  **In Euro** | **Amount in Euro (mandatory)** | | **% of whole Task (mandatory)** |
| 00 | Project Management | 0 | | . | . |
| 01 | Test Purposes development for MEC 033 and MEC 040 | 10000 | | . | . |
| 02 | Test Purposes maintenance and updates for MEC 010-2 to MEC 015 | 10000 | | . | . |
| 03 | Test Purposes maintenance and updates for MEC 016 to MEC 030 | 10000 | | . | . |
| 04 | Test Cases development for MEC 033 and MEC 040 | 10000 | | . | . |
| 05 | Test Cases maintenance and updates for MEC 010-2 to MEC 015 | 15000 | | . | . |
| 06 | Test Cases maintenance and updates for MEC 016 to MEC 030 | 15000 | | . | . |
| 07 | Maintaining and revising the Test Purposes and Test Suites | 15000 | | . | . |
| 08 | Maintaining and revising the integration to Hive-Tap for future events (Plugtests) | 15000 | | . | . |
| 09 | Full review and Validation | 20000 | | . | . |
| **TOTAL** | | 120 000 | |  |  |

**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 (22)\_3904 TTF T027 (REFERENCE BODY ISG MEC) Deadline: 09/12/2022

**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 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>