

**SAREF Digital Twins - 101099626**

**Technical Description (Part B)**

(SMP STAND Standard)

**Version 1.1**

**(26 September 2022)**

# PROJECT FACT SHEET

**STF 641**

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| Reference Body | TC SmartM2M |
| EC/EFTA Funding | Manpower: 196 000€Travels: 34 000€**Total Budget: 230 000€** |
| Project Duration | **24 months**  |
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| **WP1 STF Management** | T0 | STF Project Management and Administrative obligations | 15 000€ |
| **WP2 SAREF patterns and SAREF consolidation** | T1 | SAREF ontology patterns identification | 35 000€ |
| T2 | Consolidation of the SAREF suite of ontologies (i.e., SAREF core and its extensions for a selection of domains) | 65 000€ |
| **WP3: SAREF Urban Digital Twins** | T3 | Clarify and expand the use of SAREF in relation with Digital Twin technologies related to Smart Cities, with a focus on Urban Digital Twins. | 36 000€ |
| **WP4: SAREF EN and SAREF dissemination** | T4 | Vertical engagement and dissemination, SAREF EN and SAREF Dissemination | 45 000€ |

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# TECHNICAL DESCRIPTION (PART B)

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| **HISTORY OF CHANGES** |
| VERSION | PUBLICATION DATE | CHANGE |
| 1.0 | 17.08.2022 | Part B for EISMEA Portal and Grant Agreement preparation Typo corrections (their presence is noted in the Proposal Evaluation Form)Error in Part A related to project duration. Project duration as per proposal submission and evaluation is 24 Months instead of 18 Months.The duration of WPs has been changed in the Workplan, Total project costs and Timetable to be consistent with the due month of the deliverables Change of WP2 duration from M01 to M24 (instead of M01 to M23)Change of WP3 duration from M01 to M18 (instead of M01 to M17)Change of WP4 duration from M03 to M24 (instead of M03 to M23) |
| 1.1 | 26.09.2022 | Deliverables links to WPM addedUpdates before CL publication |

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## 1. RELEVANCE

### 1.1 Background and general objectives

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| **Background**ETSI TC SmartM2M tackles IoT, interoperability, and Semantic Interoperability challenges, contributing to the digital transformation of industry sectors in Europe. The SAREF standard ontology is a key flagship to reach semantic interoperability in IoT and Web-based applications where digitised assets play a central role. The first version of SAREF (now Smart Applications REFerence ontology) was published in November 2015 by ETSI TC SmartM2M, and subsequent extensions are being developed to describe digital assets for various domains including energy, environment, building, smart city, industry and manufacturing, agriculture and food, automotive, eHealth/ageing-well, wearables, water, and lifts. The SAREF development framework and continuous integration and deployment pipeline were released in September 2020, together with the SAREF public documentation portal <https://saref.etsi.org/>. SAREF and its different extensions were developed by different teams of experts, sometimes in parallel. Sometimes different modelling decisions were made, with the result of complicating the use of SAREF extensions especially when integrated together. TC SmartM2M started to identify ontology patterns that may be used to homogenise the structure of SAREF extensions.While in the research and in the academic areas SAREF is well established, its practical use is still at the beginning, even if some industrial and business sectors have started to use it, in a context where the number of ontology and semantic experts is still limited. To enlarge the SAREF community of users, it is important to make it simple to understand and use, allowing an easy and direct mapping of the current and future industry solutions. One goal of the present proposal is to consolidate and homogenise the TC SmartM2M SAREF suite using ontology patterns to shorten the learning.Additionally, some technology trends, namely, Edge opportunities, AI and Digital Twins, require to be properly included in the SAREF suite and methodology. The present proposal will address the Urban Digital Twins and the Edge-Cloud IoT opportunities. Some aspects are already included in the SAREF standard and in particular in its communication framework (i.e. oneM2M), that is natively based on an Edge-Fog-Cloud paradigm, that naturally enables distribution of intelligence and data according to needs and regulations, and that already includes most of the functionality and properties belonging to digital twins solutions. In this context proper use cases and gap analysis are required, together with the standardisation of the usage guidelines and of the solutions required to fill the potential gaps. IoT is currently experiencing a period of evolution and adoption in the different sectors and the SAREF specifications are deemed to evolve quickly with the evolution of IoT solutions. As a consequence, the SAREF Technical Specification suite is expected to evolve dynamically to timely accommodate new needs and contributions coming from all the interested stakeholders (from the same or from different domains). This requires the adoption of an effective SAREF methodology with the ability to point to the latest technical specifications. Such methodology is proposed to be developed in a SAREF EN, capable to guide in SAREF adoption and practical application and, at the same time, to manage SAREF evolution and extension.**Previous work**A study (January 2014 - March 2015) was commissioned by the European Commission to bring together semantics and data from smart appliances in buildings and households. These smart appliances all communicate in a different manner and the information they exchange differs. From smart appliances, the approach was generalised and extended to multiple business domains.The first version of SAREF (Smart Applications REFerence ontology) was published in November 2015 by ETSI TC SmartM2M, and subsequent extensions are being developed to describe digital assets for various domains including energy, environment, building, agriculture and food, industry and manufacturing, smart city, automotive, wearables, eHealth/ageing-well, water, and lifts.The SAREF development framework and continuous integration and deployment pipeline were released in September 2020, together with the SAREF public portal<https://saref.etsi.org/>, to facilitate the direct contribution to SAREF to all the stakeholders.The value of SAREF is strongly correlated with the size of its community of users, and also to the simplicity of understanding and usage. One goal of this STF is to consolidate and homogenise the TC SmartM2M SAREF suite and shorten the learning curve of SAREF for ontology users and industry actors.The final vision is to build the business community able to provide their input to SAREF and to maintain SAREF without a dedicated detailed support from ETSI, but just with a revision from the ETSI members, by means of TC SmartM2M....**Objectives of the present proposal**The macro-objective is to support the usability and adoption of SAREF.More in details the objectives are:* Harmonise and facilitate the use of SAREF by
	+ SAREF ontology patterns identification
	+ Consolidation of the SAREF suite of ontologies (i.e., SAREF core and its extensions for a selection of domains)
* Clarify and expand the use of SAREF in relation with Digital Twin technologies related to Smart Cities, with a focus on Urban Digital Twins in the context of an Edge-Cloud IoT paradigm.
* SAREF dissemination and SAREF adoption guidance to achieve vertical business engagement and support, providing guidelines to adopters regarding the SAREF process and methodologies via
	+ SAREF adoption guidance materials.
	+ An EN that clarifies and guide to the adoption of SAREF, that can also be used to support normative and regulation recommendations.
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### 1.2 Needs analysis and specific objectives

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| This proposal addresses in particular 1. “***Topic 15-2022-STA Internet of Things – ETSI”*** according to **“***the purpose of the action is to ensure IoT interoperability and adapt it to the new Edge paradigm and the shifting Cloud-edge continuum***”** where SAREF and sematic interoperability play a major role for IoT interoperability and its communication framework (i.e. oneM2M), enable a full Edge-Fog-Cloud continuum paradigm. It is a further step in the ETSI work with the relevant SDOs to further improve the IoT interoperability in different domains/verticals.
2. *“****Topic 17-2022-STA Smart Cities and Communities – ETSI”*** *according to “The purpose of the action is to foster the development and adoption of standards and guidelines for smart cities and communities services and applications”,* being SAREF particularly consolidated for the energy, buildings, environment, Smart water and smart lift sectors, and with a significative inclusion of the major Smart City ontologies, all in a single scalable and flexible methodology. In particular this proposal aims to provide guidelines for interoperability, expand the capacity to understand the information carried within the different data spaces, address the potentiality of the Urban Digital Twins when integrated with semantic capabilities, improve, support and promote the adoption of SAREF extensions and evolutions to cover wider applications in different (urban and rural) vertical applications and across applications.

The consolidation of the SAREF standards suite and the development of a dedicated EN matches the activities of “*I. the development and revision of European standards or European standardisation deliverables which is necessary and suitable for the support of respected Union legislation and policies”;* and with its guidelines and dissemination, and the extended use of the SAREF open portal it also matches “*II. the performance of preliminary or ancillary work in connection with European standardisation, including studies, cooperation activities, including international cooperation, seminars, evaluations, comparative analyses, research work, laboratory work, inter-laboratory tests, conformity evaluation work and measures to ensure that the periods for the development and the revision of European standards or European standardisation deliverables are shortened without prejudice to the founding principles, especially the principles of openness, quality, transparency and consensus among all stakeholders*.”The synergic use of SAREF and oneM2M offers a set of standards and guidelines to be adopted for smart cities and suppliers to avoid lock-in and achieve interoperability of data, systems, and services between cities and suppliers, in a full IoT horizontal approach integrated with the other vertical business sectors. It provides a standard-grade solution capable to put together the existing ecosystems within a common framework respecting all the previous investment and generating new and integrated services opportunities, rather to wait to have a single (or a few) colonising technology homogenising the digital market.The effectiveness of the project will be measured by a set of Performance Indicators1. The number of presentations made on the activity, at the technical meeting and at the dissemination events, at least **14**.
2. The ability of the STF to achieve the objectives within the project plan
3. The delivery of drafts and publications on schedule
4. The number of drafts for consultation: including early draft, stable draft and final draft (for approval) of each of the 12 technical deliverables, for a total of at least 36 consultations with ETSI TC SmartM2M
5. The evaluation of feedback received (e.g. on WEB site, mailing lists, etc.)
6. The number of meetings actively participated by this project, Including at least:
	1. Participation and reporting/contribution to at least
	2. 8 technical meetings (TC SmartM2M, AIOTI WG3, others as needed)
	3. 5 Steering Committee meetings
	4. 10 Presentation of the results events (including 2 annual ETSI IoT Week event) will be used to engage and disseminate
	5. 15 regular project meetings
7. The number of participants (stakeholders) at the meetings and events and their category, especially including experts from related sectors.
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### 1.3 Complementarity with other actions and innovation

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| The standardisation of the innovative field of IoT interworking, data interoperability and of Semantic Interoperability in ETSI is mainly based on* the oneM2M IoT Service enablement Layer which acts as an interoperability and communication framework within and across the different solutions existing in the various vertical IOT ecosystems. oneM2M is a global initiative leaded by ETSI in worldwide collaboration with the major standard organisation for the joint development of IOT open standards
* SAREF, a common reference ontology and a methodology to determine the commonalities between existing ontologies and to create common ontology patterns. SAREF was initially identified in a European Commission study on Smart Appliances reference ontology, the ancestor of SAREF/Smart Applications REFerence ontology solution.

On the impulse and with the active support of the European Commission, SAREF started with existing ‘vertical’ domains ontologies within Energy, Environment and Smart Buildings domains. Today SAREF is an innovative inclusive reference ontology (SAREF) to be re-used and mapped to all the application domains (11 domains already standardised). It consists of a suite of TR/TS SAREF standards freely downloadable, and an innovative approach of contribution to the standard based on an on-line portal that allows developers and IoT vertical domain users to propose their ontologies for inclusion in the standard. SAREF is in V3 (based on TS 103 264 V3.1.1), the communities of all domain users can use the ETSI SAREF portal to dynamically (in GitHub style) learn, develop and maintain ready-to-code SAREF domain mappings ontologies.ETSI, with its SAREF standardisation activity (a European Innovation), its SAREF community portal (supporting advanced ontology tools development) plus the European Commission DG GROW, DG CNECT support (studies, policy and strategy support, funding in the ICT Rolling Plan, dissemination) created together the SAREF standard suite born in European for international benefit.SAREF is developed in ETSI in TC SmartM2M, in alignment with oneM2M to reach out in all regions, and in coordination with ETSI TC ITS for automotive, TC SmartBAN for Wearable, TC eHEALTH for eHealth and Ageing Well, TC ATTM WG SDMC for Smart Cities. It is composed of a core reference ontology and 11 vertical domains mapping developed with input from the major vertical associations, European projects and industry players. TC SmartM2M has leveraged AIOTI (European IoT Alliance created by the EC) and its standardisation group (WG3 chaired by ETSI for 6 years) to ensure European and worldwide concertation on IoT Semantic Interoperability ready to be based on SAREF. SAREF is also coordinated with W3C to assure their complementarity. oneM2M standards are also re-published as ITU-T recommendations. ETSI is now proposing to develop an EN on SAREF methodology to consolidate a semantic interoperability solution in Europe and to consolidate European leading position in this area.SAREF is also promoted in the CEN/CENELEC/ETSI coordination groups on Smart Meter, Smart Energy Grids (now CG-SG), Smart Manufacturing (CG-Sma) and Smart Cities (SF-SSCC) where ETSI participates, ETSI is ensuring European Standard Development cooperation with (among other stakeholders) CEN/ISO, CENELEC/IEC and ISO/IEC JTC1. This facilitates both the CEN and CENELEC National Members coordination and international reach out.  |

## 2. QUALITY

### 2.1 Concept and methodology

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| SAREF development and maintenance methodology has been consolidated across years and is very stable. It leverages on successful consolidated ETSI standard development procedures and on a specific SAREF experience, that take benefit of the ETSI SAREF portal that provides an open guided tool for SAREF contribution and, more in general, for the participation to SAREF forum to the ontology communities.The addition of an EN to guide to the adoption of SAREF methodology to integrate ontologies within the shared SAREF framework is expected to facilitate the achievement of semantic interoperability across vertical business sectors and the consequent information sharing, driving to new services and opportunities. |

### 2.2 Consortium set-up

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| Not Applicable for ETSI |

### 2.3 Project teams, staff and experts

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| Name and function | Organisation | Role/tasks/professional profile and expertise  |
| Youssouf SakhoFunded Activities Director | ETSI | Director of ETSI funded Projects planning and control and Director of ETSI Corporate travels |
| Léa BelloulouHead of Funded Activities | ETSI | Head of ETSI funded Projects planning and control |
| Patrick GuilleminOrLaurent VreckTechnical Officer | ETSI  | ETSI Technical officer for the Technical Committee SmartM2M |
| Xavier PiednoirTechnical Expert | ETSI | ETSI Technical expert for the Centre for Testing and Interoperability |

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| **Outside resources (subcontracting, seconded staff, etc)**  |
| According to ETSI Technical working procedure on the selection of the service providers, ETSI will issue a call for expertise to get the necessary skills and resources as described below.The ETSI Staff will be integrated to guarantee the proper support and management as described in section 5.2 of this proposal.The activity in this proposal foresees the need for 5-6 experts according to the following required competences:* Knowledge about the global IoT standardisation landscape and ecosystem and expertise in standardisation of IoT/M2M at the international level.
* Expert knowledge of ETSI SmartM2M and oneM2M standards.
* Knowledge of semantics, and in particular SAREF.
* Experience with Semantic Web.
* Experience in industry-specific ontology development.
* Knowledge of Digital Twins.
* Strong expertise on ontology engineering.
* Collaborative ontology development on GitLab environment.
* Capability of collaborating in teams, mostly online, while carrying out independent work to achieve the common results.
* Proficient in English writing.
* Capability of easily communicating with technical and non-technical stakeholders.
* Leadership and project management for the STF Leader position.
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### 2.4 Consortium management and decision-making

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| Not applicable for ETSI |

### 2.5 Project management, quality assurance and monitoring and evaluation strategy

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| ETSI will perform this work by the creation of an ETSI Specialist Task Force (STF), reporting the milestones to the ETSI SmartM2M Technical Committee (TC SmartM2M), according to the planned TC meetings and additional dates agreed by the TC officials. TC SmartM2M will lead an active role in technical guidance and contributing to this work.* An STF Steering Committee (STF-SC) will be set up by TC SmartM2M in order to perform the steering of the STF, verifying the progresses in periodic meetings and guiding the STF (see section 4.2).
	+ TC **SmartM2M** Chair and Vice-Chairs,
	+ ETSI Secretariat **IoT Support Officer** and EC/ETFA Relations Manager,
	+ STF Leader (when selected),
	+ **European Commission** (ETSI Counsellor) representative (from DG GROW and DG CONNECT),
	+ ETSI TC SmartM2M liaison officer to the ETSI **oneM2M** Partnership Project**.**
	+ Other interested stakeholders as identified below.
* The STF will report regularly to the STF-SC and at TC SmartM2M meetings to consult on the latest advances.
* The STF leader will organise periodic internal meetings of the STF to share and review the latest content produced.
* The technical content of each of the provided deliverables (draft Technical Reports/Technical Specifications) will be evaluated by ETSI TC SmartM2M at regular and ad-hoc meetings, and reported a minimum of 2 times in the ETSI TC SmartM2M mailing list/meeting collecting comments and suggestions, possibly using the remote consensus ETSI Portal tool. The SmartM2M approval will take place preferably at the meetings of TC SmartM2M (Remote or F2F).
* The STF will organise reviews of its draft documents by the stakeholders described in section 4.2, in addition to the TC SmartM2M members.
* Performance indicators will be used to check the effectiveness and efficiency of the STF work, the level of stakeholder engagement and dissemination activities.
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### 2.6 Cost effectiveness and financial management

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| Each subcontractor is allocated to specific tasks with an expected level of contribution. The financial resources allocated to the subcontractor are calculated on this principle.At the start of the project, ETSI develops a baseline cost plan. It is calculated with the cost of the tasks and the scheduled progress of task at each milestone cut-off date. This baseline cost plan provides the costs at each milestone cut-off date.The milestone payment schedule for each subcontractor is then calculated by taking into account the baseline cost plan and the expected level of contribution. The milestone payment schedule is contractualThe subcontractors payment are submitted to the validation of the project milestones. The TC and ETSI proceed to the validation of the milestone.Cost effectiveness: The methodology of development of SAREF is well consolidated as described in section 2.1; ETSI experience with the STF approach described in section 2.5 is a long-lasting approach already optimised and assure cost effectiveness. The support of the overall TC SmartM2M community provides is a plus to assure the best possible results. |

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## 3. IMPACT

### 3.1 Impact and ambition

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| The expected SAREF impact is well known in terms of development of the digital market and engagement of stakeholders from the different business domains. Cross-sector semantic interoperability is a key to assure the evolution of the IoT and the related services to human markets. This proposal will amplify the SAREF impact working on the general usability of the standard ontology (SAREF). More relevantly, we are in a moment of consolidation of the SAREF framework and workflow: ETSI has just published a new version of the TC SmartM2M SAREF suite and the first version of the SAREF Portal. It is crucial to continue to support the exploitation of SAREF to the stakeholder’s market to assure a proper adoption of the ETSI standard ontology via the SAREF Portal. SAREF, and more in general ontologies, are still a knowledge domain for experts, on the border between industry and university expertise. With this proposal this work would be possible to empower the EU know-how and leadership in this sector, especially in the ontology-AI-Digital Twins integration,Additionally, SAREF is well recognised as the reference approach in the industrial sector, being developed in a compatible way with W3C’s semantic web approach, but at the same time being much closer to the different business sector solutions, from industry to smart city verticals.While making its adoption easier and its processes clearer, the market will be provided with a powerful tool to enable semantic interoperability and to complete the EU digitalisation towards IoT. Furthermore, it will support the diffusion of SAREF in emerging extra-European markets with potential benefits for the EU technology leadership in this sector and potential positive effects of adoption of EU technology. |

### 3.2 Communication, dissemination and visibility

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| A separate Work Package (WP4) is dedicated to dissemination. This task will operate to achieve the following objectives:* Prepare a light teaching material for education on SAREF (slides and tutorials based on examples).
* Increase awareness and promote SAREF and the ETSI SAREF portal.
* Participate to existing dissemination events, engaging sector association to present SAREF process and best practice to be followed to achieve SAREF usage according to the SAREF EN.
* Contribute to existing standard organisations and associations interested in the use of the SAREF/oneM2M suite
* Organise two dedicated SAREF events

All the reports of the dissemination activities will be collected in a miscellaneous work item focalising on the feedback and the follow-up effect of each dissemination event, including technical feedbacks, additional requirements and needs of future support. It will also collect the contribution presented to other TC, other organisation and fora, such as oneM2M, W3C, etc., in relation to the SAREF adoption and the technical needs in the ontology context the area of Digital Twins related to Smart Cities.The main interaction is with the stakeholders from the business sectors that can take benefit from the SAREF standard. In particular industry associations, user associations and institutions (like municipalities) that would be interested to use SAREF as semantic interoperability enabler.The selection of the action needs to be developed and agreed with the EC representative in the Steering Committee.The final goal is to increase the understanding of the SAREF ontology and of the benefit determined by its adoption, in particular with respect to:* the general use of common ontologies;

the practical use of SAREF ontologies; and* the SAREF methodology as specified by the proposed EN.

SAREF is the result of a EU commission initiative (see section 1.1 of this proposal) and this information is currently put in strong evidence in the existing SAREF core specification. Several extensions have been developed under stimulus and continuous support of the EU Commission in collaboration with ETSI. This fact will be put in evidence in every deliverable included in the current proposal. The context of SAREF and the EU support to this project will be also included in the presentations and the dissemination material produced in the context of this proposal. It will be also included on the SAREF open portal and on the project (STF) webpages. |

### 3.3 Sustainability and continuation

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| Semantic interoperability is a key element of the digital transformation, SAREF standardisation is crucial to provide a common methodology for the ontologies integration, that are a key part of AI and digital twins technologies application. ETSI has already invested on the SAREF open portal and to support an ontology expertise across European academy and industrial partner. The proposal is a step facilitate the adoption of SAREF providing clear guidelines. SAREF benefits also of a significant use within EU financed research projects but will become sustainable only when the current speed of the diffusion of IoT and of the digital transformation. It is expected that the supporting actions on SAREF would need to be maintained, especially in relation to the facilitation of use of the SAREF portal. Additionally the ontologies are dynamic structure so that standardisation support will need to be continued in ETSI (and in particular TC smartM2M). |

## 4. WORKPLAN, WORK PACKAGES, ACTIVITIES, RESOURCES AND TIMING

### 4.1 Work plan

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| The work is organised in one Work packages consisting of:WP1: Project management WP2: SAREF patterns and SAREF consolidationWP3: SAREF Urban Digital TwinsWP4: SAREF EN and SAREF dissemination*Status of deliverables: E= Early Draft, S= Stable Draft, F= final, P=Published. Please note that, for revision of already published TSs, Early Draft should be intended as the updated ToR including a summary of the foreseen intended updates.* *For D4.1, M5V means status M5V as foreseen for ENs process, i.e. the draft sent to the ETSI secretariat to be sent to the UE competent offices for EN feedback.**For D4.1, \* is the last date for the STF to receive comments on D4.1 derived from the EN revision process and \*\* represent the final date for the STF to solve and implement in D4.1 the comments received by the \* date. After \*\*, the comments will be managed directly by TC SmartM2M.**Reports: IR= Interim Report (Approved ETSI Secretariat/ EISMEA) , FR= Final Report Approved ETSI Secretariat/EISMEA); SMR= SmartM2M Report; SCR= STF Steering Committee Report.**The months marked in bold correspond to the expected allocation of the SmartM2M plenary meetings, dedicated meeting will be set according to the STF needs; The version of the deliverable intended to be formally released/published are marked in bold.**The extra month after the release of the technical deliverables is reserved to support the deliverables as ETSI formal standard Reports, Specifications, EN.* |

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| **Work Package 1: Project management** |
| **Duration:** | M01 – M24 | **Lead Beneficiary:** | 1-Short name – ETSI  |
| **Objectives** |
| - Coordination, reporting and leading of the STF team activities, in collaboration with the ETSI secretariat, TC SmartM2M and the STF Steering Committee.- Intermediate and final reporting to EISMEA |
| **Activities and division of work (WP description)** |
| Task No(continuous numbering linked to WP) | Task Name | Description | Participants - NA | In-kind Contributions and Subcontracting(Yes/No and which) |
| Name | Role(COO, BEN, AE, AP, OTHER) |
| T1.0 | Project Setup | ETSI Secretariat and TC SmartM2M chair will interview the potential candidates and select those to best meet the work plan.ETSI will make arrangements for project members (service contracts, etc.).The coordinator (with the help of the project leader) checks that the objectives of all WPs are clearly recognised by the participants.  | ETSI | COO | YES (In-kind) |
| T1.1 | Project management | Coordination, communication, reporting and leading of the STF team activities, in collaboration with the ETSI secretariat, TC SmartM2M and the STF Steering Committee. Intermediate and final reporting to EISMEA | NA | COO,OTHER | No |

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| **Work Package 2: SAREF patterns and SAREF consolidation** |
| **Duration:** | M01 – M23 | **Lead Beneficiary:** | 1-Short name – ETSI  |
| **Objectives** |
| * Harmonise and facilitate the use of SAREF by
	+ SAREF ontology patterns identification
	+ Consolidation of the SAREF suite of ontologies (i.e., SAREF core and its extensions for a selection of domains)
 |
| **Activities and division of work (WP description)** |
| Task No(continuous numbering linked to WP) | Task Name | Description | Participants - NA | In-kind Contributions and Subcontracting(Yes/No and which) |
| Name | Role(COO, BEN, AE, AP, OTHER) |
| T2.1 | SAREF identification of ontology patterns  | Report on the modularisation and factorisation potential of the SAREF ontology suite using reference ontology patterns. Lists identified modelling discrepancies in SAREF extensions, along with proposals to homogenise the modelling. Describe a set of core ontology patterns and how they can be used as a basis for future normative work in TC SmartM2M | NA | OTHER | No |
| T2.2 | SAREF Consolidation | Consolidation of SAREF core and the selected SAREF extension around the Patterns concept | NA | OTHER | No |

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| **Work Package 3: SAREF for Urban Digital Twins** |
| **Duration:** | M01 – M18 | **Lead Beneficiary:** | 1-Short name – ETSI  |
| **Objectives** |
| * Clarify and expand the use of SAREF in relation with Digital Twin technologies related to Smart Cities, with a focus on Urban Digital Twins.
 |
| **Activities and division of work (WP description)** |
| Task No(continuous numbering linked to WP) | Task Name | Description | Participants - NA | In-kind Contributions and Subcontracting(Yes/No and which) |
| Name | Role(COO, BEN, AE, AP, OTHER) |
| T3.1 | SAREF and Digital Twins | Clarify and expand the use of SAREF in relation with Digital Twin technologies related to Smart Cities, with a focus on Urban Digital Twins in the context of an Edge-Cloud IoT paradigm | NA | OTHER | No |

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| **Work Package 4: SAREF EN and SAREF Dissemination**  |
| **Duration:** | M03– M24 | **Lead Beneficiary:** | 1-Short name – ETSI  |
| **Objectives** |
| * SAREF dissemination and SAREF adoption guidance to achieve vertical business engagement and support, providing guidelines to adopters regarding the SAREF process and methodologies via
	+ SAREF adoption guidance materials
	+ An EN that clarifies and guide to the adoption of SAREF, that can also be used to support normative and regulation recommendations
 |
| **Activities and division of work (WP description)** |
| Task No(continuous numbering linked to WP) | Task Name | Description | Participants – NA | In-kind Contributions and Subcontracting(Yes/No and which) |
| Name | Role(COO, BEN, AE, AP, OTHER) |
| T4 | Vertical engagement and dissemination, SAREF EN and SAREF Dissemination | Provide guidelines to adopters regarding the SAREF process and methodologies via* An EN that clarifies and guide to the adoption of SAREF, that can also be used to support normative and regulation recommendations
* SAREF dissemination and SAREF adoption guidance to achieve vertical business engagement and support
 | NA | OTHER | No |

|  |
| --- |
| **Milestones and deliverables (outputs/outcomes)***Public — fully open (* *automatically posted online on the project Results platforms)**Sensitive — limited under the conditions of the Grant Agreement**EU classified — RESTREINT-UE/EU-RESTRICTED, CONFIDENTIEL-UE/EU-CONFIDENTIAL, SECRET-UE/EU-SECRET under Decision* [*2015/444*](https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32015D0444&qid=1586092489803). *For items classified under other rules (e.g. national or international organisation), please select the equivalent EU classification level.* |
| Milestone No(continuous numbering not linked to WP) | Milestone Name | Work Package No | Lead BeneficiaryNA | Description | Due Date(month number) | Means of Verification |
| MS1 | MA | 1,2,3 | NA | WP started: WP1, WP2, WP3Drafts agreed by SmartM2M: * Early Drafts: D2.1, D3.1

Reports: Presentation of the STF composition and work to SmartM2M (SMR) and Steering committee (SCR) | 2 | Review by SmartM2M and SCr |
| MS2 | MB | 1,4 | NA | WP started: WP4Drafts agreed by SmartM2M: * Early Draft: D4.1

Reports:* D4.2: Early Draft of Dissemination activities reporting
* Presentation of the status of the STF to SmartM2M
 | 4 | Review by SmartM2M |
| MS3 | **MC** | 1,2,3.4 | NA | Drafts agreed by SmartM2M: * Stable Draft: D2.1, D3.1

Reports: * D4.2: Update of Dissemination activities reporting
* Presentation of the status of the STF to SmartM2M and Steering committee
* Interim Report for ETSI agreed by SmartM2M
 | 7 | Review by SmartM2MReport Review by SmartM2M and SCSmartM2M |
| MS4 | **MD**  | 1,2,3,4 | NA | Drafts agreed by SmartM2M: * Early Drafts: D2.2 (D2.2E is in **M10** and D2.2S is in **M12** in Gantt Chart/GC), D3.2 (D3.2E is in M9 in GC it should be shifted to M10)
* Stable Drafts: D4.1 (D4.1S in in **M10** in GC), D2.2 (D2.2S in in **M12** in GC), D3.2 (D3.2S in in **M12** in GC)
* Final Draft: D2.1 (D2.1F in in **M10** in GC)

Reports:* D4.2: Update of (this D4.2I is in M10 in GC) Dissemination activities reporting
* Presentation of the status of the STF to SmartM2M and Steering committee
* Interim Report for EISMEA agreed by SmartM2M
* Interim Report for EISMEA approved by ETSI Secretariat (This IR is in **M10** in GC)
* Interim Report sent to EISMEA by ETSI Secretariat (**D1.1 IR EISMEA** is in **M12** in GC)
 | **10 and 12**(MD is in **M12** in Gantt Chart/GC but some deliverables are due **M10**) | Review by SmartM2MReview by SmartM2MReview by SmartM2MReport Review by SmartM2M and SCSmartM2METSI SecretariatEISMEA |
| MS5 | **ME** | 1,2,4 | NA | Drafts agreed by SmartM2M: * Early Drafts: D2.3-D2.9 (due M13 in GC)
* D4.1 [EN status M5V = “Mature draft sent to EC and/or recog.Org”] (**D4.1M5V** is due **M14** in GC)

 (sent to the ETSI Secretariat for UE representative feedback) Reports:* D4.2: Update of Dissemination activities reporting (this D4.2I is due in M14 in GC)
* Presentation of the status of the STF to SmartM2M and Steering committee
* Interim Report for ETSI agreed by SmartM2M
 | 14 | Review by SmartM2MSmartM2M +Recog. Organisations +UE RepresentativesReport Review by SmartM2MSmartM2M and SCSmartM2M, ETSI Secretariat |
| MS6 | MF | 1,2,3 | NA | WP Completed: WP3Drafts agreed by SmartM2M: * Stable Drafts: D2.3 to D2.6
* Final Draft: D2.2, D3.2

Reports: * Presentation of the status of the STF to SmartM2M
 | 18 | Review by SmartM2M |
| MS7 | **MG** | 1,2,4 | NA | Drafts agreed by SmartM2M: * Stable Drafts: D2.7 to D2.9

Reports: * D4.2 Update of Dissemination activities reporting
* Presentation of the status of the STF to SmartM2M and Steering committee
* Interim Report for ETSI agreed by SmartM2M
 | 20 | Review by SmartM2MSmartM2M and SCSmartM2M |
| MS8 | MH | 1,2,4 | NA | WP Completed: WP2, WP4Drafts agreed by SmartM2M: * Final Draft: D2.3 to D2.9

**Month 22**: Last date \* for the STF to receive comments on D4.1 derived from the EN revision process.D4.1\*\* (Month 23) represent the date for the STF to solve and implement in (D4.1) the comments received by the \* date. After \*\*, the comments will be managed directly by TC SmartM2MReports: * D4.2: Dissemination activities final reporting
* Presentation of the result of the STF to SmartM2M and Steering Committee, including an anticipation of the draft final report.

Final Report approved by SmartM2M and sent to the ETSI secretariat | 23 | Review by SmartM2M Recog. Organisations UE RepresentativesReport Review by ETSI SecretariatSmartM2M and SCSmartM2M andETSI Secretariat |
| MS9 | **F** | 1,4 | NA | WP completed: WP1, WP4**D1.2 Final Report** approved by ETSI Secretariat and sent to EISMEA | 24 | Report Review by ETSI Secretariat and EISMEA |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Deliverable No (continuous numbering linked to WP) | Deliverable Name | Work Package No | Lead Beneficiary | Type | Dissemination Level | Due Date(month number) | Description (including format and language) |
| D1.1 | Progress report to EISMEA | 1 | N/A | R *—* Document,report | PU — Public  | 12 | Ready for publication in English language and as a Microsoft Word and a PDF document |
| D2.1 | [TR 103 781](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=61440) “Study for SAREF Ontology Patterns and Usage Guidelines“  | 2 | NA | R *—* Document,report | PU — Public  | 10 | Ready for publication in English language and as a Microsoft Word and a PDF document |
| D2.2 | [Revision of the main V3.1 of the Core SAREF TS 103 264 V3.2.1](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=63056) “Smart Applications; Reference Ontology and oneM2M Mapping v321“  | 2 | NA | R *—* Document,report | PU — Public  | 18 | Ready for publication in English language and as a Microsoft Word and a PDF document M16Published version M18 |
| D2.3 | [Revision of SAREF Domain Extension for Energy TS 103 410-1 V2.1.1](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=63057), SAREF4ENERv211  | 2 | NA | R *—* Document,report | PU — Public | 24 | Ready for publication in English language and as a Microsoft Word and a PDF document at M22Published version M24 |
| D2.4 | [Revision of SAREF Domain Extension for Environment TS 103 410-2 V2.1.1](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=63058), SAREF4ENVIv211  | 2 | NA | R *—* Document,report | PU — Public  | 24 | Ready for publication in English language and as a Microsoft Word and a PDF document at M22Published version M24 |
| D2.5 | [Revision of SAREF Domain Extension for Smart Buildings TS 103 410-3 V2.1.1](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=63059), SAREF4BLDGv211  | 2 | NA | R *—* Document,report | PU — Public  | 24 | Ready for publication in English language and as a Microsoft Word and a PDF document at M22Published version M24 |
| D2.6 | [Revision of SAREF Domain Extension for Smart City TS 103 410-4 V2.1.1](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=63060); SAREF4CITYv211  | 2 | NA | R *—* Document,report | PU — Public  | 24 | Ready for publication in English language and as a Microsoft Word and a PDF document at M22Published version M24 |
| D2.7 | [Revision of SAREF Domain Extension for Smart Agriculture TS 103 410-6 V2.1.1](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=63062)SAREF4AGRIv211  | 2 | NA | R *—* Document,report | PU — Public  | 24 | Ready for publication in English language and as a Microsoft Word and a PDF document at M22Published version M24 |
| D2.8 | [Revision of SAREF Domain Extension for Water domain TS 103 410-10 V2.1.1](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=63066), SAREF4WATRv211  | 2 | NA | R *—* Document,report | PU — Public | 24 | Ready for publication in English language and as a Microsoft Word and a PDF document at M22Published version M24 |
| D2.9 | [Revision of SAREF Domain Extension for Smart Lifts TS 103 410-11 V2.1.1](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=63067), SAREF4LIFTv211  | 2 | NA | R *—* Document,report | PU — Public  | 24 | Ready for publication in English language and as a Microsoft Word and a PDF document at M22Published version M24 |
| D3.1 | [TR 103 827](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=63114) “SAREF: Digital Twins Opportunities for the Ontology Context“  | 3 | NA | R *—* Document,report | PU — Public  | 11 | Ready for publication in English language and as a Microsoft Word and a PDF document at M09Published version M11 |
| D3.2 | [TS 103 828](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=63076) “SAREF: Ontology Support for Urban Digital Twins and Usage Guidelines”  | 3 | NA | R *—* Document,report | PU — Public  | 18 | Ready for publication in English language and as a Microsoft Word and a PDF document M16Published version M18 |
| D4.1 | [EN 303 760](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=59591), “SAREF Guidelines for IoT Semantic Interoperability”  | 4 | NA | R *—* Document,report | PU — Public  | M14 (M5V version for public enquiry process)M23 (version sorting out comments received from public enquiry process by month 22 of the projectM24 | For (D4.1), month 22 is the last date for the STF to receive comments on (D4.1) derived from the EN revision process and month 23 represent the date for the STF to solve and implement in (D4.1) the comments received by the \* date. After \*\*, the comments will be managed directly by TC SmartM2M.Ready for publication in English language and as a Microsoft Word and a PDF document at M22Published version M24 |
| D4.2 | Dissemination activities reporting | 4 | NA | R *—* Document,report | SEN *—* Sensitive | 24 | Ready for publication in English language and as a Microsoft Word and a PDF document at M22Published version M24 |

## Total Project costs

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

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| --- | --- | --- | --- | --- | --- | --- |
| **Tasks** | **Objective** | **experts for the tasks** | **Man-power [k€]** | **Travels [k€]** | **Duration** | **Output** |
| **WP 1**Project Management | STF Project Management and administrative obbligations | 1 | 15 | 9  | 24 months | STF progress reports (for approval) to Steering Committee and ETSI TC SmartM2M (at each of the 12 milestones from MA to MN) and EISMEA yearly reports |
| **WP 2**SAREF Patterns and SAREF Consolidation | Homogenise and facilitate the use of SAREF and existing 7 SAREF domain extensions by based on common ontology patterns  | 6 | 100 | 0 | 24 months | • **D2.1** (TR 103 781 “Study for SAREF Ontology Patterns and Usage Guidelines“)**• D2.2** [This the revision of the main V3.1 of SAREF] (TS 103 264 V3.2.1 “Smart Applications; Reference Ontology and oneM2M Mapping v321“)• **D2.3 to D2.9** (these are the 7 SAREF domain mapping TS 103 410-x in Environment, Building, Energy, Smart Cities, Smart Agriculture and Food Chain, Water, Smart Lifts |
| **WP 3****SAREF for URBAN Digital Twins** | Clarify and expand the use of SAREF in relation and Digital Twin technologies | 4 | 36 | 0 | 18 months | • **D3.1** (TR 103 827 “SAREF: Digital Twins Opportunities for the Ontology Context “)• **D3.2** (TS 103 828 “SAREF: Ontology Support for Digital Twins and Usage Guidelines”) |
| **WP 4 EN and dissemination** | SAREF vertical engagement and dissemination via• An EN that clarifies andguide to the adoption ofSAREF, that can also be used to support normative and regulation recommendations• SAREF dissemination and SAREF adoption guidance to achieve vertical businessengagement and support | 4 | 45 | 25 | 24 months | **• D4.1** (EN 303 760)**• D4.2** (Dissemination and engagement activities reporting) |

 |
| **Travels summary** | **Cost estimate** |
| WP1:Reference TB (smartM2M) and Steering Committee meetings (14 individual participations) | 9 000 € |
| WP4:-Dissemination workshops (14 individual participations) – including IOT week, Project dedicated WSs, academic and industrial conferences, etc.-Meetings with other relevant standard related organisations (12 individual participations) -e.g. EU relevant groups in the EU ESOs, Aioti, etc.-Meetings with stakeholders from energy, smart City and building sectors (14 individual participations) | 25 000 € |
|  |  |
| **Total cost** | **34 000 €** |

**Amount: manpower: 196 k€
Amount travels: 34 k€
Total amount: 230 k€**

#### Subcontracting

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Work Package No | Subcontract No(continuous numbering linked to WP) | Subcontract Name(subcontracted action tasks) | Description (including task number and BEN to which it is linked) | Estimated Costs(EUR) | Justification(why is subcontracting necessary?) | Best-Value-for-Money(how do you intend to ensure it?) |
| 1-4 | N/A | N/A |  | 196 000 | Expertise not available inside the TC SmartM2M | Subcontractors are selected on a case-by-case basis in the context of an open call through a clearly defined process (typically one or more of the following, publication of the call through ETSI Collective letters to the membership, Technical Body mailing lists or explicit calls for tender). |
| Other issues:*If subcontracting for the project goes beyond 30% of the total eligible costs, give specific reasons.* | ETSI Secretariat (Funded Activities, Technical officers…) will ensure the project planning and controlling with the Technical Committee without charging the related costs to the project whereas subcontractors will perform the development and technical execution of the project. |

#### Timetable

|  |  |
| --- | --- |
| **ACTIVITY** | **MONTHS** |
| **M 1** | **M 2** | **M 3** | **M 4** | **M 5** | **M 6** | **M 7** | **M 8** | **M 9** | **M 10** | **M 11** | **M 12** | **M 13** | **M 14** | **M 15** | **M 16** | **M 17** | **M 18** | **M 19** | **M 20** | **M 21** | **M 22** | **M 23** | **M 24** |
| **WP1 - Project Management** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WP 2 - SAREF patterns and SAREF consolidation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WP 3 - SAREF for Urban Digital Twins** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WP 4 - SAREF EN and SAREF dissemination** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## 5. OTHER

### 5.1 Ethics

|  |
| --- |
| Not applicable. |

### 5.2 Security

|  |
| --- |
| Not applicable. |

## 6. DECLARATIONS

|  |
| --- |
| **Double funding** |
| **Information concerning other EU grants for this project**  | **YES/NO** |
| We confirm that to our best knowledge neither the project as a whole nor any parts of it have benefitted from any other EU grant *(including EU funding managed by authorities in EU Member States or other funding bodies, e.g. Erasmus, EU Regional Funds, EU Agricultural Funds, European Investment Bank, etc)*. If NO, explain and provide details. | YES |
| We confirm that to our best knowledge neither the project as a whole nor any parts of it are (nor will be) submitted for any other EU grant *(including EU funding managed by authorities in EU Member States or other funding bodies, e.g. Erasmus, EU Regional Funds, EU Agricultural Funds, European Investment Bank, etc)*. If NO, explain and provide details. | YES |

|  |
| --- |
| **Financial support to third parties (if applicable)***If in your project the maximum amount per third party will be more than the threshold amount set in the Call document, justify and explain why the higher amount is necessary in order to fulfil your project’s objectives.* |
| EFTA Financing is equal to 11 500 EUR (5% of total budget) |

**Annex I Response to the Request for Proposals
CfE – STF 641 (REFERENCE BODY SMARTM2M)**

**Deadline: 26/10/2022**

**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 641 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 | STF Project Management and Administrative obligations | 15 000 | . | . |
| 01 | SAREF ontology patterns identification | 35 000 | . | . |
| 02 | Consolidation of the SAREF suite of ontologies (i.e., SAREF core and its extensions for a selection of domains) | 65 000 |  |  |
| 03 | Clarify and expand the use of SAREF in relation with Digital Twin technologies related to Smart Cities, with a focus on Urban Digital Twins. | 36 000 | . | . |
| 04 | Vertical engagement and dissemination, SAREF EN and SAREF Dissemination | 45 000 | . | . |
| TOTAL | **196 000** |  |  |

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

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

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

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

**Annex II Terms and Conditions
CfE – STF 641 (REFERENCE BODY SMARTM2M)**

**Deadline: 26/10/2022**

**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>