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| Version: 1.2 |
| Author: USER Group – Date:27 Apr 2017 |
| Last updated by: User Group Meeting #61 – Date: 19 Oct 2017 |
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Terms of Reference - Specialist Task Force

STF BM (SC USER)

USER CENTRIC APPROACH IN THE DIGITAL ECOSYSTEM

Summary information

|  |  |
| --- | --- |
| Approval status | Approved by TC USER (doc ref: USER(17))  To be approved by Board#114 (20/21 September 2017) |
| Funding | **Maximum budget: 58 800 € ETSI FWP** |
| Time scale | December 2017 to April 2019 |
| Work Items | DTR/USER-0046  DEG/USER-0047  DTR/USER-0048 DTR/USER-0049 |
| Board priority | [ETSI STF funding criteria](https://portal.etsi.org/STF/STFs/Funding/ETSIbudget.aspx) |

Part I – Reason for proposing the STF

The main reason for submitting this STF proposal is to take into account the impact of digital ecosystem evolutions on users.

Users are currently facing monolithic application-driven solutions that have to be used sequentially. The current evolution is expected to provide them with a huge panel of various multicomponent offerings that the user would like to compose by himself in order to obtain a fully customized single/global service. The user digital environment is changing and user preferences differ from one user to another. In such a complex environment it is necessary to provide the user with accurate information that is needed to make a pertinent choice.

Beyond the information, the user is in an almost permanent interaction with the digital ecosystem. This is a new paradigm differing from the current Client/Server interaction and from the interactions between user and terminal interfaces. Thus, this proposed STF aims to handle the definitions and the specifications of these new « unified interfaces » that will reduce the complexity from the user point of view and will improve usability and will provide guidance to the user.

In this context it should also be taken into account that, due to the vast number of interfaces/services/terminals, the user may use several digital identities and it seems relevant to avoid similar information being requested from them each time they move from one channel to another. It is important that this user unified knowledge has a high level of security.

To summarize, digital system usability needs to better-fit user expectations and satisfy all the different user profiles and connected objects, everywhere and for every usage.

# Rationale

The STF is intended to provide guidance and specifications to answer customer’s needs and expectations, when requested, whatever the user location might be, using social networks and terminals. The service shall be **fully customized,** which will answer to user expectations and needs. Special attention will be paid to impaired users and older (aged) users and their specific needs, in order to ease the usage of terminals/applications/services, anywhere and anytime.  
This user centric approach has also an impact on companies and organizations due to the permanent connection of people and objects, everywhere and for all usages. Moreover, this "universal connectivity" requires stronger in-depth analysis of the following issues:

**Multiplicity of channels:** The number of user terminals or interfaces is increasing: PC, mobile, touch pad, connected TV and car, connected things, future terminals**.** This implies that companies should be able to ensure a permanent and transparent connection between all these channels.

**Changes in the interaction mode with the customers:** Technology has provided the capability for a precise targeting of the customer experience. The user is becoming a full actor in the design of future products. This implies new interactions between the User and the ecosystem in the context of co-design.

The need for knowledge of the **« unified » customer**: The different channels imply the need to share this knowledge with a privacy protection and a high level of security. The user has several digital identities (depending on the service, the channel, the terminal, etc.) but does not wish to receive new requests related to personal information each time the channel changes. This concept of a “unified” customer will significantly help impaired people and older (aged) users, simplifying the operations and the usages.

**“Fuzzing” border between professional and private life:** The user has several profiles, in the professional context and in the private context, this implies a good isolation of the borders**.** This is an important challenge to ensure: on the one hand, the security of the company SI (IT) and on the other hand, the user interaction capability inside and outside the company through a lot of sensors and objects (IoT & IoE).

# Objective

The proposed work of this STF is to:

Produce four ETSI deliverables (3 Technical Reports and 1 ETSI Guide):

DTR/USER-0046

DEG/USER-0047

DTR/USER-0048  
DTR/USER-0049

* Design and perform a survey to identify the user maturity and the user expectation in the digital ecosystem:

-the current user knowledge of available services

-the true current usages,

-the lack in the current offerings and the users’ expectations,

-the information on the associated functionalities.

* Identify the characteristics of the different user environments: public, private and professional environments (e.g. taking into account the IoT, smart cities, wearables, etc.)
* Identification of typical use cases (e.g. Interactions on: home automation appliance; service selections between private and professional life; continuity of preferred from home to vacation location…)
* Provide an ETSI Guide to the user to build his service composition with the appropriate quality of experience (QoE) and how to ensure his data privacy.
* Provide a Technical Report to the providers and standards makers to ensure that each service component is provided with the information needed by the user to make an informed choice.
* Provide a Technical Report for the qualification of the user interaction with the digital ecosystem (e.g. authentication, single sign on, composition, presentation, etc.)

# Relation with ETSI strategy and priorities

The proposed STF relates to the ETSI’s long term strategy **transversals aspects** and following priorities:

• Emerging domains for ETSI

- *Smart Cities / Technologies and Services for a Smart and Efficient Energy Use.*

The smart cities and communities standards should ensure the new user with requirements for the protection of individuals with regards to the processing of personal data and free movement of such data.

- *Internet of Things.*

The IoT standards define an understanding of user needs, including user accessibility needs aiming to develop a set of rules as a reference for the user.

• Societal challenges.

- *eHealth and active and healthy ageing.*

The user-centred work may be needed to cover different forms of user integration in the eHealth systems (standardised processes for users, etc.).

- *Web accessibility.*

Stimulate further integration of web accessibility, based on work by the World Wide Web Consortium (W3C) and on web content accessibility guidelines (WCAG) in order to overcome fragmentation in meeting user needs with appropriate guidance.

• Horizontal activities (quality, security, etc.)

- Facilitate the adoption of digital services towards users by supporting the finalisation of user standards on Service Level Objective (SLOs).

- Take into account the user needs with the goal of simplifying common tasks related to user identity management in services and applications.

- Data privacy Protection: After the end safe harbour, the new regulation RGDP( general will significantly change the way organizations maintain an manage data as well as that of their customers; the DGPR has to be taken into consideration in user centric approach

- Quality of experience (QoE), actual data from user experiences to be pulled from crowdsourcing applications.

From Board (17) 111a 011 ETSI (Board) Strategy:

« ETSI is committed to attract, retain and engage all members in its work: large and small companies and research organizations, as well as other business, **consumer, societal and environmental stakeholders.** It promotes participation of SMEs and start-ups in standards-setting as a way to boost their competitiveness and access to markets. ... »

The consumers, as actors and users, will take benefits from the results of the STF.

The STF will also identify and promote a lot of potential applications that could generate new business areas and potential developments for SMEs and start-ups.

# Context of the proposal

## ETSI Members support

The STF is intended to provide inputs that will be useful for the whole community: the users, of course, but also all the companies, network operators, service providers, application developers, terminal manufacturers. The organizations representing states also support the STF that will provide solutions for the use of all the national and European services.

The following ETSI members have expressed their support:

|  |  |  |
| --- | --- | --- |
| **ETSI Member** | **Supporting delegate** | **Motivation** |
| AFUTT | Jean-René Rousseau | Acting as a consumer association AFUTT supports the STF, and is convinced that the user centric approach is a major improvement for better and simplified usage and easier use of all the services, applications and networks. |
| IMT | Tatiana Aubonnet | For several years, IMT has explored the possibilities offered by the user centric approach, especially related to IoT, smart cities, etc. Nowadays the concept needs to be implemented by the stakeholders and the STF will be an accelerator to achieve this objective |
| LSTI | Armelle Trotin | Acting as a Conformity Assessment Body for electronic identity recognition at least at the European level in order to mutualise different ways in a secure manner, LSTI is interested in the result of this STF.  Creation of a cross-border way to operate communications and improve user services for use at National and European level is a very important challenge. |
| ARAXXE | Xavier Le sage | Our company is involved in End-to-End Billing Verification and Interconnect Fraud Detection solutions. The scope of the STF defines a new approach for which our company could provide new solutions, creating opportunities for new business. |
| ORANGE | Bruno Chatras |  |
| HUAWEI | Christian Toche | Huawei fully support the proposed STF on the user centric approach in digital ecosystem. We have high interests both in the network and consumer areas and the outcome of this STF would be very useful for our products. |
| QUALIGON | Christoph Stepping | Qualigon is involved in the successful management of digital transformation and in customer experience strategy. The STF is proposing a new approach to interaction between User and the digital ecosystem that is supported by our company. |
| TELEFONICA |  |  |
| MICROSOFT |  |  |

## Market impact

The proposed activity will help to make the user-centric approach a reality and improve the European providers’ competitiveness.

As the user will be at the centre we may expect a larger usage of the tools, applications and consequently this can have a substantial market impact, for the expert users but moreover for populations that do not have an easy use of the services.

## Tasks for which the STF support is necessary

The User Group members do not have the sufficient resources and skills to perform the necessary work. The STF will enable the bringing together of the necessary mix of skills in a shorter period in order to provide the needed guidance and specifications for further developments.

## Related voluntary activities in the TB

User Group delegates will collaborate with the STF in order to achieve the objectives and to ensure the relevance of the results from the user’s point of view.

## Previous funded activities in the same domain

None.

## Consequences if not agreed

Users have several terminals, at home, in public areas or at work. They have access to a lot of services and applications provided by different companies/organisations. If the approach defined in this STF is made available, the users will benefit from improved usages.

If the STF is not agreed:

-either, the users will never have access to such many services, especially people who are not so familiar with digital services and will never become actors of the future digital ecosystem.

-or, the users will have to take more time for all needed operations (e.g., identification, choice of the applications, choice of the suppliers, ...) and will have to renew each operations for any used new terminal. This approach will also provide relevant solutions for people who are not so familiar with digital services and applications and will facilitate their use.

Part II - Execution of the work

# Technical Bodies and other stakeholders

## Reference TB

USER Group

## Other interested ETSI Technical Bodies

- TC HF for the Human Factors issues of the interfaces defined by the STF, and for the usage situations met by impaired people, older users and people with cognitive impairments.

- TC STQ for speech, audio or video and for QoS/QoE matters when terminals are implementing solutions defined by the STF.

- TC EE for the energy impact of this new approach

- SC eHealth, SC EMTEL, TC ITS and TC SmartM2M for the relevant services, applications and terminals.

- TC Ntech (interconnection to other networks, architecture and protocol specifications applicable to access and core networks, ‘Future Networks’ technologies)

## Other stakeholders

The solutions defined by the STF may be linked with topics in the fields of other standardization bodies such as 3GPP, OneM2M, ITU-T, TMF, IETF.

# Base documents and deliverables

## Base documents

None.

## Deliverables

|  |  |  |
| --- | --- | --- |
| **Deliv.** | **Work Item code**  **Standard number** | **Working title**  **Scope** |
| D1 | DTR/USER-0046 | Working title: **User centric approach in digital ecosystem**  The goal of this TR is to consider IoT through user's point of view under the following two directions: - identification of user's needs such as QoS, security, usability, flexibility, Service Level Objectives (SLO) - study impact of technical implementations related to user's requirements/concerns  The SR details  - User centric usages in digital ecosystem (Usage identification)  - Profile of user centric according to different digital environment (digital ecosystem identification)  - Significant “use cases” (identification of the typical use cases) |
| D2 | DEG/USER-0047 | Working title: **User centric approach Best practices to interact with digital ecosystem**  Scope: this work item will define guidance to user in order to build his/her own service composition with the expected and relevant quality of experience (QoE) and to ensure his/her data privacy |
| D3 | DTR/USER-0048 | Working title: **User centric approach Recommendations for providers and standardization makers**  Scope: this work item will define recommendations to providers and standard makers to ensure that each service component is provided with the information needed by the user to make an informed choice. |
| D4 | DTR/USER-0049 | Working title: **User centric approach – Qualification of the interaction with the digital ecosystem**  Scope: this work item will define the qualification of the interaction of the User with the digital ecosystem (e.g. authentication, security, privacy, single sign on, service composition, presentation, etc.) |

## Deliverables schedule

**DTR/USER-0046** Working title: **User centric approach in Digital ecosystem**

Start of work 18 December 2017

* ToC and scope 22 December 2017
* Early draft 22 May 2018
* Stable draft 01 September 2018
* Final draft 30 September 2018
* TB approval 07 November 2018
* Publication 15 December 2018
* **DEG/USER-0047 User centric approach Best practices to interact with digital ecosystem**

Start of work 18 December 2017

ToC and scope 22 December 2017

* Early draft 22 May 2018
* Stable draft 15 November 2018
* Final draft 15 December 2018
* TB approval 15 January 2019
* Publication 15 April 2019
* **DTR/USER-0048 User centric approach Recommendations for providers and standardization makers**

Start of work 18 December 2017

* ToC and scope 22 December 2017
* Early draft 15 June 2018
* Stable draft 01 September 2018
* Final draft 30 September 2018
* TB approval 07 November 2018
* Publication 30 November 2018
* **DTR/USER-0049 User centric approach – Qualification of the interaction with the digital ecosystem**

Start of work 18 December 2017

* ToC and scope 22 December 2017
* Early draft 15 September 2018
* Stable draft 15 January 2019
* Final draft 28 February 2019
* TB approval 31 March 2019
* Publication 30 April 2019

# Work plan, time scale and resources

## Organization of the work

Most of the work will be done in their own companies by the STF members. The STF will meet two days before each User Group meeting.

## Task description

The main tasks of the STF are:

* To define a list of use cases, that will be the base for the development of the ETSI Special Report, Guides and Technical Specification
* To perform an electronic survey, distributed to a panel of different Users via social networks and specific media.
* To produce a result survey analysis.
* To provide a Technical Report, which will contain the results of Tasks 1, 2 and 3 described below.
* To provide an ETSI Guide: it will provide guidance to the user in order to build his/her own service composition with the expected and relevant quality of experience (QoE) and to ensure his/her data privacy.
* To provide a Technical Report from providers and standard makers to ensure that each service component is provided with the information needed by the user to make an informed choice.
* To provide a Technical Report on the interaction with the digital ecosystem qualification (e.g. authentication, single sign on, composition, presentation, etc.)

Task 0 - Project management

Objectives

Creation of a Steering Group to coordinate the project to:

- Supervise desired objectives

- Meet deadlines

- Organize the meeting of the milestones to validate the results.

- Ensure that deliverables comply with requirements.

Task 1 – User maturity and User’s expectations in digital ecosystem

Objectives

In Digital ecosystem, users are able to access the business application or see contents in the manner they expect. This socio technical digital environment is open with properties of self-organisation, aimed at building digital new services covering all the actions of daily life.

The first main objective of this task is to ask users to evaluate their digital maturity:

-to identify their knowledge on new services and applications that are today available

-to make an evaluation of existing difficulties to access existing services, and

-to identify their true level of satisfaction (QoE)

-to understand concerns about personal data protection

The second main objective is to identify their expectations

-for new services (smart cities, health, transport), in particular to determine their behaviours when receiving the requested information, to know if they are willing to pay for these new innovations, etc,

- for new needs in terms of “multichannel”, interaction modes, “unified” customer knowledge, and borders between professional and private life.

Another additional goal is to identify the deficiencies in existing offerings and users’ expectations through a panel of users.

Input (to be done by the STF)

The survey will be conducted using two methods:

- On the one hand a self-administered questionnaire which will be published online. The call for testimony will be made both via partner websites and mailing through optional files available among partner members. The analysis will examine both responses to the closed question and responses (verbatim) to the open questions.

- On the other hand, a forum where topics related to this STF, and the results of the previous survey, will be posted. This method will allow to refine and improve the results of the survey, thanks to the interaction of the net surfers with the animators and the other participants

The task force will:

1. Define the questions of the survey that will consider, among other things

- Security with Risk of uncontrolled usage (security risks, confidentiality risks, juridical risk) and QoE. The Quality of Experience (QoE) defined as the overall acceptability of an application or service, as perceived by the end-user including.

- User Environment: the interpretation of the level of satisfaction with regard to mobility, preferences depending on locality and agenda must be investigated as QoE factors.

- The service satisfaction what has a close relationship with the service cost

This is an important task since we have to define a clear and workable list of questions through a short survey.

1. Define the user panel composition
2. Perform the survey through an on-line survey and a forum as specified above

The aim of the survey is to anticipate the user expectations in the context of user centric approach, which means that the questions will be introduced by a short description of potential use cases related to the three categories of users, as described below.

Output --> Part 1 of the Technical Report (D1- DTR/USER-0046)

The results and analysis of the survey, which will constitute Part 1 of the TR

This part will define how user wishes to join and participate in the digital ecosystem. The action will enable the discovery of the current usages identification, of the associated functionalities information, the deficiencies in current offerings and the users’ expectations. The user panel covers at least three categories: (A) sedentary or mobile consumers, (B) business users, (C) users with special needs.

Task 2 – Digital ecosystem analysis

Objectives

A digital ecosystem provides access to resources, supports collaboration, knowledge sharing and development of open and adaptive technologies in an environment that spans enterprise boundaries and different stakeholders (operators, social networks, user). This task aims mainly at systematically analysing this context through use cases (e.g.: smart cities, domotics, e-health) in order to identify on one hand user role and boundaries and on the other hand pertinent information to be monitored

Input (to be collected by the STF)

State of the art on digital services with associated technologies.

Related standards:

* Standard Development Organisations such as ETSI, CEN/ISO, CENELEC/IEC, ITU-T, IETF, GS1, OASIS, OGC, oneM2M, etc.
* Digital Ecosystem Reference Architecture (DERA) IG1135, release 15.5, Dec.2015
* Digital Services Reference Architecture Guide (DSRA) release 16.5, Dec.2016
* IEEE-SA INTERNET OF THINGS ECOSYSTEM STUDY <http://standards.ieee.org/innovate/iot/study.html>
* EIP-SCC OIP: The European Innovation Partnership on Smart Cities and Communities, Operational Implementation Plan, Chapter 10 Priority Area 'Standards'
* AIOTI WG3 on IoT Standardisation work described with the following initial terms of reference: “AIOTI WG3 IoT Standardisation ToR: This WG implies the mapping of existing IoT standards and gap analysis, as well as strategies and use cases to develop (semantic) interoperability”
* ITU-T JCA-IoT IoT Standards Mapping.
* Directives “**GDPR”. N° 2016/679 and 680**

Output --> Part 2 of the Technical Report (D1- DTR/USER-0046)

We propose to analyze the inputs mentioned above in order to obtain a structural view (architectural model) and a dynamic view (functional model) that takes into account user mobility and preferences. This part 2 of the report will contain a schematic representation of user interactions according to UML (Unified Modelling Language). That is to say that, for modelling the system, we will provide:

* Use Case Diagram that describes the functionality provided by a system in terms of actors, roles, and objectives.
* Activity diagram that describes the activities and step-by-step operations of component workflows in a system.
* A sequence diagram that shows, how actors communicate with each other according to a sequence of messages.
* A communication diagram that shows the interactions between the parties in terms of sequenced messages. They represent a combination of extracted class, sequence and case diagrams describing both the static structure and the dynamic behaviour of a system.

Pertinent information: to be monitored and to be shared.

Resources required

Expertise in services dedicated to final users (in different environments: work, leisure, family/friends, etc.)

**Task 3 – Identification of the typical use cases (D1- DTR/USER-0046)**

Objectives

The combined advantages of universal connectivity (everything/everyone can be compared to everything/everyone at low cost, even being on the move), without forgetting cloud universal access (scalable, low-cost compute and storage capacities provided to anyone on the cloud), ability to create many new scenarios and use cases. This task aims mainly at selecting some typical use cases for the development of the ETSI Guide and ETSI TRs.

Input

The results of tasks 1 and 2 and specific characteristics for some of the use cases.

Output

Part 3 of Technical Report. Identification of set of requirements through typical use cases of digital ecosystem, for example:

Use Case A: User interaction in IoT integrated user-centric approach and user's needs (SLO, Privacy, access management, security, service flexibility, service usability, QoE)

Use-case B: User interaction with services in Smart cities environment including study on how a user connected in smart city can improve services management at level user service composition and user service management.

Use-case C: User interaction within multi-device environment, e.g. multiscreen environment: smartphone, TV and tablet. A basic use case could be: how to display a diaporama from one device to another one,

**Task 4 – Provide an ETSI Guide for the user (D2- DEG/USER-0047)**

Objectives

To provide the ETSI Guide for user in order to build his/her own service composition with the expected and relevant quality of experience (QoE) and to ensure his/her data privacy

Input

Data from Tasks 1, 2, 3 of the STF (D1: TR)

EG 202 843 V1.1.1 (2011-01): "User Group; Quality of ICT Services; Definitions and Methods for Assessing the QoS parameters of the Customer Relationship Stages other than utilization".

Output

The ETSI Guide - User centric approach; Guidance for the user

Starting from,

- On the one hand, the stages of "the customer's relationship" which are: Pre-sales with Information and advertising, Sale with SLA Contract, Service Activation through multichannel, Service use with security and privacy, management of failures and interruptions, Customer Service for complaints, Billing and Termination with administrative and technical closure.

- On the other hand, analysis of usage (task 1) in digital ecosystem (task 2) and the use cases selected in task 3

This task aims mainly at Identifying:

* All features that require interaction with users
* All indications on the service composition
* All information that allows users to choose and select services according to needs (including users with special needs)
* All information relating to security and privacy
* All billing information, etc.

In order to define and propose recommendations

Interactions

Before User Group approval, the ETSI Guide will be submitted for comments to the TBs.

**Task 5 – Provide an ETSI Technical Report for providers and standard makers (D3- DTR/USER-0048)**

Objectives

To provide the ETSI Technical Report for the providers and standard makers to ensure that each service component is provided with the information needed by the user to make an informed choice

Input

Data from Tasks 1, 2, 3 of the STF

Additional inputs on QoS/QoE, security and privacy.

Output

The ETSI Technical Report - User centric approach; Guidance for providers and standards makers

This EG will be designed in conjunction with the user guide. Each recommendation identified as important for the user will find its parallel on the side of the supplier offer.

For each needs and expectations, by user categories, the guide will recommend relevant service information and interactions. This is to facilitate, on the one hand, easy access for the user and on other hand, consistently create manageable services that are easily incorporated into a service definition that can support SLA

**Task 6 – Provide an ETSI Technical Report on the interaction qualification with the digital ecosystem (D4- DTR/USER-0049)**

Objectives

We think that for users, a GUI is more intuitive than a language. It can therefore be imagined as, whatever the chosen channel is a "user space" session is proposed, during which the user can, on one hand, drag the service components to which he has subscribed, and those which he can subscribe according to its localization and, on the other hand, to compose them in accordance to his own logic of service and his own preferences.

The purpose of this task is to specify all the "Digital-Ecosystem" user interactions necessary for all digital service lifecycle stages. Whether the user is discovering information, buying, using or asking for support as it relates to services, he want flexibility in channel usability and communication mode.

In addition, one goal for this task is to identify some areas for collaboration on development potential standards as additional support of the digital lifecycle service.

Input

Results of tasks 1 to 5 of the STF

Open Connectivity Foundation (OCF): <https://openconnectivity.org/>

Output

Technical Report - User centric approach – Interaction qualification with the digital ecosystem

The TR will provide recommendations for the different interaction information (parameters, QoS, QoE) with the ecosystem (e.g. authentication, single sign on, composition, presentation, management, etc.).

The most critical need is that each Service Component exposes input and output information such that a user can understand the impact of each Component Service on its E2E composition.

Starting from the use case families selected and listed in Task 3, and the OCF recommendations, the output of this task will include mainly requirements and testing methods to empower to Customer-centric provider to propose their customers with the information, support and tools they need in order to achieve their goals. These include, for example, access to agents (live and virtual), internal information, external knowledge (such as social media) and automated tools.

The bottom line is that the customer needs to be able to resolve problems through their own channel of choice, whether it’s selecting and purchasing a new service, getting help or any other activities.

## Milestones

Milestone 1 – The inputs for the deliverables

Tasks 1, 2 and beginning of Task 3. Progress report A

Milestone 2 – The deliverable D1 available

Progress Report B. Review of stable draft D1 and D3. Tasks 4, 5, 6 are progressing (🡪 review of progress).

Milestone 3 – The deliverables D1 & D3 available

Progress Report C: Tasks 1, 2, 3 & 5 completed.

Tasks 4 & 6 progressing (🡪 review of progress).

Milestone 4 – The deliverable D2 available

Validation of D2.Task 4 completed

Milestone 5 – The deliverable D4 available

Task 6 completed.

## Task summary

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Mil.** | **Description** | **Target date** | **Meeting** | **Remarks** |
| M0 | Start of work, STF Preparatory Meeting Provisional STF Timetable. | 12-2017 |  |  |
| M1 | Progress report A focused on Tasks T1, T2 & Start of T3 | 19/03/2018 | User#63, Paris |  |
| M2 | Progress report B approval & and initial drafts of T4 and T5 | 3-4/09/2018 | User#65, Paris |  |
| M3 | Progress report C approval &  *Validation of D1 and D3* | 07/11/2018 | User#66, Sophia Antipolis |  |
| M4 | Approval of D2 | 15/01/2019 | User#67, Paris |  |
| M5 | Final report approval &  Validation of D4 | 31/03/2019 | User#68, Sophia Antipolis | STF closed in April 2019 |
| **Total** | |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **N** | **Task / Milestone / Deliverable** | Target date | EUR |
| M0 | Start of work , STF Preparatory Meeting | 18-12-2017 |  |
| T0 | Project management | from 18-12-2017  to 30-04-2019 | 4 800 |
| T1 | User maturity and expectations in digital ecosystem | from 18-12-2017  to 13-06-2018 | 16 800 |
| T2 | Digital ecosystem analysis | from 18-12-2017  to 31-05-2018 | 6 000 |
| M1 | Progress report A focused on Tasks T1, T2 & Start of T3 | 19-03-2018 |  |
| T3 | Identification of the typical uses cases | from 19-03-2018  to 31-08-2018 | 6 000 |
| T4 | Guide to the USER in digital ecosystem | from 18-12-2017  to 15-01-2019 | 7 200 |
| M2 | Progress report B approval & and initial drafts of T4 and T5 | 04-09-2018 |  |
| T5 | Technical Report (Recommendations for providers and standard makers) | from 18-12-2017  to 07-11-2018 | 4 800 |
| M3 | Progress report C approval &  Validation of D1 and D3 | 07-11-2018 |  |
| T6 | Technical Report on the user interaction with the digital ecosystem | from 18-12-2017  to 31-03-2019 | 8 400 |
| M4 | Validation of D2 | 15-01-2019 |  |
| M5 | Final report approval &  Validation of D4 | 31-03-2019 |  |
| **Total** | | | **54 000** |

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| **Task Milest.** | **Description** | **D** | **J** | **F** | **M** | **A** | **M** | **J** | **J** | **A** | **S** | **O** | **N** | **D** | **J** | **F** | **M** | **A** |
| T0 | Project management |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T1 | User maturity and expectations in digital ecosystem |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T2 | Digital ecosystem analysis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T3 | Identification of the typical uses cases |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T1+T2+T3 | TR User centric approach in IoT (D1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T4 | ETSI Guide to the USER in digital ecosystem (D2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T5 | TR to the PROVIDER for user centric interactions (D3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T6 | TR Qualification of interaction with the digital ecosystem (D4) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M0 | Start of work , STF Preparatory Meeting |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M1 | Progress report A focused on Tasks T1, T2 & Start of T3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M2 | Progress report B approval & and initial drafts of T4 and T5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M3 | Progress report C approval &  Validation of D1 and D3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M4 | Validation of D2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M5 | Final report approval &  Validation of D4,  STF closed |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Working methods and travel cost

The large majority of the tasks will be done 100% remotely.

The travel cost for the STF Leader: to join all the User group meetings (4 anticipated)

Travel costs are also anticipated for presentations of the outcome to up to 2 external workshops/conferences in Europe.

# Expertise required

## Team structure

For such an STF, there is a need for a mix of competence.

* Expertise in the field of the selected use cases.
* User profile expertise to design the questionnaire, to define the user panel and to analyse the results.
* Experts with the transversal competence (Transversal Approach) in different domains related to the user and QoE (Quality of Experience).
* Deep understanding of service creation in domain of Next Generation Services
* Expertise in meta-modelling, UML profiles, SLA (Service Level Agreement), SLO (Service Level Objective).
* Expertise in service composition, QoS (Quality of Service), user security/privacy.
* Expertise in design and definition of functional characteristics, service interfaces and inter-services communication.
* Expert who ensures that all aspects are taken into account: Interoperability, usability and security; identification of common frame of reference for validating models.
* Expert who produces documents describing products, services, components and applications; who will select the most appropriate style and media for presentation media; who will specify the documents requirements taking in accordance with the object and the environment in which it applies.

Part III: Financial conditions

# Maximum budget

The total action cost is estimated at 58 800 EUR

## Manpower cost

The estimate of the maximum manpower budget that should be allocated for this STF is 54 000 EUR

## Travel cost

|  |  |
| --- | --- |
| **Expected travels** | **Cost estimate** |
| Travels of STF leader to 4 User Group meetings to report on the work and draft presentations | 3 200 |
| 2 presentations to workshops (outside ETSI) in Europe | 1 600 |
| **Total cost** | **4 800** |

Part IV: STF performance evaluation criteria

# Key Performance Indicators

As the STF provides a new approach, for the benefits of the users, the STF will communicate about the development and the results of all the STF tasks, in particular through workshops and scientific publications and congresses.

Several ETSI TBs will take benefits of the results of the STF in their own standardization activities. To ensure that, the STF leader will present the progress of the STF to the most relevant TBs and will collect comments from the other TBs. A review of the comments and inputs, and the consequences for the STF deliverables will be produced in the final report.

Number of Contributions from ETSI Members to STF work

* Support to the STF work: organization of workshops, events where the work is discussed with indications of the level of attendance, the number of reactions and by category.
* Steering Group meetings. The steering group will also involve, on a voluntary basis, leaders from other ETSI TBs and will meet (as much as possible via remote) before each milestone.
* Report on delegates directly involved in the review of the deliverables
* Analysis of contributions/comments received. As the milestones are defined in relationship with the User Group meetings, the contributions and comments from the participants to User Group will be expected for each User Group meeting.

Contribution from the STF to ETSI work

* The STF has defined several Technical Bodies to which contributions will be submitted.
* Presentations in workshops, conferences,

Liaison with other stakeholders

* Stakeholder participation in the project (see the list of supporters)

Cooperation with other standardization bodies. Several standardization bodies have been identified (at least 3GPP, One M2M, ITU-T,TMF, IETF). As the intention of the STF is to be addressing the results to the most of the stakeholders, it will be necessary to ensure cooperation, during and after the STF, with these bodies, with the expectation to have a very large implementation of these results.

* Potential interest of new members to join ETSI. Even if the “large” companies will be involved in the implementation of the results, the STF will open new fields in which start-ups and new companies may be involved, becoming new ETSI members. It is also expected that this STF will motivate external “user groups” to collaborate within ETSI.
* Liaison to identify requirements and raise awareness on ETSI deliverables. In particular the ETSI Guides and the TS will provide data and requirements that should be taken into account by the different other TBs when publishing or revising some of their deliverables.
* Comments received on drafts. The comments will be submitted as contributions to USER Group on ETSI portal.

Quality of deliverables

* Approval of deliverables according to schedule
* Comments from Quality review by TB
* Comments from Quality review by ETSI Secretariat

Time recording

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

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

# Document history

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| --- | --- | --- | --- | --- |
|  | **Date** | **Author** | **Status** | **Comments** |
| 0.1 | 12-May--2017 | Contributors from User Group |  | Several preliminary versions of the documents have been revised by the contributors and ETSI |
| 0.2 | 31-July-2017 | User Group |  | Revision which takes into account the OCG comments: items clarification and budget reduction |
| 1.0 | 8-Aug-2017 | User Group |  | Final version |
| 1.1 | 17-October-2017 | Youssouf Sakho | Board#114 Approved | Update for CL publication |
| 1.2 | 19-october-2017 | User  Group | Board#114 Approved | Update of the agenda |