



4. Context

Introductory note: A CEN/TC 428 Ad hoc Group has been established to transfer the proposals developed by the CEN ICT Skills Workshop to foster ICT Professionalism in Europe into CEN/TC 428 activities and prepare the documentation required for EC funding application.

The proposal presented, under development by TC 428 since 2017, has joined the CEN/TC 428 Ad hoc Group structure to ensure maximum consistency between all proposals. It is not in competition with the other proposals emerged from the 2018 Ad hoc Group work but it is their complement; therefore all proposals should be read and considered in conjunction with each other, and in conjunction with EN 16234-1 “e-CF” which provides the common framework for all the proposals in line with the TC 428 “ICT professionalism and digital competences” scope.

The five proposals are:

- e-Competence performance indicators and common metrics
- CEN/TR 16234-2,-3,-4 “e-CF User support” (revision of existing TR’s and new development)
- Foundational Body of Knowledge (BoK)
- ICT, e-leadership and innovation Curriculum guidelines
- Code of Conduct and Ethics

This project proposal deals with matters which falls into the scope of CEN TC 428 “ICT Professionalism and Digital competences” and is strictly integrated with the activities ongoing in this organisation. The integration stems not only from the fact that its main deliverables are three Technical Reports of essential importance to the EN 16234-1 “e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all industry sectors - Part 1: Framework” continued implementation by a broadest possible user community coming from multiple perspectives in the field of ICT Professionalism, but also, and above all, from the strict liaison that the deliverables of the project have with the other existing and future Work Items of CEN/TC 428.

With regard to the EC work programmes, this proposal is a direct response to the Domain “e-Skills and e-Learning” of the ICT Standardization Rolling Plan 2018. It has been developed in full coherence with multi-stakeholder initiatives and public policies (such as the EU e-Skills strategy, the New skills agenda for Europe, the Digital agenda and the digital skills and jobs coalition) aiming at reducing skills shortages, gaps and mismatches and at fostering ICT professionalism in Europe overall. ICT Standardization Rolling Plan 2018 quotes:

“Action 2 SDO to further develop the EN 16234-1 European e-competence framework (e-CF) and progress towards a comprehensive framework for ICT professionals: Maintain the e-CF and continue work on job profiles, Body of Knowledge, qualifications and certifications, and methods and tools for the development, promotion, implementation and maintenance of the e-CF to promote and strengthen ICT professionalism in Europe (including international).”

The proposal aims at revision respectively new development of three Technical Reports. These forthcoming TRs are considered as major contributions providing methods and tools in support of the promotion, implementation and maintenance of the standard EN 16234-1 “e-Competence Framework (e-CF) - A common European Framework for ICT Professionals in all industry sectors - Part 1: Framework”.

TR 16234-2: User guide for the application of EN 16234-1 from multiple ICT stakeholder perspectives (REVISION of existing TR).

TR 16234-3: Methodology documentation: Building the e-CF – a combination of sound methodology and expert contribution (REVISION of existing TR).

TR 16234-4: Case studies illustrating the use of the e-CF standard in practice (NEW DEVELOPMENT – substituting previous CWA 16234-4).

The proposed work directly contributes to the goals stated in the Annual Union Work Programme (AUWP). The support is both with respect to the area that is the subject of the proposal and with respect to the goals it aims to achieve.



Area of the proposal

The AUWP is consistent with the EU Rolling Plan for ICT standardization which lists e-Skills and e-Learning among the policy priorities where standardization plays a role in the implementation of the respective policy. Above all, the AUWP states: "timely ICT standardization actions are expected to reduce market fragmentation by increasing interoperability of [...] services and therefore contributing to the competitiveness of European firms of all sizes, including SMEs". The topics were identified by the EC and reviewed with the MSP.

Goal of the proposal

The ICT Standardization Rolling plan for 2018 specifies in consistence with the AUWP the political and technical context for this proposal and its main goal. The proposal meets the requirement expressed by the AUWP. On the one hand, it reduces market fragmentation by increasing interoperability of services and therefore contributing to the competitiveness of the European firms of all sizes, in particular SMEs. The proposed work aims at fostering greater use of European service standards, in particular the EN 16234-1 «European e-Competence Framework for ICT professionals in all industry sectors» and further surrounding relevant concepts. As envisaged by the AUWP increased usage of the EN 16234-1 standard helps tap the unexploited potential of the services sector for the EU economy by improving the performance and quality of the services, ensuring interoperability and facilitating cooperation among economic operators. This work targeting ICT professionals is complementary to the activities related to the Digital Competence Framework for Citizens (DigComp 2.1).

All three deliverable developments will be logically linked to the revised version of EN 16234-1 that is currently under development:

- **CEN/TR 16234-2** will provide revised user guidance to the European ICT industry of all organisational sizes, public and private ICT education providers and further stakeholders on how to apply the revised standard.

It will substitute the current CEN/TR 16234-2:2016 in place that supported broad acceptance and adoption of the previous EN 16234-1 version from multiple stakeholder usage perspectives.

- **CEN/TR 16234-3** will provide revised methodology documentation on development and maintenance of the standard.

It will substitute the current CEN/TR 16234-3:2017 in place that supported broad acceptance and adoption of the previous EN 16234-1 version from methodology perspective.

- **CEN/TR 16234-4** will provide a series of case studies providing typical examples of application and use of the standard in ICT business and education practice.

It will substitute the current CWA 16234-4:2014 in place that supported broad acceptance and adoption of the previous EN 16234-1 version providing practical use cases from multiple stakeholder perspectives.

EU legislation and EU policies that the work will support

The 2018 release of the EU ICT Rolling Plan encourages European stakeholders to continue standardisation work on a European Framework for ICT Professionalism in close connection with existing EN 16234-1.

The Digital Single market strategy – especially Objective 4.3.1 - relates to better equipped workforce (ICT professionals with the right digital skills)/Enhanced use of digital technologies and ICT professionalism/improve their job opportunities.

The system of recognition of professional qualifications in the EU is governed by Directive 2005/36/EC, recently amended by Directive 2013/55/EC. The directive provides a modern EU system of recognition of professional experience and promotes automatic recognition of professional experience across the EU. Directive 2005/36/EC on the mutual recognition of professional qualifications does not apply in principle to ISO/CEN standards of competence per se, unless these are integrated in national law and designed as a qualification or part of a qualification, necessary to exercise a given activity or to wear a given title. As an example, one can think of the profession of certified energy assessor who by law has to follow some training in compliance with a given ISO/CEN Standard and who, after completion of the given training, is the only one able to assess the energy consumption of a building. Even in this case, it is not the ISO/CEN standard as such which will be considered as a professional qualification, but the qualification designed around this standard as it has been transcribed in the national law.



The main policy references can also be found in the EU ICT Rolling Plan 2018.

- COM(2018) 22. Communication “A Digital Education Action Plan”.
- COM(2016) 381. Communication “A New Skills Agenda for Europe: Working together to strengthen human capital, employability and competitiveness”. It presents a number of actions and initiatives aiming to tackle the digital skills deficit in Europe. One of these actions is the launch in December 2016 of the digital skills and jobs coalition to develop a large digital talent pool and ensure that individuals and the labour force in Europe are equipped with adequate digital skills. This new coalition builds on the work already done under the Grand Coalition for Digital Jobs and the EU e-skills strategy, and will bring together a broader set of stakeholders beyond ICT-sector, including ICT-using sectors, training organisations, academia, social partners and Member States.
- COM(2016) 180. Communication Digitising European industry, which introduced a set of coherent policy measures as part of a digital single market technologies and public service modernisation package. Part of the communication is devoted to digital skills. In particular, it calls for human capital ready for the digital transformation with the necessary skills.
- COM(2013) 654. Communication Open up education: innovative teaching and learning for all through new technologies and open educational resources”.
- Recommendation 2009/C 155/01 on the establishment of a European quality assurance reference framework for vocational education and training (EQAVET).
- COM(2015) 192. “A digital single market strategy for Europe
- The Digital Single market strategy – especially Objective 4.3.1 - related to better equipped workforce (IT professionals with the right digital skills)/ Enhanced use of digital technologies and ICT professionalism / improve their job opportunities.
- COM(2007) 496. “e-Skills for the 21st century: Fostering competitiveness, growth and jobs”.

The work is of particular relevance for Pillar II Interoperability and standards: "Europe must ensure that new IT [...] services interact seamlessly anywhere".

Furthermore, the project dovetails with the priorities of digital skills and jobs coalition "aimed to offer more ICT training co-designed with the industry; implement job placement programmes; provide more digitally aligned degrees and curricula at all levels and types of training and education; and motivate young people to study ICT and pursue related careers".

The work will advance the standardization activities of the CEN/TC 428 “ICT Professionalism and Digital competences” within its currently defined scope. The scope of the CEN/TC 428 was extended in July 2016 when the need to revise the existing publications was identified. The upcoming deliverables will be developed by a Project Team and approved by CEN/TC 428.



5. Objectives and impact

5.1 Objectives

The ultimate objectives of the proposed project and its final deliverables are the development of three technical reports supporting the implementation of EN 16234-1 from multiple stakeholder perspectives:

- a) **CEN/TR 16234-2 providing up-to-date and easily accessible user guidance** to European stakeholders (including ICT service, user and supply organisations, SMEs and larger sized organisations, ICT managers, HR departments and individuals, and public and private education and qualification institutions e.g. universities, vocational education and training, private certification providers) on how to apply EN 16234-1 “e-CF” from multiple perspectives, and connected to further relevant concepts in the field.
- b) **CEN/TR 16234-3 providing the methodology documentation** on EN 16234-1 development and maintenance.
- c) **CEN/TR 16234-4 providing case studies of typical implementations** of the standard EN 16234-1 “e-CF” to illustrate its practical use from multiple perspectives as listed above

Looking at the broader context, the project aims at long-term strengthening of the ICT Profession in Europe with careful consideration given to all stakeholder perspectives and needs that are influencing and influenced by ICT Professionalism, including ICT business requirements, market trends and overall digitization of industry. The project deliverables will provide a key contribution to the broader concept of ICT Professionalism which is founded upon four main building blocks: competences, bodies of knowledge, professional ethics, education and training. In particular, the project will contribute to further maturing and support of the COMPETENCES pillar.



Figure 1: The proposal aims at boosting one of the four main building blocks of ICT Professionalism for Europe, namely the “Competences” pillar. The picture makes further development from primary sources: IVI/ CEPIS/ Capgemini/ Ernst & Young)

The project is planned to work complementarily with the recently started CEN/TC 428 ‘ICT Professionalism and Digital competences’ project (SA 2017-03) aiming at a first revision of the EN 16234-1 published in 2016 in line with current business needs, framework development, digitization of industry and ICT market trends.

It will also closely interact where applicable with other CEN/TC 428 EN and TR deliverable developments currently under planning to mature the European ICT Profession (namely in the fields of Ethics, Education and Certification, e.g. Curriculum Guidelines, Assessment Indicators and common Metrics, Quality labels for Industry based Certification and Training) and a Foundational Body of Knowledge for the ICT Profession.



5.2 Relevance

One of the key objectives on the Digital Single Market is to answer the need of society and of the economy to benefit from having a highly skilled ICT workforce. Digital skills and ICT professional competences are in high demand in society and are a core element to growth and jobs in Europe.

The standard EN 16234-1, currently under revision, provides an efficient and broadly accepted common European language about knowledge, skills and competences of the ICT professional workforce and it has proved to be a useful benchmark for all EU ICT stakeholders dealing with ICT Professionalism, including all industry sectors, qualification providers, policy strategy makers and HR and ICT departments of all sizes.

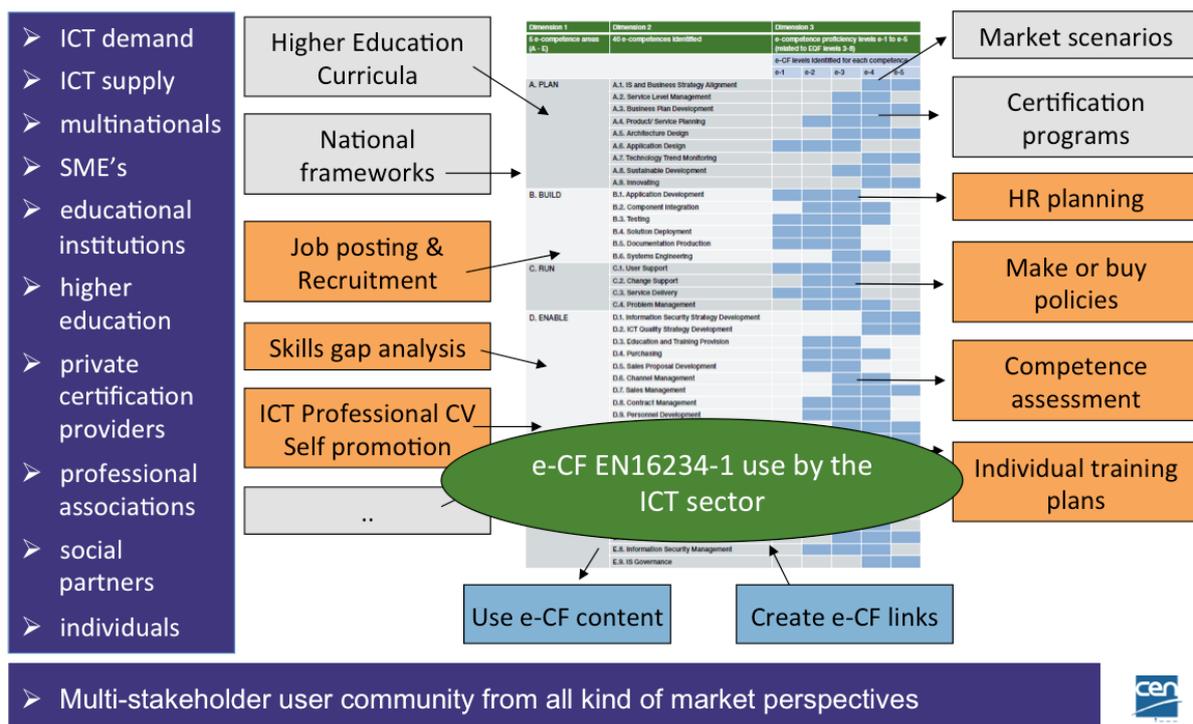


Figure 2: EN 16234-1 e-CF is largely applied from multiple stakeholder perspectives as a shared European language to address the ICT professional skills challenge

Taking into account that information and communication technologies are evolving continuously and therefore also the competences and skills required by the European ICT professional workforce, the European standard EN 16234-1 consisting of 40 competences needs regular and systematic review. This is currently ensured by the project agreement N° CEN/2017-03 "e-Competence Framework".

To boost consistent standard implementation across CEN membership and beyond, it is equally essential to maintain the supporting Technical reports and previous CEN Workshop Agreements providing effective EN 16234-1:2016 implementation guidance to multiple stakeholder perspectives and purposes as illustrated in the above figure 2. This is the ultimate goal of this proposal.

5.3 Indicators

The quality, up-to-dateness and market relevance of the three EN 16234-1 implementation supporting technical reports hardly depends on the number and quality of contributions and suggestions received during the existing Technical reports revision and new development process. Alongside project phases 1 and 2 the CEN/TC 428 and the project expert team will ensure together that the project activity gets a maximum of EU-wide outreach, multi-stakeholder contribution, active participation of CEN member bodies and therefore active involvement of e-CF relevant parties into the TR 16234-2, -3 updating and TR 16234-4 new development process.



The project will meet the following performance indicators;

- Compliance with project aims, scheduling and budget as defined by this proposal
- Number of National bodies involved into the formal TR approval process in phase 3: at least 10 National bodies are planned to be actively involved within the CEN/TC 428 work.
- Number and outreach of internal and external meetings and workshops in phase 1 and 2 of the project:
 - 3 project team expert meetings requiring the presence of at least all project team members + optionally 5 voluntary experts on invitation
 - 2 public workshops actively involving the broader EN 16234-1 user community

1 EN 16234-1 e-CF user experience/ best practice workshop with at least 30 participants

1 public workshop discussing the TR draft proposals prior to presentation for further commenting and approval in the CEN/TC 428 with at least 30 participants
- Number and relevance of ICT sector multi-stakeholders engaged in the TR phase 1 via electronic contribution:
 - At least 80 participants coming from at least 10 different countries contributing to the e-CF application experiences reporting survey in month 5-8
- Clearness in project communication
- Overall alignment of the three Technical Reports to the current EN 16234-1 content and look, and market best practice
- Acceptance and approval of the proposed CEN/TRs by the National member bodies as ultimate KPI at the end of the project.

Due to the relevance of EN 16234-1 implementation to ICT professional and business performance overall, this work will be actively accompanied and promoted by important ICT associations on national and European levels, among them CEPIS, having thousands of members of 32 national computer associations combined, the European Digital SME Alliance with a specific look at the needs of small and medium sized enterprises and EuroCIO addressing the top strategy level of ICT departments in larger organisations together with its national members, like CIGREF in France and VOICE in Germany.

The proposed project activity allows a mutual dissemination benefit between the project activity and the CEN/TC 428 in general. There is significant potential that communication of the ongoing Technical Reports development project work will call the interest and attract new national member bodies to get actively involved in the CEN/TC 428 and its activities to mature the ICT Profession from a shared European perspective, but also that the work will again contribute to enlarging the EN 16234-1 user community as a whole.

5.4 Impact

ICT is a cross-sector issue and the need for a highly qualified ICT professional workforce concerns any sector including the health, safety and environment domain. In the light of the ongoing digital transformation ICT is an essential utility that is embedded within almost all processes deployed by industry, commerce, government, charities and society as a whole. It logically follows that any enhancement to the quality of ICT professional service provision has high leverage across almost every aspect of European citizens' lives from health provision to road and air traffic management to social wellbeing and safety of the society as a whole.

Further developments, including big data and artificial intelligence, amplify the dependency of European citizens and governments on the efficiency, accuracy, safety and reliability of ICT systems. ICT systems are created, built, integrated and maintained by ICT professionals who are at the heart of this proposal. The ability of ICT professionals to improve performance and innovation will be enhanced by target-specific implementation guidance on the standard EN 16234-1 covering the different needs of different stakeholder perspectives that have an influence on quality of ICT professional competence performance at short notice and in a long-term.

The work will support the development of standardization activities in new areas and upcoming proposals in support of the Digital Single Market i.e. Big Data, AI, Security, 5G and Cloud professionalism.

The Figure 2 in the previous section 5.2 shows the main areas of impact of the project deliverables from the different stakeholder and EN 16234-1 application perspective. The project will continue fostering the acceptance



of common language among ICT professionals, policy, ICT supply and demand organizations across the European Union; the availability of more skilled ICT professionals; of more transparent training schemes; of better support to HR departments in HR planning and the necessary training programs.

The EN 16234-1 standard supporting up-to-date implementation guidance will enable companies to consistently and methodically identify, deploy and train their staff, regardless of the job titles and grading structures at European level. This will remove the barrier and create integrated teams which speak the same language and thus contribute to more competitiveness and digitization of EU vertical business sectors.

Qualification providers, public and private, including universities will find structured guidance on how to deploy the EN 16234-1 in their environment.

The project proposal does not focus only on tackling the challenge of providing the right ICT professional Skills for filling existing jobs. It will also be compliant with future jobs, results of a functioning Digital Single Market. Organisation's compliance of their ICT Professional staff with the upcoming CEN deliverables will better equip EU businesses to make use of fast evolving technologies.

The upcoming project will support the life-long learning of ICT professionals in various sectors by identifying the competences, skills and knowledge that are required for the uptake of technological innovations. As a result, this will facilitate their replication in different industry sectors also from a European level perspective.

Empowered by straight forward guidance on EN 16234-1 standard usage, European companies will have the tools to more effectively identify, deploy and train their ICT staff, often distributed across the countries of Europe with different job titles and grading structures. This will reduce the friction in assembling multi-national teams and thus contribute to more competitiveness and digitization of EU vertical business sectors.

Small and medium sized enterprises that often only have limited resources for internal development, implementation and maintenance of HR planning and development systems will find reliable and straight-forward guidance on how to make best use of the EN 16234-1 for their specific purposes.

Ignorance of standardization on these topics will prevent the Digital Single Market from becoming Single/ Standardised regarding digital/ ICT Professionalism.

EN 16234 is one of the subjects within the Digital Single Market program. A Digital Single Market can create up to € 415 billion in additional growth, hundreds of thousands of new jobs, and a vibrant knowledge-based society (DSM-factsheet).

EN 16234-1 even today is in use by many companies and organisations that are operating in Europe but also globally. EN 16234-1 and forthcoming supporting CEN/TR part -2, -3 and -4 providing guidance on successful implementation of the standard provide Europe with a shared understanding of ICT professional competences and competence development, supporting therefore a workforce which can act and compete on an international level as a highly competent, skilled and knowledgeable partner in the ICT domain. The use of the standard and supporting material including facilitation of best practice will support innovations both in the HR and in the ICT domain.

Using the standard has multiple positive effects, e.g.:

- establish a European, in many cases globally applied, common language on ICT Professional competences, knowledge and skills
- translation of new technologies and business processes in new competences, knowledge and skills requirements (e.g. in the context of digital transformation)
- competence-based matching of job vacancies to CVs
- enabling the identification of competences and skills gaps and trends in the ICT ecosystem as an important support for decision makers but also the ICT Professional community (e.g. continuously increasing requirements in ICT security, data privacy, requirements emerging from digital transformation).

By using the standard in intelligent ways, innovations can be analysed quickly by the early makers/ thinkers of the innovation to identify those e-CF competences which involved and to help to train and/ or identify the necessary people. The Technical Reports projected by this proposal will provide the necessary supporting user guidance to the relevant perspectives, i.e. industry and HR departments, qualification providers and digital competences strategy makers.



5.5 SMEs, consumer organization and environmental and societal stakeholder representation (Art. 17(4) (b) of standardization regulation No 1025/2012) example– Annex III organisations (ECOS, ETUI, ANEC, SBS)

SBS is a Partner Organisation of CEN/TC 428, and one of the SBS Board Members is the chairman of CEN/TC 428 and hence will have access to all documentation. All the organisations mentioned will be invited to contribute to the development of the CEN/TRs 16234-x supporting material by participating and expressing their specific needs in the two workshop scheduled for input gathering and validation, and to propose candidates for the expert selection.

6. Description of the different tasks

6.1 Introduction

In line with CEN rules the minimum time investment for development of a Technical Report is 23,5 months (21,5+2 months of NWI ballot). The development of the three technical reports will be closely interconnected in content and a parallel development of the three deliverables makes sense from both the TR development methodology and the EN 16234-1 supporting implementation perspective.

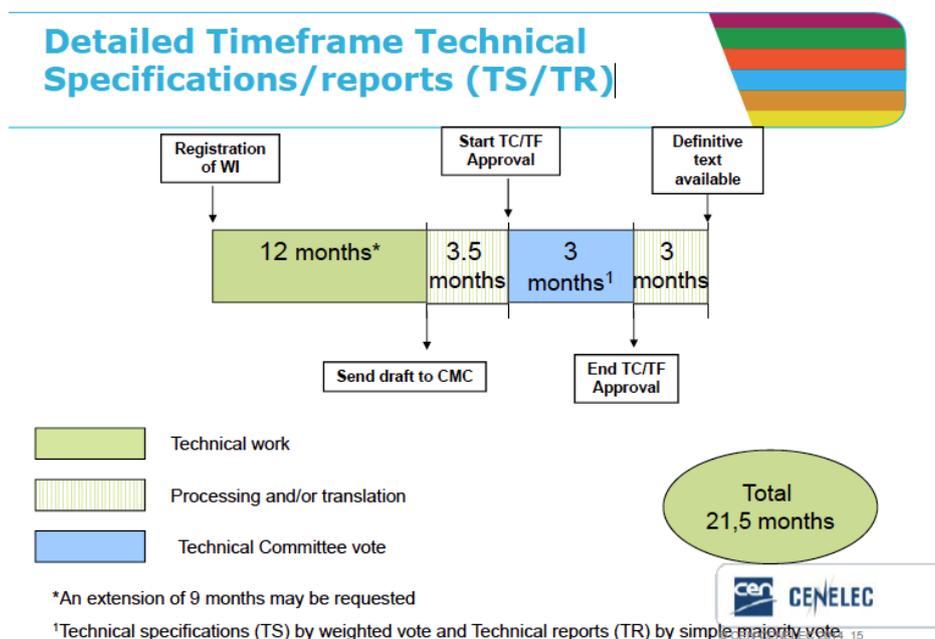


Figure 3: TR development process from NWI to publication

The detailed task planning foresees 12 months for the TR development technical work to be carried out by an expert team under supervision of the CEN/TC428 + 9.5 months for the editing and voting process in the CCMC structure. The interim report will be delivered no later than 18 months after project start.

PHASE 0 (ca. 4 months for project start and expert nomination)

PHASE 1 (8 months):

- State of the art assessment and input collection.
- Evaluation and prioritization of the input collected

PHASE 2 (4 months):

- Draft revision of the technical reports and new development.
- Validation of the proposed revisions/ new development of the technical reports.

PHASE 3 (9,5 months – to be expanded by UNINFO/CEN if necessary, in line with correct proceedings):

- Formal standardization process.



PHASE 4 (0,5 months) preparation of the final report

6.2 Scope

The first activity of the Project is the selection and establishment of the Project Team. It will take not less than four months.

In the next few sections for the definition of the duration of the tasks reference is made to its beginning and end. So, for example the notation “month m – month n” must be read as “the task is scheduled to begin in the first day of month m, and finish on the last day of month n”. Month 1 is defined as the first month after the project approval.

Task 1: Project management, TC 428 and multi-stakeholder interaction and project communication

- 1.1. Project work planning, project team and workshop events management
- 1.2. Project communication and interaction with the European ICT multi-stakeholder community
- 1.3. Continued reporting on project progress and exchange with CEN/TC 428 backed by the National Mirror Committees

DELIVERABLES: Project reports to the TC 428 secretariat

KPI's: Project progress and final delivery on time and meeting all KPI's defined by the proposal

Task 2: Collection of feedback on existing TR16234-2 and TR16234-3 usage and improvement opportunities and current EN16234-1 use in practice

- 2.1. On-line survey
- 2.2. EN 16234-1, TR 16234-2 and TR 16234-3 “e-CF” user experience/ best practice workshop
- 2.3. Selected phone interviews with experienced EN 16234-1 e-CF users (10 in total)

DELIVERABLE: a well-documented collection of multi-stakeholder feedback to be evaluated

KPI: number of CEN member countries and ICT business stakeholders involved and actively contributing to the process (coming from at least 10 CEN member countries)

Task 3: Systematic evaluation of feedback received

- 3.1. Structuring and evaluating of the EN 16234-1 user experiences and TR feedback received
- 3.2. Make structured propositions on the forthcoming update of TR 16234-2 and TR 16234-3

DELIVERABLE: User feedback report

KPI's: Quality of feedback collected, clarity in structuring of feedback received, completeness of stakeholder perspectives considered

Task 4: Editing TR 16234-2 and 16234-3 draft revision

- 4.1. Editing the first drafts of TR16234-2 and TR 16234-3 revision
- 4.2. Feedback gathering from TC 428 / CEN National Member Bodies and ICT multi- stakeholder community and evaluation
- 4.3. Evaluation of feedback received - editing the second draft
- 4.4. Feedback gathering from TC 428 and ICT multi-stakeholder community incl. Final feedback collecting workshop
- 4.5. Evaluation and integration of feedback received – provision of the final draft

DELIVERABLE: the final prTR 16234-2 and -3 update drafts

KPI's: Quality and clarity in presentation and content of the documents, completeness of stakeholder perspectives to be addressed by the guide, completeness in methodology issues to be addressed by the methodology documentation.

Transparency in how comments from CEN/TC 428 were addressed to satisfy multiple ICT business stakeholder needs including national perspectives (logfiles).



Task 5: New development of TR 16234-4 Case studies

- 5.1. Collection of relevant perspectives to be considered
- 5.2. Identification of stakeholders with appropriate standard implementation experiences for documentation by the use cases
- 5.3. Development of a template for the forthcoming case studies and of guiding questions for stakeholder interviews
- 5.4. Phone interviews
- 5.5. Editing the first draft of case studies
- 5.6. Feedback collection, testing and optimization
- 5.7. Evaluation of feedback received – editing the second draft
- 5.8. Feedback gathering from CEN/TC 428 and ICT multi-stakeholder community
- 5.9. Evaluation and integration of feedback received – provision of the final draft

DELIVERABLES: Final draft of newly developed TR 16234-4 Case studies

KPI's: Number of case studies to be developed: At least 10 case studies illustrating different application experiences from multiple stakeholder perspectives in practice

Clarity in how comments from TC 428 were addressed to satisfy stakeholders needs (log-files)

Task 6: Interim Report Development

- 6.1. Interim Report draft editing in collaboration with the TC Secretariat
- 6.2. Interim Report adjustments
- 6.3. Interim report proof read and final delivery

Task 7: The formal process

This task includes all the activities which span from the presentation of the definition and activation of the New Work Item (NWI) to the approval of the final product of the standardization activity. These procedures are detailed in CEN BOSS.



6.3 Workplan & Milestones

MONTH/S	ACTIVITIES	RESPONSIBILITY	MILESTONE
PHASE 0, 1 and 2	PROJECT START AND TECHNICAL DRAFTS DEVELOPMENT		
1	Call for experts	Project Secretariat (SEC)	
4	Selection and nomination of experts in the Project Team and appointment of the Project Team Leader	A representative of UNINFO, CEN/TC 428 and CEN	A – Expert team selected and contracted
5-8	Collect input on EN 16234-1 application experiences and translate into TR 16234-2,-3,-4 new requirements	Project Team (PT)	
	New Work Item (NWI) Proposal development	Project Team (PT)	
5-8	Online survey	PT	
7	1 EN 16234-1 e-CF user experience/ best practice workshop	PT	B – All relevant input for consideration collected
7-10	Translation of input collected into TR 16234-2,-3,-4 update and new requirements		
5-16	Prepare the TR 16234-2,-3,-4 drafts		
14-15	Public Workshop for TR 16234-2,-3,-4 draft discussion with interested stakeholders		C – All workshops successfully completed D – Presentation first draft update
16	TR 16234-2,-3,-4 delivery to CEN/TC 428 Communication on work in progress	PT LEADER	E.a. – Delivery of Phase 2 result to CEN/TC 428
Phase 3	FORMAL PROCESS		
7	New Work Item (NWI) approval	CEN/TC 428 SEC	
16	TR 16234-2,-3,-4 draft update receipt from Phase 1 Project team, distribution to CEN/TC 428	CEN/TC 428 SEC	E.b. – Receipt and Distribution of Phase 1 result to CEN/TC 428
5-26	Formal standardization process	CEN/TC428	F – TR 16234-2,-3,-4 rev/new available
5-26	Technical support to TC428	PT LEADER	
16	Delivery of TRs to CCMC		End of Technical Activity



The following Gantt provides an overview of the technical work planned to be performed by the contracted expert team in phase 1 and 2 of the project.

Table 1: Gantt - overview of the technical work planned in phase 1 and 2 of the project

Phase 1 and Phase 2 Actions/ Month/ Technical Milestones B-E.a.	5	6	7	8	9	10	11	12	13	14	15	16
Task 1 Project Management												
1.1. Project work planning, project team and workshops event management	A											
1.2. Project communication and interaction with the European ICT multi-stakeholder community												
1.3. Continued reporting on project progress and exchange with CEN TC 428 backed by the National Mirror Committees												
Task 2 Collection of feedback on existing TR16234-2 and TR16234-3 usage and improvement opportunities and current EN16234-1 use in practice												
2.1. on-line survey												
2.2. EN 16234-1, TR 16234-2 and TR 16234-3 e-CF user experience/ best practice workshop												
2.3. selected phone interviews with experienced EN 16234-1 e-CF users (10 in total)												
Task 3: Systematic evaluation of information collected and input received												
3.1. Structuring and evaluating of the EN 16234-1 user experiences and TR feedback received												
3.2. Make structured propositions on the forthcoming update of TR16234-2 and 16234-3												
Task 4: Editing TR 16234-2 and 16234-3 draft revision												
4.1. Editing the first drafts of TR 16234-2 and -3 revision												
4.2. Feedback gathering from TC 428 / CEN National Members and ICT multi-stakeholder community and evaluation												
4.3. Evaluation of feedback received - editing the second draft												
4.4. Feedback gathering from TC 428 and ICT multi-stakeholder community incl. multi-stakeholder final feedback workshop											C D	

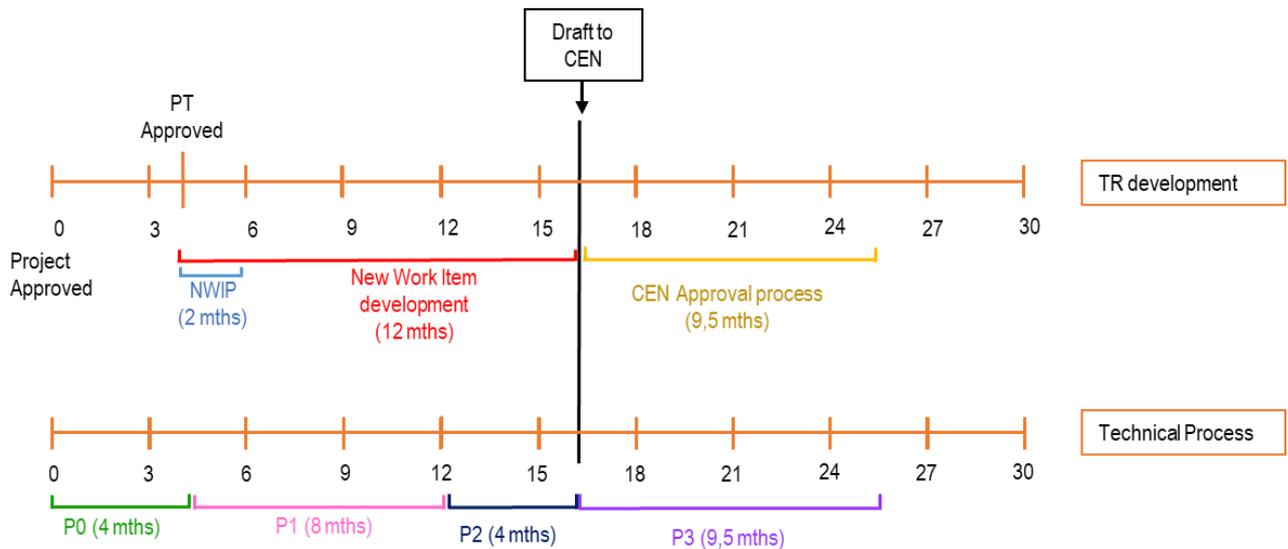


Figure 4 - Gantt Diagram for the activity of the project Team

6.4 Deliverables

1) Interim report

A Technical progress report with an update of the status of the work item (EN 16234-1) will be provided to the European Commission and to CCMC 18 months after the signature of the contract. The report will include the statistical results from the on-line survey as an Annex.

The Interim report will contain:

- a) Draft TR 16234-2,-3,-4 (The proposed text for the revised TR 16234-2 and -3 and new TR 16234-4, which will be submitted to CEN/TC 428 for approval.)
- b) Two external workshops documentation (Documentation on the organization and results of the two workshops described above for input collection and validation of the suggested content to TR 16234-2,-3,-4.)

2) Final Report

A final technical and administrative report containing the TR 16234-2,-3,-4 technical reports will be provided to the European Commission and to CCMC 28 months after the signature of the contract.

The final report will contain an overview of the work performed from the beginning of the action to the date this final report is produced, working methods, technical approach, achievements, and the assessment of the indicators against the given benchmarks. In addition and where applicable, the principles for awarding other types of contracts (catering etc.) will be mentioned in the final report. Moreover, the Final Report will contain in annex the published CEN/TR.



7. Execution of the different tasks - Structure and Resource Requirements

7.0 Organisation & relationship

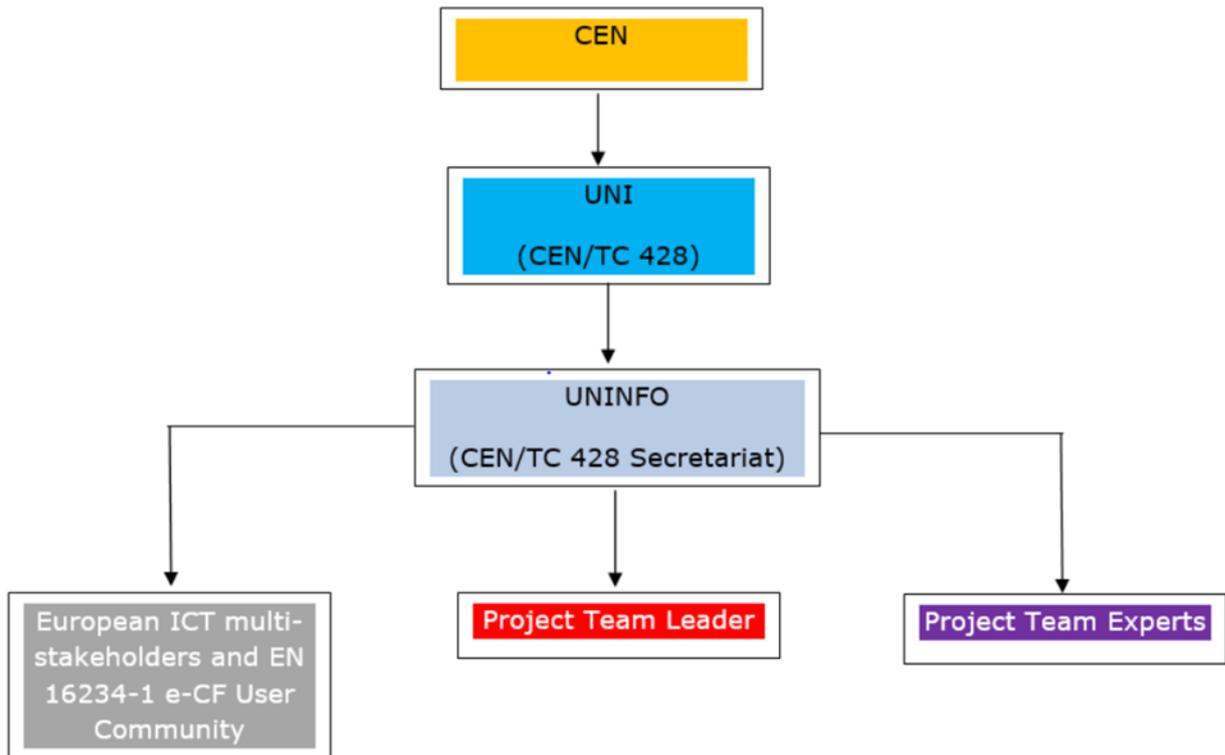


Figure 5: Structure and Resources

The Project will be carried out by multilevel work under the ultimate technical responsibility of CEN/TC 428 and incorporating stakeholders and experts across Europe.

The structure will be composed as follows:

- UNINFO who has the overall responsibility of the Project and operates through a
 - Project Manager and a
 - Project Secretariat.
- UNINFO appoints the Project Manager and the Project Team. The Project Team, led by a Project Team Leader, reports to UNINFO and CEN/TC 428 regularly on the project status.
- CEN/TC 428 has the overall responsibility of final EN 16234-1 update decisions and ensures the quality of the results produced by the Expert Project Team.
- The CEN/TC 428 secretariat will facilitate the communication between the project team and the CEN/TC 428 members and the decision making process in view of adoption of the new technical reports.
- The CEN/TC 428 has the responsibility to find consensus on the draft and closely work with the Project team to finalize the drafting process in line with the CEN rules.
- The Project Team carries out the technical work.



The Project Team will be composed of a project team leader and experts supplying subcontracted work, working part time on the action. Administrative support will be provided by UNI/UNINFO. A large part of Phase 1 and 2 will be subcontracted, structured participation of the Project Team is expected for Phase 3, and the PT Leader should be ready to provide technical support on demand, in particular regarding test and evaluation of the revision of CEN/TR 16234-x.

PT will work mostly in remote. Three face to face meetings are forecasted for the kick-off, for the proposal finalization, and when required.

The Project Manager and the PT Leader will take part in the CEN/TC 428 meetings which will take place during the Project.

The action will be carried out in strict liaison with CEN/TC 428, the secretariat of which is held by UNINFO (UNI). The NBS which are CEN/TC 428 members will be the preferred and formal channel of communications. UNINFO (UNI) has volunteered for this role.

Crossed participation of experts and back to back meetings are informal channels of communications between the proposed Project and CEN/TC 428; for this reason CEN/TC 428 experts are by default invited to participate and contribute as individual stakeholders to the activity of the Project.

Phase 3 will directly feed into CEN/TC 428 which will process this input as a work item.

The work plan of the Project Team will be aligned with the standardization process in CEN. The Project Team will coordinate the time schedule with the timing of CEN/TC 428 and provide deliverables in due time before their meetings. The work plan of the Project Team will give room for the given commenting and voting process within CEN/TC 428.

Regular status reports will be provided to CEN/TC 428 for information and seeking assistance on issues where required. The Project Team will consider and take due account of inputs from the members of CEN/TC 428.

The European Commission will be updated on the action progress through two reports (Project interim and Project final report) and its representative in CEN/TC 428.

7.1 Staff member

UNINFO, subcontractor of UNI, carries out all the activities for ICT standards development which fall into the remit of UNI. UNINFO, on behalf of UNI, will assure the overall project coordination during the project life; therefore, UNI staff will only manage UNINFO liaison and financial justification.

7.2 Travel costs (only Affiliated entities staff member)

N/A

7.3 Equipment necessary to implement the action

N/A

7.4 Cost of consumables and supplies necessary to implement the action

N/A

7.5 Other costs and services necessary to implement the action

In accordance with the Article II.19.2 (e) and II.23 of the Framework Partnership 2014, 1 audit will be required to be provided to EC.



7.6 Subcontracting to external organizations

UNINFO

From the functional point of view, UNINFO's activities are described in the next sections.

From the point of view of cost budgeting and reporting, UNINFO's costs are listed as entries in the subcontracting section, while UNI's are listed in the section relative to affiliated organizations. UNI's and UNINFO's daily rates are the same, and both equal to the rates agreed between EC and CEN.

UNINFO will manage the Action as follows:

- General Project management,
- Organization of the selection of experts,
- Maintaining contracts with experts,
- Support to the Project Team in providing access to published standards and other documentation,
- Accommodation of the consensus trajectory - gathering comments from the wider CEN membership on the Enquiry draft, and
- Support in the editing of the final deliverable.

Role of UNINFO: Secretariat of CEN/TC 428 and secretariat of Project Team:

- Management of the CEN/TC 428 secretariat;
- Organization of the meetings of both CEN/TC 428 and Project Team (e.g. ensuring that tasks have been fulfilled, preparation of the agenda, preliminary consultation with the chairman/convenor, participation in meetings);
- Drafting of CEN meeting reports;
- Follow up on decisions and to act as contact point for receiving and distributing viewpoints and documents;
- Drafting and circulation of CEN/TC 428 and PT documents;
- Coaching and assisting the Project leader in order to maintain the time schedule of the Project;
- Carrying out a call for tender in order to select the required subcontractors;
- Contracts with subcontractors;
- Coordination of the work of the different subcontractors;
- Ensuring accordance with the CEN rules for the preparation of European Standards (e.g. in accordance with the structure and drafting of CEN publications, CEN template);
- Resolving any non-technical comments on the draft standards given during CEN Enquiry or otherwise (e.g. editorial, structural);
- Give assistance, advice and guidance on standardization procedures and processes to all involved parties (subcontractors, experts, members, convenors, etc.);
- Coordination and management of procedures, e.g. enquiry, FV and resolutions;
- Approaching any other stakeholders for involvement in the Project;
- Management of the interim and final technical report to the EC on the activities;
- Any other occurring tasks emerging from the work under contract.



Project Team

Subcontracting deals with the bulk of the envisaged technical work. The experts' selection procedure will be handled in compliance with the FPA 2014 requirements.

The professional profiles subject of subcontracting are the Project Team. The required capabilities are specified in qualitative and quantitative terms and spelled out in terms of competencies.

To employ such specialized experts by a CEN member would be expensive and not economically viable considering the very specific area of specialization that is required for the execution of this contract. To engage the services of the appropriate specialist experts from the market is more cost-effective. This sub-contracting also enables the quick availability of the drafts to enter the consensus building and validation processes, which are CEN's core business.

The management and administration of the consensus building and validation process with the aim to publish the end results as a standards deliverable is the responsibility of the CEN National Body.

CEN has a standard methodology to select specialized experts which are called Project Teams. Project Team experts are selected by a selection panel from the applications received as a result **of an open Call for Experts. The open call refers to the expertise required for being eligible for participation in the Project Team. Experts are eligible to apply. A balanced composition of the different stakeholders (e.g. in terms of expertise) is preferred.**

The development of high quality and up-to-date user guidance, methodology documentation and case studies on how to apply EN 16234-1 (European e- Competence Framework) in multiple environments (which means for different types of organisations influencing and influenced by ICT Professionalism of all sizes including SMEs) and on how the standard was developed and revised requires independent and high quality expert work, backed by sound technical and methodology knowledge and awareness, together with EN 16234-1 standard development and application experience.

Continued input and feedback from CEN/TC 428 with its extensive expert community of ICT services, ICT user and ICT supply organisations, ICT professional associations, universities, ICT education and training providers will be of maximum relevance to the project. The role of the funded experts will be to gather, structure and consider all input received, and to process and document it together with e-CF standard underpinning framework basic principles in a way that allows pragmatic and concise presentation of initially complex content in a user- friendly, well understandable and methodology well-grounded final document.

For CEN/TR 16234-2 revision, in-depth knowledge of framework usage possibilities and application experience from a broad variety of stakeholder perspectives is required.

For CEN/TR 16234-3 revision, in-depth methodology expertise on how the standard was constructed and maintained is required.

For CEN/TR 16234-4 new development, in-depth understanding of beneficial use of the standard in multiple specific situations is required.

The work will take place in a complex environment where multiple needs and interests from the CEN membership and the EU ICT Professional expert community need to be perceived and addressed in a well-grounded and well balanced way. Specific efforts will be made to capture ICT skills and professional competence management needs of SMEs which are the main driver for digital innovation in Europe.

Furthermore the project requires an efficient project management over all stages of the project, ensuring effective internal team cooperation, EN 16234-1 user needs driven leadership in the overall TR



document development, continued exchange and interaction with CEN/TC 428 and secretariat and ICT stakeholders EU-wide.

Absence of funding will prevent development of the deliverables. Ignorance of standardisation on these topics will prevent the Digital Single Market to become more efficient regarding the ICT Profession.

The expert team will systematically gather, structure and consider all input from stakeholders that is relevant to create three market-relevant, up-to-date designed and user friendly presented EN 16234-1 supporting technical reports, complement this input collection by active investigation and process all information collected in close interaction with the CEN/TC 428 and ICT Professional community in a way that allows pragmatic and concise presentation of initially complex content in three user-friendly, well understandable and methodologically well-grounded final documents, supporting EN 16234-1 implementation from multiple perspectives and the best possible way.

For these Project Teams, the selection panel will, in accordance with the existing rules for the selection of Project Team experts, select experts from the applications received. The selection committee will be composed of:

- A representative of CEN/TC 428 (i.e. Chairman or Vice Chairman).
- A representative of UNINFO.
- A representative from the CEN CENELEC Management Centre.

For the Project Team in relation to this Action, experts should have specific expertise and knowledge, which will be the main criterion for their selection and which is described in detail below. The selection report shall be prepared by UNINFO and submitted to CCMC. The Project Team shall consist of six members including one Project Team Leader. The selection report mentioning the principles followed to select these experts will be provided to EC for approval as soon as the selection process is completed.

1 project team leader in charge of team coordination, CEN/TC 428 interaction, stakeholder management including coordination of stakeholder-driven input and feedback on work in progress collection, project reporting and TR co-editing and final delivery responsibility

To ensure successful project performance the Project Team Leader should provide a proven track report making evidence of expertise and experience in the following areas:

- ICT and HR project and project team management on international level
- Intimate knowledge of the work of TC 428 and related conceptual developments, in particular EN 16234-1 currently under revision, ensuring maximum consistency between the new EN 16234-1 revised version and the EN supporting Technical Reports to be revised/ new developed by the project
- In-depth understanding of and practical experience with EN 16234-1 implementation opportunities from multiple stakeholder perspectives
- ICT professionalism conceptual developments in EU multi-stakeholder environment and standardization context
- Stakeholder management incl. workshops chairing
- Several years of expertise in drafting standards at national/European level.
- Expertise in the field of European and international standardization, in particular in the field of ICT professionalism and digital competences.
- Experience with implementing standards in short and long-term perspectives
- Intimate knowledge of the work of JTC1, of the national bodies and consortia allowing easy communications with these bodies



- The tasks of the PT Leader include:
 - Distributes, coordinates and integrates the work of the other experts
 - Responsible for preparing, coordinating and delivering the report deliverables
 - Acts as co-editor of the standard, i.e. support the other co-editing experts in the development of the standard (especially support in drafting and evaluation of comments)
 - Manages communications with liaison bodies (ISO/IEC JTC1/SC 27, SC 7) and with National Standardization bodies
 - Chairs the public workshops and meetings of the Project Team
 - Assesses and approves the final version of the PT deliverables
 - Acts as interface to the "parent" body CEN/TC 428 and with UNINFO
 - Interacts with the larger EN 16234-1 user community
 - Writes the progress reports including summary of the individual reports
 - Disseminates information on progress and results
 - Provide technical content to the preparation of the three workshops (technical and organisation).

4 project team experts in charge of analysing current relevant EN 16234-1 implementation and user experiences from multiple perspectives and TR 16234-2,-3 and -4 co-editing tasks –

1 x Industry/ HR Expert with

- a proven track record in the environment of ICT professionals/ HR planning and development at the workplace
- proven intimate EN 16234-1 e-CF knowledge
- extensive EN 16234-1 implementation work experience in ICT industry and HR departments environment, ideally of all sizes from SME to multinationals
- proven capability to present initially complex content in user-friendly and pragmatic format, in order to develop practical EN 16234-1 implementation guidance for multiple purposes especially to ICT business and industry stakeholders

1 x Qualification Expert with

- a proven track record in the environment of curricula design and qualifications offering to prepare and/ or further develop ICT professional careers
- proven intimate EN 16234-1 e-CF knowledge
- extensive EN 16234-1 implementation work experience in qualification environment and curricula design
- a broader vision ideally understanding and covering both, public and private environments of qualification provision (e.g. HE, VET, private certification) across all levels covered by the EN 16234-1
- proven capability to present initially complex content in user-friendly, pragmatic and sustainable format, in order to develop practical EN 16234-1 implementation guidance for multiple purposes to stakeholders coming from qualification environment

2 x EN 16234-1 conceptual and multi-stakeholder community envisioning Experts with

- proven track records and technical competence with long-standing experience in EN 12634-1 conceptual design and e-CF development, maintenance, and implementation
- intimate knowledge of EN 16234-1 as a neutral and multi-stakeholder agreed answer to multiple market perspectives and ICT business and qualification needs



- proven capability to appropriately document the EN 16234-1 underlying principles and overall methodology
- proven capability to exploit the EN 16234-1 usage potential from multiple perspectives

The regular tasks of the project expert include the following:

- Coordinates with the other experts
- Contributes to the report deliverables
- Takes part in the Project Team meetings to discuss results and next steps, to monitor progress and results in order to ensure agreed timeline
- Evaluates specifications and collects requirements
- Contributes to the two workshops (technical and organisation)
- Identifies and combines different individual specifications or existing pre-work for the definition of the complete EN
- Writes technical chapters of the EN

The management of editing function (assignment of the work coordination execution and approval) will be agreed among the Project team members under the responsibility of the PT leader.

A balanced composition of the above described standard EN16234 application perspectives by the experts selected is key for the Project success.

The Project Team members bear the travel costs for meetings attendance by themselves.



Organisation Workshops

Two workshops are planned during Project phase 1 and 2

1) A one-day workshop is planned in Month 7 with known e-CF users. Their feedback is essential and very valuable for the planned activity proposal to CEN/TC 428 and participation should not depend on their financial capacity to cover the travel costs. 10 participants being experienced users should be present in order to guarantee good and reliable results.

2) An open final workshop is planned in month 15 to collect feedback and further input from European ICT multi-stakeholders to the draft CEN/TR 16234-x prior to presenting the final draft from phase 3 to CEN/TC 428 for initiating and implementing the formal process.