

Terms of Reference for a Project Team on InLOC “InLOC ELM 2.0: Integrating Learning Outcomes and Competences”

1. Title of the project team to be established

InLOC “ELM 2.0: Integrating Learning Outcomes and Competences”

2. Subject and Scope

The objective of the project is to enable the description, management, and exchange of learning outcome and competence concepts and data.

The project will produce an information model and associated guidelines for capturing and exchanging concepts and data on personal achievements of knowledge, skills, and competences in alignment with European initiatives and frameworks including the European Qualifications Framework (EQF), Europass, and European Learner Mobility (ELM). The results of this project will contribute to efforts towards European portability of information on personal achievements and needs. The resulting specification will capture information on knowledge, skills, and competences that a person (a lifelong learner) has acquired through learning in schools, Higher Education, Vocational Education and Training or at workplace. In addition, emphasis will be put on information about the context where the learning outcomes are obtained or applied. Evidence records and levels (e.g. proficiency level) associated to the outcomes will also be considered in the specification.

The information model is expected to serve as a solid infrastructure for the increase of exchange and reuse of such rich data and to improve the interoperability among institutional learner information and learning management systems and services for recruitment, opportunity exploration and personal development (career planning, e-portfolios). For this objective, InLOC will benefit from the existing concepts and models of the e-portfolio, European skills passport and in particular sector-specific e-Competence Framework (e-CF) for the e-competences related to the ICT skills and sector.

3. Justification of a PT

Relying on voluntary contributions only would not be sufficient to deliver within the timeframe set. There is therefore a need for a funded Project Team.

4. Reference authority (Workshop in charge of the follow-up action)

CEN Workshop Learning Technologies.

5. General context/Background environment

The enhancement of learner mobility and employability undoubtedly remains a high priority action item within Europe. The European Union is now confronted with the challenge to accomplish the initiated shift to a competitive and knowledge-based economy in order to ensure growth and employment in the long term, taking into account job market demand for new skills and competences. The achievement of this ambitious goal has been linked to a fundamental transformation of learning, education, and training, from an input-based to an outcome-based paradigm throughout Europe.

This project addresses domain 7 “eSkills and eLearning” of the European Commission DG Enterprise’s ICT standardization work-programme (1st update).

eLearning is also a key area in the Digital Agenda. Key Action 11 foresees that by 2012, the European Commission will develop tools to identify and recognize the competences of ICT practitioners and users, linked to the European Qualifications Framework and Europass and develop a European

Framework for ICT Professionalism to increase the competencies and the mobility of ICT practitioners across Europe.

In particular the InLOC proposal supports the following European policies and strategies:

- COM(2007) 496: "e-Skills in the 21st Century: Fostering Competitiveness, Growth and Jobs" followed by Competitiveness Council Conclusions of 23 November 2007 on a long-term e-skills strategy;
- COM(2005) 229: "European i2010 strategy for information society and media of 1 June 2005";
- SEC(2008) 2629: "The use of ICT to support innovation and lifelong learning for all - A report on progress" of 9 October 2008";
- COM(2008) 865: "An updated strategic framework for European cooperation in education and training";
- Stockholm Programme 2010-2014 – an open and secure Europe serving and protecting citizens - (Council doc: CO EUR-PREP3 JAI 896 POLGEN 229 of 2.12.2009) setting ambitious targets for training for the judiciary and legal practitioners as well as police, customs officers and border guards.

This project focuses on the development of conceptual and technical frameworks for learning outcomes, skills and competences in order to enable more transparent and comparable descriptions: of lifelong learners' achievements and goals; of learning, training and employment opportunities; of recruitment needs. It will contribute to making definitions of learning outcomes and competences reusable and accessible across learning and recruitment systems, thus facilitating the development of valuable services such as the linking of learning opportunities and units of learning-to-learning outcomes, the generation of personal profiles of achieved learning outcomes and competences. In essence, the outcomes of this effort will facilitate the actual building of effective pathways between learning and employment through technology based solutions and services.

This goal is fully aligned with the European Union activities and initiatives set up for the transformation of European education and mobility into a 'world quality reference'. These activities have resulted in consolidated frameworks and instruments (EQF, ECTS, ECVET and Europass), which need to be supported by interoperable technological systems and services in order to achieve their full potential. The development of this standard therefore contributes to the implementation of the Commission's policy.

This project grows out of the accumulated experience and expertise of the CEN Learning Technologies Workshop (CEN WS-LT). The most relevant work from this Workshop includes:

- CWA 15903, MLO (currently prEN 15982);
- CWA 16131, Europass Diploma Supplement Application Profile of the EuroLMAI;
- CWA 16132, European Learner Mobility Achievement Information (EuroLMAI) (currently prEN 15981);
- CWA 16133, Guidelines on a European Learner Mobility model;
- CWA 16078, Curriculum Exchange Format (CEF).

It is also vital for harmonisation to coordinate the work with that of the CEN ICT Skills Workshop, and in particular its work on:

- CWA 15893, the European e-Competence Framework (e-CF);
- CWA 16053, Interoperability of European e-Career Services.

Existing related work on related frameworks, specifications and standards, that follows the Bologna and Copenhagen processes, will also be taken into consideration. This includes:

- European Credit Transfer and Accumulation System (ECTS), for the understanding and recognition of qualifications across Europe, and to express students' workload and facilitate recognition of studies in HE;
- European Credit system for Vocational Education and Training (ECVET), for the recognition of vocational education and training experiences;
- European Qualifications Framework (EQF), for making qualifications and learning outcomes more readable;
- European Taxonomy of Skills, Competencies, and Occupations (ESCO), initiated by DG

Table 1: Timetable and Milestones

A:	Project Team established
B:	R0.1 InLOC Progress Report produced
C1:	R0.2 InLOC Progress Report produced
C2:	R1.1 ELM Information Model for LOC produced
D1:	R2.1 Guidelines for Integration of LOC into existing ELM specs produced
D2:	Interim Report produced
E:	R0.3 InLOC Progress Report produced
F1:	R0.4 InLOC Progress Report produced
F2:	R1.n ELM Information Model for LOC produced
G1:	R3.1 ELM Application Profiles (AP) for Europass CV and the CS produced R4.1 Technical Bindings for ELM Europass AP specs" First Draft produced
G2:	R2.n Guidelines for Integration of LOC into existing ELM specs produced
H1:	R0.5 InLOC Progress Report produced
H2:	R3.n ELM Application Profiles (AP) for Europass CV and the CS produced R4.n Technical Bindings for ELM Europass AP specs produced
I:	Final Report submitted

Table 2: Milestones and associated Results

Task ID	Activity	Man-days
T1	Launch of project and establishment of the project team	10
T2	Project start-up, collaboration and progress reporting Contact with participants will be via an online collaborative space managed by the project team. There will be regular reports made to the WSLT and presentations at each of the meetings.	20
T3	Documenting existing approaches Information about existing standardization activities and approaches around learning outcomes and competences will be assembled. This activity will build on existing specifications like IEEE RCD, IMS RDCEO, ISO SC36 Competence Framework, HR-XML and CEN Curriculum Exchange Format (CEF). European projects like ICOPER, WACOM and eCOTOOL, will contribute related use case scenarios and prototypes for diverse stakeholders. In this task also, an analysis of the existing approaches to the understanding, representation and use of learning outcomes and competences will be undertaken with particular focus on: <ul style="list-style-type: none">• the elicitation of requirements through the study of related activities across the diverse identified practice.• the expression of a common conceptual model for describing learning outcomes and competences in terms of EU lifelong learner and employability informational tools as well as of required technical interoperability standards• the outline of priorities in future standardization activities• the description of concrete business use cases and learning outcomes and competences services• the development of an informational specification for Learning Outcomes and Competences A central focus of this task will be the comparison of relevant existing standardisation work with European policies and instruments such as Ploteus, Europass, European skills passport, ESCO etc., thus paving the way for progressive use of standard information models across Europe. The results of this task, including the common conceptual model, will be presented to the Workshop for discussion and feedback as shown in the timeline below, and published or otherwise made openly available at a later date. In the event that these results reveal any irreconcilable differences in practice or its conceptualisation that jeopardise effective standardization, the team will consult the WS-LT to achieve consensus of the best way of proceeding, and together propose reasonable and proportionate variations in the specification of the deliverables.	40
T4	Initial Drafts documents for comments A draft version of the CWA specification "ELM Information Model for Learning Outcomes and Competences"; A draft version of the CWA specification "Guidelines for the Integration of Learning Outcomes and Competences into existing ELM specifications" These drafts will be revised taken into accounts comments received by the WS/LT members.	50
T5	Interim Report An interim report to EC/EFTA will be produced by month 10, presenting progress (including the first drafts for R1 and R2 agreed by the Workshop for submission to the EC as part of the interim report) and remaining issues.	10
T6	Draft CWAs for internal comments R3: A draft version of the CWA specification "ELM Application Profiles for Europass Curriculum Vitae and the Certificate Supplement"; R4: A draft version of the Report on "Technical Bindings for the ELM Europass Application Profile specifications"	20
T7	Final draft CWAs for public comments They made available for a 60 days public commenting process on the CEN web site.	50
T8	Final text CWAs and report Finalization of text with comments received during public comment period. Endorsement by Workshop members. In case of consensus not being possible, the final draft(s), accompanied with a report explaining the reasons for sustained objections by certain stakeholders.	20
T9	Dissemination and exploitation/validation The InLOC outcomes will be presented broadly to education and training stakeholders, including the EC DGs, and transferred into reference implementations.	40

Total man-days: 260

7. Manpower (in man-days or man-months)

See Clause 6 for an estimation of resources distributed across the project progression.

The Project Team will have a total budget of 260 person days, to be allocated over maximum 7 paid experts (1 PT leader appointed among the selected experts and up to 6 PT members). The travels to Workshop meetings as well as to Project Team meetings are not reimbursed.

8. Characteristics of the expertise required and criteria for selection of candidates

For the Project Team in relation to this Grant, all experts (including the team leader) should have specific and complementary expertise, knowledge and competences, so that the team as a whole is competent at all the required tasks. This will be the main criterion for their selection and which is described in detail below:

A balanced composition of the different stakeholders (balanced in terms of background, representation, nationality if applicable) is preferred.

For this PT, the selection panel will, in accordance with the existing rules for the selection for the selection of Project Team experts, consist of the Chair (and Vice-chair(s)s) of the Workshop, the Workshop's Secretary and a CCMC staff member as the representative of the CCMC Director General.

In addition, the Project Team will be supported by a group of unpaid experts from different stakeholder communities, representing the industry and enterprises as well as stakeholders responsible for the learning, education, and training, the human resources development and their standards and mobility.

The PT leader should be able to:

- Manage the collaboration of, and coordinate, the team as a whole, including both paid and unpaid members
- Supervise, edit and where necessary author all the deliverables

The PT members as a whole (including the team leader) should have expertise covering all the Workplan tasks listed in Clause 6. Involving the following areas of competence, the PT members should be able to:

- Analyse concrete business use cases around learning outcomes and competences services
- Identify requirements of learning outcomes and competences and its application in learning and mobility
- Analyse existing standards in relevant domains
- Compare and draw conclusions of analysis results
- Write reports understandable by other PT members and stakeholders
- Communicate work outcomes within the education domain
- Identify components and associate properties of learning outcomes and competences
- Develop conceptual information models
- Build on, integrate and advance work done in existing relevant standards
- Communicate work outcomes within the employability sector
- Design specifications that can be integrated into existing standards
- Write base documents of information models
- Communicate with stakeholders from different sectors and standards
- Design application profiles of standards
- Communicate with stakeholders from different sectors and standards
- Develop technical bindings of standards

PT members should collectively have and be able to share expertise and experience appropriately during the tasks and for the production of the deliverables, around the following policies, related standardisation efforts and technologies:

- European Learner Mobility
- Europass framework
- Current approaches to the design of specifications and standards
- RDF and OWL
- XML and ATOM

The division of the actual work will be decided between the PT members in consensus, and will not be constrained by the task set descriptions here below:

Expert 1 (focus on the overall coordination) - Project Leader

A Project Team leader who has in-depth knowledge on the topic of this proposed work item and can demonstrate experience and expertise in the coordination of the development of standards and specifications for learning

Tasks:

- Guide the review and analysis of existing learning outcomes and competences standards, specifications and their use
- Draft and finalise CWA reports
- Coordinate tasks within the Project Team

Expert 2 - Conceptual expert (CEN WS-LT and TC 353)

Tasks:

- Review and analyse existing European learning outcomes and competences standards, specifications and their use (general knowledge and in-depth expertise)
- Provide input and support development of an information model for learning outcomes and competences (in-depth experiences and expertise in CEN WS-LT and TC 353)

Expert 3 - Conceptual expert (CEN WS-LT and TC 353)

Tasks:

- Building on the review and analysis of requirements and standards, develop an information model for learning outcomes and competences
- Draft (together with PT Leader) the CWA “ELM Information Model for Learning Outcomes and Competences” (in-depth experiences and expertise in CEN WS-LT and TC 353)

Expert 4 - Conceptual expert (CEN CWA ELM)

Tasks:

- Develop guidelines for the integration of learning outcomes and competencies into existing ELM and other relevant specifications
- Provide input to the development of an information model for learning outcomes and competences
- Draft (together with PT Leader) “Guidelines for the Integration of Learning Outcomes and Competences into existing ELM specifications”

Expert 5 - Conceptual expert (CEN CWA ELM and Europass)

Tasks:

- Develop application profiles for Europass relevant specifications
- Provide input to the development of an information model for learning outcomes and competences
- Draft (together with PT Leader) the CWA “ELM Application Profiles for Europass Curriculum Vitae and the Certificate Supplement”.

Expert 6 - Technical expert (CEN CWA ELM and Europass)

Tasks:

- Develop ontology-based bindings for developed information models and applications profiles
- Write relevant part of “Technical Bindings for the ELM Europass Application Profile specifications”, XML and ATOM binding

Expert 7 - Technical expert (CEN CWA ELM)

Tasks:

- Develop technical bindings for developed information models and application profiles

- Write relevant part of “Technical Bindings for the ELM Europass Application Profile specifications”, OWL and RDF binding.

The candidates must provide a CV, that underlines the possession of relevant expertise.

Candidate experts have to describe in their offer the expertise that they will bring to the Project Team.

9. Expected deliverables

The project will produce the following deliverables:

Interim report (M + 10)

The interim report to be produced in month 10 will contain the following results:

- A draft version of the CWA specification “ELM Information Model for Learning Outcomes and Competences”.
- A draft version of the CWA specification “Guidelines for the Integration of Learning Outcomes and Competences into existing ELM specifications”.
- Notification of any issues arising about the work to be completed.

Final report (M + 20)

The final report to be produced in month 20 will contain the following results:

- The final text of the CWA “ELM Information Model for Learning Outcomes and Competences”: this specification consists of an information model for the representation and exchange of learning outcome and competence concepts and data. This activity will build upon the results and experiences of the CEN specifications ELM and MLO (both published as CWAs), IMS RDCEO, IEEE RCD, the HR-XML Competence Framework and CEN CEF.
- The final text of the CWA “Guidelines for the Integration of Learning Outcomes and Competences into existing ELM specifications”: this specification provides guidelines for the integration and linkage of outcome, skills, and competence related concepts and data into the existing MLO, EuroLMAI and the EuroLMAI Diploma Supplement (DS) Application Profile.
- The final text of the CWA “ELM Application Profiles for Europass Curriculum Vitae and the Certificate Supplement”: this specification contains application profiles for two competence-oriented Europass documents, namely the Europass Curriculum Vitae (CV) and the Europass Certificate Supplement (CS). For this task existing structures published by CEDEFOP and other bodies (e.g. EIfEL) will be taken into consideration.
- The final text of the Report on “Technical Bindings for the ELM Europass Application Profile specifications”: this report comprises a collection of technical bindings that will be proposed /submitted by implementation communities with regard to the existing and resulting Europass-related Application Profile specifications, namely the EuroLMAI DS, CV and CS, in all suitable formats (e.g. XML, ATOM and RDF binding).

Communication event

A dissemination event as an Open conference at the end of the project during month 18-20.