

PROJECT PERIODIC REPORT

Grant Agreement number: SI2.488704 (ECOKT2016-1)

Project acronym: COMPLEAP

Project title: Learner-centred digital ecosystem of competence development

Funding Scheme: Preparatory Action – Open Knowledge Technologies: Mapping and validating knowledge

Date of latest version of Annex I against which the assessment will be made:

November 16th 2017

Periodic report: 1st 2nd 3rd 4th

Period covered: from December 1st 2017 to November 30th 2018

Name, title and organisation of the scientific representative of the project's coordinator¹:

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Project website² address: www.compleap.eu

¹ Usually the contact person of the coordinator as specified in the Grant Agreement.

² The home page of the website should contain the generic European flag

Declaration by the project coordinator

I, as co-ordinator of this project and in line with my obligations as stated in Article II.2.3 of the Grant Agreement declare that:

- The attached periodic report represents an accurate description of the work carried out in this project for this reporting period;
- The project (tick as appropriate):
 - has fully achieved its objectives and technical goals for the period;
 - has achieved most of its objectives and technical goals for the period with relatively minor deviations³;
 - has failed to achieve critical objectives and/or is not at all on schedule.
- The public Website is up to date, if applicable.
- To my best knowledge, the financial statements which are being submitted as part of this report are in line with the actual work carried out and are consistent with the report on the resources used for the project and if applicable with the certificate on financial statement.
- All beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs, have declared to have verified their legal status. Any changes have been reported under section Project Management in accordance with the Grant Agreement.

³ If either of these boxes is ticked, the report should reflect these and any remedial actions taken.

Name of Coordinator: Stina Westman

Date: 17/1/2019

Signature of Coordinator:

1. Core of the report for the period: Project objectives, work progress and achievements, project management

1. Project objectives for the period

In the Grant Agreement Annex I, the project objectives have been set for the whole two-year period of CompLeap project (Annex I p.3-4). Since no separate project objectives for the reporting period in question, December 1st 2017- November 30th 2018, have been identified, all general project objectives are discussed in this midterm report. Information on the progress of each of them is given in the text. Further details concerning the objectives can also be found in the deliverables table (Chapter 2) which most accurately shows how the project is progressing towards its objectives.

The main objectives as stated in the Annex I:

The main objectives of the project:

The project aims to build **a learner-centred ecosystem of digital services and products** around skills and competences to better match competence supply and labour market needs, serving individual citizens, employers, decision-makers and, ultimately, the society at large. More specifically, the project aims to empower the citizen to take ownership of their competence development by offering them an opportunity to plan their own learner pathway based on enhanced self-awareness, improved recognition practices and responsive education offer. Furthermore, the competence formation will be based on national competence requirements reflecting the needs of the labour market.

During the first year of the CompLeap project, major effort to achieve its main objectives has been put to framework architecture design work (see WP2: Framework architecture design). The premise of this work has been to build learner-centred ecosystem framework which gathers existing digital services that are available for individuals/citizens to use when developing one's skills and competences on a lifelong scope. Special emphasis has been put to make sure that this architecture work would be learner-centred since quite often, because of organisational or other administrative reasons, such enterprise architecture work is not learner-centred— instead it is often centred in institutional roles and foci.

As a part of visualizing the digital ecosystem available for learners, also possible digital services still lacking have been identified. The new service prototypes to be developed in the CompLeap project are examples of new kind of digital services that would make the existing digital ecosystem better for learners (See WP3 prototype development). Framework architecture work has been conducted in a holistic way with the idea to cross the administrative borders. This kind of holistic framework is still missing in many EU countries and at EU level so it could be very useful when developing new digital services to better match competence supply and labour market needs especially when collaboration across administrative borders is needed: education and employment services etc.

CompLeap service prototypes (See WP3) are designed basically for any EU citizen. This way the project is serving individual citizens, employers, decision-makers and, ultimately, the society at large. These different actors have been identified as a part of framework architecture modelling. The project has also paid special attention to building a wide stakeholder network (See Eduuni wiki WP5 - stakeholders) to serve society at large.

The service prototypes (See WP3) - like the personal digital competence profile - developed in the CompLeap project would empower the citizen to take ownership of their competence development by offering them an opportunity to plan their own learner pathway based on enhanced self-awareness, improved recognition practices and responsive education offer as has been stated in the Grant Agreement. One example of an improved recognition practices would be a possibility to link one's open badges to such digital competence profile that is to support individuals lifelong learning.

Some challenges have also occurred. Since the competence formation should be based on national competence requirements reflecting the needs of the labour market, and there is a variation in the national competence requirements (if there even exists such in all EU countries) it is challenging to develop automatically portable EU services that could be taken use in any EU country since there are different ways of defining the skills and competences for example. To mitigate this, the project is using the existing EU level ontologies (e.g. ESCO) whenever possible and will evaluate and support portability through piloting.

The specific objectives as stated in the Annex I are:

Specific objectives:

This general objective can be broken down to four more specific objectives that would together achieve the overall goal of the project as follows:

1. To study and develop an integrated and holistic learner-centred digitalised ecosystem framework that will look beyond existing, often siloed, structures
2. To tailor the functionality of this framework so that it is suitable across Europe
3. To technologically build prototypes of this ecosystem
4. To deploy the developed ecosystem through networks

Under **the first** objective, the project will develop the conceptual framework to support the creation, evolution and implementation of a so called structured, digitalised learner pathway integrating personal competence development plan, education offer, labour market needs and competence intelligence together. The digital learner pathway aims to provide comprehensive yet tailored support to all learners while particularly addressing the needs of citizens at risk of exclusion. To support **the second** objective, the system will be developed in cooperation with international partners / networks. The technological solution will be open source, modular and easily adaptable to different geographic locations and circumstances. The interested parties may choose to implement the ecosystem as a whole or only parts of it depending on their needs and already existing infrastructure. **The third**

objective aims to build prototypes of the modules of the ecosystem to test the technical feasibility and architectural principles. The **fourth objective** will aim to support the deployment of the ecosystem through various professional networks and impact evaluation study.

The main emphasis in the first year of the CompLeap project has been in planning the requirements for the prototypes and in framework architecture design. At this point in time, the first objective has progressed quite well. The main objective during the second project year will be to refine the architecture, after getting feedback from different stakeholders as a part of piloting and testing (See WP4).

The CompLeap framework model looks beyond the existing siloed structures. In Finland such a framework has already helped the collaboration between different sectors in a society. Since the framework is generic and is done for EU-level purposes it really could help when developing such issues both in EU and national levels and contexts. This kind of holistic and lifelong view on digital services is especially important when talking about citizens at risk of exclusion (like in CompLeap project NEET's and migrants) but the model can support basically any lifelong learner in their upskilling and re-skilling.

With the second objective the project has so far mostly concentrated on the existing project partner/associated partner countries Finland, Netherlands and Germany and existing EU-wide networks like Europass, Euroguidance, Cedefop etc. (See international stakeholders). Since most of the partners are coming from Finland, it is clear that the most active and closest stakeholder collaboration has started in Finland. Developing the service prototypes for EU wide use in Finland should work as an example for implementing the framework and the new service prototypes developed in CompLeap project in any EU nation.

Technical solutions are now under construction (See WP3) and they will be open source and modular. There is some variation in the national infrastructures, which means the services and solutions will have to be brought into each national context before other EU countries are able to adapt the service. However, as mentioned in Annex I it's up to the other EU countries and their existing infrastructures to decide which part of the learner pathway they might be willing to implement.

The third objective, developing new service prototypes, is on-going at the moment and as a result, the CompLeap project will deliver prototypes that will be tested with the different stakeholders and end-users during year 2019 (See piloting plan and WP4)

The fourth objective, the deployment, will take place during the second project year when the products are ready for deployment. Already now the project has contacted several existing networks and built contacts that will later be used when disseminating the project results.

Please include a summary of the recommendations from the previous reviews (if any) and indicate how these have been taken into account.

No previous reviews taken place so far so therefore no recommendations have been received.

2. Work progress and achievements during the period

WP2: Requirements and architecture design

A summary of progress towards objectives and details for each task;

The work in WP 2 has focused on developing the ecosystem and the modules. Planning has followed three interlinked tracks, which entail:

1. developing the ecosystem architecture framework
2. developing the electronic personal learner plan
3. developing personalization and visualization through analytics

The work has been led by the Finnish National Agency for Education (EDUFI).

As such, WP2 has been responsible for innovating and designing the ecosystem and its modules. The first year has focused on studying and defining the requirements for building the digital service ecosystem, and interlinked modules, and especially on planning the contents and framework for the new service prototypes that support citizens in their competence development.

Task 1.1: Architecture and interoperability - developing the Ecosystem Architecture framework.

Developing the architecture framework for the service ecosystem has focused on a holistic view of the learners needs in competence development process. Architectural planning has incorporated the principles of standardization, interoperability and service-oriented architecture. We have worked to create and depict the conditions whereby the service framework operates in the Finnish context, and for sharing components and for better integrating developed system(s) across Europe.

The ecosystem architecture (Task force: TF-AI) devised in this WP is used as a reference throughout the project. The architecture design provides input to the tasks in WP2 as well as to WP3, WP4 and WP5.

Ecosystem framework has been visualized by using the QPR tool and the recommended architecture principles used in the Finnish public sector enterprise architecture. Experienced enterprise architects from project partners CSC and EDUFI have together led this process. Framework architecture design started already in the beginning of the project and has since then continued regularly.

A project team has convened every Monday morning for framework architecture meetings, where the models have been updated together. All framework architecture work is well documented in project wiki pages in Eduuni WP2 section.

The current new service prototype versions have been marked with green colour the framework architecture design (See Eduuni WP2 – framework architecture design) and Learner pathway

visualization. The modules are closely linked together. The main focus has been on modelling the learner pathway before the learner applies to education since there are distinct needs for new kinds of services at this point in the learner journey.

The CompLeap project has placed much attention on the learner-centred approach in the architecture design. This human-centred approach to personal data management and processing reflects strongly the Nordic Mydata concept that aims at strengthening digital human rights while opening new opportunities to develop innovative personal data-based services.

The next phase is to start testing the models with different stakeholders. During 2019, the project plans to do the framework architecture piloting (WP4) in partner countries and with other possible networks and stakeholders and further update the models as the feedback requires.

Task 1.2: Personal learner plan

Under this task, EDUFI has been planning and developing the personal digital services with tailored tools and information on opportunities relevant to support users in identifying and gaining competencies. In the first year of the project, this has meant planning of the concrete services whereby the learner will best be supported in their personal learner path. The planning has taken place with the help of the CompLeap reference groups and a wide array of stakeholders and potential users.

The personal learner plan includes several independent but interconnected modules, but is focused around the concept of having a lifelong competence profile which can always be updated with relevant new competencies and competence development needs.

The planning has started off from the existing service framework, with the target of looking which new services are most in need and also what kind of interconnections are still needed between existing services in the ecosystem.

The following key elements have been identified as crucial additional services for learners:

- a personal competence profile
- a personal learner path
- personalized learning opportunities based on usage data and personal profile

The aim is that the competence profile will be used for lifelong competence mapping and easy application to relevant study opportunities. The learner-centred MyData approach is especially visible in the new service prototypes that are right now under construction. For example, in a digital competence profile the basic idea would be that the individual him-/herself is controlling their own data instead of the organisation.

Also, the user needs and scenarios, and system requirements that will be exploited by the other WPs have been developed and defined as a part of WP2. To acquire information on relevant user needs and requirements, WP 2 has engaged stakeholders in the process. The reference group work was initiated by organising a kick-off seminar on April 9th in the Ministry of Education and Culture in

Finland. The April Stakeholder workshops resulted in the first iteration of user needs and service development requirements used in designing the first Mock-up prototype. These user needs were as follows:

- **NEED 1: To help learners identify, map and visualise current competencies**
The prototype enables the user to create content relating to their competences and collect data points / materials for AI analytics. The data mass will create visualised and verbalised content on the user's competences. The content can be added to the user's own competence profile.
- **NEED 2: To help users understand what competencies they need and wish to have**
The prototype enables users to map and collect content for a personal competence profile, which also provides intelligent input on potential competence development opportunities. The user can input their own interests and competencies and compare them to labour market needs with valuable feedback of further competence development needs.
- **NEED 3: Creating own competence profile (technical)**
The prototype enables users to sign into the service either with strong or weak authentication and create the basic profile. The profile information is updated through competence mapping.
- **NEED 4: Low threshold support and community**
The prototype enables users to share and discuss content.
- **NEED 5: Linkages and movement between different digital services e.g. labour market platforms**
The prototype includes an interface and approval management tool, which provides content for the use of different education providers. Own data from different relevant services can be transferred and shown in personal competence profile.
- **NEED 6: Providing the necessary data and transitions for the comparing of education opportunities**
The prototype provides information and data as input for comparing educational opportunities. The supply of education opportunities can be visualised into a map where specific competence needs are highlighted. The user can inform of interest to participate in training, or availability for moving in relation to competence needs.

During the course of 2018, these user needs have been prioritized, narrowed down and made more concrete. This has been done both with technical and reference group experts, as well as with users.

After the kick-off seminar, the interested stakeholders have engaged with the service development and planning in a total of six webinars and online and live workshops that have been organised during 2018. The CompLeap reference group has presented expert views on skills formation needs including also immigrants and refugees. The stakeholders' feedback has been crucial to guarantee the innovative and applicable nature of the service requirements.

The CompLeap project reference group consists of over 100 experts on guidance and digital services for learners. The project has held monthly webinars to validate prototype ideas and requirements, and to refine solutions. User testing has actively involved different user groups, but focused mainly on young adults. In addition, several reference group members have expressed their interest to participate in the development and testing and have provided useful feedback relating to their usage scenarios.

Task 1.3: Learning environments and analytics - exploring next generation digital learning environment to meet the changing needs of learning society, with focus on personalization; analytics, advising, and learning assessment; collaboration; and accessibility.

University of Oulu is leading the task force TF-LEA: Learning environments and analytics under WP2. The basic idea in this task force has been to seek solutions how to use different kind of data as an analytics data that could be shown to individual in a next generation learning environment like the personal, digital competence profile which is developed in WP3. The idea would be to use learning analytics to support the individual study and career choices before he/she is applying to some certain education as well as increase individual reflection of own skills, competences and interests, therefore increasing user's understanding of his/her present situation and future possibilities. User reflection and introspection would be triggered by visualizing individual competences as well as learner's path of individual study and career choices in an understandable and useful way. The individual recommendation of the study-choices will be done based on the data available in the individual profile. The aim of the education recommendation is to support individual reflection and choice-making, but not to provide future prediction.

Work by University of Oulu was done following the guidelines described in the scientific literature, specifically the development phases of the learning analytics development process (Martinez-Maldonado et al., 2015). The following phases and work tasks are described below.

1. Problem-identification: Recognition of needs for data and feedback and definition of the data.

The work has progressed first, to identify different sources of data that can be used in learning analytics. Data is foreseen to be included on competencies, interests and interaction with the educational opportunities module. The data may be register-based, learner-entered or log data-based.

2. Low-fidelity prototyping: Analysing the visualizations.

Second, workshops (specific to TF-LEA and to reference groups) have been organized (September 18th, October 31st 2018) to identify and explicate user requirements for learning analytics visualizations and functionalities for the prototype. Specification of user requirements for learning analytics functionalities has been started during the first reporting period and will be continued.

3. High-fidelity prototyping: Analysing the data and combining different datasets.

The use of register-based data from Finnish national registers will be examined to define the sources and procedures to enable showing the users information of their prior education.

4. Pilot studies

Visualizations to present users their educational background, self-entered interests and competencies will be designed and tested with user groups.

5. Classroom use: Optimization of the learning/educational process

The prototype testing by end-user piloting is foreseen to include some preliminary learning analytics functionalities.

6. Validation and Iterative design-deployment-evaluation

Based on piloting by groups of end-users, research-based evaluation will be carried out and reported following the piloting activities in the project.

In the second project year, next steps will involve the prioritization of the learning analytics functionalities and the evaluation of timeframe to implement the various identified learning analytics requirements into the first prototype. The prioritized learning analytics functionalities have to be well integrated with the whole services provided with CompLeap as well as tested and well-functioning within various user scenarios. To ensure learning analytics part is incorporated within the broader CompLeap services, several data models have been designed showing the data flow of learning analytics, learning analytics place in the CompLeap context as well as the benefit for the user from the individual perspective. Data visualization provided in CompLeap project may differ from traditional visualization provided by learning analytics in learning dashboards, as data used in the CompLeap project is only partly numerical (user interaction within the modules) and mostly of categorical nature (self-entered descriptions and choices) and requires clear but at the same time creative approach to designing the visualizations and feedback.

As CompLeap services as well as learning analytics functionalities deal with personal and sensitive information coming from various sources (Finnish databases and user-entered), high priority is placed and have to be placed on privacy and data security in the second part of the project. Ethical framework proposed by Sclater and Bay (2015) is followed. Privacy is ensured by restricting the access to user data. Strong authentication by a trusted service provider is needed to create and access user profile. User consent has to be granted to create user profile. Transparency will be ensured by explaining to the user what kind of data and for what purposes is used. User can also choose what kind of data he/she wants to use. Validity of the data will be ensured by using only trusted data sources (defined here as Finnish registries and some user-entered data). We also try to make data presented as useful and appropriate. For this reason, testing with end users has to be done to make sure the information is understandable and useful for them. Stewardship of data is promoted and learning analytics is kept to a minimum only to deliver desired result and support individual in taking control of her/his learning process. Great care has been taken to prevent any undesired effects of learning analytics. For instance, not including any predictive or profiling functionalities in CompLeap services as this is would potentially de-motivate those already struggling users, and possibly increase discriminatory attitudes.

Work that has been done is carefully designed to enable positive impact of learning analytics. In our project using the service as a whole is seen as an intervention on user reflection and decision-making process and the appropriateness and effectiveness will have to be evaluated in the second part of the project.

Highlight clearly significant results

Firstly, the complete learner-centred framework architecture has been created in planned timetable and the next step is to start further refine it with the different kind of national and international stakeholders.

Secondly, user scenarios have been defined and requirements for prototype development have been delivered in order to start WP3 prototype development in time. As a part of prototype definition, the task force on learning analytics has identified the data resources and user requirements to support human decision making.

Thirdly, the reference group formation has been successful and collaboration active. This provides a good foundation for the piloting of the prototypes in the second project year.

WP3: Prototype development

A summary of progress towards objectives and details for each task

Thus far, the CompLeap project has focused on defining the requirements and prioritizing the content of the planned service prototypes. This has also included work with service designers and UX-designers to define and develop preliminary mock-up (Invision) and HTML-prototypes for further user testing and validation. In 2018 two separate mock-up prototypes we developed for user testing:

1. <https://projects.invisionapp.com/share/8XNRS737TF9#/screens>
2. <https://projects.invisionapp.com/share/T5P4U1PHBDC#/screens>

The results of the user testing of the first demo, resulted in the creation of the second Invision demo. The second demo is now mimicked for the HTML-prototype, providing further functionalities to be tested and validated with users.

WP3 is led by the Finnish National Agency for Education. The idea in this WP is to build upon the architecture and requirements defined in WP2, and create prototypes to prove the practical use of the planned services. The final prototypes will be implemented and tested by partners in WP4.

WP3 started in fall 2018 and will be running until the summer 2019.

Task 1.1: Setting up test environment including suitable test dataset to be used in WP3 and WP4

In this project we have chosen a learner-centred, user-driven, development approach. We have engaged with users and partner organisations in planning what is being developed. The development is done in iterations, with the testing of prototypes integrated in the planning and development of the services.

The development of the testable prototypes is done in phases, and user and reference group validation will occur in each phase:

1. Mock-up prototype (completed)
2. HTML prototype (ongoing)
3. Service prototype

As such, the lead of the work package, Finnish National Agency for Education (EDUFI), has so far focused on user needs and UX design. During 2018 two testable mock-up prototypes as well as a preliminary HTML-prototypes have been developed. The HTML-prototype will be finalized in January 2019, and is planned to provide already a good understanding of the applicability of the final product.

User testing and reference group validation has proved both useful for defining the final prototypes. The interactive cycle naturally however also slows down the process.

Task 1.2: Development of prototypes taking into account of learner perspective

The service prototype revolves around a personal, digital competence profile, which is the main service prototype planned. It will be interlinked with associated service and provide a whole new platform and user interface for learners taking into account their specific needs, interests and goals.

The current HTML-prototype phase provides crucial input for the next phase whereby the actual service prototype will be developed.

Task 1.3: UI and Business logic to support the targeted learner-centred services

The focus of the work in WP3 has so far been on creating the service designs, user experience and defining the content. The user interface has been developed and then re-worked according to user and reference group input and feedback in WP2.

The planned competence profile will be linked to educational offer, whereby it will make possible the comparing of personalised educational opportunities. The competence profile can also be used as a help in study- and career counselling, and therefore it can also be seen as a counselling service for lifelong learners.

Highlight clearly significant results

Visual mock-up prototypes have been created to visualize project goal and to make it easier for stakeholders to share their ideas on the development and to contribute. This has enabled a feedback loop and agile development of the HTML prototype based on the use scenarios from WP2 during the second project year.

WP4: Deployment and evaluation

A summary of progress towards objectives and details for each task

Jyväskylä Educational Consortium Gradia is coordinating the deployment and evaluation of the developed prototypes. This work starts in WP4 in M17 (April 2019). The partners cooperating with Gradia in this work package are CSC, Finnish National Agency for Education (EDUFI), University of Oulu and Dienst Uitvoering Onderwijs (DUO) from the Netherlands.

In order to be able to fulfil the assignments in WP4, Gradia has already gathered together with our associated partners to foster their involvement in the project. Online meetings have been organised (5th June, 16th August) and planned (14th December 2018). German associate partners were met in Haag (14th June 2018) to discuss their role in this project, the piloting plan to be implemented later and the WP4 budget regarding partner costs. The identified associated partners so far are the Oulu Region Joint Authority for Education (OSAO), Salpaus Further Education – regional consortium and Rovaniemi Municipal Federation of Education (Redu) in Finland and Die EU-Geschäftsstelle der Bezirksregierung Köln in Germany. The cooperation with SURFnet in the Netherlands is under discussion.

The project has also organised three facilitated workshops for the Finnish associated partners in cooperation with WP2 led by EDUFI. In these workshops the ideas on different subjects have been gathered and discussed with the help of a service designer from Cybercom Finland. The participants have been guidance counsellors and teachers from the vocational education and training (VET) organisations, who support their students' or clients' professional growth and career paths, as well as staff working with development processes or digital systems in these organisations.

Workshops held during the first year of the CompLeap project (with about 55 participants in total):

1. 11th June 2018 Gradia, Jyväskylä: Tools for counselling - how to make non-formal competences visible
2. 18th September 2018 Gradia, Jyväskylä: Different needs within the defined user profiles - how to prioritize the requirements for the prototypes
3. 31st October 2018 OSAO, Oulu: Input for analytics functionalities – how to visualize the soft skills

Workshops with the associated partners are to be continued in January, March and April in 2019.

In addition, all the associated partners have been encouraged and supported financially to participate the Reference Group meetings, monthly webinars and workshops (first arranged in Helsinki 10th October 2018), to support the development process in WP2 with their expertise. The representatives of associated partners were invited to the kick-off seminar 9th April and they will also join the mid-term review seminar 4th December 2018 in Helsinki.

Gradia has also prepared a piloting plan together with the project team after listening to our associated partners in the meetings and workshops. Several open web platforms are used in the communication and cooperation in WP4.

Highlight clearly significant results

Gradia has a competent network of educational providers in Finland to cooperate with as associated partners strongly involved in the project. In addition to Gradia resources, they can offer the project a variety of end-users from different target groups/user profiles and the expertise of their employees, such as experienced guidance counsellors, teachers and other staff dealing with digital services, admissions or career guidance. The associated partners can see the importance and the relevancy of the digital solutions to be developed in CompLeap, as well as the benefits of their own co-partnership. CompLeap project team has also started the discussions with central European associated partners as well.

A piloting plan has been started, which will be specified during the following months with the associated partners. The preparations for the deployment and evaluation are done carefully and in contact with development in WP2 and WP3.

If applicable, explain the reasons for deviations from Annex I and their impact on other tasks as well as on available resources and planning

The associated partners from the Netherlands and Portugal originally named in Annex I, announced already in the beginning of the project, that they are not able to participate in the project as associated partners any more. One reason for that could be the later beginning of the project than expected in the planning phase. The project is actively building new connections in central Europe to cooperate with us as our associated partners for the deployment and evaluation in in WP4 later.

If applicable, explain the reasons for failing to achieve critical objectives and/or not being on schedule and explain the impact on other tasks as well as on available resources and planning (the explanations should be coherent with the declaration by the project coordinator)

What comes to the original timetable of the project presented in Annex I, WP4 starting in April 2019 (M17) is challenging for the education providers as it will run through the summer season. Gradia organises vocational education and training, as well as other services (for instance for the applicants), throughout the year, but the timing during the holiday season is not optimum. The project anticipates problems to involve enough end-users, or end-users from all the user groups defined in Annex I, for instance the immigrants. It is unfortunately not possible to start the work earlier, as it is dependent on

the previous work packages' deliverables. One possibility might be to allow extra time for piloting since it seems to be possible from the project budget perspective. The situation is due to the fact that the project was started later in the year 2017 than expected at the time of application.

WP5: Dissemination, communication and exploitation

A summary of progress towards objectives and details for each task

WP5 is led by DUO (Dienst Uitvoering Onderwijs), a department of the Dutch Ministry of Education. It looks into ways to promote the ecosystem concept across Europe, get interested stakeholders involved in the process and to support the concept and system deployment in other countries. Because the first half of the project was largely marked by planning, initiation and framework architecture development, the role of WP5 has been rather small so far. However, as the project proceeds, this role becomes more prominent. The main actions of WP5 will take place in 2019. The idea is to promote various initiatives and raise the visibility of CompLeap project among various stakeholders through events, social media and other promotional material now that both framework architecture design and new service prototype development are both under way.

A communication group has been named to realize the objectives of WP5. The group comprises of members from all five organisations of the consortium and it is led by DUO. The group has had meetings at least once a month throughout the project but in the planning phase the project, the communication has been mostly project internal communication. External project communication focused mainly on building the stakeholder network for the project. In the group meetings, the group members have shared responsibilities to each other and checked on the status of their designated tasks. New members have also joined the communication group since it is expected that the communication work intensifies in 2019. For this reason, the group aims to meet every week during 2019. Meetings have taken place mainly online in Zoom. All up-coming and some past communication and dissemination actions have been listed to a chronological communication calendar which marshals the internal work of the group. The calendar is dynamic which means it gets updated every time something new in terms of communication or dissemination is decided. It is located in Eduuni wiki under WP5 pages where the minutes of the group meetings are saved as well.

DUO has created a specific project identity in order to reinforce the project's external image and to ensure a transversal coherence between all project communication channels. The project image can be seen for example in the project website www.CompLeap.eu and Twitter account. The official website has so far been used to share and distribute information about the project in order to promote the project in a wider community. All partners have also operated a corporate communication (through, for example, newsletters, community sites, and RSS feeds) of the project events and results.

Highlight clearly significant results

Firstly, communication group has been named and organised to promote the communication and dissemination during 2019. Secondly, communication and dissemination calendar has been created

and organised in order to facilitate an effective way of working of the group. Thirdly, we have built an active stakeholder network (see Eduuni wiki WP 5 > Stakeholders). Nevertheless, we will be focusing mainly on the stakeholder networks in partner countries and on existing EU-networks because of the limited resources in the project – it is better to focus on these networks instead of trying to build totally new ones. Fourthly, creating a presence in social media can be counted as a clearly significant result. CompLeap twitter account was opened in August 2018. Now, we have 79 followers and we are aiming to increase the number significantly through 2019. The existing results in the mid-term of the project will surely help us to raise even more interest in the social media.

In addition to the above mentioned results, communication group has delivered four out of six deliverables that were listed in the Annex I.

3. Person-Month Status Table (cumulative)

Workpackage	WP1		WP2		WP3		WP4		WP5		TOTAL per Beneficiary	
	Actual WP total	Planned WP total	Actual WP total	Planned WP total	Actual WP total	Planned WP total	Actual WP total	Planned WP total	Actual WP total	Planned WP total	Actual total	Planned total

Coordinator	5,65	18,00	5,18	9,00	0,93	3,00	0,84	3,00	4,33	3,00	16,93	36,00
CSC –IT Center for Science Ltd.												
Beneficiary 1 short name	4,71	4,00	5,04	20,00	3,32	40,00	1,21	12,00	2,77	3,00	17,04	79,00
OPH / EDUFI												
Beneficiary 2 short name	1,42	2,00	6,37	14,00	0,00	0,00	0,20	5,00	0,90	1,50	8,89	22,50
OY /UOulu												
Beneficiary 3 short name	0,93	1,00	0,99	3,00	0,09	2,00	3,29	6,00	0,17	3,00	5,47	15,00
Gradia / JEC												
Beneficiary 4 short name	0,61	1,00	0,42	2,00	0,12	0,25	0,00	1,75	3,84	5,00	4,99	10,00
DUO												

Actual = number of person months consumed from the beginning of the project to the end of this period

Planned = total effort planned for the project in the latest version of the description of work - annex I to the grant agreement

4. Project management during the period

Consortium management tasks and achievements

The operational management and decision-making of the project has been done in Project management committee (PMC) (material Eduuni wiki – WP1 project management committee). Right from the start of the project, PMC has had monthly meetings usually on the first Monday of each month. At first, the WP leaders had webinars and other meetings more often than just once a month but as the project has progressed, PMC meets once a month. In addition, other thematic meetings take place where rest of the project team members join depending on the theme.

The PMC meetings were organised first with Adobe connect pro and later with Zoom. The meetings take place on Mondays at 14-16 o'clock. Agenda for each meeting is available in Eduuni wiki two weeks in advance so that every WP leader can contribute to it and share comments and ideas.

During the first project year, Project management committee consisted of five members who were also working as WP leaders:

- Antti Laitinen, Project manager, CSC – chairman of the PMC – WP1 responsible
- Annica Moore, Project manager, EDUFI – WP2 and WP3 responsible
- Hanni Muukkonen, Professor, University of Oulu – Learning analytics task force (T1.3) in WP2
- Tarja Puura, Project manager Gradia – WP4 responsible
- Erik van den Broek, Senior consultant DUO – WP5 responsible

All members of the PMC are experienced project managers and each of them represents one of the partner organisations of the consortium. There have been some changes in the project staffing which have also affected WP leaders. These small inner changes in project partners' responsibilities have however gone smoothly.

Antti Laitinen (CSC) has been as a project coordinator responsible to coordinate everyday work defined in the project plan. Project management committee webinars have been important venues for coordinator to take care of his duties. Also phone, e-mail or project team Slack are active communication channels. All partners have sent financial reports to coordinator every three months (PM's and actual costs) and the coordinator has made summaries of all financial material to be able to monitor that project is progressing within the given budget. Project coordinator has had active and regular collaboration with the project officer in the European Commission and any open questions have always been solved together right away when they have occurred.

As stated in the Annex I, CompLeap project management applies and expects that all partners take actively part in the project activities. So far there has not been need to do any major changes to project plan.

The steering committee of the project consist of members listed below:

- Stina Westman, Director, CSC (Chair)
- Tomi Kytölä, Senior officer, Ministry of Education and Culture
- Raakel Tiihonen, Director, EDUFI
- Susanna Pirttikangas, Professor, University of Oulu
- Rauni Gylden, Student service manager, Gradia
- Vera Mol, Project manager, DUO
- Antti Laitinen, Project coordinator, CSC (Secretary)

Steering committee members are experienced, senior experts and managers with wide international and national networks and they have made sure that project is aware of relevant policy work ongoing elsewhere both in national and EU context. Each member organisation of the consortium is represented also in the project steering committee.

During the first project year the steering committee has had three meetings:

- 3.4.2018 – The Finnish Ministry of Education and Culture
- 14.6.2018 – The Hague
- 18.10.2018 – online meeting

To support the steering committee in its work of guiding the project, all relevant material has been collected to Eduuni wiki steering committee pages (WP1 – steering committee).

Between December 1st 2017–November 30th 2018 CompLeap project has gone through Phase 1: Initiation and planning and some of the Phase 2: Execution. Phase 3: Evaluation will take place during the second year of the project which is why only the first two of the three phases that were described in the Annex I have been commented here from the project management perspective.

Phase 1: Initiation and planning

The project started with the initiation and planning phase which took place between December 1st 2017 and March 31st. During this phase, the initial vision was translated into practical plans and concrete steps for the project team to achieve the goals and objectives. This was done by paying extra attention to deliverables which always structure the management in all projects. A separate “All deliverables” page was set up in Eduuni wiki for monitoring of the deliverables. The page was also linked to the steering committee dashboard in Eduuni wiki so that the steering committee could easily follow the project progress in terms of the deliverables.

In this phase, the roles and responsibilities of the project team were agreed upon. Extra effort was put on the stakeholder work since the project is linked to many important and urgent social issues, like skills and competence mismatch and the integration and employment of migrants. These topics are of utmost relevance both in the European and national level in the EU.

Main activities:

- Project kick-off meeting
- Project Roadmap incl. schedule, cost estimates, deliverables
- Communication plan
- Risk Management Plan
- Stakeholder Management Plan
- WP meetings
- Project Committee meeting
- Steering group meeting
- Stakeholder Kick-off Seminar

Phase 2: Execution

After the planning phase, the project moved to the execution phase in spring/summer 2018. So far, the work in the execution phase has meant developing the ecosystem architecture and building the first versions of the new service prototypes. There has been active and versatile collaboration with the stakeholders. It has supported the prototype development and provided us with feedback for the project. Great deal of such testing and piloting with stakeholders and end-users will however take place in the second year of the project, in other words in 2019. In addition, a specific mid-term stakeholder seminar is set to be organised on December 4th 2018 to present the results gained so far and to collect the views of the stakeholders for further development.

Main activities:

- Development of ecosystem architecture
- Technical prototype development and testing
- WP meetings and workshops
- Documentation
- Mid-term seminar with stakeholders
- Project committee meeting
- Steering group meeting

CompLeap project has also collaborated with other DG Connect-funded projects like Skillsmatch and Compass. Antti Laitinen (CSC) and Annica Moore (EDUFI) joined Compass project dissemination seminar in Brussels on November 23rd 2018. On December 11th–12th, Kiira Noponen (EDUFI) joined Skillsmatch project workshop in Stockholm. Antti Laitinen joined DG Connect Stakeholder event in Luxembourg on December 10th–11th.

CompLeap project has been active in suggesting project collaboration during 2019 as a part of dissemination of the project results. One option would be to organize shared events during the Finnish EU presidency but those agendas are still in progress and not publicly available. CompLeap project has been especially active in the collaboration with Europass network because the plan concerning the New Europass seems to be very close to what is developed in CompLeap project. On October 5th, the project took part virtually in the annual Europass network meeting in Istanbul and presented what had been developed in CompLeap so far. Afterwards, there have been some discussions, for example with the Commission, on possible project collaboration between Europass and CompLeap during 2019.

Problems which have occurred and how they were solved or envisaged solutions

No major problems have yet occurred.

It says in the proposal, that in order to test the technical feasibility and architectural principles in practice, prototypes of the modules of the ecosystem will be built in this project. The portability of the prototypes should be taken into account so that the solutions of the prototypes can be brought into use in other national and international infrastructures. However, it will ultimately rest on each EU member state to evaluate and integrate the prototypes into their national technical infrastructure as this is out of the scope of this project. Therefore, piloting has to be planned and calibrated carefully. It should support the potential wider use of the solutions that we are developing. The sustainability plan should address these issues.

The actual piloting timeline which runs through the summer season 2019 is problematic. In order to involve enough end-users, and end-users from all the user groups, the project should allow extra time for piloting since it seems to be possible from the project budget perspective. This would mean that the piloting and deployment would run through M24 and related deliverables 27-33 would be due at M24.

For greater support to the deployment of the framework and the prototypes, some internal budget transfers between WPs (See GA article II.22 – budget transfers p.86) are needed. They would help the project to achieve its objectives.

The impact evaluation of the project needs to be planned taking into consideration the nature of the project. It should encompass aspects of the piloting, deployment within the project and additional use of the prototypes, during the project and envisioned after.

Changes in the consortium, if any

Due to an organisational change Jyväskylä Educational Consortium (JEC, in Finnish JAO) changed its name to Jyväskylä Educational Consortium Gradia in the beginning of 2018. In terms of the actual changes in the consortium, two of the three international associated partners listed in the application informed the project team at the beginning of the project that they were not able to join the project. Despite investigations, the consortium and the coordinator did not reach any clear answer for their

sudden opt-out but it seemed that it was because of the delay of the start of the project. The consortium was informed about the acceptance of this project quite late in autumn 2018.

List of project meetings, dates and venues

Between December 1st 2017 and November 30th 2018, the following Project management committee (PMC) meetings took place:

- 10–11.1.2018 Project team kick-off, CSC office, Espoo, Finland
- 5.2.2018 Project management committee No.1
- 19.3.2018 Project management committee No.2
- 23.4.2018 Project management committee No.3
- 28.5.2018 Project management committee No.4
- 25.6.2018 Project management committee No.5
- On July no meetings because of summer holiday season
- 6.8.2018 Project management committee No.6
- 10.9.2018 Project management committee No.7
- 1.10.2018 Project management committee No.8
- 19.11.2018 Project management committee No.9

For information: Before the kick-off, there were some WP leader webinars but no structured PMC meetings because the project was still organizing itself.

Besides PMC meetings other thematic meetings have taken place. Information on them is available in this report under each WP section.

PMC meetings have acted as an important forum for discussions. In each meeting, the members have shared updates on WPs and deliverables which has eased the flow of information between different work packages. In addition, financial and administrative issues and topical questions, like how to react to the identified risks, have been addressed in these meetings regularly. Decisions in the PMC meetings have been made together with all WP leaders. All the important material concerning the project management and project management committee has been linked to the working area in Eduuni wiki and Eduuni workspaces so that the WP leaders can find the information easily at any time.

Project planning and status

At the moment, the project is in the execution phase. Piloting of the framework, learning analytics and of the new service prototypes will start during spring 2019.

Impact of possible deviations from the planned milestones and deliverables, if any

In the beginning, there were some delays with the deliverable reports because of the lack of the personnel but none of those caused any harm to the project. The project officer in the European Commission has kept us up-to-date right from the start of the project and contacted us whenever there was anything to inform.

Development of the Project website, if applicable

Project website has been set-up and updated by DUO as a part of WP5: Communication, dissemination and exploitation. The website was launched in the planning phase of the project and it has mostly been used to inform the stakeholders about the project goals and achievements. The website has also acted as the main channel for disseminating information on CompLeap events, like webinars, workshops and seminars. In autumn 2018, a section for blogs was added to the website. As the project is approaching the dissemination phase, communication through the website will be very active in 2019.

2. Deliverables and milestones tables

The table below sums up all the deliverables that have either been submitted during the first year of the project or that are currently in progress. The ones that are in progress will be submitted later – please see “comments”. The status of each deliverable has been kept up-to-date in Eduuni where there is also a dashboard for steering committee to check on the progress in terms of deliverables. The most important deliverables have been approved by CompLeap steering committee before sending the reports on them to the project officer. All deliverables have been reported according to the project plan (Annex I).

Deliverables

TABLE 1. DELIVERABLES										
Del. no.	Deliverable name	Version	WP no.	Lead beneficiary	Nature	Dissemination level ⁴	Delivery date from Annex I (proj month)	Actual / Forecast delivery date Dd/mm/yyyy	Status No submitted/ Submitted	Comments
1	Standard management report Q1		WP1	CSC	Report	PU	M3	15.3.2018	Submitted	

⁴ PU = Public

PP = Restricted to other programme participants (including the Commission Services).

RE = Restricted to a group specified by the consortium (including the Commission Services).

CO = Confidential, only for members of the consortium (including the Commission Services).

Make sure that you are using the correct following label when your project has classified deliverables.

EU restricted = Classified with the mention of the classification level restricted "EU Restricted"

EU confidential = Classified with the mention of the classification level confidential " EU Confidential "

EU secret = Classified with the mention of the classification level secret "EU Secret "

2	Standard management report Q2		WP1	CSC	Report	PU	M9	31.8.2018	Submitted	
5	Standard progress report P1		WP1	CSC	Report	PU	M6	14.6.2018	Submitted	
6	Standard progress report		WP1	CSC	Report	PU	M12		Submitted as a part of mid-term periodic report	Information included as a part of periodic report – no extra report submitted – project officer instructions
8	Project road map		WP1	CSC	Document	PU	M1-M24	30.11.2019	Not submitted	Ongoing - To be submitted M24
9	Project management and steering group meetings		WP1	CSC	Event, Document	PU	M1-M24	30.11.2019	Not Submitted	Ongoing - To be submitted M24
10	Mid-term report		WP1	CSC	Report	PU	M12		Submitted	Information included as a part of periodic report – no extra report submitted – project officer instructions
12	Eduuni wiki webpage		WP1	CSC	Website	PU	M1	19.3.2018	Submitted	
13	Eduuni workspace		WP1	CSC	Website	PU	M1	19.3.2018	Submitted	
14	Risk Management Plan		WP1	CSC	Document	PU	M3	19.3.2018	Submitted	
15	Desk research		WP2	EDUFI	Document	PU	M3	15.3.2018	Submitted	

16	Kick-off seminar and workshops in cooperation with WP5		WP2	EDUFI	Event	PU	M5	4.5. 2018	Submitted	
17	Task-force and WP2 meetings and meeting notes		WP2	EDUFI	Event	PU	M5	28.6. 2018	Submitted	
18	Detailed description of the user scenarios with guidelines and advice for developers in WP3		WP2	EDUFI	Document	PU	M6	28.6. 2018	Submitted	
19	Mid-term review seminar in cooperation with WP5		WP2	EDUFI	Event	PU	M12	14.12. 2018	Submitted	
21	Feedback and specifications to user scenarios		WP2	EDUFI	Prototype	PU	M6-M18	31.5. 2019	Not Submitted	Ongoing - To be submitted M18
24	Open source code for all components, including example code		WP3	EDUFI	Document	PU	M7-M18	31.5. 2019	Not Submitted	Ongoing - To be submitted M18
26	Three prototypes		WP3	EDUFI	Prototype	PU	M10-M18	31.5. 2019	Not Submitted	Ongoing - To be submitted M18
34	Dissemination and Communication plan		WP5	DUO	Document	PU	M3	14.5. 2018	Submitted	
35	Stakeholder management plan		WP5	DUO	Document	PU	M3	14.5. 2018	Submitted	
36	Project identity		WP5	DUO	Other	PU	M3	19.3. 2018	Submitted	
37	Project website		WP5	DUO	Website	PU	M3	19.3.	Submitted	

								2018		
38	Presentations and publications		WP5	DUO	Other	PU	M3-M24	30.11.2019	Not Submitted	Ongoing - To be submitted M24
39	Targeted workshops and seminars in cooperation with WP2		WP5	DUO	Event	PU	M6-M24	30.11.2019	Not Submitted	Ongoing - To be submitted M24

Milestones

No separate milestones have been specified in Annex I to the Grant agreement. The pre-determined phases of the project and the deliverables have acted as concrete milestones and they have provided with structure to each WP.

3. Explanation of the use of the resources

Use of resources

During the first year CompLeap project has stayed in its budget as can be seen in the table 1.3 Person-Month status table (page 14-15). Since WP3 started its operations later than other WPs, most of its resources have not yet been used and they will be allocated to the second project year. The same applies to the budget of WP4 which will be used largely during 2019 when the piloting and deployment start.

CSC as a coordinator has used resources mostly as planned. Only WP5 resources have been used more than originally planned, due to the building up of the stakeholder network. Also project communication has required more resources than was planned. Spending more resources on WP5 is nevertheless rational because it was expected in the beginning of the project that this might happen. In order to cover the costs, internal transfers from other WP budgets can be done. It seems, for example, that some PMs can be moved from WP1 to WP5. Such small internal changes in the budget allocation are expected to be feasible in light of Grant Agreement article II.22 – budget transfers. It is the project's understanding that this kind of budget adjustment does not require an amendment of the Agreement (Grant agreement page 86).

OPH/EDUFI is having a similar situation to the one described above. For this reason, some small internal transfers between different work packages will be needed. Most of the EDUFI resources are allocated to WP3 which has only recently started its operations. Most of its actions will take place in 2019, which is why the resources of WP3 have been scarcely used during the first year of the project.

Other partners, OY/Oulu, Gradia/JEC and DUO, have fewer resources and each of them has stayed in the budget quite well during the first year. In similar vein to WP3, WP4 too acts mainly during the second project year. Therefore, most of Gradia's resources will be used during 2019. As also DUO's budget shows that the resources reserved for WP5 seem to be a bit too scarce, so therefore it is probable that some budget transfers need to be done during the second project year.

Include explanations on transfer of costs categories (if applicable).

No transfers been made so far.

Include explanations on adjustments to previous financial statements (if applicable).

No previous financial statements been done.

Subcontracting and Unforeseen subcontracting (if applicable)

Specify in this section:

a) the work (the tasks) performed by a subcontractor which may cover only a limited part of the project;

The service design, facilitation of service design workshops, UX-design and the preliminary code needed in the HTML-prototype have been sub-contracted from a service provider whose expertise has been utilised in other EDUFI's digital service development projects. Utilising professional service designers provided the much-needed knowhow and synergies with the existing service framework. The service provider, SOLITA, was selected within the existing Framework Agreement that EDUFI has with certain service providers. This guaranteed a competitive pricing for the acquired services.

A specific agreement within the framework agreement on the creation of the HTML prototype was signed with SOLITA for 37 270 Euros. No larger procurement has taken place. The framework agreement allows direct subcontracting within the Framework Agreement up to 60 000 Euros.

b) explanation of the circumstances which caused the need for a subcontract, taking into account the specific characteristics of the project;

As defined in the Grant Agreement, service design, UX design and coding of the prototypes are subcontracted from service providers specified in the EDUFI Framework Agreement.

c) the confirmation that the subcontractor has been selected ensuring the best value for money or, if appropriate, the lowest price and avoiding any conflict of interests.

The subcontractors have been selected out of the rigorously prepared and negotiated EDUFI Framework Contract for Digital Service Providers, ensuring best value for money and best knowhow of the existing service framework.

4. Certificates

List of Certificates which are due for this period, in accordance with Article I.4.3 of the Grant Agreement.

Beneficiary	Organisation short name	Certificate on the financial statements provided? yes / no	Any useful comment, in particular if a certificate is not provided
1 CSC – IT Center for Science	CSC	Yes	
2 Finnish National Agency for Education	OPH / EDUFI	Yes	
3 University of Oulu	OY / UOulu	Yes	
4 Jyväskylä Educational Consortium	Gradia (JAO) / JEC	Yes	
5 Dienst Uitvoering Onderwijs	DUO	Yes	

A copy of each duly signed certificate on the financial statements (Form C) or on the methodology should be included in this section, according to the table above (signed originals to be sent in parallel by post).