

DESIGN AND IMPLEMENTATION OF AN E-LEARNING AND COLLABORATION ECOSYSTEM BASED ON THE INTEGRATION OF MULTIPLE HETEROGENEOUS PLATFORMS

Author: Vicente Goyanes / Advisor: Domingo Docampo
University of Vigo

1. Motivation

- Almost anyone now can take an online course from any university thanks to the MOOC platforms. Initiatives like EdX and Coursera “Micro-Masters”, full online degrees and Master programs are becoming ever more popular.
- These online platforms usually provide advanced tools, up to date learning content, and sometimes a better User Experience than the one available to regular HE students on a “traditional” University campus.
- Universities, and High Schools as well, need to cope with the challenge of delivering a blended learning experience, by combining online digital media with traditional classroom methods, a step beyond the traditional LMS, MOODLE-like solutions.
- **We believe in a solution based upon an Open architecture that can glue together a rich selection of Open Source tools and a federated Identity management solution. The platform will be felt like one rich tool by end users, in spite of being built like a LEGO underneath.**

3. Research Plan

1. Bibliographical review of the state of the art.
2. Review of open projects on the Internet with similar objectives.
3. Design of a first architecture and its associated APIs.
4. Implementation of a first proof of concept.
5. Validation of first proof of concept.
6. Presentation of communications in conferences with proposed ideas

5. Next Year Plan

1. New bibliographical review of the state of the art
2. New review of existing open Internet projects with similar objectives
3. Development of final implementation
4. Final implementation validation
5. Publication of at least one article in a JCR journal, reporting the central results of the thesis.
6. Writing the thesis manuscript.

6. References

- [1] Campus do Mar, digital Campus - <http://digimar.campusdomar.es>
[2] Fed4FIRE - FP/ Project- <https://www.fed4fire.eu/>
[3] Up2U H2020 Project - <https://up2university.eu/>

2.Objectives

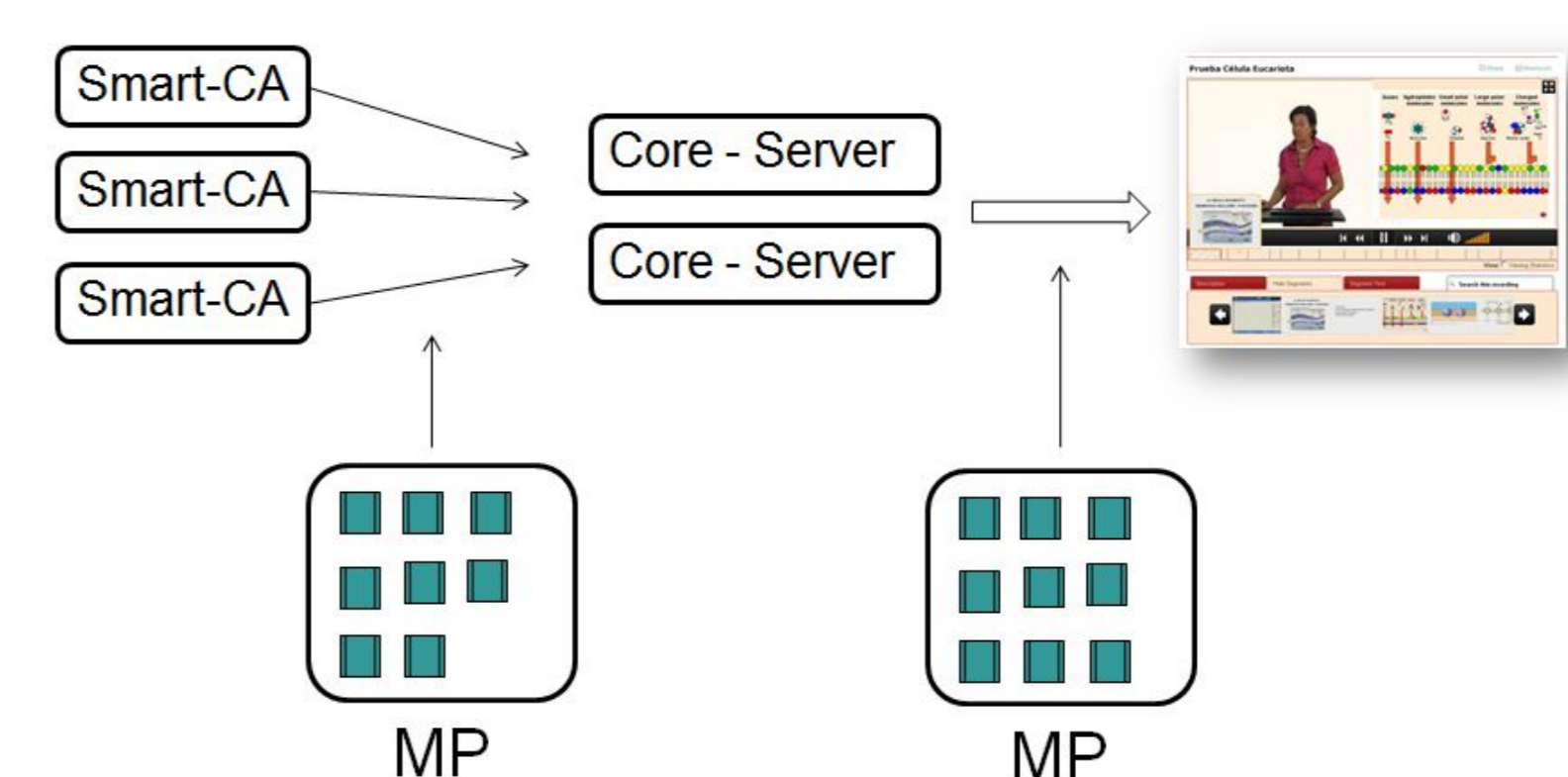
- The goal of this thesis is the design and implementation of a new architecture for a fully operational "Digital Campus", far beyond traditional e-learning solutions.
- The mission of the architecture within the new learning environment is to replicate online the activities of a physical campus, enabling students, teachers and researchers to work together in spite of being physically separated.
- In this fully operational digital campus, students should be able to do online much of the activities that usually take place on a physical campus, such as attend live or recorded lectures, meet teachers and colleagues, carry out laboratory activities, take proctored exams, etc...

4. Results

Smart-CA Architecture for Opencast-Matterhorn

Within the first year an improved architecture for the Opencast lecture capture system has already been proposed. It is already being tested. and a paper describing the architecture has been accepted in an international conference:

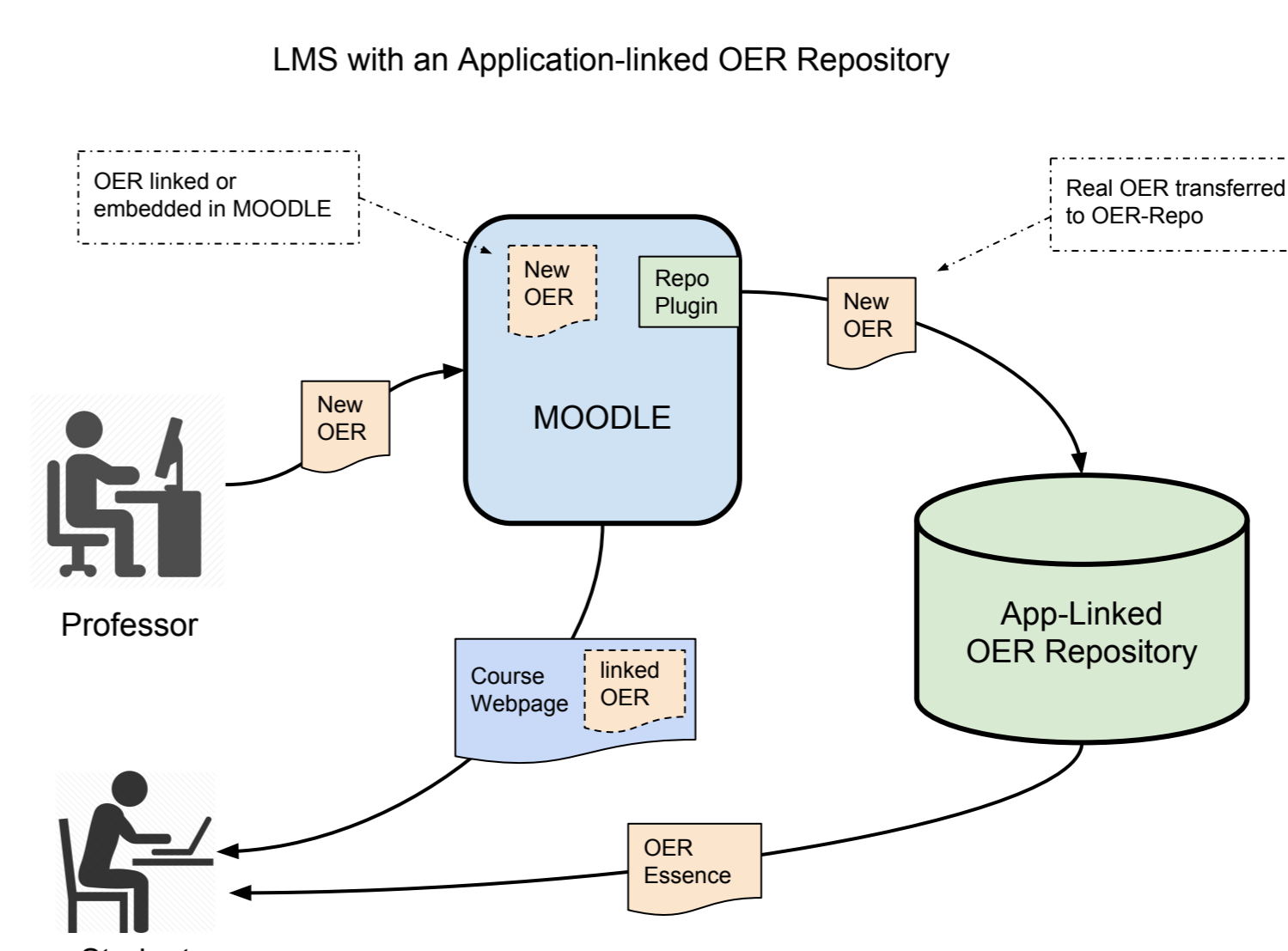
1. Vicente Goyanes, Rubén González, Anxo Sánchez & Domingo Docampo, “A Smart-CA Architecture for Opencast Matterhorn”, to be presented at KES IIMSS 2017 Intelligent Interactive Multimedia: Systems & Services, Vilamoura, Portugal, 21-23 June 2017.



Application-linked Repository

In addition, a new approach to Open educational resources curation has been channeled through the use of the “application-linked repository” architecture proposed in a paper which has also been accepted for presentation in an international conference:

2. Docampo, D., Goyanes, V., Vidal, X. & Sánchez, A., “Facilitating curation of open educational resources through the use of an application-linked repository”, to be presented at the 5th World Congress of Research in Education (WCRE2017), St. Petersburg, Russia, 12-14 June, 2917.



The thesis will include contributions from the author carried out within the Campus del Mar [1] project, the Fed4FIRE[2] European FP7 project, and the current European Up2U [3] project under the H2020 program.



Universidade de Vigo