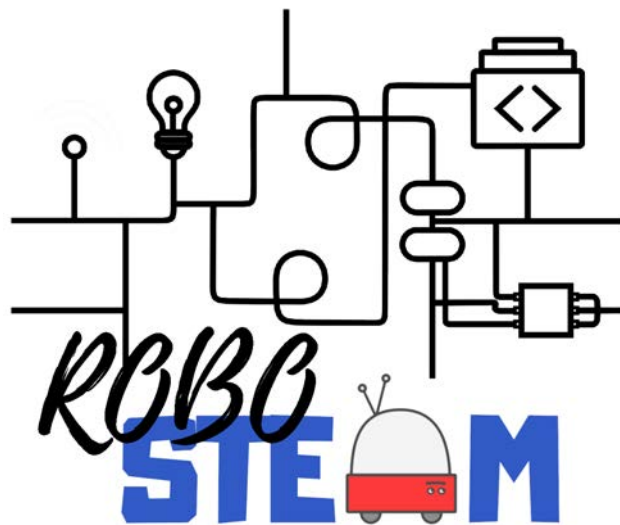

Design and implementation of RoboSTEM Environment – O3.A1



Version	1.0
Date of issue	01/07/2019
Filename	ROBOSTEAM_O2A1_01072019.pdf
DOI	10.5281/zenodo.3524537
Nature	Service/Product
Dissemination level	PP (restricted to other programme participants)

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Project Number: 2018-1-ES01-KA201-050939

Version History

Version	Date	Comments
0.1	01/05/2019	Analysis of the problem
0.2	01/06/2019	Solution Design
1.0	01/07/2019	Implementation

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1. 03.A1

This document describes part of the work of the RoboSTEAM project [1, 2] Output 3 – RoboSTEAM Environment [3]. The output aims to define an educational environment [4, 5] which will offer to schools and teachers a complete set of tools, activities, guides and support to manage the implementation of STEAM challenges. An important part of this output is the definition of the technological framework. This is described in the project proposal as follows:

“Design and implementation of a virtual environment as the base of the portal (It should include functionalities such as: web site, virtual campus, software repository for STEAM challenge, software repository with evaluation and diagnosis tools, video conference, social media capabilities, intranet system regulated by roles, etc.)”.

2. THE PROCESS

First of all, it was necessary to study the requirements of the technological problem, specially that related with interconnection, later a solution was designed and finally implemented.

2.1. Problem Analysis and solution Design

During the Bragança Transnational Meeting. This task was discussed and specially the way in which it can be properly addressed. The conclusion after the meeting was that the definition of a common ecosystem that includes all these functionalities was not possible. The best solution will be the integration of the different elements:

- The project portal. With public information about the project and also a connection with the other components of the ecosystem.
- The social networks as one of the main communication channels. It must include at least Facebook and Twitter.

- A Zenodo community, linked to the portal and also to a content repository. To provide visibility to the elements published.
- An Institutional repository [6], to include, index and classify the different educational resources produced. It should be connected with the portal.
- Learning Management System, to facilitate the management of the project and also, in a final stage, to facilitate educators the access to the resources and training activities.

Figure 1. shows this architecture and also main issues:

1. How to classify and access to the resources, which is solved by using a Zenodo Community.
2. The collection of tools, for which a template is defined during O3.A3 and resources are provided by using it.
3. How to maintain the whole system. Some agreements were carried out by the partners regarding to this (also described in the output O3.A3 [7]).

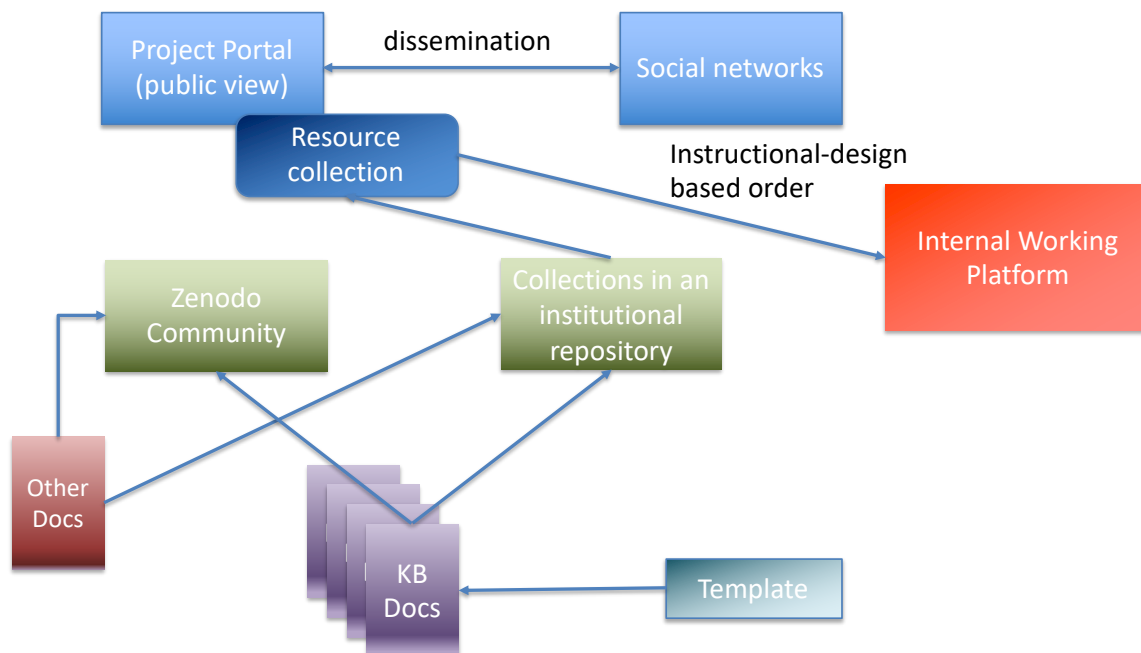


Figure 1 .- RoboSTEAM Environment Architecture. Source: Based on [3]

2.2. Solution Implementation

This section shows some of the components included in the architecture. Figure 2 shows the RoboSTEAM Environment (<http://robosteamproject.eu/>) with access to the other ecosystem components.

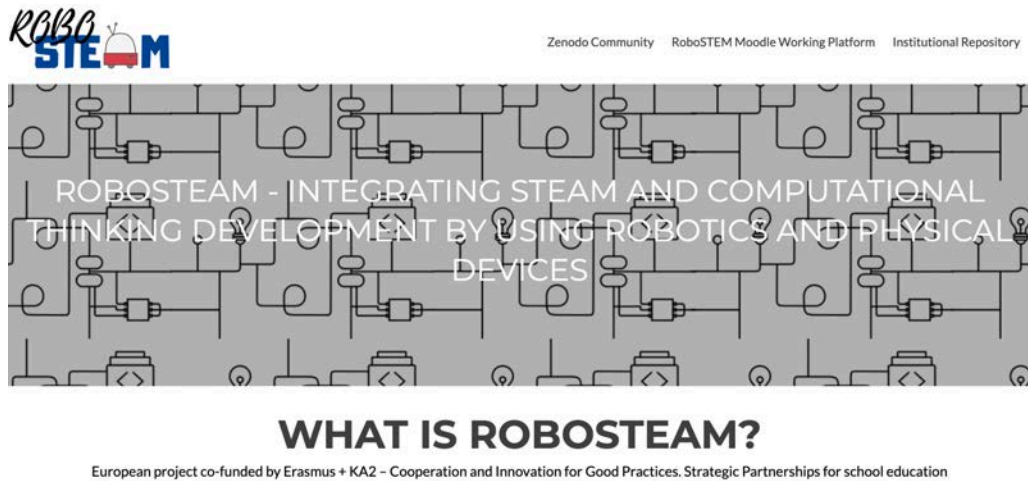


Figure 2. – RoboSTEAM Portal

The zenodo community (with different resources published about the project (Figure 3 - <https://zenodo.org/communities/robosteam/?page=1&size=20>).

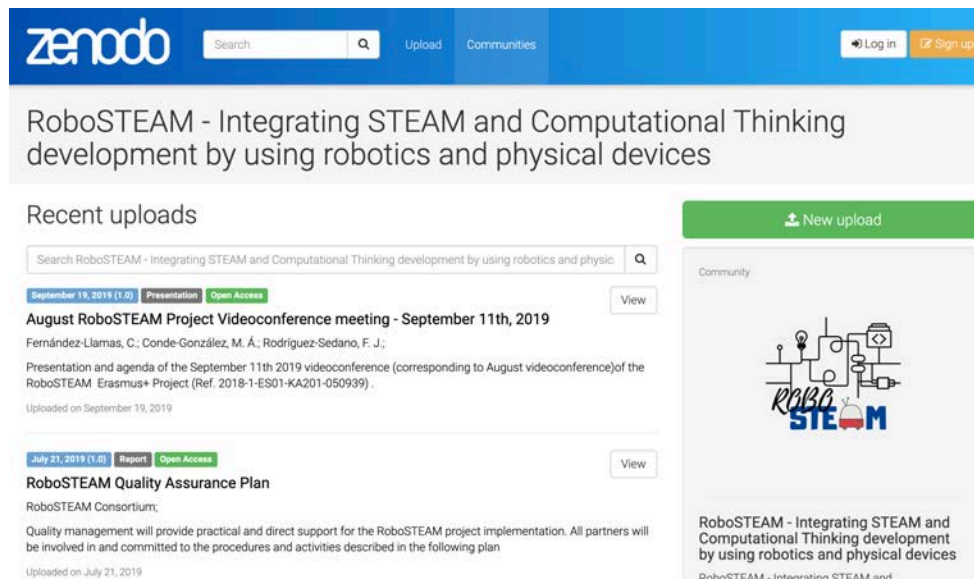


Figure 3.- Zenodo Community

The institutional repository (<https://repositorio.grial.eu/handle/grial/1519>) can be seen in Figure 4. It is provided by USAL.

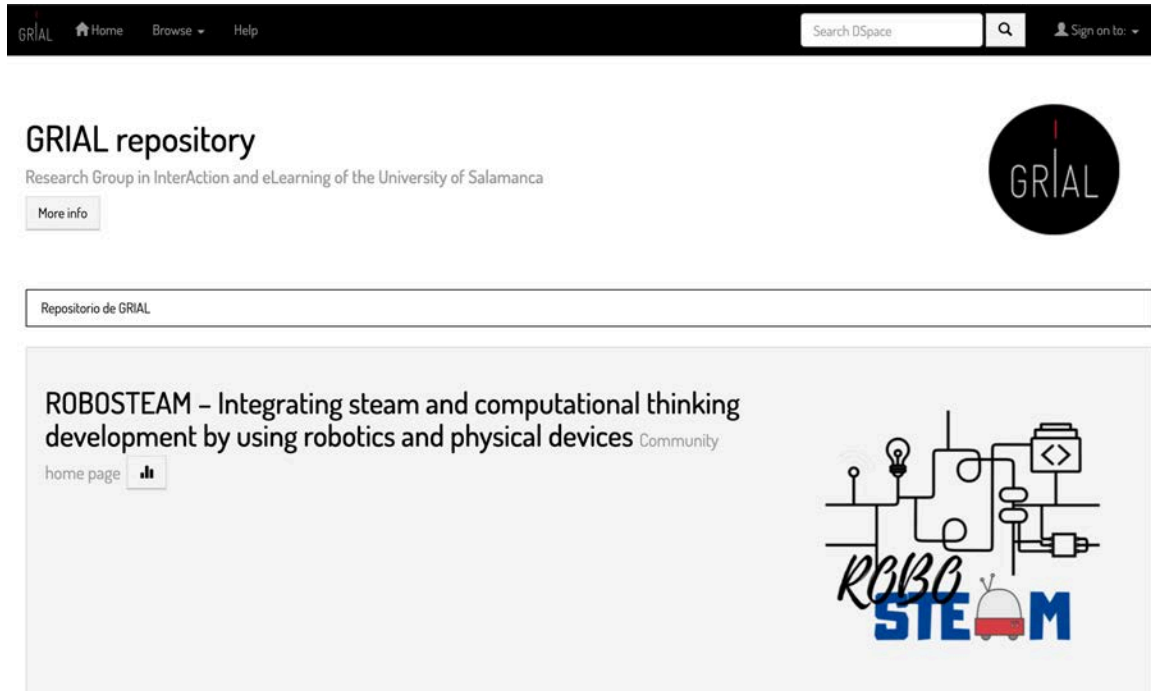


Figure 4. – Institutional repository

The LMS employed is also linked from the Portal and employed for the project management (Figure 5 - <http://robosteampoint.eu/moodle/>).

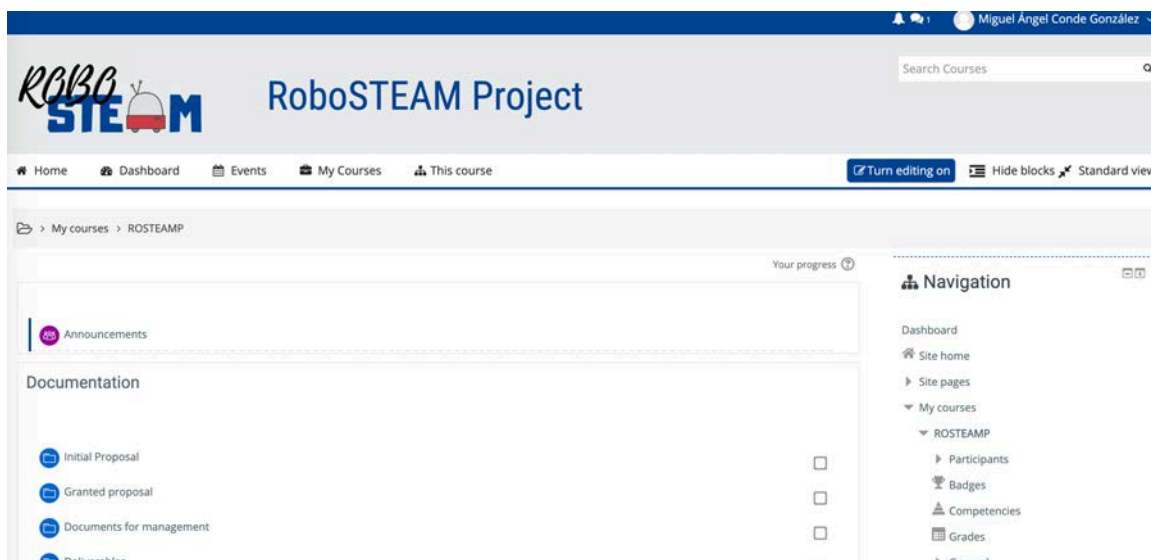


Figure 5. – RoboSTEAM LMS Platform

And finally, the social components can be seen in Figures 6 (facebook) and 7 (twitter).



Figure 6. – Facebook Group for the project



Figure 7. – Twitter user

4. ACKNOWLEDGEMENTS

This document has been developed within ROBOSTEAM Erasmus+ KA201 Project with reference 2018-1-ES01-KA201-050939.

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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