



Widening Access to Virtual Educational Scenarios

562463-EPP-1-2015-1-UK-EPPKA2-KA

Deliverable 3.3: Training guides for Tool-Kit

Deliverable number D.3.3

Delivery date June, 2018

Status Final

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Funded by the
Erasmus+ Programme
of the European Union

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1. AIM OF THE DELIVERABLE

The aim of this deliverable is to report on the material produced to inform end users of the target groups, such as instructors, technical personnel and authors, how to use the tools for creating Virtual Scenarios (VS) for Scenario-Based Learning (SBL) activities. The material is developed with the exemplar Scenario-Based Learning and Virtual Scenario authoring tools of the WAVES project: CASUS and OpenLabyrinth (OL).

2. OVERVIEW OF THE WAVES TECHNICAL TOOLKIT

In order to develop the training material for this deliverable, there was a focus on the outputs of the technical toolkit developed within WAVES WP2. The technical toolkit is a means for achieving the core project objective of easing access to Scenario-Based Learning. This is achieved both by proposing and implementing improvements in the usability of existing tools. It is also achieved through the development of new tools that can both be integrated in the existing technical Virtual Scenario infrastructure and can stand alone as specifications and implementations that facilitate user engagement with the topic of Virtual Scenarios.

By its nature, the toolkit is not one integrated piece of software as it consists of several components and implementation specifications as summarised in the table below (Table 1).

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Table 1. Inventory of the technical toolkit

Id	Description	Contributor	VS tool	Outcome/Form	Link to related references
A1.1	CASUS GUI translation tool	Instruct	CASUS	Java code (JSF web app)	https://bitbucket.org/gulpipvt/i18nproperties , D2.2, D3.1
A1.2	Polish, Persian GUI translation files for CASUS	UJ, MU, Isfahan, Instruct	CASUS	Translation files + Java code improvements (JSF web app)	Language files: Access on request. Polish translation maintained by UJ - for improvements contact: support@casus.net Tested converters RTL CSS: http://rtlcass.com 2.1.1.1.1 CSS-Flip: https://github.com/twitter/css-flip D2.2, D3.1
A2.1	Summary of improvements of accessibility (for users with visual impairments)	Instruct	CASUS	Report	D2.2
A3.1	Working VS player mobile theme for Open Labyrinth	AUTH	OL	HTML, CSS + JavaScript	https://github.com/wavesnetwork/mobileplayer , D2.2, D3.1

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U1.1	Heuristic evaluation of OL version 3 usability	AUTH	OL	Report	D2.2
U1.2	Wireframe models of OL version 4 workflows (as initiated by Sam McInerney)	SGUL	OL	Report (drawings)	D2.2
U2.1	New MCQ feedback mechanism	Instruct	CASUS	Java code (JSF web app)	D2.2
U2.2	New VS pathway review mechanism for learners	KI	OL	HTML, CSS + JavaScript	https://github.com/wavesnetwork/vispath , D2.2, D3.1
U3.1	Prototype of guided tour mechanism for OL version 3	MU	OL	PHP+JavaScript (Intro.js)	https://github.com/wavesnetwork/guidedtour D2.2, D3.1

2.2. GUI translation tool

The translation tool in CASUS enables the platform's graphical user interface (GUI) translation into other languages. In particular it is possible that the end user contributes by improving an already existing translation or by performing a new one. Access control can be achieved by using standard JAVA webapp access methods.

The main functionality is accessible by a left navigation frame with a sorted tree structure of the available properties. As a delimiter of tree nodes we take "." (DOT) within the keys.

On the right side the window shows the property key, a text box for the translated value and the default value in English language. The tree structure shows missing items with slightly different icons.

To facilitate the translation process we added a button which allows to let the original/default English text been automatically translated by Google translate. The Google translate service requires having a valid Google API access key installed. The translation proposed by google is pasted in the "Translated Value" field and can be further worked on and modified (Figure 1). This tool allows the translation of the platform language and this should be differentiated with the process of translating the content of the virtual scenarios, which should be done via the authoring process of a virtual scenario.

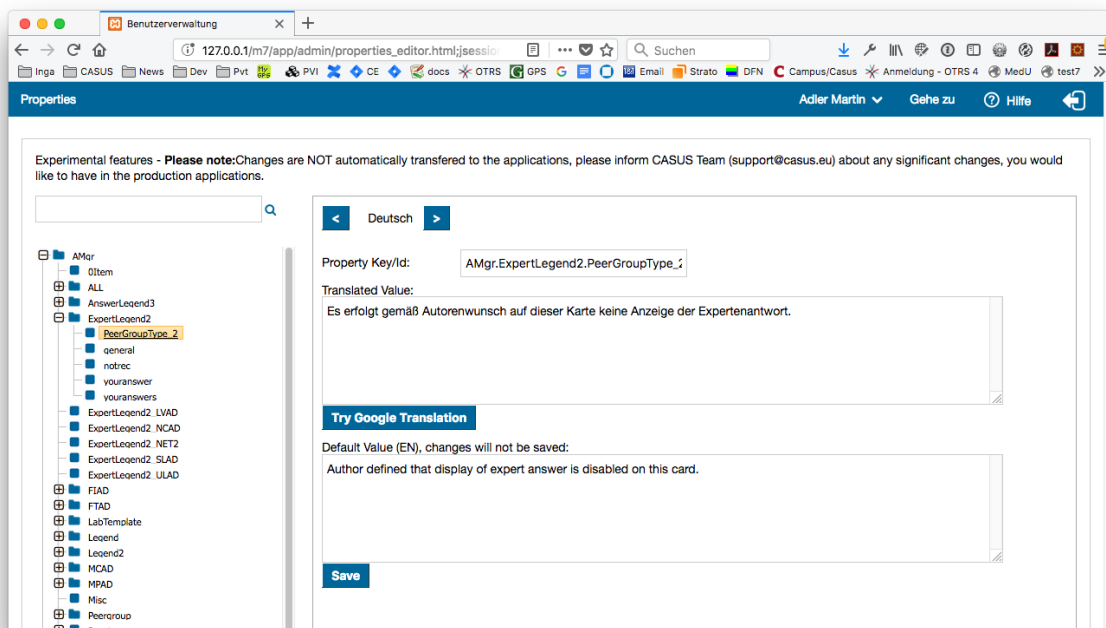


Figure 1: Translation tool integrated into CASUS

2.3. Internationalisation support

Internationalisation is an important part of scenario based learning systems. Translations of the interface in CASUS were done in: German, English, Spanish, French, Polish, Hungarian and Portuguese.

Moreover, translation was performed also in an RTL language, as Persian, as shown in the figure below (Figure 2).

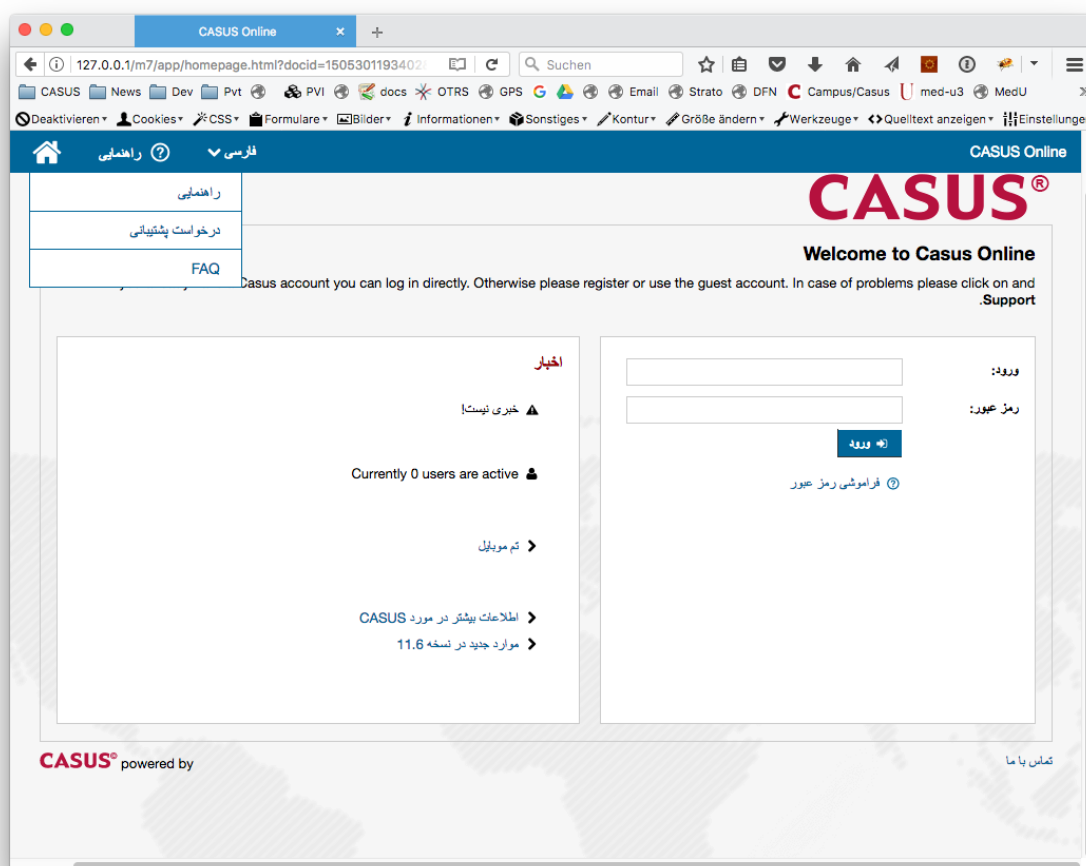


Figure 2: Translated GUI of CASUS in Persian.

The translations were performed in the platform language and this entails that the content of the platform (virtual scenarios) were not translated.

It is not uncommon, that a user has selected a platform language that is different from the content (virtual scenario) language. Examples are courses which are mainly compiled of scenarios in the mother tongue of users and some interesting scenarios, which are not available in this language are selected from another language, most likely English. This can be particularly true for languages where only a limited number of VS are available, so courses are filled up with non native language content.

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To enhance the learner experience, the instructor can use the translation feature by changing the platform language from the CASUS home page as shown in the figure below (Figure 3). The content of the cases can be also translated, but this must be performed by the instructor, following the instructions of authoring a case in CASUS which is described in this document, in the section “3.TRAINING GUIDELINES FOR COMMON WORKFLOWS”.

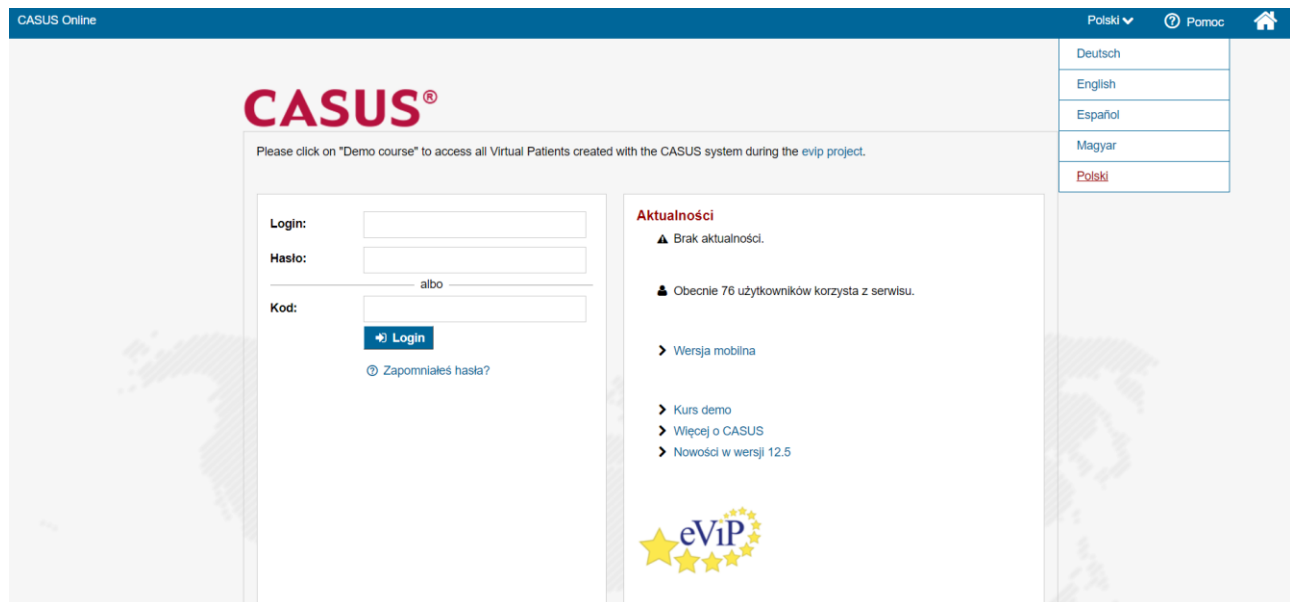


Figure 3: Using CASUS in another language e.g., Polish

2.4. Mobile player theme

The mobile player for OpenLabyrinth virtual patients is designed not only to fit in small screens, but also to maximise the user experience, when played in a mobile device. The mobile player is designed so that a learner can play comfortably a case while travelling that was authored in OpenLabyrinth.

The mobile player is also designed in a way to prevent the user to navigate forward and backward between nodes: if a user clicks the back button (on an Android device for example), the application routes the action to the main, home screen instead of the previous node. Thus, we can better control user transitions between nodes in the virtual scenario which might prevent some forms of dishonest or unexpected behaviours in the system. Modal dialogs for supporting information and pathway, let the user get extra information, without forcing to navigate or scroll. On top of the screen there is a special progress indicator, that allows the user to know if he/she reached any given (by the virtual scenario author) milestones. This facilitates the users to know how much time they need in order to complete the case as well.

The mobile player is also enabling the option to use the cases in an assessment mode by allowing only one option to be the final from the user and by blocking the possibility to navigate forward and

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backward within the case. Figure 4 presents screenshots of the implemented mobile player from the learner perspective.

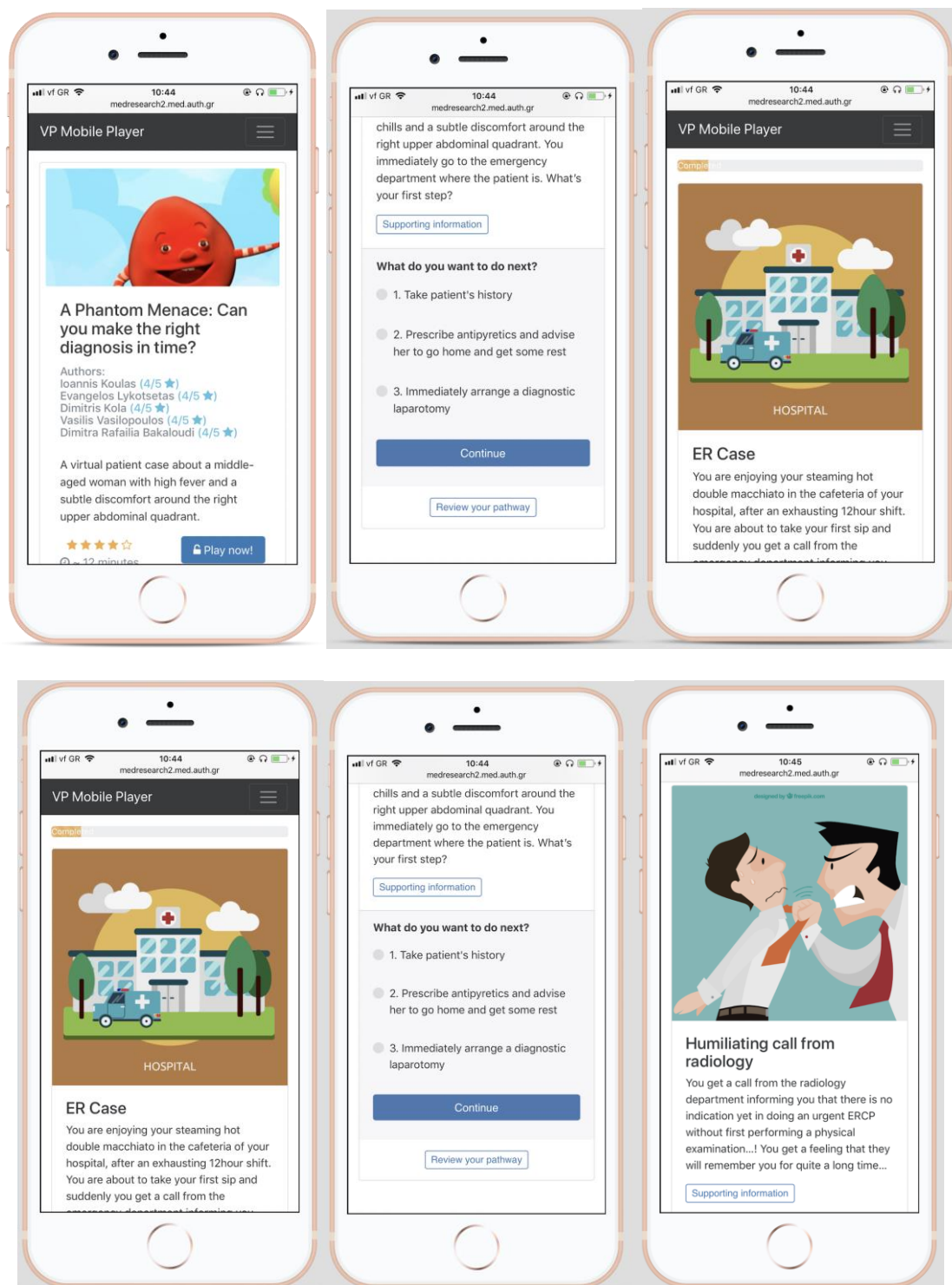


Figure 4: Mobile theme for branched virtual scenarios

2.5. Visual Pathway tool

This feature is enabled within OpenLabyrinth VS system. The learner upon solving the case and reaching the end is presented with the whole structure of the scenario in a flowchart diagram that illustrates all nodes of the scenario and the selected options (visited nodes). By that the whole virtual scenario is illustrated in a legible way and the user can gain a clear overview of the virtual scenario on the whole, reflect on the total available options / required decisions and on the choices made. In particular, the total available options are presented with the white nodes while the blue nodes represent the visited ones (Figure 5).

The feature does not need to be enabled; it comes integrated with the extended version of OpenLabyrinth 3.1. The case can be created as usual with the OpenLabyrinth editor as presented later in this document in section 3: "Common Workflows". It works on desktop computers, smartphones and tablets.

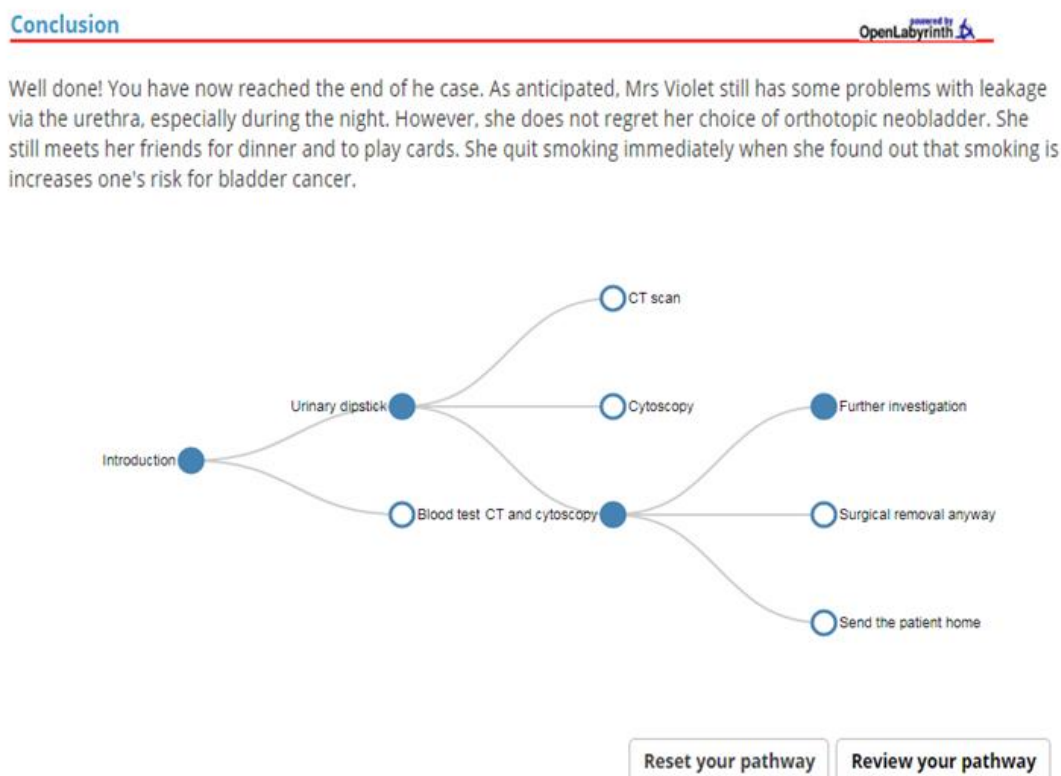


Figure 5: Visual pathway tool

2.6. Just-in-time help system

2.6.1. OpenLabyrinth

Tooltips (interactive hints) and guided tours (interactive step-by-step guides) enrich the virtual scenario delivery systems with contextualised help/tutorial system which would make navigation for novice users easier.

The guided tours are not widespread in the virtual scenarios community and the unveiled use cases indicated that the step-by-step guides that optionally appear on each page of an interface, form an ideal way to introduce key features that might be needed by the users while working with the interface.

Part of the guided tours were integrated into the landing page, editor and player for the purpose of providing hints to the users as it is presented in figure 6 below.

The guided tours make it possible for the user to author a virtual scenario, by providing hints of how to initiate a labyrinth, create a node and edit a node. In addition, it provides hints about how to play a case in the home page, and how to edit a node when playing the case when the user is logged in as the administrator of the case.

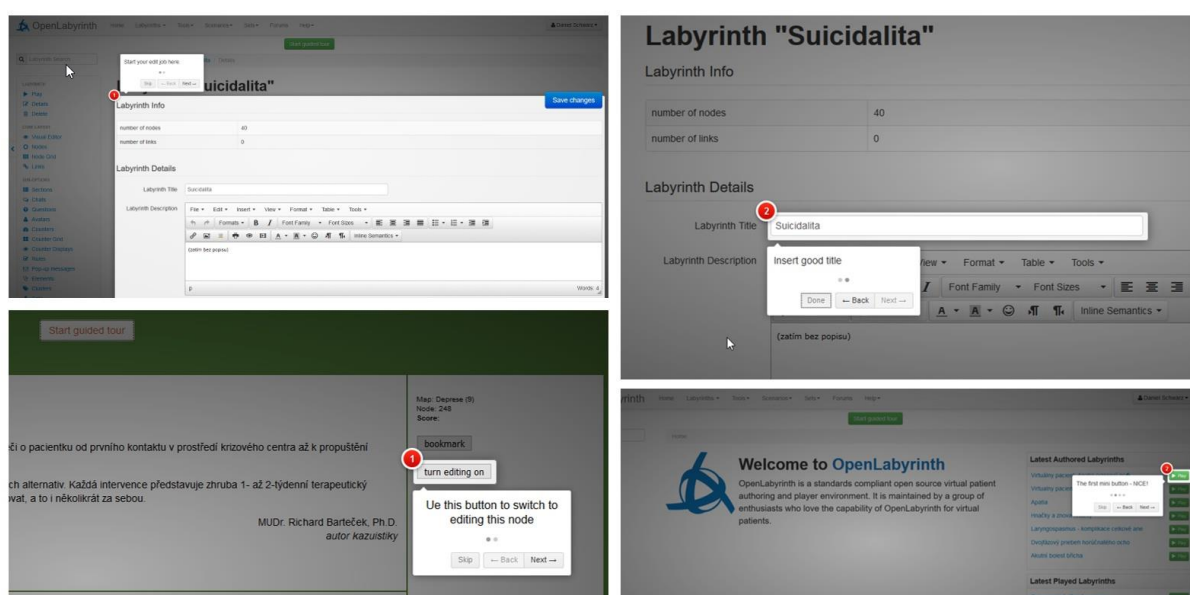


Figure 6: Some parts of the three guided tours embedded into the home page (bottom right), the virtual scenario editor and player..

2.6.2. CASUS

Help entries are already implemented in CASUS (Figure 7) while tutorials and static slide sets were considered as not appropriate material to meet the purpose of this deliverable since they would need to be wordy and long to capture all the information required to disseminate.

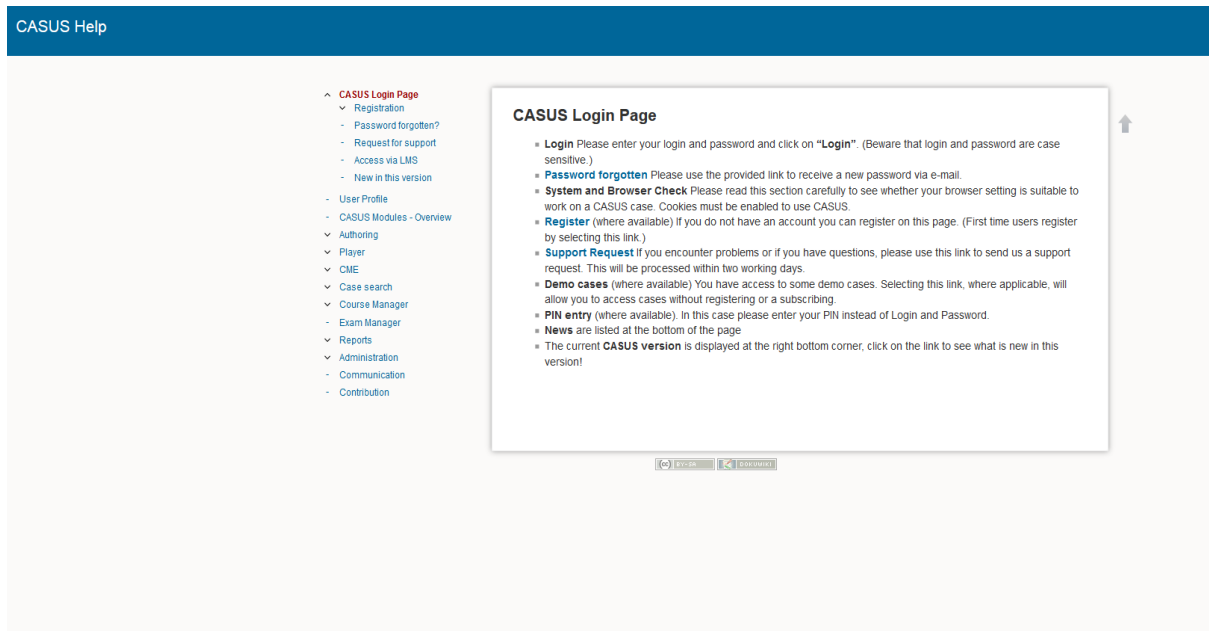


Figure 7: Help entry in CASUS

3. TRAINING GUIDELINES FOR COMMON WORKFLOWS

3.1. Training Guidelines Approach

To complete the training guidelines, we considered to create material based on the test cases as described in D5.2 for the purpose of informing the educators about common workflows. For that, we considered creating materials such as: Videos, guided tours, tutorials, help entries and/or static slide sets, defined as:

1. Video tutorial = screen recording or recorded slide-set with voice-over or text captions as commonly published on YouTube or Vimeo
2. Tutorial = a description in formatted/plain text (including screenshot or figures) containing instructions on what to do to reach a particular goal
3. Help entry = explanation of a particular function or component of a VS system available as part of the help module of the system and activated context specific (e.g. by clicking on the help button at a particular screen in CASUS)
4. Static slide set = Power-Point or PDF file including a series of slides explaining a particular topic.

We decided to develop video tutorials for the purpose of communicating and demonstrating the different procedures in an authentic way without producing wordy manuals.

The video tutorials illustrate a step by step process on how to use the exemplar tools for performing different functions in regard to virtual scenarios and were constructed by both technical

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developers and educators to ensure that they can disseminate knowledge in an understandable way to different audiences and in particular to meet requirements of non-technical target groups.

The material was reviewed according to the quality assurance plan and was improved according to the received feedback. The activities that were selected to be demonstrated within the videos were selected based on the test cases specified in the deliverable 5.2 that regard the activity of an educator and in particular were related to the Learning Tools Interoperability standard (LTI) and Learning Records Store (LRS) integration, creating simple branched and linear virtual scenarios, and viewing Experience API (xAPI) statements in an LRS. The workflows selected to be demonstrated are presented in Table 2:

Table 2: Tutorials for common user workflows

	Tutorials for common user workflows
1	Instructor creates an LTI link from the main system (LMS) to a VS
2	Educator creates a short linear VS with 3 nodes in a line
3	Educator creates a short branched VS with 3 nodes: one decision node with two options
4	Instructor analyses learning records in a learning records consumer for a specific learner
5	Instructor analyses learning records in a learning records consumer for a specific VS
6	Instructor analyses learning records in a learning records consumer for a specific group

After discussing with the WAVES partners the above stated workflows we decided to implement the three first video tutorials and a fourth one to demonstrate the integration of a VS authoring tool with an LRS, including the analysis of learning records.

Exemplar integrations of OpenLabyrinth with openEdX and FutureLearn, as well as with CASUS and Moodle and FutureLearn via the use of the LTI standard are described in the D2.4.

The exemplar LRS system selected for the purpose of demonstrating the integration of a virtual scenario authoring system and an LRS was GrassBlade. The selection of this system was encouraged by the OpenLabyrinth community that provided access to the GrassBlade system.

3.2. Training Guidelines description

The videos were developed to include subtitles in English to enhance the understanding of every step. One of the videos demonstrating the integration of the OpenLabyrinth system with the Canvas LMS system was translated to other languages, including German, Greek and Czech. All videos are hosted in the WAVES YouTube channel:

<https://www.youtube.com/channel/UCWjPDRooh6H9Ke7XYIygEvv/featured>

Table 3 below includes the final full list of video tutorials produced the corresponding languages they were translated to, and the corresponding link to the video.

Table 3: Final list of the tutorials for common user workflows and link

	Workflow demonstrated in the video tutorial	Link	Language
1	Instructor creates an LTI link from the main system (LMS) to a VS	https://www.youtube.com/watch?v=MbCTfOgaFXQ&t=10s	English, Greek, German, Czech
2	Educator creates a short linear VS with 3 nodes in a line	https://www.youtube.com/watch?v=YdXbfW4V2xE	English
3	Educator creates a short branched VS with 3 nodes: one decision node with two options	https://www.youtube.com/watch?v=Y-p1edHlpXs&feature=youtu.be	English
4	Instructor integrates a VS system in a learning records consumer and analyses xAPI statements	https://www.youtube.com/watch?v=JzpBfMT5Tqw	English

Table 4 below describes the video tutorials in terms of the content each one covers.

Table 4: Description of the video tutorials' content

	Workflow demonstrated in the video tutorial	Description
1	Instructor creates an LTI link from the main system (LMS) to a VS	This video tutorial presents a step by step integration of the OpenLabyrinth system with the Canvas LMS
2	Educator creates a short linear VS with 3 pages in a line	This tutorial demonstrates step by step how to create a short linear case by using the authoring system CASUS. This example contains 3 pages within the scenario
3	Educator creates a short branched VS with 3 pages: one decision node with two options	This video tutorial presents all the steps required in order to create a short branched case by using OpenLabyrinth v3 visual editor in the virtual scenario authoring system
4	Instructor integrates a VS system in a learning records consumer and analyses xAPI statements	This video tutorial demonstrates how to integrate OpenLabyrinth system with the GrassBlade LRS system and how to view the xAPI statements produced by playing a case

3.3. Video translation process

The captions were added in the different languages as community contributions by using a feature of YouTube for adding caption translations as demonstrated in the process below:

1. Select add translations, as shown in Figure 8:
2. Select "Add new subtitles or CC"
3. Set the language to be translated
4. Submit the contribution and select 'Yes - They're ready to be reviewed.'

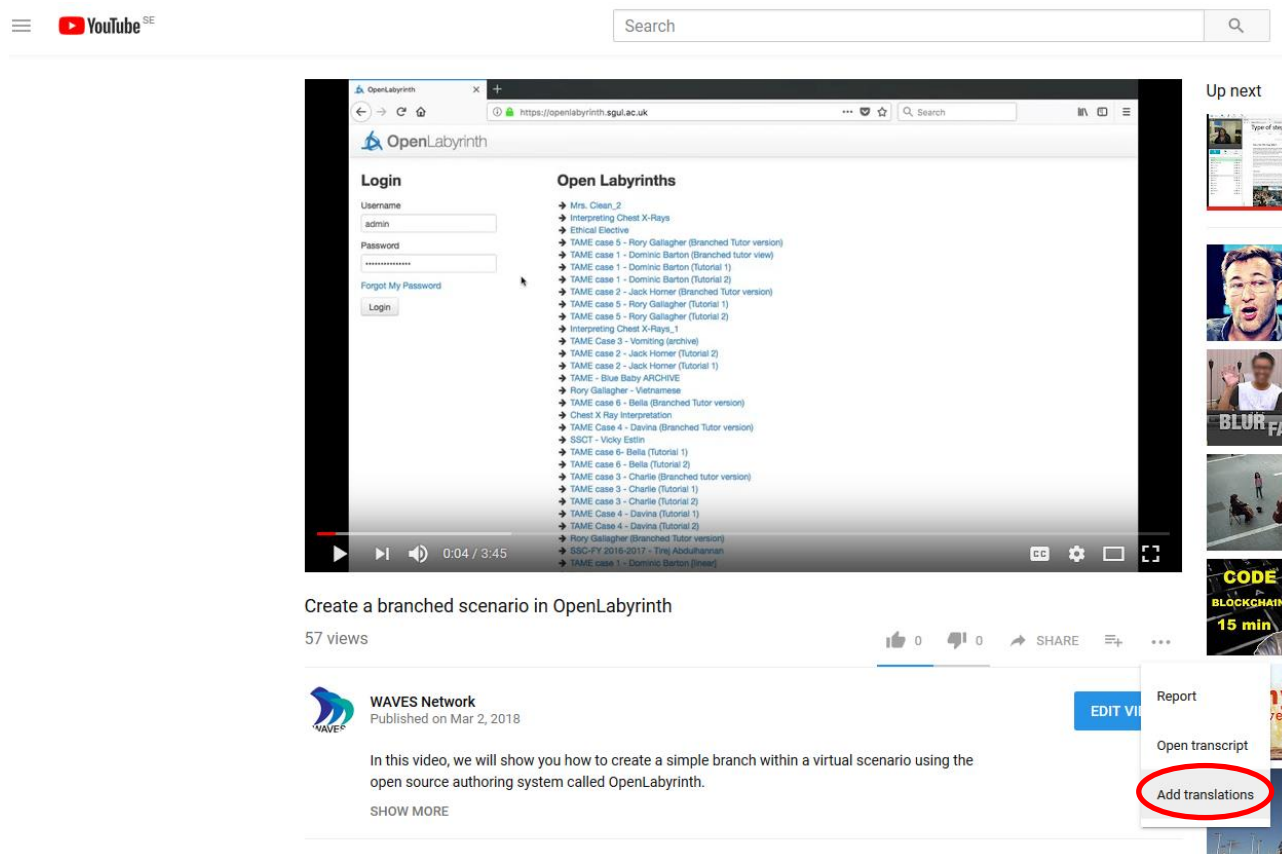


Figure 8: Add translations in YouTube

4. FUTURE WORK

Further videos could be constructed for the purpose of demonstrating step by step common workflows. We hope for community contributions regarding more videos and translations. The deliverable 3.1 that was developed in parallel of this deliverable includes complementary information in regarding the guidelines for the technical toolkit installation and maintenance. Some of the features from the toolkit are still under development as part of D2.3 which is due in the last month of the project. A report for the training materials for those will be included in the D2.3 deliverable.

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In particular to the technical toolkit future work is going to include:

1. A step by step video for parsing the OpenLabyrinth cases into the mobile player
2. A complete integration of the guided tours in the next version of OpenLabyrinth and a step by step demonstration of how the guided tours can benefit the end users
3. An updated version of the visual pathway tool, including the pathway indicated by the teacher, and how the teacher can introduce it.