DOCUMENT TITLE:

REPORT ON TRANSFERABILITY GUIDELINE TOOL

Project: Improving RD and business policy conditions for transnational cooperation in the manufacturing industry

Acronym: Smart Factory Hub

Work package	WP4: Improving Knowledge Base
Activity	A 5.2 Knowledge transfer model
Deliverable	D 5.2.2: Report on transferability guideline tool
Date of issue	14.05.2018
Document issued by	USTUTT
Contributors	All partners
Version	A1.0
Number of Pages	28

Dissemination level*		
PU	Public	
PP	Restricted to other Programme participants	
RE	Restricted to a group specified by the consortium	
CO	Confidential, only for members of the consortium	X

*Any personal data in this document has been collected and will be processed for the purpose of the Project Smart Factory HUB, financed by the Interreg Danube Transnational Programme in accordance with the General Data Protection Regulation (EU 2016/679). We are committed to respect and protect the privacy of personal data collected. This document may be disseminated electronically or on paper and conferred to other participants and public in the interest of facilitating communication within the Project Smart Factory HUB.

TARGET GROUP ASSESSMENT

Has this deliverable addressed any of the target group indicated in the application form?

Yes / **No**

If yes, please describe the involvement of each individual target group in the table below.

Target group	Number reached by the deliverable	Description of target group involvement
SME		
Regional public authority		
National public authority		
Higher education and research		
Business support organisation		

CONTENT

LIST OF FIGURES

LIST OF TABLES

1 Introduction and background

This report determines the ways and tools for sharing the knowledge (in the form of Training Curricula) to facilitators, project partners and potentially also to interested parties (as integral part of the mapping tool). The report provides guidelines on using Transferability tools by the facilitators, with the goal to achieve effective knowledge transfer between facilitators and to the facilitators.

2 Evaluation of possible training tools and methodologies for knowledge transfer

To find out which software solutions are suitable for the cost-effective and efficient development of a learning platform, various open-source solutions were researched. This was then evaluated and the respective favourites compared head-to-head.

The platform had to meet the following requirements:

- No license fees
- Possibility to embed video conferencing functionality
- Easy administration of content

As a result, the research led to a comparison of two potential platform solutions as well as two potential plug-in solutions. The two comparisons are presented below:

Table 1: Comparison of both platform solutions

	ILIAS	**MOODLE**
Whiteboard	No whiteboard feature but video conference possible	Good whiteboard feature with Skype whiteboard add on
Easy handling?	Usability requires some practice, because it's not as intuitive as Moodle. Navigation is complicated, e.g. the creation and administration of courses is not so easy	Easy to use because Moodle is very easy to learn, easy to use and the interface can be used intuitively. Courses can be easily created and managed.
Community		Very large community, therefore few errors
Layout	Simple and clearly arranged	Greater variety of instruments
App	No app	App available
Functionalities	Many functionalities, but less than with Moodle	Many functionalities
Updates	Regular updates	Regular updates

Table 2: Comparison of both plug-in solutions

	BigBlueButtonBN	**OpenMeetings**
Whiteboard		
Differences	Tools: Text input only possible via chat Import/Export: Import of only one document is possible No memory function for the whiteboard Objects: Objects can be deleted individually	Tools: Special tool for text input Choice of cliparts to insert Line tool for underlining and marking („highlighter“), pointer Import/Export: File import of videos possible Import of more than one document is possible Whiteboard can be stored on the server & be reloaded
Similarities	Tools: Pen can take on different colours and thicknesses Creation of circles and rectangles possible Zoom function Import/Export: File import of pptx, docx, odt, xls, pictures possible Imported objects cannot be edited or modified in its shape	
Communication		
Differences	Chat: Chat function is intuitive Save the entire chat history with copy & paste is possible Screensharing: quality not adjustable but very good Assignment of rights: Only one user has the rights to present Bugs: if you click with the left mouse button on a link in the chat, you fly out of BBB and land on the corresponding website	Chat: Chat function is unclear and a bit hidden Separate function for saving the chat log Screensharing: Quality adjustable (low, medium, high) Assignment of rights: Rights are divisible Additional features: Different types of rooms, each with its own specific requirements functions, presentation room, cooperation area,… Calendar, with the meeting plans and users can be invited to these meetings
Similarities	Chat: Private chat is available Voice: Call quality very good, low delay Video: picture quality good, scalable video image Screensharing: Screen- or desktop sharing possible, streaming of the whole screen or a selected region possible	

3 Description of the Smart Factory Hub training tool

3.1 General description of the tool

The learning platform is designed to reduce knowledge gaps and facilitate knowledge transfer. A complex process was initiated to identify the suitable components for the implementation of such a solution. Subsequently, it was necessary to overcome technical barriers in the implementation and to gain experience during the operation of such a platform.

Parallel to this, a training curriculum was developed. This required identifying knowledge carriers in the project and coordinating the provision of learning content of suitable quality. Another experience during the implementation of the tool was to embed the actual source material, which was provided in various forms, didactically in such a way that the learner can make maximum use of his invested time. To do this, it was necessary to analyze the content provided and select a suitable form of presentation in the platform.

In addition to the modules and courses on the topic of Smart Manufacturing (Mastergrid) available in a given structure, a glossary has been added, for example. A link to the mapping tool in the Smart Factory Hub was also created. Furthermore, the guidelines on using the training tool described in chapter 4 of this report are anchored on the main page to give first-time users a better introduction to the tool.

A digital publication on the Smart Factory Hub training tool will be published in the near future, based on the information contained in this report.

3.2 Future development and improvements proposition

As a support tool for E-Learning, the Moodle platform is continually further developed and will be improved over time, modified and filled with more content in the (near) future. It is clear that the initial and potential design, development and implementation errors and shortcomings have already been corrected and revised. However, the mapping tool in its current form has a wide potential for improvement, refinement, updating and upgrading, which we have already carefully examined and which we want to apply as soon as possible, especially after receiving feedback and general user response. By adding more and more information and learning material, the Moodle platform will continue to grow and offer more and more value.

The Internet is already filled with different E-Learning platforms, which collect, archive and provide data and information on various topics. However, such existing platforms do not explicitly help to fill the knowledge gaps in the areas we deal with. In all platforms, there are courses that show and present the knowledge that should be taught and learned. For that, it is important to choose the right E-Learning platform, that the needed functions are included and easy to use for learners. The benefit for the users of a well-tuned platform is immense. On the other hand, the concept of the E-Learning platform requires the best possible content in order to achieve best possible results later, i.e. to minimize the learner's knowledge gaps. The courses are offered to the users, which receive many descriptions and additional information.

Nevertheless, everything said so far is only a small part of the benefit that our E-Learning platform offers. The main task, purpose and vision of the E-Learning platform is to extend it by at least the following functions/options:

- Providing access to the online conferencing room “BigBlueButton” to open and join conferencing sessions which allows presentations and meetings online
- The ability to upload files directly from the computer/ mobile phone/ tablet to the platform to share knowledge with other learners
- The possibility to upload and download many different digital document formats, such as Word, PowerPoint, Excel and PDF files
- Providing access to further information on websites of companies, other E-Learning platforms or books and articles with links, etc.
- Providing additional offers like a glossary with the most important words, a direct link to the mapping tool, a manual for the E-Learning platform, etc.
- The opportunity to enter all important and necessary dates in the calendar, to stay tuned
- The possibility to upload private files onto the platform
- Access to the personal dashboard with the course overview and the included timeline and the courses
- The possibility to administrate different things, for example it is possible to move the fields on the home site and thus create an individualized start page
- The possibility to see all upcoming events in a clearly arranged layout
- All announcements can be seen directly on the home site
- All lectures held in BigBlueButton can be recorded and made available for later viewing. These recordings can be viewed at the course “Webinars”.
- It is possible to fill one’s own profile individually and thus come into contact with other learners who share the same interests in order to learn together or to help and support each other.
- Getting an overview of all written entries

In addition, we will strive to make our E-Learning platform even more accessible, comprehensive, complete and intuitive. We will also provide uninterrupted support, control, help, monitoring and assistance to ensure and guarantee the functionality of our E-Learning platform.
We will also continue to expand the reach and thus the network to a platform in order to increase the possibilities for further training and filling the knowledge gaps in order to obtain greater benefit.

The E-Learning platform also serves as a quite reliable (all-at-once and mass) communication tool and can therefore be used as such to carry out communications, messaging, news sharing and notifications, e.g. about the latest files, events, etc. within the entire network. This can easily be achieved via e-mail addresses and/ or other contacts provided by all participants, i.e. entered for registration on the E-Learning platform. This allows news, tasks and even possible messages of the consortium to be spread quickly and easily.

4 Guidelines on using the Training tool

4.1 E-Learning Platform basic functionality

The access to the E-Learning platform is provided through the following web page link: https://elp.iao.fraunhofer.de/moodle/.
A user reaches the front-end web page layer as presented in the picture below:

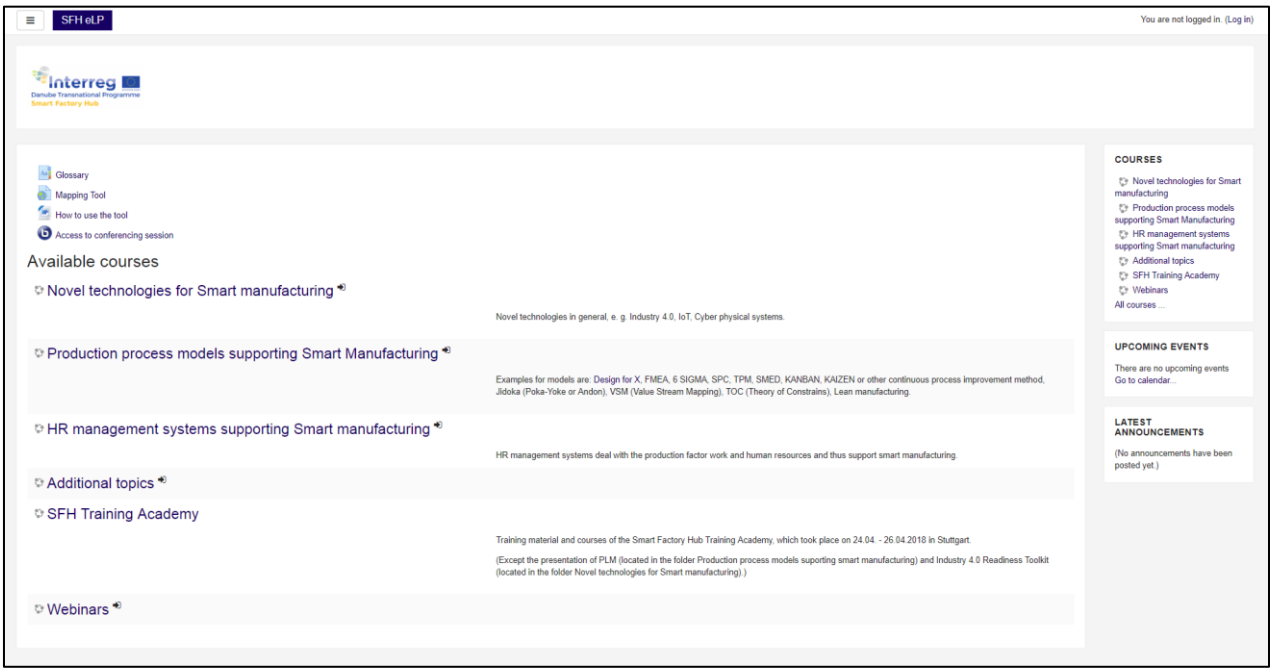

Figure 1: Landing page

4.2 E-Learning platform – Front end

The E-Learning platform's front end is designed to be as user-friendly as possible. It gives an overview of the available courses on the platform and displays additional offers, such as a Wiki for example. It is also possible to log in if a user account is already available. A new account can also be created on the front end.

4.2.1 Login as a user already registered

To login with an existing account it is necessary to click on the "Log in" button in the upper right corner on the front page.

Figure 2: Log in button

On the next page, i.e. linked subpage, the user is required to log in with his or her username and the correspondent password.

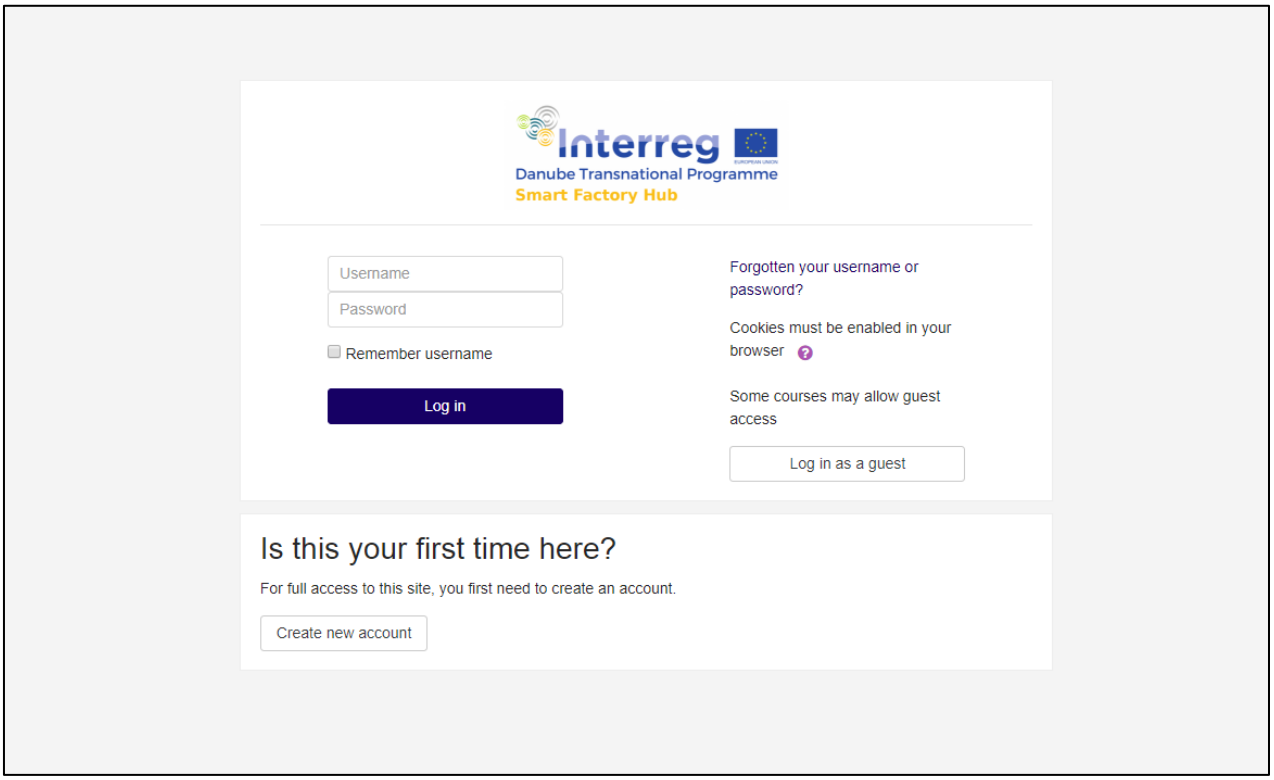

Figure 3: Log in window

4.2.2 Create a new user account

If there is no existing user account, it is possible to create a new one. Therefore, it is necessary to click on the “Log in” button in the upper right corner of the front-end page as shown in 1.3.1. On the opened page, there is the option “Create new account”. With a click on that button, it is possible to get access to the user account for the platform.

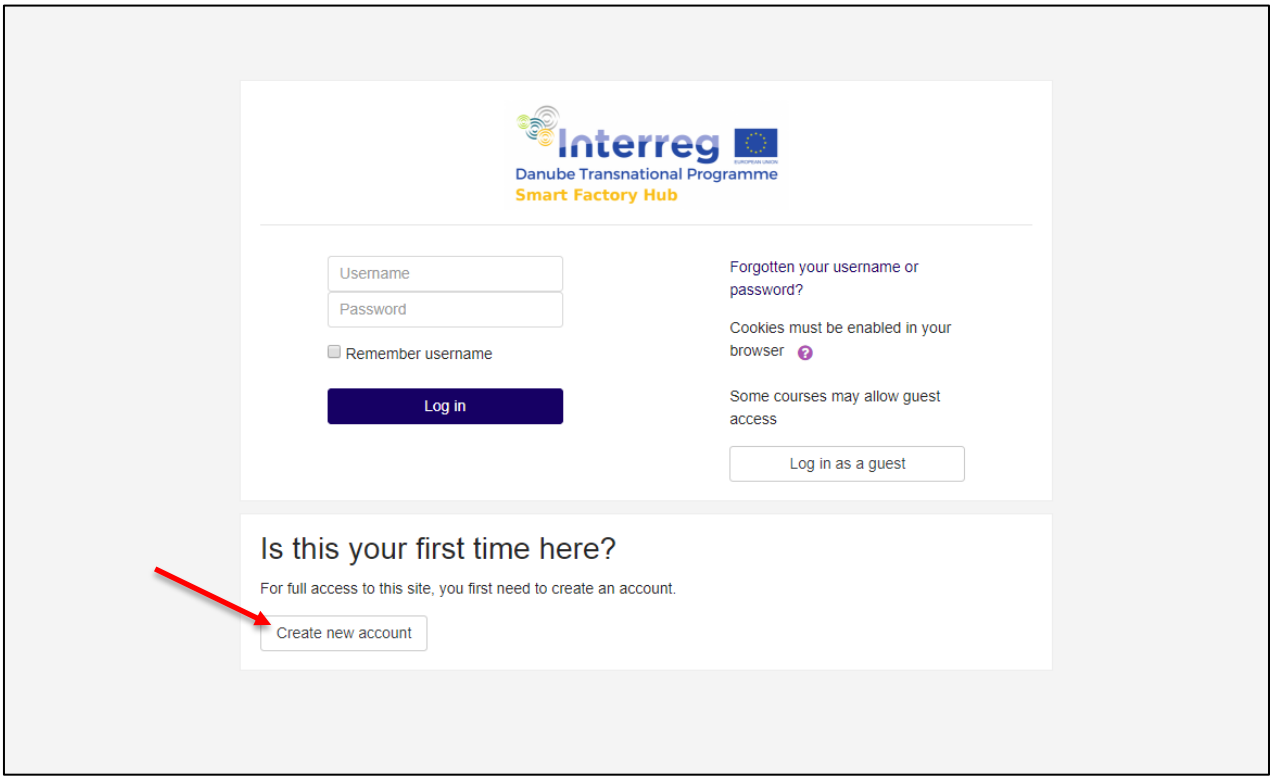

Figure 3: Log in window

After clicking on the button, a template opens up in which all necessary data can be filled in. Once this is done, you can create a new account by clicking on the button “Create my new account”. Afterwards you have to register, for which an Email link will be sent automatically to the given address. By clicking on this link, the registration is completed and the user account can be used.

Figure 4: Create new account

4.3 Home

After logging in with the user account, you are redirected to the home-site. Here you can see all courses with a short description and all available additional offers, e.g. BigBlueButton, link to the SFH Mapping Tool or the glossary. Events and announcements are displayed on the right-hand side. On the left-hand side, the tabs "Dashboard", “Calendar”, “Private files” are selectable.

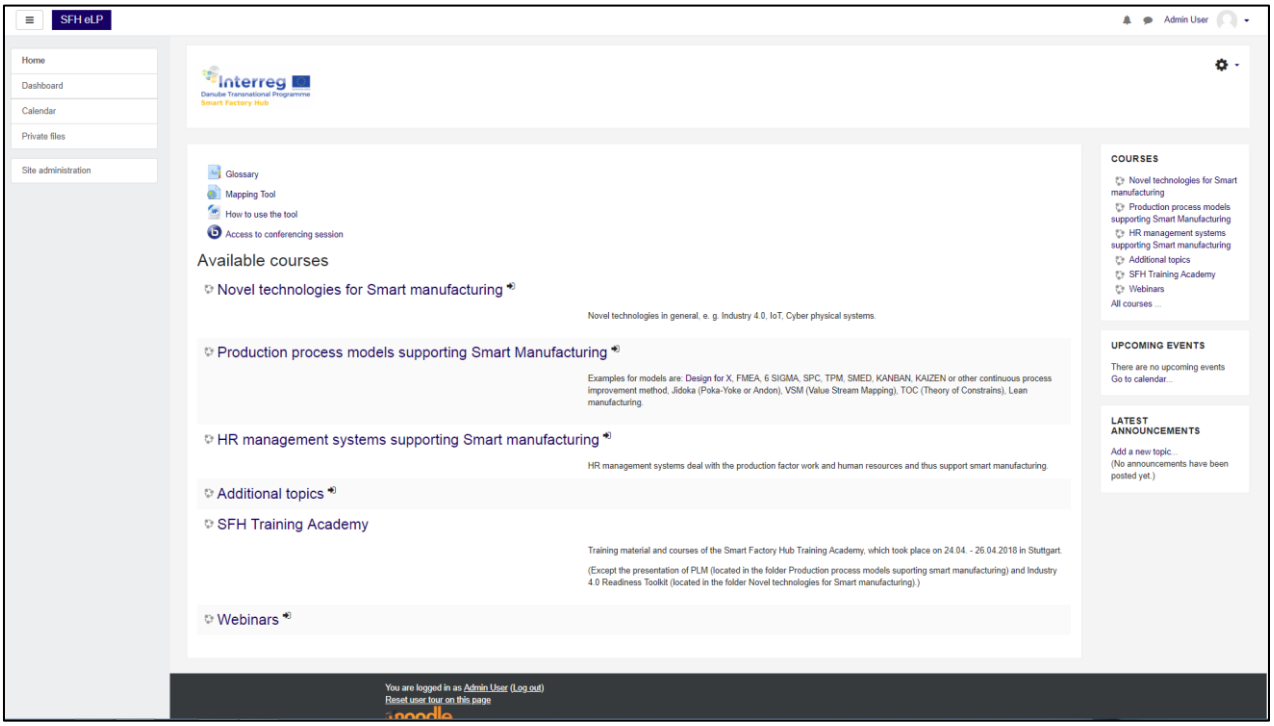

Figure 5: Home site

The six courses on the Moodle platform are listed on the home site. With a click on its name, it is possible to see the different course modules.

4.3.1 Courses

The course structure and its respective modules follow the training curricula described in D5.2.1.

After clicking on a course, for example on “Novel technologies for Smart manufacturing”, you are able to enrol for the course. After completion, the course opens up and the course modules become visible (see below).

On the left-hand side, there are different tabs that can be selected. With a click on “Participants”, it is possible to see the course participants. Badges, Competencies and Grades are not of further importance at the current moment for the E-Learning platform.

Underneath these mentioned tabs are all course modules of the selected course. With a click on one of these, you will directly get to the selected course module.

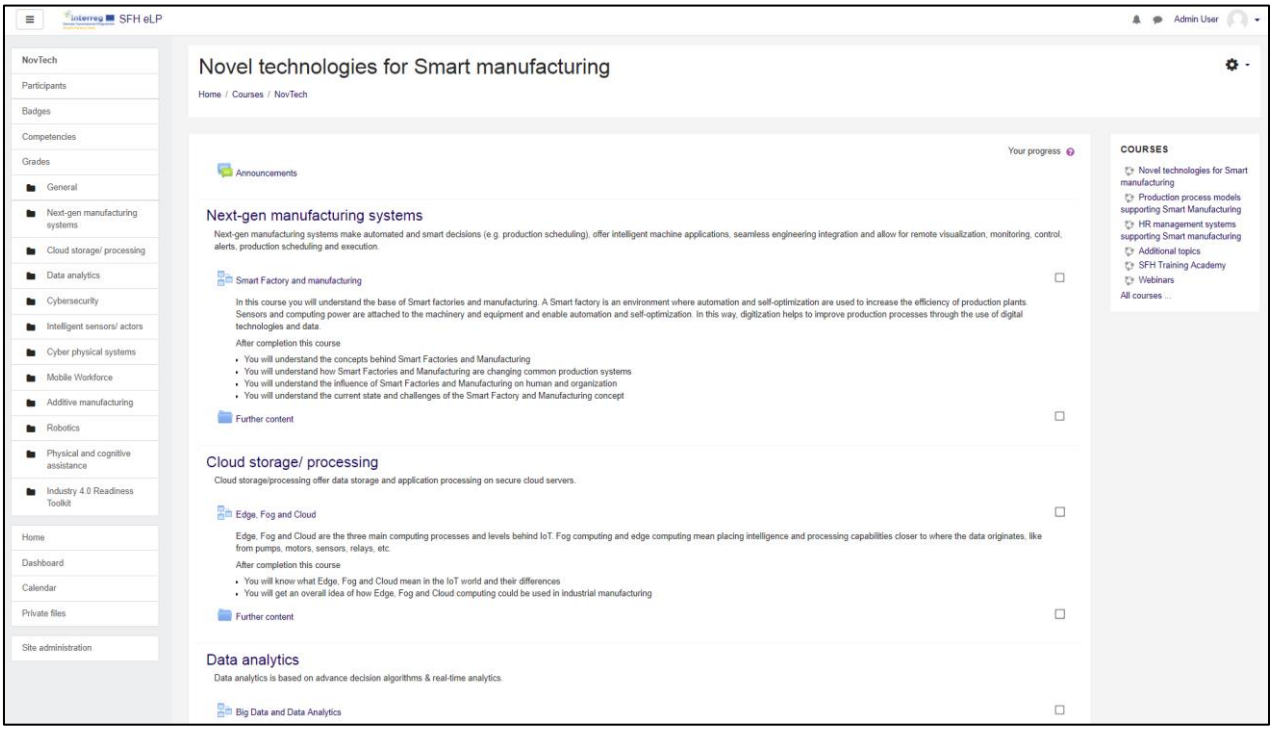

Figure 6: Sub-level of a course

The structure of the course page “Novel technologies for Smart manufacturing” is as follows: Under the title of the course module, you are able to find a short explanation of what the individual chapters are about. Depending on the respective module, the user can for example find a so-called lesson activity, which can be started by clicking on it. For an explanation, see 1.3.5. Then follows a summary of what was learned by working through the lesson. Finally, there is a folder with further content, which contains further interesting and helpful documents on the topic. It is possible that there are different structures of the course content in the other courses / modules.

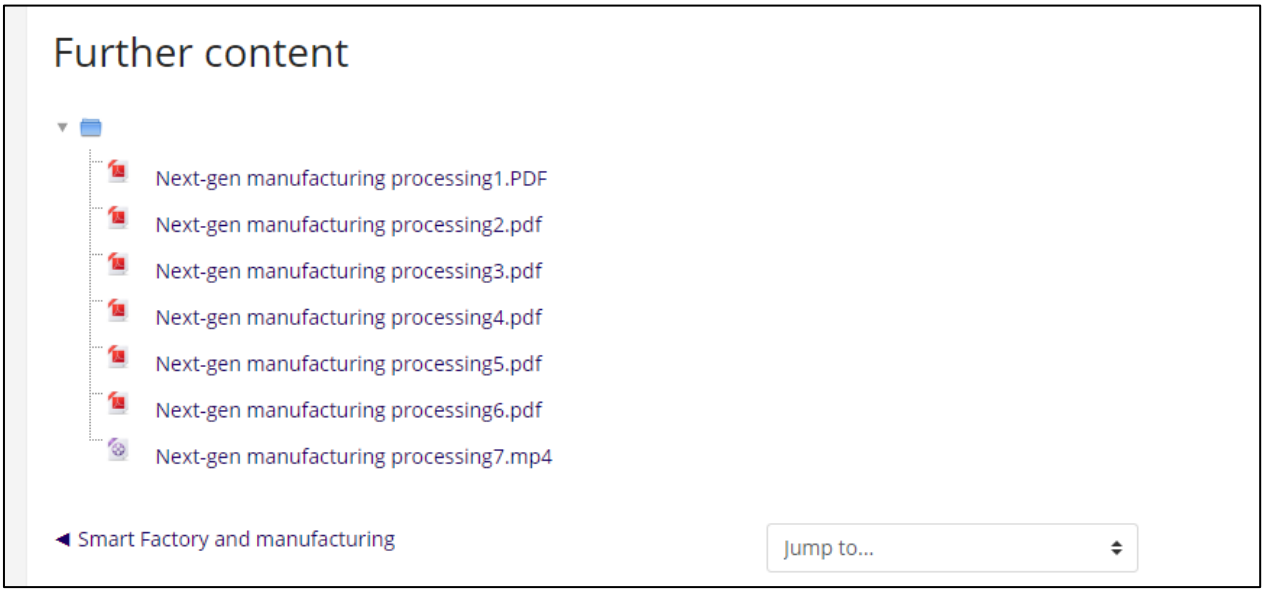

Figure 7: Further content sub-level

Other existing courses, such as the “Additional topics” course, are structured differently.

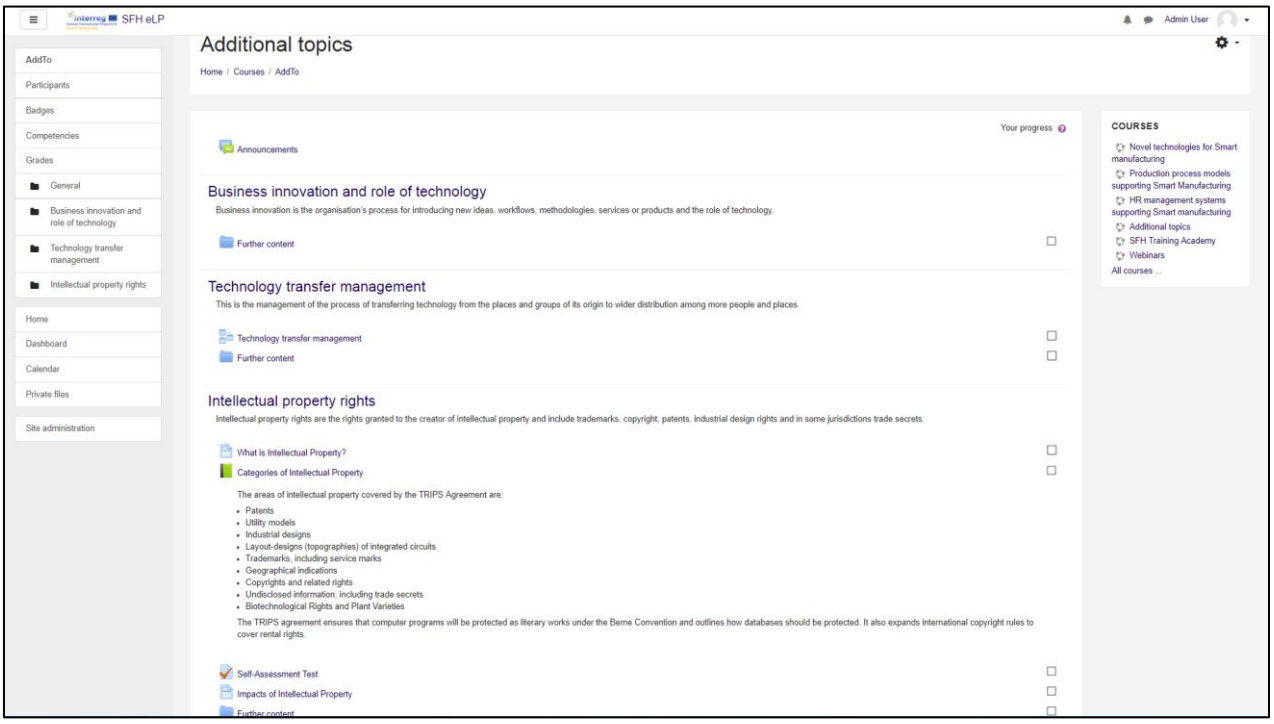

Figure 8: Different course structure 1

The topic “Intellectual property rights” contains an explanation of what intellectual property is. The next subcategories points to the different categories of intellectual property. With a click on Categories of Intellectual Property, it opens another page with information.

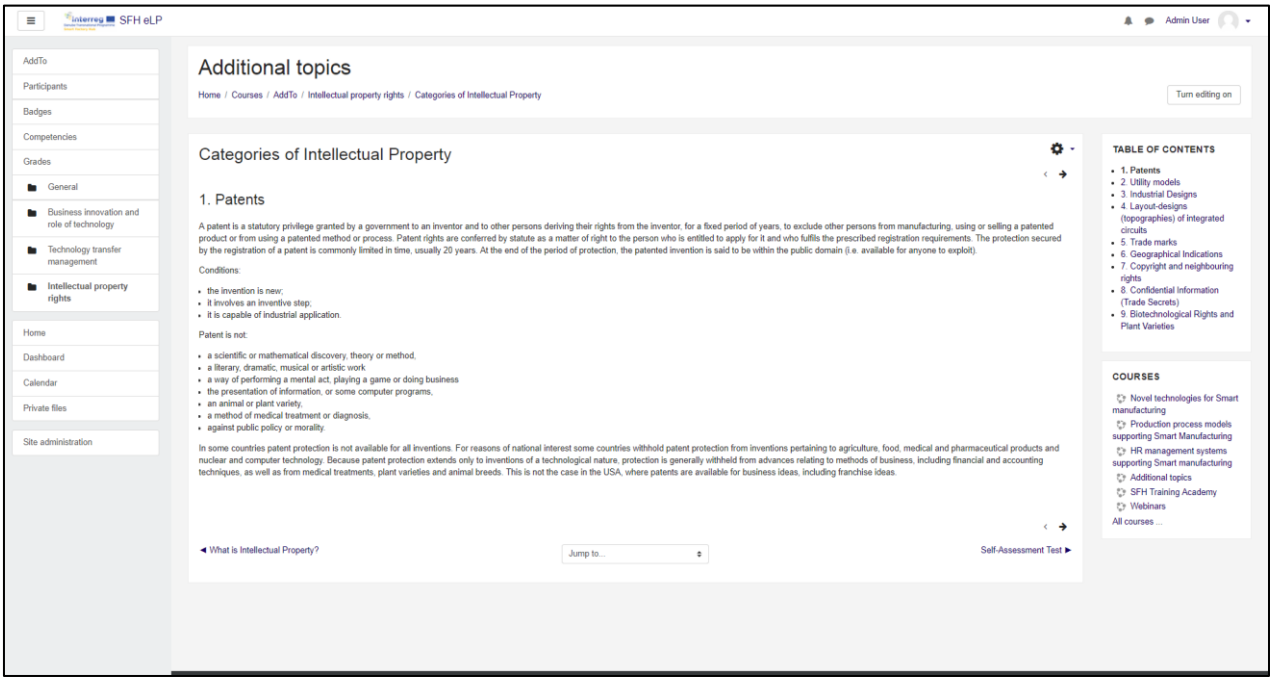

Figure 9: Different course structure 2

Here the important things about the categories of Intellectual Property are explained in more detail. You can go to the next information page or to the previous page using the arrows in the upper right-hand corner below the setting gear. The arrows in the lower right corner are used to switch to the other sub-categories.
Another point of the topic “Intellectual property rights” is a self-control test and information about impacts of intellectual property.
As with nearly every topic, at the end there is a folder with further content.

These two course structures were only presented as examples. All other courses may differ from the explained ones, but should be intuitive to use so that all information can be retrieved.

Another special course is the “SFH Training Academy” course. Here all contents are uploaded, which were used during the workshop in Stuttgart from 24.04.2018 – 26.04.2018. The presentations given there can be worked through based on so-called “lessons” (see 1.4.2).

4.3.2 Lesson

You can find the so-called lesson in the course “Novel technologies for Smart manufacturing”. The lesson is indicated by the marked symbol in the text. With a click on this heading, a new page opens.

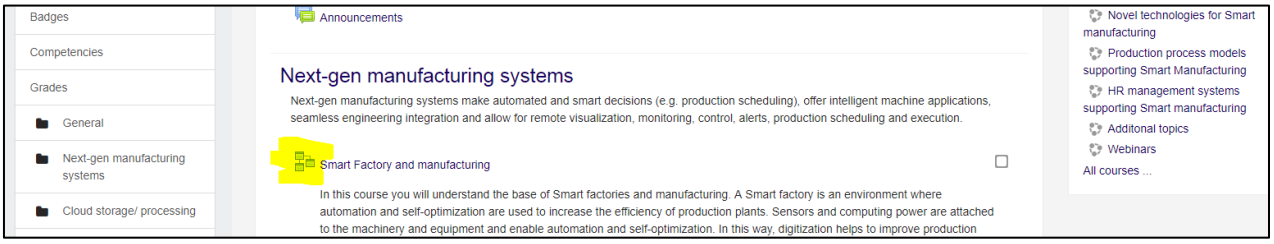

Figure 10: Lesson activity

With a click on the lesson, you can start it. A presentation on the selected topic follows. With the button “next page”, slides can be forwarded. Similarly, slides can be switched back with the button “previous page”. The buttons are located under each slide.

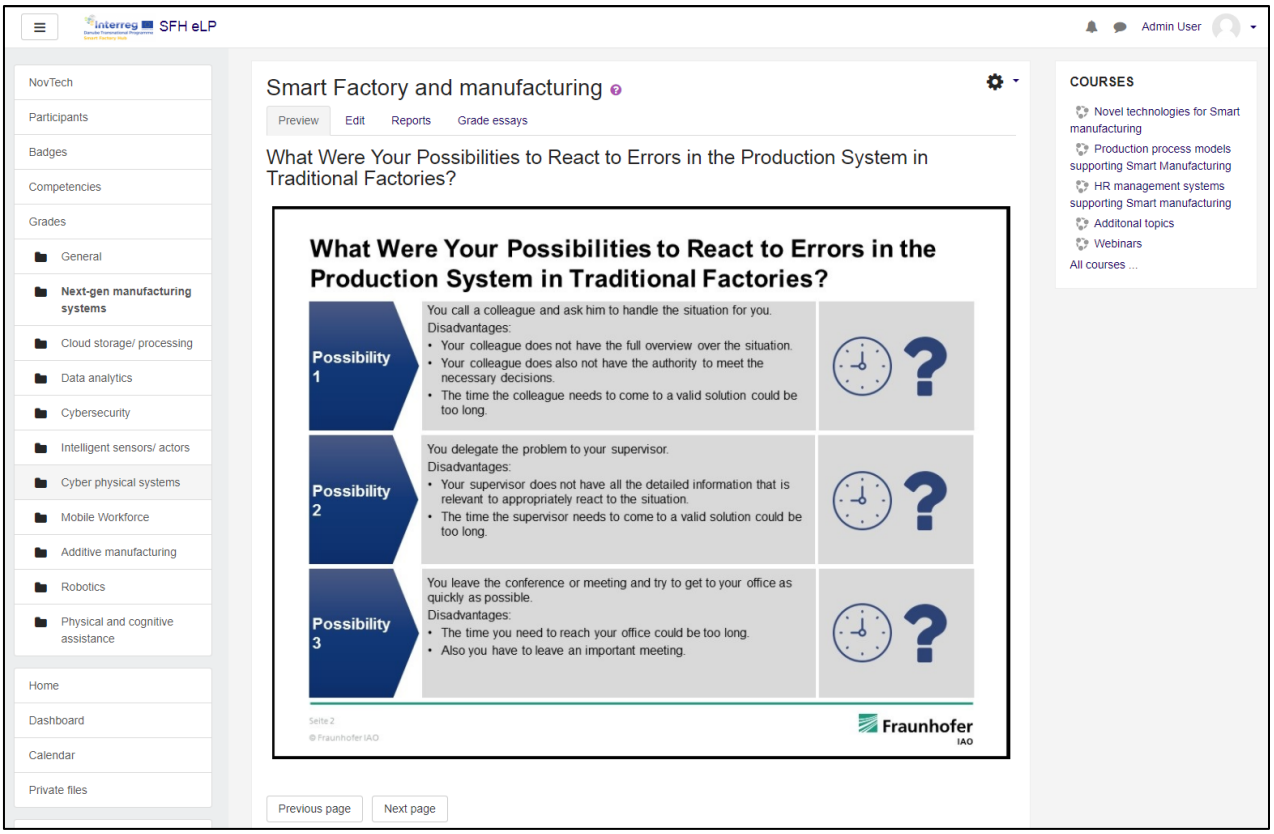

Figure 11: Next page and previous page buttons

Quizzes are embedded into a few lessons. Exemplary, these can look close to this:

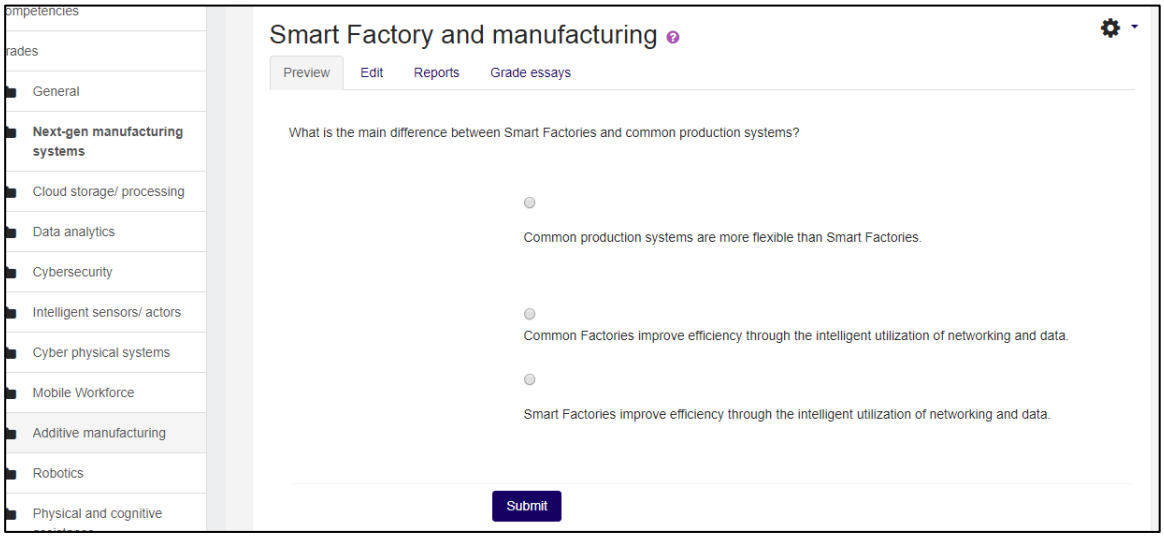

Figure 12: Quiz 1

Additionally, quizzes can appear subsequently to a use case:

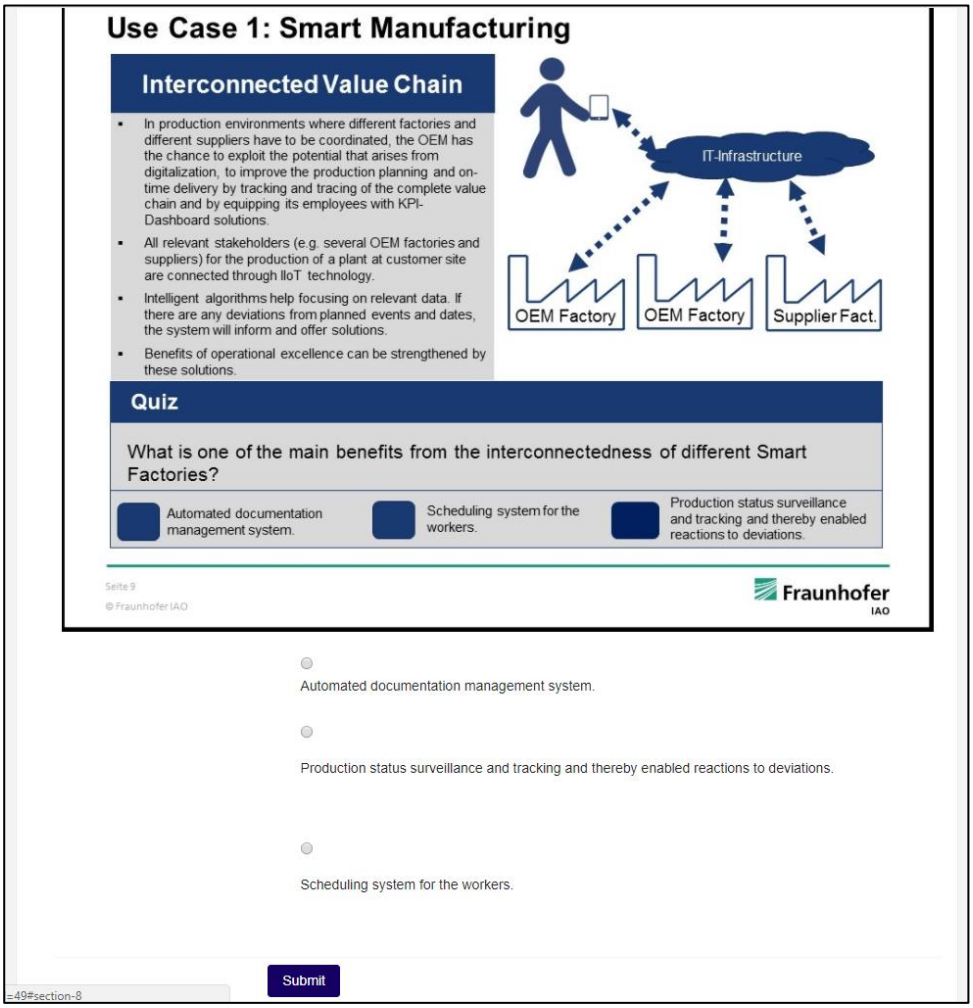

Figure 13: Exemplary use case

If a lesson has already been activated and is later re-called, the following text field appears:

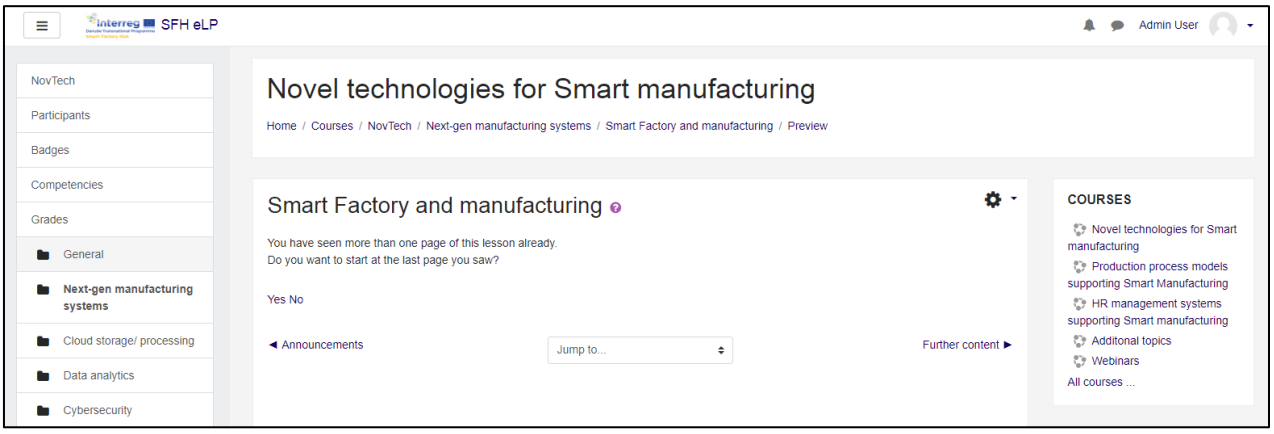

Figure 14: Revisiting a lesson

Clicking “Yes” displays the slide that was stopped last time. It is therefore possible to interrupt lessons and continue them at a later point of time. By clicking “No”, the lesson restarts from the first slide. A textual status bar indicates the progress on each course module as seen in the picture below:

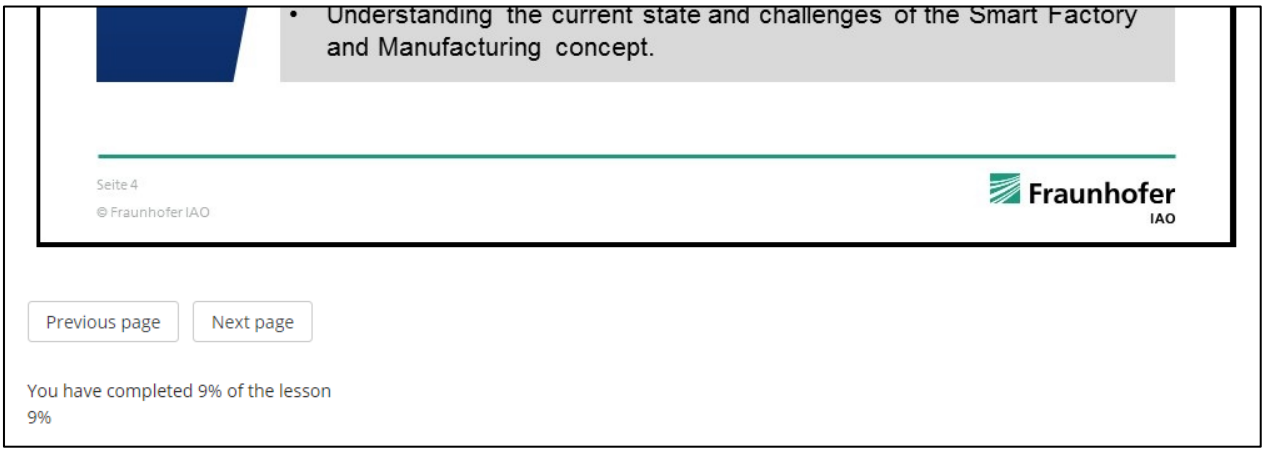

Figure 15: Lesson progress status

4.3.3 BigBlueButton

On the home site there is a button “Access to conferencing session” which allows you to access BigBlueButton for conferencing sessions and recording for later use.

Figure 16: BigBlueButton 1

As moderator of the conferencing session: To start a conferencing session or to join and listen to one, you have to click on the “Access to conferencing session” button. Then click “Join session”.

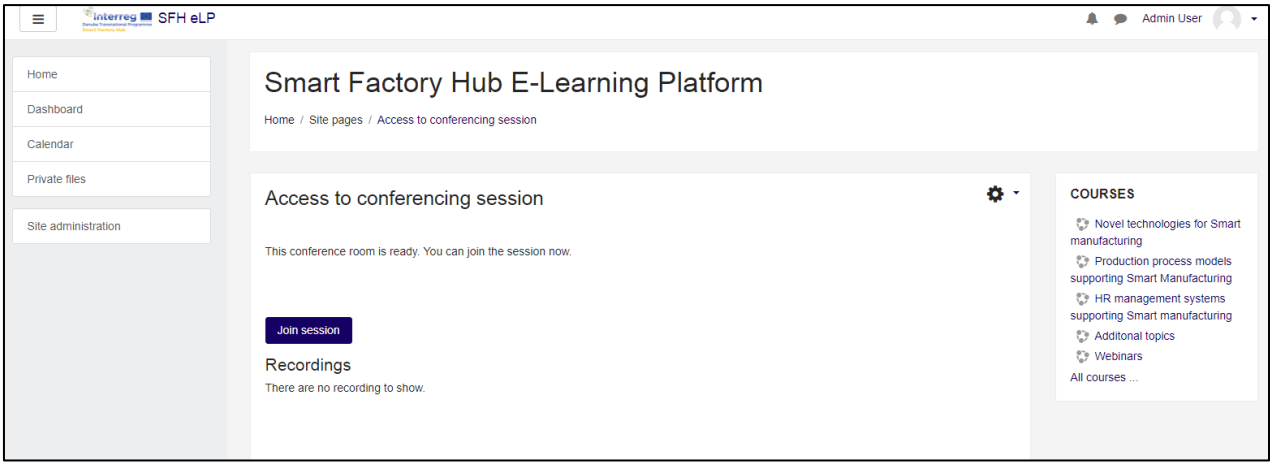

Figure 17: BigBlueButton 2

A new tab will now open. Then you have to decide if you want to participate with your microphone or if you just want to listen.

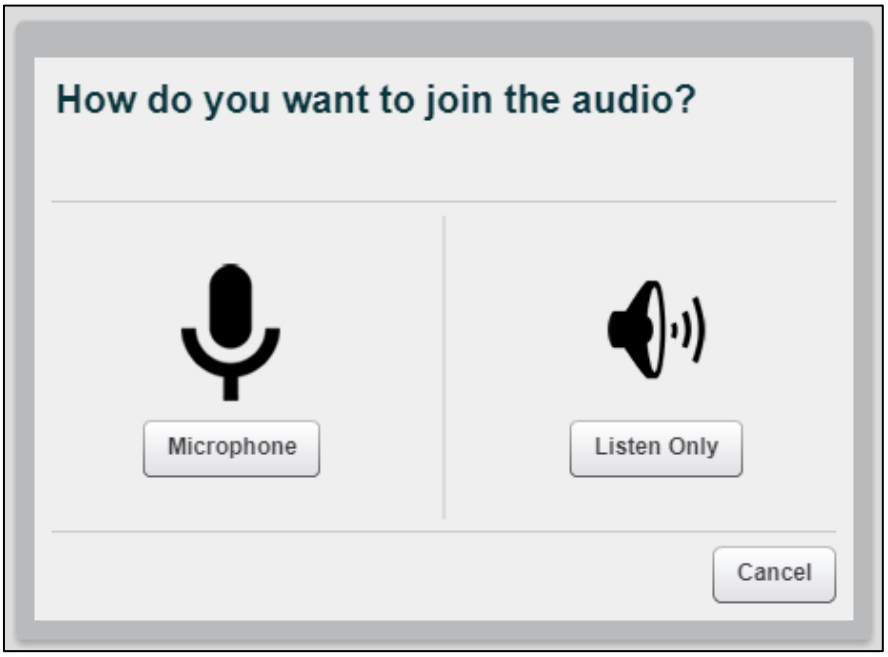

Figure 18: BigBlueButton 3

As a moderator: Please pick the option to join with microphone.
As a listener only: Decide if you want to join with microphone or not.

If you chose “with microphone”, you have to test your audio settings. Please follow the shown instructions. After all settings have been configured, the conference room is ready for use.

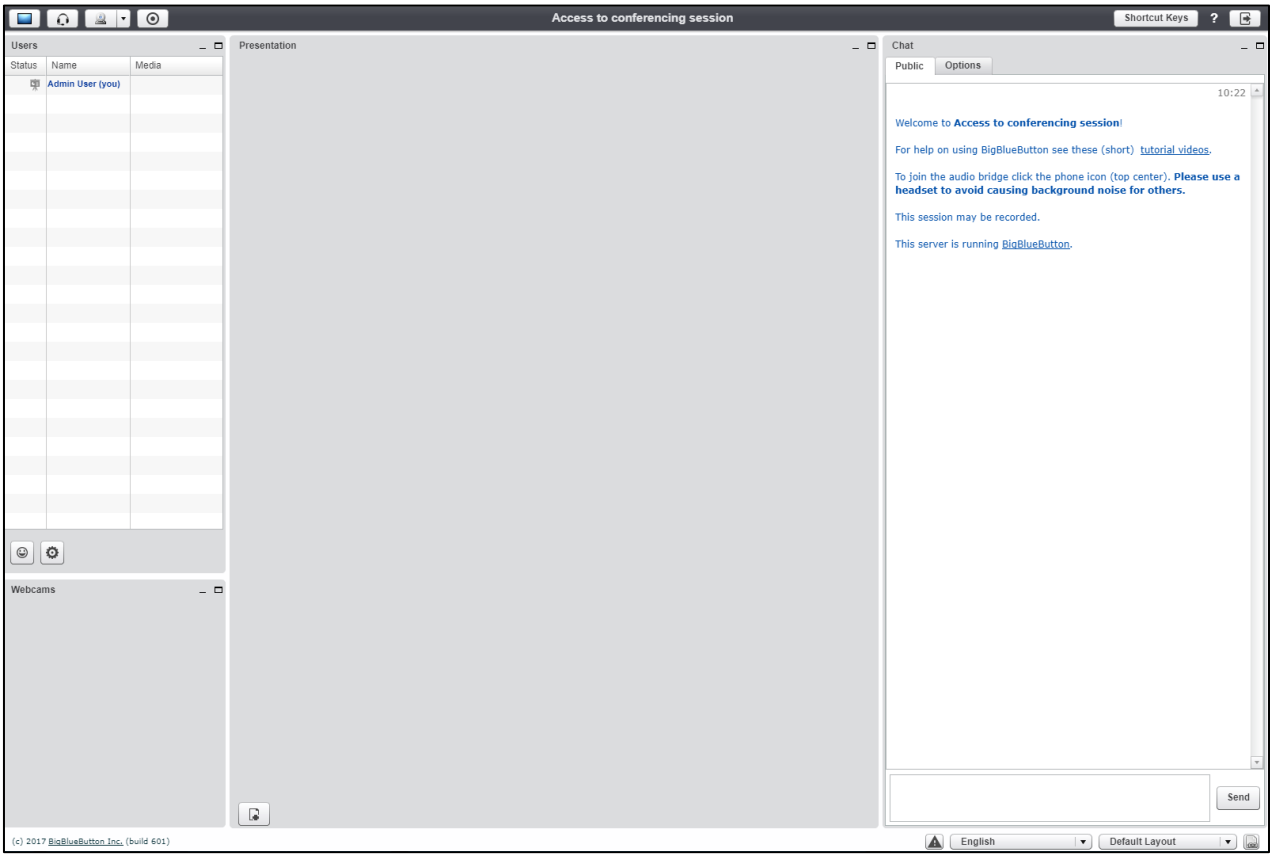

Figure 19: BigBlueButton 4

There are many different possibilities and settings in the conferencing room, which are explained below. In the upper left corner, four icons are displayed. With the first one, you are able to share your own screen with the others. To use this, simply follow the steps shown after clicking on it. With the second, the audio settings can be recalled to decide whether to listen or to use the microphone. In the icon next to it the webcam, if available and needed, can be switched on. By clicking on the last icon, the recording of the session can be started if this is desired. Please click “Yes” when you confirm the recording to start it.

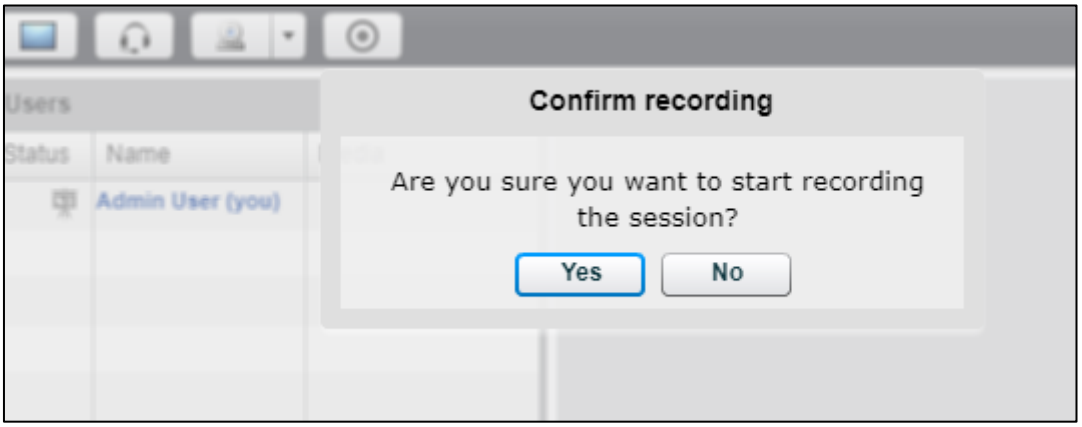

Figure 20: BigBlueButton 5

Below the four already explained icons there is a field showing all users participating in the session. It is possible to see their status, name and media. To change his personal status or, for example, to show other participants or the presenter if the content was understandable, you can click on the smiley button below the user list. There are nine different status options to express its personal temporary state of mind, to report or to evaluate (Figure 18).

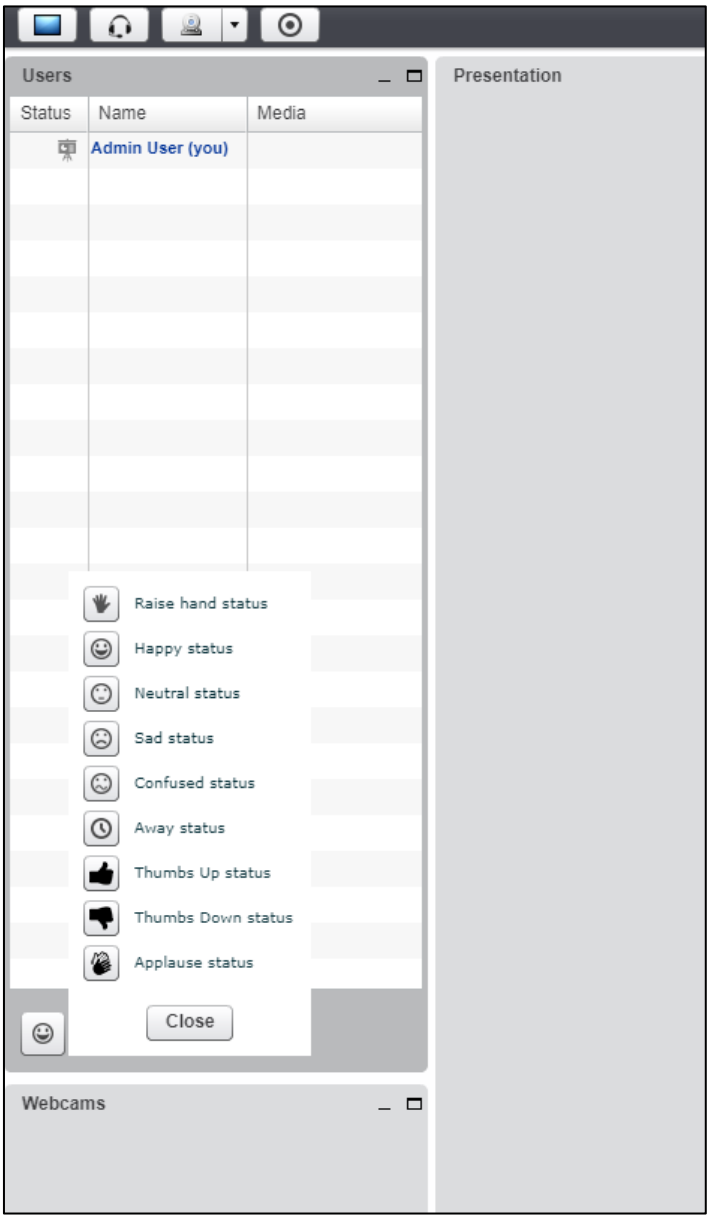

Figure 21: BigBlueButton 6

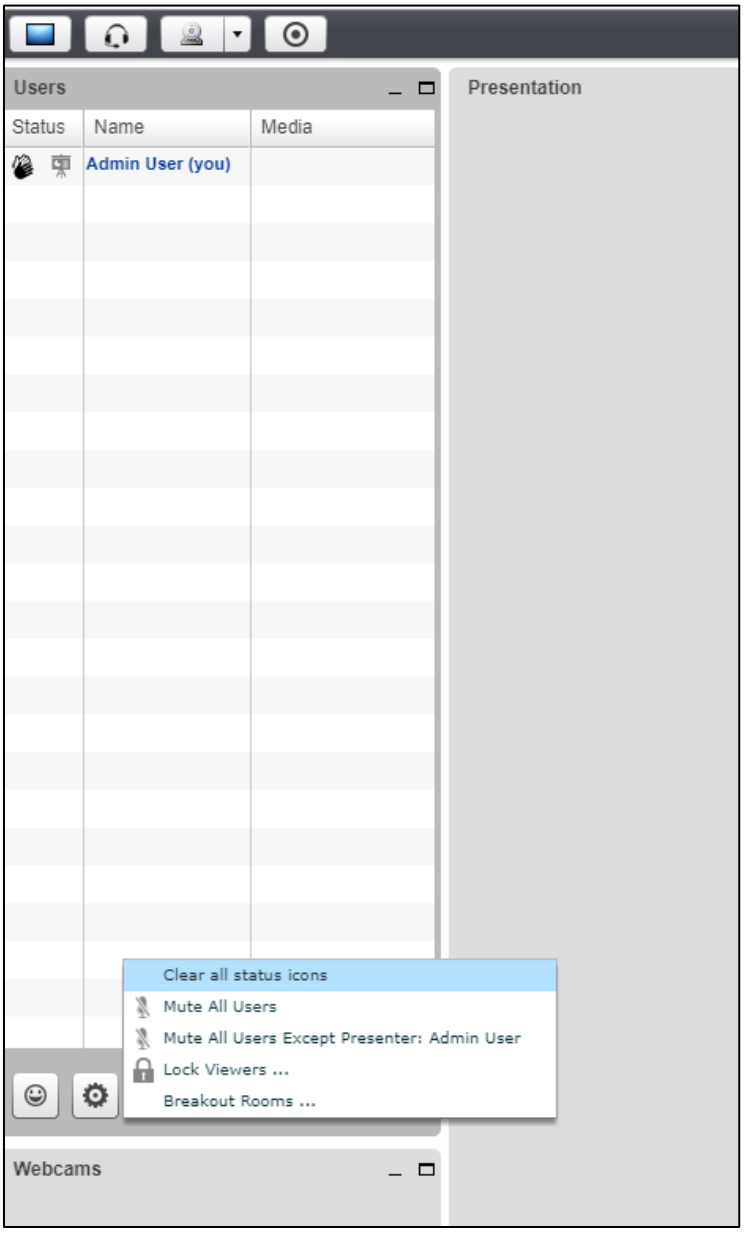

Figure 22: BigBlueButton 7

Next to the status button, there is the settings button. Here it is possible to clear all status icons, to mute all users except the presenter and to lock viewers (Figure 18).

Under the user field, there is a field called “Webcams”, which shows a list of all active webcams.

On the right-hand side there is a field called “Chat” with two different opportunities. In the “Public” chat, all users can see this chat and can participate. In the “Options” chat, it is possible to select a person to chat with privately.

Above the chat window, there are three more buttons.

With a click on the “Shortcut Keys”-button, you will see all the possible shortcuts that can be used in BigBlueButton.

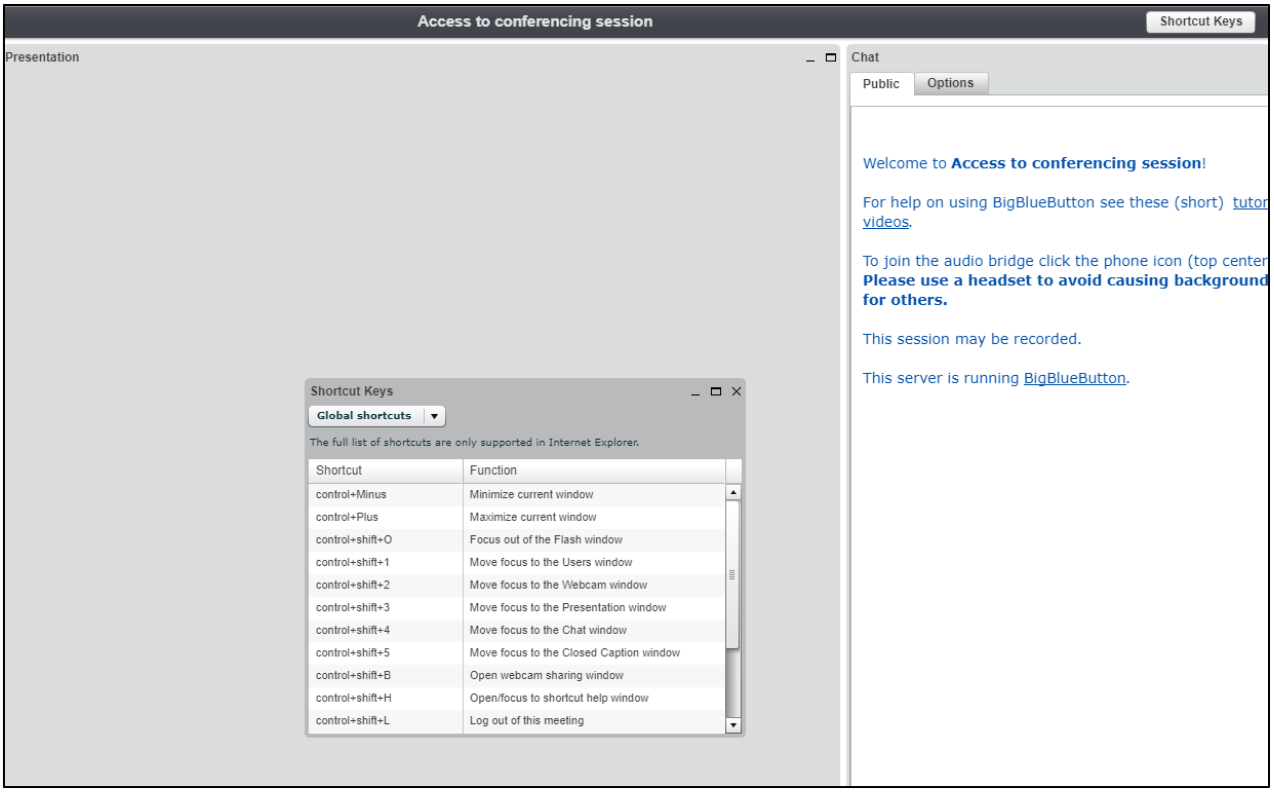

Figure 23: BigBlueButton 8

Next to the “Shortcut Keys” button is a button with a question mark, which symbolizes the help button. Beside is the “log out” button for leaving the virtual conference room.

In the lower right corner, you can set the language and select the layout that is most useful for the purpose from various options.

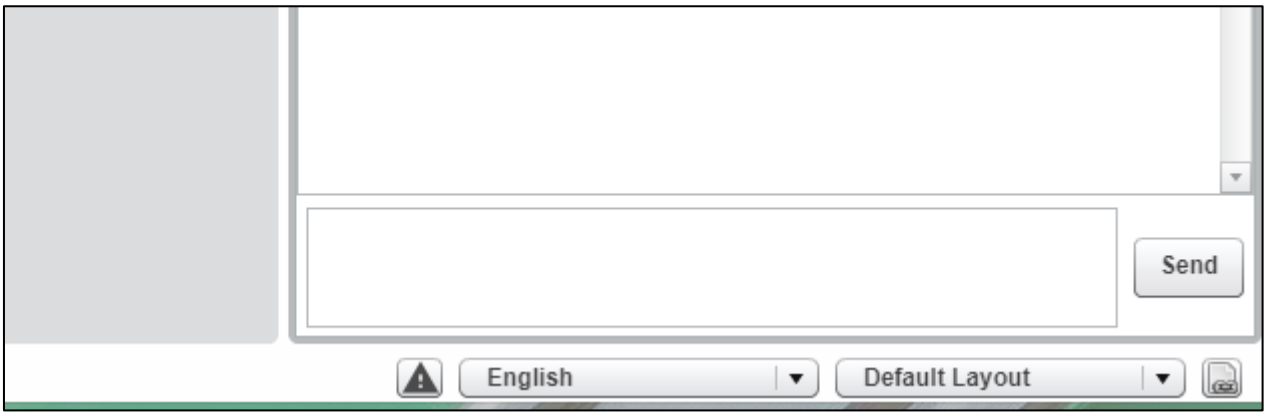

Figure 24: BigBlueButton 9

To upload a presentation, pictures or other files and documents to be shown during the conference, click on the marked button in the presentation field in the lower left corner (Figure 21). Then the files to be used can be selected (Figure 22).

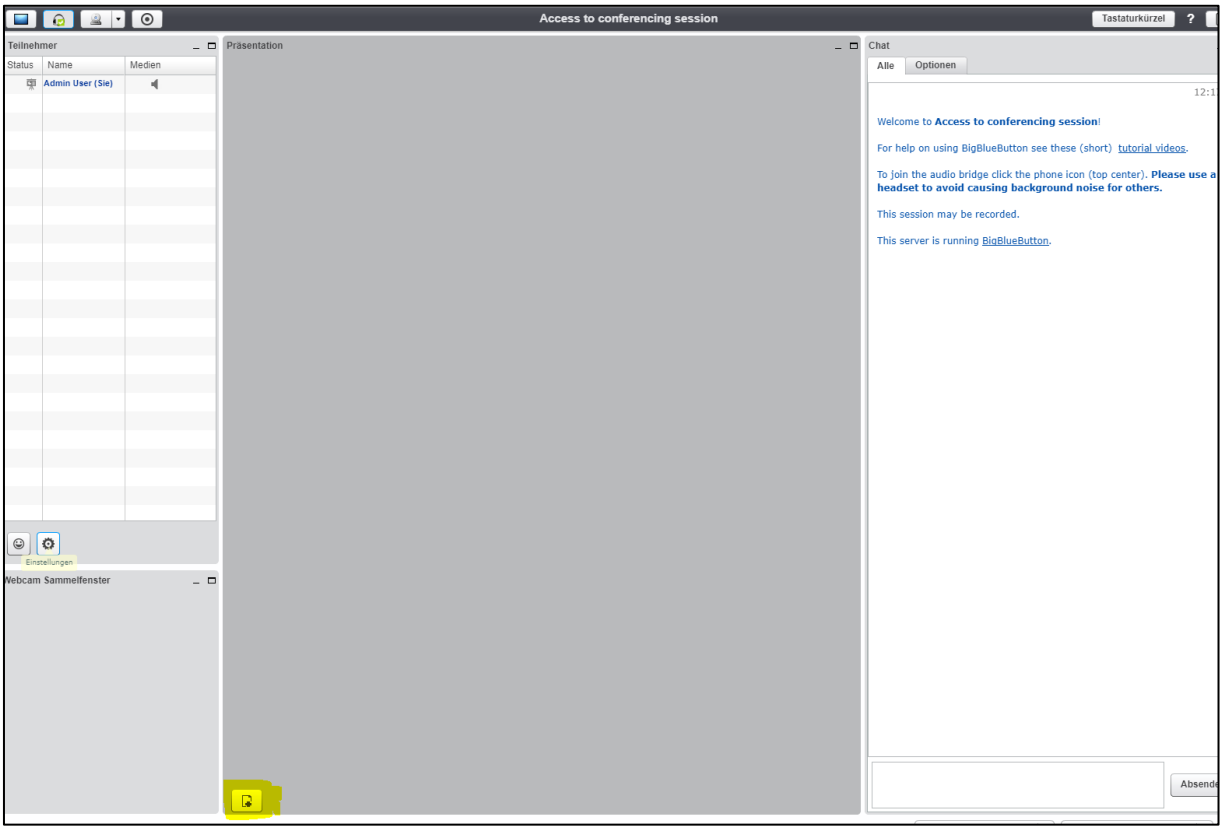

Figure 25: BigBlueButton 10

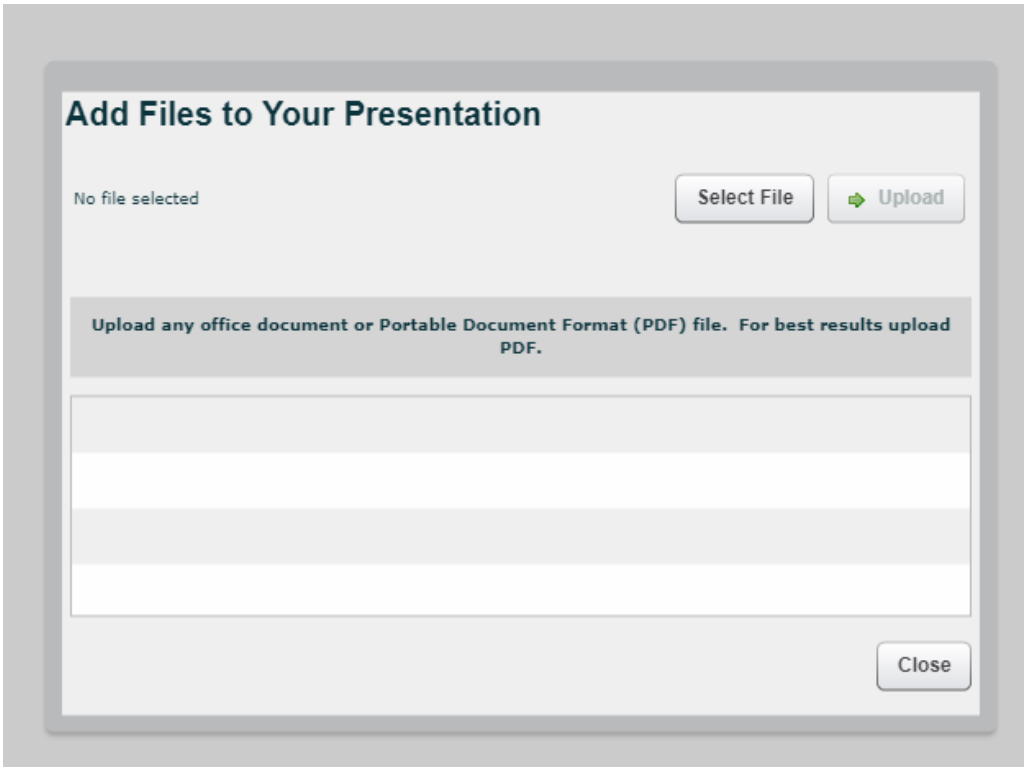

Figure 26: BigBlueButton 11

After uploading the selected file, various actions are possible: to start a poll, to go to the next slide, to go to the previous slide, to zoom, to fit the presentation to width or to page when needed.

As soon as you move the mouse over the slides, a menu with various options appears on the right margin. There it is also possible to pan and zoom, to write on the slides, to draw different forms like a rectangle, a circle or a triangle. Also implementing text is possible. In addition, there are different colour and thickness options.

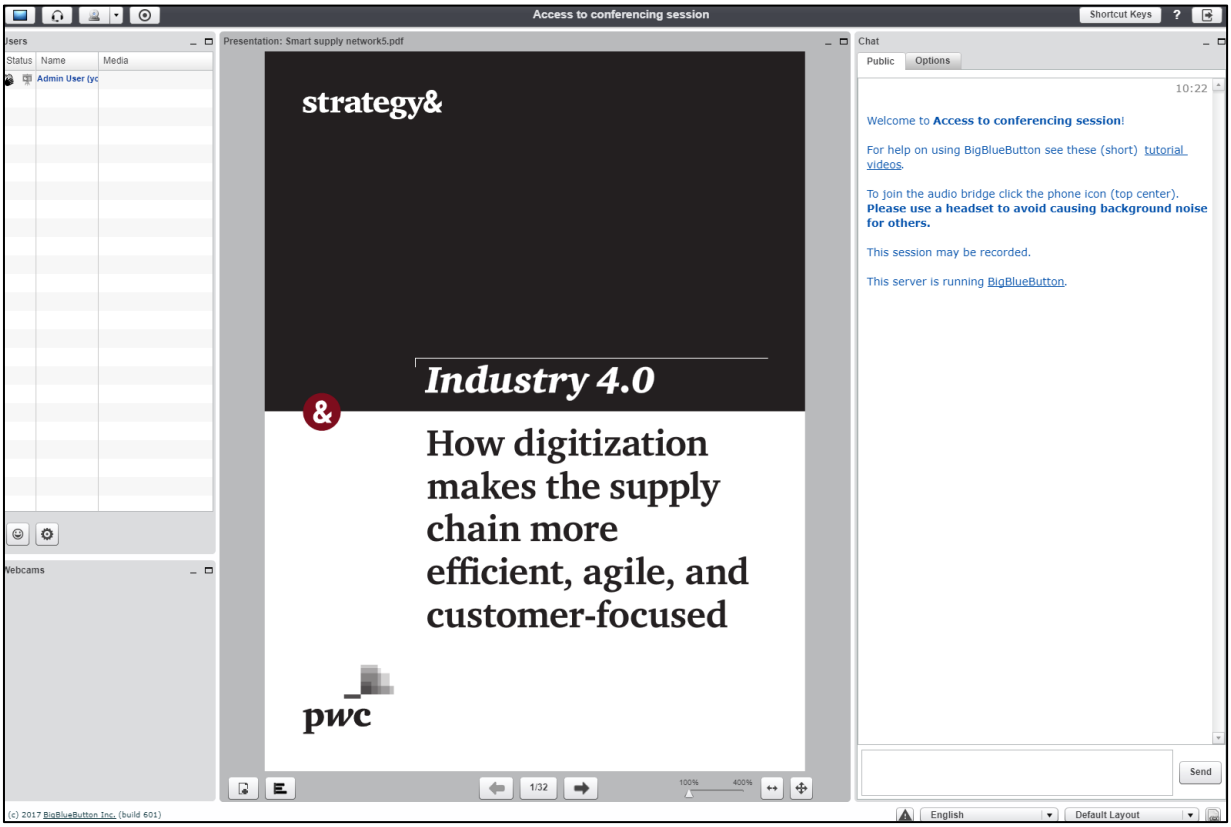

Figure 27: BigBlueButton 12

After ending the conferencing session just click on the “log out” button in the upper right corner. Then confirm your logout.

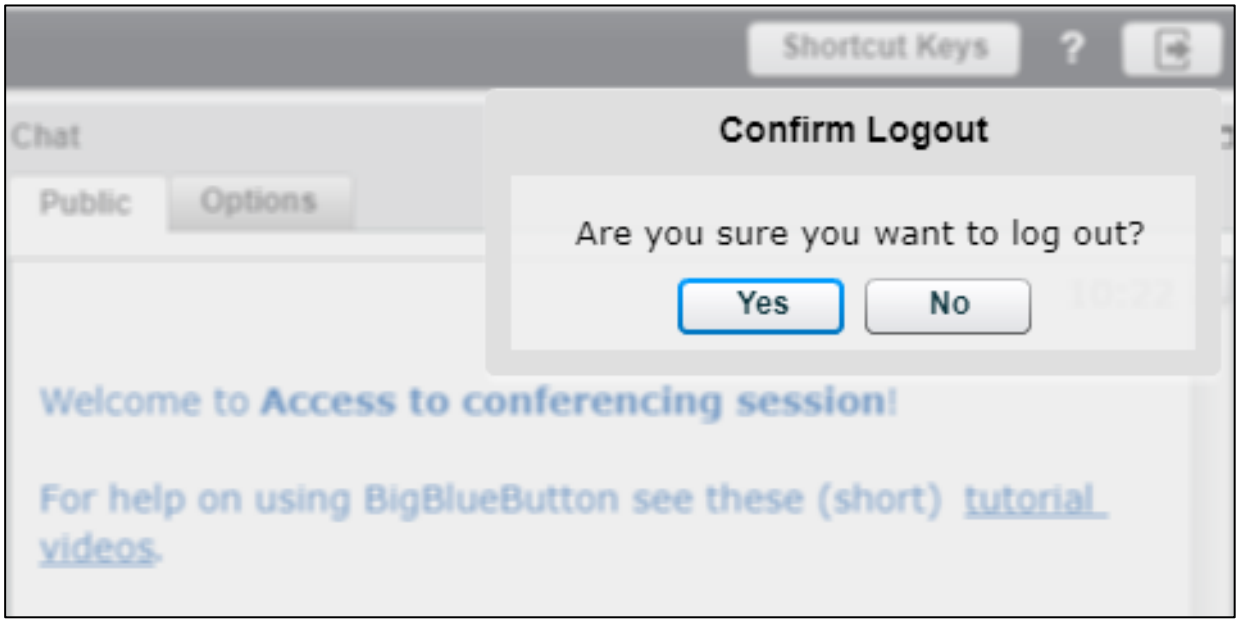

Figure 28: BigBlueButton 13