

# Automatic update of course components

Functional specification imc Learning Suite

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# 1 Functional specifications

#### 1.1 Component update behaviour (As is situation)

Component update: If the function is enabled, the following update rules apply:

- If it involves a test, feedback or a WBT (AICC or SCORM): As soon as the first participant has begun processing, updating is no longer possible. This ensures that all course participants are working under equal conditions.
- Chats in progress are not updated.
- All other components can be updated at any time.
- Learning logic exception: if a learning logic was defined, updates can be performed via the syllabus tab until the participants launch the course (duration-dependent courses) or until course launch (date-dependent courses). This ensures that follow-up actions are based on the same conditions for all course participants.



# 1.2 Update process

The update process is described in the tables below, based on the different cases:

1. Initial media creation without publication:

Initial media creation and initial assignment to the course						
Task	Action	Version	Update checkbox in course is active	With revision date	Without revision date	Comment
Initial creation of media, tests, feedback form	Save	0.1	Does not matter	No effect	No effect	Drafting a new document
Finalization of the media, test, feedback form	Save and Publish	1.0	Does not matter	No effect	No effect	Initial version created
Initial course creation	Save	No versioning	Does not matter	No revision date assigned	No revision date assigned	-
Assignment of tests, feedback forms, media to courses	Assign on Syllabus and mark automatic update	1.0 on course syllabus	Does not matter	Manual changes take effect right away	Manual changes take effect right away	Content now available in the course



- 2. Publication of a new version in the following cases:
  - a. No learner has started the course yet

CASE A: No learner has started the course yet					
Task	Action	Version	Update checkbox in course is active	With revision date defined on the course	Without revision date defined on the course
Update of a test/feedback/ media	Save and Publish	New published version available	Yes	Update applied on revision date automatically	Update applied either by triggering an update either at the test/feedback/media manager or at the course manager (as described further in the specification) or nightly by the cron job.  An automatic update by the cron job will only be triggered if the new meta tag which enabled the update for courses without revision date is enabled.
Update of a test/feedback/media	Save and Publish	New published version available	No	No update applied	No update applied



b. At least a learner has started the course (duration of use) or the start date of the course is reached (date dependent) (LEARNING LOGIC case)

Action	Version	Component is bound by learning logic rules	Update checkbox in the course is active	Meta tag: Allow update of components bound by learning logic rules is enabled	With revision date	Without revision date
Save and Publish	New published version available	Yes	Yes	Yes	Update applied on revision date automatically	Update applied either by triggering an update either at the test/feedback/media manager or at the course manager (as described further in the specification) or nightly by the cron job.  An automatic update by the cron job will only be triggered if the new meta tag which enabled the update for courses without revision date is enabled.
		Yes	Yes	No	No update applied for the corresponding component	No update applied for the corresponding component.
		No	Yes	Does not matter	Update applied on revision date automatically	Update applied either by triggering an update either at the test/feedback/media manager or at the course manager (as described further in the specification) or nightly by the cron job.  An automatic update (either triggered automatically by the job or manually by the admin) will only be conducted if the new meta tag which enabled the update for courses without revision date is enabled.
		No	No	Does not matter	No update applied for the corresponding component	No update applied for the corresponding component



c. At least one learner started processing the test/feedback form/WBT (AICC/SCORM) which gets a new published version

CASE C: At le	CASE C: At least one learner started processing the test/feedback form/WBT (AICC/SCORM) which gets a new published version					
Action	Version	Component is bound by learning logic rules	Update checkbox in the course is active	Meta tag: Allow update of components bound by learning logic rules is enabled	With revision date	Without revision date
Update of WBT (SCORM or AICC)	Save & Publish	New published version available	Yes	Yes	Update applied on revision date automatically	Either by triggering an update either at the test/feedback/media manager or at the course manager (as described further in the specification) or nightly by the cron job.  An automatic update (either triggered automatically by the job or manually by the admin) will only be conducted if the new meta tag which enabled the update for courses without revision date is enabled.
			Yes	No	No update applied for the corresponding component	No update applied for the corresponding component
			No	Does not matter	No update applied for the corresponding component	No update applied for the corresponding component
Update of a test/feedback	Save and Publish	New published version available	Yes	Yes	Update applied on revision date automatically (via cron job)	Update applied either by triggering an update either at the test/feedback/media manager or at the course manager (as described further in the specification) or nightly by the cron job.  An automatic update (either triggered automatically by the job or manually by the admin) will only be conducted if the new meta tag which enabled the update for courses without revision date is enabled.
			Yes	No	No update applied for the corresponding component	No update applied for the corresponding component
			No	Does not matter	No update applied for the corresponding component	No update applied for the corresponding component



# 1.3 New course meta tag: Allow update of components bound by learning logic rules

Learning logic restrictions for component update in a course					
Case	As is behaviour	Targeted behaviour			
Start date of the course is not reached (date dependent course) or No participant has started the course (Duration of use) AND the Update flag of the component is checked	The update is performed, and the last published version of the component is available in the course	The update is performed, and the last published version of a component is available in the course when no revision date is set on the course or at the revision date when the automatic update process is triggered.			
Start date of the course is reached (date dependent course) or at least one participant started the course (Duration of use) AND the Update flag of the component is checked	No more update is processed for the components subject to learning logic rules	A new course meta tag to define whether the update should take place even if learning logic rules are defined is created.  Type: Checkbox  Default value: false  EN: Allow update of components bound by learning logic rules Info text EN: Allows to perform an update to the last published version of media elements marked to be updated which are bound by learning logic rules, even if the start date of the course was reached (for date dependent courses) or if at least one participant has started the course (duration of use courses)  The meta tag is taken into consideration during the automatic update process, regardless of how the process was triggered (at the cron job run or when a manual trigger is performed)			



# 1.4 New course meta tag: Allow update of course components after participant start

Allow update of tests, feedback forms or a WBTs (AICC or SCORM) after processing has begun					
Case	As is behaviour	Targeted behaviour			
The media was not started yet by any learner AND the Update flag of the component is checked	The update is performed, and the last published version of the component is available in the course	The update is performed, and the last published version of the component is available in the course when no revision date is set on the course or at the revision date when automatic update process is triggered.			
The media was started by at least one participant AND the Update flag of the component is checked	No more update is processed for the corresponding media	A new course meta tag to define whether the update should take place even if a participant has already begun processing component  Type: Checkbox  EN: Allow update of course components after participant start  Default value: false  Info text EN: Allows to perform an update to the last published version of a test, feedback form or WBT(SCORM/AICC) if it was marked to be updated in the course, even if participants have already begun processing the component.  The meta tag is taken into consideration during the automatic update process, regardless of how the process was triggered (at the cron job run or when a manual trigger is performed)			



#### 1.5 New course meta tag: Enable automatic update for courses without revision date

The automatic update of courses which do not have a defined revision date can be enabled via a dedicated meta tag. The meta tag is of type: Checkbox

When the meta tag is disabled/not present and the course does not have a revision date, the automatic update via cron job will not be executed for that course.

When the meta tag is enabled and the course does not have a revision date, the automatic update via cron job is executed nightly (or based on the cron job configuration at each run of the job).

The courses that have a revision date will only be updated at the revision date.

### 1.6 Outcome of the update

If an update applies, then the behaviour is as follows:

The learner has started the course after the update has been applied					
Media type Desired Outcome Comment					
WBT (SCORM/AICC), Test/Feedback, Other media	The learner has access to the last published version	No change from the current behaviour			



The learner has previously accessed the syllabus before the component was updated (but has not started the component before the update)					
Media type	Desired Outcome	Comment			
WBT (SCORM/AICC)	The learner will see the new version in the syllabus.  If the What's new function is active on the system, the component				
Test/Feedback	will be labelled as UPDATED (in Businessprocess.xml add <newwhatsnew< td=""><td></td></newwhatsnew<>				
Other media	newWhatsNewActivated="true"/> )				

The learner has started the component before the update					
Media type	Desired Outcome	Comment			
WBT (SCORM/AICC)	The component will keep the status reached by the learner on the	The status will NOT be kept if the media was			
Test/Feedback	previous version. (but not the progress).  If the What's new function is active on the system, the component	completely removed from the course and added in a new version.			
Other media	will be labelled as UPDATED (in Businessprocess.xml add <newwhatsnew newwhatsnewactivated="true"></newwhatsnew> )				



The learner has passed/failed the component							
Media type	Desired Outcome	Comment					
WBT (SCORM/AICC)	<ul> <li>The component will directly reflect the information from the last published version (Title, attribute values)</li> <li>The component will keep the status reached by the learner on the previous version and the number of attempts is not reset.</li> <li>If the What's new function is active on the system, the component will be labelled as UPDATED in the course room (in Businessprocess add <newwhatsnew newwhatsnewactivated="true"></newwhatsnew>)</li> <li>Starting the media again will trigger the load of the new version.</li> </ul>						
Test/Feedback	<ul> <li>If there are attempts left</li> <li>The component will directly reflect the information from the last published version (Title, attribute values, test player configuration)</li> <li>The component will keep the status reached by the learner on the previous version and the number of attempts is not reset.</li> <li>If the What's new function is active on the system, the component will be labelled as UPDATED in the course room (in Businessprocess add <newwhatsnew newwhatsnewactivated="true"></newwhatsnew>)</li> <li>Starting the media again will trigger the load of the new version. (new question set)</li> <li>The detailed evaluation of the component will always reflect the last submitted set of questions and answers.</li> <li>If there are no attempts left or if the media is locked, since the learner will no longer be able to open the components, no update flag is needed and also no new version.</li> </ul>	If the test was already submitted in its initial version, if the learner decides to retake the test, the start page of the test will display the overall results based on the previous version.  If the learner gained a certificate based on the submission, the certificate button will be displayed. the downloaded certificate considers the last submitted version.  The Detailed evaluation button will open the detailed evaluation based on the last submitted version  The repeat button will start the test based on the new version of the test. The test player settings of the new version are considered. For free text submissions, if the submission is not corrected at the time of the update to a new version, it will be discarded from the correction pool. Then the test is not locked anymore, and the learner can take the new version					
Other media	The component will directly reflect the information from the last published version (Title, attribute values)  The component will keep the status reached by the learner on the previous version  If the What's new function is active on the system, the component will be labelled as UPDATED in the course room (in Businessprocess add <newwhatsnew newwhatsnewactivated="true"></newwhatsnew> )						



The learner has submitted an older version of the test after a new version of the test is available in the course (Offline handling for updated tests/ Submits of older versions when a new version is available)

If a learner has started the test in an older version and before submitting the test the version has been updated in the course, the following behavior will be applied when the learner submits:

- The submit of the old version is permitted
- At the time of the submit, the evaluation of the submitted version is performed
- The evaluation of the submitted version can be accessed by the learner while still on the submit confirmation page.
- The status achieved on the submitted version is transferred to the new version
- The number of attempts is reduced by one
- If no more attempts are left after reducing by one, the test can no longer be started in its new version

Navigating back to the course room will show the test in the new version with the last status achieved after the last submit.



#### 1.7 Update to the template level

The "Update syllabus" process from template to course is not impacted by the customization.

# 1.8 Tutoring/Individual Syllabus/Supervisor view Syllabus/Attendance tracking

When a tutor is observing the course progress per participant in Course instruction, selecting the component will display the details corresponding to the version of the media which is available to the learner.

When a supervisor is editing the syllabus of a non-started course participant, marking syllabus components as optional will take effect on the corresponding version of the media. Unchecking the media will ensure that the learner will not have access to it.

#### 1.9 Reporting

For reporting it will be ensured that the current behaviour outlined in the following is still working after the enhancements:

- The **Test result report** reflects the progress on each test version that was submitted by the learner
- The Test questions per user report reflects the results per each test version that was submitted by the learner
- The feedback questions report reflects the results per each submitted feedback form version
- The feedback submissions report reflects the results per submitted each feedback form version

NOTE: The reports will show the results on the specific versions only if the learner actually submitted the test in that particular version.



#### 1.10 "Revision date" for courses

A new authorization is available at the course manager (EN: Set revision date)

When the authorization is available for the course manager, the versioning icon will be displayed on the toolbar for the course manager as well. (**EN**: Revision date)

On hover, a tooltip is available for this button: (EN: Set revision date)

When the button is selected, a pop-up is displayed which allows defining the revision date for the courses

The button is only enabled when at least one course is selected.

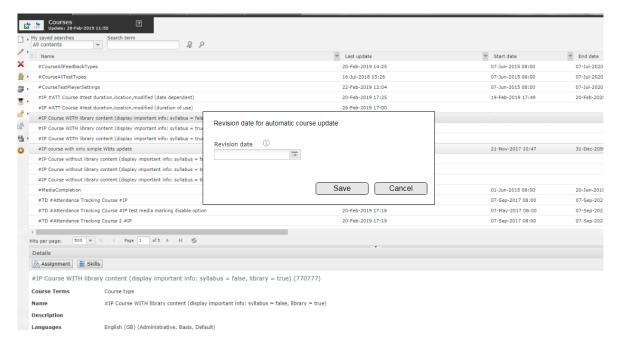


Fig. 1.1: "Revision date" for courses.

# 1.10.1 Changing the revision date value in bulk for multiple selected courses or course templates

The revision date can be changed also for multiple courses at the same time.

When the existing values are different for the several selected objects, the field is displayed as empty



#### 1.10.2 Revision date column

In the course manager, it will be possible to add a new column to display the revision date. By default, the column is not displayed

- When there is a revision date defined, the date is displayed in the column
- When there is no revision date, the column is empty
- When the revision date is changed or defined, and the changes are saved, the manager will refresh, and the list will display the updated revision date.

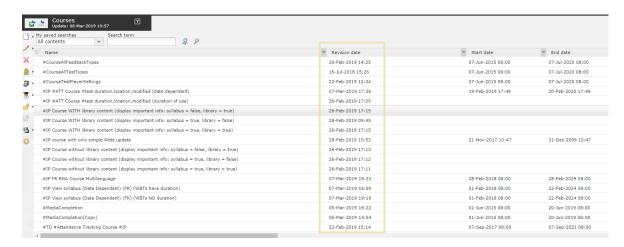


Fig. 1.2: Revision date column.

## 1.11 Update of course specific media

The course specific media update is not impacted by the customization.



#### 1.12 Active/Inactive flag for questions

A new checkbox option is added to test and feedback questions. (EN: Active)

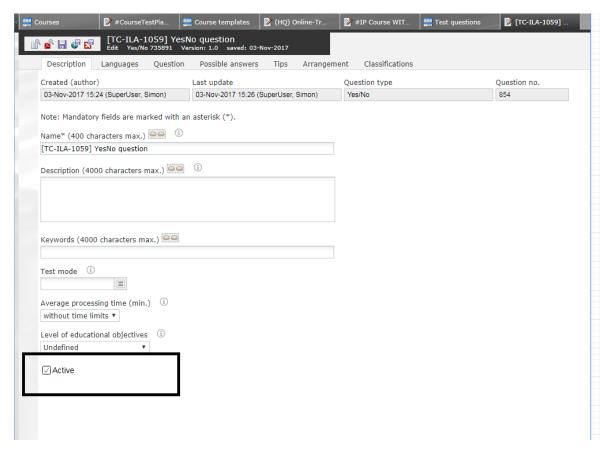


Fig. 1.3: Active/Inactive flag for questions.

Inactive questions can no longer be assigned to tests and are removed from the assignment during the update job.

#### 1.12.1 Filter in test/feedback question manager

In the feedback questions and test questions manager, a new filter is available which allows to filter questions based on the Active/Inactive flag.

The name of the Filter is EN: Active and the options in the list are Yes, No, All

Filtering for Active: yes will only display questions which are marked as active. Filtering for No will show only inactive questions and Filtering for All will show all.

By default, All questions are displayed.

The filter can be added to the view by using the Add search criteria function.

The Active column can also be added to the manager by enabling the Column in the Columns section. Active questions are marked with Active, while inactive questions are marked as Inactive in the table when the Column is displayed.



# 1.13 Adding/Removing questions in a test/test series/feedback form based on classifications

In order to keep track of which classifications were added to a test/test series/feedback, a new column is introduced in the Contents tab of a test/test series/feedback form.

The column is called: **EN**: Added via classification

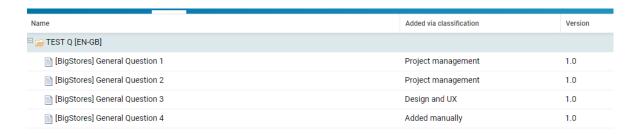


Fig. 1.4: Adding/Removing questions.

The column will be positioned, if available, after the question name. The column is only displayed if the client setting to allow automatic updates based on classifications is enabled.

When selecting a classification via the Classification assignment tab, then the Classification will be populated in the **Added via classification** column.

The questions are populated, and the column will show the classification name for each of the questions.

Note: A question might have multiple classifications assigned. Here only the classification that the user selected from the sign is displayed, to show where the question originated from.

A question that was added manually from the question list or for which the option to remember the classification for automatic update was not selected, will display the following text: **EN**: Added manually

When processing an automatic update, the classification listed in this column will be considered. If the question no longer has that classification assigned, it will be removed.

If there is a new question included in one of the classifications assigned to the test, the question will be added to the test (if it is marked as Active)

Manually added questions are not subject to removal from the test/test series during the automatic update.



#### 1.13.1 New client parameter to enable the recoding of the classification

A new Client parameter (and a new section) (on the Functionalities and settings tab) allows to define that when adding a classification to a test, the classification is remembered and will be considered for automatic updates of the test, if questions are added or removed from the corresponding classification.

The new section is called: EN: Tests and feedback forms

The section is positioned below the AICC section.

The parameter is called: EN: Allow automatic updates based on classifications

The default value of the parameter is false.

#### 1.13.2 E-mail for undone updates

If the removal or deactivation of questions, the necessary number of questions for the test series would fall below the required number, the update for these questions for these tests will not be performed and the not performed change will be notified by e-mail.

The e-mail is sent to the e-mail address of the user who last updated the respective questions.

**Subject of the email message** (will be provided as a bundle containing the specified placeholders):

**EN**: Incomplete automatic course update

#### Body of the message:

EN: Dear <user first and last name>,

The automatic course update triggered on <date> at <time> has been processed with exceptions. The attached log provides information about the changes that could not be performed.

Please consider making any needed changes manually.

This is an automatic notification. Please do not reply to this e-mail. This address can only send messages.



#### Log structure

A log will be attached in the body of the e-mail informing about exceptions in the automatic course update.

The log structure will be the following:

Question title	Question ID	Test title	Test ID	Course title	Course ID	Reason
Will contain the title of the question that could not be removed from the test	ID of the Question	Comma separated list with the title of each course that contains the test	ID of the test	The title of the course which required the test update. If multiple courses required the update, they will all be listed, comma separated.	ID of the course	EN: The question in its new version is no longer active and removing the question would reduce the number of questions in the test below the required number / The question in its new version is no longer associated with the <name classification="" of=""> classification and removing the question would reduce the number of questions in the test below the required number/ The question in its new version is no longer active but it is flagged as mandatory for the test / The question in its new version is no longer associated with the <name classification="" of=""> classification but it is flagged as mandatory for the test</name></name>

- A new row is populated for each question that could not be removed.
- If multiple users should receive e-mails based on the questions they have updated, each of them will receive a log containing all
  questions that could not be processed.



#### 1.14 Cron job to update the courses at the revision date

A new cron job is added to the businessprocess.xml The cron job is called: Automatic Course Update

#### Check for revision date

- The cron job checks which courses have reached the revision date
  - If no revision date was set on the course, the course is included in the update process each time the job runs. (if the meta tag which configures this is active)
  - If the revision date is in the future, the course is ignored for the current update
  - If the revision date was reached, the course is included in the update process

#### The cron job checks for the update flag of the course components

- If the component is not marked for update, the component is ignored
- If the component is marked for update, the component is included in the update process If included the action applied for an update are as follows:

#### Tests/test series/feedback forms

If the course contains tests, test series or feedback forms which are marked for update, the system will check:

- Are there new versions available for the questions inside the test/test series AND are the new versions of the questions labelled as active with the Active checkbox?
  - If yes, the new versions are added to the test/test series, a new version of the test/test series is automatically created and the test/test series in its new version is added to the course.
  - If a new version is available for the question, but the new version is no longer marked as Active, the question will be removed from the test/test series.
  - Only one new version of the test/test series is generated, that will contain all the changes that apply at the time of the update (Do not generate a new test/test series version for each question that must be updated)
  - Check the meta tag values for updating the learning logic and updating although participants have started processing the components
- Update of questions based on classifications
  - Check if there are new Active questions to be added based on the classification assignment (as described in the dedicated chapter) and add them
  - Check if there are Inactive questions or questions no longer associated with the defined classification and remove them
  - Check the meta tag values for updating the learning logic and updating although participants have started processing the components.

NOTE: The update will only work based on classification added to tests/test series/feedback forms which were created after the enhancement is implemented.



#### Other media

- If the course contains other media which are marked for update, the media will be updated as well based on the meta tag settings, as described above.
- The update itself does not differ between manual execution and automated execution.
   Manual execution allows ad hoc updating of tests/test series/feedback forms and courses.

#### 1.15 Impact of the update/ Mark the component as updated

The new test version will not impact the users who already passed the test (except if there are remaining attempts left and the learners decides to retake the test even if they initially passed it).

The users who had started or submitted the test in its previous version and still have attempts remaining, will continue to have the same number of remaining attempts in the new version of the test.

The status of the previous version of the test is transferred to the new version.

The detailed results page will still contain the last submitted answers for the questions in their previous version

- If the learner has passed or failed on a previous version of a test, the status is kept
- If, however there are attempts left on the test, the number of attempts is not reset, and the
  test is still highlighted as UPDATED. Deciding to retake the test will provide the learner with
  the new test version.

The effects will be visible with the test player in ILP.

#### 1.15.1 Update flag

- If the What's new function is active on the system, the component will be labelled as UPDATED in the course room (in Businessprocess add <newWhatsNew newWhatsNewActivated="true"/>)
- The Updated label is applied to all course room types (configurable and syllabus only)



#### 1.15.2 The automated update can also be started manually from the course manager.

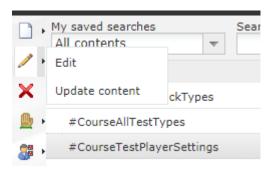


Fig. 1.5: Course manager: Start automated update.

A new authorization is available at the course manager to enable the display of the manual update function.

Authorization is called:

- **EN**: Automatic course update

Based on the authorization, a new button is available as a sub-action under the Edit function.

- **EN**: Update content

The button will be active when one or more courses are selected in the manager. Clicking on the Update button will trigger the automatic update of the selected courses with the same outcome as the execution of the cron job.

#### An alert is displayed after the option is selected:

- Title EN: Automatic course update
- Message EN: Do you want to begin an automatic course update? The time this takes may
  depend on the number of selected courses and the number of components which must be
  updated. You will receive a system message as soon as the process has been completed.
   Please note that courses which have a revision date will not be updated during this process.

A success message is displayed when the update is finished

EN: Automatic course update process completed

The notification is displayed as for the catalogue search index generation.

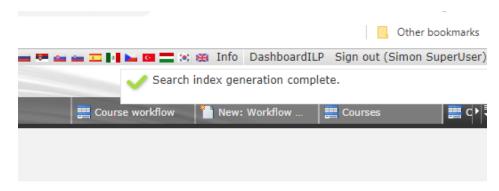


Fig. 1.6: Success message.

If the course has a revision date and I want to manually update is not performed

If the course does not have a revision date, the manual update works and takes effect

immediately



# 1.16 Manually trigger an update of a new test/feedback/WBT in the courses where it is contained

A new access right is created for the test, feedback form and media manager (at the navigation entry)

- EN: Publish in started courses

When this authorization is available for the logged in user, a new button is displayed as sub-action under the Edit button.

- EN: Publish in started courses

Selecting this button will allow to push the new published test version into courses where learners have already started processing (this applies to both the learning logic update and actual test update if a learner already started the test.) Only courses without a revision date are subject to this update.

An alert is displayed after the option is selected:

- Title EN: Update already started courses
- Message EN: Do you want to begin an automatic update? The time this takes may depend on the number of selected tests/feedback forms and the number of components which must be updated. You will receive a system message as soon as the process has been completed.

Please note that courses which have a revision date will not be updated during this process.

A success message is displayed when the update is finished

- EN: Automatic update process completed

The notification is displayed as for the search index generation.

#### 1.17 Offline tests and feedback form functions

Offline tests and feedback forms from inside the course will not be impacted by this customization.



# 2 Out-of-Scope

The following is considered as out-of-scope for the described enhancements:

- The update of components that already have an update mechanism (Web-based trainings content update; documents / content without learning logic) and other changes to questions,
  tests or courses that have not been described are not part of the scope of this adaptation.
- The "Update syllabus" process from template to course is not impacted by this enhancement.
- The course specific media update is not impacted by the customization.
- Offline tests and feedback forms from inside the course will not be impacted by this customization.

This refers to the Offline tests and feedback form tab available in the course (as seen in the screenshots provided by mail). The automatic update enhancement will affect only the contents of the syllabus (not the Library and not the offline tests and feedbacks)

- Exercise sheet is out of scope as this media type is not supported in Learning Portal.
- The downwards correction setting will not be considered from one version of the test to the other.

# 3 Effects on other components

No other effects besides the changes described in this document.

# 4 Data migration

No data is migrated. Existing courses must be updated once with the new functionality, i.e. the update checkmark and the new revision date must be set manually for the relevant courses.

# 5 Data protection & security

No personal or business-critical data will be added or modified during the adaptation. Therefore, no separate privacy statement is necessary for this adaptation.