



LMS Customisations

Service Description LMS Customisations

imc Learning Suite | Consulting Department | July 16, 2025

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1 Preface

This document describes the LMS Customisations service provided by the imc project team for the Learning Management System (LMS) imc Learning Suite. The imc Learning Suite is a standard product (standard software) which is constantly being extended with further functions & features (Innovation Packages). In addition, imc offers to extend the range of functions regarding specific customer requirements.

These requirements can be implemented either as part of a **customer-specific customisation** or as a **customer-driven standard enhancement** in the standard product.

The procedure for implementing customisations or standard enhancements differs. For this reason, the service description contains the procedures separately for each type of customization, considering the following aspects:

- **Description of the services to be provided** by the imc project team in the context of implementing a customisation.
- **Description of the competences and responsibilities**, which lie partly on the part of imc and partly on the part of the customer.
- **Description of the procedure, the process and time dependencies** for the implementation of the customisations, so that a transparent view of the individual steps is possible for all involved people.

2 Customer specific Customisation

This section highlights the recommended project roles and responsibilities along with a RACI matrix, for LMS implementation projects.

This section deals with the implementation of **customer-specific customisations**, i.e., a code-side change to the standard product that is not implemented for all customers and is only in the customer's individual codeline.

Important Note: Customer-specific customisations are only possible if a customer has its own codeline. Furthermore, a customisation is not possible in all areas of the product, as not all areas allow / provide for customisation of code.

The following describes the process and procedure associated with the implementation of a customisation. Here, the ordering of the customisation is the starting point, and the delivery of the customisation represents the conclusion of the process.

Each customisation is supervised by a **Business Consultant**, who is responsible for the entire process on the imc side and also acts as a contact person for the customer. Depending on the technical complexity, it may also be necessary to involve a **Technical Contact**. This decision is incumbent on the Business Consultant and tends to be the exception (e.g., for integrations or interfaces). If the customer is already using the LMS productively, the delivery of the customer-specific customisation is carried out by **imc Support**, which creates a delivery ticket in the Service Desk for this purpose. Before going live, the project team conducts the delivery.

The implementation process of a customer-specific customisation includes the following phases, which are now described in detail:

- **Planning phase**
- **Conception phase**
- **Implementation phase**
- **Delivery phase**

2.1 Planning Phase

After a customisation has been ordered, the implementation is assigned to a Business Consultant who supervises the entire implementation and serves as a contact person. It may take 1-2 weeks before the task is assigned to a Business Consultant and she or he begins with the actual planning. Until then, the Account Management is available for queries.

The Business Consultant will initiate or take over the following activities during the **planning phase**:

- So that the customer knows who oversees implementing the customisation, the Business Consultant informs the customer by e-mail or ticket about the processing of the order and the next steps.
- The Business Consultant now checks the order for the customisation and the proposed solution outline. The aim is to ensure that the Business Consultant has understood the problem and the proposed customisation entirely. The Business Consultant will also check possible professional and technical problems or restrictions.

- Subsequently, the implementation is planned together with the Technical Services. Then the Business Consultant checks the possible delivery of the customisation together with imc Support. It often makes sense to deliver the customisation as part of an already planned delivery (e.g., a patch). Alternatively, a delivery based on an already delivered code version is possible. However, the concrete procedure can still change in the course of time (e.g., if other factors make additional deliveries necessary).
- With the information obtained, the Business Consultant can inform the customer about the timing of the customisation. Based on the implementation slot, in which the development of the customisation is implemented in the customer's codeline, it results when the functional specification concept must be coordinated between the customer and imc, as well as when a delivery can take place. As a rough rule of thumb, the customer must approve the functional specification 2-3 working days before the start of implementation and delivery can take place at the earliest one week after the end of implementation, as time is needed for verification and rework.

Result of the planning phase: On the customer side, it is known which Business Consultant on the imc side is responsible for the implementation and how the time schedule is planned.

2.2 Conception Phase

The conception phase is about creating a coordinated functional specification document between the customer and imc. The responsible Business Consultant takes over this task on the imc side. The functional specification document describes in detail the necessary changes, enhancements and new developments in the system and considers aspects such as necessary data migrations and the effects of the customisation on other system components or aspects of data protection or data security. Finally, the functional specification document describes acceptance criteria in the form of test cases, which are used to check and ensure the functionality of the customisation after implementation.

The basis for the technical concept is the solution outline that is created for the requirement in the context of the effort estimation and is part of the offer. Particularly in the case of extensive or complex changes, the Business Consultant clarifies any queries about the requirement and the application scenario with the customer before creating the functional specification document. It may also be necessary to organise a joint meeting to clarify the functional specification document in advance. It may also be necessary to involve a technical contact person on the imc side.

The following procedure will be applied in the **conception phase**:

- The Business Consultant formulates the functional specification document based on the available solution outline and carries out a technical review together with the Technical Services that will implement the actual development. Here the developer checks the concept for technical plausibility / feasibility.
- The imc internally agreed functional specification document is then made available to the customer for acceptance. This takes place at least ten working days before the start of the planned implementation period, so that the customer has sufficient time to clarify any queries regarding the functional specification document with the Business Consultant and to make any necessary changes or additions.
- If requirements change or expand significantly during the review by the customer, a re-evaluation of the customisation is necessary. The changed requirement must be described,

estimated, and reordered, after which the process described here starts again from the beginning.

- If the customer does not approve the implementation 2-3 working days before the start of the implementation period, the implementation must be rescheduled. Depending on the current resource situation in Technical Services, rescheduling can have a significant impact on the schedule and can significantly delay the completion or delivery of the customisation.

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Result of the conception phase: The technically coordinated functional specification document was created by imc, change requests were incorporated, and the customer's approval for implementation is available.

2.3 Implementation Phase

If the customer has successfully checked and approved the functional specification document, a developer implements the requirement. In parallel, the Business Consultant coordinates the actual delivery of the customisation together with imc support, as changes may have occurred in the meantime. The delivery of a customer-specific customisation is usually conducted at short notice as part of a normal patch delivery or as an additional delivery on the current code status of the system. However, there may be situations that prevent a short-term delivery (e.g., if a delivery has already been initiated and must be completed first, or if the delivery requires a patch that must first be integrated into the customer's codeline).

After completion of the customisation and after verification of the customisation by the developer, the Business Consultant tests the customisation in the customer's imc-internal reference system. During this verification, the acceptance criteria described in the functional specification document are used to ensure that the customisation has been implemented correctly and thus meets the requirements. Any deviations or errors found are forwarded directly to the developer for correction. Only after the Business Consultant has verified the work, the customisation delivery can take place. For this reason, and considering possible corrections by the developer, the earliest delivery must be expected to be one week after the planned end of development.

If delays occur during the implementation phase (resource situation, quality), the Business Consultant informs the customer and communicates the new planning.

Result of the implementation phase: The customer-specific customisation has been implemented by the developer and released (verified) by the Business Consultant, so that delivery is possible

2.4 Delivery Phase

After the customisation is ready for delivery, the Business Consultant informs the customer and clarifies the delivery together with imc Support. If a customer has a test environment, the delivery always takes place - as with every delivery - first on the customer's test environment and after approval by the customer on the productive environment. The delivery itself is coordinated by imc Support, provided the customer is using the LMS productively.

If, after delivery of the customisations, rework / configuration is necessary to activate the customisation in the system (e.g., setting up navigation points, setting up scheduled cron jobs, changes to the roles and rights concept including releases for objects, setting up an SFTP job for data transfer etc.), this will be carried out by the Business Consultant – unless otherwise agreed – and the customer will be informed of the implemented changes. However, the manual set-up effort should be kept to a minimum already during the conception phase.

If the customer encounters potential errors when evaluating the customisation (in the test or productive environment), the customer reports these back to imc as potential software errors with reference to the customisation via a Service Desk ticket. The imc support team will then immediately check this together with the supervising Business Consultant, who will call in the developer if necessary. If there is an error in the customisation, the Business Consultant will initiate the correction of the error and coordinate a new delivery together with imc Support.

If the customer has not reported any potential errors after delivery of the customisation to the productive environment, the Business Consultant will assume that the customisation has been implemented correctly, and the implementation process is complete. After successful delivery of the customisation, the Business Consultant closes the order including the reported project times.

Result of the delivery phase: The customer-specific customisation has been installed on the customer's productive environment, necessary configuration work has been made, and no errors have been reported, so the implementation process is complete.

3 Customer driven Standard Enhancement

This section deals with the implementation of customer-driven standard enhancements, i.e., the implementation of new functions & features into the standard product so that these new functions are available to all customers.

Important Note: Customer-driven standard enhancements are only possible if the imc Product Management agrees to an enhancement in the standard product. This clarification is part of the effort estimation and offer process. The implementation itself then takes place within the framework of the Innovation Packages of the standard product. Implementation outside the Innovation Package cycle is not planned.

In the following, the process and procedure are described, which is linked to the implementation of the customer-driven standard enhancements. Here, the ordering of the customisation is the starting point, and the delivery of the customisation represents the conclusion of the process.

Each enhancement is supervised by a **Business Consultant**, who is responsible for the entire process on the imc side and acts as a contact person for the customer. In addition, the enhancement is accompanied by the Product Management / a **Product Manager** to ensure the implementation in the standard product and to guarantee that the enhancement fits into the overall product. If the customer is already using the LMS productively, the delivery is carried out by **imc Support**, which creates a delivery ticket in the Service Desk for this purpose, whereby the delivery is only possible within the scope of the Innovation Package.

The implementation process of a **customer-driven standard enhancement** includes the following phases, which are now described in detail:

- **Planning phase**
- **Design phase**
- **Implementation phase**
- **Delivery phase**

3.1 Planning phase

After an enhancement has been ordered, the implementation is assigned to a Business Consultant who supervises the entire implementation and serves as a contact person. It can take 1-2 weeks until the task is assigned to a Business Consultant and she or he starts planning. Until then, the Account Management is available for queries.

The Business Consultant will initiate or take over the following activities during the **planning phase**:

- So that it is known on the customer side who oversees the implementation of the customer-driven standard enhancement, the Business Consultant informs the customer by mail or ticket about the processing of the assignment and the next steps.
- The Business Consultant now checks the order for the enhancement and the proposed solution outline. The aim is to ensure that the Business Consultant has understood the problem and the proposed customisation.

- Subsequently, the planning of the realisation / implementation takes place together with the Product Management. The Product Management plans the standard enhancement for one of the upcoming Innovation Packages. It should be noted that this planning may change again.
- With the information now received, the Business Consultant can inform the customer about the time schedule of the customisation, i.e., communicate the primary information in which Innovation Package the implementation is planned. Based on this, the timing of the conception also results, since an agreed concept (scoping document) must be available at the beginning of the innovation package. The delivery of the enhancement then results within the scope of the delivery of the innovation package (as "First Customer Shipment" / FCS) or with the first patch of the innovation package (with "General Availability" / GA).

Result of the planning phase: On the customer side, it is known which Business Consultant on the imc side is responsible for the implementation and in which innovation package the implementation of the enhancement was planned.

3.2 Conception Phase

In contrast to customer-specific customisation, the Business Consultant does not prepare a functional specification document that describes in detail which components in the system will be changed, extended, or newly created and how. Instead, a so-called scoping document is created in cooperation with the Product Management, which describes the use cases or user stories that will be additionally supported after the implementation of the standard enhancement in the system. In addition, there is a general, rough description of which components in the system will be changed, extended, or newly implemented. To maintain the reference to the specific requirement of the customer, the scoping document includes a section on customer-specific consideration, which describes the use of the future functionality in the customer's scenario and deals with aspects such as configuration of the functionality or any necessary data migration. Finally, the scoping document includes acceptance criteria in the form of test cases, which are used to test the new system functionality to be created and to ensure that the customer's requirements are met.

The basis for the conception phase is the solution outline, which is created for the requirement within the scope of the effort estimation and is part of the offer. Particularly in the case of extensive or complex changes, the Business Consultant clarifies any queries about the enhancement and the general application scenario with the customer before preparing the scoping document. It may also be necessary to organise a joint meeting for preliminary clarification, in which the Product Management participates. It may also be necessary to involve a technical contact person on the imc side.

The following procedure will be applied in the **conception phase**:

- The Business Consultant formulates the scoping document based on the available solution outline and conducts a review together with the Product Management.
- The internally agreed scoping document is then made available to the customer for acceptance. This must take place at an early stage before the start of an innovation package so that the customer is given sufficient time to clarify queries about the document together with the Business Consultant and, if necessary, Product Management and to make any changes or additions.
- If requirements change or expand significantly during the review by the customer, a re-evaluation of the adaptation is necessary. The changed requirement must be described, estimated

and re-commissioned, after which the process described here starts again from the beginning.

- If the customer does not give approval before the development work of an innovation package begins, the enhancement may be postponed to a later innovation package.

Result of the conception phase: The technically agreed scoping document has been prepared by imc, change requests have been incorporated, and the customer's release for implementation has been given.

3.3 Implementation Phase

During the implementation of the enhancement in the system standard, the Business Consultant is involved in the development process and represents the customer's interests in this process. In particular, the current development progress is demonstrated to the Business Consultant during the regular bi-weekly sprint review meetings. The Business Consultant ensures that the development progress is compatible with the requirements formulated in the scoping document. If not, he passes this feedback directly on to development and product management and demands appropriate improvements, the implementation of which will be demonstrated again in one of the next sprint review meetings. The actual implementation of the enhancement is the responsibility of Product Management, which implements this together with Development and Quality Assurance.

After the implementation of the enhancement in the system standard has been completed, the Business Consultant plans the delivery of the standard enhancement for the customer together with imc Support. Here it must first be distinguished whether the customer's system has its own codeline or not:

- If the customer has its own codeline, the delivery usually takes place within the framework of the "First Customer Shipment" (FCS). This corresponds to the first version of an Innovation Package. In consultation with and at the request of the customer, a later delivery within the framework of the first patch (General Availability / GA) is also possible.
- If the customer does not have its own codeline, the delivery takes place within the framework of the defined standard patch cycle of the cloud environments. This corresponds to a delivery within the scope of the "General Availability" of the innovation package.

In both cases, the Business Consultant – in coordination with imc Support – will carry out a verification of the standard enhancement as soon as the customer's imc internal reference environment is at the necessary code level (FCS or GA). This is based on the acceptance criteria formulated in the scoping document, which the Business Consultant uses to ensure that the customer's requirements are covered by the new functionality. After this final verification, the customer is informed that the ordered standard enhancement is ready for delivery. If the Business Consultant identifies deviations or errors, these are recorded and corrected by the standard development team. This may result in a delayed delivery, or the customer will be informed about these identified deviations / errors.

Result of the implementation phase: The enhancement has been implemented and is part of the standard software. The Business Consultant has verified the enhancement and released it for delivery.

3.4 Delivery Phase

After the enhancement is ready for delivery, the Business Consultant informs the customer and clarifies the delivery of the necessary patch together with imc Support. If a customer has a test environment, the delivery always takes place - as with every delivery - first on the customer's test environment and after release by the customer on the productive environment.

If, after delivery of the adjustments, rework /configuration is necessary to activate the enhancement in the system (e.g., setting up navigation points, setting up scheduled cron jobs, changes to the roles and rights concept including releases for objects etc.), this will be carried out by the Business Consultant – unless otherwise agreed – and the customer will be informed of the changes implemented.

If the customer encounters potential errors when testing the standard enhancement (in the test or productive environment), the customer reports these back to imc as potential software errors with reference to the enhancement via a Service Desk ticket. The imc Support team will then immediately check this together with the supervising Business Consultant, who will involve Product Management or Development if necessary. If it is an error in the enhancement, the Business Consultant will initiate the correction of the error and coordinate a new delivery together with imc Support. The correction of errors is carried out for standard enhancement exclusively within the framework of the standard patch cycle.

If the customer has not reported any potential errors after delivery of the enhancement to the productive environment, the Business Consultant assumes that the enhancement has been implemented correctly, and the implementation process is complete. After successful delivery of the customisation, the Business Consultant closes the order including the reported project times.

Result of the delivery phase: The standard enhancement has been installed on the customer's productive environment, necessary configurations have been made, and no errors have been reported, so the implementation process is complete.