

JISC PALS2 PROJECT: ONIX FOR LICENSING TERMS PHASE 2 (OLT2)

Functional review of OPLE Version 1, ONIX-PL license expression drafting system, against the original requirements and design specification

1. Introduction

The following text documents a review of the functional capabilities of Version 1 of OPLE, the ONIX-PL license expression editing tool, against the functional requirements and design specification. Text quoted with a grey background is quoted directly from the original system specification.

3. Functional requirements for an ONIX-PL license expression editing system

3.1 Access to public templates, public clauses and the OLT Dictionary

The drafting system will always have access to all current public templates and public clauses, the current version of the ONIX-PL XML Schema and the current version of the OLT Dictionary of controlled (ontologised) terms. The drafting system must therefore have access to the public Internet in order to function properly.

OPLE has been designed on a web architecture and network access is integral to its operation. Version 1 of OPLE uses an annotated version of the ONIX-PL XML Schema. The functionality to handle updates of the schema and OLT Dictionary have not yet been implemented, but are included in a list of enhancements to be included in the next open release.

3.2 Private template development

The drafting system will support the development of private templates based upon public templates, public clauses and the controlled terms of the OLT Dictionary, as well as upon existing private templates and public clause sets.

OPLE Version 1 supports the development of private templates based upon public templates and the controlled terms of the OLT Dictionary as expressed in the ONIX-PL XML schema. Clause sets are implemented simply as a special case of a template in which only certain

components are used.

The development of a new private template will involve selection of an existing public or private template and its modification by the addition or removal of optional public clauses and the addition or removal of text from editable fields within clauses.

OPLE Version 1 supports this functionality.

An optional public clause may be marked as required in a private template, in which case it cannot be removed when creating a license expression from that template, while optional clauses can be added or removed when creating a specific license expression. Both required and optional clauses may contain editable fields whose contents may be free text or selections of OLT Dictionary-controlled terms.

All clauses, whether public or private in their origin, can be marked to be required in a template. Furthermore, the content of a field may be marked to be editable or fixed.

An editable field may be left blank in a template or it may be filled in with a specific value that may be locked so as not to be editable when creating a specific license expression. Editable fields that are left blank or are filled in but not locked may be edited when creating a specific license expression.

OPLE Version 1 supports this functionality.

Where a clause contains an editable field whose value must be taken from a list of controlled values (OLT Dictionary controlled terms or locally-defined labels), individual values may be marked to be included or excluded from the use of that clause in a specific template.

OPLE Version 1 supports this functionality.

The drafting system may only allow the creation of templates that are valid in terms of the ONIX-PL schema and that conform to whatever other business rules are defined in the ONIX-PL specification. The drafting system will, however, allow incomplete expression templates to be saved.

OPLE Version 1 supports this functionality.

The following functionality for creating private templates will be supported:

- Create a new private template based upon an existing public or private template.
- Open an existing private template.
- Save existing private template.
- Save a new private template.

OPLE Version 1 supports all the above functionality.

- Insert optional public clause.
- Insert public clause set.
- Remove optional public clause.
- Mark an optional public clause to be required in this template.
- Edit data values in public clauses.

- Mark a data value to be locked in this public clause.
- Mark a data value option to be included or excluded in this public clause.

OPLE Version 1 supports all the above functionality for clauses in general, except that the insertion of public clause sets is not supported. Support for insertion of sets of clauses from other templates is planned for a future version.

- Test private template for completeness against schema and business rules.

OPLE Version 1 supports this functionality in the sense that only valid templates and instances can be created. Version 1 does not support validation against complex business rules that require analysis of the content of the license (e.g. to ensure that a license expression contains both Licensor and Licensee).

3.2.1 Development of public clause sets

A public clause set is a collection of public clauses that are packaged together for incorporation in templates or one-off license expressions. The drafting system will support the creation of public clause sets using the following functionality:

- Create a new public clause set.
- Open an existing public clause set.
- Save existing public clause set.
- Save a new public clause set.
- Insert optional public clause.
- Remove optional public clause.
- Mark an optional public clause to be required in this public clause set.
- Edit data values in public clauses.
- Mark a data value to be locked in this public clause.
- Mark a data value option to be included or excluded in this public clause.

OPLE Version 1 supports the creation of public clause sets as special cases of templates, but does not currently support insertion of clauses from one template into another. This functionality is planned to be added to a future version.

3.3 Preparation of complete license expressions

The drafting system will support the preparation of complete expressions of individual licenses using a selected public or private template as a starting point in each case.

OPLE Version 1 supports this functionality.

Two methods of preparation are supported:

- Preparation of a complete license expression based solely upon a selected template.
- Preparation of a “one-off” license expression, requiring modification of the selected

template to incorporate additional public clauses.

OPLE Version 1 supports this functionality. A license expression is simply a special case of a template – the data format is the same – so can be treated as its own template.

3.3.1 Preparation of complete license expressions based solely upon a selected template

This is the normal method of preparation of license expressions as performed by a user in the license development role.

The drafting process will involve the following steps:

- Selection of a template.
- Selection of appropriate clause options within a template.
- Completion of editable fields.

The system will allow incomplete license expressions to be saved and exported for communication with business partners, but their incomplete status will be indicated accordingly.

The following functionality for drafting specific license expressions will be supported:

- Create a new draft license expression from a selected template.
- Open an existing draft license expression.
- Save an existing draft license expression.
- Save a new draft license expression.
- Select optional clause.
- De-select optional clause.
- Edit free-text field.
- Select value(s) from a list of controlled value options.

OPLE Version 1 supports all the above functionality.

3.3.2 Preparation of “one-off” license expressions, involving template modification

This method of preparation of license expressions combines the functionality required for template development and completion of the license expression. All the functionality specified in sections 3.2 and 3.3.1 above is required in this case.

OPLE Version 1 supports all the functionality in 3.2 and 3.3.1 except where indicated above.

3.4 Review and approval of private templates and license expressions

When a draft license expression is thought to be ready to be exchanged with a business

partner, the system will enable an authorised user to review the draft and approve it for export.

OPLE Version 1 supports different levels of authorisation of users, but only implements two levels: "user" and "manager"; and these levels are used to control which users are able to modify templates.

The drafting system will enable review of the license expression as a whole and will also highlight or summarise the revisions made to the last approved draft.

The data format defined for templates and license expressions includes the storage of revision data which can be used in a future version of OPLE to enable revisions to be highlighted. However, this functionality is not supported in OPLE Version 1.

The approval of a license expression may involve some final tasks to complete the expression, such as selection of specific clause options or the editing of specific fields. Once a draft is thought to be complete, the system will provide tools to assist in checking that it is complete and valid in accordance with the ONIX-PL schema and business rules.

OPLE Version 1 does not support this functionality directly. As mentioned earlier, it is not possible to create an improperly structured template or license expression using OPLE, but it will always be possible to enter incorrect data.

The OPLE architecture supports the incorporation of additional functionality, including the integration of other tools for carrying out validation of various kinds. When the necessary business rules are specified, the functionality to validate templates and license expressions against those rules can be added to a future version of OPLE.

In addition to the functionality provided for license expression drafting, the drafting system will provide the following functionality specifically for review / approval tasks:

- Highlight revisions made to this template or draft license expression since the last approved version.
- Check license expression for completeness and highlight omissions and other errors.
- Approve draft license expression as a new draft version or, if prepared by the owner of the original license, as an completed and agreed license expression.

OPLE Version 1 does not support this functionality, although, as already mentioned, the data format for templates and license expressions supports the storage of revision data that can be used to implement highlighting of revisions in later versions of OPLE.

3.5 Design, preparation and review of license interpretations

If a license is to be expressed in ONIX-PL by anyone other than the license owner and is not commissioned and authorised by the license owner, the resulting expression is a license interpretation. The ONIX-PL schema and drafting system will support the design, preparation and review of license interpretations by enabling the incorporation of suitable status information and digital signatures in an expression to indicate reliably whether it is the owner's expression of their license or someone else's interpretation of the license.

The ONIX-PL schema supports the labelling of templates and license expressions as

interpretations. This is therefore supported by OPLE Version 1.

3.6 Management of templates and license expression drafts

The drafting system will support management of the drafting process by providing means for version control and for maintaining status information about both templates and license expression drafts. The system will also support revision management by maintaining information on the derivation of a template or license expression and by maintaining an audit trail of revisions between drafts.

When a template is revised, the system will use stored derivation information to report (on request) on other templates and specific license expressions that may need to be revised as a result of the template revisions.

Management of template and license expression versions in OPLE Version 1 is a manual process. The metadata stored with each template includes the identity of the template or 'proto-template' from which it was originally derived.

3.7 Export license expressions for communication with business partners

The drafting system will support the export of license expressions for communication with business partners in at least two formats:

- ONIX-PL XML format
- HTML format

OPLE Version 1 supports this functionality.

In addition to these, the system may support the export of both templates and complete expressions in other formats, such as may be required for printing or other purposes.

OPLE Version 1 does not support this functionality.

3.8 Access management by user role

The drafting system will require users to identify their role at the start of a drafting session in order that appropriate functionality can be presented at the user interface. Three user roles will be recognised:

- Template development (including one-off license preparation)
- License preparation
- License approval.

The system may manage access either by simply allowing the user to select the role they wish to play or by requiring users to enter username and password before selecting from one or more roles that the system is configured to allow the particular user to play.

OPLE Version 1 supports user roles "user" and "manager". A user who only has the role "user" is only able to perform license preparation.

4. Design specification for an ONIX-PL drafting system for piloting, demonstration and related purposes

The following design specification is for a ONIX-PL license expression drafting system that fully meets the functional requirements specified above. Although also designed for initial piloting and demonstration purposes, a drafting system developed from this specification should be fully functional and usable for “live” license expression drafting.

Specific choices have been made as to how to implement such a system that may not necessarily be relevant in all license expression (or license interpretation) drafting contexts. However, the system may find wider application than its initial intended uses.

The aim is to specify a drafting system that will provide an adequate level of support for all the use cases described above. The system will meet all the functional requirements specified above, and will also provide some additional functionality that is thought to be desirable, including the ability to compare two license expressions (not necessarily successive drafts of the same expression) and report upon the differences between them.

4.1 Drafting system architecture

The drafting system will be implemented on a popular web-based client-server technology platform. This will keep the requirement for bespoke software development to a minimum and make it easy to find the resources for developing and maintaining the bespoke software components. The system will employ standard web browser clients to provide user interfaces to the system, which will reduce the implementation of the user interface to simply one of web page design. This will also make it relatively easy to roll out access to the system to any number of users, thereby supporting adoption of the system by both smaller and larger organisations.

Installations will typically be network-based, as public Internet access is in any case a requirement (for access to public templates, the ONIX-PL Schema and the OLT Dictionary), but both client and server could be implemented on a single workstation if desired.

The architecture of OPLE follows exactly this design principle.

Figure 1 gives a schematic view of the drafting system. The box in the bottom left-hand corner contains a schematic of a single drafting system, while the remainder of the diagram represents the ability of the system to communicate via the public Internet with other drafting systems and with the server providing access to public templates, the ONIX-PL Schema and the OLT Dictionary.

4.2 Web Browser Client

4.2.1 Graphical user interface

The drafting system should be able to use any popular web browser to provide the graphical user interface for the system. The system will be configured as a minimum to function satisfactorily with Microsoft Internet Explorer v6.x and Mozilla Firefox v1.x.

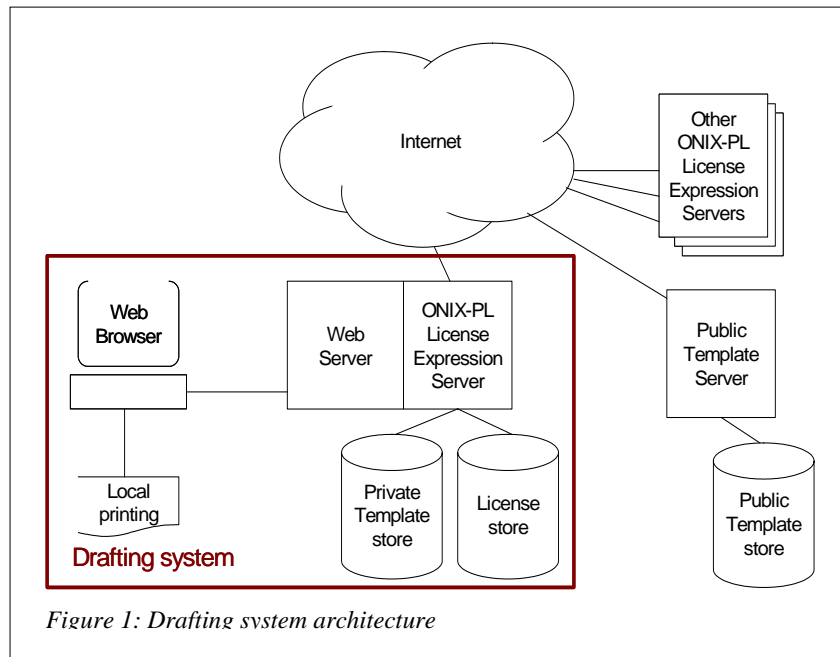


Figure 1: Drafting system architecture

The drafting system will support two “views” of a license expression:

- Form view
- Page view.

The Form view of a license expression will be used primarily for editing purposes and will present the license expression as a series of editable forms, each form representing a logical section of the license expression. The number of editable forms will depend upon the length and complexity of the license expression, but the aim is to make each editable form sufficiently small to have most of the section in view without scrolling the on-screen display (some vertical scrolling is acceptable). The Form view will not be readily printable.

The Page view will be used primarily for review purposes and for comparing license expressions with original licenses, whether on screen or on paper. The license expressions presented in Page view will not be editable, but will be in a general human-readable format comparable to that of a printed license and will be readily printable.

Help text will be viewable in on-screen 'pop-ups'. In Form view pop-ups will also be used for editing annotations.

The drafting system will support a similar Form view for template creation and revision, but with modifications for the additional functionality required, such as for adding and removing optional public clauses.

OPLÉ Version 1 follows exactly these design principles. The functionality for on-screen 'pop-ups' is available in OPLÉ but has not been implemented in Version 1. Pop-ups have not been used for editing annotations, which instead use an expandable text box.

[OPLÉ requires the latest current versions of Firefox \(i.e. 2.x\) or a recent version of Microsoft Internet Explorer \(i.e. versions 6 or 7\) to function properly.](#)

4.2.2 Other client-side functionality

The web browser client will not be required to provide any functionality other than to act as a user interface to the drafting system. Clients may be required to store “cookies” to enable system states to be preserved during arbitrary interruptions of drafting sessions. Client-side processing, apart from page-based display, forms-based editing and local printing, will be limited to simple validation tasks such as enforcing string length or value range constraints.

If a machine-readable version of a license expression is required for other purposes, the user will request that the license expression server deliver the license expression in a suitable format as a file that can be saved locally. The user may request such a file to be delivered to the browser in the normal way (then either saved or opened directly if suitable application software is locally available), or may request that it be delivered as an attachment to an email or stored on an FTP server.

Templates and license expressions can be saved from OPLÉ Version 1 in three different formats:

- OPLÉ internal format (annotated XML)
- ONIX-PL
- XHTML (page view).

4.3 ONIX-PL license expression server

The ONIX-PL license expression server is a software application that delivers the full functionality of the drafting system via a web server interface to the user interface on a standard web browser.

The principal functions of the license expression server are:

- To manage the storage and retrieval of license expressions and private templates
- To manage drafting sessions based upon a chosen user role and web client's IP address, or by user identification
- To manage the drafting process: by maintaining an audit trail of the revision history of a draft; by managing multiple draft versions of the same expression or template
- To generate web forms for license templates and expressions and deliver these to the user interface in Form view for editing purposes
- To generate web pages for license expressions and deliver these to the user interface in

Page view for review or comparison purposes

- To make regular checks for updates of public templates, the ONIX-PL XML Schema and associated business rules and the OLT Dictionary; and to perform all necessary local re-configuration tasks associated with updates
- To validate templates and license expressions with reference to the ONIX-PL XML Schema and any associated business rules
- To communicate with other license expression servers for the purposes of exchanging draft license expressions
- To deliver license expressions to users in other formats as required for printing and for exchange with other types of system.

OPLÉ Version 1 implements the above design approach, but the functionality is more limited as described above in the section covering functional requirements.

4.3.1 Storage and retrieval facilities

The license expression server will have access to a suitable storage device (database or file store) on which license expressions and private templates will be stored. Working copies of public templates, the ONIX-PL XML Schema and the OLT Dictionary may also be stored temporarily (cached) on the license expression server for performance optimisation reasons.

As explained in more detail elsewhere, OPLÉ uses the eXist XML database management system for storing templates and license expressions.

4.3.2 Drafting session management

The license expression server will be capable of managing multiple simultaneous user sessions, ensuring that the right forms/pages are served to each user and allowing a user to suspend a session for an arbitrary period before resuming where they left off.

The web server-based architecture of OPLÉ implements this design approach.

4.3.3 Revision management

The license expression server will track changes to a draft license expression or template and will allow the user to review changes made in the current session as well as changes compared with the previous version(s) of a draft.

The license expression server will maintain multiple versions of a draft license expression and will only allow revisions to the current version.

The license expression server will also track dependencies between distinct license expressions and templates and the templates from which they are derived, so that when changes are made to the latter, the user is alerted to review the changes in case they also should be applied to the derived expressions and templates.

The data format used by OPLÉ for storing templates and license expressions supports both revision management and tracking of dependencies (at the template level), but the functionality has not been implemented in OPLÉ Version 1.

4.3.4 Delivery of web forms for license expression / template editing

The license expression server will be capable of delivering a license expression or template to the user as a sequence of web forms, allowing the user to navigate around a license expression by including suitable navigation aids on each form.

The license expression server will provide a forms design mode, enabling some control of forms layout by suitably-trained users.

OPLÉ has adopted this design approach.

4.3.5 Delivery of web pages for license expression review

The license expression server will be capable of delivering a license expression as a single web page or as a series of web pages linked by suitable navigation tools.

The license expression server will provide a web page design mode, enabling some control of page layout by suitably-trained users.

OPLÉ Version 1 enables both templates and license expressions to be presented in page view mode. The format is not controllable by users in Version 1.

4.3.6 Periodic checks for changes to public templates, the ONIX-PL schema and the OLT Dictionary

The license expression server will make periodic checks for updates and additions to the public template server, and automatically update its own configuration to make the new templates available to users.

The license expression server will make periodic checks for updates to the ONIX-PL schema and will automatically install updates to its own software that are necessitated by changes to the schema. The same will apply to updates to the OLT Dictionary.

This functionality is not available in OPLÉ Version 1, but is planned to be added in a future version of OPLÉ.