

Flexible Services

EDEN

D3.1.5: Improved XFormsDB Implementation

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1 Introduction

This document contains a short description of the deliverable *D3.1.5: Improved XFormsDB Implementation* (including its sub-deliverables), which are part of the Flexible Services program's Ecosystem Design and Evolution (EDEN) project. The deliverable is closely related to the following tasks:

- T3.1.3: M2M interface to XFormsDB
- T3.1.4: XFormsDB language additional design
- T3.1.5: XFormsDB language implementation
- T3.1.6: Integration with mobile XForms processor
- T3.1.7: Testing in use cases

The document starts by presenting the objectives of the deliverable. Then the current status of the deliverable is reported. Finally, Chapter 4 summarizes the results of the deliverable presented in this document.

2 Objectives

The deliverable has the following objectives:

- To implement the design specified in the deliverable *D3.1.4: Definition of the XFormsDB M2M Interface*
- To design and implement authentication and access control
- To design and implement session management and state maintenance
- To implement the design specified in the deliverable *D3.1.3: XFormsDB language design for templates and transactions*
- To add support for mobile XForms processor

3 Status

3.1 M2M Interface (D3.1.5a)

The implementation of the XFormsDB M2M Interface was initially planned to take place in Q2/2008. However, the work is pushed to the second project year due to effort spent on supporting Flexible Services project management Web application.

In the meanwhile, XIDE can directly access/modify documents stored in data sources (eXist-db only) used by XFormsDB by using APIs and interfaces provided by eXist-db. Detailed information about the APIs and interfaces are available at:

<http://www.exist-db.org/devguide.html>

3.2 Security and Session Management Features (D3.1.5b)

Authentication

A feature that enables users to log in/out to/from Web application as well as retrieving information about the currently logged-in user has been designed and implemented to XFormsDB. The detailed description of the

feature including usage examples can be found from the publicly available XFormsDB API:

- **The *xformsdb:login* Request:**
http://www.tml.tkk.fi/Opinnot/T-111.5360/api/#toc2_2
- **The *xformsdb:logout* Request:**
http://www.tml.tkk.fi/Opinnot/T-111.5360/api/#toc2_3
- **The *xformsdb:user* Request:**
http://www.tml.tkk.fi/Opinnot/T-111.5360/api/#toc2_4

Access Control

A feature that enables showing/hiding the part of a Web page based on the roles of a user has been designed and implemented to XFormsDB. The detailed description of the feature including usage examples can be found from the publicly available XFormsDB API:

- **The *xformsdb:secview* Element:**
<http://www.tml.tkk.fi/Opinnot/T-111.5360/api/#toc5>

Both authentication and access control use **The *xformsdb_users.xml* Document** (<http://www.tml.tkk.fi/Opinnot/T-111.5360/api/#toc7>) for checking the credentials etc. of a user.

Session management

XFormsDB provides two different options for managing sessions: (1) using cookies and (2) using URL rewriting. The default is using cookies but if the client has disabled the cookies in his/her browser, then URL rewriting method is used.

The URL rewriting method supports almost all of the elements in XHTML and XFormsDB, in which URLs can be used.

State Maintenance

XFormsDB provides two different options for maintaining state: (1) using in-memory session object (XML Instance Data) and (2) using parameters in URL. The detailed description of the state maintenance feature including usage examples can be found from the publicly available XFormsDB API:

- **The *xformsdb:state* Request:**
http://www.tml.tkk.fi/Opinnot/T-111.5360/api/#toc2_1

Parameters in URL are made available to XFormsDB-based Web application on each Web page through auto-generated *xformsdb-request-parameters-instance*.

3.3 Templates and Transactions (D3.1.5c)

Templates

The implementation of the XFormsDB Template language has been started and is still work in progress. The results look promising and we are expecting a first demo to be ready by the end of June, 2009.

Transactions

The implementation of the XFormsDB transactions was initially planned to take place in Q3-Q4/2008. However, the work is pushed to the second project year due to effort spent on supporting Flexible Services project management Web application.

3.4 Support for Mobile Processor (D3.1.5d)

XFormsDB should be usable also from a (mobile) XForms browser. This means that XFormsDB needs to be able to serve also pure XForms without the Orbeon XForms-to-HTML transformation, and that XFormsDB needs to work also without cookies.

A mobile version of the Blog application has been implemented and tested on the Nokia mobile XForms client. At the moment the XFormsDB server does not yet support serving web browsers and XForms clients simultaneously. This is a relatively simple server configuration issue which will be fixed at the start of the second project year.

XFormsDB can now be used in clients without cookie support. This works by using URL rewriting for passing session management information.

4 Summary

The purpose of this deliverable is to design and implement additional features to the XFormsDB markup language so that software developers and even non-programmers can build useful, highly interactive multi-user Web applications quickly and easily using purely declarative languages.

Most of the work in this deliverable is done. In addition, a lot of extra features has been designed and implemented to XFormsDB, which were necessary for fulfilling the requirements of the Flexible Services project management Web application (one of the use cases in the task *T3.1.7: Testing in use cases*). Some of the work, on the other hand, had to be pushed to the second project year due to effort spent on supporting that Web application.