



Declarative Formats for Web Applications WWW2006

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2006-05-24

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Introduction

- The Web Application Formats (WAF) WG is part of the W3C's Rich Web Activity within the W3C's Interaction Domain.
- The Director announced the start of this WG in November 2005 and it is chartered through November 2007.
- The WG's Mission:
 - *The mission of the W3C Web Application Formats Working Group is to develop specifications that enable improved client-side application development on the Web. This includes the development of languages for applications, especially user interfaces.*
 - *The target platforms for this Working Group includes desktop and mobile browsers as well as many specialty, browser-like environments that use Web client technologies. The goal is to promote universal access both for users and devices, including those with special needs.*
- Translation: WAF specifies **declarative formats** (as opposed to the Web API WG which specifies API).

Why Declarative UI Formats?

- A declarative language is characterized by its focus on **describing** a problem space via a set of conditions/constraints rather than defining a specific solution to a problem.
- A declarative format for application User Interfaces provides several advantages including:
 - Facilitates separating presentation from programming logic
 - Programmers create the programming code
 - UI specialists create the UI
 - Never the two shall mix :-)
 - Can help reduce the need for scripting

List of Work In Progress

1. XML Binding Language (XBL)
2. Authorizing Read Access to XML Content
3. Declarative Formats for Applications and User Interfaces
4. Format for Web Application Packaging
5. Web Forms

See the following slides for details ...

XML Binding Language (1/2)

- An XML Binding Language is a *declarative language* that defines generic mechanisms to *bind* an arbitrary XML element to a *binding* element that defines the behavior and/or presentation of the arbitrary element.
 - This mechanism can be used to separate or hide elements of an XML vocabulary from its presentation or behavior.
- **History of XML Binding Language**
 - XBL 1.0 - America Online's XBL (Editor David Hyatt); 2001 W3C Member Submission
 - sXBL - SVG Working Group's XML Binding Language for SVG (Editors: Jon Ferraiolo, Ian Hickson and David Hyatt); 2005
 - XBL 2.0 - Mozilla (Editor Ian Hickson); May 17 2006
- **Use Case - Extension Mechanism**
 - A major use of the XBL declarative language is to extend an XML vocabulary. For example an XBL binding element can **define an event handler** that will be added to a bound element (when the bound element is interpreted).
 - An XBL binding element can be used to **change the behavior of an XML element** e.g. adding a menu to a button, changing how a scroll bar functions, adding a new menu option to a pulldown menu, etc.

XML Binding Language (2/2)

- **Use Case - Presentation and Behavior Encapsulation**
 - XBL can be used to define an arbitrarily complex binding (e.g. the behavior of an element, the presentation of an element, etc.) that can then be used by a hosting language via a reference to an externally defined binding. This encapsulation functionality facilitates reuse.
 - XBL allows a binding to be defined once in a document and then the document can refer to the document in multiple places without having to copy the binding. This feature is particularly useful in scenarios where there is low network bandwidth.
- **Use Case - Facilitate Device Independent Content**
 - XBL when combined with a mechanism like Media Queries can facilitate delivering appropriate content to a user.
- WAF completed a review of Mozilla's XBL 2.0 spec (2006-05-04 version) and submitted comments to Mozilla's XBL mail list.
- The W3C is working with Mozilla to determine how to deal with copyright issues related to publishing the document.

Authorizing Read Access to XML Content (1/3)

- Brief History - The Voice Browser published a Working Group Note in June 2005
 - *Authorizing Read Access to XML Content Using the <?access-control?> Processing Instruction 1.0*
<http://www.w3.org/TR/2005/NOTE-access-control-20050613/>
- From the Abstract:

This Note describes one mechanism in use by voice browser vendors to allow XML content providers to specify which application domains can access their XML content.

For example, a news service may declare that their XML data can be accessed by any application, while a stock ticker provider can allow access to individual partner applications that have licensed that data.
- Basic Idea - an XML document uses an XML Processing Instruction to state those domains that are allowed to access it. If a request for the data comes from a domain that is not allowed, the request is rejected.

Authorizing Read Access to XML Content (2/3)

- In addition to the VB WG other groups have Use Cases for such functionality:
 - WAF WG - XML Binding Language (XBL)
 - Web API WG - XmlHttpRequest Object
 - Members of these three WGs are now working on a Recommendation track document
- Mechanism is relatively simple
 - Can specify those hosts allowed to access a document (e.g. `allow host1.example.com`)
 - Can specify those hosts denied access (`deny badguy.example.com`)
 - Syntax allows wildcards (`allow *.example.com`)
- The document also defines the processing model for the rules
- Architectural constraints:
 - The document is designed to address a very limited number of Use Cases
 - The document does **NOT** and will **NOT** define a general Web security model

Authorizing Read Access to XML Content (3/3)

- May 17 - the 1st public WD was published:
 - <http://www.w3.org/TR/access-control/>
 - The document clearly identifies known issues
 - The document also contains a *Security Considerations* section that enumerates the model's limitations
- Please read the document and submit comments
- Also on Friday, attend the Web Security Panel (part of the W3C Track)

Declarative Format for Applications and UIs

- Charter describes this work as follows:

This deliverable should be based on an existing application/UI format, such as Mozilla's XUL, Microsoft's XAML, Macromedia's MXML or Laszlo Systems' LZX, provided the owners of the format are willing to contribute. The format should allow embedded program code. This format, combined with the deliverables below and existing technologies including XHTML, CSS, XForms, SVG and SMIL, should provide a strong basis for rich client application development.

- Two of the WAF WG Members have submitted a language as input for this work: :
 - Nexaweb:
<http://www.nexaweb.com/open/xal/xal.html>
 - Telefonica (TID):
<http://www.morfeoproject.org/files/tmobile/lr/Language%20reference.html>
- We are just beginning to review these inputs ...

Format for Web Application Packaging

- A number of WG members want a standardized format for packaging Web applications (e.g. *Widgets*).
- The WAF WG has agreed to work on such a spec.
- The work is in the **very** early stages.
- This is **NOT** about creating *Widgets* themselves but about how to package them.
- The types of data that could be included in such a format:
 - Name (e.g. of the application)
 - Description
 - Security information
 - ...

Web Forms

- Opera submitted Web Forms 2.0 to the WAF WG in April
 - Web Forms 2.0 Member Submission:
 - <http://www.w3.org/Submission/web-forms2/>
 - The contribution adds some new elements and attributes to HTML's form element.
- The submission is being positioned as an update to XHTML's Forms Module
- The specifics about which WG will do the work are ToBeDetermined ...

Summary

- We have quite a bit of work in progress and lots more to do!
- Please review the May 17 version of the Authorizing Read Access Control to XML Content document:
 - <http://www.w3.org/TR/access-control/>
- If you are a Member of the W3C then join the WG.
 - Web Application business
- If you are not a Member of the W3C then join the W3C and the WAF :-~)!

More Information

- WAF WG
 - Public Home Page: <http://www.w3.org/2006/appformats/>
 - Charter: <http://www.w3.org/2006/appformats/admin/charter.html>
- XBL 1.0: <http://www.w3.org/TR/xbl/>
- Mozilla's XBL 2.0: <http://www.mozilla.org/projects/xbl/xbl2.html>
- SVG's XML Binding Language (sXBL): <http://www.w3.org/TR/sXBL/>
- Authorizing Read Access Control to XML Content document:
 - <http://www.w3.org/TR/access-control/>