The RenderX Tribune

RenderX News

2006-05-15

XEP 4.6 with AFP output released. RenderX has released XEP 4.6, a new version of its XSL processor and accompanying tools. The new version introduces AFP backend (available with a special license), improved linebreaking algorithm conformant to the Unicode Standard Annex #14, and a new implementation of XSL 1.1 change bars. XEPwin 2.0 has also been updated and includes XEP 4.6.

Wikipedia

XML The Extensible Markup Language (XML) is a W3C-recommended general-purpose markup language for creating special-purpose markup languages, capable of describing many different kinds of data. In other words: XML is a way of describing data and an XML file can contain the data too, as in a database. It is a simplified subset of Standard Generalized Markup Language (SGML). Its primary purpose is to facilitate the sharing of data across dif-

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XSL 1.1 — New Features

XSL 1.0 defines the features and syntax for the Extensible Stylesheet Language (XSL), a language for expressing stylesheets. It includes an XML vocabulary for specifying formatting semantics. An XSL stylesheet specifies the presentation of a class of XML documents by describing how an instance of the class is transformed into an XML document that uses the formatting vocabulary.

Requirements

Since becoming a Recommendation on 15 October 2001, XSL 1.0 has enjoyed widespread support. However, the user community has expressed requirements that have encouraged various implementations to provide extensions to the language. These extensions--especially those implemented by more than one implementation--are clear candidates for standardization so as to maximize interoperability.

The XSL Working Group has surveyed and analyzed various existing extensions, user requirements, and features intentionally cut from XSL 1.0 due to lack of time. Using the results of this research, the Working Group is developing an XSL 1.1 version that incorporates current errata and includes a subset of relatively simple and upward compatible additions to XSL.

Since there are already various non-interoperable extensions for many of these features, it is crucial that XSL 1.1 be developed in a timely manner. It is important that added XSL 1.1 features correspond to things that implementors have implemented or things that can be implemented in a reasonable time frame.

After research, requirements gathering, and discussions with vendors and within the working group, we developed the following set of potential requirements for added features to XSL 1.1:

- Change bars
- Index improvements, especially merging page numbers
- Conditional graphic scaling, e.g., "scale-down-to-fit"
- Table of contents windows (aka bookmarks)
- Folio-prefix and folio-suffix
- Table markers that allow dynamically determined text to be put into table headers or footers
- Support for a value of "only" for the page-position property
- Support for a page-number-citation-last formatting object (retrieving the last page number of a section or document)
- Support for "flowmaps" and other region/float extensions

The working group is also maintaining a list of other potential requirements to XSL [Post-XSL 1.1] that have already been deemed to be beyond the scope of XSL 1.1.

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W3C News

2006-05-29

W3C Holds the Second Workshop on Internationalizing SSML. Following a successful Workshop in Beijing, China, W3C holds a second Workshop on Internationalizing the Speech Synthesis Markup Language (SSML) on 30-31 May, hosted by the Foundation for Research and Technology - Hellas (FORTH) in Heraklion, Crete, site of the W3C Office in Greece. Attendees will identify and prioritize extensions to SSML to improve its use for rendering non-English languages. Read about W3C Workshops and visit the Voice Browser home page.

2006-05-23

W3C Invites Public Discussion of Current, Future Work at WWW2006. We invite you to attend the W3C Track of the Fifteenth International World Wide Web Conference (WWW2006) for discussion on Web standards in media, health sciences, and international commerce, as well as opportunities in the next wave of Internet and Web technical development. Come learn about the latest developments in accessibil-

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Advanced Function Presentation

IBM's AFP platform drives simplicity into output environments. As a published, object-oriented, device-independent architecture, AFP can streamline:

- Creation and management of personalized content
- Integration with existing statement systems
- Use of color in high-speed production printing
- Data control, security and integrity
- Delivery of information in your choice of format
- Workflow management

IBM's Advanced Function Presentation (AFP) platform is a published standard in the print industry for printing variable data at very high speeds with complete integrity. AFP incorporates other industry formats, including EPS, PDF, TIFF, GIF, JPEG, XML, XSL, PostScript, PCL and PPML - to cover the entire range of text, image, graphics, process color, highlight color and monochrome printing.

With page-level print monitoring and error recovery, AFP has the ability to print on standard printing device and deliver content via HTML, fax, e-mail or screen. When it is combined with an Intelligent Printer Data Stream (IPDS) printer, AFP also provides:

- Full page-level error recovery
- Exceptional print integrity

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Wikipedia *(continued from page 1)*

ferent systems, particularly systems connected via the Internet. Languages based on XML (for example, Geography Markup Language (GML), RDF/XML, RSS, Atom, MathML, XHTML, SVG, and MusicXML) are defined in a formal way, allowing programs to modify and validate documents in these languages without prior knowledge of their form.

XSL The eXtensible Stylesheet Language (XSL) is a family of languages which allows one to describe how files encoded in the XML standard are to be formatted or transformed. The family contains three languages:

— XSL Transformations (XSLT): an XML language for transforming XML documents
— XSL Formatting Objects (XSL-FO): an XML language for specifying the visual formatting of an XML document
— the XML Path Language (XPath): a non-XML language used by XSLT, and also available for use in non-XSLT contexts, for addressing the parts of an XML document.

These three specifications are available in the form of W3C Recommendations.

XSLT Extensible Stylesheet Language Transformations, or XSLT, is an XML-based language used for the transformation of XML documents. The original document is not changed; rather, a new document is created based on the content of an existing one. The new document may be serialized (output) by the processor in standard XML syntax or in another format, such as HTML or plain text. XSLT is most often used to convert data between different XML schemas or to convert XML data into web pages or PDF documents.

XSL-FO XSL Formatting Objects, or XSL-FO, is an XML markup language for document formatting. XSL-FO is part of XSL, a set of W3C technologies designed for

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XSL 1.1 — New Features *(continued from page 1)*

Design

The following chapters describe how each features is designed in XSL 1.1.

Change-bars

This feature introduces two new elements: fo:change-bar-begin and fo:change-bar-end. These elements may be placed virtually anywhere in the source document.

The fo:change-bar-begin is used to indicate the beginning of a "change region" that is ended by the subsequent fo:change-bar-end whose change-bar-class property value matches that of the change-bar-class property on this fo:change-bar-begin and is at the same nesting level (relative to other fo:change-bar-begin/fo:change-bar-end pairs with the same change-bar-class property value) of this fo:change-bar-begin.

The change region is decorated with a change bar down either the start or end edge of the column. That is, a change bar is generated along side of the areas generated within the region-body's non-conditional reference area by the formatting objects "under the change bar influence". All formatting objects after (in document order) this fo:change-bar-begin and up to the matching fo:change-bar-end (or end of document) are considered under the change bar influence of this fo:change-bar-begin.

The position, thickness, style, and color of the generated change bar is determined by the respective properties.

Bookmarks

```
bookmark-tree = element fo:bookmark-tree {
  bookmark+
}
bookmark = element fo:bookmark {
  accessibility-properties,
  (external-destination
   | internal-destination),
  starting-state,
  bookmark-title, bookmark*
}
external-destination =
  attribute external-destination { text }
internal-destination =
  attribute internal-destination { text }
starting-state =
  attribute starting-state { "show"
                           | "hide" }?
bookmark-title =
  element fo:bookmark-title {
    accessibility-properties,
    attribute color { text }?,
    attribute font-style { "normal"
                         | "italic" }?,
    attribute font-weight { "normal"
                          | "bold" }?,
    text
  }
```

The fo:bookmark-tree formatting object is used to hold a list of access points within the document such as a table of contents, a list of figures or tables, etc. Each access point is called a bookmark.

The fo:bookmark formatting object is used to identify an access point, by name, and to specify where that access point is within the current document or another external document. A given bookmark may be further subdivided into a sequence of (sub-)bookmarks to as many levels as the authors desire.

The property "starting-state" determines whether any sub-list of bookmarks is initially displayed or is hidden. The value "show" means include the sub-list of bookmarks in the presentation of this bookmark. The value "hide" means show only this bookmark in the presentation. The fo:bookmark-title formatting object is used to identify, in human readable form, an access point.

flow-maps

One or more fo:flow-map objects may be placed in fo:layout-master-set. An fo:simple-page-master is allowed to have more than one fo:region-body children. An fo:page-sequence is allowed to have more than one fo:flow children.

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W3C News *(continued from page 1)*

ity, browser security, Semantic Web applications, SVG graphics, compound document formats and styling, Web services, XML tools, and the Mobile Web Initiative. The W3C Track runs from 24-26 May in Edinburgh, Scotland, UK. Read the press release. (Photo credit: Ian Jacobs. News archive)

2006-05-20

W3C Welcomes Members at Advisory Committee Meeting. W3C holds its semiannual Advisory Committee Meeting on 21-22 May in Edinburgh, Scotland, UK. W3C Member organizations participate in two days of discussions and strategic planning about W3C Activities and future work. Learn How to Become a W3C Member and join W3C at the next Advisory Committee Meeting on 29-30 November in Tokyo, Japan. (Photo credit: Kazuyuki Ashimura. News archive)

2006-05-18

W3C Workshop on a Device Description Repository. W3C holds the International Workshop on the Implementation of a Device Description Repository on 12-13 July 2006, in

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XSL 1.1 — New Features *(continued from page 2)*

The assignment of flows to regions on a page-master is determined by a flow-map. The flow-map is an association between the flow children of the fo:page-sequence and regions defined within the page-masters referenced by that fo:page-sequence.

Flow-maps are specified by fo:flow-map formatting objects. An fo:page-sequence uses the flow-map indicated by its flow-map-reference property when assigning its flows to regions. If the flow-map-reference property is not specified for the page-sequence then the implicit flow-map is used for that page-sequence, as in version 1.0 of this Recommendation. The "flow-name" property of a flow specifies to which region that flow is assigned. Each region has a "region-name" property. The flow-map assigns a flow to the region that has the same name.

```
flow-map =
  element fo:flow-map {
    attribute flow-map-name { text },
    element fo:flow-assignment {
      element fo:flow-source-list {
        element fo:flow-name-specifier {
          attribute flow-name-reference {
     text },
          empty
        }+
      },
      element fo:flow-target-list {
        element fo:region-name-specifier {
          attribute region-name-reference {
     text },
          empty
        }+
      }
    }+
  }
```

Folio-*

Two new elements fo:folio-prefix and fo:folio-suffix may be placed in fo:page-sequence specify a static prefix(suffix) for the folio numbers within a page-sequence.

The child areas of the inline-areas produced by fo:page-number, fo:page-number-citation and fo:page-number-citation-last are the same as the result of formatting a result-tree fragment consisting of the content of any fo:folio-prefix child of the reference-page-sequence, followed by fo:character flow objects; one for each character in the folio-number string and with only the "character" property specified, followed by the content of any fo:folio-suffix child of the reference-page-sequence.

page-position="only"

The value "only" of the page-position attribute provides a mean to declare that a page-master is eligible for selection if this is the only page (i.e. the page is both first and last) page in the page-sequence.

fo:page-number-citation-last

The fo:page-number-citation-last is used to reference the page-number for the last page containing an area that is (a) returned by the cited formatting object and (b) has an area-class that is consistent with the specified page-citation-strategy.

It may be used to provide the page-numbers in the table of contents, cross-references, and, when combined with fo:page-number-citation, for page range entries.

Conditional graphic scaling

Conditional graphic scaling is designed with two new attributes, appliable to fo:external-graphic and fo:instream-foreign-object: allowed-height-scale and allowed-width-scale. They are alike, so the further text describes the former one.

The value of allowed-height-scale attribute may be a sequence of percentage values or the token "any".

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Wikipedia *(continued from page 2)*

the transformation and formatting of XML data. The other parts of XSL are XSLT and XPath.

XPath XPath (XML Path Language) is a terse (non-XML) syntax for addressing portions of an XML document. Originally motivated by a desire to provide a common syntax and behavior model between XPointer and XSL, XPath has rapidly been adopted by developers as a small query language.

W3C The World Wide Web Consortium (W3C) is an international consortium where member organisations, a full-time staff, and the public, work together to develop standards for the World Wide Web. W3C's mission is: "To lead the World Wide Web to its full potential by developing protocols and guidelines that ensure long-term growth for the Web". W3C also engages in education and outreach, develops software, and serves as an open forum for discussion about the Web. The Consortium is headed by Tim Berners-Lee, the original creator of the World Wide Web and primary author of the URL (Uniform Resource Locator), HTTP (HyperText Transfer Protocol) and HTML (HyperText Markup Language) specifications, the principal technologies that form the basis of the Web.

AFP Advanced Function Printing (AFP) is an IBM architecture and family of associated printer software and hardware that provides document and information presentation control independent of specific applications and devices.

Using AFP, users can control formatting, the form of paper output, whether a document is to be printed or viewed online, and manage document storage and access in a distributed network across multiple operating system platforms. AFP is primarily used in large enterprises with printer rooms and expensive high-speed printers.

AFP applications allow users or print room operators to distribute print jobs among a group of printers and to designate backup printers

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W3C News *(continued from page 2)*

Madrid, Spain. Application and database developers and others are invited to discuss the design, implementation and use of a repository of device information for content and service providers. Position papers are due 31 May. Read the press release, about W3C Workshops and about the Mobile Web Initiative.

2006-05-18

W3C to Participate in Advisory Board of Internet Governance Forum. In a 17 May 2006 press release, United Nations Secretary-General Kofi Annan established "an Advisory Group to assist him in convening the Internet Governance Forum (IGF), a new forum for a multi-stakeholder dialogue on Internet governance." Daniel Dardailler, W3C's Associate Chair for Europe, will represent W3C on the new Advisory Board. W3C looks forward to sharing its experience in distributed consensus-building within this new international environment for standardization.

2006-05-18

W3C Launches WebCGM Working Group. W3C is pleased to announce the launch of the Web CGM Working

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AFP *(continued from page 1)*

— Resource management to support printing at rated speeds
— Full color capability including support for ICC-based color management
— Dynamic, published architecture capable of evolving with technology advances

AFP is unique because it incorporates a presentation model (Mixed Object Document Content Architecture or MO:DCA) and a device model (Intelligent Printer Data Stream or IPDS).

MO:DCA is object-oriented, so applications can include text, image, graphics, bar codes and existing data in many formats. It allows a programmer to think in terms of the presentation look - bill, policy, label, report and so on - and to write code accordingly.

IPDS allows devices, including IBM workgroup printers that support color, to be driven at the highest possible speed and with the greatest exploitation of its functions. IPDS consists of device commands instead of MO:DCA's presentation descriptions.

XSL 1.1 — New Features *(continued from page 3)*

allowed-height-scale specifies a list of constraints on the scale-factor values that may be used when scaling a graphic in the height direction. The list is unordered, except that an "any" value is considered last and is only used if the scaling constraints cannot be satisfied using any of the other specified values.

Indices

The formatting objects and properties for indexing enable the generation of lists of page numbers associated with specific items in the formatting object tree, such as for use in back-of-the-book indexes. There are two kinds of such objects and properties: those that associate index keys with formatting objects throughout the tree and formatting objects that are used in the back-of-the-book index to assemble page references to the pages where the areas from formatting objects with a particular index key occur. Further formatting properties and objects control the way in which these page references are grouped and arranged into ranges.

There are two properties for associating index keys with formatting objects: "index-key" and "index-class". These two properties apply to almost all formatting objects. There are two formatting objects for associating explicit index key ranges, fo:index-range-begin and fo:index-range-end.

Cited page items associated with a particular index key are obtained using the fo:index-key-reference. Its parent, fo:index-page-citation-list, groups and arranges these. In addition, the form of the generated page number list can be defined and controlled using the formatting objects fo:index-page-number-prefix, fo:index-page-number-suffix, fo:index-page-citation-list-separator, and fo:index-page-citation-range-separator. For a back-of-the-book index each index term would have an index key that is used to identify each occurrence of that term within the document. In the back-of-the-book index there would be at least one fo:index-key-reference for each index key used.

The structure and content of the generated list of page numbers can be further controlled through the use of index classes to distinguish different types of index entries or to distinguish entries present in different parts of the document. For example, different classes could be used to distinguish index entries for figures from normal entries or to distinguish entries within one section, e.g. the preface, of a document from entries from another section, e.g. the main body, in order to control the construction of page ranges. The fo:index-page-number-prefix and fo:index-page-number-suffix specify additional text, e.g. "[" and "]", to surround the page numbers in the index.

Table markers

The fo:retrieve-table-marker may be placed in a fo:table-header or fo:table-footer and is used in conjunction with fo:marker to produce table-headers and table-footers whose content can change over different pages.

Typical examples include:

— dictionary headers showing the first and last word defined in the part of the table on the current page.
— subtotals e.g. that give a subtotal of numbers in rows up to the last row on the current page.
— table-continued captions that show if a table is continued after the current page, or was a continuation from a previous page.

Wikipedia *(continued from page 3)*

when one fails. IBM considers AFP to be a "cornerstone" of EDM applications such as print-and-view, archive and retrieval, and Computer Output to Laser Disk (COLD).

AFP consists of MO:DCA-P and IPDS.

MO:DCA-P (Mixed Object:Document Content Architecture-Presentation), the Page Description Language fileformat that describes the text and graphics on a page. The 'Mixed Object' moniker refers to the fact that AFPDS can contain multiple types of objects, including text, images and even objects marked as 'barcodes'. An application can simply include a string of digits marked as a specific type of barcode, and the rendering of bars will be done on the output platform (physical printer hardware or software emulation). AFPDS is comparable to PDF or PostScript, though PostScript can also include job specific information that drives printer options such as input tray selection.

IPDS Intelligent Printer Data Stream. This is the bi-directional protocol used between the host and the printer. It is used to send the pagelevel data (AFPDS) and to signal errors and completion of jobs, as well as to query a

W3C News *(continued from page 3)*

Group. Lofton Henderson will Chair this Working Group, which is chartered through 31 May 2007 to produce a W3C Recommendation for version 2.0 of the WebCGM 1.0 Recommendation. W3C Members may use this form to join the Working Group. Visit the WebCGM Working Group home page.

2006-05-18

Working Draft: Mobile Web Best Practices 1.0. The Mobile Web Best Practices Working Group has published an updated Working Draft of Mobile Web Best Practices 1.0 that incorporates comments from their 18 April 2006 Last Call Working Draft. This document aims to improve user experience by describing how to produce Web content and Web sites intended for delivery to mobile and small-screen devices. Visit the Mobile Web Best Practices Working Group home page.

2006-05-18

Last Call: Internationalization Tag Set. The Internationalization Tag Set Working Group has published a Last Call Working Draft of the Internationalization Tag Set (ITS) Version 1.0, a First Public Working Draft of Best Practices for XML Internationalization, and updated requirements.