Intelligent Content Plug-In for Microsoft® Word

Based on – "Method and System for Automated Structuring of Textual Documents"
US Patent Number 7,251,777 (July 2007)

Intelligent Content

Single Source of Truth

Establish an architecture that enables the organization to achieve consistency across the enterprise.

Technology Populism

Empower the knowledge workers by extending the tool that they are familiar with – Microsoft® Word.

Future-proof Content

Leverage the XML standard to ensure interoperability and reduce proprietary lock-ins.

Sustainable Cost Reduction

Achieve efficiencies through optimization of complex business processes.

Multi-Channel Delivery

Deliver content to traditional (Web, print) and new channels (mobile, personalized, social networks, and other).

Competitive Advantage

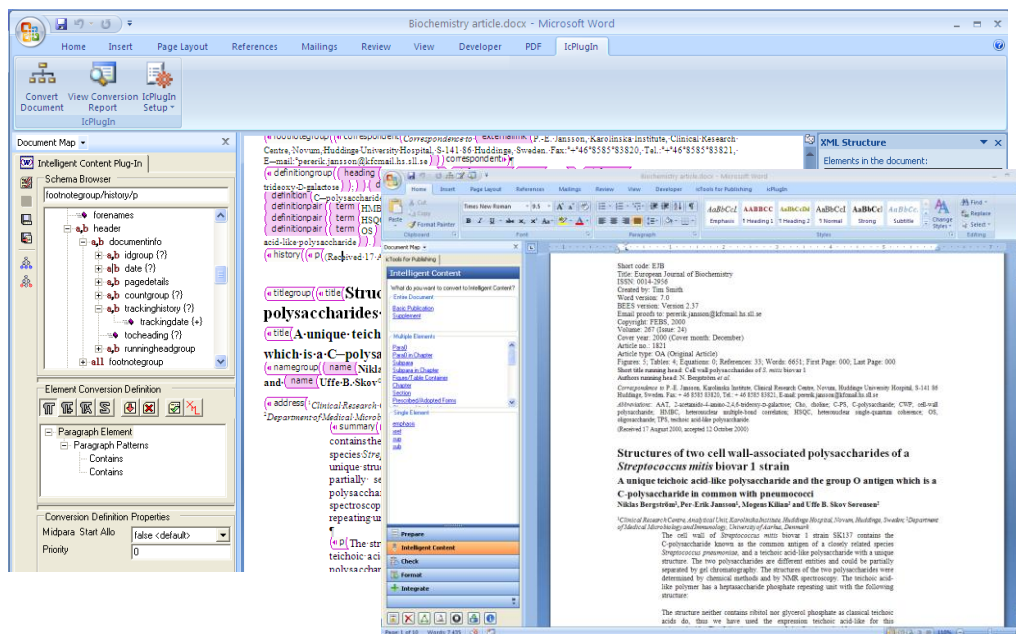Leverage intelligent content architecture to develop innovative products and services.

Figure: Intelligent Content Plug-In User Interfaces for Content Architects, Administrators, and Knowledge Workers

Overview

Intelligent Content Plug-In by Ictect, Inc. provides a solution for structuring content and extracting semantically relevant information, which is a critical part of the process for organizations seeking to better utilize and manage their enterprise-wide information with the goal to optimize business processes and discover opportunities for innovation leading to competitive advantages.

icPlugIn provides knowledge workers, content architects, and content administrators powerful tools to semantically enhance content and build an effective content architecture.

icPlugIn supports a wide range of textual content types, provides semantic flexibility and accuracy, while allowing its users to maximize their productivity by continuing to work within a familiar environment – Microsoft Word.

Highlights

- Microsoft Word 2003 and 2007 plug-in for developing XML-based content architectures.

- XML Schema-driven, providing visual support for content architects and content administrators.

- Empowers knowledge workers by providing tools integrated with Microsoft® Word.

- Proven in content projects in e-publishing and other initiatives involving complex business process optimizations.

- Available in a variety of licensing models, including OEM, VAR, and technology/services packages.

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Business Value through Intelligent Content

What is Intelligent Content Plug-In?

icPlugIn is a powerful plug-in for Microsoft Word that provides an integrated environment for **automated semantic markup** of documents using XML structures. The semantic markup is stored as an additional XML layer with its own namespace, while preserving all formatting and other word processing features of Microsoft Word in the document. icPlugIn uses a patented schema-driven method to identify relevant content and apply semantic XML tags. This method allows for complex, yet accurate and manageable automated markup. The marked-up content can be extracted as XML and transformed for further processing.

Why use icPlugIn?

Content structuring and extracting semantically relevant information is one of the most challenging tasks in many content initiatives. In most multi-channel publishing environments, content structuring to XML is often a requirement. For such environments, icPlugIn provides the means for highly effective, fully customizable tagging of content to XML, without disrupting existing processes and communication with others by using commonly used Microsoft Word documents.

Because XML tags are stored within the target Microsoft Word document, and because the document's rich formatting and other word processing features remain intact after tagging, it is possible to streamline documents or content-centric business processes by applying XML structures with defined semantics without having to explicitly store the content as XML or burdening business users with the complexity of a specialized XML authoring tool.

icPlugIn provides a solution for this critical step in the process of building and maintaining an effective content architecture. It helps organizations develop content architectures to streamline their document centric business processes, improve information quality, reduce costs, and achieve competitive advantage through innovative uses of information extracted from the content.

Where is icPlugIn applicable?

icPlugIn is applicable in the following situations:

- The organization desires the benefits from a semantically enhanced content architecture.
- Contributors in the business process (e.g., content creators) use Microsoft Word

If this is the case, icPlugIn can be applied in a variety of ways. After appropriate setup for a specific set of document types, it can be used as a **standalone application** by knowledge workers. However, since XML is most often needed in the context of large-scale enterprise content initiatives, integration with custom business applications and processes is likely to be desired. To meet this need, icPlugIn was designed for a variety of applications where Microsoft Word is used in content creation processes. It can be used in **interactive** as well as in automated applications, including unattended **batch-mode**. The icPlugIn engine is expressly designed to be used as an **embedded component** in a variety of custom solutions.

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Intelligent Content Plug-in Process and Technology

Working with icPlugIn

icPlugIn and its semantic XML markup process enables content architects to develop appropriate XML-schemas for given business requirements. Using such schemas and Microsoft Word, knowledge workers can easily participate in content processes.

Especially non-technical knowledge workers, responsible for creating and processing content, have successfully applied icPlugIn and increased the business value of documents in a variety of contexts: appraisers for streamlining and speeding up the appraisal process, financial analysts for moving content to the Web more effectively, attorneys and paralegals for enhanced contract preparation and compliance with regulatory requirements.

icPlugIn users benefit from its intuitive user-interface and flexibility. All files formats that can be opened in Word are supported, including plain text, rich text (RTF) and HTML. icPlugIn has the unique feature that it preserves all the original content and appearance of the document in the automated markup process, applying semantic XML markup as an additional layer that is invisible to readers, but can be leveraged for further document processing.

Documents marked-up with icPlugIn can be saved as Microsoft Word documents (.doc or .docx) and easily exchanged with Microsoft Word users without loss of XML markup or formatting. The semantically marked-up content can be automatically extracted and exported as XML from the Word document at any time. Thus, an organization can enhance and streamline its internal workflow using XML, while at the same time communicate with external contributors in the familiar Microsoft Word format.

icPlugIn uses an XML Schema to guide the content recognition and markup construction process. Then, using the XML capabilities of Word (2003 or 2007), icPlugIn enhances the document by applying an additional layer of semantic XML markup.
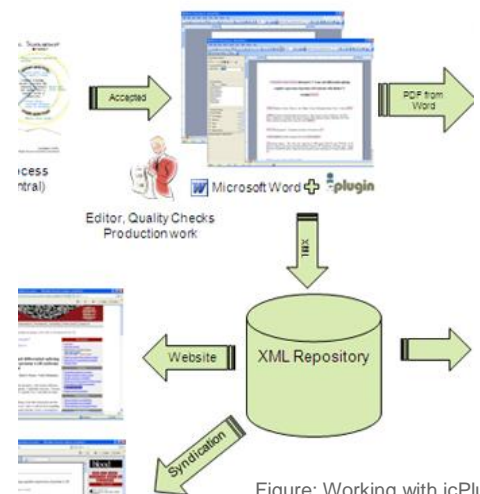

Figure: Working with icPlugIn

What does icPlugIn include?

icPlugIn includes a Graphical User Interface (GUI), fully integrated into Microsoft Word, for developing auto-tagging definitions. The second component is an engine for the processing of these rules and the construction of XML document markup. The third, optional component is a batch component, which also makes use of the auto-tagging engine and allows batch document auto-tagging and dispatching based on a predefined file folder model.

Ictect further offers professional services for helping organizations establish content architectures and develop effective, context specific processes and tools.

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icPlugIn features

All pattern matching is context-specific, due to the unique schema-guided technology. This means simpler patterns and fewer spurious matches, resulting in better processing performance and higher information quality.

Allows for associating confidence levels to auto-tagging definition for better markup.

Application of markup does not alter the visual appearance or the rich-text content of the document in any way.

Setup of conversion rules does not require programming knowledge.

High degree of automation with advanced reporting capabilities.

Manual completion and quality control facilitated by rule-based analysis tools.

Supports all file formats that are supported by Microsoft Word.

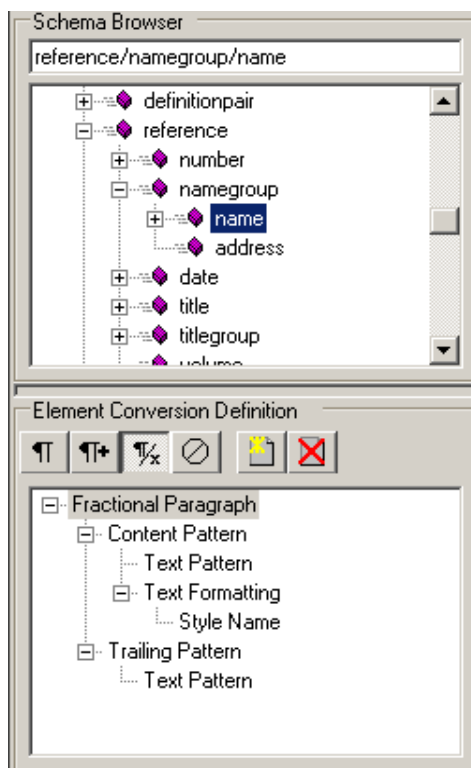Small footprint, API-enabled.

Technology Features

Figure: icPlugIn XML Schema Support

How does icPlugIn work?

The use of icPlugIn requires an XML Schema that closely models the logical structure of documents under consideration. Having an appropriate schema, a content or IT architect can create auto-tagging definitions in Microsoft Word using icPlugIn. Auto-tagging definitions consist of a set of text and formatting patterns for recognizing content in unstructured documents as well as corresponding markup construction actions.

Patterns can include almost arbitrary combinations of literal strings, regular expressions, wildcard patterns, paragraph properties, and paragraph and character formatting (such as styles, color, font names, italic and bold). Complex composite patterns can be easily constructed using the graphical interface of icPlugIn, with no programming required.

Text formatting characteristics of select document ranges can also be automatically translated into appropriate pattern definitions, making the setup process rather "visual" and intuitive.

The icPlugIn engine takes an auto-tagging definition and governing XML schema and builds an internal model for automatic tagging. It then parses the given unstructured document and constructs XML markup on it, which is immediately displayed in an XML Structure view within Microsoft Word. The resulting document can be saved as a Word document, with the markup embedded in it, or as an XML document, possibly including additional custom transformations.

In addition to the generated XML structure, icPlugIn provides a comprehensive auto-tagging report, which can be of great help to auto-tagging definition developers as well as to end users. Developers can use it as a "debugging" aid that provides insight into the workings of the auto-tagging engine, while end users can rely on it for guidance in reviewing and completing the generated document markup. This integration of the report with the corresponding Microsoft Word document provides for the efficiency and ease of all tasks related to document XML-structuring.

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