Elkera Pty Limited

Elkera Business Narrative Markup Language

Introduction to the BNML Schema

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Introduction to the BNML Schema

The Elkera® Business Narrative Markup Language (BNML™) Schema provides an improved approach to XML content management for most technical, legal and business narrative documents. It can be applied to the simplest correspondence or the most complex legal contracts and technical specifications with numbered clauses and schedules.

The BNML Schema defines simple, re-usable patterns for the markup of narrative content to make it easier to develop XML authoring applications that will provide much greater author convenience than with other generally available XML schema or DTDs.

The BNML Schema's simple, tight markup model promotes the consistent markup of re-usable content and supports automated content re-use and high quality publishing in print, on the web or in other electronic formats.

The BNML Schema is designed to be easily customized to enterprise requirements. New elements can be added with simple, re-usable markup patterns to handle most common narrative markup requirements. There is no need to remove large numbers of unwanted elements or work out how to manage unnecessarily loose content models. It enables developers to create carefully targeted markup to simplify all aspects of single source publishing application development.

The BNML Schema is freely available under the BNML Schema Public Licence.

Purpose of the Elkera BNML Schema

Many enterprises that could benefit from a single source or dynamic enterprise publishing system are denied those benefits because they are unable to justify the changes necessary to manage narrative content using XML. There are two problems. Firstly, the usability of XML editing applications with available general purpose DTDs or schema has not been satisfactory. Secondly, the cost of application development is too high because of a lack of low cost, ready to use tools that satisfy usability needs.

The Elkera BNML Schema is designed as a foundation to help address these problems. The key aims of the Elkera BNML Schema are to:

- provide a simple, generic representation of business narrative content that will support high quality, standardized renditions in print, on the web and in other formats;

- make it practicable for application developers to create simple, easy to use interfaces in XML editing applications;

- provide simple markup patterns that can be easily explained to content authors to simplify initial training and ongoing support;

- provide a generic, structural framework that allows semantic metadata to be associated with narrative content; and

- facilitate reliable sharing and re-use of narrative content in automated and manual applications.

How is the BNML Schema different?

Many general purpose DTDs or schema contain a vast number of elements in an attempt to provide a smorgasbord of elements for different types of content. It is also common for these schema to provide multiple ways to markup the same content, even down to the paragraph and list level. This approach makes it very difficult to train authors to use the schema and XML editing tools. It leads to very inconsistent markup usage by different authors and between documents by the same author. This causes problems for content re-use and automated rendering processes. It also makes rendering applications expensive to develop and difficult to maintain.

Using just a few elements, the Elkera BNML Schema defines a few simple patterns that can provide a generic representation of almost any narrative content of the kind found in technical, legal and business documents. The Elkera BNML Schema uses a recursive hierarchical model for the main narrative structure and is particularly suited to documents with numbered provisions, such as clauses in contracts and technical documents.

The simple, re-usable patterns defined by the Elkera BNML Schema mean that there is really only one way to markup most narrative content. This promotes much more consistent markup than is achievable with many other general purpose schema and it reduces the training and support needs of authors.

How does the BNML Schema work?

The core of the BNML Schema is a very small number of elements to model the generic structure of almost any kind of narrative document. To begin, an author only needs to know 6 or 7 elements.

The BNML Schema uses a single, recursive element (item) to define the main parts, such as sections or clauses in the document to any desired level. The item element may have a number (num) and a title. The title is not required.

The item element is intended to be a re-usable object that can be inserted at any point into the document hierarchy.

The BNML Schema also defines a strict conceptual or grammatical paragraph using a block element. All lists, tables, graphic objects and inline content must be contained by a block element. Lists are created by re-using the item element inside block. The block

element does not contain mixed content but uses the text element for all narrative content.

The Schema defines a set of standard structure patterns for the occurrence of item and block elements within container elements. Schema designers can easily select the desired pattern for each container. In addition to block only or item only structures, the defined patterns are:

- Tight structure model which permits either item or block elements but does not allow both at the same level;

- Standard structure model which permits block before the first item, but not otherwise at the same level; and

- Loose structure model which allows item and block to be mixed at the same level.

An inclusion element is used to represent all content that occurs within the narrative but is distinct from the surrounding text, such as quotations, explanatory notes and examples. It may also be used for graphics and tables which require group titles or figure or table numbers. The function of each inclusion element is determined by the value of its *class* attribute.

These core elements and patterns can be used inside other container elements that are needed to define the generic structure of particular document types such as document, contract, correspondence, etc.

An adjunct element is used for subsidiary content such as schedules, appendices and attachments. The adjunct may contain complete documents or item and block markup.

The BNML Schema also provides specialist markup for particular document types, including the party-signature markup for use in contracts and correspondence.

Once these basic principles are understood, an author is able to markup narrative content of any complexity. The Elkera BNML Schema can markup something as simple as a few paragraphs in a letter or as complex as a technical specification or a lengthy, contract with complex numbered clauses and schedules.

Features for authors

The BNML Schema defines simple patterns that can be quickly learned by content authors to enable them to easily make the change to authoring of narrative content using an XML editor.

The BNML Schema includes flexible markup structures needed for business narrative documents, including dynamic cross references and annexed or subsidiary content.

Application developers can build on this simplicity to provide authoring interfaces that permit XML authoring to be much simpler than using common word processing software.

Features for developers

The BNML Schema is particularly designed for documents that require automatic numbering of document provisions and internal cross references to numbered provisions.

The BNML Schema is simpler to modify and extend than most general purpose schema. There is very little that can be pruned from the BNML Schema. The schema provides inbuilt configuration options for common content model variations and extensions. The pre-defined markup patterns will enable developers to quickly add their own extensions.

The small element set and more consistent markup promoted by the Elkera BNML Schema greatly reduces the complexity of rendering and processing applications.

The Elkera BNML Schema is maintained in RELAX NG syntax and can be expressed as an XML Schema or a DTD. The DTD version does not provide the complete features of the schema.

Business benefits

The BNML Schema is designed to open up the possibilities of single source or dynamic enterprise publishing to a wider range of enterprises than ever before. In particular:

•   The BNML Schema simplifies narrative content markup to make it easier to train and support authors using XML editing systems.

•   The Schema's simple markup model should reduce the cost of rendering application development and maintenance.

•   It is available under open source licensing to promote widespread use by application developers with the aim that they will develop low cost, user friendly authoring applications around the BNML Schema.

BNML Schema Public Licence

The BNML Schema is open source and freely available under the terms of the BNML Schema Public Licence. The current version of the licence is available from the Elkera website (http://www.elkera.com).

Further information about the Elkera BNML Schema

Feedback, technical discussion and suggestions for improvement of the BNML Schema are welcome through the BNML discussion forum to be established on Elkera's web site. Pending establishment of that forum, please contact the BNML Schema principal architect, Andrew Squire with your feedback and suggestions. Elkera is not able to

provide support to schema developers except through its normal schema development services.

Please re-visit Elkera's web site (http://www.elkera.com) regularly for announcements and new information about the BNML Schema.