

LexDania

A MetaSchema for Legislative Text

12 January 2004 DOCUMENTA Hugh Tucker

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- Project Background
- LexDania
 - Philosophy (Why a Meta-schema?)
 - Data model (XML practices chosen)
 - Methodology (How to use LexDania)
- Schema Details
 - Structure
 - Content

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Project history

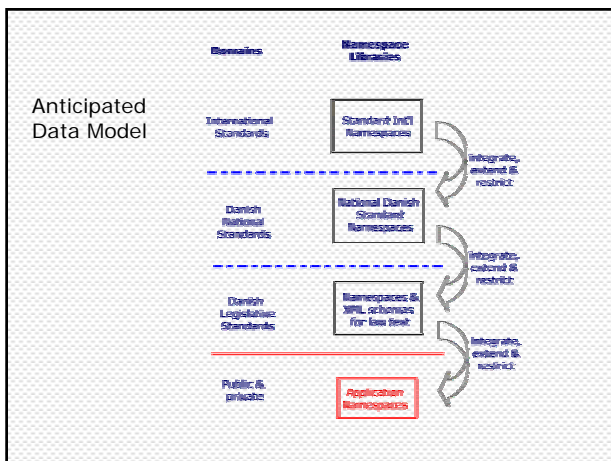
- Initiated by
 - Danish Ministry of Science, Technology and Innovation
- Continued by
 - Retsinformation (Ministry of Justice) and
 - Folketinget (Danish Parliament)

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Pilot project

- Phase 1: Research
 1. Research international activities
 2. Investigate other national standards & / projects
- Phase 2: Pilot development
 1. Basic data model / methodology
 - 1. Follow general Danish Public Information Online (OIO) XML strategy
 - 2. Choose a set of central types and elements (standards if possible)
 - 3. Create sets of "building blocks" for national use
 - 4. (Re-)Use building blocks to create specific legislative schemas
 2. A pilot meta-schema(s) for legislative documents - *LexDania*

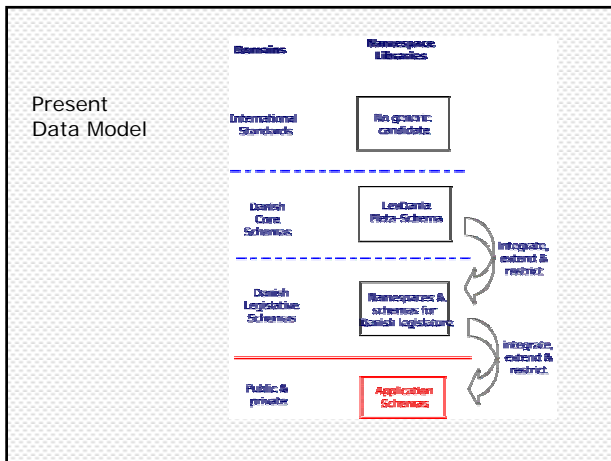
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Philosophy / Requirements

- Why build on (international / standardized) Schemas?
 - Compatibility (interchange) with international law/projects
 - Common goals/tools/discussions/experience
- Why not?
 - Danish legislative is in Danish! (no need to interchange)

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LexDania as a Meta-schema

- Provides a common syntactic level
- A common set of (building blocks):
 - Element declarations
 - Attributes
 - Structures
 - Metadata
 - Addressing
 - Referencing

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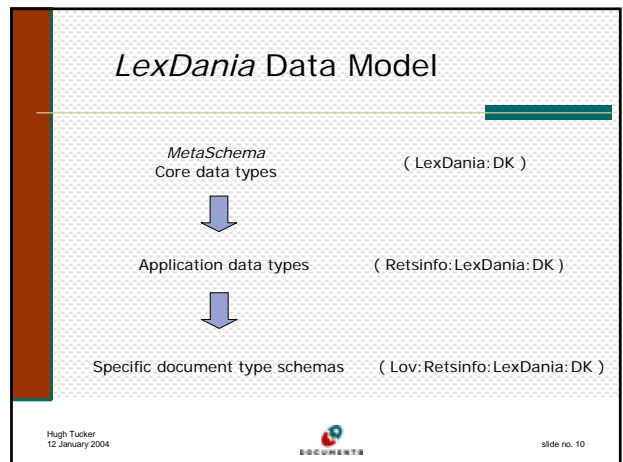
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So what?

- Removes detail
 - Makes schema writers job easier
- Provides built-in:
 - Interchange and
 - Interoperability
- Common tools
 - Editors
 - Repositories
 - Processing tools (parsers, browsers, formatters)

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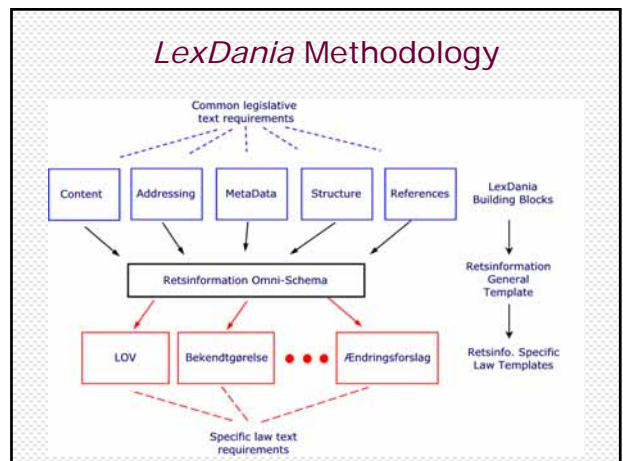


LexDania modules

- Structure
- Content
- Addressing
- Referencing
- MetaData

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LexDania – phase 2

- Modules in “LexDania:DK”
 - Provides syntax
 - Provides detail (addressing, metadata, ids, etc.)
- Retsinformation “Retsinfo:LexDania:DK”
 - Danish “standard” level
 - Provides semantics for Danish legislative documentation
 - Use building blocks by:
 - Re-using / redefining data-types
 - Substituting Element-names
 - Declaring attributes values
- Example *Law:Retsinfo:LexDania:DK*
 - Uses *Retsinfo:LexDania:DK* as meta-schema

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LexDania - XML chosen practices

- No namespaces (chameleon)
 - Best for schemas with no semantics
 - Makes life easier (more readable)
- Use component Ids
 - Identify components - more precise
- No mixed content
 - Makes programming easier
- Use attributes for:
 - Common (global) modifiers
 - Otherwise use elements

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LexDania naming conventions

- Types, attributes, elements
 - LATIN
- Text – Documentation
 - ENGLISH
- Examples
 - DANISH
- Criticisms and Negative Comments
 - URDU

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LexDania - Schema writing rules

- Type declarations
 - Global – permits redefinition
 - Complex – available for extension/restriction
 - Identifier: id= “xxx.LexDania.DK”
(where xxx can be any application identifier e.g., institute / module / etc.
e.g., id= “Retsinfo.LexDania.DK”)
- Element definitions
 - Global – permits renaming
- Attributes
 - No values in *LexDania*

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LexDania modules

- Structure
- Content
- Addressing
- Referencing
- MetaData

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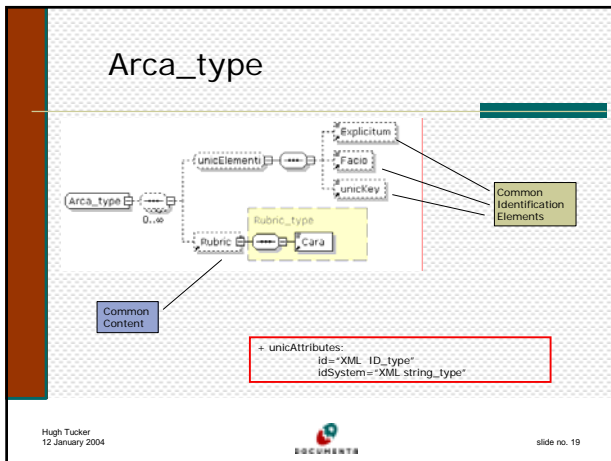
Structure: LexDania:DK

- ARCA_type
 - “ARCA” - (Latin ~ “container”)
 - Generic structure for containers
- Template contents
 - Rubric (“title”)
 - unicElementi (“unique element identifiers”)
 - unicAttributes (“unique identification attributes”)

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- ## Addressing: *LexDania:DK*
- Standard identification elements and attributes
 - Used for setting addresses on element structures
 - Default ARCA_type (container) structures
 - Setting visual identifiers (for readers) on elements
 - Creating "anchors" either in or upon
 - text fragments, elements, element structures
 - Setting local/system/universal uniqueness in addresses
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- ## Address: *LexDania:DK*
- LexDania Mark-up Identifier
 - All data_types declared with origin id
 - E.g., Retsinfo.LexDania.DK
 - "unickAttributes" attribute group
 - `<attribute name="id" type="xsd:ID" use="optional"/>`
 - `<attribute name="idSystem" type="xsd:string" use="optional"/>`
 - "unickElementi" element group
 - `<element ref="Explicitum" minOccurs="0"/>`
 - `<element ref="Facio" minOccurs="0"/>`
 - `<element ref="unickKey" minOccurs="0"/>`
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- ## Origin Markup Identifier
- All data_types have "id"
 - Identifies origin schema / module
 - E.g.,
 - id="Retsinfo.LexDania.DK"
 - id="address.LexDania.DK"
 - Used for identifying origin schema during "round-trip" conversion processes.
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Example of origin id markup

```

<!-- AFSNIT - That part of a document that contains a
      number of chapters ("Kapitel"). -->

xsd:complexType name="Afsnit_type" id="Retsinfo.LexDania.DK">
  <xsd:complexContent base="Arca_type">
    <xsd:sequence>
      <xsd:element name="Kapitel" type="Kapitel_type"
        maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexContent>
</xsd:complexType>

```

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- ## unickElementi
- Explicitum_type (~ explicit name / number / visual identifier)
 - e.g., "nummer, der vises som navn" eks., (4a)
 - `<element name="Explicitum" type="xsd:token"/>`
 - Facio_type (~ origin data_type / category)
 - origin tag name - used to preserve mark-up names during conversion.
 - `<element name="Facio" type="xsd:NCName"/>`
 - unickKey (~ unique key value / identifier)
 - E.g., database entity / table primary key
 - `<element name="unickKey" type="xsd:string"/>`
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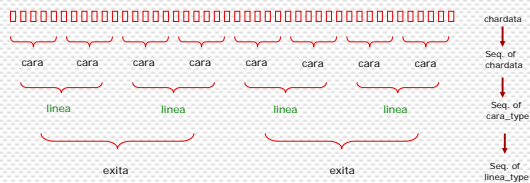
unicAttributes

- "unicAttributes" attribute group
 - <attribute name="id" type="xsd:ID" use="optional"/>
 - <attribute name="idSystem" type="xsd:string" use="optional"/>

Content: *LexDania:DK*

- Cara_type (chardata)
 - is a non-empty sequence of characters (chardata)
 - there is no mark-up allowed in Cara_type elements,
 - no mixed content
- Linea_type (phrases, sentence fragments, sentences, lines of text, etc.)
 - is a non-empty sequence of Cara_type elements.
- Exita_type (blocks of text, paragraphs, verses, etc.)
 - is a non-empty sequence of Linea_type, Caudex_type, Mensa_type, Figura_type, and/or Epistola_type etc.
- Caudex_type (lists)
 - is a non-empty sequence of Exita_type
- Epistola_type (notes)
- Mensa_type (tables)
- Figura_type (image)
- Articulatus_type (point, item, sequence of blocks of text)
- Xtern_type

Content - hierarchical sequence



Examples: cara_type

Example: "Retsinfo:LexDania:DK" declaration (inherited directly from "LexDania:DK")
`<xsd:element name="Cara" type="Cara_type" id="Retsinfo:LexDania:DK"/>`

a) with default attribute (forma) used for typographic instructions to printer:

```
<Cara forma="Caps">Vi Margrethe Den Anden,</Cara>
<Cara> af Guds Nåde Danmarks Dronning, gør vitterligt </Cara>
```

b) with default attribute (forma) used to indicate link to translator program.

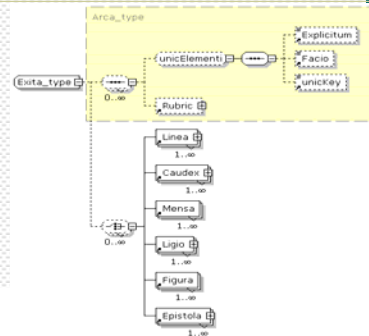
```
<Cara>Rådets direktiv</Cara>
<Cara forma="Celex">77/91/EOF</Cara>
<Cara> af 13.12.1976 (EF-Tidende 1977 nr. L 26, s. 1),</Cara>
```

Example: Linea_type

Example: "Retsinfo:LexDania:DK" declaration (inherited directly from "LexDania:DK")
`<xsd:element name="Linea" type="Linea_type" id="Retsinfo:LexDania:DK"/>`

```
<Linea>
  <Cara forma="Caps">Vi Margrethe Den Anden,</Cara>
  <Cara> af Guds Nåde Danmarks Dronning, gør vitterligt:</Cara>
</Linea>
<Linea>
  <Cara>Folketinget har vedtaget og Vi ved Vort samtykke
  stadfæstet følgende lov:</Cara>
</Linea>
```

Exita_type




Exita_type - example

```
<xsd:element name="Hymne" type="Exita_type"/>
<!-- Hovedlov, Ændringslov -->
```

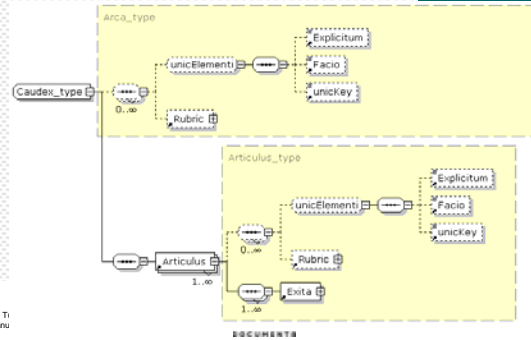
```
<Hymne>
<Linea>
<Cara forma="Caps">Vi Margrethe Den Anden.</Cara>
<Cara>af Guds Nåde Danmarks Dronning, gør vitterligt.</Cara>
</Linea>
</Hymne>
```

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<Cara>Folketinget har vedtaget  ved Vort
samtykke stadfæstet følgende lov.</Cara>

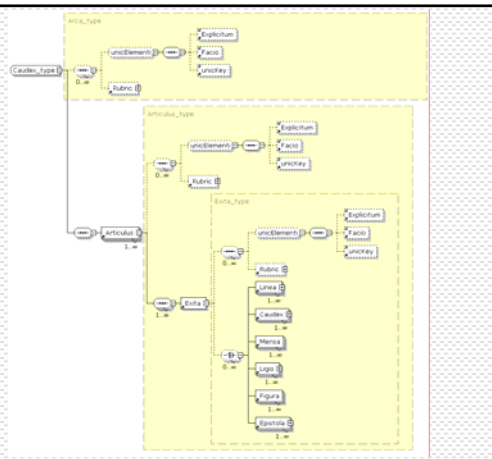
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Caudex_type



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```
<Stk id="A20000067229_P2_S7">
<Explicitum>7</Explicitum>
<Facio>Stk</Facio>
<Exita>
<Linea>
<Cara>Til medfinansiering af udviklingsaktiviteter kan Vækstfonden anvende et eller flere af følgende  
finansieringsinstrumenter.
</Cara>
</Linea>
</Exita>
<Caudex>
<Articulat id="A20000067229_P2_S7_L1_N1">
<Explicitum>1</Explicitum>
<Facio>Numerus</Facio>
<Exita>
<Linea><Cara>Tilskud</Cara></Linea>
</Exita>
</Articulat>
<Articulat id="A20000067229_P2_S7_L1_N2">
<Explicitum>2</Explicitum>
<Facio>Numerus</Facio>
<Exita>
<Linea><Cara>lån med forskellige former for tilbagebetalingsvilkår.</Cara></Linea>
</Exita>
</Articulat>
<Articulat id="A20000067229_P2_S7_L1_N3">
<Explicitum>3</Explicitum>
<Facio>Numerus</Facio>
<Exita>
<Linea><Cara>kapitalindskud, herunder erhvervelse af aktier.</Cara></Linea></Exita>
</Articulat>
<Articulat id="A20000067229_P2_S7_L1_N4">
<Explicitum>4</Explicitum>
<Facio>Numerus</Facio>
<Exita>
<Linea><Cara>garantier og</Cara></Linea></Exita>
</Articulat>
<Articulat id="A20000067229_P2_S7_L1_N5">
<Explicitum>5</Explicitum>
<Facio>Numerus</Facio>
<Exita>
<Linea><Cara>andre lignende finansieringsinstrumenter, hvorom erhvervsministeren  
fastsætter nærmere bestemmelser efter forslag fra Vækstfonden.</Cara></Linea>
</Exita>
</Articulat>
</Caudex>
```

MetaData

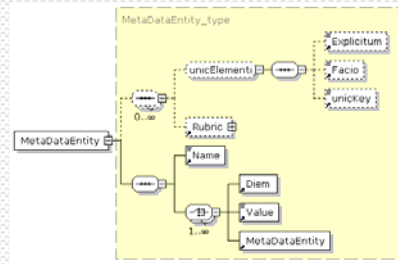


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MetaDataEntity



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