

GJXDM Information Exchange Package Methodology Naming & Design Rules (MNDR)

Presented by

John Ruegg

County of Los Angeles

Information Systems Advisory Body

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You have a dictionary called GJXDM (NIEM)

How do I use the dictionary to construct messages and documents?

Words



assembled for



Business Information



Answer: Need Methods and Rules for constructing meaningful electronic business messages and documents

English Dictionary

- **Webster’s dictionary of words and definitions doesn’t give us a method for constructing meaningful phrases.**
- **Using words from a dictionary doesn’t guarantee meaning**

“Hmmpf, hair brown my dog has” (Yoda speak)



English Dictionary

But dictionary words assembled according to the rules of grammar can convey meaning

“My dog has brown hair” (English sentence)

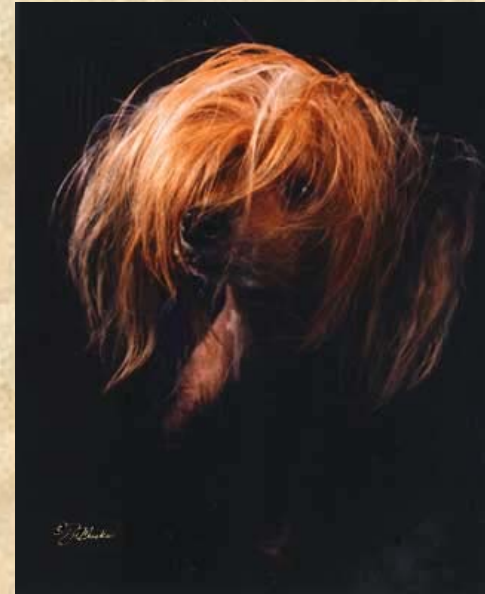




Rules of English grammar:

My dog = subject

Has brown hair = predicate



Terms of grammar:

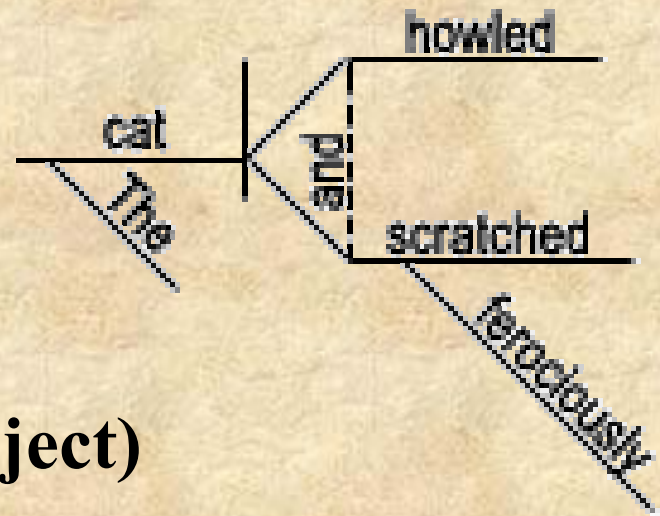
My = possessive pronoun

Dog = noun (subject)

has = verb

brown = adjective

hair = noun (predicate object)





Rules of GJXDM grammar:

MNDR and GJXDM use ISO 11179 Rules of Grammar for their dictionaries:

“My dog has brown hair.” => English grammar

“DogHairColorText” => ISO 11179 grammar

My = Object Class Term Qualifier

Dog =Object Class Term

Hair = Property Term Qualifier

Color =Property Term

Text = Representation Term





Sample MNDR Naming Rule:

[GNR2] - General Naming Rule

*GJXDM information exchange XML element, attribute and type names **MUST** be ISO 11179 compliant*



ISO - International Standards Organization

Sample MNDR Spreadsheet for GJXDM

Business Data Element	GJXDM Property (BBIE)	extend	GJXDM Path (ABIE, ASBIE)	Notes
Criminal Filing (Sample Elements)			CriminalFiling	For brevity's sake, omitted
Prosecutor Office Zip + 4	LocationPostalCodeExtensionID		Case/CaseFiling/SubmissionSubmitter.Organization/OrganizationLocation/LocationAddress/LocationPostalCodeExtensionID/ID	LocationPostalCodeExtensionID: IDType
Prosecution Filing Office Clerk - Name	PersonFullName PersonGivenName PersonMaidenName PersonMiddleName PersonNameInitialsText PersonPrefixName PersonSuffixName PersonSurName		Case/CaseFiling/SubmissionDocument/DocumentDescriptiveMetadata/DocumentCreator.Person/PersonName/...	CaseFiling:SubmissionType SubmissionDocument: DocumentType DocumentDescriptiveMeta
Prosecution Document Submitted Date	SubmissionSubmittedDate		Case/CaseFiling/SubmissionSubmittedDate	SubmissionSubmittedDate:
Prosecution Recommended Bail	ProsecutionRecommendedBailAmount	X	Case/CaseParticipants/CaseDefendantParty.Person/ProsecutionRecommendedBailAmount	Total bail for all charges booked against the
Preliminary Hearing Duration Estimate	PreliminaryHearingDurationEstimate	X	Case/CaseFiling/PreliminaryHearingDurationEstimate	PreliminaryHearingDurationEstimate: TimeMeasure
Complainant Name	PersonFullName PersonGivenName PersonMaidenName PersonMiddleName PersonNameInitialsText PersonPrefixName PersonSuffixName PersonSurName		Case/CaseParticipants/CaseInitiatingParty.Person/PersonName/...	CaseInitiatingParty.Person: PersonType
Complainant Title	EmploymentPositionName		Case/CaseParticipants/CaseInitiatingParty.Person/Employment/EmploymentPositionName	Employment: EmploymentT

MNDR Rule for Documenting New Elements & Components

```
<xsd:documentation>
<ccts:Component>
  <ccts:ComponentType>BBIE</ccts:ComponentType>
  <ccts:DictionaryEntryName>Address. Floor.
Text</ccts:DictionaryEntryName>
  <ccts:Version>1.0</ccts:Version>
  <ccts:Definition>Identification by name or number of the floor
in a building, as part of an address.</ccts:Definition>
  <ccts:Cardinality>0..1</ccts:Cardinality>
  <ccts:ObjectClass>Address</ccts:ObjectClass>
  <ccts:PropertyTermPrimaryNoun>Floor</ccts:PropertyTermPrimaryN
oun>
  <ccts:PropertyTerm>Floor</ccts:PropertyTerm>
  <ccts:RepresentationTerm>Text</ccts:RepresentationTerm>
  <ccts:DataType>Text. Type</ccts:DataType>
  <ccts:AlternativeBusinessTerms>SubPremiseNumber</ccts:Alternat
iveBusinessTerms>
  <ccts:Examples>"30"</ccts:Examples>
</ccts:Component>
</xsd:documentation>
```

MNDR Documentation standards for defining Context (reason for Customization)

Without *CONTEXT* what does Charge mean?

- **MasterCard or Visa?**
- **Residential or Commercial Burglary?**
- **100 Volts or 220 Volts?**
- **Quantity of gunpowder required?**
- **Person in Charge?**
- **Charge the flank or the rear?**

“Every new Document Schema or Message Schema is developed for a particular business purpose in some business CONTEXT.”

Sample “business context metadata” for documents, messages and any extension(s) to GJXDM(NIEM) Dictionary:

business process -----	Criminal Filing
Document/Message classification-	Initial Complaint
industry domain -----	Courts, Prosecution
geopolitical region -----	Los Angeles County, District Attorney, Superior Court
official constraint -----	None
business process role -----	Prosecution submittal
supporting role -----	Court E-Filing
system capabilities -----	https, ftps

MNDR Context Elements are additional Schema Documentation for any Business Document, Message or Extension Elements

```
<xsd:element name="Context" type="ccts:ContextType" />
```

```
<xsd:complexType name="ContextType">
```

```
  <xsd:sequence>
```

```
    <xsd:element ref="BusinessProcess" min="0" max="*" />
```

```
    <xsd:element ref="DocumentMessageClassification" ... />
```

```
    <xsd:element ref="IndustryDomain" min="0" max="*" />
```

```
    <xsd:element ref="Geopolitical" min="0" max="*" />
```

```
    <xsd:element ref="OfficialConstraint" min="0" max="*" />
```

```
    <xsd:element ref="BusinessProcessRole" min="0" max="*" />
```

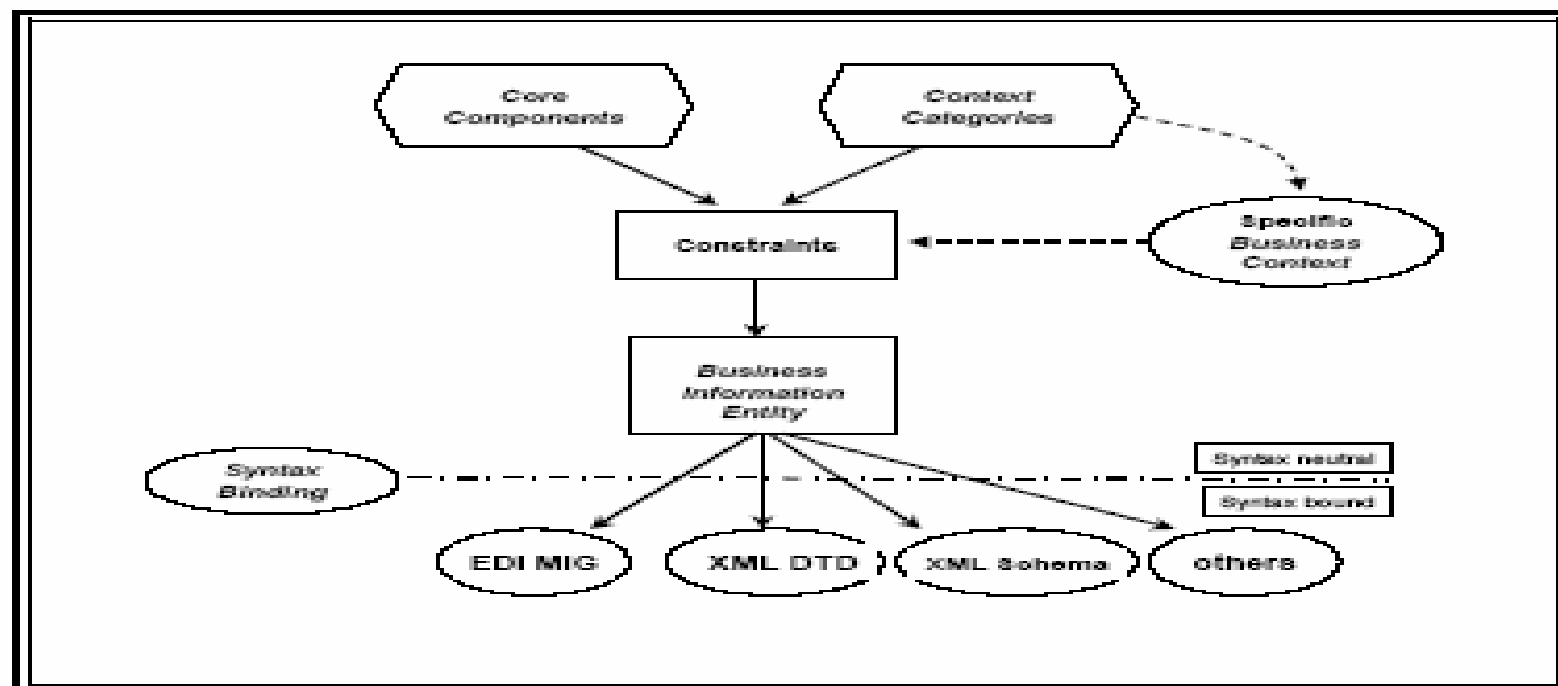
```
    <xsd:element ref="SupportingRole" min="0" max="*" />
```

```
    <xsd:element ref="SystemCapability" min="0" max="*" />
```

```
  </xsd:sequence>
```

```
</xsd:complexType>
```


Figure 6-3. Operation of The Context Mechanism



6.2.1.1 Context Categories

Context Categories exist to allow users to uniquely identify and distinguish between different *Business Contexts*. Eight *Context Categories* have been identified (Table 6-2). Each of the identified categories, unless otherwise stated, uses a standard classification to provide values for the category. Constraint rules, and therefore *Business Information Entities*, are tied to a particular set of standard classifications for identifying and distinguishing *Contexts*.

6.2.1.2 Constraint Language

A *Constraint Language* is used to express the relationship between specific *Business Contexts* and how semantics are applied to the *Core Components* to produce *Business Information Entities*. The scope of this language covers two functional parts:

- *Assembly* of a large aggregate (the *Document*). The *Constraint Language* addresses how *Assembly* is done. It does not address the design or design

MNDR Rule for Documenting Context for Documents, Messages , New Elements & Components Element extensions

```
<xsd:documentation>
  <ccts:Context>
    <ccts:BusinessProcess>Criminal Filing</ccts:BusinessProcess>
    <ccts:DocumentMessageClassification>Initial Complaint
      </ccts:DocumentMessageClassification>
    <ccts:IndustryDomain>Courts</ccts:IndustryDomain>
    <ccts:IndustryDomain>Prosecution</ccts:IndustryDomain>
    <ccts:Geopolitical>Los Angeles County</ccts:Geopolitical>
    <ccts:Geopolitical>District Attorney</ccts:Geopolitical>
    <ccts:Geopolitical>Superior Court</ccts:Geopolitical>
    <ccts:BusinessProcessRole>Prosecution Submittal
      </ccts:BusinessProcessRole>
    <ccts:SupportingRole>Court e-Filing</ccts:SupportingRole>
    <ccts:SystemCapability>HTTPS</ccts:SystemCapability>
    <ccts:SystemCapability>FTPS</ccts:SystemCapability>
  </ccts:Context>
</xsd:documentation>
```


MNDR Schema Naming & Design Rules

- **The other major set of rules addressed by the MNDR specify Schema Design rules to apply in defining:**
- **new XML elements**
- **extensions to GJXDM components**
- **local namespace conventions.**
- **versioning rules**
- **And more.....**



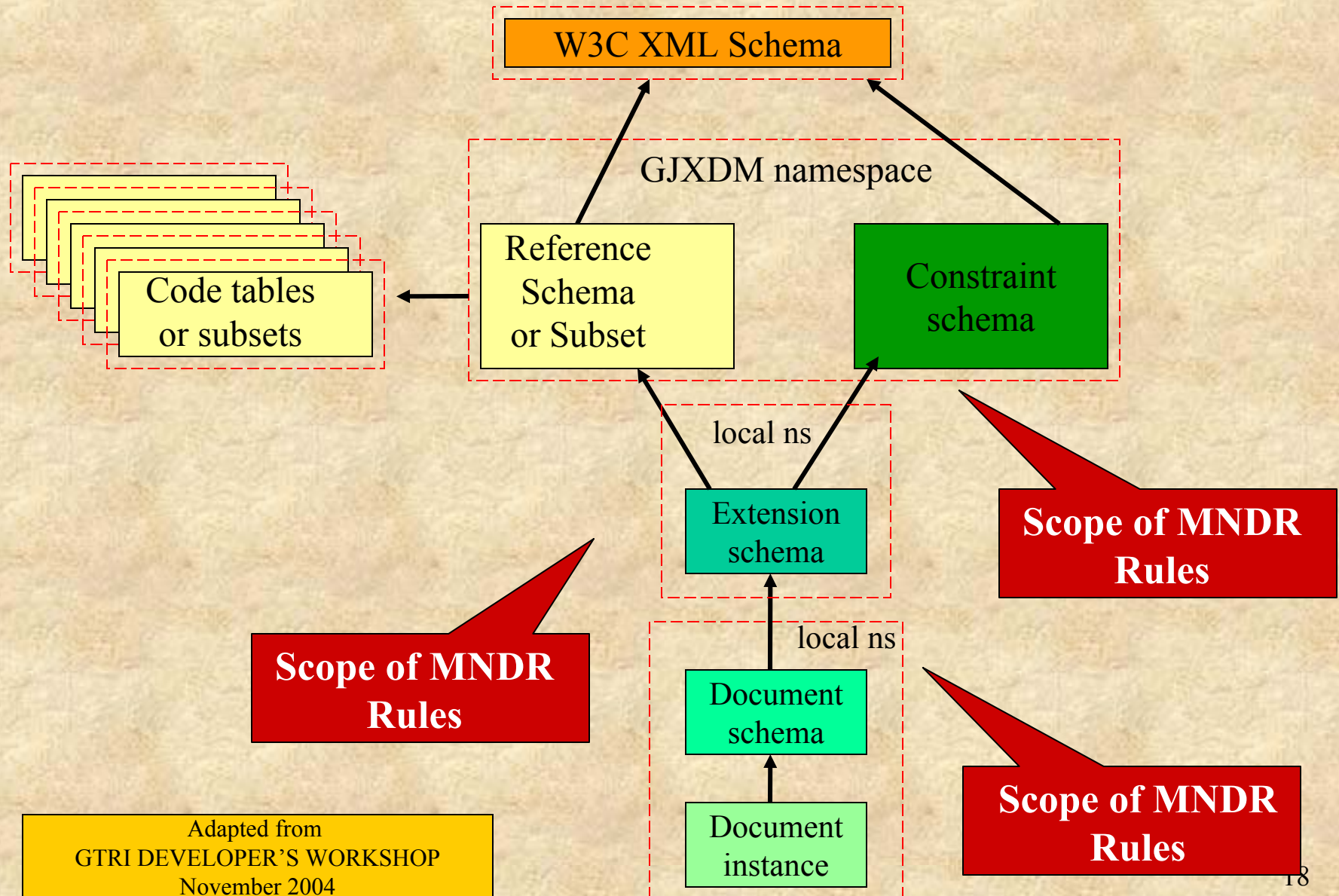
Set of XSD Schema Rules Defined in MNDR

Attribute Declaration Rules	(ATD)
Code List Rules	(CDL)
ComplexType Definition Rules	(CTD)
ComplexType Naming Rules	(CTN)
Documentation Rules	(DOC)
Element Declaration Rules	(ELD)
General Naming Rules	(GNR)
General Type Definition Rules	(GTD)
General XML Schema Rules	(GXS)
Instance Document Rules	(IND)
Modeling Constraints Rules	(MDC)
Namespace Rules	(NMS)
Root Element Declaration Rules	(RED)
Schema Structure Modularity Rules	(SSM)
Standards Adherence Rules	(STA)
Versioning Rules	(VER)

MNDR for Development of Implementation Schema & Instances

- 1) **Identification of Components Required** the Document Component Model (UML, visio, or powerpoint diagram(s))
- 2) **Document Assembly Detailed Model** + local extensions(Domain Spreadsheet called Document Assembly Model)
- 3) **Generate Subset Schema** based on Document Assembly Model
- 4) **Develop Extension Schema** for customized GJXDM(NIEM) components
- 5) **Construction of Document Schema** utilizing Extension schema and GJXDM subset/constraint schema.

GJXDM Diagram for Document Model Creation:



Adapted from
GTRI DEVELOPER'S WORKSHOP
November 2004

MNDR is a reference document of Rules and Methods for developing business content



MNDR IS *NOT* A

Registry, but provides definitions, context data and standardized naming conventions for publishing to a registry.

MNDR IS *NOT* The Semantic Web

But the MNDR Context and Component Documentation terms could be used in supporting a semantic web capability.

Semantic Web is like a thesaurus to let similar words and categories lead you to the object/elements you could re-use or customize.

“We all like to copy before we re-invent and you can’t copy what you can’t find. Need for semantic web and registry is a key goal for the future.”

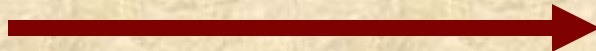
Summary

“MNDR is being developed to build messages and documents in a way which promotes standardization , reuse and interoperability between organizations exchanging information based on a common dictionary (GJXDM(NIEM)).”

Words



assembled for



Business Information



Summary

MNDR Contents (Rules of Grammar):

- **Rules for Naming Elements (ISO 11179)**
- **Rules for Developing Interoperable Schema**
- **Rules for Extensions of GJXDM(NIEM)**
- **Rules for Documenting Extensions and IEP Packages**



Summary

MNDR Benefits



- **Interoperability**
- **Schema compatibility**
- **Syntax compatibility**
- **Context & Customization Documentation compatibility**
- **Semantic compatibility**
- **Whatever you call the component I can understand what it means and can map it to my application**
- **We share “syntax-independent” Universal Core Components**

References

DOJ Global GJXDM Reference Site

<http://it.ojp.gov/index.jsp>

OASIS LegalXML Integrated Justice MNDR draft

http://www.oasis-open.org/committees/documents.php?wg_abbrev=legalxml-intjustice

OASIS LegalXML Court Filing Technical Committee

http://www.oasis-open.org/committees/documents.php?wg_abbrev=legalxml-courtfiling

UN/CEFACT Core Components Technical Specification

http://www.unece.org/cefact/ebxml/CCTS_V2-01_Final.pdf

OASIS Universal Business Language NDR

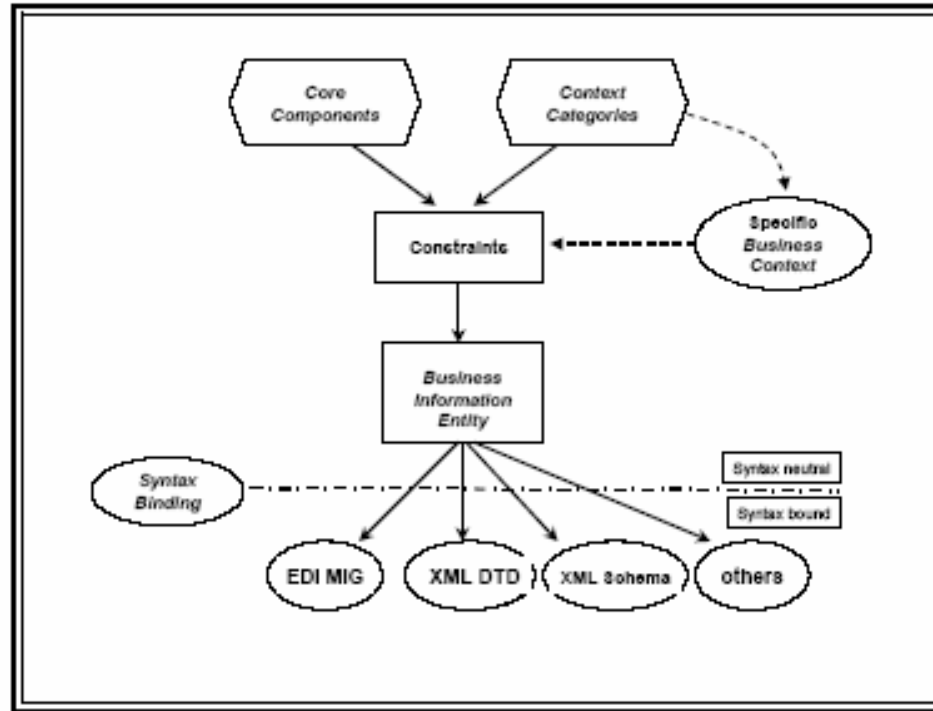
<http://www.oasis-open.org/specs/index.php#ubl-ndrv1.0>



Sample MNDR Spreadsheet from UBL

	A	D	H	I	M	O	P
1	UBL Name	Object Class	Property Term	Representation Term	Associated Object Class	Cardinality	Component Type
2	ReceiptAdvice	Receipt Advice					ABIE
3	ID	Receipt Advice	Identifier	Identifier		1	BBIE
4	CopyIndicator	Receipt Advice	Copy	Indicator		0..1	BBIE
5	GUID	Receipt Advice	Identifier	Identifier		0..1	BBIE
6	IssueDate	Receipt Advice	Issue Date	Date		1	BBIE
7	DocumentStatusCode	Receipt Advice	Document Sta	Code		0..1	BBIE
8	Note	Receipt Advice	Note	Text		0..1	BBIE
9	BuyerParty	Receipt Advice	Buyer Party	Buyer Party	Buyer Party	1	ASBIE
10	Delivery	Receipt Advice	Delivery	Delivery	Delivery	0..n	ASBIE
11							END

Figure 6-3. Operation of The Context Mechanism



change

MNDR Method
(IEP), UML, P
(put class diagr

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- *Assembly of a large aggregate (the Document)*. The *Constraint Language* addresses how assembly is done. It does not address the design or design



MNDR Context drivers could help NIEM goal in defining ur-CORE, CORE and Domain Specific objects and to build lots of synonyms to find content. Semantic Web is like a thesaurus to let similar words lead you to the object/elements you could re-use or customize.

NIEM



GJXDM