Judicial Information Service
Ministry of Justice

Management of Metadata and XML Schemas for e-Justice

Pim Keizer
Pim van der Eijk

Judicial Information Service
Ministry of Justice

Content

a. Background and Context
b. Challenges
c. Approach
d. How it works
e. Current Status
f. Future Plans

Netherlands Ministry of Security and Justice

The largest Ministry in the Netherlands, covering

- Central Policy and Staff Department
- Custodial Institutions Agency
- Central Fine Collection Agency
- Child Care and Protection Agency
- Fire Brigade
- Immigration and Naturalization Department
- Judicial Agency for Testing, Integrity and Screening
- *Judicial Information Service*
- The Judiciary
- Netherlands Forensic Institute
- Police
- Public Prosecution Service
- Public Order and Safety Inspectorate
- Research and Documentation Centre

A diverse community with a wide range of responsibilities

History

- Initiative to digitize and exchange criminal justice data to improve consistency and efficiency of criminal justice system

- Metadata management closely linked to document exchange and engineering

Chinese Gang Is Suspected in Smuggling Into Dover : A Traffic in Humans

By Tom Buerkle International Herald Tribune

Wednesday, June 21, 2000

The death of 58 Chinese immigrants aboard a tomato truck at the British port of Dover was just the latest and most gruesome tip of the growing traffic in illegal immigrants by organized crime networks, European authorities said Tuesday.

The British and Dutch police on Tuesday interrogated the driver of the truck, who was detained in Dover on suspicion of manslaughter, and said they believed that one of the Chinese criminal gangs known as "snakeheads" had organized the passage of the immigrants from Fujian Province in southern China, charging an estimated £15,000 ($22,680) a person.

Meanwhile, the police in the Dutch city of Rotterdam late Tuesday arrested another person in connection with the deaths. Prosecutors declined to name the suspect but earlier had said they were seeking an engineer, Arjen van

der Spek, 24, who had registered the truck only last week.

Two Dover survivors, in a hospital in nearby Canterbury, began telling the police about their ordeal. Speaking through interpreters, they described how the passengers had screamed and banged on the doors of the truck and how their own desperation mounted as their companions began to pass out and die, apparently of suffocation.

"This was clearly a horrific death," said a detective superintendent, Dennis McGookin.

As shocking as the incident was, there appeared to be no shortage of people prepared to run the risks in an effort to enter Europe illegally.

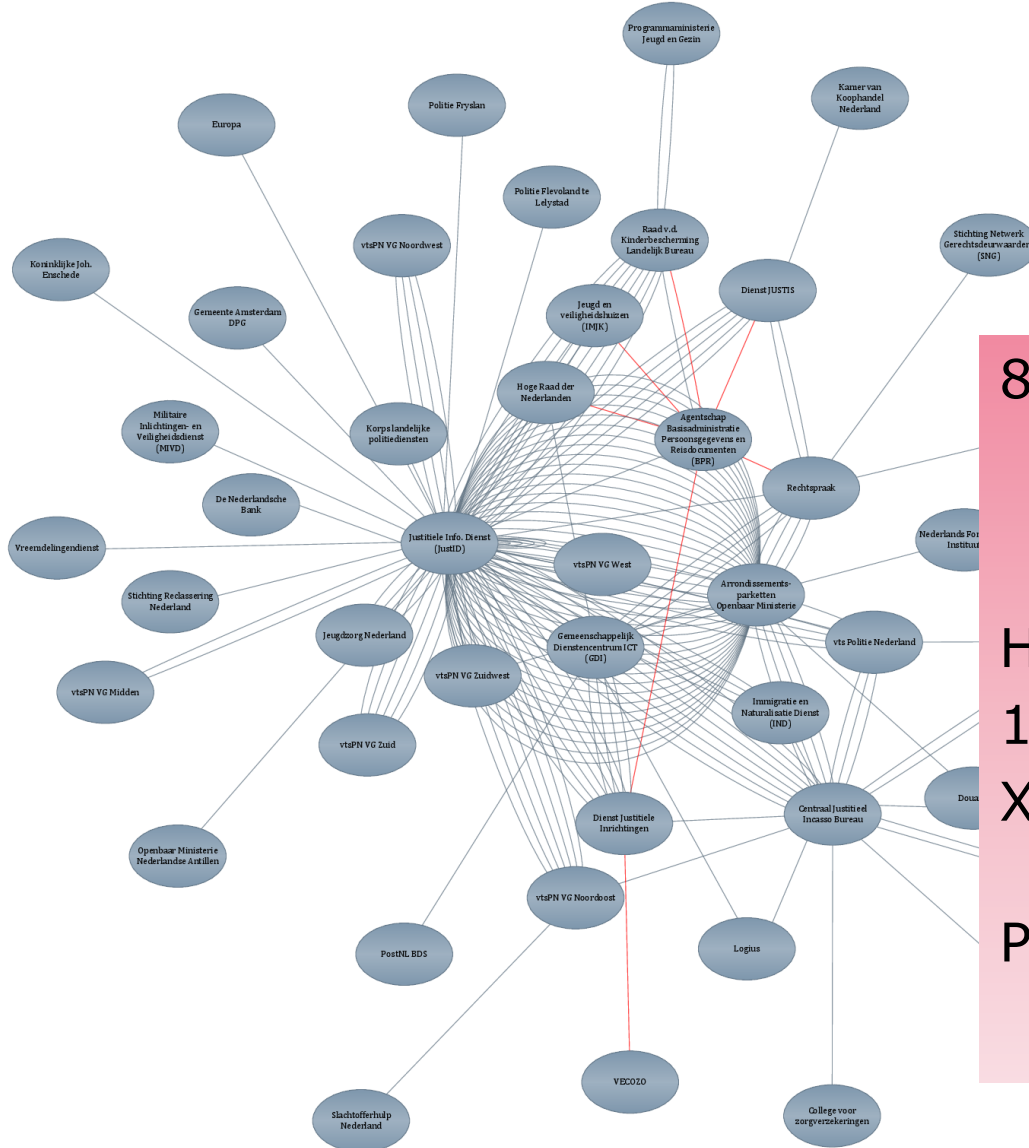An estimated 500,000 people enter the 15-nation European Union illegally

each year, re percent of a immigrants annually for according to EU police ag

With growing immigrants a from places the Ukraine, offsetting a d from the forn problem sho

"This will sta Christian Bra illegal immig

The breadth underscored announced t immigrants highway in s Monday.

80 endpoints connecting organizations inside and outside Security and Justice

Hundreds of collaborations

150000 messages per day

XML documents based on e-Justice schemas

Production since 2005

Business Processes and Services in Production

- Criminal case records exchange
  - Investigation> Prosecution > Trial > Detention > Re-Socialization
- Case management
- Domain registries and alerting systems
  - Criminals, children at risk, lawyers
- National Base registries
  - Citizens, businesses, buildings, locations, vehicles
- Identity Registration and Verification and biometrics
- International exchanges
  - ECRIS, E-CODEX, legal assistance …
- Electronic Archiving and postal handling
- Exchange of management information (data warehousing)
- …

Metadata Challenges

Metadata affects a diverse range of stakeholders

- Information analysts, legal and other domain experts, IT architects, designers and developers, end users

Metadata can have cross-domain and cross-border aspects

- Base registries, social services, care professionals, tax authorities etc.

Metadata underlies a range of artifacts

- Information models, form templates, document schemas, documentation, code tables

Metadata supports a diverse range of applications domains

- Information systems, databases, user interfaces, document exchange, management reporting

Approach to Metadata

Leverage concepts, methodologies, technologies from e-business standardization:

- UN/CEFACT Core Components Technical Specification (CCTS)
- OASIS Universal Business Language (UBL)

Manage metadata and XML schemas consistently

- XSDs, data dictionaries, documentation always in sync

CCTS adopted for Netherlands Criminal Justice in 2005

Lessons learned leading to increased sophistication

- Adding a CC abstraction layer
- Support for concept of XSD "profiles"
- UN/CEFACT XML NDR
- Domains

Simplified notion of "context", limited to business process

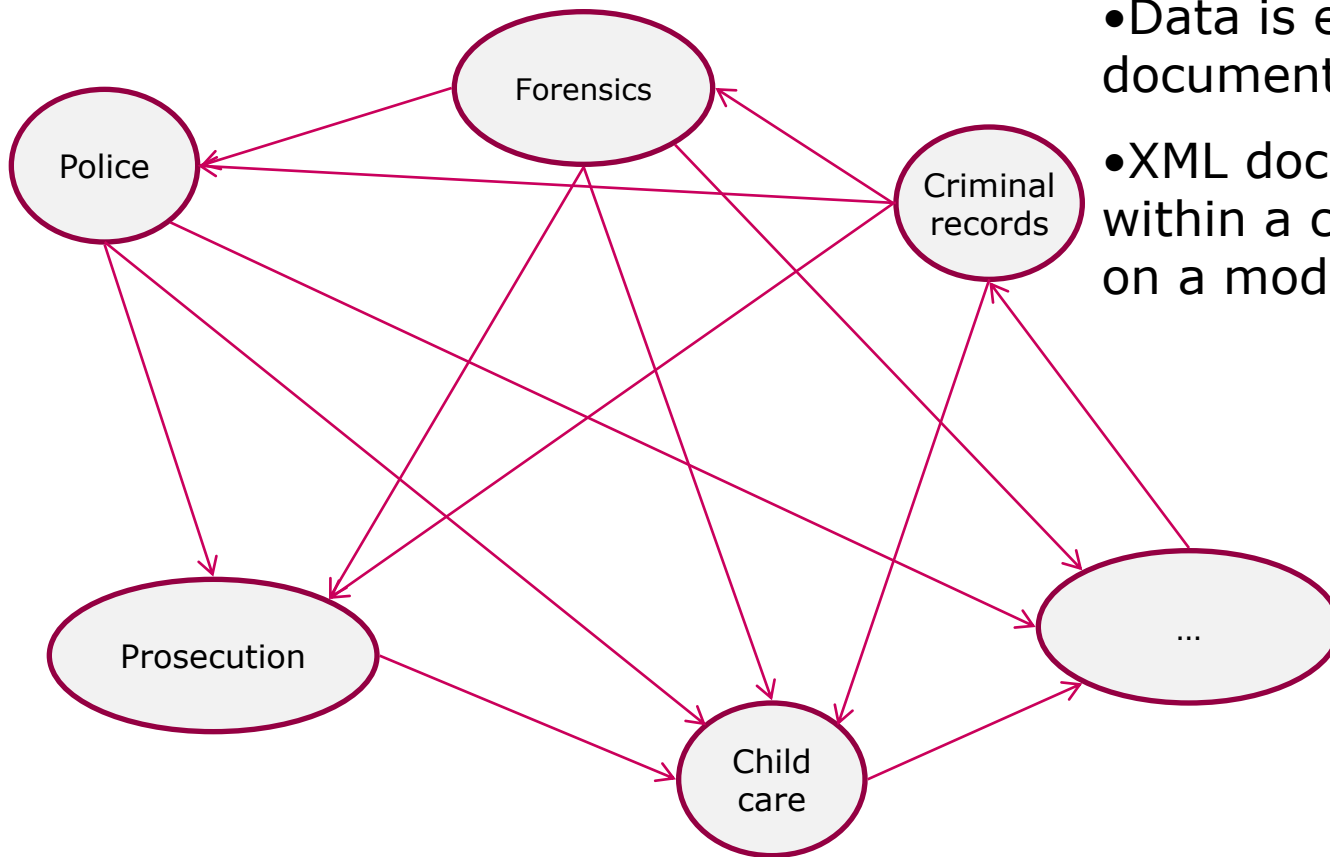Custom tooling: the Metadata Workbench

Data exchange e-Justice – initial approach

- Data is exchanged in XML documents

- XML documents are designed within a context, mostly based on a model

example contexts:

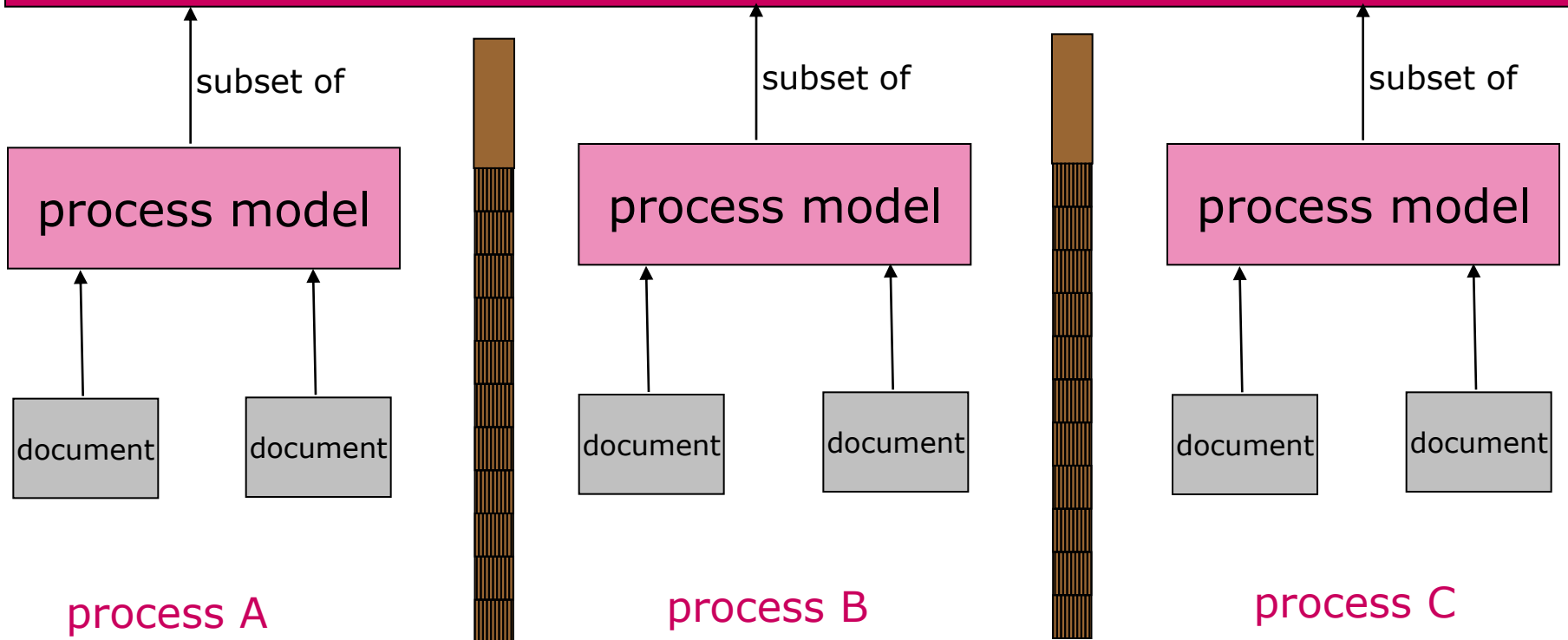- *case transfer*
- *prisoners transfer*
- *invoicing*

Data exchange e-Justice

- Processes were designed separately
  - > risk: data modelled in different ways

Generic model

process model — subset of → Generic model

document → process model ← document

process A

process model — subset of → Generic model

document → process model ← document

process B

process model — subset of → Generic model

document → process model ← document

process C

Metadata Workbench

- We developed the Metadata Workbench:
  - A CCTS implementation
  - Generic and context-specific models
  - Document specification

- Characteristics:
  - Consistent definitions, syntax and NDR across all levels
  - Impact analysis
 - Fast XML Schema export

Core Components

example: 'Case':

- Core components library (generic model)

- Syntax and technology neutral

- Components contain all attributes

- Maintained by user council

- We introduced domains

Lib	Property Term
jus	Request
jus	Identification
jus	Type Of Case
jus	Filing
jus	Court
jus	Jurisdiction
jus	Claim
jus	Offence
jus	Decision
jus	Order
jus	Involved Party
jus	Case
jus	Type Of Procedure
jus	Description
jus	Name
jus	Type Of Proceedings

Business Information Entities

- Context-specific model: a subset of the generic model
- Customized for business context
- Customize components by restriction

core component

business information entities
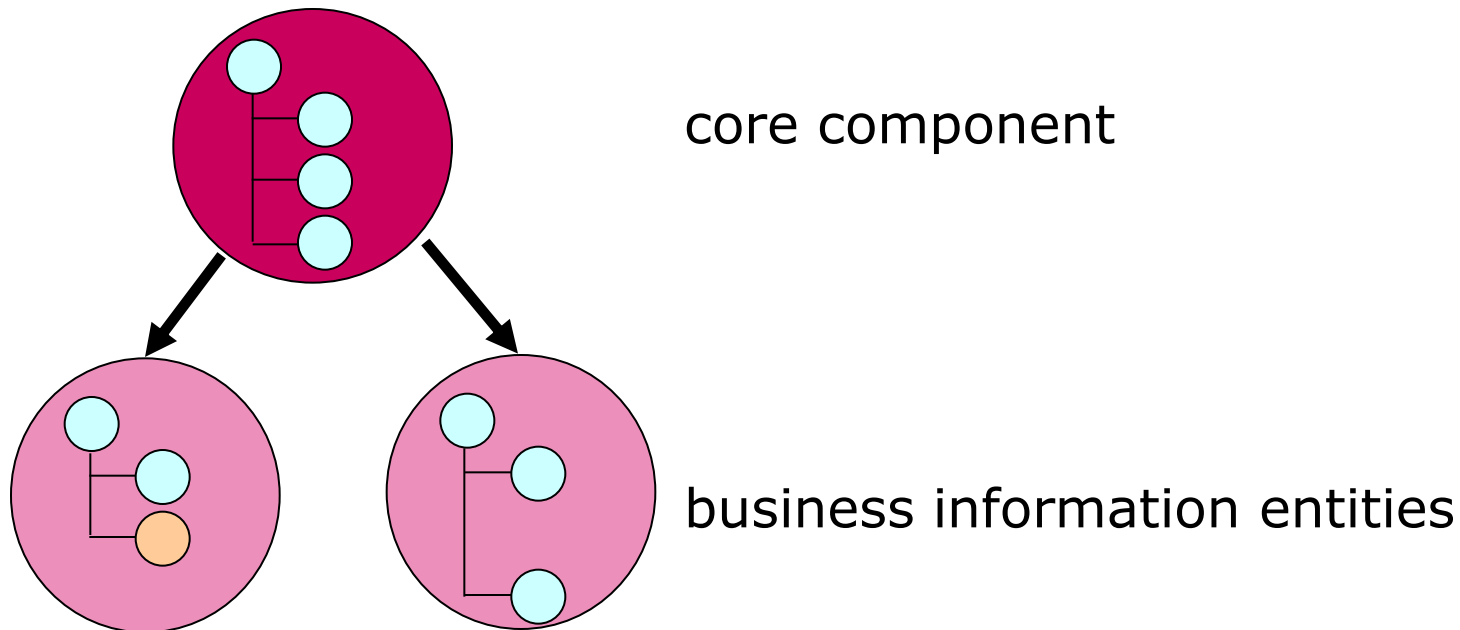
Example

'Case'

Lib	Property Term
📁 jus	Request
📁 jus	Identification
📄 jus	Type Of Case
📁 jus	Filing
📁 jus	Court
📁 jus	Jurisdiction
📁 jus	Claim
📁 jus	Offence
📁 jus	Decision
📁 jus	Order
📁 jus	Involved Party
📁 jus	Case
📄 jus	Type Of Procedure
📄 jus	Description
📄 jus	Name
📄 jus	Type Of Proceedings

European Order for Payment

Lib	Property Term
📁 jus	Identification
📁 jus	(Refers To)Identification
📁 jus	(Issuing Authority)Identification
📁 jus	(Validating Authority)Identification
📁 jus	(Validating Authority Referenced)Case
📁 jus	Order
📁 jus	Request
📁 jus	Involved Party
📄 jus	Type Of Proceedings
📁 jus	Offence

Financial Penalties

Lib	Property Term
📁 jus	Identification
📄 jus	Description
📄 jus	Name
📁 jus	Decision
📁 jus	Involved Party

Core Components   Business Information Entities

Document specification

- Data is sent in XML messages

- To validate we use XML Schemas

- Schemas are specified by:

  - adding Business Information Entities

  - setting restrictions

NES Information Model Architecture
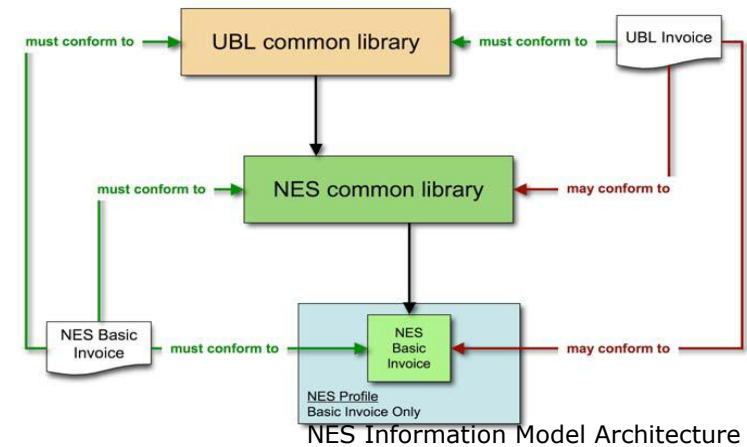
Northern European Subset

Deliverables

Documentation (HTML / PDF)

XML Schemas

RDF (experimental)

E-Codex

- e-Justice communication via Online Data Exchange

- Business documents designed using the Metadata Workbench
  – Building block **e-Document** (standards and semantics)

- Adopted Joinup Core Concepts
  Person, Location …

- Member-states create a mapping of the concepts to their own datamodel.

ec	European Core

ACC's

Pr...		Object Class Term
ec		Address
ec		Agent
ec		Geometry
ec		Identifier
ec		Jurisdiction
ec		Legal Entity
ec		Licence
ec		Location
ec		Person

Future plans

- Add function of collaboration management
  - Manage business processes, transactions and their collaborations linked to the metadata.

- Integration with linked data

- Connect to external repositories like the core concepts of Joinup.

- Open source / cloud deployment of the tooling ?

Contact

Pim Keizer
p.keizer@justid.nl
+31613577598

Pim van der Eijk
pvde@sonnenglanz.nl
+31622502011

Justitiële Informatiedienst
Ministerie van Veiligheid en Justitie