

# Detailed Clinical Models with Enterprise Architect

Michael van der Zel

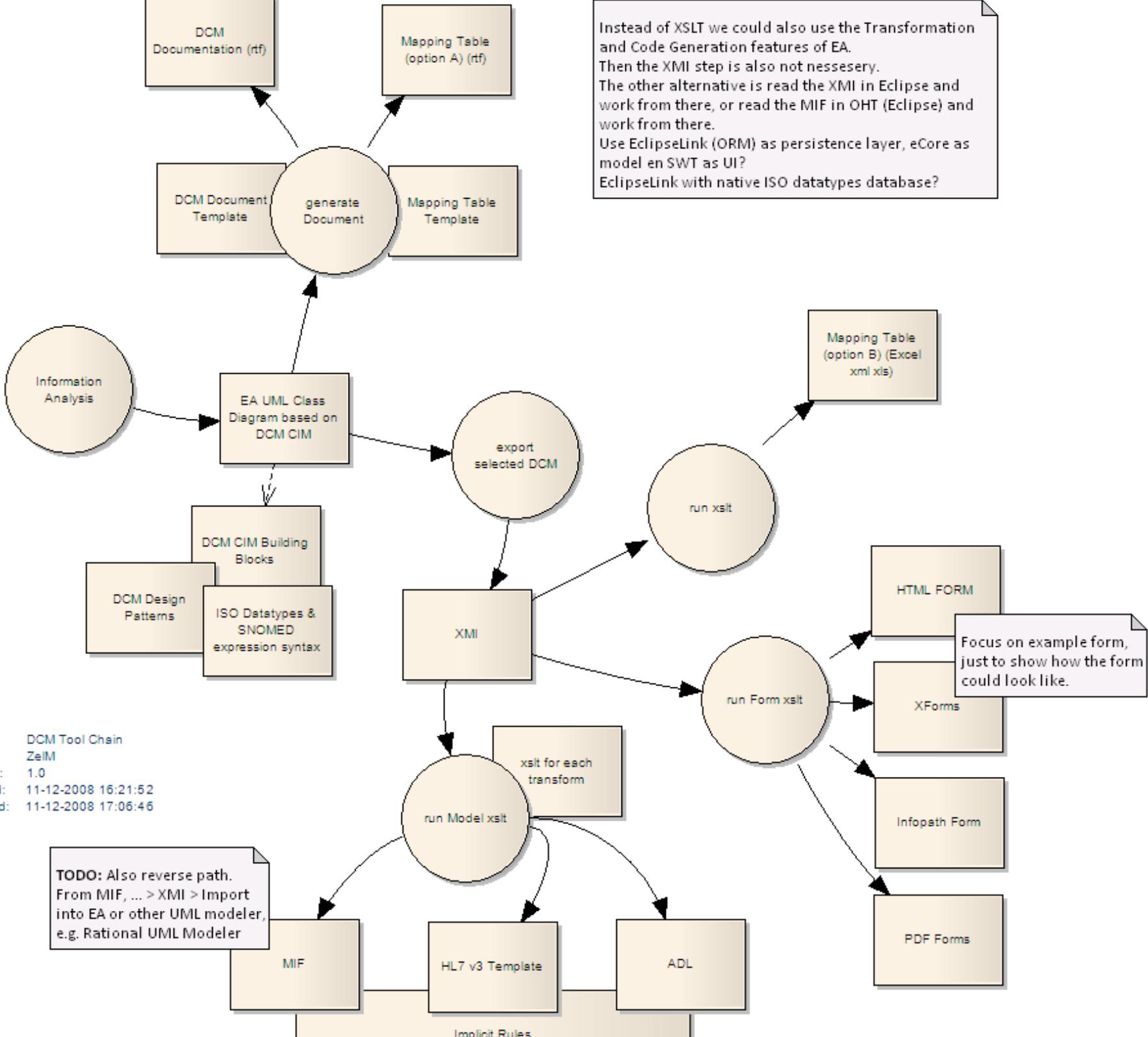
*Orlando HL7 WGM januari 2009*

# Contents

- Model Driven
- Standards based; not exclusively EA
- Flowchart
- HOW-TO with EA
- Patterns and Rules
- DCM to:
  - DOC, HTML, XFORM, HL7 v3 Template, ADL, etc.

# Assumptions

- Know what DCM's are
- DCM's are instances
- Basic UML
- Read the EA getting started
- (Design Patterns)



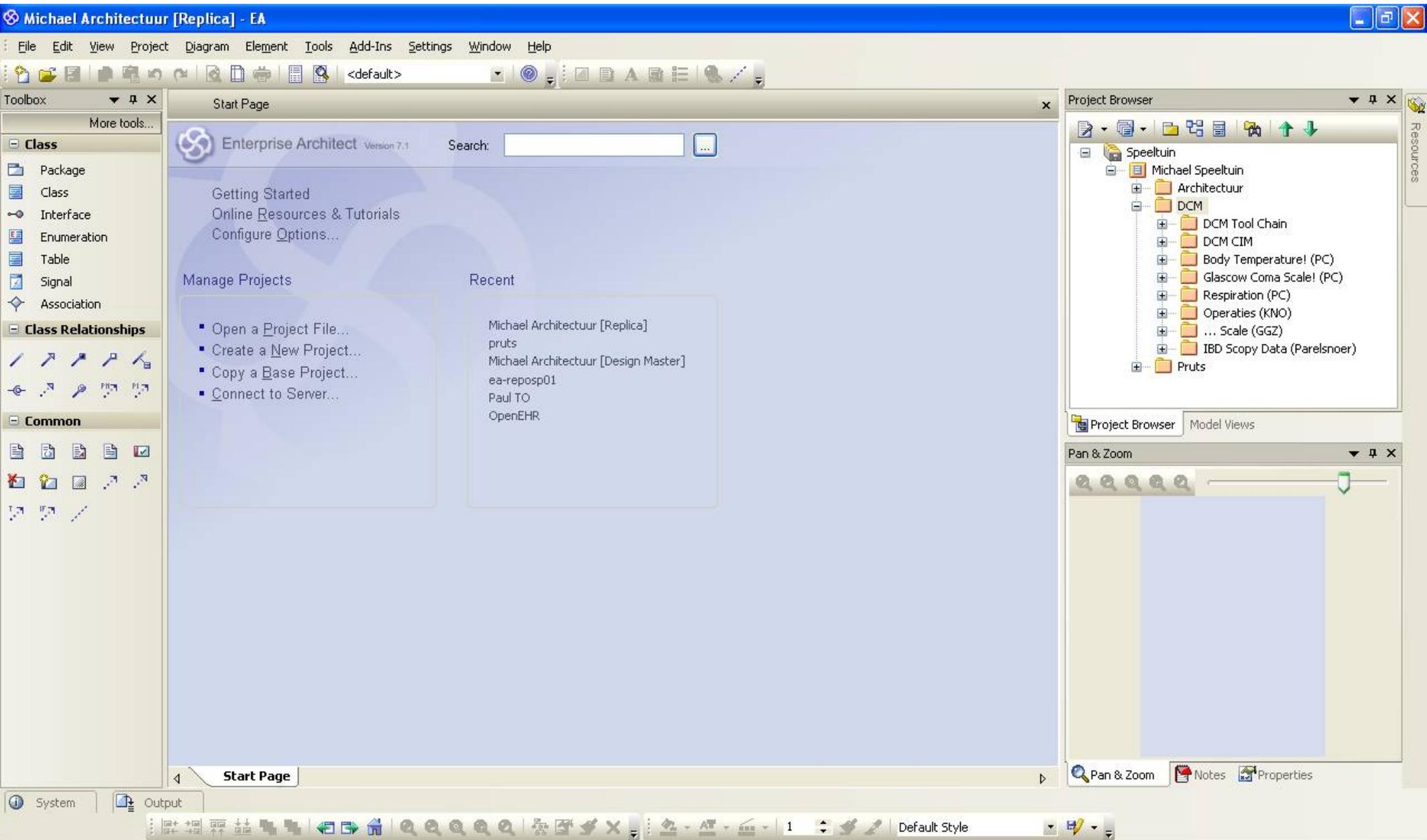
Instead of XSLT we could also use the Transformation and Code Generation features of EA.  
 Then the XMI step is also not necessary.  
 The other alternative is read the XMI in Eclipse and work from there, or read the MIF in OHT (Eclipse) and work from there.  
 Use EclipseLink (ORM) as persistence layer, eCore as model en SWT as UI?  
 EclipseLink with native ISO datatypes database?

Focus on example form, just to show how the form could look like.

Name: DCM Tool Chain  
 Author: ZeIM  
 Version: 1.0  
 Created: 11-12-2008 16:21:52  
 Updated: 11-12-2008 17:06:46

**TODO:** Also reverse path.  
 From MIF, ... > XMI > Import into EA or other UML modeler, e.g. Rational UML Modeler

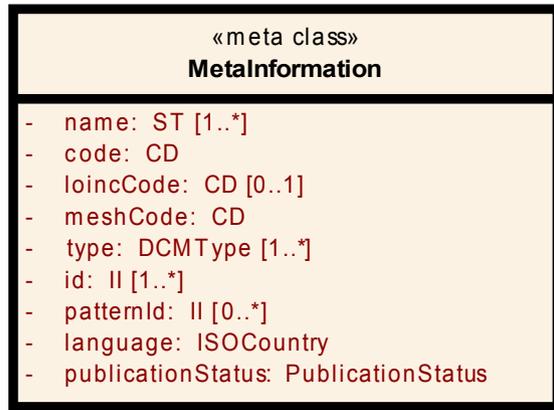
# DCM Project



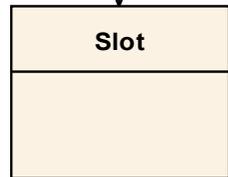
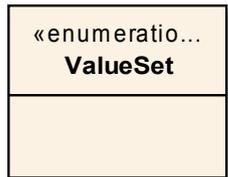
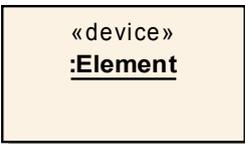
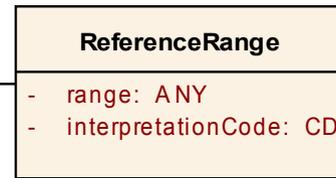
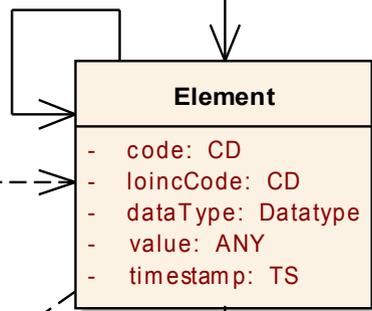
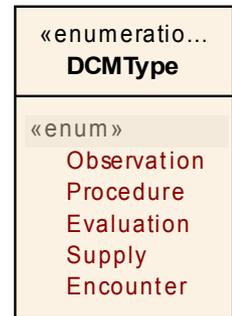
# DCM Project Structure

- Contents diagram
- *Metadata*
  - *Most metadata is in the UML Model!*
- Purpose
- Evidence base
- **Model**
  - **UML and description of the variables**
- Working instructions
- Interpretation guidelines
- Care proces / dependance / Story board(s)
  - Story boards describe the Model?
- An example of the instrument
- *Screenshots*
  - *Generated forms? Or example application*
- *Mapping Table (generated from model!)*
- Remarks

# DCM CIM Walkthrough



How do we model this in UML?  
Will this be all ST, CD or classes.



We should also address SOP (Standard Operating Procedure)  
[http://en.wikipedia.org/wiki/Standing\\_operating\\_procedure](http://en.wikipedia.org/wiki/Standing_operating_procedure)  
~ Protocol, Guideline, CarePlan

Name: DCM CIM  
Author: ZeIM  
Version: 1.0  
Created: 12-1-2009 12:31:49  
Updated: 12-1-2009 12:36:00

# Create Element

The screenshot displays the Michael Architectuur [Replica] - EA software interface. The main window shows a Logical Diagram titled "Glasgow Coma Scale" with a class element named "Glasgow Coma Scale : MetaInformation" (code = MeSH:Glasgow Coma Scale D015600). A yellow callout bubble points to the diagram with the text: "ctrl drag DCM CIM element on diagram and select 'as instance...'".

The "Paste Element" dialog box is open, showing the following options:

- Paste Element into Diagram
  - as Simple Link
  - as Instance of Element (Object)
  - as New Child (Generalization)
- Set Selection as Default for:
  - All Drag and Drop
  - This Dialog
- Only show this dialog when Ctrl+Mouse drag is used

The dialog box has "OK" and "Cancel" buttons.

The Project Browser on the right shows the following structure:

- DCM CIM
  - DCM CIM
    - «enumeration» DCType
    - Element
    - «meta class» MetaInformati
    - OtherMetaInformation
    - «enumeration» PublicationSI
    - ReferenceRange
    - Slot
    - «enumeration» ValueSet
    - «device» : Element
    - Copyright
    - «document» OtherMetaInfo
  - Body Temperature! (PC)

The Pan & Zoom window at the bottom right shows a small diagram with a class element and its relationship to another element.

# Set Instance Properties

The screenshot displays the Michael Architectuur [Replica] - EA software interface. The main window shows a logical diagram titled "Glasgow Coma Scale" with a class box for "Glasgow Coma Scale :MetaInformation" and an instance box for "Element". A yellow callout bubble points to the instance box with the text "double click element and set instance properties".

The "Object instance Properties" dialog box is open, showing the following fields:

- Name: [ ]
- Stereotype: [ ]  Abstract
- Author: ZelM
- Status: Proposed
- Scope: Public
- Complexity: Easy
- Role: [ ]
- Language: Java
- Persistence: [ ]
- Keywords: [ ]
- Phase: 1.0
- Version: 1.0
- Notes: [ ]

The dialog box has buttons for "OK", "Annuleren", "Ieopassen", and "Help".

# Set Run State

The screenshot displays the Michael Architectuur [Replica] - EA software interface. The main window shows a logical diagram titled "Glasgow Coma Scale" with the following properties:

- Name: Glasgow Coma Scale
- Author: ZeIM
- Version: 1.0
- Created: 19-12-2008 14:02:34
- Updated: 19-12-2008 14:35:15

The diagram includes two classes:

- «meta class» Glasgow Coma Scale :MetaInformation** with code = MeSH:Glas
- Eye Movement :Element** with code = 10101010|Eye Movement

A yellow callout bubble points to the diagram with the text: **[ctrl-alt-r] set run state**

In the foreground, a "Set Run State" dialog box is open, containing the following fields:

Variable	code
Operator	altCode
Value	code
Note	dataType timestamp value

The dialog box also features buttons for OK, Apply, Cancel, and Help.

The Project Browser on the right shows a tree structure under "Speeltuim" including "Michael Speeltuim", "Architectuur", "DCM", "DCM Tool Chain", "DCM CIM", "Body Temperature! (PC)", "Glasgow Coma Scale! (PC)", "UML Diagram", "Glasgow Coma Scale", "Eye Movement: Element", "«meta class» Glasgow C", "Respiration (PC)", and "Operaties (KNO)".

The bottom status bar shows "Logical Diagram: Glasgow Coma Scale" and "CAP NUM SCRL".

# Next

- ValueSets > enumerations
- export XMI – right click on DCM
- export RTF
- create HTML (XMI + XSLT)

# Some thoughts

- Naming the zip
- Versioning
- Sending via patientcare list
- Publishing on [detailedclinicalmodels.org](http://detailedclinicalmodels.org)?
- Repository