



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

Session 2 – ISO ICSR Implementation Technical Aspects - Part 1

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An agency of the European Union





Do I really need to understand the ISO/HL7 messaging model?

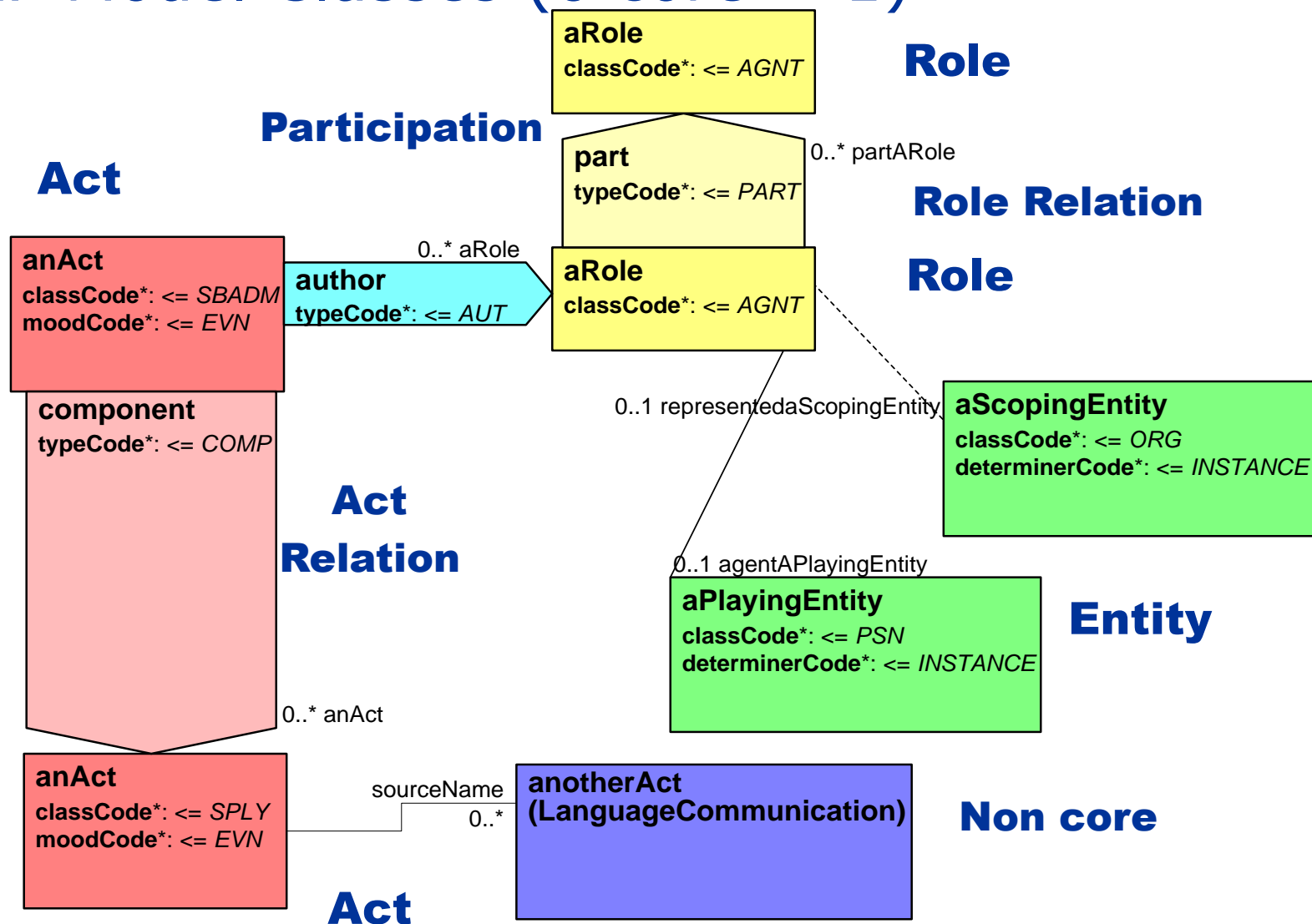
- It Depends
- A basic implementation for submissions of cases in the EU, you probably will not need to understand the ISO/HL7 model
- For the following situations having a good understand will be big advantage
 - You also need to implement reporting requirements to other regulators/domains e.g.
 - FDA – Vaccine reporting (Many differences to E2B(R3))
 - FDA - Device reporting
 - You have a need for custom extensions to E2B(R3) e.g. E2B(R2)+



INTRODUCTION TO ISO/HL7 ICSR MODEL



HL7 Model Classes (6 core + 1)

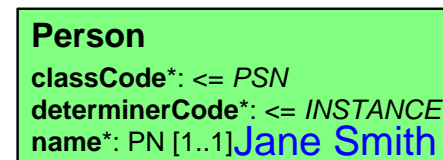
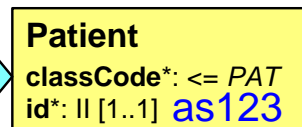
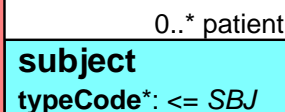
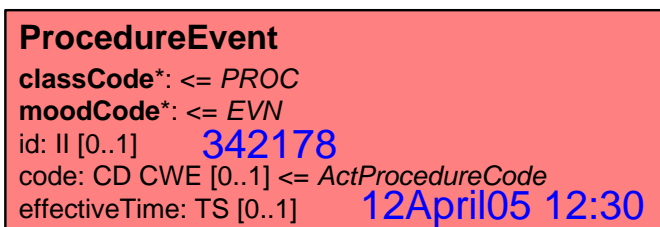




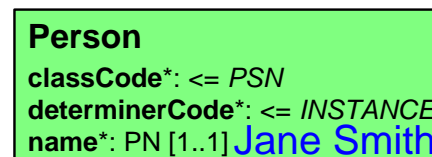
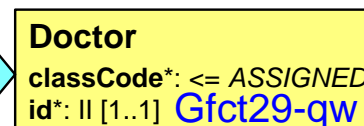
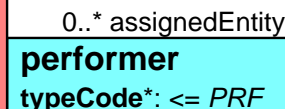
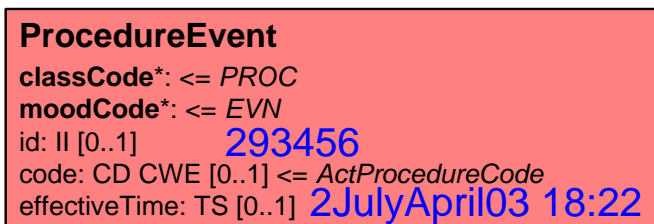
Representing Information in HL7 Models

Dr Smith had an appendectomy today

- Entity: Jane Smith
 - Role: Patient
 - Participation: Subject
 - Act: Procedure
- Entity: Jane Smith
 - Role: Doctor
 - Participation: Performer
 - Act: Procedure



1..1 patientPerson *



1..1 assignedPerson *



ISO ICSR Model

- Walk through
- ISO ICSR Model and the ICH Reference Instance
- How EU extensions to ICH E2B(R3) were made
 - ISO ICSR Model and the EU Reference Instance



Suggested Reading

- ISO/HL7 27953-2:2011 Standard

http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=53825

- HL7 books

- HL7 Version 3 Primer Normative Edition version ISBN 3-933819-21-0
- Principles of Health Interoperability HL7 and SNOMED ISBN: 978-1-44712-800-7
- <http://www.hl7.org.uk/marketing/publications.asp>



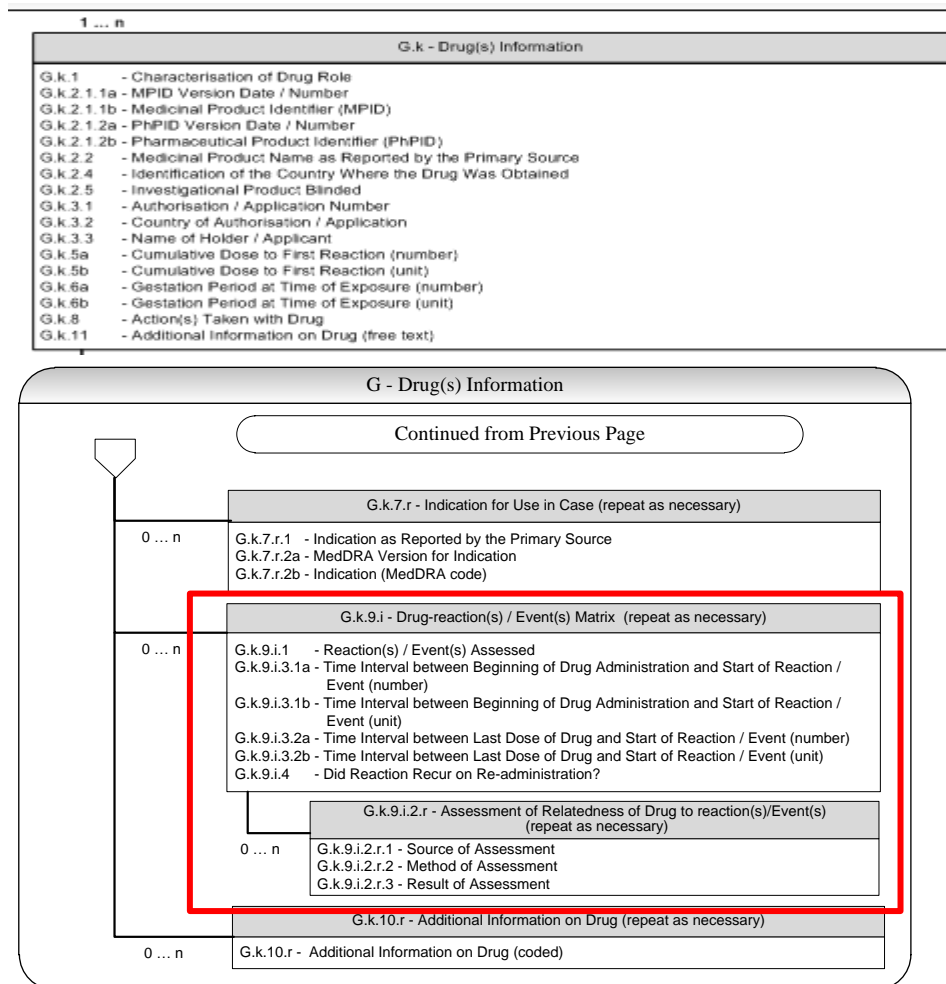
Here be dragons!



- Assumptions you might have that will cause you problems!
 - ICH Logical model and the HL7 messaging model are identical
 - You can use the BFC rules to migrate your database from R2 to R3
 - XPATHs can easily be made for each data element
 - You can use the R2 to R3 conversions to load R2 messages in your R3 system

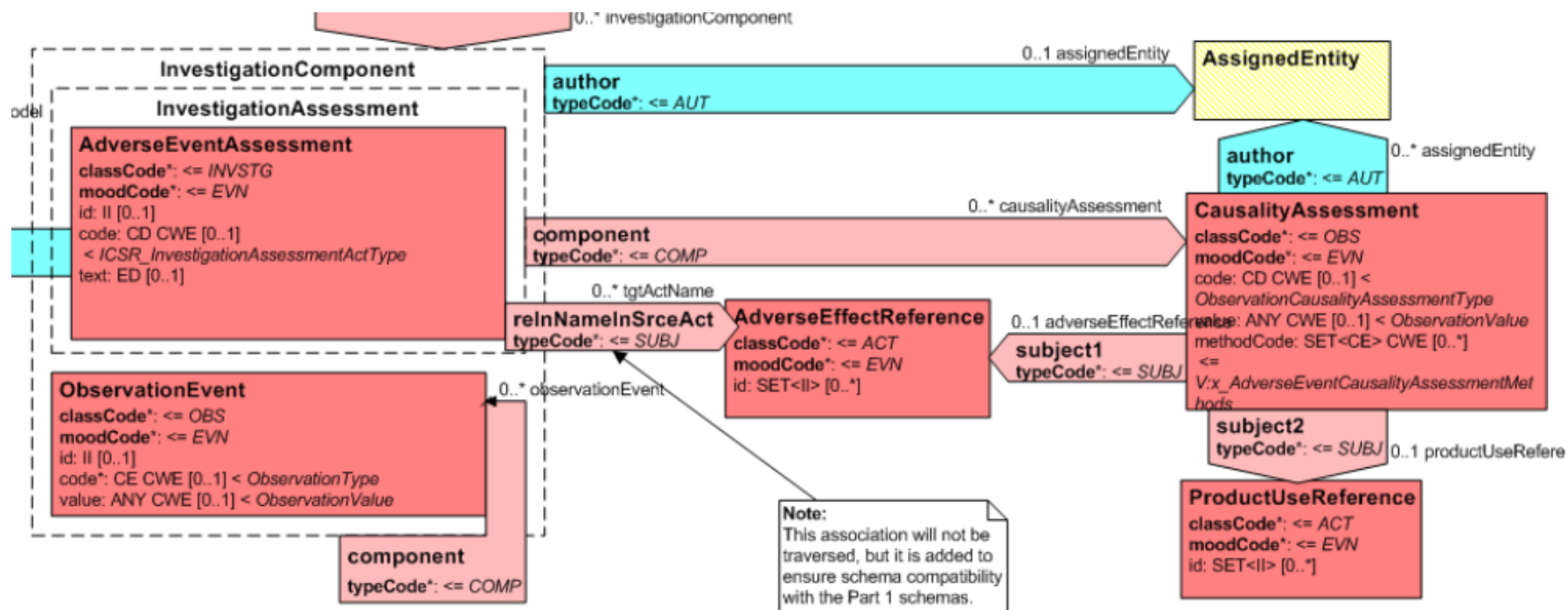


ICH Logical model - Drug Reaction Assessments





ISO ICSR Messaging Model





ISO ICSR XML Instance

```
<component typeCode="COMP">
  <causalityAssessment classCode="OBS" moodCode="EVN">
    <code code="39" codeSystem="2.16.840.1.113883.3.989.2.1.1.19" codeSystemVersion="1.1"
      displayName="causality"/>
    .....
  </assignedEntity>
  </author>
  <subject1 typeCode="SUBJ">
    <adverseEffectReference classCode="OBS" moodCode="EVN">
      <id root="154eb889-958b-45f2-a02f-42d4d6f4657f"/>
    </adverseEffectReference>
  </subject1>
  <subject2 typeCode="SUBJ">
    <productUseReference classCode="SBADM" moodCode="EVN">
      <id root="3c91b4d5-e039-4a7a-9c30-67671b0ef9e4"/>
    </productUseReference>
  </subject2>
</causalityAssessment>
</component>
```




XPATHS

- How to deal with missing attributes
- When receiving an E2B(R3) from another organisation has the sender populated all optional attributes?
 - `<performer typeCode="PRF">`
 - `<performer>`
 - `<organizer classCode="CATEGORY" moodCode="EVN">`
 - `<organizer>`
- Do you,
 - Pre-process the E2B(R3) file to add in missing attributes?
 - Generalise the XPATHs to account for optional attributes?



Approach taken at EMA

- Creation of Logical/Physical/Messaging models
 - Mappings created between the models
 - Physical Model includes R2 and R3 only fields in addition to common (preserved) fields
- Physical database migration of R2 to R3
 - Considerations
 - Drug reaction relatedness (time intervals)
 - Code system mapping R2-R3
 - BFC Excel rules used as help not as gospel
 - BFC tool not used for conversions



Use of the BFC tool

- When to use
 - Creating test R3 files for development
 - Interim process (survival) to convert R3 data obtained from EudraVigilance to load into an R2 system (mid-2017)
- When not to use
 - Loading R2 data into an R3 system
 - Long term
- Don't calling your system R3 compliant if you have to use these XSLTs