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The full HL7 EHR-WG Summary Presentation November 2013 on EHR System Function and Information Model Release 3 Development is available at http://wiki.hl7.org/index.php?title=EHR_Interoperability_WG

Prototype-Hypothesis Allergy, Intolerance & Adverse-Reaction FHIR-FHIM Data-Specifications



class FHIR-FHIM High-Level Specification for Allergy, Intolerance and Adverse Reaction

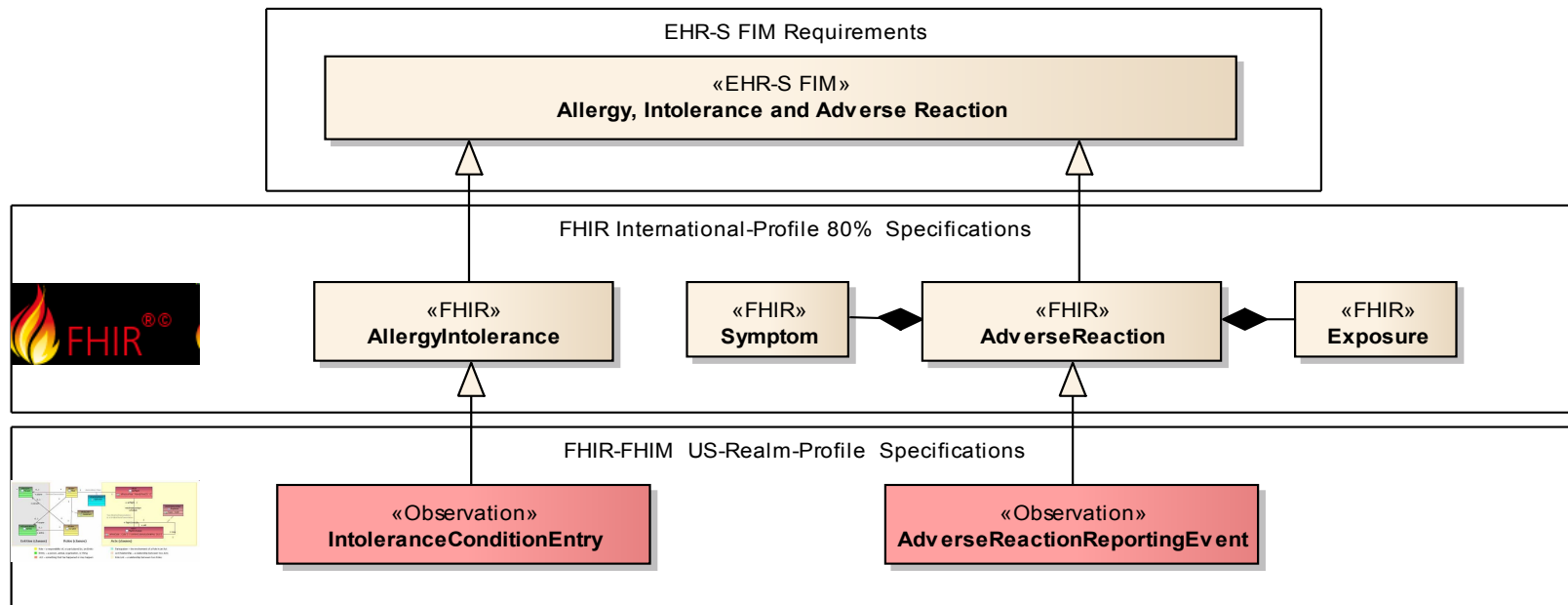
Name: FHIR-FHIM High-Level Specification for Allergy, Intolerance and Adverse Reaction
 Author: Steve Hufnagel
 Version: Prototype
 Created: 11/7/2013 4:26:03 AM
 Updated: 11/7/2013 7:16:42 AM

- The 2016 EHR-S FIM release-3 objective is for an analyst-or-architect to use the EA-tool to
1. Create a use case from a prescribed lexicon of Entities, Events, Modifiers and Actions; where,
 2. the lexicon is mapped to applicable EHR System Functions; where,
 3. the EA-tool can generate an Interoperability-Specification (IS) containing
 - UML EHR-S-FIM/FHIR/FHIM profile, based-on the use-case
 - including FHIR-XML (International)
 - including FHIR-FHIM-XML (US Realm) with appropriate terminology value-set binding; where,
 - other realm models could be added to the EA-tool by interested stakeholders
 - profiles can be further refined to support local needs.

EHR-S-FIM is EHR System Function-and-Information model

FHIR is Fast Healthcare Interoperability Resource

FHIM is US Federal Health Information Model



EHR-S FIM Using FHIR

ISSUE: EHR-S FM r2.0 Implied Information Model is Ad-Hoc; where, FHIR & FHIM Information Model & Data Dictionary are Configuration Managed.

- **FHIR Administrative**

- Attribution: Patient, RelatedPerson, Practitioner, Organization
- Resources: Device, Location, Substance, Group
- Workflow Management: Encounter, Alert, Supply, Order, OrderResponse
- Financial: Coverage

- **FHIR Clinical**

- General: [AdverseReaction](#), [AllergyIntolerance](#), CarePlan, FamilyHistory, Condition, Procedure, Questionnaire
- Medications: Medication, MedicationPrescription, MedicationAdministration, MedicationDispense, MedicationStatement, Immunization, ImmunizationProfile
- Diagnostic: Observation, DiagnosticReport, DiagnosticOrder, ImagingStudy, Specimen
- Device Interaction: DeviceCapabilities, DeviceLog, DeviceObservation

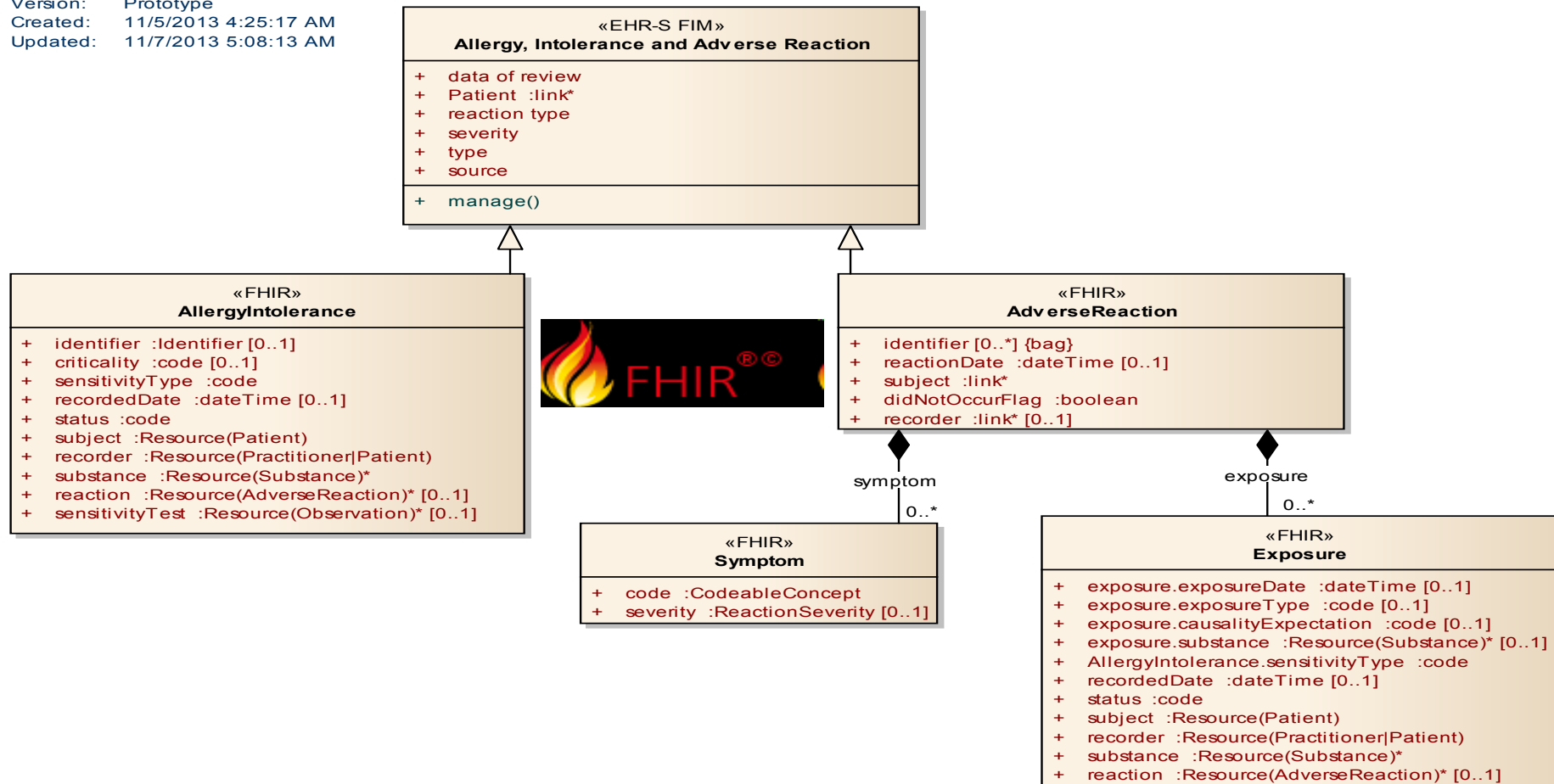
- **FHIR Infrastructure**

- Support: List, Media, Other, DocumentReference, (Binary)
- Audit: Provenance, SecurityEvent
- Exchange: Document, Message, OperationOutcome, Query
- Conformance: Conformance, ValueSet, Profile

Prototype Allergy, Intolerance & Adverse-Reaction FHIR Design-Specification

class FHIR Specification for Allergy, Intolerance and Adverse Reaction

Name: FHIR Specification for Allergy, Intolerance and Adverse Reaction
 Author: Steve Hufnagel
 Version: Prototype
 Created: 11/5/2013 4:25:17 AM
 Updated: 11/7/2013 5:08:13 AM



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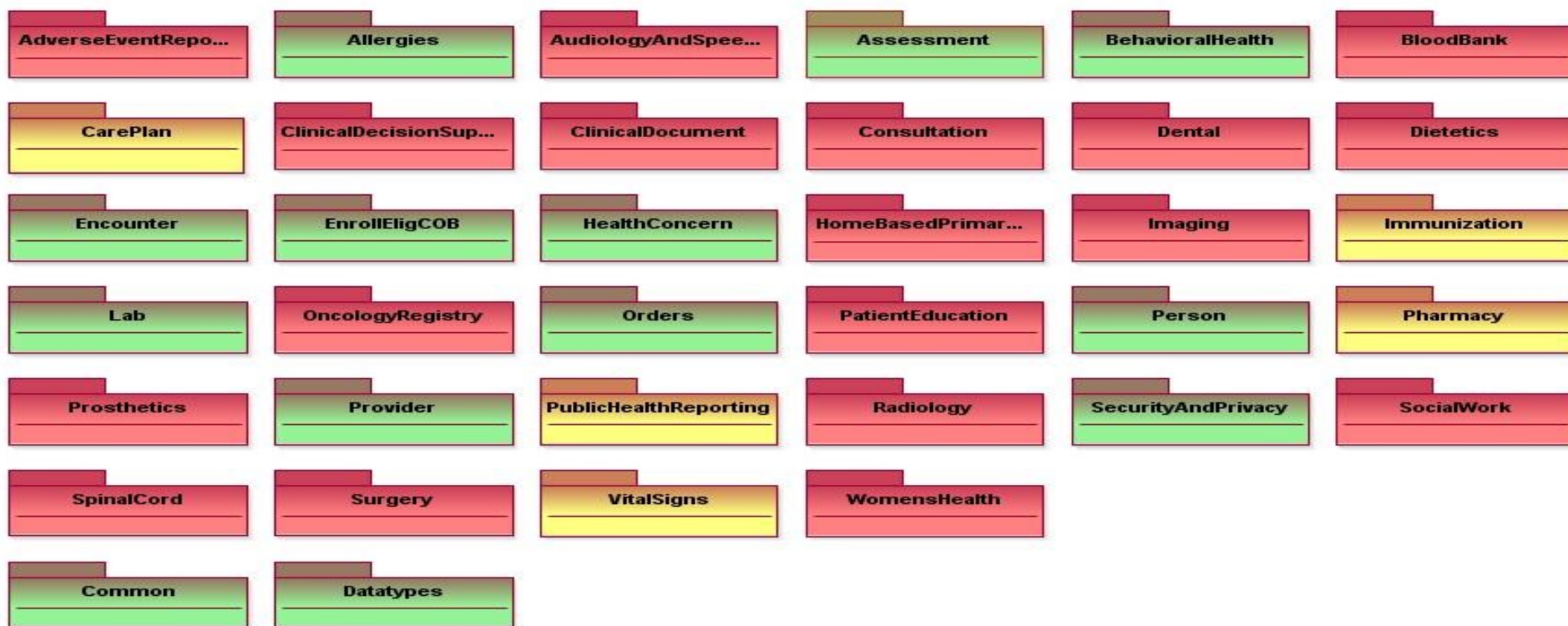
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EHR-S FIM Using Federal Health Information Model (FHIM)



http://www.fhims.org/content/420A62FD03B6_root.html

FHA Federal Health Information Model (FHIM)



FHIM modeling complete

FHIM modeling in progress

Unchanged from the VHIM

Color Key

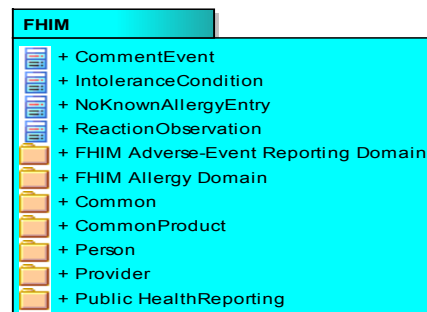
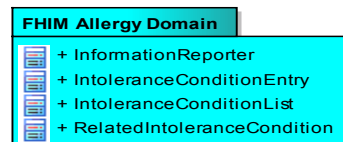
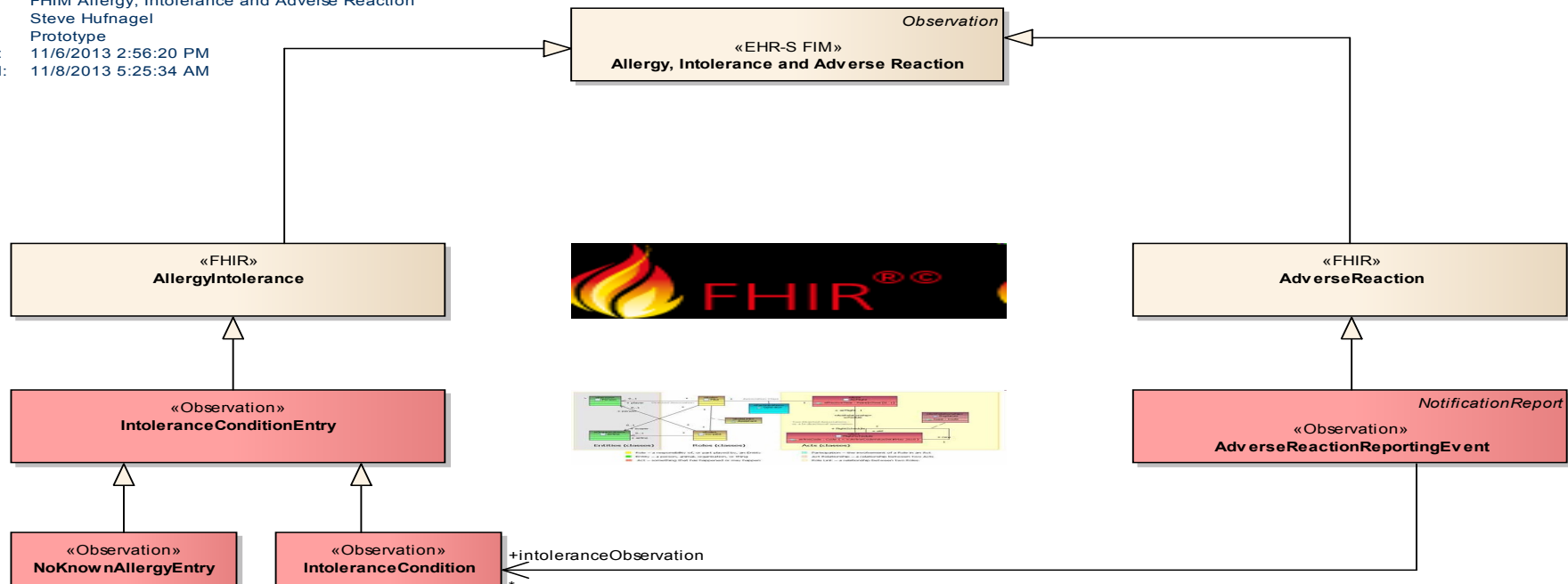
Prototype

Allergy, Intolerance & Adverse-Reaction

FHIM High-Level US-Realm Specification

class FHIM Allergy, Intolerance and Adverse Reaction

Name: FHIM Allergy, Intolerance and Adverse Reaction
 Author: Steve Hufnagel
 Version: Prototype
 Created: 11/6/2013 2:56:20 PM
 Updated: 11/8/2013 5:25:34 AM



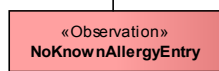
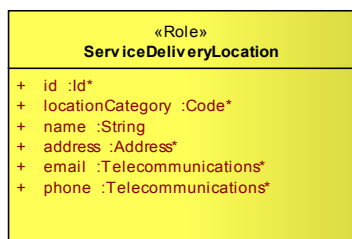
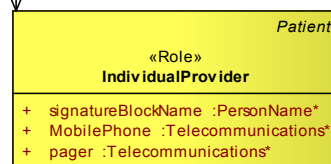
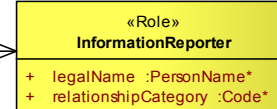
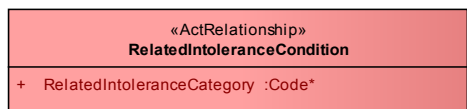
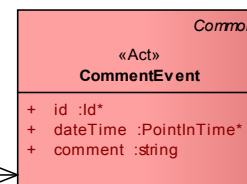
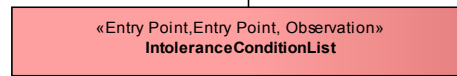
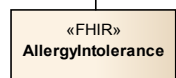
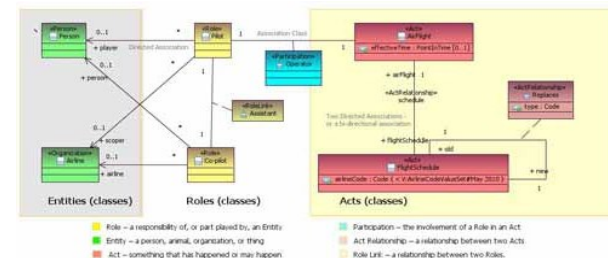
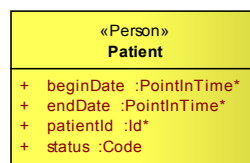
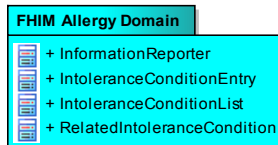
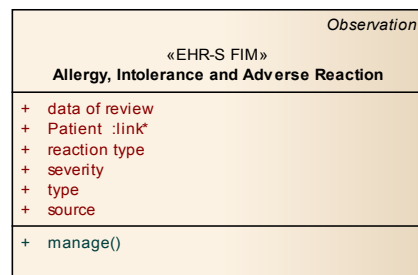
Prototype

FHIM-Detailed Allergy & Intolerance Specification

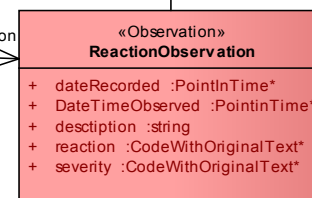
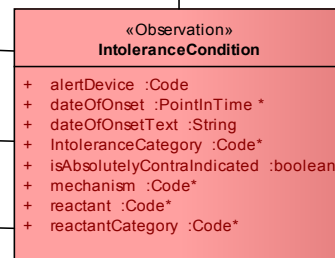
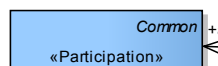


Class FHIM Allergies Domain

Name: FHIM Allergies Domain
 Author: Steve Hufnagel
 Version: Prototype
 Created: 11/6/2013 4:40:24 AM
 Updated: 11/7/2013 4:06:44 PM



May need to know drug allergies and no known food allergies entries



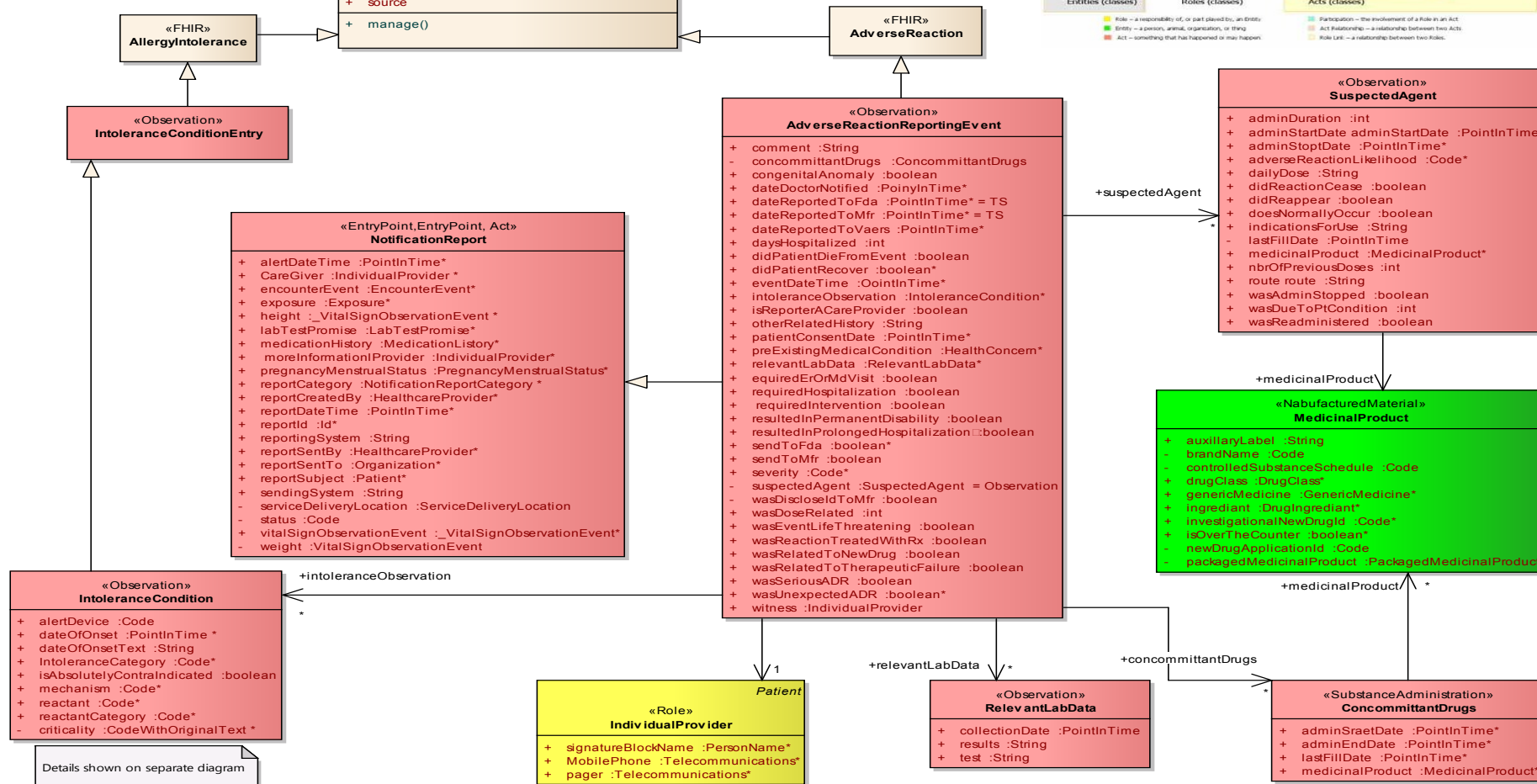
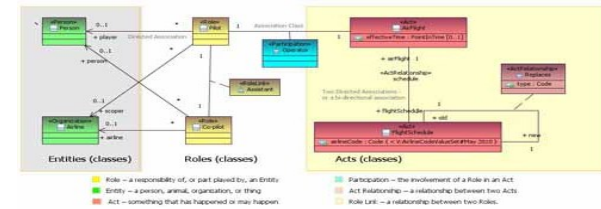
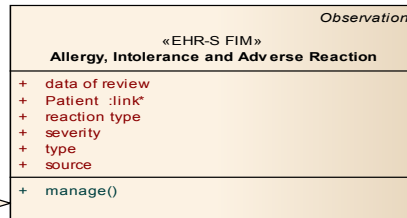
Note that participation classes are used when we need date/time or comments, otherwise, we point directly to Individual Provider. This why there are "authors" from Comment Event, etc., but Intolerance Condition uses the Author Participation.

Prototype

FHIM Detailed Adverse-Reaction Specification

class FHIM Adverse-Event Reporting Domain

Name: FHIM Adverse-Event Reporting Domain
 Author: Steve Hufnagel
 Version: Prototype
 Created: 11/7/2013 12:42:32 PM
 Updated: 11/7/2013 3:38:49 PM



Details shown on separate diagram

■ Prototype Allergy, Intolerance & Adverse-Reaction FHIR & FHIM Design-Specifications

INTERIM CONCLUSION

EHR-S FIM, FHIR and FHIM complement each other; where,

- EHR-S FIM defines Requirements; but,
 - EHR-S FIM needs data element specifications and Dictionary
 - FHIR & FHIM provide data element specifications and Dictionary
 - FHIR defines the International Specifications (“The 80% set”)
 - FHIM defines the US-FHA Specification-Profile for FHIR
 - Configuration Management is essential for FIM/FHIR/FHIM consistent
- A FIM-FHIR-FHIM populated UML-Tool (e.g., EA or RSA) can manage
- **Requirements** from EHR-S FIM
 - **International-Specifications** from FHIR
 - **US-Realm Specifications-Profiles** from FHIM