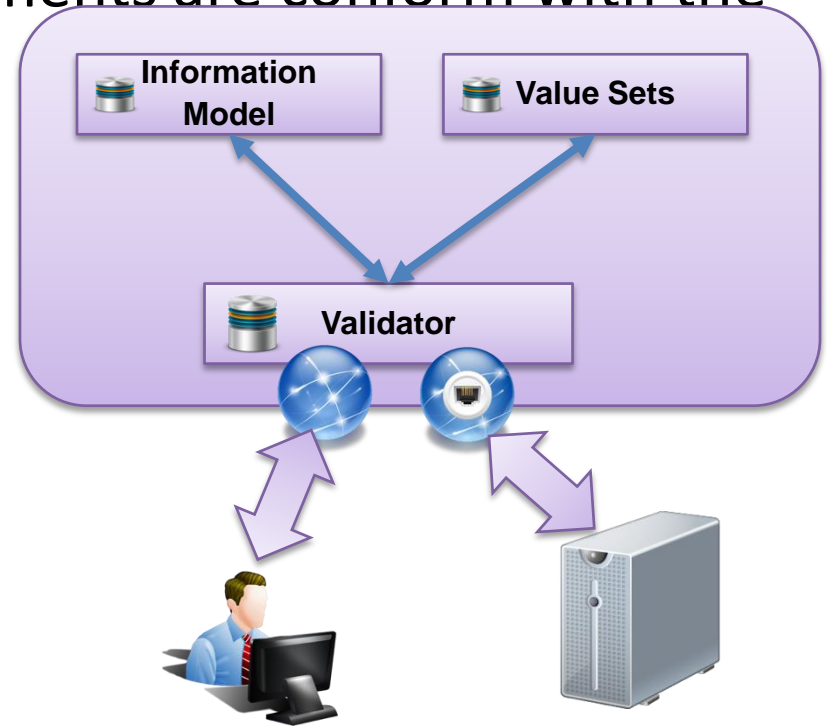


# CONFORMANCE CHECKING TOOLS



# Conformance Checking tools

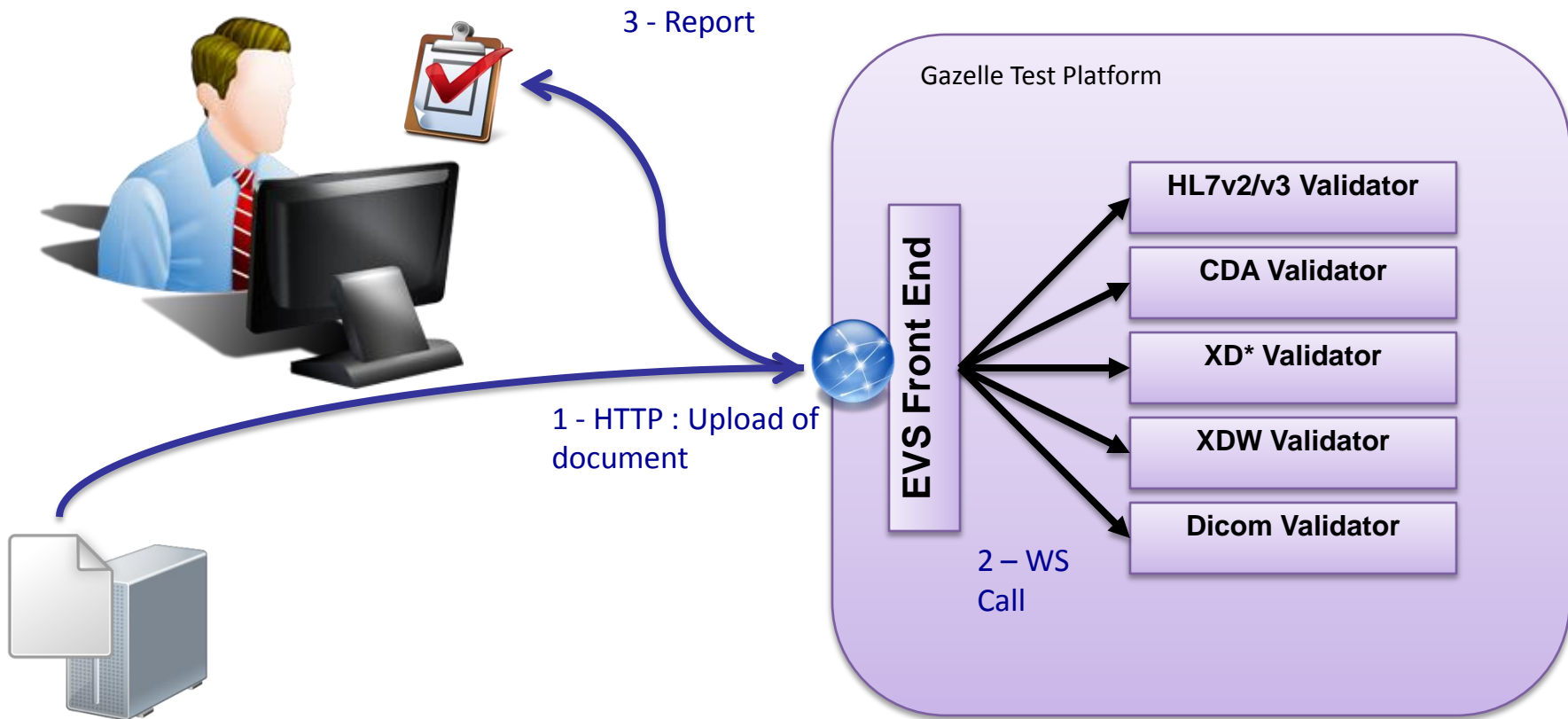
- Goal
  - Verify that messages/documents are conform with the specifications
- Target
  - Developers
  - Testers
  - Other tools like simulators
- Interface
  - GUI for users
  - Web services for tools



# Existing tools






- HL7 CDA Structured Document (ObjectsChecker)
- HL7v2, HL7v3
- IHE XD\* transactions
- Sharing Value Set content
- Workflow documents
- ATNA audit messages
- X509 certificates
- SAML Assertions
- ...

# Standalone Document/Message Validation



# Validation Tool Example : CDA

**External Validation Service Front-end**

  IHE  epSOS  Schematrons  Statistics

## Validate CDA documents

**Validation**

Upload the XML File you want to validate - only files with extension ".xml" are allowed -

**schematron**

**Select a validator** and / or

**Model Based Validation**

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- CDA Validation tool for IHE / epSOS / ASIP /...
  - [Link](#)



Model Based Validation details

Show Templates Tree (experimental)

- 1.3.6.1.4.1.19376.1.5.3.1.1.1 - Medical Documents Specification
- 1.3.6.1.4.1.19376.1.9.1.1.1 - PharmacyPrescriptionDocument
- 1.2.40.0.32.6.1.10.1.1.1- UNKNOWN
- 1.2.40.0.32.6.1.10.1.1.2- UNKNOWN
- 1.3.6.1.4.1.19376.1.5.3.1.3.19 - MedicationSection
- 2.16.840.1.113883.10.20.1.8 - Medications
- 1.3.6.1.4.1.19376.1.9.1.2.1 - Prescription
  - 2.16.840.1.113883.10.20.1.24 - MedicationActivity
- 1.3.6.1.4.1.19376.1.5.3.1.4.7 - Medications
- 1.3.6.1.4.1.19376.1.5.3.1.4.7.1 - NormalDosing
- 1.3.6.1.4.1.19376.1.9.1.3.2 - PrescriptionItemEntry
  - 1.3.6.1.4.1.19376.1.5.3.1.4.7.2 - ProductEntry
  - 2.16.840.1.113883.10.20.1.53 - Product
    - 1.3.6.1.4.1.19376.1.9.1.3.1 - MedicineEntry
    - 2.16.840.1.113883.10.20.1.49 - PatientInstructions
    - 1.3.6.1.4.1.19376.1.5.3.1.4.3 - PatientFulfillmentInstructions
    - 2.16.840.1.113883.10.20.1.43 - FulfillmentInstructions
    - 1.3.6.1.4.1.19376.1.5.3.1.4.3.1 - MedicationFulfillmentInstructions

**Result** FAILED  
**Summary** 324 checks  
5 errors  
2 warnings  
6 infos

HIDE:  Errors  Warnings  Infos  Reports

Errors

- |                    |  |
|--------------------|--|
| <b>Test</b>        | constraint_pharmpre_PrescriptionItemEntry_...OfUnitsOfTheConsumableToDispense  |
| <b>Location</b>    | /ClinicalDocument/component/structure... SubstanceAdministration   |
| <b>Description</b> | ERROR : This condition is not verified : one or more amounts of units of the consumable to dispense, which SHALL be... for "entryRelationship/@typeCode" in a relationship between a prescription item entry... SHALL be "COMP" 2.16.840.1.113883.5.1002 ActRelationshipType STATIC. (IHE PRE, 6.3.4.1.3.21) more... |
- Click here to view the OCL language to test the assertion.
- |                    |   |
|--------------------|---|
| <b>Test</b>        | constraint_pharmpre_PrescriptionItemEntry_entryRelationship_amountsOfUnitsOfTheConsumable_classCode   |
| <b>Location</b>    | /ClinicalDocument/component/structuredBody/component[0]/section/entry[0]/substanceAdministration  |
| <b>Description</b> | ERROR : This condition is not verified : The value for "supply/@classCode" in an amount of units of the consumable to dispense SHALL be "SPLY" 2.16.840.1.113883.5.6 ActClass STATIC. (IHE PRE, 6.3.4.1.3.21) more... |
- |                    |   |
|--------------------|---|
| <b>Test</b>        | constraint_pharmpre_PrescriptionItemEntry_entryRelationship_amountsOfUnitsOfTheConsumable_independentInd            |
| <b>Location</b>    | /ClinicalDocument/component/structuredBody/component[0]/section/entry[0]/substanceAdministration                    |
| <b>Description</b> | ERROR : This condition is not verified : An amount of units of the consumable to dispense SHALL contain exactly one |

## Constraint Descriptor : constraint\_pharmpre\_PrescriptionItemEntry\_entryRelationship\_amountsOfUnitsOfTheConsumableToDispense (type : ERROR)

### Constraint : constraint\_pharmpre\_PrescriptionItemEntry\_entryRelationship\_amountsOfUnitsOfTheConsumableToDispense

**Constraint Name** constraint\_pharmpre\_PrescriptionItemEntry\_entryRelationship\_amountsOfUnitsOfTheConsumableToDispense (type : ERROR)

**Constraint Class** [PrescriptionItemEntry](#)

**Package** ihepre

**Description** A prescription item entry SHALL contain one or more amounts of units of the consumable to dispense, which SHALL be presentes be supply. The value for "entryRelationship/@typeCode" in a relationship between a prescription item entry and amount of units of the consumable to dispense SHALL be "COMP" 2.16.840.1.113883.5.1002 ActRelationshipType STATIC. (IHE PRE, 6.3.4.1.3.21)

**OC**

```
self.entryRelationship->exists(enresh : POCDM7000040EntryRelationship |  
  not enresh.typeCode.ocIsUndefined() and  
  enresh.typeCode=XActRelationshipEntryRelationship::COMP and  
  (not enresh.supply.ocIsUndefined()))
```

#### List Assertions

- <http://gazelle.ihe.net/AssertionManager/rest/testAssertion/assertion?assertionId=CONF-15&idScheme=PRE>
- <http://gazelle.ihe.net/AssertionManager/rest/testAssertion/assertion?assertionId=CONF-16&idScheme=PRE>

Here is the actual OCL language used to test the assertion.

As we can see here, this test is testing 2 assertions. We provide here the link to the assertion.