

Template 0100: Message from one facade to another

Reference data library dependencies

The following role-constraining classes need to be defined:

- ISO15926-7credentialsInXML¹
- Transmitting
- ISO15926-7RepresentationOfInformationInRDF/XML
- TransmittedANDISO15926-7MessageFile
- SenderAndISO15926-7Facade
- AddresseeAnd15926-7Facade.

These classes are represented in the graph by identifiers, respectively, *REF700002*, *R-9652247*, *R-700001*, *R-900800*, *R-900826*, *R-900827*.

In order to avoid excessively long formulae, we abbreviate the following class names.

- ISO15926-7credentialsInXML as CredentialsInXML
- ISO15926-7RepresentationOfInformationInRDF/XML as RepresentationInRDF
- TransmittedANDISO15926-7TransferFile as TransmittedAndMessageFile
- SenderAndISO15926-7Facade as SenderAndFacade
- AddresseeAnd15926-7Facade as AddresseeAndFacade.

Shorthand template

The shorthand template contains eight roles:

- addressee, cardinality 1
- containedDocuments, cardinality 1
- context, cardinality 0 :?
- credentials, cardinality 1
- physicalFile, cardinality 1
- sender, cardinality 1
- transmission, cardinality 1

¹This class name for REF700002 appears in the Analysis Graph only.

- transmissionDT, cardinality 1

$\forall s(\text{ST-0100}(s) \rightarrow$

$\exists 1x(\text{addressee}(s, x)) \wedge$

$\exists 1x(\text{containedDocuments}(s, x)) \wedge$

$\exists 1x(\text{credentials}(s, x)) \wedge$

$\exists 1x(\text{physicalFile}(s, x)) \wedge$

$\exists 1x(\text{sender}(s, x)) \wedge$

$\exists 1x(\text{transmission}(s, x)) \wedge$

$\exists 1x(\text{transmissionDT}(s, x)) \wedge$

$\forall x(\text{addressee}(s, x) \rightarrow \exists z(\text{Classification}(z) \wedge \text{classified}(z, x) \wedge \text{classifier}(z, \text{AddresseeAndFacade}))) \wedge$

$\forall x(\text{containedDocuments}(s, x) \rightarrow \exists z(\text{Classification}(z) \wedge \text{classified}(z, x) \wedge \text{classifier}(z, \text{RepresentationInRDF}))) \wedge$

$\forall x(\text{context}(s, x) \rightarrow \text{ClassOfTemporalWholePart}(x)) \wedge$

$\forall x(\text{credentials}(s, x) \rightarrow \exists z(\text{Classification}(z) \wedge \text{classified}(z, x) \wedge \text{classifier}(z, \text{CredentialsInXML}))) \wedge$

$\forall x(\text{physicalFile}(s, x) \rightarrow \exists z(\text{Classification}(z) \wedge \text{classified}(z, x) \wedge \text{classifier}(z, \text{TransmittedAndMessageFile}))) \wedge$

$\forall x(\text{sender}(s, x) \rightarrow \exists z(\text{Classification}(z) \wedge \text{classified}(z, x) \wedge \text{classifier}(z, \text{SenderAndFacade}))) \wedge$

$\forall x(\text{transmission}(s, x) \rightarrow \exists z(\text{Classification}(z) \wedge \text{classified}(z, x) \wedge \text{classifier}(z, \text{Transmitting}))) \wedge$

$\forall x(\text{transmissionDT}(s, x) \rightarrow \exists z(\text{Classification}(z) \wedge \text{classified}(z, x) \wedge \text{classifier}(z, \text{XmlSchemaDateTime}))))$

Longhand template

$$\begin{aligned} & \forall s, x_1, x_2, x_4, x_5, x_6, x_7, x_8 (\text{ST-0100}(s) \wedge \\ & \quad \underline{\text{addressee}}(s, x_1) \wedge \\ & \quad \underline{\text{containedDocuments}}(s, x_2) \wedge \\ & \quad \underline{\text{credentials}}(s, x_4) \wedge \\ & \quad \underline{\text{physicalFile}}(s, x_5) \wedge \\ & \quad \underline{\text{sender}}(s, x_6) \wedge \\ & \quad \underline{\text{transmission}}(s, x_7) \wedge \\ & \quad \underline{\text{transmissionDT}}(s, x_8) \\ & \rightarrow \exists y_1, y_2, \dots, y_{15} (\\ & \quad \text{LT-0100.InvolvementByReference}(y_{15}) \wedge \text{involved}(y_{15}, x_4) \wedge \text{involver}(y_{15}, x_7) \wedge \\ & \quad \quad \text{LT-0100.Participation1}(y_1) \wedge \text{whole}(y_1, x_7) \wedge \text{part}(y_1, x_5) \wedge \\ & \quad \quad \text{LT-0100.Participation2}(y_2) \wedge \text{whole}(y_2, x_7) \wedge \text{part}(y_2, y_{12}) \wedge \\ & \quad \quad \text{LT-0100.Participation3}(y_3) \wedge \text{whole}(y_3, x_7) \wedge \text{part}(y_3, y_{14}) \wedge \\ & \quad \quad \quad \text{LT-0100.Beginning}(y_4) \wedge \text{whole}(y_4, x_7) \wedge \text{part}(y_4, y_{13}) \wedge \\ & \quad \text{LT-0100.1002.1.TemporalWholePart}(y_5) \wedge \text{whole}(y_5, x_2) \wedge \text{part}(y_5, x_5) \wedge \\ & \quad \quad \text{LT-0100.1002.1.Beginning}(y_6) \wedge \text{whole}(y_6, x_5) \wedge \text{part}(y_6, y_{13}) \wedge \\ & \quad \text{LT-0100.1002.2.TemporalWholePart}(y_7) \wedge \text{whole}(y_7, x_6) \wedge \text{part}(y_7, y_{12}) \wedge \\ & \quad \quad \text{LT-0100.1002.2.Beginning}(y_8) \wedge \text{whole}(y_8, y_{12}) \wedge \text{part}(y_8, y_{13}) \wedge \\ & \quad \text{LT-0100.1002.3.TemporalWholePart}(y_9) \wedge \text{whole}(y_9, x_1) \wedge \text{part}(y_9, y_{14}) \wedge \\ & \quad \quad \text{LT-0100.1002.3.Beginning}(y_{10}) \wedge \text{whole}(y_{10}, y_{14}) \wedge \text{part}(y_{10}, y_{13}) \wedge \\ & \quad \text{LT-0100.1002.ClassOfRepresentationOfThing}(y_{11}) \wedge \text{represented}(y_{11}, y_{13}) \wedge \text{pattern}(y_{11}, x_8) \wedge \\ & \quad \quad \text{LT-0100.1002.2.PhysicalObject}(y_{12}) \wedge \\ & \quad \quad \quad \text{LT-0100.1002.PointInTime}(y_{13}) \wedge \\ & \quad \quad \quad \text{LT-0100.1002.3.PhysicalObject}(y_{14}) \wedge \\ & \quad \quad \quad \forall x_3 (\underline{\text{context}}(s, x_3) \rightarrow \exists z_1, z_2, z_3 (\\ & \quad \quad \quad \quad \text{LT-0100.1002.1.Classification}(z_1) \wedge \text{classifier}(z_1, x_3) \wedge \text{classified}(z_1, y_5) \wedge \\ & \quad \quad \quad \quad \text{LT-0100.1002.2.Classification}(z_2) \wedge \text{classifier}(z_2, x_3) \wedge \text{classified}(z_2, y_7) \wedge \\ & \quad \quad \quad \quad \text{LT-0100.1002.3.Classification}(z_3) \wedge \text{classifier}(z_3, x_3) \wedge \text{classified}(z_3, y_9)))))) \end{aligned}$$