Template 0099: Transmittal for a transfer file

Reference data library dependencies

The following role-constraining classes need to be defined:

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

These classes are represented in the graph by identifiers, respectively, *R-9652247*, *R-700001*, *R-900825*, *R-900826*, *R-900827*.

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

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

Shorthand template

The shorthand template contains seven roles:

- addressee, cardinality 1
- context, cardinality 0 :?
- payload, cardinality 1
- physicalFile, cardinality 1
- sender, cardinality 1
- transmission, cardinality 1
- transmissionDT, cardinality 1

$\forall s(\text{ST-0099}(s) \rightarrow$

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

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

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

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

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

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

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

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

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

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

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

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

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

Longhand template

$$\forall s, x_1, x_3, x_4, x_5, x_6, x_7(\text{ST-0099}(s)\wedge \underline{\text{addressee}}(s, x_1)\wedge \underline{\text{payload}}(s, x_3)\wedge \underline{\text{physicalFile}}(s, x_4)\wedge \underline{\text{sender}}(s, x_5)\wedge \underline{\text{transmission}}(s, x_6)\wedge \underline{\text{transmissionDT}}(s, x_7)$$
$$\rightarrow \exists y_1, y_2, \ldots y_{14}($$
$$\text{LT-0099.Participation1}(y_1)\wedge \text{whole}(y_1, x_6) \wedge \text{part}(y_1, x_4)\wedge$$
$$\text{LT-0099.Participation2}(y_2)\wedge \text{whole}(y_2, x_6) \wedge \text{part}(y_1, y_{12})\wedge$$
$$\text{LT-0099.Participation3}(y_3)\wedge \text{whole}(y_3, x_6) \wedge \text{part}(y_3, y_{14})\wedge$$
$$\text{LT-0099.Beginning}(y_4)\wedge \text{whole}(y_4, x_6) \wedge \text{part}(y_4, y_{13})\wedge$$
$$\text{LT-0099.1002.1.TemporalWholePart}(y_5)\wedge \text{whole}(y_5, x_3) \wedge \text{part}(y_5, x_4)\wedge$$
$$\text{LT-0099.1002.1.Beginning}(y_6)\wedge \text{whole}(y_6, x_4) \wedge \text{part}(y_6, y_{13})\wedge$$
$$\text{LT-0099.1002.2.TemporalWholePart}(y_7)\wedge \text{whole}(y_7, x_5) \wedge \text{part}(y_7, y_{12})\wedge$$
$$\text{LT-0099.1002.2.Beginning}(y_8)\wedge \text{whole}(y_8, y_{12}) \wedge \text{part}(y_8, y_{13})\wedge$$
$$\text{LT-0099.1002.3.TemporalWholePart}(y_9)\wedge \text{whole}(y_9, x_1) \wedge \text{part}(y_9, y_{14})\wedge$$
$$\text{LT-0099.1002.3.Beginning}(y_{10})\wedge \text{whole}(y_{10}, y_{14}) \wedge \text{part}(y_{10}, y_{13})\wedge$$
$$\text{LT-0099.1002.ClassOfRepresentationOfThing}(y_{11})\wedge \text{represented}(y_{11}, y_{13}) \wedge \text{pattern}(y_{11}, x_7)\wedge$$
$$\text{LT-0099.1002.2.PhysicalObject}(y_{12})\wedge$$
$$\text{LT-0099.1002.PointInTime}(y_{13})\wedge$$
$$\text{LT-0099.1002.3.PhysicalObject}(y_{14})\wedge$$
$$\forall x_2(\underline{\text{context}}(s, x_2) \rightarrow \exists z_1, z_2, z_3($$
$$\text{LT-0099.1002.1.Classification}(z_1)\wedge \text{classifier}(z_1, x_2) \wedge \text{classified}(z_1, y_5)\wedge$$
$$\text{LT-0099.1002.2.Classification}(z_2)\wedge \text{classifier}(z_2, x_2) \wedge \text{classified}(z_2, y_7)\wedge$$
$$\text{LT-0099.1002.3.Classification}(z_3)\wedge \text{classifier}(z_3, x_2) \wedge \text{classified}(z_3, y_9)))))$$