Tutorial

Parts (library concepts) : \_101xxx (for the 1st Part), \_102xxx (for the 2nd Part)

Define extended Part template with specific PartCategory and PartFeature/PartTerminals

* Wire
* Cable
* Backshell
* Connector
* Connector set
* …

ExternalGeometricModels :

* 3D
* 2D stick Line
* 2D Formboard

Template for ConnectedEdgeWithLengthSetRepresentation

Part (WiringHarnessAssemblyDesign) *31xxxx (*311xxx for the Part)

Define extended Assembly template with references to:

* ConnectedEdgeWithLengthSetRepresentation, ( \_312xxx)
* Connectivity
* AssemblyJoint
* CrossSection (\_313xxx)
* HarnessSegment & HarnessNode (\_314xxx)

Further templates based on existing SingleOccurrence template: (\_201xxx for 1st Occurrence of Part \_101xxx, \_2011xx for the 1st Occurrence, \_2012xx for the 2nd occurrence)

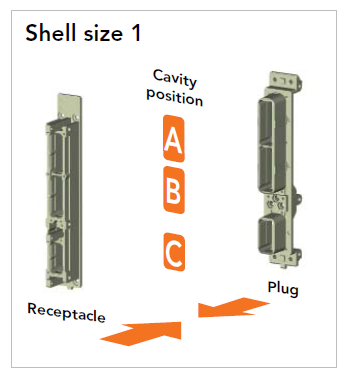
* Extended SingleOccurence with Feature/TerminalOccurrences defined by PartOccurence
* QuantifiedOccurrences for Cables and Wires with a specific length
* Wire and Cable occurrence terminals and grouping
* AssemblyGroupOccurrences for connectors

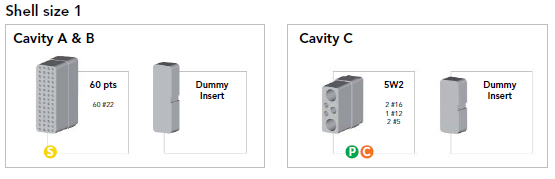
Template for CrossSection

Template for the HarnessSegment & HarnessNode and how they link to the topological model and to the corresponding occurrence features

Template for AssemblyJoint

Template for connectivity





Parts used in the example:

\_101000 wire (WIRE,ELEC,COMP,SNGL CONDUCTOR,150 DEG C) )

\_104000 cable (speaker wires)

\_102000 cable (COAX)

\_202006

\_202106

\_103000 terminal lug (TERMINAL LUG CRIMP STYLE COPPER INSULATED RING TONGUE)

\_117000 phone connector

\_118000 splice

\_119000 dsub9

\_110000 connector kit (ARINC 600 set)

\_210100

* NextAssemblyOccurrenceUsages for:
  + \_215100 SingleOccurrence c1 (Insert 5W2 assembly)

\_111000 connector insert (ARINC 600 shell 1 A and B dummy)

\_112000 connector insert (ARINC 600 shell 1 C 5W2 insert)

\_212005

\_113000 connector contact (#5 Coax contact)

\_213100

\_213200

\_114000 connector contact (#16 Power contact)

\_214100

\_214200

\_115000 connector insert assembly (2 COAX & 3 single contacts)

\_215100

* NextAssemblyOccurrenceUsages for:
  + \_213100 coax1
  + \_213200 coax2
  + \_214100 power3
  + \_214200 power4
  + \_216100 signal5
  + \_212005 Bare insert 5W2

\_116000 connector contact (#12 signal)

\_216100

\_120000 braid

\_121000 protective covering C1(wrap)

\_121000 protective covering C2 (HeatShrink)

\_311000 wiring harness (Electrical Harness team reference example)

* NextAssemblyOccurrenceUsages for:
  + \_202006 CableOccurrence cable1 (COAX…)
  + \_202106 CableOccurrence cable2 (COAX…)
  + \_201004 WireOccurrence wire1 (WIRE…)
  + \_201104 WireOccurrence wire2 (WIRE…)
  + \_204006 CableOccurrence cable3 (Speaker wire)
  + \_220005 QuantifiedOccurrence braid1 (Braid)
  + \_221005 QuantifiedOccurrence wrap1 (Wrap)
  + \_222005 QuantifiedOccurrence heatshrink1 (HeatShrink)
  + \_203005 SingleOccurrence lug1 (TERMINAL LUG…)
  + \_210100 SingleOccurrence arinc1 (ARINC 600 set)
* ConnectedEdgeWithLengthSetRepresentation, ( \_312xxx)
* Connectivity
* AssemblyJoint (\_31101X)
* CrossSection (\_313xxx)
* HarnessSegment & HarnessNode
* ExternalAdvancedBRep (\_314xxx)

AssemblyJoins in the Electrical Harness view

N1: On the lug1 side

\_203006 lug1, External, not connected

\_203008 lug1, Internal, connected with wire2, end a

N2: On the arinc1 side

\_210112 arinc1/c1/coax1, Interface signal, not connected

\_210113 arinc1/c1/coax1, Join signal, connected with cable1, end a signal

\_210114 arinc1/c1/coax1, Interface gnd, not connected

\_210115 arinc1/c1/coax1, Join gnd, connected with cable1, end a shield

\_210122 arinc1/c1/coax2, Interface signal, not connected

\_210123 arinc1/c1/coax2, Join signal, connected with cable1, end a signal

\_210124 arinc1/c1/coax2, Interface gnd, not connected

\_210125 arinc1/c1/coax2, Join gnd, connected with cable1, end a shield

\_210132 arinc1/c1/power3, Int term, connected with cable3, end a A

\_210133 arinc1/c1/power3, Join term, not connected

\_210142 arinc1/c1/power4, Int term, connected with cable3, end a B

\_210143 arinc1/c1/power4, Join term, not connected

\_210152 arinc1/c1/signal5, Int term, connected with wire1, end a

\_210153 arinc1/c1/ signal5, Join term, not connected

N3: splice1 close to N3

Xxx splice1, a, connected with wire1, intermediate 1

Xxx splice1, b, connected with wire2, end b

N5: On the phone1 side

Xxx phone1, A, connected with cable3, end b A

Xxx phone1, B, connected with cable3, end b B

N6: On the dsub1 side

Example: big example (at the end) with some extract for each template

Note: Validation properties for EH to be defined in further version. Examples: number of terminals, number of connectors…