

About Parts, Part Assemblies, Part Instances

A part is an engineering representation of a physical part, and a part assembly is a group of part assemblies and/or parts. Part Instances, which are recognized from PDM, are automatically converted to Part Instances on import into HyperMesh.

Parts and Part Assemblies

HyperMesh supports CAE parts (🔲) and part assemblies (📁) and PDM parts (🔲) and part assemblies (📁).

Parts assemblies and parts facilitate the one-to-one mapping of a CAD hierarchy into the HyperMesh environment as a CAE hierarchy. The CAE hierarchy can be created manually or can be imported from a PDM system via a neutral file format such as PLMXML.

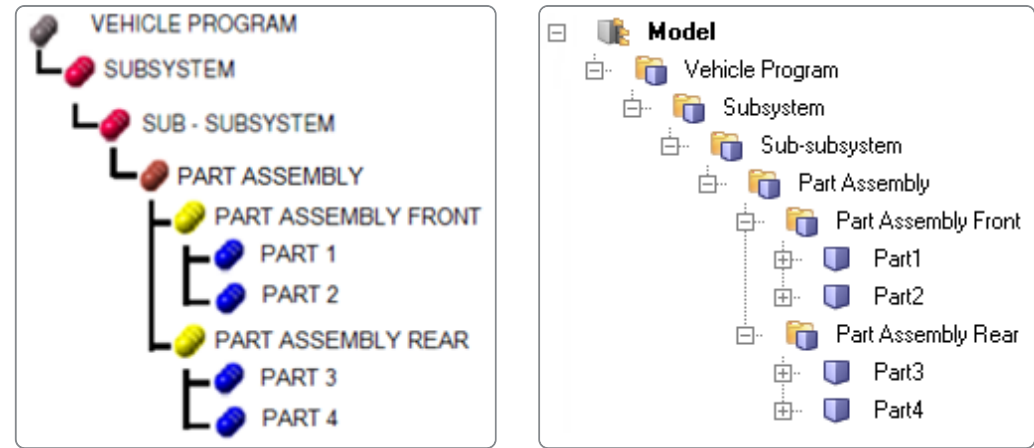


Figure 1. PDM BOM

Figure 2. HyperMesh BOM

If a part is comprised of multiple components, such as cast parts or tailor-welded blanks, you can perform actions such as visualization view modes, model management, and connector link definition at the part level.

Parts can be used to organize a physical part that is made up of multiple components in a CAE model as a single part.


Entities	UID	Representation	Active	CID	PID	MID	Material	Thickness
Model								
🔲 Casting		Crash 10mm	<input checked="" type="checkbox"/>	1, 2, 3, 4,	1, 2, 3, 4, 5,	1	Undefined_1	1.000000, 6.000000,

Figure 3. Cast Part in Part Browser

In the Part Browser, collapsing all folders at the part level enables you to see all owned and referenced entities. Expanding folders at the part level displays a nested list of all referenced components and their entity specific attribute values which are shown in the respective columns.

Part Instances

The Part browser provides limited support for part instances of externally sourced BOMs.

Part Instances () share UID and Part names. The name assigned to child instances is incremented by *.ixx, where xx indicates the number of the child instance. The positioning of Part Instances is dictated by the transformation matrix applied to the Part in the PDM system. Part Instances can also be created and broken interactively in a session. Upon creation, you will automatically be prompted to transform the part via the Transform tool. When broken, instances are split into two separate parts that are independent of each other.

In circular, symmetric, or rectangular patterns, certain parts may appear in a BOM multiple times. Typical examples include bolts, hinges, and symmetric parts.

Creating or saving part representations for instantiated parts saves a single representation in the repository. Importing instantiated parts positions them according to their respective 4 x 3 transformation matrices.