Rule for Entering Description for Required Properties with "Fixed" or "Default" Values:

Definitions:

- **Fixed Value:** The value of a property that is narrowed to a single value
- **Default Value:** The value of a property when no other value has been specified

Specification:

- **Fixed Values:** Description should read "**Fixed to [value]**"
- **Default Values:** Description should START with "**Default value is [value]**" followed by additional description as needed.

Constants and default values in DDI-Views

Some classes use controlled vocabularies to define precise characteristics. Class extensions may be defined by fixing one or more of those controlled vocabulary values. For instance, *Binary Relation* has four different properties, i.e. totality, reflexivity, symmetry and transitivity, each one defined by its own controlled vocabulary in a data type. *Immediate Precedence Relation* is an extension of *Binary Relation* where those properties have now constants "Partial", "Anti-Reflexive", "Anti-Symmetric" and "Anti-Transitive", respectively. The extension adds a new semantics property with constant "Parent-Of". When such classes are part of a DDI design pattern, then any class realizing the pattern needs to include those properties with the same constant assignment. The mechanism for doing that in the realization class is by creating the same object properties the realized class has and documenting the value assignment in the *Description* field with the string "Fixed to [constant]", where [constant] is one of the values in the property datatype. For instance, *Node Hierarchy* realizes *Immediate Precedence Relation,* which will be documented as follows:

Name	Cardinality	Datatype	Description
totality	1..1	TotalityType	Fixed to Partial
reflexivity	1..1	ReflexivityType	Fixed to Anti-Reflexive
symmetry	1..1	SymmetryType	Fixed to Anti-Symmetric
transitivity	1..1	TransitivityType	Fixed to Anti-Transitive
semantics	1..1	ExternalControlledVocabularyEntry	Fixed to Parent-Of

This means that *Node Hierarchy* is a partial, anti-reflexive, anti-symmetric, anti-transitive relation with parent-of semantics, like *Immediate Precedence Relation*. Those constants are fixed for any instance or extension of *Node Hierarchy*.

An alternative to constants is to have properties with <u>default</u> values. The difference is that default values can be changed in the instances and extensions of the class. For instance, *Annotated Identifiable* has isUniversalyUnique and isPersistent properties, which are both set to false as default. However, back to our example, any instance of *Node Hierarchy*, which is an extension of *Annotated Identifiable*, can assign a different value to those properties. Similarly, we could create an extension that changes isPersistent to a constant using the approach described above. The mechanism for specifying default values is by documenting it anywhere in the *Description* field with the string "Default value is [value]", where [value] is in the domain of the property datatype. For instance, the isPersistent default value in *Annotated Identifiable* is documented as follows:

| isPersistent | 1..1 | xs:boolean | Default value is false Usually the content of the current version is allowed to change, for example as the contributor is working on the object contents. However, when isPersistent is true, it indicates the there will be no more changes to the current version. |