[tanja] How to refactor test- and observation-related classes, to consolidate with DistributionWindingTest? What of this is per model, what is per asset? [tom] Any of these Observation classes will be per Asset, since they are done in field inspections of specific instances. To me, it would help if we had an Observation class between IdentifiedObject and the observation-related classes, to hold the status and some other common attributes of inspection tests. This idea would also apply to switches and other assets, although we are not looking at them right now. The DWTest classes were intended for the model-specific tests. If we try to splice in the instance-specific tests, it could lead to more confusion. [tanja] We also have some Procedure classes, with related data sets, so let's address instance-related stuff when needed (probably with Part 4 or 6?).

[tanja, 2009-08-20]
- What ElectricalInfo attributes (if any) are needed for BushingModel?
- PowerRating is really not a good name for what the class is really used.

[tanja, 2010-01-31]
- Reexamine relationships to PSR-related classes

[tanja, 2011-09-01]
- Added hyperlinks to diagrams: The first three are normative, appearing in 61968-11. The last one shows informative xformer-related *Info classes (as this diagram is showing old xformer asset-related classes).
- Renamed PowerRating to CoolingPowerRating.

+AssetInfo

IdentifiedObject
Assets::AssetInfo

+Assets 0..*   0..1

IdentifiedObject
Assets::Asset

+ acceptanceTest: AcceptanceTest [0..1]
+ baselineCondition: String [0..1]
+ baselineLossOfLife: PerCent [0..1]
+ critical: Boolean [0..1]
+ electronicAddress: ElectronicAddress [0..1]
+ inUseDate: InUseDate [0..1]
+ inUseState: InUseStateKind [0..1]
+ kind: AssetKind [0..1]
+ lifecycleDate: LifecycleDate [0..1]
+ lifecycleState: AssetLifecycleStateKind [0..1]
+ lotNumber: String [0..1]
+ position: String [0..1]
+ purchasePrice: Money [0..1]
+ retiredReason: RetiredReasonKind [0..1]
+ serialNumber: String [0..1]
+ status:
+ type: St
+ utcNum

IdentifiedObject
Wires::TransformerEnd

+TransformerEnd 0..* 1
+FromWinding   +ToWinding 1

DocIEC61968 : DCIMTransformerModel

DocIEC61968 : DCIMTapChangerModel

AssetInfo : DCIMTransformerInfo

InfAssetInfo : InfTransformerInfo

ACDCTerminal
Core::Terminal

+Terminal 0..1

+Terminal 0..1

«informative»   «informative»

Assets::Bushing

+Asset 0..1

+Bushing 0..1

Equipment
Wires::TransformerTank

+Transformer 0..1

+Bushing 0..1

«informative»

+ToWindingInsulations 0..*
+FromWindingInsulations 0..*

IdentifiedObject
WindingInsulation

+ insulationPFStatus: String [0..1]
+ insulationResistance: String [0..1]
+ leakageReactance: Reactance [0..1]
+ status: Status [0..1]

+Asset 0..1

«informative»

0..* +Reconditionings

IdentifiedObject
Reconditioning

+ dateTime: DateTime [0..1]

0..*   1
+Reconditionings

+Reconditioning

«informative»

+BushingInsulationPFs 0..*

IdentifiedObject
BushingInsulationPF

+ status: Status [0..1]
+ testKind: BushingInsulationPfTestKind [0..1]

+BushingInsultationPFs 0..*

«informative»

0..* +WindingInsulationPFs
+WindingInsulationPFs

«informative»

+TransformerObservations 0..1   0..*

+TransformerObservation 0..1

+TransformerObservation 0..1

0..* +PowerRatings

IdentifiedObject
CoolingPowerRating

+ coolingKind: CoolingKind [0..1]
+ powerRating: ApparentPower [0..1]
+ stage: Integer [0..1]

+TransformerObservations 0..*

IdentifiedObject
TransformerObservation

+ bushingTemp: Temperature [0..1]
+ dga: String [0..1]
+ freqResp: String [0..1]
+ furfuralDP: String [0..1]
+ hotSpotTemp: Temperature [0..1]
+ oilColor: String [0..1]
+ oilDielectricStrength: Voltage [0..1]
+ oilIFT: String [0..1]
+ oilLevel: String [0..1]
+ oilNeutralizationNumber: String [0..1]
+ pumpVibration: String [0..1]
+ status: Status [0..1]
+ topOilTemp: Temperature [0..1]
+ waterContent: String [0..1]

+TransformerObservations
0..* «informative»

+ProcedureDataSets 0..*   0..*

Document
Assets::ProcedureDataSet

+ completedDateTime: DateTime [0..1]

«enumeration»
CoolingKind

selfCooling
forcedAir
forcedOilAndAir
other

«enumeration»
AssetInfo::BushingInsulationKind

oilImpregnatedPaper
compound
resinBondedPaper
resinImpregnatedPaper
solidPorcelain
other

«enumeration»
BushingInsulationPfTestKind

c1
c2