**Modelling biomarker information**

**Challenges:**

* The importance of the context: a biomarker can be measured with different assays and have more than one use, depending on an association with a specific disease, as described in the provided evidence.
* Sets, panels or combinatorial markers: can contain multiple markers, either within the same assay or a combination of different assays. In other words, there is no 1-1 relationship between all biomarker attributes (described in minimal information document)
* on a theoretical level – do we want to have a defined entity for a biomarker ? Or is it enough/more accurate to only represent/talk about an association ?
* There is more than one classification system for a BM (by usage, concept, status, or assessment type)

**Suggestion:**

* A single or composite biomarker belongs to 3 classes, corresponding with different classification systems. a subclass of Biomarker for its context, a subclass of BiomarkerStatus – for its status in clinical context and a subclass of BiomarkerType, which defines its measurement characteristics.
* A complex biomarker, consists of independent measurements. It belongs to ComplexBM class and a BiomarkerStatus subclass and and contains (links to) many instances of MolecularBM/PhysiologicBM/… (can be a combinations of different types)

Information that is relevant to only one or more types of usage/status/assessment can be added later to the specific subclass(es)

**Remarks / open questions :**

* Device belongs to assay but for the moment is linked directly to a biomarker. If we link assay to an entity in an existing ontology does it make sense to create a class for it ?
* Still need to check what would be the relevant properties for other types (physiologic, radiographic,histologic)
* Same for qualified/validated