

Figure 8.4: Basic Samples - overview. This diagram illustrates the relationships between various classes and interfaces for sample data, organized into several layers.

Top Layer (Interfaces and Schemas):

- Observation Interfaces:**
 - `interface Observation` (with attributes: `phenomenonType TM_Objet`, `resultTime TM_Objet`, `validTime TM_Period`).
 - `interface Observation` (with attribute: `phenomenonType TM_Objet`).
 - `interface Observation` (with attribute: `phenomenonType TM_Objet`).
- Sample Interfaces:**
 - `interface Sample` (with attributes: `phenomenonType TM_Sample`, `resultTime TM_Sample`, `validTime TM_Period`).
 - `interface Sample` (with attribute: `phenomenonType TM_Sample`).
 - `interface Sample` (with attribute: `phenomenonType TM_Sample`).
- Schemas:**
 - `From ISO 15926 Observations, measurements and samples - Conceptual observation schema`
 - `From ISO 15926 Observations, measurements and samples - Conceptual sample schema`

Middle Layer (Abstract and Concrete Classes):

- Abstract Classes:**
 - `AbstractObservation` (implements `Observation`).
 - `AbstractSample` (implements `Sample`).
 - `AbstractSamplingProcedure` (implements `SamplingProcedure`).
 - `AbstractPreparationStep` (implements `PreparationStep`).
 - `AbstractSampleCalculation` (implements `SampleCalculation`).
- Concrete Classes:**
 - `Sample` (implements `AbstractSample`).
 - `SamplingProcedure` (implements `AbstractSamplingProcedure`).
 - `PreparationStep` (implements `AbstractPreparationStep`).
 - `SampleCalculation` (implements `AbstractSampleCalculation`).

Bottom Layer (Specialized Classes and Relationships):

- Specialized Classes:**
 - `StatisticalSample` (implements `AbstractSample`).
 - `PhysicalDimension` (implements `AbstractSample`).
 - `StatisticalClassification` (implements `AbstractSample`).
- Relationships:**
 - `AbstractSample` is associated with `AbstractSamplingProcedure`, `AbstractPreparationStep`, and `AbstractSampleCalculation`.
 - `AbstractSamplingProcedure` is associated with `AbstractPreparationStep`.
 - `AbstractPreparationStep` is associated with `AbstractSampleCalculation`.
 - `AbstractSampleCalculation` is associated with `AbstractSample`.
 - `StatisticalSample` is associated with `StatisticalClassification`.
 - `PhysicalDimension` is associated with `StatisticalClassification`.

The diagram uses various UML notations, including interfaces (dashed boxes), abstract classes (dashed boxes with a hollow triangle), and concrete classes (solid boxes). Relationships are indicated by solid lines (association), dashed lines (generalization), and arrows (direction of flow).