

## Templates for the slides

<b>Taxonomies and Ontologies</b>	
1. Your name and name of your taxonomy and/or ontology	Dr Cliff Brown MTF-UC1
2. What is the application domain of your taxonomy and/or ontology?	Metrology: Materials Testing Facility (e.g. CFRP structures)
3. What is the intended purpose of the taxonomy and/or ontology? (Taxonomies are used for data documentation, while ontologies add the possibility of extended reasoning)	To capture the Data Curation and Provenance information for the Materials Testing Facility at NPL to make data FAIR
4. How do you represent the world:	
• as a continuum?	Yes
• as discrete particles?	Sometimes
• with quantum mechanics?	Possible but rare
5. What are the concepts, with definitions, in the upper level of your taxonomy and/or ontology?	{See below}
6. What are the industrial use cases (e.g. in ontology-driven tools) demonstrating the value of the taxonomy and/or ontology?	Metrological level Materials Testing and Calibration
7. What overlaps do you see with other taxonomy and/or ontologies?	Multiple levels of ontologies representing trustable data to be developed and defined by NMIs across Europe  We anticipate using the EMMO as a core Materials Description Ontology
<b>Ontologies</b>	
8. What are the (main) relations in your ontology?	

9. What is the knowledge your specific ontology represents?	
a. Knowledge necessary for a pragmatic description of current practices	
òr	
b. Explanation of the world according to one of the philosophical views called realism/conceptualism/nominalism	
10. How does your ontology represent the relations between different granularity views on the same object?	
11. How does your ontology represent materials?	
12. What type of processes do you address? How does your ontology represent these processes?	
13. How does your ontology represent manufacturing?	
14. How does your ontology address the circular connection between physical properties, materials models (see definition in RoMM <a href="#">Review of Materials Modelling VI</a> ) and measurement?	
15. What is the representation language and implementation (logics)?	

## Class Outline Descriptions

The following table provides outline descriptions of the Classes and their purpose.

Class Name	Purpose	Relation and Type
MaterialsTestFacility	Top Level Class (Contains all Jobs done by the MTF)	Collection of Job(s)
Job	A single job; identified by a MIR code	Link to a Client Collection of ClientCommunication(s) Link to a WorkPlan Link to a Quote
ClientCommunication	Points to client communication 'documents' including emails	
Client	Identifies the person who 'owns' the Job at the Client Organisation	Link to an Organisation
Organisation	Identifies the Organisation who is the client for the Job	
Quote	Specification of the costs and details of the WorkPlan to be performed for the Job	Includes the WorkPlan
WorkPlan	Specification of the work to be performed for the Job	Collection of WorkPlanPart(s) Collection of CustomerSample(s)
WorkPlanPart	A single test that makes up part of the work plan	Link to a Sample Collection of Device(s) Collection of Result(s)
CustomerSample	Specification of an original CustomerSample including dimensions; material content; structure etc.	Link to a CuttingPlan Link to a MaterialType Link to an InspectionReport

CuttingPlan	Specification of how a Sample is to be divided; creating further Sample objects.	Collection of Sample(s)
Sample	Represents a Test Piece. This may be the original, customer supplied sample; or, a part of the original.  Sample objects go through various states as described in Appendix F.	Collection of PreparationType(s)  Collection of SampleImage(s)  Link to InstrumentationPlan  Link to StructureDefinition
StructureDefinition	Defines the structure of the Sample and holds common information e.g. weight.	A generic StructureDefinition  MeasureWeight(DeviceID)
Plate	Definition of plate dimensions.	A Type of StructureDefinition  MeasureHeight(DeviceID)  MeasureWidth(DeviceID)  MeasureDepth(DeviceID)
Cylinder	Definition of cylinder dimensions.	A Type of StructureDefinition  MeasureLength(DeviceID)  MeasureOutsideDiameter(DeviceID)  MeasureInsideDiameter(DeviceID)
InstrumentationPlan	Pointer to a document containing the specification of how a Sample will be instrumented e.g. with Strain Gauges.	
SampleImage	Pointer to file containing sample image	
MaterialType	A pointer to a material type identifier suitable for MTF. This may be implemented as a table within the DCAS or to an external database	

InspectionReport	Pointer to a file containing the inspection report for the Customer sample	
PreparationType	Types of Preparation	Collection of preparations. Each sample can go through a series of preparations
FinalReport	Pointer to a file containing the final report	
TestDeviceComponent	A generic device used as part of a test rig. Each TestDeviceComponent to be marked with a unique Identifier  RoladexLocation	A generic Device
TestMachine	Testing Machines	A Type of Device
LoadCell	Load Cells	A Type of Device
DataLogger	Data Loggers	A Type of Device
EnvironmentMonitor	Environmental Monitor (pressure, Humidity, Temperature)	A Type of Device
Results	Holds generic information for a set of results, e.g. filename, filetype etc.	A generic Results
RawResults	Pointer to a Raw Results file	A Type of Results. The original results prior to processing
IntermediateResults	Pointer to an Intermediate Results file	A Type of Results. Processed but not final results.
FinalResults	Pointer to a Final Results file	A Type of Results. The final results from processing
ResultsSummary		A summary of the Final results.