# Encoding Legacy Data using the Heritage Digital Twin Ontology

To encode the information concerning the “Caterina Cornaro” and “St. John Lampadistis” examples according to the HDT Ontology, you can either use the online 3M Mapping Tool or the X3ML engine locally, on your computer. Please follow the instructions below.

**To use the online 3M Mapping Tool:**

1. Register and access the 3M Mapping Tool at <https://demos.isl.ics.forth.gr/3m/>
2. To visualize the complete mapping between legacy data and HDT ontology select and open one of the mappings named:
   1. “Caterina Cornaro Art Analysis (Digital Twin)” (HRID:774743)
   2. “Caterina Cornaro Scientific Analysis (Digital Twin)” (HRID: 196433)
   3. “St. John Lampadistis Monastery (Digital Twin)” (HRID:230114)
3. Click the “Produce RDF” button on the bottom of the screen to generate the HDT representation of the corresponding legacy data. From the small arrow on the same button, you can also select the desired encodings format (e.g., RDF, Turtle, TriG, N-Triples)
4. Read or download the generated code from the “Transformed output” popup.

**To use the X3ML engine locally on your computer**

1. Download the latest release of the X3ML engine from the official GitHub X3ML repository at: <https://github.com/isl/x3ml/releases> (the current latest version, *x3ml-engine-2.1.0-exejar.jar* is also available in the 5.X3ML Encodingfolder)
2. Prepare a folder containing the engine .JAR file, the legacy XML information, the mapping and policy files and from your command line invoke the engine using the following syntax:

java -jar *x3ml-engine-2.1.0-exejar.jar* -i <input file> -x <mappings file> -p <generator file> -o <output file> -f <chosen format>

For example, to encode legacy information about St. John Lampadistis Church using the HDT Ontology and the RDF/XML format, you can use the following command:

java -jar x3ml-engine-2.1.0-exejar.jar -i lampadistis.xml -x lampadistis.x3ml -p generator-policy.xml -o lampadistis.rdf -f application/rdf+xml

This will generate a new lampadists.rdf file in the current folder or in the specified path, encoded according to the HDT Ontology and the RDF format.

Additional information and directions on how to configure and use the X3ML Engine and all its features are available on the GitHub official X3ML page at: <https://github.com/isl/x3ml>

1. The folder 5.X3ML Encoding also contains a transformALL.bat file to transform locally all three legacy XML input files, produce RDF output in TRIG format and put them in the related folders. You can modify the –format option to set the format for the desired final output (see <https://github.com/isl/x3ml> for more options)