

# STELLAR

Ceri Binding  
Hypermedia Research Unit, University of Glamorgan, Wales

<http://hypermedia.research.glam.ac.uk/kos/STELLAR/>



Arts & Humanities  
Research Council



# STELLAR applications

<http://hypermedia.research.glam.ac.uk/resources/STELLAR-applications/>

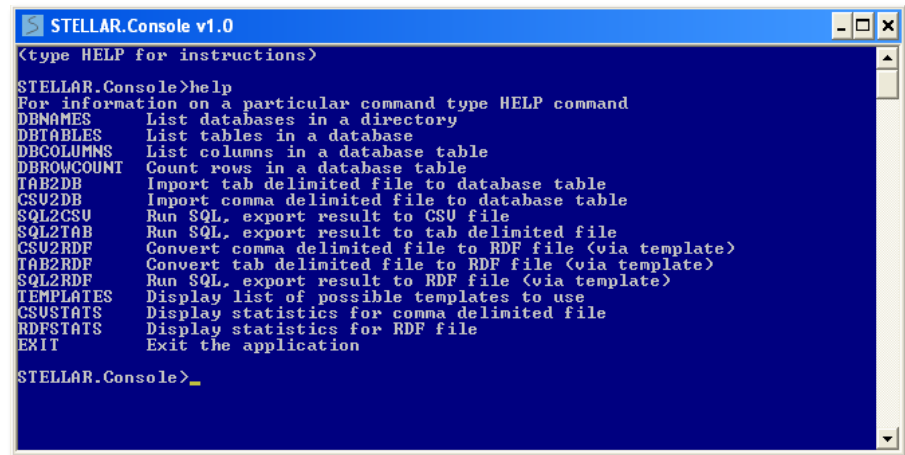
## STELLAR.Web

<http://hypermedia.research.glam.ac.uk/kos/stellar/>

## STELLAR.Console

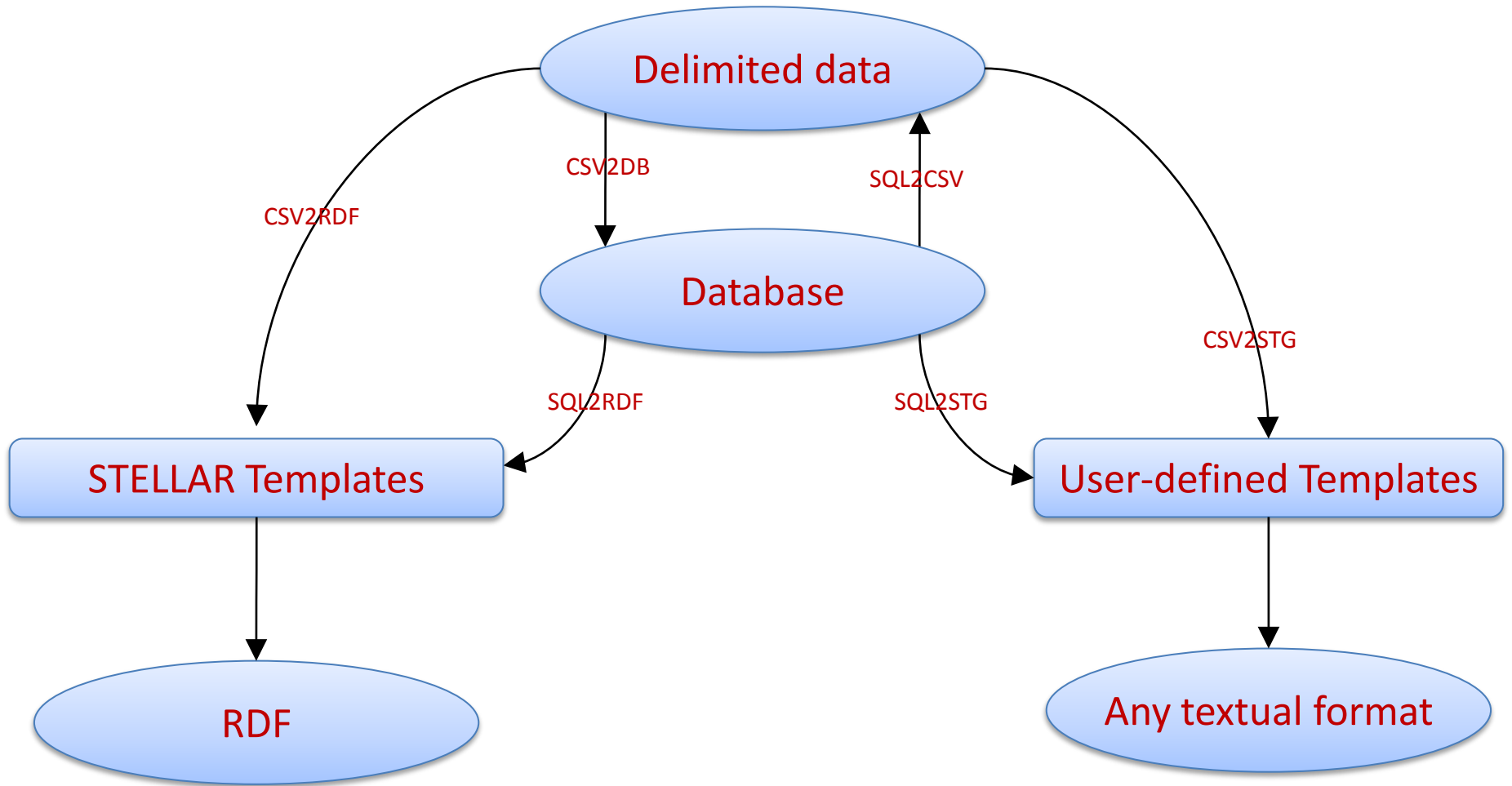
# STELLAR.Console application

- Command line application, freely downloadable
- Data import, cleansing & export
- Data conversion via “templates”
- Batch processing of commands

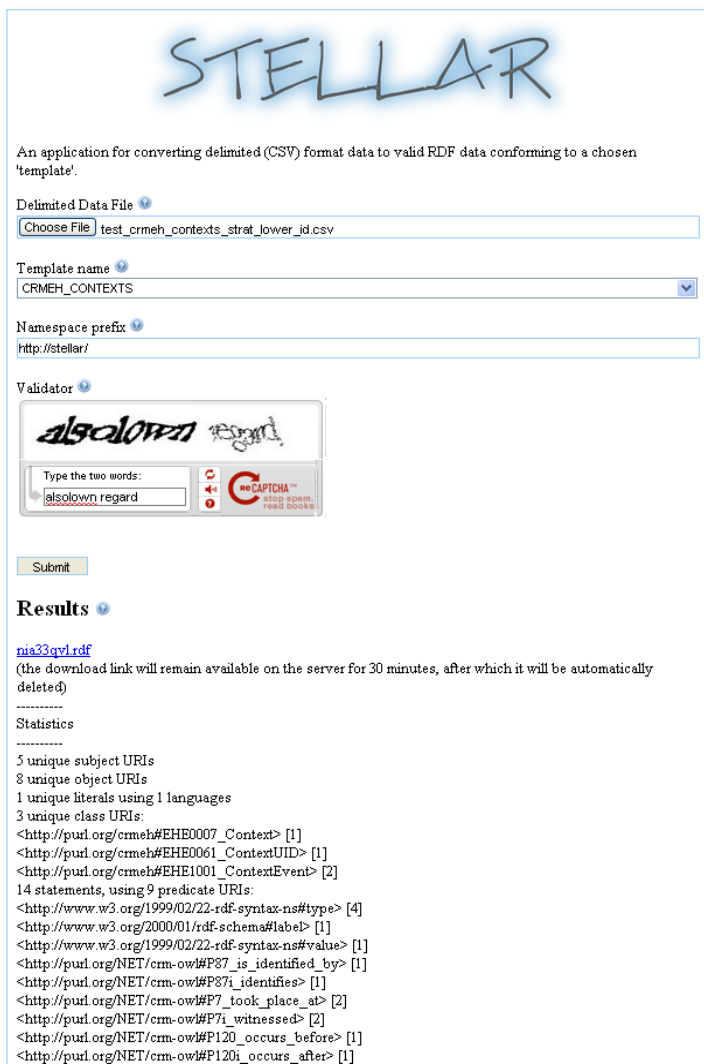


```
STELLAR.Console v1.0
<type HELP for instructions>
STELLAR.Console>help
For information on a particular command type HELP command
DBNAMES      List databases in a directory
DBTABLES     List tables in a database
DBCOLUMNS   List columns in a database table
DBROWCOUNT  Count rows in a database table
TAB2DB       Import tab delimited file to database table
CSU2DB       Import comma delimited file to database table
SQL2CSU      Run SQL, export result to CSU file
SQL2TAB      Run SQL, export result to tab delimited file
CSU2RDF      Convert comma delimited file to RDF file (via template)
TAB2RDF      Convert tab delimited file to RDF file (via template)
SQL2RDF      Run SQL, export result to RDF file (via template)
TEMPLATES    Display list of possible templates to use
CSU2STATS    Display statistics for comma delimited file
RDF2STATS    Display statistics for RDF file
EXIT         Exit the application
STELLAR.Console>
```

# Data conversions




# STELLAR.Web application





**STELLAR**


An application for converting delimited (CSV) format data to valid RDF data conforming to a chosen 'template'.

Delimited Data File 


test\_crneh\_contexts\_strat\_lower\_id.csv


Template name 




CRMEH\_CONTEXTS 


Namespace prefix 

http://stellar/

Validator 



Type the two words:    

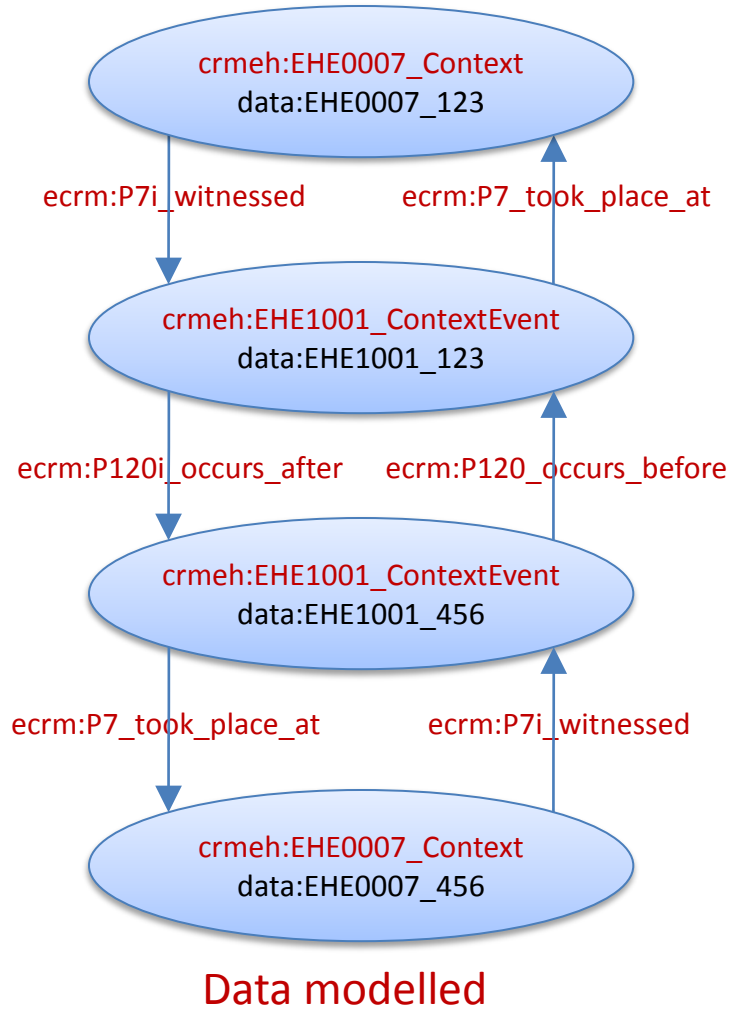
**Results** 

[nia33qv1.rdf](#)  
(the download link will remain available on the server for 30 minutes, after which it will be automatically delete d)

-----  
Statistics  
-----  
5 unique subject URIs  
8 unique object URIs  
1 unique literals using 1 languages  
3 unique class URIs:  
<http://purl.org/crmeh#EHE007\_Context> [1]  
<http://purl.org/crmeh#EHE0061\_ContextUID> [1]  
<http://purl.org/crmeh#EHE1001\_ContextEvent> [2]  
14 statements, using 9 predicate URIs:  
<http://www.w3.org/1999/02/22-rdf-syntax-ns#type> [4]  
<http://www.w3.org/2000/01/rdf-schema#label> [1]  
<http://www.w3.org/1999/02/22-rdf-syntax-ns#value> [1]  
<http://purl.org/NET/crm-ow#P87\_is\_identified\_by> [1]  
<http://purl.org/NET/crm-ow#P87i\_identifies> [1]  
<http://purl.org/NET/crm-ow#P7\_book\_place\_at> [2]  
<http://purl.org/NET/crm-ow#P7i\_witnessed> [2]  
<http://purl.org/NET/crm-ow#P120\_occurs\_before> [1]  
<http://purl.org/NET/crm-ow#P120i\_occurs\_after> [1]

- Browser based application
- Subset of STELLAR.Console functionality
  - CSV2RDF
  - RDFStats
- Using same (internal) templates
- Input CSV from any external application
- No registration or login

# Example input / output



context_id	strat_lower_id
123	456

Template input

```

<crmeh:EHE0007_Context rdf:about="http://stellar/EHE0007_123"/>
<crmeh:EHE0007_Context rdf:about="http://stellar/EHE0007_456"/>
<crmeh:EHE1001_ContextEvent rdf:about="http://stellar/EHE1001_123"/>
<crmeh:EHE1001_ContextEvent rdf:about="http://stellar/EHE1001_456"/>
<rdf:Description rdf:about="http://stellar/EHE1001_123">
  <ecrm:P7_took_place_at rdf:resource="http://stellar/EHE0007_123"/>
</rdf:Description>
<rdf:Description rdf:about="http://stellar/EHE0007_123">
  <ecrm:P7i_witnessed rdf:resource="http://stellar/EHE1001_123"/>
</rdf:Description>
<rdf:Description rdf:about="http://stellar/EHE1001_456">
  <ecrm:P7_took_place_at rdf:resource="http://stellar/EHE0007_456"/>
</rdf:Description>
<rdf:Description rdf:about="http://stellar/EHE0007_456">
  <ecrm:P7i_witnessed rdf:resource="http://stellar/EHE1001_456"/>
</rdf:Description>
<rdf:Description rdf:about="http://stellar/EHE1001_456">
  <ecrm:P120_occurs_before rdf:resource="http://stellar/EHE1001_123"/>
</rdf:Description>
<rdf:Description rdf:about="http://stellar/EHE1001_123">
  <ecrm:P120i_occurs_after rdf:resource="http://stellar/EHE1001_456"/>
</rdf:Description>

```

Template output

# Using the RDF data

```

<crmeh:EHE0007_Context rdf:about="http://stellar/silchester/EHE0007_1017">
  <rdfschema:label>1017</rdfschema:label>
  <ns:P87_is_identified_by>
    <crmeh:EHE0061_ContextUID rdf:about="http://stellar/silchester/EHE0061_1017">
      <rdf:value>1017</rdf:value>
      <ns:P87i_identifies rdf:resource="http://stellar/silchester/EHE0007_1017" />
    </crmeh:EHE0061_ContextUID>
  </ns:P87_is_identified_by>
  <ns:P7i_witnessed rdf:resource="http://stellar/silchester/EHE1001_1017" />
</crmeh:EHE0007_Context>
<crmeh:EHE1001_ContextEvent rdf:about="http://stellar/silchester/EHE1001_1017">
  <ns:P7_took_place_at rdf:resource="http://stellar/silchester/EHE0007_1017" />
  <ns:P120i_occurs_after rdf:resource="http://stellar/silchester/EHE1001_1015" />
  <ns:P120i_occurs_after rdf:resource="http://stellar/silchester/EHE1001_1302" />
</crmeh:EHE1001_ContextEvent>
  
```

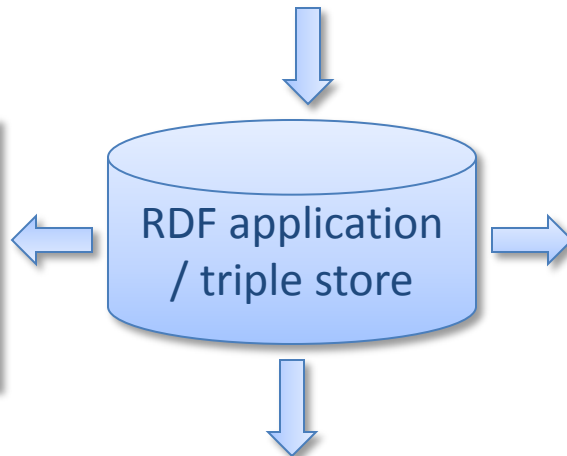
RDF data output from STELLAR

```

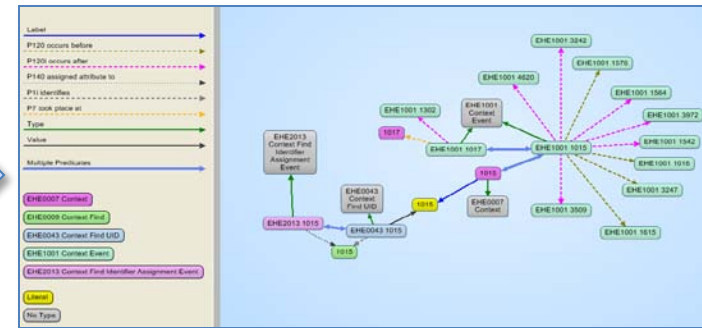
PREFIX ecrm: <http://erlangen-crm.org/101001/>
PREFIX crmeh: <http://purl.org/crmeh#>

SELECT DISTINCT ?g
WHERE
{
  ?f a crmeh:EHE0009_ContextFind;
  ecrm:P45_consists_of [rdfs:label 'Animal Bone'];
  ecrm:P53_has_former_or_current_location ?c .
  ?c a crmeh:EHE0007_Context;
  ecrm:P89_falls_within ?g .
  ?g a crmeh:EHE0005_Group .
}
LIMIT 5
  
```

SPARQL queries



Linked data browsers



RDF enabled applications

# User defined templates

```
isbn,title,author
1234567890, Winnie the Pooh, A.A. Milne
2345678901, Alice in Wonderland, Lewis Carrol
3456789012, The Cat in the Hat, Dr. Seuss
```

Delimited (CSV) data file

CSV2STG

CSV2STG

```
group books_to_html;
HEADER() ::= <<
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<html>
<head>
<title>List of books</title>
</head>
<body>
>>
FOOTER() ::= "</body></html>"
MAIN(data) ::= <<
$header()$
<h1>List of books:</h1>
<table border=1>
$<data:{ record |
<tr>
<td>$record.isbn$</td>
<td>$record.title$</td>
<td>$record.author$</td>
</tr>
}$
</table>
$FOOTER()$
>>
```

```
group books_to_rdf;
HEADER() ::= <<
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
xmlns:dc="http://purl.org/dc/elements/1.1/">
>>
FOOTER() ::= "</rdf:RDF>"
MAIN(data) ::= <<
$header()$
$<data:{ record |
<rdf:Description rdf:about="http://tmp/
<dc:identifier>ISBN $record.isbn$
<dc:title>$record.title$</dc:title>
<dc:creator>$record.author$</dc:creator>
<dc:format>Book</dc:format>
</rdf:Description>
}$
$FOOTER()$
>>
```

Template to convert the data to RDF

Template to convert the data to HTML

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<html>
<head>
<title>List of books</title>
</head>
<body>
<h1>List of books:</h1>
<table border=1>
<tr>
<td>1234567890</td>
<td>Winnie the Pooh</td>
<td>A.A. Milne</td>
</tr>
<tr>
<td>2345678901</td>
<td>Alice in Wonderland</td>
<td>Lewis Carrol</td>
</tr>
<tr>
<td>3456789012</td>
<td>The Cat in the Hat</td>
<td>Dr. Seuss</td>
</tr>
</table>
</body></html>
```

## List of books:

1234567890	Winnie the Pooh	A.A. Milne
2345678901	Alice in Wonderland	Lewis Carrol
3456789012	The Cat in the Hat	Dr. Seuss

```
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
xmlns:dc="http://purl.org/dc/elements/1.1/">
<rdf:Description rdf:about="http://tmp/1234567890">
<dc:identifier>ISBN 1234567890</dc:identifier>
<dc:title>Winnie the Pooh</dc:title>
<dc:creator>A.A. Milne</dc:creator>
<dc:format>Book</dc:format>
</rdf:Description>
<rdf:Description rdf:about="http://tmp/2345678901">
<dc:identifier>ISBN 2345678901</dc:identifier>
<dc:title>Alice in Wonderland</dc:title>
<dc:creator>Lewis Carrol</dc:creator>
<dc:format>Book</dc:format>
</rdf:Description>
<rdf:Description rdf:about="http://tmp/3456789012">
<dc:identifier>ISBN 3456789012</dc:identifier>
<dc:title>The Cat in the Hat</dc:title>
<dc:creator>Dr. Seuss</dc:creator>
<dc:format>Book</dc:format>
</rdf:Description>
</rdf:RDF>
```



# User defined template – CLAROS specific example

```
// record.production_material_uri - URI for this material
// record.production_material_name - Name of material
// record.production_material_name_uri - URI for material name
// record.augmentation_feature_uri - A URI identifying this feature
// record.augmentation_feature_label - A short textual label for the feature
// record.augmentation_feature_description - A description of the feature

MAIN(data) ::= <<
$CLAROS_HEADER()$
$data:{ record |
<crm:E22_Man-Made_Object rdf:about="$record.object_uri$">

  $if(record.object_id)$
    <crm:P48_has_preferred_identifier>
      <crm:E42_Identifier>
        <rdf:value>$record.object_id$</rdf:value>
      </crm:E42_Identifier>
    </crm:P48_has_preferred_identifier>
  $endif$

  $if(record.object_label)$
    <rdfs:label>$record.object_label$</rdfs:label>
  $endif$

  $if(record.object_title)$
    <crm:P102_has_title>
      <crm:E35_Title>
        <rdf:value>$record.object_title$</rdf:value>
      </crm:E35_Title>
    </crm:P102_has_title>
  $endif$

  $if(record.object_type)$
    <crm:P2_has_type>
      $if(record.object_type_uri)$
        <crm:E55_Type rdf:about="$record.object_type_uri$" />
      $else$
        <crm:E55_Type>
          <rdf:value>$record.object_type$</rdf:value>
          <crm:P127_has_broader_term rdf:resource="&claros;ObjectType" />
        </crm:E55_Type>
      </crm:P2_has_type>
    $endif$
  $endif$
}
```

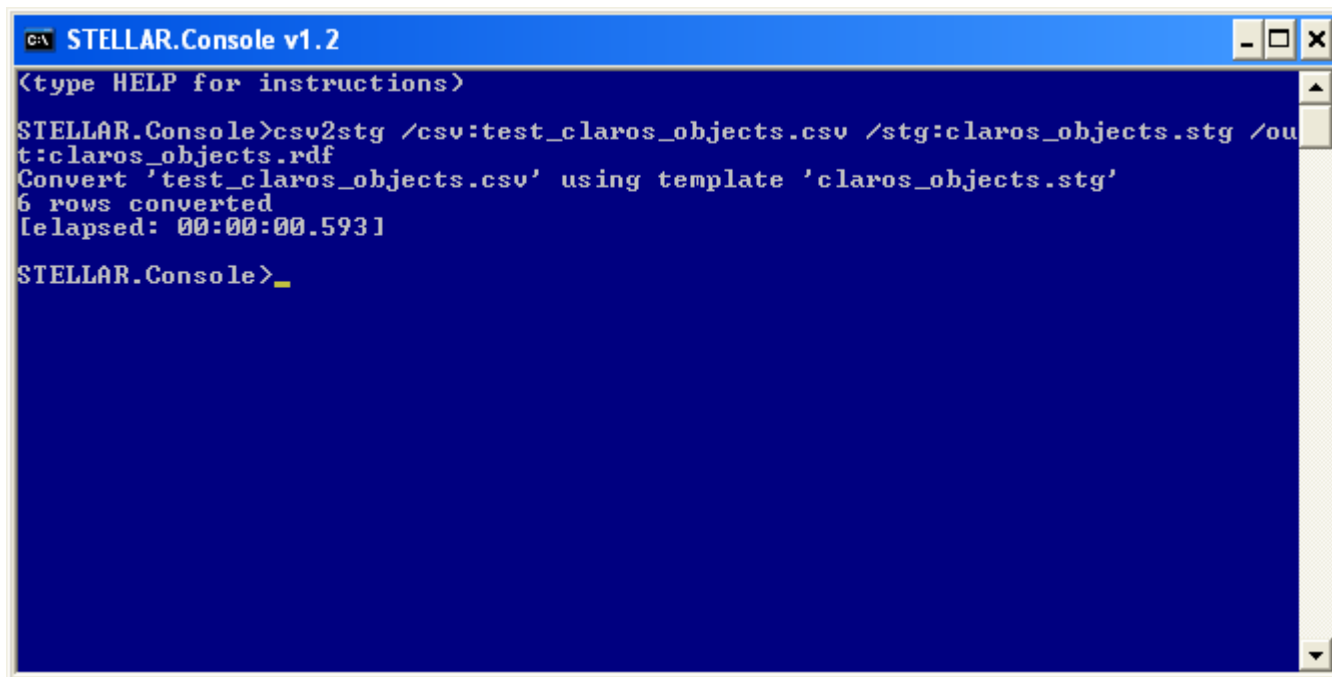
claros\_objects.stg

## Data fields recognised:

- object\_uri
- object\_id
- object\_label
- object\_title
- object\_type\_uri
- object\_type
- find\_place\_uri
- find\_place\_label
- thumb\_uri
- thumb\_label
- image\_uri
- image\_label
- page\_uri
- reference
- object\_condition
- object\_condition\_uri
- attributed\_fabric
- attributed\_shape
- attributed\_technique
- attributed\_artist
- attributor
- production\_label
- production\_period\_uri
- production\_period\_label
- production\_period\_begin
- production\_period\_end
- production\_period\_time\_uri
- production\_material
- production\_material\_uri
- production\_material\_name
- production\_material\_name\_uri
- augmentation\_feature\_uri
- augmentation\_feature\_label
- augmentation\_feature\_description

# CLAROS specific template - testing

Command: `CSV2STG /csv:"file" /stg:"file" /out:"file"`



```
STELLAR.Console v1.2
<type HELP for instructions>
STELLAR.Console>csv2stg /csv:test_claros_objects.csv /stg:claros_objects.stg /out:claros_objects.rdf
Convert 'test_claros_objects.csv' using template 'claros_objects.stg'
6 rows converted
[elapsed: 00:00:00.593]
STELLAR.Console>_
```

# CLAROS specific template - result

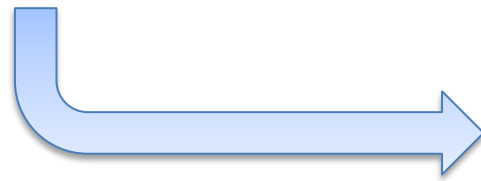
object_uri	object_id	object_la	object_tit	object_ty	thumb_ur	thumb_la	image_ur	image_l
http://cla	101	object 10:			http://cla	label for t	http://cla	label fo
http://cla	102	object 10:	title for o	type for o	http://cla	label for t	http://cla	label fo
http://cla	103	object 10:	title for o	type for o	http://cla	label for t	http://cla	label fo
http://cla	104	object 10:	title for o	type for o	http://cla	label for t	http://cla	label fo
http://cla	105	object 10:	title for o	type for o	http://cla	label for t	http://cla	label fo
http://cla	106	object 10:	title for o	type for o	http://cla	label for t	http://cla	label fo

ec productio	productio
ris http://cla	Vespasian
ris http://cla	Roman
ris http://cla	Tetricus I
ris http://cla	Probus
ris http://cla	Aurelian
ris http://cla	Quintillus

Test (CSV) data



claros\_objects.stg



```
<?xml version="1.0"?>
<!DOCTYPE rdf:RDF [
  <ENTITY rdf:"http://www.w3.org/1999/02/22-rdf-syntax-ns#">
  <ENTITY rdfs:"http://www.w3.org/2000/01/rdf-schema#">
  <ENTITY xsd:"http://www.w3.org/2001/XMLSchema#">
  <ENTITY owl:"http://www.w3.org/2002/07/owl#">
  <ENTITY crm:"http://purl.org/NET/crm-owl#">
  <ENTITY claros:"http://purl.org/NET/Claros/vocab#">
  <ENTITY claros_place:"http://purl.org/NET/Claros/place#">
  <ENTITY claros_placeid:"http://purl.org/NET/Claros/placeid#">
]
<rdf:RDF xmlns:claros="http://purl.org/NET/Claros/vocab#" xmlns:crm:"http://purl.org/NET/crm-owl#"
  xmlns:owl:"http://www.w3.org/2002/07/owl#" xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" xmlns:xsd="http://www.w3.org/2001/XMLSchema#">
  <crm:E22_Man-Made_Object rdf:about="http://claros/amp/1">
    <crm:P48_has_preferred_identifier|
      <crm:E42_Identifier|
        <rdf:value>101 </rdf:value>
      </crm:E42_Identifier>
    </crm:P48_has_preferred_identifier>
    <rdfs:label>object 101 </rdfs:label>
    <crm:P16i_was_used_for|
      <crm:E7_Activity|
        <crm:P2_has_type rdf:resource="&claros;Event_FindObject"/>
        <crm:P7_took_place_at rdf:resource="http://claros/amp/222"/>
      </crm:E7_Activity>
    </crm:P16i_was_used_for>
    <crm:P138i_has_representation|
      <crm:E38_Image rdf:about="http://claros/amp/thumb101">
        <rdfs:label>label for thumb 101 </rdfs:label>
        <crm:P2_has_type rdf:resource="&claros;Thumbnail"/>
      </crm:E38_Image>
    </crm:P138i_has_representation>
    <crm:P138i_has_representation|
      <crm:E38_Image rdf:about="http://claros/amp/image101">
        <rdfs:label>label for image 101 </rdfs:label>
      </crm:E38_Image>
    </crm:P138i_has_representation>
    <crm:P70i_is_documented_in rdf:resource="http://claros/amp/page101"/>
    <crm:P67i_is_referred_to_by|
      <crm:E31_Document|
        <rdfs:label>http://claros/amp/reference101 </rdfs:label>
      </crm:E31_Document>
    </crm:P67i_is_referred_to_by>
    <crm:P44_has_condition|
      <crm:E3_Condition_State|
        <crm:P2_has_type|
          <crm:E55_Type rdf:about="http://claros/amp/555">
            <rdf:value>condition label 1 </rdf:value>
          </crm:E55_Type>
        </crm:P2_has_type>
      </crm:E3_Condition_State>
    </crm:P44_has_condition>
  </crm:E22_Man-Made_Object>

```

Output (RDF) data

# STELLAR

Ceri Binding  
Hypermedia Research Unit, University of Glamorgan, Wales

<http://hypermedia.research.glam.ac.uk/kos/STELLAR/>



Arts & Humanities  
Research Council



ARCHAEOLOGY  
DATA SERVICE



ENGLISH HERITAGE