

STAR

Semantic Technologies for Archaeological Resources

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



Arts & Humanities
Research Council

DANMARKS 
BIBLIOTEKSSKOLE

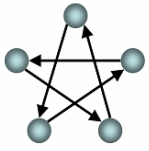


ENGLISH HERITAGE

University of Glamorgan

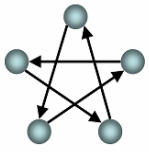
you live, you learn



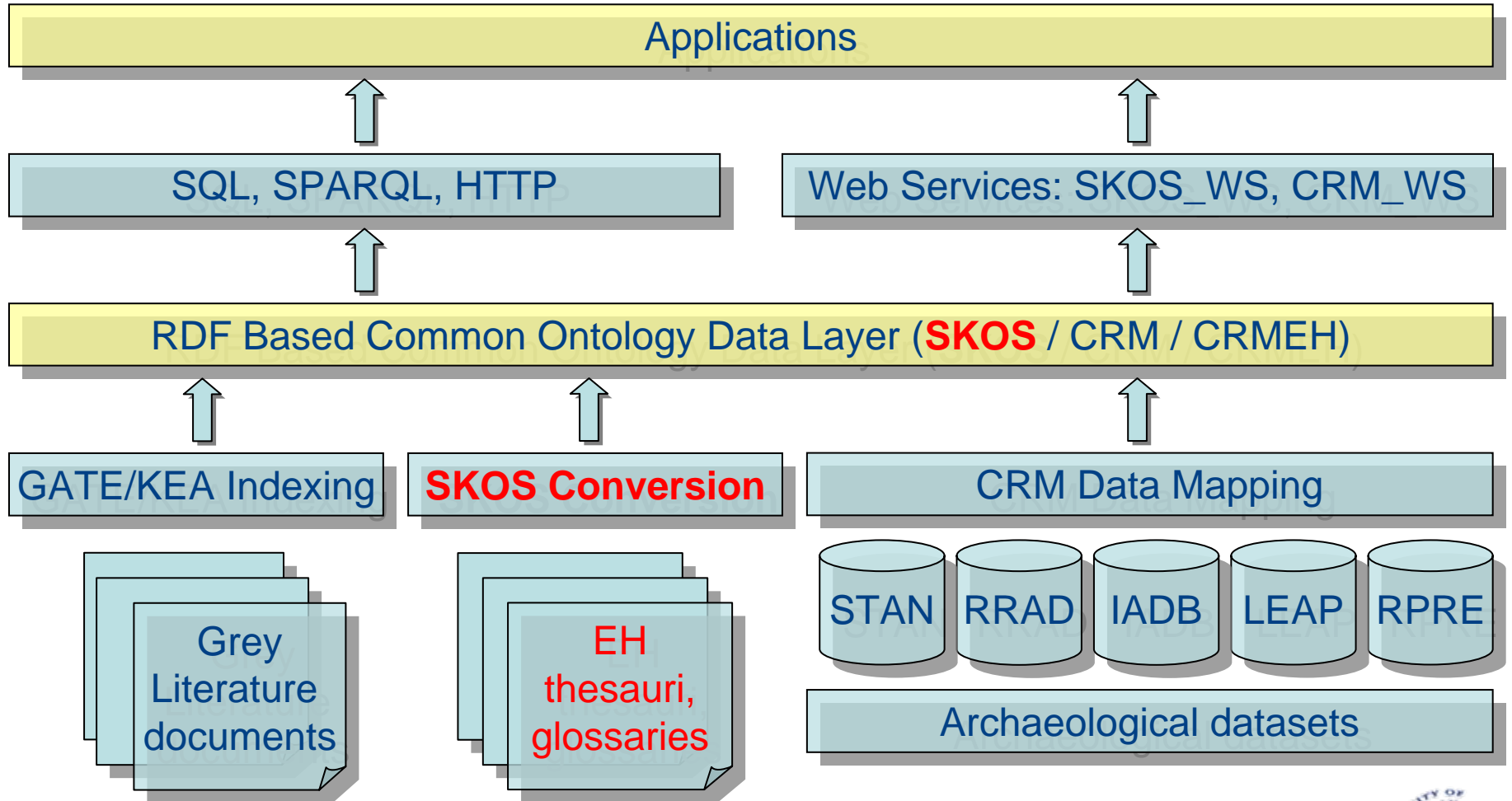


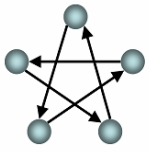
STAR - Project Outline

- 3 year AHRC funded project
- Started January 2007, finish December 2010
- Collaborators
 - English Heritage
 - RSLIS Denmark
- Aim – *“To investigate the potential of semantic terminology tools for widening access to digital archaeology resources, including disparate datasets and associated grey literature”*

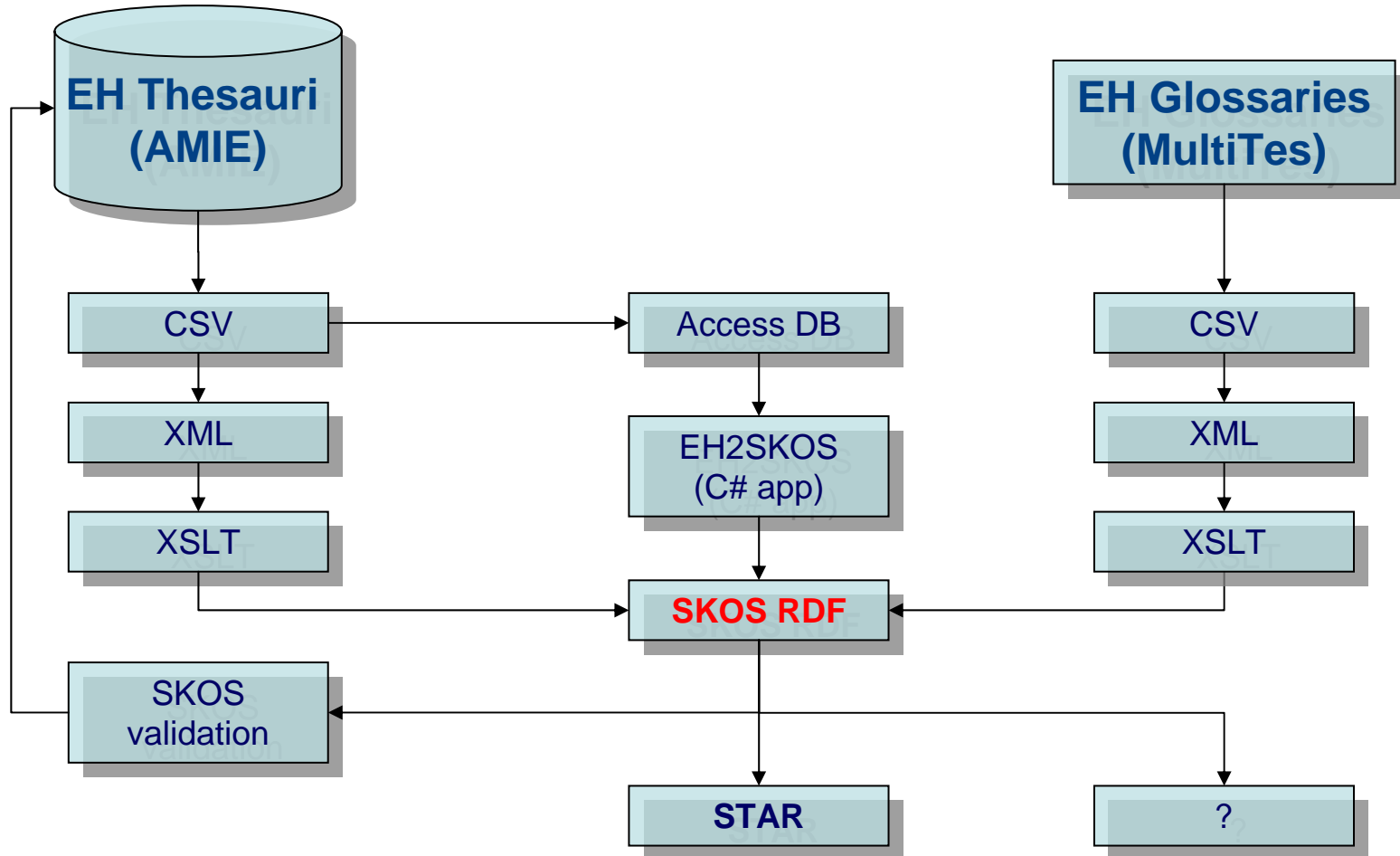


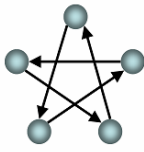
STAR - General Architecture



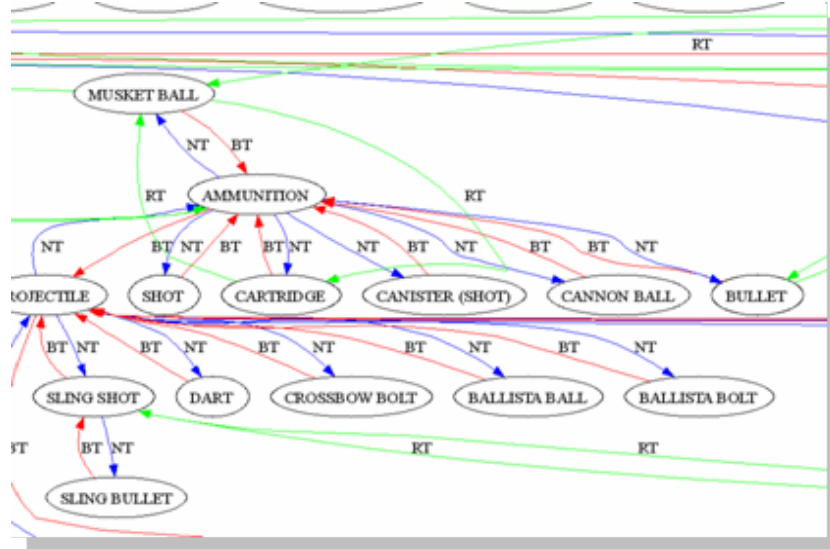


Converting Thesauri and Glossaries to SKOS



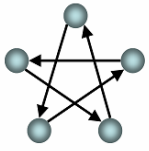


Thesauri Converted to SKOS RDF



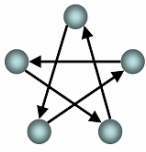
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  <skos:broader rdf:resource="#95138"/>
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</skos:Concept>
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  <skos:prefLabel>HANGER</skos:prefLabel>
  <skos:broader rdf:resource="#95221"/>
  <skos:scopeNote>A type of sword often used by infantry.</skos:scopeNote>
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  <skos:prefLabel>SABRE</skos:prefLabel>
  <skos:broader rdf:resource="#95221"/>
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  <skos:related rdf:resource="#97232"/>
  <skos:scopeNote>Articles used in charging guns and ordnance.</skos:scopeNote>
</skos:Concept>
```





SKOS Conversion Issues

- Modelling of guide terms e.g. *<investigative techniques>*
 - Arrays / flags / *<brackets>* ?
- Creation of unique identifiers
 - URN / URI / URL ?
 - Persistence
 - Dereferencing
- SKOS versioning
 - SKOS 2005 - <http://www.w3.org/2004/02/skos/core#>
 - SKOS 2008 - <http://www.w3.org/2008/05/skos#>
 - Deprecated features
 - Backward compatibility
 - Changing URI prefixes



SKOS_WS - Web Service API

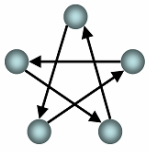
SKOS_WS
+GetTopmostConcepts(conceptScheme: String): Concept[] +GetConceptSchemes(): ConceptScheme[] +GetConcept(uri: String): Concept +GetAllConceptRelatives(uri: String): ConceptRelative[] +ExpandConcept(uri: String, costBT: Float, costNT: Float, costRT: Float): ConceptRelative[] +GetConceptScheme(uri: String): ConceptScheme +GetKeywordMatch(keyword: String, includeNPT: Boolean): ConceptRelative[]

Concept
+definition: String = "" +example: String = "" +externalID: String = "" +inScheme: String = "" +nonPreferredLabels: String[*] +preferredLabel: String = "" +scopeNote: String = "" +uri: String = ""

ConceptRelative
+concept: Concept +relationship: String = "" +distance: Double = 0

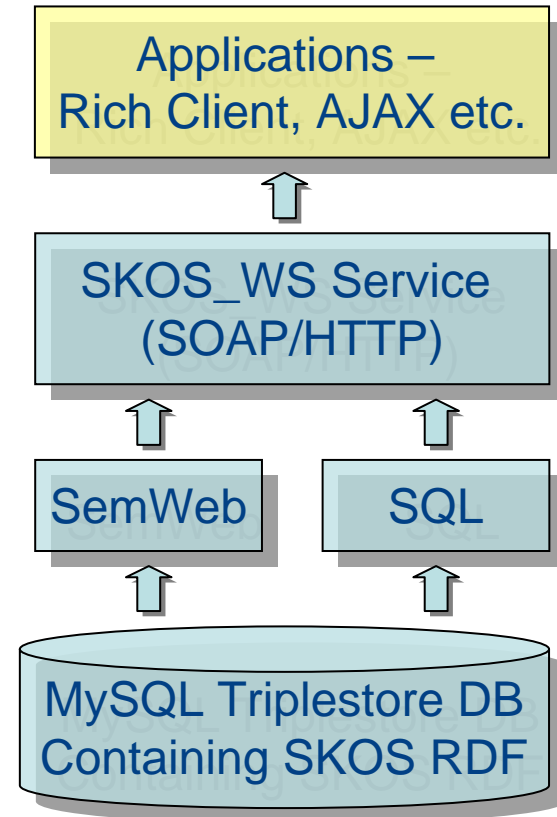
ConceptScheme
+uri: String = "" +title: String = "" +description: String = ""

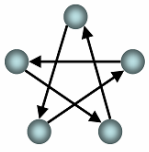




SKOS_WS - Web Service Implementation

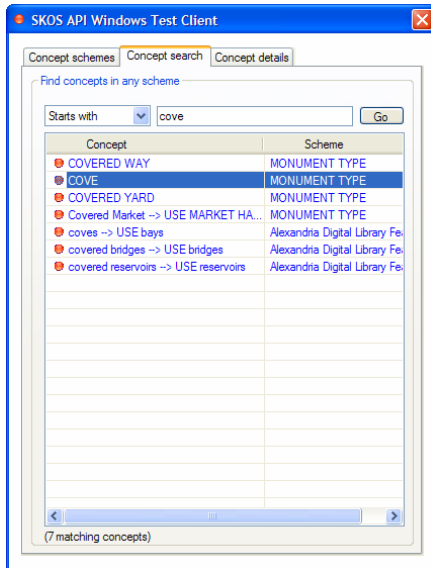
- Service implemented in C#, using “SemWeb” RDF Library (<http://razor.occams.info/code/semweb/>)
- MySQL database backend holds RDF triples representing multiple SKOS thesauri and glossaries – facilitates cross searching of thesauri
- Full-text index added for partial matching on literal strings



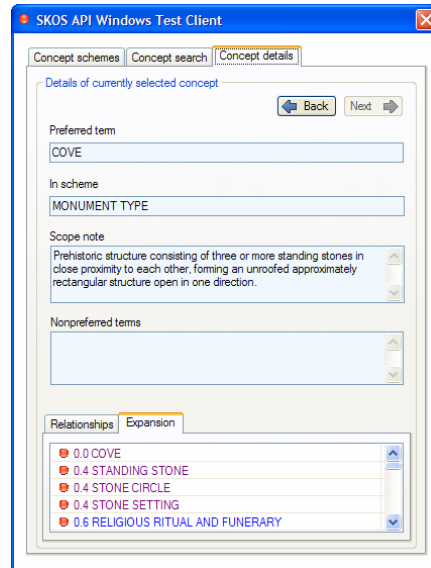


SKOS_WS - Client Application

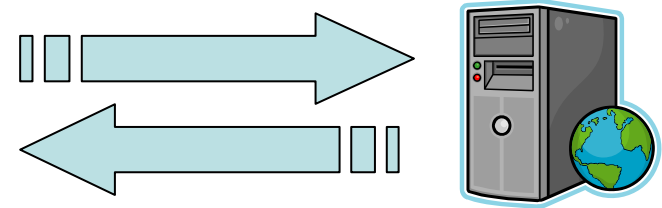
- MS ClickOnce deployment
- URL: http://reswin1.isd.glam.ac.uk/STAR/SKOS_WS_EH/SKOS_WSClient.htm



Search across multiple controlled vocabularies



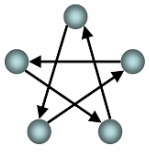
Display details of selected concepts



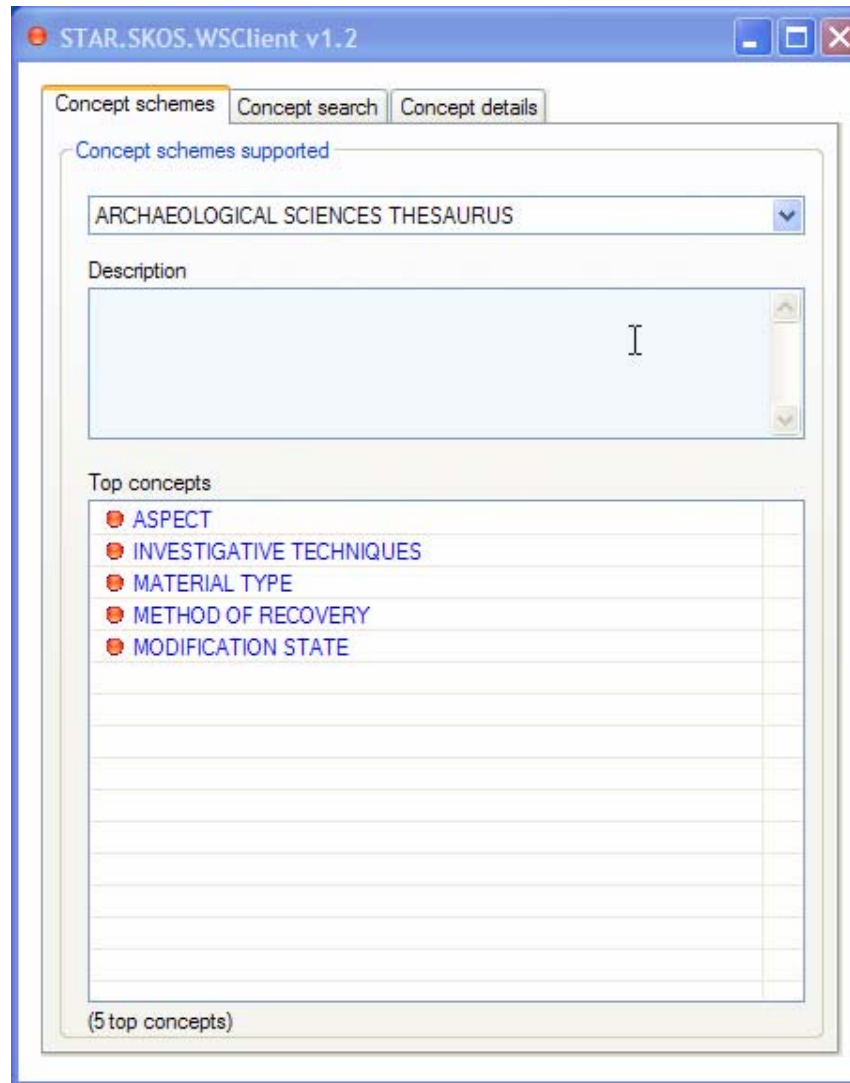
SKOS_WS Service

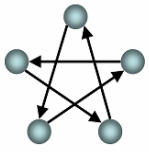
SKOS Client Application(s)



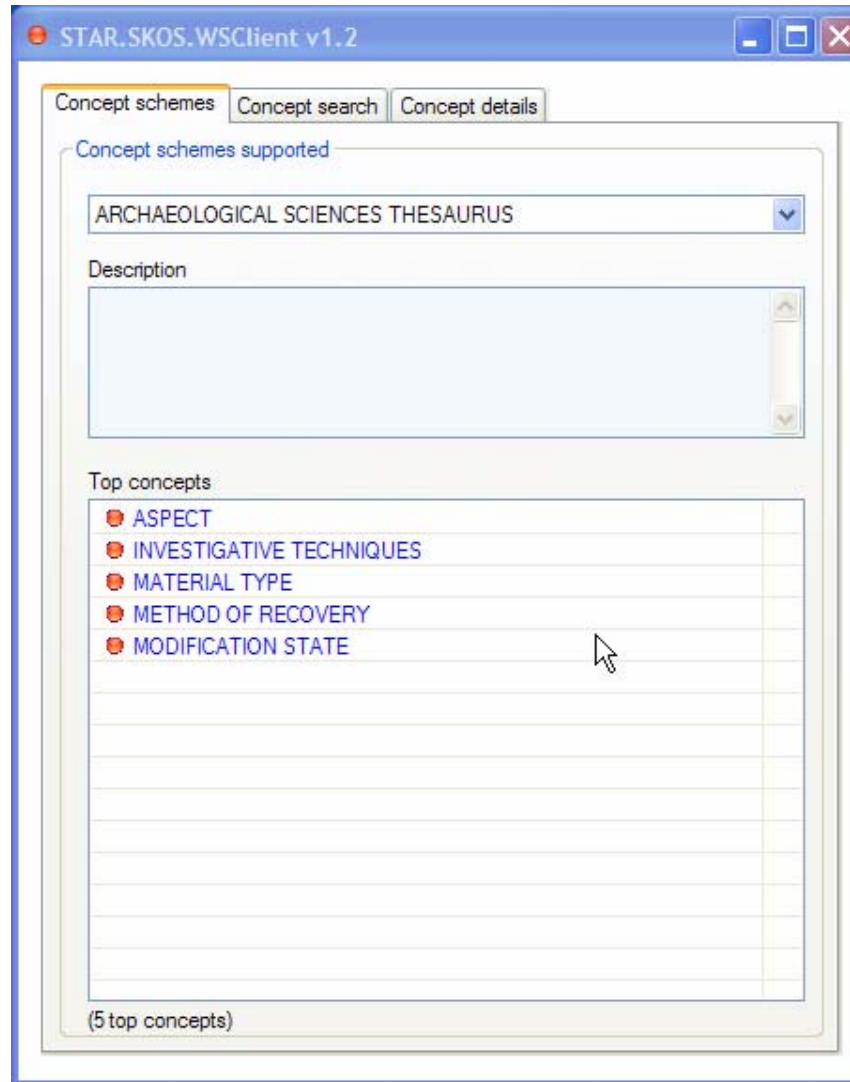


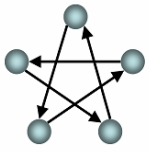
SKOS_WS Client – Browse Concept Schemes





SKOS_WS Client – Search for Concepts





SKOS_WS Client – Navigate via Expansion

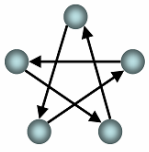
The screenshot shows the STAR.SKOS.WSClient v1.2 application window. It has three tabs: 'Concept schemes', 'Concept search', and 'Concept details'. The 'Concept details' tab is active, showing the following information:

- Preferred term:** CORN DRYING KILN
- In scheme:** MONUMENT TYPE
- Scope note:** A building found in conjunction with a WATERMILL, used for drying com before it is ground.
- Nonpreferred terms:** (Empty list)

At the bottom, there are two sub-tabs: 'Relationships' and 'Expansion'. The 'Expansion' sub-tab is active, displaying a list of related concepts:

- 0.0 CORN DRYING KILN
- 0.4 CORN DRYING OVEN
- 0.4 CORN MILL
- 0.6 DRYING KILN
- 0.6 FOOD PROCESSING SITE
- 0.8 GRANARY

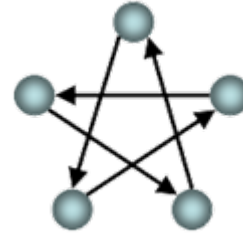




Using SKOS_WS - Term Suggestion

Property	Text





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