Kino : Making Semantic Annotations Easier

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What is Kino?

• A search engine of sort currently specialized for scientific domains
  – Semantic Annotation (using SA-REST) for services and documents (or any Web resources)
  – Indexing system
  – Uses SA-REST, Faceted search
  – integrates with NCBO

• Tools include browser plugin & back-end server
Two use cases

• **service lookups:** eg: BioCatalogue returns about 75 Web services for the search term “gene prediction”. However, it returns only 20 Web services for the term “gene finding”, even though gene prediction and gene finding are synonyms.

• **supporting the whole cycle of annotation and curation at Sangers**
Use case 1: Service lookups for gene data

1. Gene sequence Comparison
2. Cellular location determination
3. Function prediction

Tagging is not consistent, keyword based Lookups are not accurate and do not take synonyms into account!
Use case 2: Scientific Document Annotation

- Read Published Paper
- Add notes via a browser plugin
- Look up terms and update the notes
- Are the annotations complete?
  - yes: Submit annotations to the database
  - no: (loop back)

Long and cumbersome cycle of term lookup and updates. This done by scientists – is there a way to make this process easier for them?

Courtesy of Sanger Institute UK
How does it work?

NCBO Ontology Access API
NCBO Ontology Repository
Kino Search API
Kino Index API
SOLRJ
Kino Search Interfaces
SOLR Web Interface
Lucene Index
Kino Back-end
NCBO REST Service
Kino Web Front-end
SOLRJ
Kino Browser Plugin
Kino browser based annotation
Web Pages
Other Front-ends
Kino Web Front-end
What did we learn?

• Back-end automatically including even the synonyms make a significant improvement in search recall.

• Having integrated tooling enables faster cycles in scientific literature annotations.
Check out our poster for more details

Video demo at
http://wiki.knoesis.org/index.php/Kino

Paper at