Reviewer's report

Title: AGUIA - Autonomous Graphic User Interface Assembly - for clinical trial semantic data services

Version: 1 Date: 12 April 2010

Reviewer: Prakash Nadkarni

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Major Compulsory Revisions:

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The paper does a very poor job of communicating its ideas, and other than the mention that the work was related to clinical trials, little effort is made to justify the paper's submission to a biomedical informatics journal.

It appears that the authors have developed a widget toolkit that allows the assembly of interfaces (in the manner of competing frameworks by vendors such as Adobe, Microsoft and Google), where the interface is specified by high-level tags with an XML syntax (e.g., in Microsoft's ASP.NET, one can use a syntax like:

<asp:TreeView [property-settings] [data-binding statements] />

while here

<AGUIA:widget .... /> is used.)

No description is provided in the text: one has to look at Figure 1 to get a feel for the widget-set.

Despite this weakness, this reviewer would be favorably inclined if the authors were able to demonstrate that their work has resulted in something that is operational and has a user base. Unfortunately, the authors provided a URL that cannot be evaluated because no user name and password was supplied to the reviewer to enable one to get past the login screen. On the login screen itself, the authors misspell "authority" as "autority", so it is uncertain that this site has even been beta-tested with real users- it is definitely NOT in production use.

As a result, I fail to be convinced that figure 3 represents an operational user interface. In any case, in this figure the icons for the folders on the left are not arranged logically - histology, baseline PET and PET (positron emission tomography) appear before demographics and medical history, and there does not appear to be some other convention (e.g., alphabetical order) to suggest a reason for this arrangement - PET is used very infrequently for the majority of patients in a clinical trial, given its expense: it is hardly the first thing a user wants to see on a patient.

Helena Deus and Jonas Almeida, the 2nd and senior authors of the paper, are
also the key individuals in the S3DB project (this connection was not apparent from the text of the paper, until I went to the S3DB site and looked at the "people" list) - so again, it is uncertain that S3DB has been actually tested in production. It is nice that S3DB is open source, but how does it compared to other RDF-based offerings such as Oracle's with respect to performance and scalability? It is also not clear that there is an S3DB user community (as has developed for open-source offerings like MySQL and Berkeley DB). Does S3DB handle transactions robustly, and support audit trails (these features are important for real biomedical data).'

In the absence of further information, the justification for the use of S3DB (other than that it was homegrown) are highly unclear. The fact that something is REST-based or uses RDF does not edify it, any more than if it used a relational database engine or was built with the aid of UML 2.0 tools. What matters is its fitness for a given purpose, and it is not clear that this fitness has been demonstrated.

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I have no competing interests