

# Semantic Infrastructure Concept of Operations Alternatives

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## General Approach

The general annual approach to be taken by the caBIG® Semantic Infrastructure is as follows:

- Evaluate results of previous year's projects with emphasis on addressing shortcomings, reducing the barriers to adoption, adaptation and deployment of the semantic infrastructure
- Align priorities, scope, schedule with caBIG® enterprise projects and priorities via C-Team guidance.
- Engage Clinical Trials and Life Science Governance Groups regarding semantics needs and project priorities and participation
- Identify existing projects to be continued/halted and new projects to be started in the coming year.
- Design projects relying on E-CAT for conformance and compliance guidance before and during project execution following ECCF process.
- Rely upon caBIG® cross cutting work group review for compliance certification.
- Maintain semantic integrity within clinical and research domains and extend semantic support to include behavioral semantics and semantic based reasoning as needed to support enterprise priorities.
- Engage with standards development organizations to influence and use critical existing and emerging health informatics, IT metadata and services standards.

## Risks

### Poor 3rd Party Adoption Risks

The caBIG® approach to semantics would achieve highest success if adoption increases over time. This includes 3rd party development of implementations conforming to the semantics approach, as well as using the caBIG® implementations for storing data elements, data models, controlled vocabulary, etc. Use of the ECCF to produce implementation-independent specifications describing our semantics should help to reduce the risk of 3rd party implementation. Gathering and responding to user needs during all phases of the ECCF process should help to assure that semantics resources are suited to community needs. Semantic services and repositories developed and maintained by CBIIT which form "reference implementation", and provision for a lot of training and outreach to the community, should help reduce the risk of the community failing to use the semantics resources.

### ARRA Driven Risks

The emphasis on EHR adoption and use and related national initiatives has increased the breadth of support the caBIG® Semantic Infrastructure must address. Related changes such as introduction of the ECCF process offer adaptive advantages in the context of the increased scope. However, the combination of evolving organizational practices and greatly expanded scope increases both technical and management risk. The best mitigation for this risk is to pursue development initiatives in an iterative fashion and to continually assess the progress and programmatic value of ongoing initiatives so that initiatives can be adjusted. The Semantic Infrastructure and Operations group will rely heavily on the C-Team/E-CAT and other caBIG Governance Groups in pursuing this risk management strategy.

### ECCF/CAT Risks

This is a new process that is not yet well defined nor understood by those who are being asked to employ it. The organizational changes required to understand and employ any new process takes time, more so with a complex, novel process that has not been used elsewhere previously and which affects every development initiative enterprise wide.

There are no existing supporting tools or standard documentation. It is unclear what the artifacts should contain, how they are used, or what the LOE will be to create and review them. There is a risk that the process itself will produce more documentation and artifacts than current government staff can absorb and that decision making will get bottlenecked, forcing delays or even decisions made without enough information. Management of this risk requires the ECCF to be operationalized as soon as possible. Training on what following the ECCF means, operationally, for the Semantic Infrastructure team must be developed on an expedited basis.

## **Coordination Risks**

Even while the Infrastructure Team is pursuing its initiatives, the domain workspaces will be creating solutions that will be expected to interoperate/integrate /conform with the semantic infrastructure. The possibilities for SNAFUs are endless. Absent an existing formal mechanism for coordination, management of this risk requires that Semantics Team managers become involved in the Domain Governance Groups as well as the Composite Architecture Teams, and that they establish clear and continual exchange of information about the relationships of initiatives and effects of decisions. Prompt access to the C-Team for mediation and decisions about priorities and direction will also be needed.