GridWise™ Architecture Council Interoperability Context-Setting Framework Position Paper

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Question 1:
Are the Categories Sufficiently Comprehensive and/or Granular?
Or, Is There a Missing Category?

The range of the Framework is very broad: from bit-level protocols through grand policyissues. While I appreciate the rationale for such a large scope, I wonder if the attempt to span such a range with just eight Interoperability Categories (or these specific Categories) couldn't be improved. In particular, while there is symmetry in having four categories associated with "Business and Above" (Categories 5 through 7) and four associated with "Implementation and Technology." I encountered what felt like a discontinuity as I traversed the stack (upwards or downwards). While the upper four Categories seemed to flow smoothly, I felt that there was a sudden leap from "Business Knowledge" to "Message Data Structures." From there on, the technical levels made reasonable sense. What seems to be possibly missing is a place to describe the actual mapping from the business process to some form of application architecture. Having the Framework go directly from Business Context to Semantic Understanding (the information model, in essence) begs the question of how the information models will actually be used to support implementation of the business processes.

Question 2:
Should More Attention Be Paid to "Vertical" (Inter-Category) Mappings?

As it stands, the Framework provides a mechanism for classifying issues on which agreement is required. It can also be helpful when identifying issues, as it suggests areas that might not have been analyzed. Looking at the first question from a slightly different point of view, though, have the relationships between the categories been sufficiently explored? There might be value in suggesting procedures or mechanisms for connecting or deriving the issues in a Category from those in its adjacent Category (or Categories). Rather than simply serving as a repository for the issues, it might be interesting to see if the Framework could also be used to help populate itself, by taking the issues at one level and through some sort of analytical process, derive the issues that might be encountered at the next level. Just what that process might be I do not know, and I suspect that different sorts of processes would be appropriate at different levels.

Price-Responsive Demand in the CAISO Spinning Reserve Market

Interoperability Category	Tools, Systems, Key Actors	Examples of interoperation across organizational boundaries where agreements must be reached
Organizational		
Economic/Regulatory Policy Political and economic objectives as embodied in policy and regulation	WECC, CAISO, CPUC, CEC, IOUs	WECC rules currently do not allow demand-side resources to provide spinning reserve service and would need to change
Business Objectives Strategic and tactical objectives shared between businesses	CAISO, Load Aggregators, IOUs, Consumers	Provision of spinning reserves from load would be cheaper and easier to implement that construction of additional generation (and transmission to connect it); financial incentives to load could be higher than simple interruptible programs (spin is a more valuable product)
Business Procedures Alignment between Operational Business	CAISO, Load Aggregators, Scheduling Coordinators	The CAISO Spinning Reserve Market already exists and SCs that represent generators already participate in it; procedures for pricing, bidding, scheduling, and dispatching such reserves already exist, as do mechanisms for bidding load into the energy market; similar business procedures supporting this scenario would be required.
Informational		
Business Context Awareness of the business knowledge related to a specific interaction	SCAISO A/S Market Rules (Business Practice Manuals); CAISO Market Portal and associated tools	The CAISO Market Portal and associated business rules will need to reviewed/revised to properly support this scenario
Semantic Understanding Understanding of concepts contained in the message data structures	CAISO Market Portal and associated tools; CAISO technical systems documentation	Resources in the CAISO markets are modeled and parameterized according to clearly defined and published structures; such models will need to be revised and applied to this scenario

Technical		
Syntactic Interoperability Understanding of data structure of messages exchanged between systems	CAISO Market Portal and associated tools; CAISO technical systems documentation	Detailed technical descriptions of the Web services and XML schemas used to exchange information SCs and the CAISO already exist for similar products and transactions; they would be reviewed/revised as necessary
Network Interoperability Mechanism to exchange messages between multiple systems across a variety of networks	CAISO networks; Internet; CAISO and SC computer systems; customer communications	Existing CAISO tools that use private or Internet networking to connect market participants could be used to bidding and dispatch; customer systems (such as for smart meters) could be used to send control signals to customers and monitor performance
Basic Connectivity Mechanism to establish physical and logical connections between systems	MPLS; TCP/IP; RDS, etc.	The CAISO-to-SC information typically flows on existing WAN links; customers could receive control signals through low bandwidth radio broadcasts (such as RDS0)