Overview
The EI Core services are at a higher level of abstraction, and reflect Party-to-Party interactions. There are more specific services that embody a vocabulary for specific interactions, e.g. from ISO to Aggregator, from Utility to DR participant.

(Note that Party is logically the abstract base class for all actors in our terminology; inheritance is not defined here but will draw on relevant parts of contributed IRC and TEMIX/EMIX work)

All references are to energyinterop-1 0-spec-wd-13.pdf posted August 30, 2010.

Actors
Some actors have been identified at the concrete level, (below the abstract Party), including ERM and Participant. All interactions are among these actor classes—in my validation work so far the pair wise interactions as described Appendix D (this will be normative, non appendix, in a future WD) this covers all of the use cases I’ve gone through.

Many actors have been identified (IRC documents show six roles and two business entities in wholesale DR; extending to retail and inside-microgrid DR through the architecture will add many more—Ed Cazalet has identified

Service Definitions
There are several “swim lane” diagrams contributed to the TC. These have been extremely valuable in validating the abstract interaction patterns.

Previous service definition lists are inconsistent in naming (use consistent terms for the lifecycle of objects per comments received). Naming conventions that follow SOA common practice are being addressed offline, so discussion on those issues should be on the email list or direct communication.

So there are several orthogonal characteristics of the model:

   (1) Verbs to describe communication actions (e.g. Send, Receive, Register, Cancel)
   (2) Terminology and classes to describe actors (e.g. ERM, Participant, REC, VEN) at two levels
   (3) Service names
   (4) Message content names

EMIX and TEMIX have identified five areas of interactions:

   (1) Registration
   (2) Pre-Transaction
(3) Process-Transaction
(4) Post-Transaction
(5) Signaling

With this terminology in place and the core service definitions, we will then have addressed both consistent terminology across all of Energy Interoperation and include specific terminology in use today. This decoupling is very important to the usefulness of Energy Interoperation.

For example, the DR portion of the OpenADR profile could use terminology consistent with the usage of OpenADR today as aliases for the Core services names.

A Closer Look
For example, in the Process-Transaction area there are at least the following service invocations, however represented:

1. MakeOffer (could be local/remote)
2. PostOffer
3. AcceptOffer
4. GetQuotes
5. WithdrawOffer
6. Etc (total of 9)

In Signaling, we have an indication that performance is now required, and other notifications that don't fit into the other interaction areas.

Models and Issues
I've learned a great deal in resolving issues on modeling aspects of the NAESB Energy Usage Standard that applies to this work, including a CIM-friendly abstraction approach and critical conformance issues.

The WS-Calendar integration through EMIX approach, percolating through the three specifications, is important. Whether one takes an interval-centric approach (e.g. the Core Model proposed to NAESB, largely integrated as a Minimal Conforming View in their Public Review Draft) or a location-centric approach (the NAESB full Model), the interactions would be similar.

One view of Product in EMIX is that a Product has a schedule (WS-Calendar Sequence) and one or more Locations. This is more balanced and less interval-centric.

Conclusions
Abstract and concrete interactions and services (and their parameters) are critical to acceptance and use of Energy Interoperation. This modeling approach allows decoupling of general terminology and specific terminology for each kind of interaction.

Specialization of actors and roles is part of Energy Interoperation; product definition must be coordinated with EMIX.