

# Energy Market Information Exchange Technical Committee

Minutes for Thursday, 3 December 2009, 11:00am EDT

## Agenda:

1. Call to Order
2. Roll Call
3. Location and EMIX (Carl Reed)
4. Approve Minutes
5. Action Items
6. Priority Action Plan 3 Update from Grid-Interop
7. Block prices evaluation and placement -- questions and issues (Toby, Bill)
8. Adjourn

## Attendees: Member / Company (\* = voting)

Timothy Bennett	Drummond Group Inc.
Edward Cazalet*	The Cazalet Group
Toby Considine*	University of North Carolina at Chapel Hill
William Cox*	Cox Software Architects LLC
Sharon Dinges	Trane
Craig Gemmill	Tridium
Girish Ghatikar*	Lawrence Berkeley National Laboratory
Anne Hendry*	Individual
David Holmberg*	NIST
Perry Krol*	TIBCO Software Inc.
Derek Lasalle	JPMorganChase
Scott Neumann*	Utility Integration Solutions Inc.
Carl Reed*	Open Geospatial Consortium, Inc. (OGC)
Pornsak Songkakul*	Siemens AG
David Sun	Alstom Power Inc.

## Minutes:

### 1. Call to Order

Ed C: Call to order.

### 2. Location and EMIX (Carl Reed)

Geospatial techniques and tools, relationship to Emergency Management location, discussion <http://www.oasis-open.org/committees/download.php/35146/2009%20Nov%20Reed%20slides%20for%20EMIX.ppt>

Chief technology officer in OGC; member of OGC since 1994. Initially solving problems of sharing geospatial data, which was in proprietary format so formed OGC to address those problems. Mission is to serve as global forum for development and sharing of freely available geospatial standards. Now have over 385 members worldwide, over 6 continents, and 28 standards with rapidly growing list of implementations. Coordinate with many other standards organizations:

OASIS and OGC have a MOU, work with IETF, ISO TC 211, Open Global Alliance, etc -- about 18-20 other standards development organizations.

Want to make sure use of geospatial content is consistent across other communities. OGC is vendor, content, and application neutral, grounded in an abstract model. Geospatial information is part of a larger workflow that passes from community to community and requires interoperability.

OGC provides a tightly coupled API for geospatial services; is implemented by commercial database providers and also in open source use. Also in mobile devices for mapping: Android, iPhone, Windows Mobile. Standard for location services provides ubiquitous access for navigation, GeoMobility Server – open location services framework; latest by T-Mobile in Europe.

OGC is becoming more involved in the energy industry. eg. building energy modeling, solar electricity development, placement; hydroelectric transmission in Canada. Would like to get back requirements. Already used to classify customer types, regions, on customer side

For smart grid relevance, integrated home sensors monitoring of temperature and on-demand utilization -- overall energy consumption, reduced costs.

OSIRIS in Europe funded by EUC; improve use of sensors; 4 key areas of major environmental risk: forest fires, industrial risk, fresh water pollution, air pollution in urban areas.

Relationship to energy community would be integration of location-based sensors monitoring consumption and feeding back to pricing models. Ability to feed back real-time information would impact distribution and pricing and information that gets fed into pricing model.

View Carl as resource when it comes to thoughts about location-based info.

Ed C.: When you say location, are you saying within a building you can identify individual rooms and sensors? Carl: Yes, mobile or fixed asset when gps doesn't work inside a building. With respect to Home Messenger, those are all location-enabled sensors so don't need gps.

David H.: In first responders project research determined not a good use for interior building location. Is this being addresses with buildingSmart and others?

Carl R.: Yes, have MOU with buildingSmart; pilots with AEC and other organizations; also in Korea for ubiquitous cities project, developing indoorML (ext OGC CityML) based on semantics in BIM.

Toby C.: Significant barrier to nuanced energy service inside is inability to understand what's affected by turning off HVAC. This might be the back door for situational awareness in buildings.

Toby C.: Becomes part of DR issues. Really simple encoding - Geo-enabled GRSS, not done in OGC but by staff and members. Lightweight encodings (<http://www.grss-ieee.org/>).

Carl R.: In internet community, 5 or 6 standards incl DHCP extended to deal with location - back to indoor and mobile asset environments. Lat/Long/Location so any IP enabled device you can fix location can put in packet. Also extensions to SIP, Jabber, VOIP, SIP – SMS, IM. Many sources. Feed into more dynamic pricing models or consumption models.

Bill C.: In certain price areas (eg. wholesale price) how to represent those? Info description issue if you have nodal price, would you have a canonical location you'd then validate that then in turn reflects the polygon to which that applies? An info representation issue. Also grid topology, grid coordinates and intersection may be interesting, but thinking more of if you're quoting price don't need to know polygon if you have the info on the polygon.

Carl R.: Either way or both.

Toby C.: 2 issues: building on grid may be necessary to point to meter, don't need complex structure but using polygon, what's off a particular feeder may be much simpler than describing particular network ... depends on connection point.

Bill C.: Good subject for email list.

### **3. Roll Call**

Anne H: Roll Call

Meeting achieved quorum.

Voting Members: 10 of 12 (**83%**)

Individual Attendance Members: 15 of 43 (**34%**)

### **4. Approve Minutes**

Approve minutes of 2009-11-05 meeting. Minutes approved, seconded. No discussion. Approved. November 12 meeting did not reach quorum, so there are no official minutes to approve; however meeting notes are in the document archive at

[http://www.oasis-open.org/committees/download.php/35167/EMIX\\_20091112\\_Minutes.pdf](http://www.oasis-open.org/committees/download.php/35167/EMIX_20091112_Minutes.pdf)

### **5. Action Items**

#0000 Present EM location work to EMIX TC: Done

#0001 Schedule discussion of modeling tools: TBD next week.

### **6. Priority Action Plan 3: Update from Grid Interop**

AI: Bill C. email PAP03 mp3 link to TC. Encourage joining PAP03 mailing list.

Slides at <http://www.pointview.com/data/2009/11/32/pdf/David-Holmberg-5071.pdf>

Ed C.: Presentations by David, by NAESB, PAP09 and PAP03, by SEP smart-energy  
Ed gave brief presentation on status (where we are, formed, and in general where we're going)  
Highlights: work on PAP03 by NAESB was discussed; quite preliminary; most work based on actors and use cases. Ed submitted to NAESB; they worked that and revised the use cases.  
Comments have come in but are minor (on NAESB site). In terms of smart energy profile, message there is what they're doing on pricing is unchanged from profile #1 -- they regard pricing as a relatively simple problem for them; look in the PAP09 work by NAESB. They put together a description of what they think pricing is for real-time DR purposes. That follows what's in smart-energy profile #2; will pull that one page out of doc and email it to the group. AI: Ed.

## 7. Block prices evaluation and placement -- questions and issues (Toby, Bill)

Toby C.: Philosophical and staging issue - support everything in the grid today? Like saying "you can't use TCP/IP unless it has everything from SNA inside it." Don't want to cut off, but if you're getting monthly billing that's not really a Smart Grid function. Not balancing supply and demand. The group needs to decide the bigger issue about block pricing, and then what we should support would come out almost automatically.

Scott N.: Sat with Robby Simpson - comparing SEP 1 and 2 with IEC 61968-9 (?>) standard for meter integration. Price was very simple, price for start and end time. Unless this has changed, very simple. Block pricing was not in there.

Toby C.: OK to align with something very simple. Told already in the CIM therefore must be supported in EMIX.

Scott N.: In the CIM, as far as price models, is not standard yet anyway, a work-in-progress.

Bill C: This is the reason we need a small group to look in to this; we're getting conflicting information even from what I've heard today; issue is no way to look at wip at SEP2 which is in the managed area and targeted at residential, however want to make broader models consistent -- believe some aspects of wip are available in SIM user group in UCAIug site? At what point does this effect EMIX work?

Scott N.: Within 3 weeks on UCAIug. DR, metering, simple price. More complex WG16 - not certain updated. That's a work in progress. Probably don't have things we'd want for DR and complex block pricing. Don't know details of smart-energy contact block rates/tariffs may be simple (x/month @ xrate, y/month @yrate) but may be more complicated by time-of-day should identify some people in this TC and look at what SEP (#1) work and get an opinion as to whether and how it's relevant to us.

Toby C.: Not decide, keep in mind. Large info model. What SEP and EMIX does with that - are they the same object, ... don't have to talk in detail. But similar to, aligned with -- compatible with may not mean identical.

Scott N. : Subset of the model for SEP. More complex for wholesale and retail energy markets.

Toby C.: At some point as we talk to others, have to have internally a clear story.

Bill C.: We've gone through long discussion on energy characteristics and need to begin evaluation phase. What if any overlap coord, ietc 57 common info model or common info model of fix and financial markets iso 20022? (Derek L. agrees)

Bill C.: AI: Volunteers: Scott N, Ed Cazalet, Bill Cox, Derek LaSalle, David Sun. Charter: look into issues and make a recommendation as to how EITC and EMIX should address. Status in 2 weeks.

AI Ed C. set up a meeting time.

## 8. Additional Items

David H.: Mentioned block pricing as KwH. Common to have ratchet clauses based on demand - hit a new demand peak and your rate goes up. Thinking about whether we would capture that somehow in EMIX would depend on whether we think that matters in the SG - along Toby's point. The problem is on a distribution feeder, new demands from a customer cause problems because of transformer or whatever. Is everyone on the feeder because new customer installs additional equipment. How do we handle if don't allow customer-specific price increase? Throw that issue out there as a use case. Very complex.

Toby C.: Very intriguing, posit that block price within a month/day is a special case of this problem - price goes up for a period of time. May be a mapping, if solve one might solve in similar way. Not whether.

Rish G.: How well are we looking into addressing RTprices based on contractual agreements. Nodal, block, could be part of a contract. This price info comes with some reliability promise. Not yet discussed -- how are we planning on addressing this.

Bill C.: Need to understand context before address those issues; EMIX itself as a data object needs to be as small and uncomplicated as possible to allow for processing, subsetting, etc. exact parallel to discussion on DR programs in EI because can be very complex -- tariffs same as contracts. Question of if it's in or out is big so let's focus on simplicity: if price is going to change more frequently, send another message. If relevant period is not 5 minutes, then perhaps communicated a different way as part of a larger structure. Invite other people to comment ...

David H.: Is there a case where a single customer would have more than one price at the same time?

Toby C.: Not for the same product, but say green vs non-green.

David H.: For a single product, one price. If on-demand block pricing, would we allow that? If goes above the demand threshold that lasts for 5 seconds? How much tariff do we want to reflect? If something in EI that's a multiplier, higher price ... If have simple in EI, simple way to write tariff, you give me the base price, I know what other things do. All defined in the tariff - send me the base price. Can figure out what it is.

Bill C. : Analog to discussion on wholesale; draw on market context; can still have wholesale closing price, forward market price, but if you participated, you know there are costs, balancing, transmission, etc. other aspects, but actionable info is 'here is a price'.

Derek L. : Is it possible we can have multiple layers from simple underliers to more complex structure instruments that have parameters that drive these? (e.g. conditions in wholesale price). What we do in the energy derivatives space. Conditions that drive it may change over time. Constantly repricing. Is this an analogy to what we're dealing with.

Bill C.: As trader or other participant, details are not what we're trying to communicate in EMIX. I think this is market context area; first and most valuable step, not achieved today, simply to have consistent way of describing closed transaction prices; in 27/8 wholesale markets in US multiple ways; great first step to have a single way to communicate those. If participating in multiple markets, have a lot to do to figure out what the prices are doing. Hammer on it to make it

at least commensurable, then blend it with all other factors, then end up with price, and make decisions on that.

Derek L.: simple at quote level, more complex as you go up the levels and start structuring contracts. Is that where to start, how to compose the layers? Fixed vanilla contracts but then you go into more complex contracts (FPML out of ISDA).

Ed C.: Yes, if have a base quote for a given interval at a given location, then that's the basic underlying transaction. Then contracts composed/based on that. Maybe in some cases things that look more like options, composed out of that underlying. Daily peak contract.

Toby C.: No matter where we go, we'll never achieve a direct perfect mapping between some of the EMIX items and the monthly bill. The retail market trick (common) is smoothing for the year. Why not participate in 15 second markets and then get rate readjusted at the end of every year. Diff between what we're communicating now, and additional market agreements that might affect what you're doing.

Bill C. : Derek has raised important point in clear way; how one would/could/might define levels. if could do a sample section in the current doc would be incredibly useful in showing what we're trying to accomplish. Would be good leverage. Paper - January? Derek - pull in Jim N - at one layer, FIX is predominant protocol for these instruments (more vanilla). FPML (ISDA)

AI Derek L.: draft in January on hierarchy, assembly, use, and more

Bill C.: Have been working with OASIS staff to get relationship between FIX and OASIS in place. Will work on that in parallel.

Ed C. : Fundamental problem w/ smart pricing and traditional way of doing things is that the typical way of selling power is quote a rate -- in wholesale you quote amount and price and are obligated to take that price and amount; can only sell some o fit back; other would be like financial market 'option' but not in energy market. In the standard markets you're never committed to buying anything. Seller quoting an optional purchase at a given price. That's not a fundamental building block. Typical contract fixed amount of power, maybe create options on top - reason we're in this mess, didn't have the ability to measure anything other than monthly kWh.

Derek L.: Germane point - fundamental rate base model will be changing as we move forward?

Ed C. : Has to. Toby C.: That's the benefit of Smart Grid.

Ed C. : Only in retail has anachronism that you have to offer a certain amount at given rate. Then pay them not to take it. End up with a baseline that can be manipulated by the customer. Say I'll buy this much and you'll pay me not to take it, then I'll say I'll buy more.

Derek L.: End to end consolidation on a single model? Toby C.: This is the third rail.

Bill C.: Issue (for all of us) focus in EMIX is on exchange of actionable information; action can be many things -- we're not changing the entire world -- we're doing something at the margins; if trader, not effecting your operations. we're facilitating how you're communicating across domains. This may well have the effect of driving a consistent model but not dependent on it.

Toby C. : If you're making AC systems, prime energy user in most commercial buildings. Would like to have a national market for selling your gizmos. This state might be fixed all the time. That state may be dynamic. But the way you ask the question and get the answer creates national markets for equipment. That alone is huge even if nothing else is accomplished. The biggest problem for the grid stepping into the power system is sometimes it has too much, some times not enough. Used to solve by too much all the time. (cartoon version). The model is changing. Intro large amounts of unreliable power, more supply variability. Coordinating supply and demand is the most fundamental problem of a grid with renewables added. Control by a 3rd party turning things on and off -- the way we balance supply and demand in other markets. Get economic signals to let people manage it – that is what is driving what we are doing.

Derek L.: Two areas of value prop - reduced cost, better integration, better ability to schedule usage based on availability and price (so can find algorithms to allow you to optimize your usage by price). From markets, other aspect is the advent or creation of new opportunity to drive revenue. That's typically more compelling argument, one I'll have to formulate when talking to our energy trading group.

Bill C.: Value proposition is that one more piece of what is today complex custom-installed customized software products are that much simpler to install, use, maintain.

Toby C.: Existing market at the retail is regulated natural monopoly.

Ed C. : Substantial parts of the market that are open, TX, IL, commercial/industrial in several states, New England, have open access at the retail level. Many hamstrung by lack of interval metering. Once you've made investment in meters (CA remetered by 2011). Then that opens up a different way of doing things.

Bill C.: Next meeting – winnowing of characteristics? Other things?

Derek L.: Tools. Will need tools to manage multiple syntaxes; model to which each of these syntaxes will be managed. XMI, tools.

Scott N.: All the wholesale markets, all ISOs, open web services interfaces for all.

Toby C.: If we could finalize what we're doing with the FIX group – a contribution of current energy market data structures as a great starting point. Many energy markets traded on the street (NIMEX) if those became part of what we're shuffling that would be useful as well

## **9. Adjourn**

Bill C: Adjourn 12:31 ET