

Re: Automatic power metering – existing products and new functions

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- *From:* "Paul Hovnanian P.E." <Paul@xxxxxxxxxxxxxx>
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Noen wrote:

- >
- > My problem relates to automatic power metering (by electric power
- > supplier to private homes) using existing off-the-shelf products. I am
- > currently looking at enhancing existing automatic metering systems
- > (e.g. with "residential gateway" solutions supplied by Echelon or
- > Ericsson) with added functionality and better data security. The
- > problem is interfacing the new equipment with existing equipment,
- > because the existing equipment are of different makes and models, and
- > the installation is done by technicians with very limited engineering
- > skills.

Generally, when power companies make a change to remote metering, they send the techs out with new meters, already fitted with the necessary equipment. The electromechanical meter movements are so cheap (when purchased in quantities) that it doesn't pay to have a tech fit new equipment to them in the field. They just get scrapped.

Meters generally aren't that easy to open up and modify. Due to tampering concerns, the interface hardware is contained entirely within the meter's sealed glass envelope.

- > Further, considering additional future needs (which have not been
- > thought of yet), the way to go seems to be the design of an interface
- > module that can handle all existing equipment and any new equipment to
- > make the design of new equipment independent of varying existing
- > equipment (only the interface protocol needs to be considered).

Probably not worth it. The cost to make meters upgradable in the field is prohibitive. There would also be tampering issues. Imagine someone coming up with an uploadable hack to cut recorded power consumption.

Of course, these economics don't hold true for large commercial or industrial customers, where revenue can be substantial. In these cases, metering systems are custom designed (by the utility), assembled from components (which can be upgraded and/or replaced) and are subject to periodic testing and maintenance.

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- > Further yet, in the case that another company (in the future) has
- > developed new equipment that is useful for us, we would be inhibited if
- > we cannot get the interface module to run with this new third party
- > equipment, so we would rather need a flexible interface. In order to
- > avoid inventing the wheel all over again, my question is:
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- > Does a flexible interface system already exist (for this purpose)?? Can
- > anyone point me in the direction of companies/products?

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Paul Hovnanian <mailto:Paul@xxxxxxxxxxxxxx>

Entropy: When your shoelace comes untied, you can't fix it
by walking backwards.

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• **References:**

- ◆ **[Automatic power metering – existing products and new functions](#)**
 - ◇ From: Noen
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