

Foundation Working Group Meeting #3 Structures and Standards for the MDM/R Information

June 17, 2015

Overview

The Foundation Working Group and the IESO engaged in a discussion to determine the minimum set of information needed to enable the further use of energy consumption data in the MDM/R for analysis. The following data sets were identified:

- Premise address;
- Dated move-in/move-out indicator; and,
- Some representation of the customer account ID (further discussion needed)

Both the structure and the standard for each information element need to be established to inform the Foundation recommendations. The respective requirements for premise address are presented below along with some of the options available and related considerations.

Customer information (i.e. move-in/move-out and customer ID) presents different challenges and issues to consider. For instance, how should the SME implement the information to maximize the use and value of the MDM/R information, while not imposing too burdensome and costly an implementation on the LDCs and the Smart Metering Entity (SME)? Some options that consider this trade-off are discussed in the customer information section below.

Note that there exists a formal change management process for making modifications to the MDM/R and its interfaces. This process involves reviews with both the Smart Metering Entity Steering Committee (SSC) and the MDM/R Technical Panel. Similar to the role of the Foundation Working Group, these forums will provide recommendations for the SME and IESO to consider in making its decisions on how to move forward.

Address

In many ways address information is the simplest of the elements to consider. Yes, it can be structured in several ways, but the use and interpretation of the address information is uniform and straightforward.

Structure

Below is a table of the relevant address fields, as they are currently defined in the Synchronization Technical Interface Specifications of the MDM/R.

Field Name	Field Type	Required (Y/N)	Description
Premise Address	Alphanumeric (max length=100)	Y	The physical address of the SDP. Alternatively, the LDC may provide the Premise ID or other value as may be determined by the LDC.
City	Alphanumeric (max length=20)	Y	This is the city in which the SDP exists or other value as may be determined by the LDC.
Province	Alphanumeric (max length=20)	Y	This is the province in which the SDP exists or other value as may be determined by the LDC.
Postal Code	Alphanumeric (max length=10)	Y	This is the postal code associated with the SDP or other value as may be determined by the LDC.
Extra Premise Fields (1 – 4)	Alphanumeric (max length=50)	Must be empty	Reserved for future use.
Demographic-Firmographic Fields (1-4)	Alphanumeric (max length=50)	N	Placeholder for future firmographic-demographic data.
GPS (Latitude & Longitude)	Subject to definition	Exists in underlying data base but not in the interface	Could be added to the system if required. Extent of changes would depend on nature of additions.

City, province and postal code can likely be used in their current form. Premise address offers two distinct options:

1. Only use the existing Premise Address field, an alphanumeric field of up to 100 characters

Since the address is constructed of some distinct components, street name, street number, unit number to mention the most obvious, incorporating these into a single Premise Address field will require the use of delimiters to separate the components. An example of this structure, using the “pipe” delimiter to separate the address components, is shown below.

Example: Premise Address in Single Field

Premise Address Field

1	2	3	4	5	-	A		M	A	I	N	S	T	R	E	E	T	W	E	S	T		A	P	T	.	2	1		.	.	.				
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City Field

T	O	R	O	N	T	O																																	
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Province Field

O	N	T	A	R	I	O																																	
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Postal Code Field

I	9	E	8	S	7	O																																	
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One benefit of this option is it only utilizes the existing address field defined in the MDM/R Synchronization Technical Interface Specification. Another would be that this construct would probably be the least costly for both the LDCs and the SME to implement. The drawback to this option is the field has to be parsed to isolate the address components to match the address information with other data sets.

2. Allocate each component of the address information to a separate field

One example would be to assign the street name to the current Premise Address field and activate two of the four extra premise fields, one for street number and the other for unit number. If there are other components of the address information, the other two extra premise fields could be assigned. An example of this structure is shown below.

1. Use the current MPAC standard

Since many people have indicated that MPAC would be another source of important geo-location information and attributes, one logical choice would be for the MDM/R to have address information in a matching format with MPAC.

2. Use the Canada Post standard

This is a likely candidate since it is already widely used throughout Canada and many organizations may already have software/solutions that work with it.

3. Use the real estate industry Multiple Listing Service (MLS) standard

Determine if this is a true North American standard widely used by the real estate industry. If so, compare the MLS standard and its merits with those of the other options.

Questions for the FWG Members:

- What are the strengths and weaknesses of each of the possible standards?
- Are there other standards to consider?
- Is there a consensus view on a recommended standard for the address information?

Customer Account ID and/or Move-in/Move-out Dated Indicator

Customer related information is more complicated than geo-location information for a number of reasons discussed below.

- It is unclear if stakeholders would be contemplating a wide variety of analytical uses of the customer account ID or if the ID is just required as a mechanism to determine a move-in or move-out occurrence. If detecting move-in/move-out situations is the only real driver for providing this information, then the Account ID change is one available method to accomplish this. For the purposes of this paper, it is assumed that the sole use of the Account ID is for change of resident detection.
- As Account ID is not a mandatory field in the MDM/R it is not used by all LDCs.
- There is active functionality in the MDM/R that processes changes in the relationship between an Account ID and a Service Delivery Point that has given some LDCs problems.

The association of an Account ID to an SDP ID (Service Delivery Point ID) in the MDM/R indicates what LDC customer is residing at a specific premise (SDP). This is referred to as a date effective relationship, having a start date when the customer moves into the premise and an end date when the customer moves out of the premise. An LDC has the option of using the functionality associated with the SDP ID to Account ID relationship or not. If used the MDM/R will:

- Automatically segment a request for billing determinants when the billing period includes a move-in/move-out situation, delivering a separate set of billing determinants for each customer living at the premise during the period.
- Never use one customer’s energy consumption data to estimate missing interval consumption data for another customer.

If the MDM/R functionality is not used, the LDC takes on the responsibility for recognizing when a billing period includes multiple customers having resided at the same premise and segmenting the framed daily electricity usage data accordingly. Under this scenario the MDM/R will also use all available data to fill in interval energy consumption gaps because it is unaware what customer the data belongs to.

Having successfully aligned the SDP ID to Account ID relationship functionality with their business processes, many LDCs currently use this capability of the MDM/R. However, as previously indicated, some LDCs have never used it. Others have used it in the past, but no longer do because of problems this creates with their business processes.

Structure

Below is a table of the relevant fields regarding customer account ID, as they are currently defined in the Synchronization Technical Interface Specifications of the MDM/R.

Field Name	Field Type	Required (Y/N)	Description
Account ID	Alphanumeric (max length=50)	N	This is the account identifier that is associated with the Universal SDP ID.
Demographic-Firmographic Fields (1-4)	Alphanumeric (max length=50)	N	Placeholder for future firmographic-demographic data.
New Fields	Subject to definition	Don't exist yet	Could be added to the system if required. Extent of changes would depend on nature of additions.

If necessary, Demographic/Firmographic and New Fields can potentially be used to handle elements other than the Account ID.

Several options are available within the MDM/R to communicate one customer has moved out of a residence and another customer has moved in.

1. Require all LDCs to use the Account ID to SDP ID relationship functionality and make the associated fields mandatory.

For the SME, this is likely the simplest solution because the MDM/R functionality remains the same, except that the Account ID becomes a mandatory field when its relationship to the SDP ID changes. This would also be the case for many LDCs that currently use this functionality since there would be no changes required on their part.

LDCs that have never used this functionality would have to reengineer some of their business processes and make changes to their systems to support the SDP ID to Account ID relationship.

LDCs that have tried but abandoned using this functionality would have to do essentially the same types of modifications as LDCs that have never used it.

This work could be costly and resource intensive to implement. However, there may be some simplifications that would lessen the burden on the LDCs. These should be investigated.

2. Create a new date effective move-in/move-out mandatory field for all LDCs

Rather than make changes to the current implementations by the SME and the LDCs of their systems and business processes, require the addition of a new mandatory MDM/R move-in/move-out date effective field. The elements of this new information would be the SDP ID, the designator of whether a move-in or a move-out occurred, and the effective date of the occurrence. This alternative requires everybody to make additions to their business processes and systems, but leaves in place everything that is working today.

The changes in the MDM/R are thought to be simple because they would only be surface changes, not affecting any of the core MDM/R solution applications. LDCs will also need to comment on whether the same applies to their work.

3. Develop a hybrid solution that supports a combination of options 1 and 2

The contemplated hybrid solution would impose no changes on those LDCs that already use the Account ID to SDP ID relationship functionality as designed. The remaining LDCs would have to either activate option 1 or option 2 at their choosing.

With this hybrid solution the SME would have to examine both the SDP ID to Account ID relationship changes and the date effective move-in/move-out field to determine all the move-in and move-out events across the province.

Note: The SME will also need to make a determination from an implementation perspective if there is a substantive difference in implementing one structure versus the other(s) in the MDM/R.

Questions for Consideration:

- Are there use cases with respect to the use of the MDM/R energy consumption data where the actual Account ID (or a proxy) is required for purposes other than determining a move-in or move-out occurrence? If so, what are they?
- Are there any alternative structures (i.e. other information already in the MDM/R that can be interrogated to determine move-in/move-out situations) that should be considered?
- For those LDCs on the FWG that used then abandoned, or never used, the SDP ID to Account ID relationship MDM/R functionality, will you briefly describe the reasons for not using it?
- Primarily for the LDCs on the FWG – from an implementation perspective, is there a substantive difference in implementing one structure versus the others in your systems?
- Primarily for the SME – from an implementation perspective, is there a substantive difference in implementing one structure versus the others in the MDM/R?

Standards

Unlike the situation with address information, the required standards for the Account ID field and any date effective information associated with a field or relationship are already defined in the MDM/R Synchronization Technical Interface Specification. These should be retained. It is doubtful there exist any standards for a move-in/move-out indicator field, but the SME will check. In any event, its construct should be quite simple.

Question for Consideration:

- If it has been determined that a new date effective move-in/move-out field will be part of the solution, can the IESO go forward with drafting a proposed standard format for this field?