Customer Briefing Note 018

Meter Read Management

Edge Background

Edge is our flag-ship web-based software solution for retail water and waste services suppliers in the UK.

Edge has been designed and built from first principles to provide a complete "Business in a Box" for both established and new entrant Licensed Providers.

The Edge system allows seamless operations across the UK – in both the Scottish and English markets.

Edge runs on the Microsoft "Azure" cloud platform, and provides unrivalled flexibility, security and availability.

Deployment of Edge is quick and easy, whether you are a new start or the largest water company in the country.

Meter Reading Concept

Meter Readings are a critical billing data item for utility billing and the management of meter readings is a key part of any billing system.

In the UK Water market, the Retailer is responsible for obtaining periodic Meter Readings for all meters at the premises (SPIDs) under their management. The meter readings are then loaded to the Edge billing system to allow the creation of Invoices.

The meter readings are also communicated to the Market Operator (MOSL / CMA) in a timely manner to allow accurate Settlement charging.

ADC Billing Concept

Most metered utility variable charges are calculated in arrears and are based on either "actual" or "estimated" meter reads. This is a very easy way to calculate bills, but it relies upon a direct association between metering frequency and billing frequency. This has two major disadvantages:

- Bills can only be created "in arrears". This causes corporate cashflow issues in competitive markets where settlement charges are incurred "in advance"
- It is difficult to create truly consolidated customer bills, since it is nearly impossible to align the meter readings for different premises within a consolidated account.

The Edge billing module overcomes these limitations by removing the relationship between metering and billing. The Edge billing algorithm calculates an Average Daily Consumption (ADC), in the same way as the Central Market Operators do when calculating Settlement charges (see also CBN002)

Edge Meter Reading Data Load

The Edge system provides two different approaches for loading meter reads. These are:

- Ad hoc Meter Reads
- Bulk Meter Reads

Ad Hoc Meter Read Data Entry

This is used for entering meter reads directly to the Meter Read screen for the SPID in Edge. It is useful for entering one-off meter reads and also for editing or deleting previously entered meter reads

Bulk Meter Read Data Entry

This approach is more commonly used by larger Retailer to bulk load many meter reads from a spreadsheet data loaders. There is a separate data loader for English and Scottish meter reads

The data spreadsheets should be structured according to the following data formats:

Scotland

The file format must contain only 7 columns. They should have 'no header row' and in the following order:
- Core SPID
- Meter Id D3001
- Meter read date (YYYYMMDD)
- Meter reading
- Meter read type
- Approve (1 = True, 0 = False)
- Re read (1 = True, 0 = False)

England

The file format must contain 14 columns. Values seperated by ",". Header row is mandatory as defined below:
- SPID
- METER-MANUFACTURER
- METER-SERIAL-NUMBER
- PROCESS-INDICATOR
- METER-READ
- METER-READ-DATE
- METER-READ-TYPE
- METER-READ-METHOD
- ESTIMATE-REASON-CODE
- ESTIMATE-REMEDIAL-WORK-IND
- RE-READ
- ROLLOVER-INDICATOR
- METER-REMOVAL-REASON
- COMMENT

Figure 1 - Meter Read Bulk Load Data Formats

Once the meter readings are loaded into the Edge system they are visible in the Meter Reads screen for the associated SPID. See Figure 2.

Meter Read Date	Read Type	Reading	Read Method	Entered By	Rollover Indicator	Rollover Flag	S Read reason code	S remedial work indicator	Approved	In MDS
01.05.2018	C	17577	VISUAL	Bulk.Upload					✅	✅

Figure 2 - Meter Reading Screen in Edge

Here we see an example of a Meter Reading for an English SPID that has been loaded via the Bulk data loader.

Note that Edge shows two flags along with the meter reading record:

- Approved – this indicates that the meter read has been approved by MOSL following the receipt of a T005.M
- In MDS – this indicates that the meter reading is available for viewing in the Market Data Set (MDS)

Only when the meter reading has been "approved" at the Market Operator (in this case MOSL) will the reading be used in SPID billing. The reason for this is that MOSL might reject a meter reading due to data validation. If this was to happen, then Edge would delete the meter reading from the system since it was not a valid meter reading.

Meter Reading Transactions

When the meter reading has been loaded to Edge it is automatically sent to the appropriate Market Operator (MOSL or the CMA) using a Market Transaction. The Transactions for England and Scotland are similar, but they are not the same.

The English (MOSL) Transaction is a T105.R. An example is shown in Figure 3.

```xml
<Transactions xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="urn:co.uk:mosl:cmos:b2b:message:v01">
  <Transaction>
    <T105.R_SubmitMeterRead>
      <Header>
        <DataTransaction>T105.R</DataTransaction>
        <DataTransactionReferenceNumber>acf63e2773424477b8a41daf7666459d</DataTransactionReferenceNumber>
        <OriginatorsReference>52e98ee524e740a7b9f701bc6bc5099c</OriginatorsReference>
        <TransactionSourceOrgID>CASTLE-R</TransactionSourceOrgID>
        <TransactionDestinationOrgID>MOSL-M</TransactionDestinationOrgID>
        <TransactionTimestamp>2018-08-28T07:47:31.2443692+00:00</TransactionTimestamp>
        <DataTransactionSequenceID>1</DataTransactionSequenceID>
      </Header>
      <PayLoad>
        <SPID>3010056052W19</SPID>
        <MeterManufacturer>Elster_Meters_V200</MeterManufacturer>
        <ManufacturerMeterSerialNumber>01T010692</ManufacturerMeterSerialNumber>
        <MeterRead>1554</MeterRead>
        <MeterReadDate>2018-08-24T00:00:00</MeterReadDate>
        <MeterReadType>C</MeterReadType>
        <MeterReadMethod>CUSTOMER</MeterReadMethod>
        <ReRead>0</ReRead>
        <RolloverIndicator>0</RolloverIndicator>
        <TextCommentField>Meter Read Submission</TextCommentField>
      </PayLoad>
    </T105.R_SubmitMeterRead>
  </Transaction>
</Transactions>
```

Figure 3 - T105.R Transaction

The Scottish (CMA) Transaction is a T005.1.

Meter Reading Process in Edge

The process for managing meter readings in Edge is shown in the following process diagram. Note that the process is largely the same for both English and Scottish meter readings, except the incoming and outgoing Transactions are different.
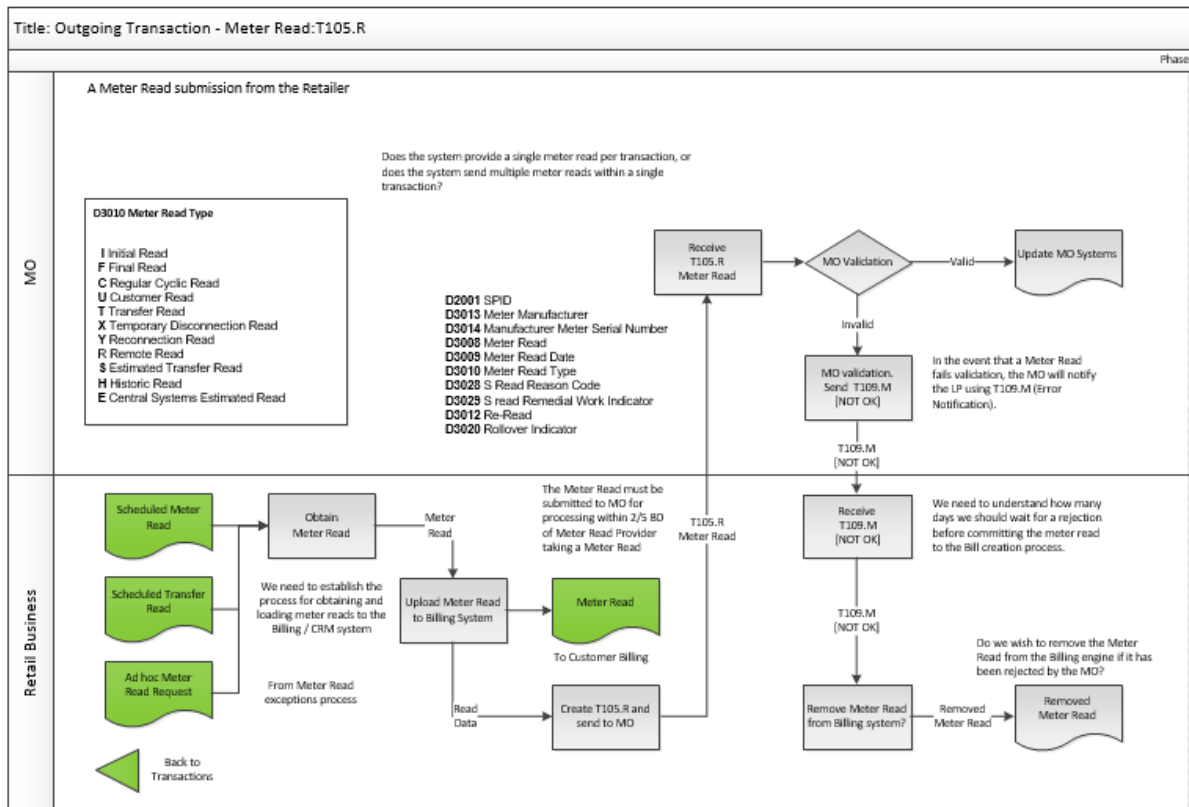

Figure 4 - English Meter Read Process

Related Customer Briefing Notes (CBN's)

You may also be interested in these related CBN's

- CBN001: "Edge Overview"
- CBN002: "ADC Billing"
- CBN003: "Volumetric Adjustment"
- CBN004: "Metered Billing"
- CBN005: "Block Tariffs"
- CBN006: "Consolidated Billing"
- CBN007: "Published Tariffs"
- CBN008: "Manual and Automated Billing"
- CBN009: "Bill Output Formats"

- CBN010: "Market Transactions and Data Items"
- CBN011: "Integrated Transaction Management"
- CBN012: "Bitemporal Updates"
- CBN013: "Market Data Set"
- CBN014: "Market Pricing"
- CBN015: "SPID Transfers"
- CBN016: "CRM Module"
- CBN017: "Data Quality"
- CBN018: "Meter Reading Management"
- CBN019: "Sub Meters and Complex Metering"
- CBN020: "Meter Exchange Management"
- CBN021: "Trade Effluent"

Further Information

If you require further information on any aspect of the Edge solution, please contact us at:

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