

Market Change Request

Number	Title	Priority
MCR 0112	MPD 16 (2.1): Data Aggregation; to satisfy new requirements for SEM Implementation.	<i>HIGH</i>

Date	Version	Reason For Change
26/10/2006	1.0	Draft for IGG Review
15/11/2006	1.1	As detailed in "Responses to AIP MCR Comments". Ref. 4, 31, 32, 33, 34, 35, 36, 37, 41, 44, 46, 47, 48, 49

PART 1 CHANGE REQUEST:		
Name of Requesting Organisation	ESB Networks AIP / RMDS	
Contact name	Theresa O'Neill	
Date Change Request Raised	26/10/2006	Originating Discussion Request
		DR 'Impact of AIP on ROI Retail Market', Draft Ver 0.41

Detail of Change Request
<p>In order to introduce the Single Electricity Market there are a number of changes required to the existing Retail Market processes. This MCR relates to the Market Process surrounding Data Aggregation.</p> <p>The current procedures for MPD 16:- MPD 16 (1.1) – Data Aggregation for QH Meters Export, MPD 16 (1.2) – Data Aggregation for QH Meters Import, MPD 16 (1.3) – Data Aggregation for NQH Meters and Unmetered,</p> <p>will be replaced by the following:-</p> <p>MPD 16 (2.1) Data Aggregation</p> <p>The new procedure will combine Data Aggregation for QH meters (Import and Export), NQH meters and Unmetered consumption across each of: D+1 Indicative Data Aggregation D+4 Initial Data Aggregation M+4 Data Re-Aggregation M+13 Data Re-Aggregation</p> <p>The Data Aggregation process will utilise a set of Market Messages, the 59x series, which will be generic across each aggregation. In addition there will be a Settlement Run Indicator in the body of each message to indicate the originating procedure. This Settlement Run Indicator will contain values as follows: <u>10</u> = Indicative Aggregation <u>20</u> = Initial Aggregation <u>30</u> = Re-aggregation at M+4 <u>40</u> = Re-aggregation at M+13 <u>50</u> = Ad Hoc Aggregation</p>

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These changes will be reflected in the relevant market baseline products.

Detailed changes for new process MPD 16 (2.1) – Data Aggregation:-

New functions and events will be added to create a new process MPD 16 (2.1).

These changes are described below (from page 4), containing:-

1. History of Changes
2. ARIS Process Flow Diagram (ARIS screenshot)
3. ARIS Process Flow Diagram – Supporting Text
4. Supplementary Information
5. Market Message Structures
 - 5.1 MM590
 - 5.2 MM591
 - 5.3 MM594
 - 5.4 MM595
 - 5.5 MM596
 - 5.6 MM597
 - 5.7 MM598

Note: Details of new Data Items and Definitions (i.e Supplier Unit ID, Generator Unit ID) can be found in MCR 120.

Reason for Change Request

Introduction of the Single Electricity Market.

Scope of Change Request

Correction to Documentation	Business Process	Market & MP Systems	MPCC	Readings Processor	Market Gateway	Schema	Web Forms
	Y	Y	Y		Y	Y	Y

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Identification of Baseline Products Impacted

1. MPD 16 (1.1, 1.2, 1.3) Data Aggregation (will be removed after a 13 month cutover)
2. MPD 16 (2.1) –Data Aggregation (new)
3. New Market Messages: 590, 591, 594, 595, 596, 597, 598.

Description of Trading & Settlement Code Impact (if any)

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PART 2 MARKET ASSURANCE:				
Applicability				
ESB Networks	Suppliers	TSO	SMO SSA	Generators
Y	Y	Y	Y	Y
Scope of Test				
Connectivity	DTT	MSA	IPT	Other
Y	Y		Y	
			No. Of Scenarios	
			TBC	

Date of issue of Change Request	
Date response is required	

PART 3 RESPONSES AND MODIFICATIONS:
Collation of Impact Assessment (from Form C)
<i>Not Applicable</i>
Modifications Included
<i>Not Applicable</i>
Reason for Modifications
<i>Not Applicable</i>

PART 4 ASSESSMENT & RECOMMENDATION:
Part 4(a) ASSESSMENT
Summary of Impact Assessment
Recommendation on Implementation Plan

Part 4(b) RECOMMENDATION			
ACCEPTANCE	REJECTION	NO RECOMMENDATION	COMMENT

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Reason for Recommendation			
Date of Recommendation			

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1. History of Changes

This Procedure includes the following changes

Source of Change	Description of Change
259	Changes to aggregation approach incorporating re-aggregation and usage factors
	Changes applied since Version 3.1
	Standardisation of use of QH/NQH terminology
	Removed Section 5.9 as this is now covered by MPD 14 – NQH Readings Processing
	Updates arising from Supplier Clarifications
Written Supplier Clarifications 1	Updated title of Process map on page 8 to remove Non Profile reference.
B202	Updated text around Steps 7,8 on to clarify process
Written Supplier Clarifications 2	Settlement Interval Period renamed to Settlement Interval for consistency with Data Definitions
Written Supplier Clarification 3, 5	Updated scope of document. Term 'Independent Supplier' removed.
	Changes applied since version 4..1
MCR0029	Update of Market Process Documentation to reflect single point unmetered design
MCR003 CR00556	Suppliers have requested a change to include on the 501 message: <ul style="list-style-type: none"> •Total usage factor per Time of Use and Profile •The count of MPRNs used in the aggregation run for the above Time of Use & Profile in order to validate the aggregation run results.
	Changes applied since Version 4.2
MCR 0044	Removal of Data Aggregation Netting Functionality
MCR 0045	SSA Controls Section 5.10
	No Changes applied since Version 4.3
	No Changes applied since Version 4.4
	Changes applied since Version 5.0
MCR 0075	NQH consumption will be resettled on a half hourly basis for the time since January 2005 until the SEM arrangements are fully phased in. To carry out the resettlement, they require 15 minute reaggregation difference information rather than at rolled up single day and night difference.
	Changes applied since Version 5.1
MCR 0068 V.3	The 591 message amended to only allow valid combinations of DLF Code & Load Profile.
MCR 0112	Amendments to satisfy requirements of SEM implementation. The current 3 streams of MPD16 (1.1 – 1.3) will be replace by the following :- MPD 16 2.1 Data Aggregation This will necessitate changes to:- ARIS Process Flow diagram, ARIS Process Flow – supporting text, Supplementary Information and Market Message structures.

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3. ARIS Process Flow Diagram: Supporting Text

Details of the new processes where the Description expands on the Name are listed below :-

1.

Name	Provides Valid QH Export Data
Description	The data processor will provide valid QH Export Data into the aggregation process. The data processor may also provide new or revised export data following an aggregation. In exceptional circumstances MRSO may update Generation Unit or DLF data following an aggregation.

3.

Name	Perform Data Aggregation of QH Export Data
Description	MRSO will aggregate export data for Distribution Connected Generators using the latest validated readings and estimates that are received from the Data Collector for the settlement day being aggregated. Export kW are converted to kWh for aggregation. MRSO will commence aggregation of data for a Distribution Connected Participant Generator export from the date it is effective in the SEM. MRSO will commence aggregation of data for a Distribution Connected Non Participant Generator export from the Effective Date ¹ of the Export Arrangements. Gross export per Generator Unit or Export Arrangement will be aggregated. Aggregated data will contain aggregation values both including and excluding the application of DLF applicable to the Settlement Interval for the Generator Unit or Export Arrangement.

4.

Name	Provide Participant Generator Aggregated Export Data
Description	Export data per Generator Unit will be sent to the relevant Participant Generator.

8.

Name	Provide Non-Participant Generator Data to Supplier
Description	Export data from Non Participant Generators will be sent to the relevant Suppliers, per Export Arrangement.

12.

Name	Provides Valid QH Import Data
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¹ Agreed Procedure 1, Appendix 3, will set out more detail on the effective date for a participant.

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Description	The data processor will provide valid QH Import Data into the aggregation process. The data processor may also provide new or revised import data following an aggregation. In exceptional circumstances MRSO may update Supplier, SSAC or DLF data following an aggregation.
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14.

Name	Perform Data Aggregation of QH Import Data.
Description	MRSO will aggregate import data for Meter Points registered to Suppliers using the latest validated readings and estimates that are received from the Data Collector for the settlement day being aggregated. Import kW are converted to kWh for aggregation. For Meter Points which are aggregated for both import and export, gross import will be aggregated. Aggregated import data will be summarised by Supplier, Supplier Unit and SSAC registered on the Settlement Date. Aggregated data will contain values both including and excluding the application of DLF applicable for the DLF Code and Settlement Interval.

14A.

Name	Provide Aggregated Import Data to TSO
Description	A copy of the Aggregated Import Data sent to the Supplier will be sent to the TSO.

15.

Name	Provide Aggregated Import Data to the Supplier
Description	Aggregated QH import data will be sent to the relevant Supplier. Data will be summarised per Settlement Date, 15 minute Settlement Interval, Supplier, Supplier Unit and SSAC registered on the Settlement Date and will include a breakdown by DLF code.

22

Name	Provides Valid Usage Factor Data
Description	The data processor will provide Usage Factors into the aggregation process. Usage factors may also be created or updated following an aggregation. Typically updates will occur as the result of readings data collection as described in MPD14. In exceptional circumstances MRSO may update Supplier, SSAC, Profile or DLF data following an aggregation.

24.

Name	Perform Data Aggregation of NQH Meter and Unmetered Point Connections
Description	MRSO will aggregate consumption using the Usage Factors applying to each Timeslot associated with Meter Points registered to Suppliers on the Settlement Date. Actual Usage Factors will be used if available at the point of time aggregation, otherwise Estimated Usage Factors are used. The application and calculation of Usage Factors is described in MPD 14 – Readings Processing – NQH Meter. MRSO will profile consumption for each 15 minute Settlement Interval within a Settlement Date by applying to the

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	Usage Factor the interval coefficients defined for the applicable Derived Load Profile. No estimated usage is aggregated in respect of a Meter Point that is de-energised. Aggregated data will contain values both including and excluding the application of DLF applicable for the DLF Code and Settlement Interval. The Additional Aggregated Information segment will also include the count of MPRN processed in aggregation per DLF Code and Load Profile combination for the Supplier, Supplier Unit & SSAC classification. The Additional Aggregated Data segment will also include the total usage factor processed in aggregation per DLF Code and Load Profile combination for the Supplier, Supplier Unit and SSAC classification' to 'per DLF Code and Load Profile combination for each Supplier, Supplier Unit and SSAC classification' in both sentences.
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25.

Name	Provide Aggregated Consumption Data to Supplier.
Description	Aggregated consumption data per Supplier, Supplier Unit, SSAC combination will be sent to the relevant Supplier and will include a breakdown by Load Profile and DLF code

32.

Name	Provide Aggregated Consumption data to TSO.
Description	A copy of the Aggregated Consumption Data sent to the Supplier will be sent to the TSO.

35.

Name	Consolidate and Net Aggregated Data
Description	In order to provide complete aggregated import and export at Supplier Unit and Generator Unit level the previous aggregated data is consolidated by the MRSO and the following actions taken: First, per 15-minute interval, adding the Loss Adjusted NQH Import and QH Import Data that has been summated to Supplier Unit level. Second, MRSO will summate from 15 minute to 30 minute settlement intervals. Third, MRSO will subtract , per 30-minute settlement interval, the non-participant generation data that has been summated per Supplier Unit from the relevant 30-minute settlement interval for the Loss Adjusted Import that has been aggregated per Supplier Unit. Fourth, where the result of this subtraction is a positive value, it will be set to nil. Finally MRSO will convert the kWhs data to MWhs by division by 1000, representing MWh to three decimal places. This is called the Measured Quantity.

36.

Name	Provide Aggregated data to Generator.
Description	Loss Adjusted aggregated export data sent to the SMO at Generator Unit level that is relevant to a Participant Generator will also be sent to that Participant Generator.

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34.

Name	Provide Aggregated Data to Supplier.
Description	Loss Adjusted aggregated data sent to the SMO at Supplier Unit Level that is relevant to a Supplier will also be sent to that Supplier. Where the measured quantity of an interval has been set to zero in the netting calculations MRSO will send an email to the Supplier allowing them to take any further relevant action with the SMO.

44.

Name	Provide Aggregated Data to SMO.
Description	Loss Adjusted aggregated data will be sent to the SMO indicating the Measured Quantity per 30-minute settlement interval, per Supplier Unit or Generator Unit.

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4. 4. Supplementary Information

4.1 Loss Factors

The DSO will identify the Distribution Loss Factors (DLF) applying to each meter point through the definition of an appropriate DLF Code and DLF value.

For **Embedded Distribution Connected** Generators a site specific DLF will be applied. For other Meter Points, DLF shall be applied according to the connection voltage and settlement class – QH/NQH

4.2 Profile Coefficients

The DSO will identify the profile coefficients applying to each settlement interval for each Load Profile. Profile coefficients will be identified in advance for each year and will take account of weekends and public holidays. Profile coefficients are expected to sum to 1 for a 365 day year.

4.3 Settlement Dates and Intervals

A Settlement Date is the calendar day on which export or import consumption is determined to have occurred. When the Settlement Date is a day in which the clocks are advanced it shall have 23 hours and when the Settlement Date is a day in which the clocks are put back it shall have 25 hours.

A Settlement Interval **within the Retail Market** is defined as a fifteen minute period. There shall normally be 96 Settlement Intervals in a day but there can be 92 or 100 when the clocks are changed. **Within the Wholesale Market a Settlement Interval is defined as a thirty minute period. As such, there shall normally be 48 Wholesale Market Settlement Intervals in a day but there can be 46 or 50 when the clocks are changed.**

4.4 Derived Load Profiles

For each Timeslot to be settled a Derived Load Profile will be allocated in accordance with published rules for the combination of:

- For non-MD sites, whether the meter point is rural domestic, urban domestic or non-domestic, as determined by the DUoS Group
 - For MD sites, the load factor
- The Timeslot to be settled.

The Derived Load Profile is a set of interval coefficients determined from a researched or sampled Standard Load Profile which are specific to the Timeslot, which sum to the same as the profile from which the derivation is made (1 over a 365-day year). Derived Load Profiles applied at a Meter Point may be determined from more than one Standard Load Profile (e.g. where both 24 hour and night storage meters are installed).

4.5 Day / Night Split for **NQH Re** Aggregation

In NQH Aggregation MRSO will use an Actual Usage Factor where available and an Estimated Usage Factor where it is not.

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MRSO will determine a day/night split in re-aggregation by using the Derived Load Profile applied to a Timeslot as follows:

- Day time consumption = Usage Factor for the Timeslot * sum of day-time coefficients given by the Derived Load Profile for period
- Night time consumption = Usage Factor for the Timeslot * sum of night-time coefficients given by the Derived Load Profile for period

For customers connected at LV with non quarter-hourly meters day-time DLFs shall apply from 8.00 a.m. to 11.00 p.m. in winter and 9.00 a.m. to 12.00 p.m. during summer. For LV customers with quarter-hourly meters, MV and 38kV customers, day-time DLFs shall apply from 8.00 a.m. to 11.00 p.m, summer and winter. Day-time DLFs coefficients shall apply between the hours of 8am and 11pm GMT (i.e. 8am to 11pm LTC) throughout the year. Night-time DLF coefficients shall apply to the remaining hours of the settlement day.

Where Supplier, SSAC, Derived Load Profile or DLF data changes during the effective period of a usage factor then day and night time consumptions must be calculated in respect of each period where these data remain constant. There will be no day / night split for NQH. Aggregation and, as such, NQH aggregation data will be broken per 15-minute settlement interval. All NQH aggregation run processes are identical, with output data provided per 15 minute retail settlement interval.

4.6 Settlement Reconciliation Period

The Settlement Reconciliation Period is composed of a range of Settlement Dates to be considered in the Re-Aggregation processing. The Settlement Reconciliation Period will be agreed with SSA in respect of both QH and NQH Meter Points.

For NQH Meter Points the Settlement Reconciliation Period is expected to be the previous thirteen months. Any differences that arise in respect of dates prior to the start of the Settlement Reconciliation Period (i.e. due to meter points where there has not been a reading in the period) will be ignored. This proposal is subject to discussion with SSA and other participants

4.7 Records

MRSO will maintain a record of input to Indicative, Initial, Ad Hoc and both 4 and 13 month Re-Aggregation runs identifying the Generator, Supplier, SSAC, Loss Factor Code, Profiles and Usage Factor Data used for each Meter Point.

4.8 Timings

Initial aggregation will occur on the tenth day following the Settlement Date.

Re-aggregation will be performed monthly. Indicative Aggregation will occur on the week day following the Settlement Date

Initial Aggregation will occur on the fourth week day following the Settlement Date

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A Re-aggregation will occur four months following the Settlement Date

A Re-aggregation will occur thirteen months following the Settlement Date

4.9 Unmetered Connections

Unmetered Connections are managed within aggregation at TMRN level. As such, information is distributed in the same process & messages as per NQH.

4.10 SSASMO Controls

Controls required by SSA the SMO have been agreed and documented separately in Working Practice 007.

4.11 The 591 Market Message

The 591 Market Message only allows valid combinations of DLF Code & Load Profile.

4.12 Netting of Non Participant Generation

De Minimus Generators that elect not to participate in the SEM can register Supplier Units against their export via Export Agreements. Prior to the issue of aggregated data to the SMO this loss adjusted export will be netted, per Settlement Interval, from the aggregated loss adjusted import recorded against that Supplier Unit. It is possible for this netting to result in a positive value and where this is the case the result will be set to zero and an email issued from the MRSO to the relevant Supplier outlining the occurrence and thus enabling them to take any further relevant action with the SMO.

4.13 Signing

The following Signing standards will apply across consumption/generation quantities within the Data Aggregation message:

- Supplier Unit data will be signed as negative in messages 590 and 596
- Generator Unit Data will not be signed in messages 590 and 597
- Zeros will not be signed in all messages
- 591, 594, 595 and 598 – The Demand and Generation values will not be signed

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4.14 Price Effecting Generation

Where Distribution Connected Participant Generators have Price Effecting Generation they will not be sent 594 or 597 messages from MRSO, instead, that export data would be available to the participant via the EirGrid website.

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4.15 Market Messages

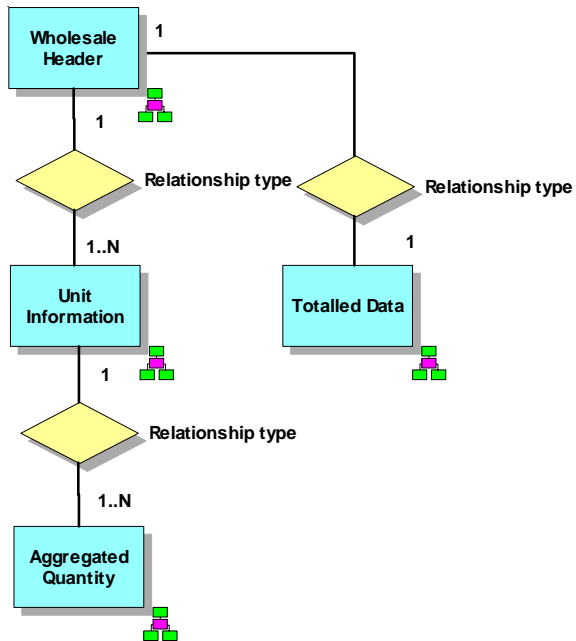
The Data Aggregation process will utilise a set of Market Messages, the 59x series, which will be generic across each aggregation. In addition there will be a Settlement Run Indicator in the body of each message to indicate the originating procedure. This Settlement Run Indicator will contain values as follows:

- 10 = Indicative Aggregation
- 20 = Initial Aggregation
- 30 = Re-aggregation at M+4
- 40 = Re-aggregation at M+13
- 50 = Ad Hoc Aggregation

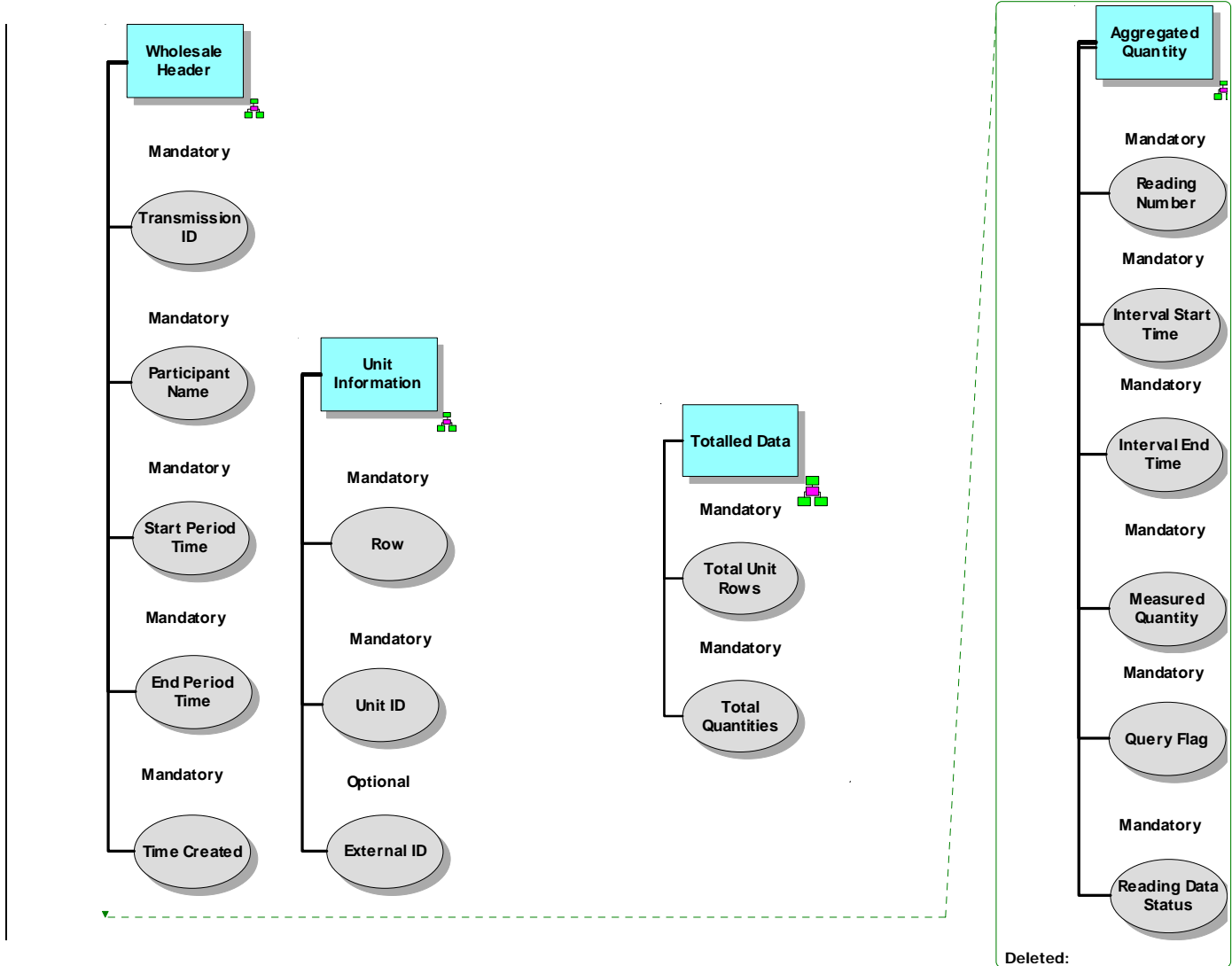
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5. Market Message Structures

5.1 MM 590

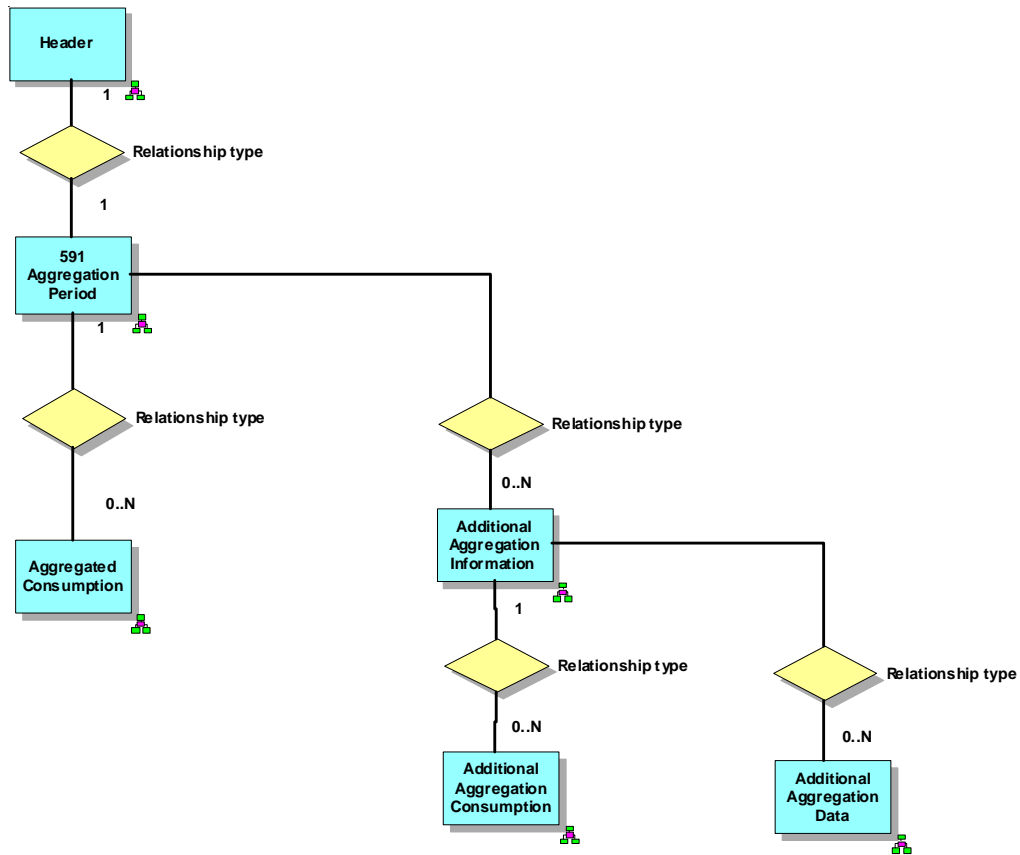


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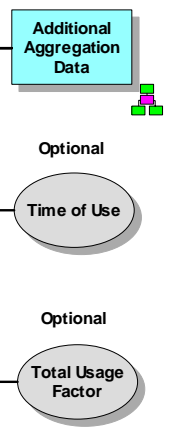
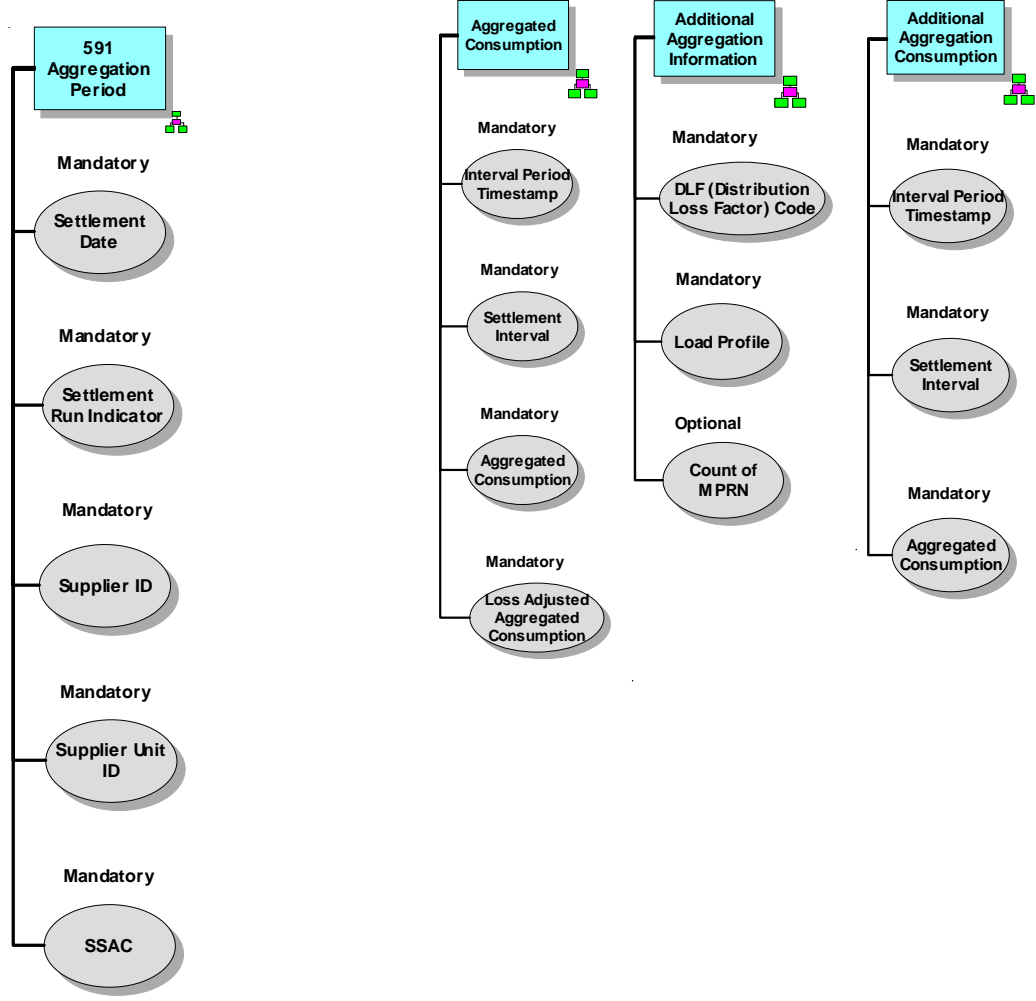


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5.2 MM 591



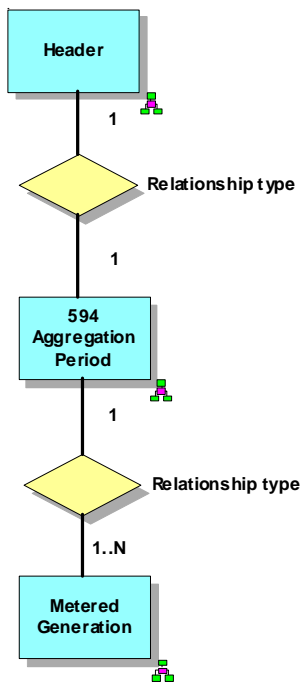
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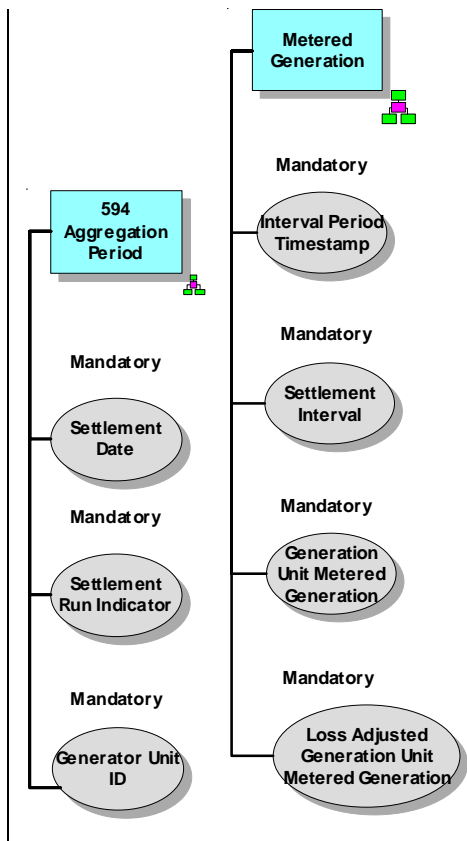
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5.3 MM 594

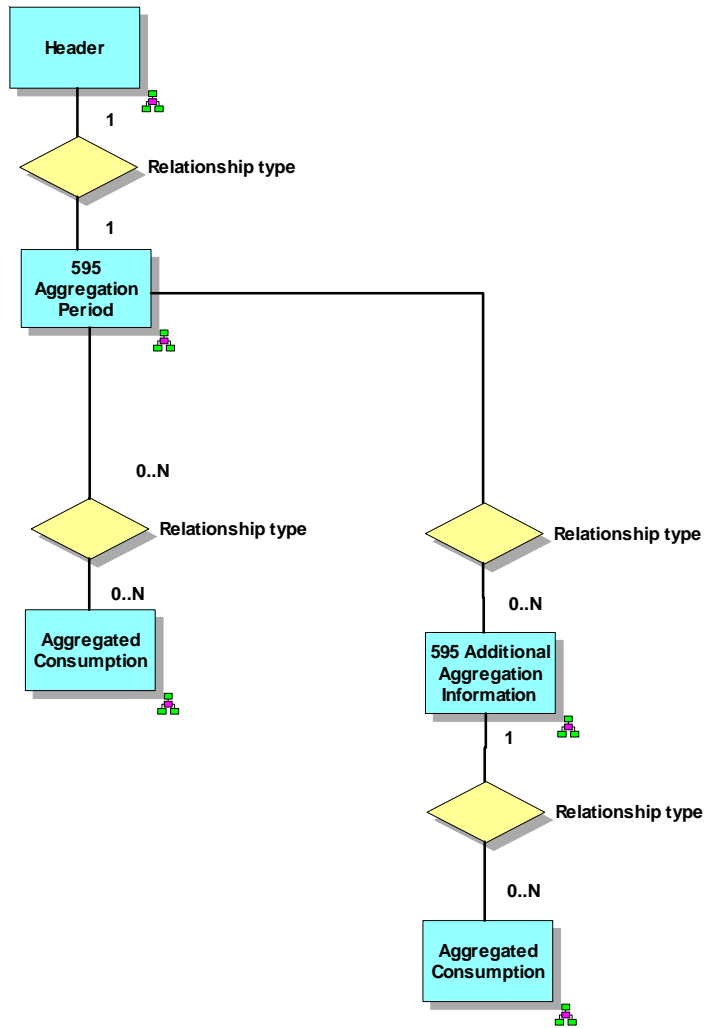


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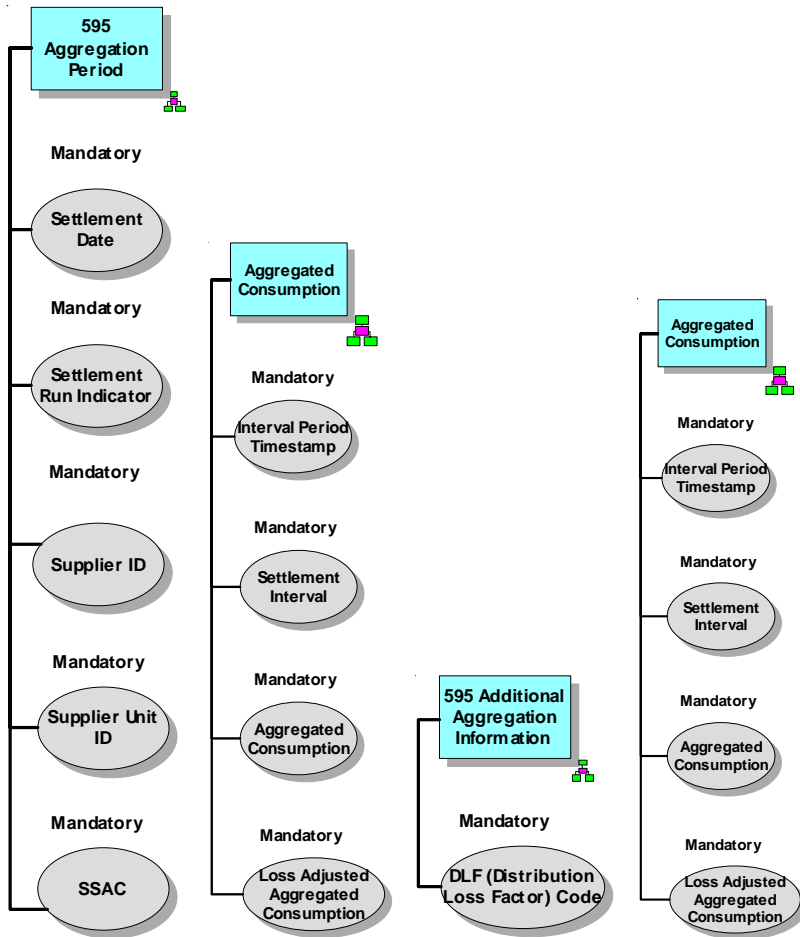


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5.4 MM 595

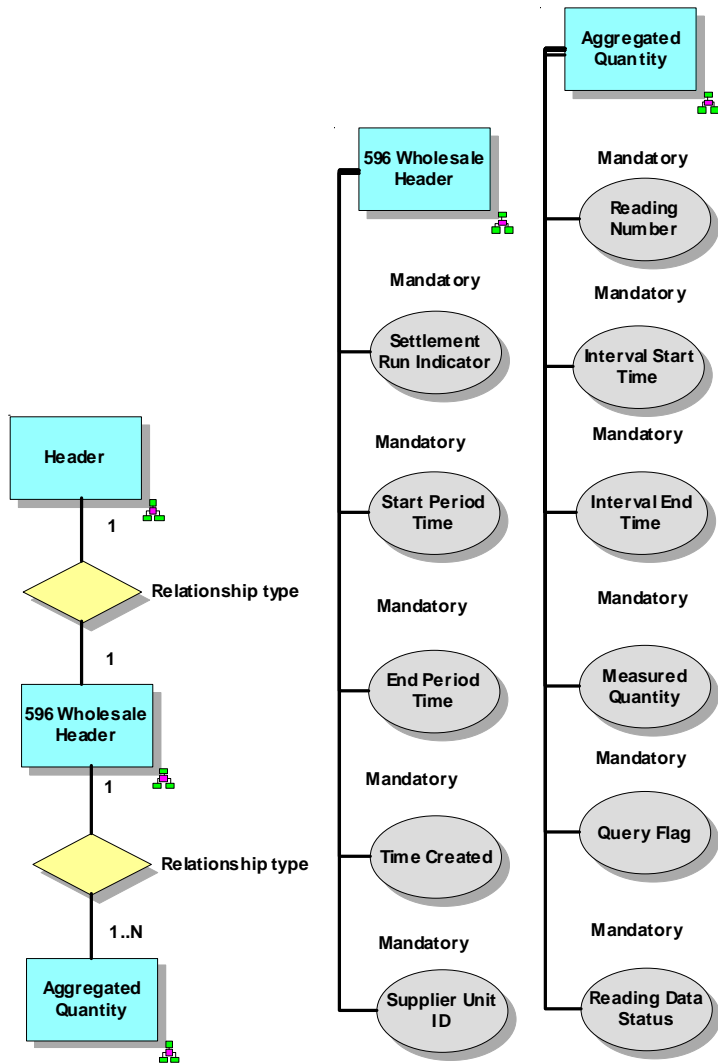


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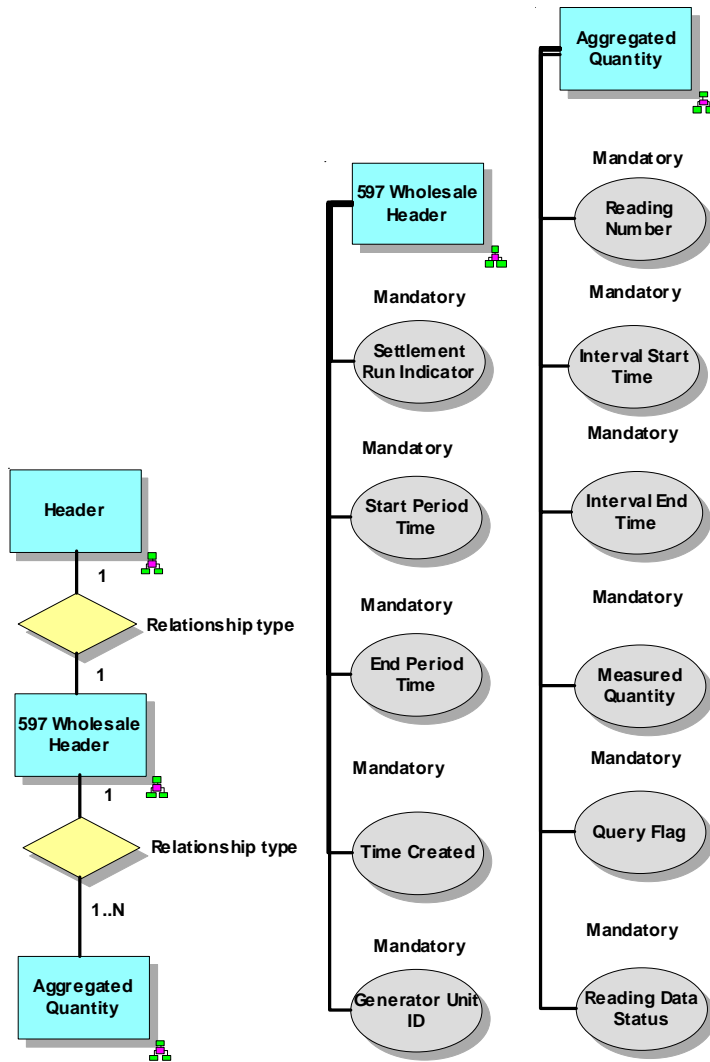
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5.5 MM 596



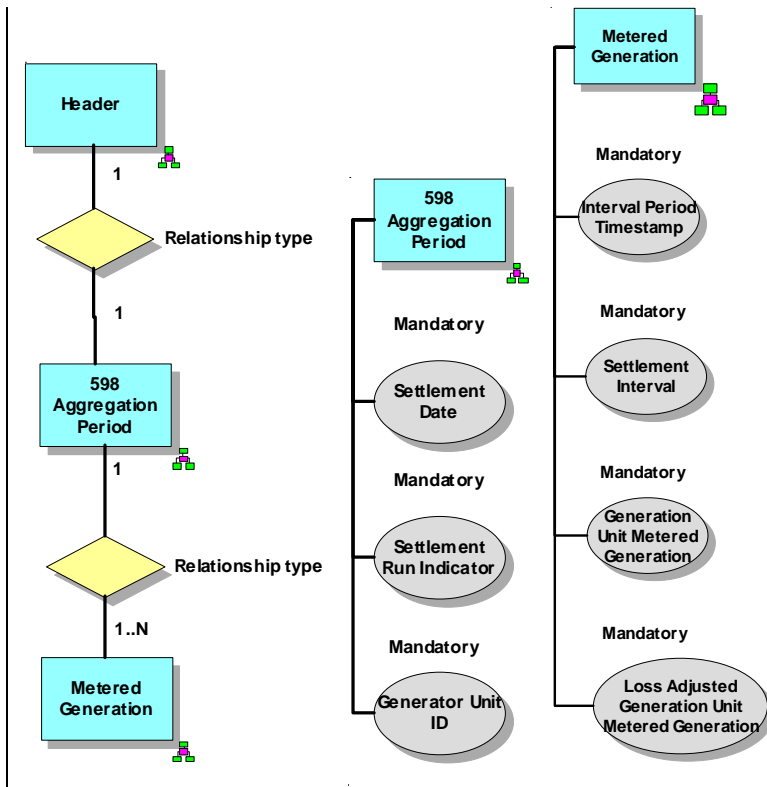
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5.6 MM 597



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