MIRN STRUCTURE

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Version	Effective Date	Author(s)	Change
1.0	8 Dec 2017	N Datar	First Issue
2.0	18 Oct 2019	D McGowan	Insert note under section 2.5.2

EXECUTIVE SUMMARY

This document describes the MIRN Structure that is used in the Victoria, Queensland, New South Wales / Australian Capital Territory and South Australian Gas Retail Markets.

REFERENCES TO PREDECESSORS

This document was created by merging the MIRN Structure documents for Victoria, Queensland and New South Wales/Australian Capital Territory (NSW/ACT). The MIRN structure for South Australia, where a document did not exist in the past has been included in this document.

To reflect the governance changes implemented on 1 July 2009, this document has been amended to remove references to the Victorian Energy Networks Corporation (VENCorp) and replace such references with Australian Energy Market Operator (AEMO). Where any content inadvertently refers to VENCorp it should be read as referring to AEMO.

It should be noted that the following participant ID's remain as participant ID's for AEMO as the gas market operator in the respective jurisdictions.

- VENCORP in Victoria and Queensland
- REMCO in South Australia
- NAGMO in New South Wales/Australian Capital Territory

CONTENTS

1. INTRODUCTION

1.1. Purpose

This document has been prepared as a guide for new entrants to explain the MIRN structure. Whilst the document is specific in detailing the intelligence underpinning the MIRN, it is a reference guide only and not to be used as a technical design document.

The Gas Interface Protocol describes technical interfacing requirements for the Retail Markets in Victoria, Queensland and New South Wales / Australian Capital Territory.

The Specification Pack describes technical interfacing requirements for the Retail Market in South Australia.

This document sets out the structure and format for MIRNs to be used in the Retail Gas Market jurisdictions mentioned above.

Successful operation of the National Gas Retail Market is reliant on:

- Positive and reliable identification of supply points within the customer transfer process;
- A verifiable link between supply points and relevant metering data; and
- An audit trail for data collection and processing operations.

The Meter Installation Registration Number (MIRN) provides a unique identifier for each supply point. It provides a reference against which other essential data can be linked and managed, and is crucial to the accurate management of customer transfer, supply point change control and data aggregation and transfer..

1.2. Audience

The document has been written for business and IT personnel within any Registered Participant as well as AEMO business and IT personnel. It is expected that the audience will have a familiarity with the overall business endeavour of Gas Retail Markets with the artefacts listed in the Related Documents section of this document.

1.3. Related documents

There are a number of related documents or artefacts that should be read in conjunction with this document. The table below defines the documents and the versions.

Reference	Artefact Name	Version
1	Retail Market Procedures (Victoria)	Current version as published on AEMO's website
2	Retail Market Procedures (Queensland)	Current version as published on AEMO's website
3	Retail Market Procedures (NSW/ACT)	Current version as published on AEMO's website
4	Retail Market Procedures (South Australia)	Current version as published on AEMO's website
5	Gas Interface Protocol	Current version as published on AEMO's website
6	AEMO Specification Pack	Current version as published on AEMO's website
7	Guideline Identification of Victorian Contestable Transfer Points	Current version as published on AEMO's website

1.4. Definitions and Acronyms

Term	Definition
GIP	The Gas Interface Protocol is a protocol required under clause 1.2 of the Retail Market Procedures (Victoria) and 1.3 of the Retail Market Procedures (Queensland) & (NSW/ACT). The GIP describes an agreed set of technical standards and business processes that enables participants to pass information between each other in a uniform method.
Specification Pack	Set of documents that provide the protocol which governs the manner and form in which information is to be provided, notice given, notices or documents delivered and requests made as contemplated by the Retail Market Procedures (South Australia).
Custody Transfer Meter (CTM)	A Custody Transfer Meter is used to measure the volume of gas entering or leaving the gas transmission system.
Gas Chromatograph (PG)	A Gas Chromatograph is an instrument measuring gas composition in the transmission system, and used in monitoring gas quality and in determining Zonal Heating Values. A Gas Chromatograph has a MIRN assigned to it.
Logical Meter (LC or LT)	A Logical Meter is where the readings are derived mathematically from other meters.
MIRN	In relation to a supply point at any time, the Metering Installation Registration Number (MIRN) for that supply point as recorded at that time: (a) where the supply point is a distribution supply point, in the MIRN database of the Distributor in whose distribution area that supply point is located; and (b) where the supply point is a transmission supply point, in the AEMO meter register, Please note that acronyms MIRN (Metering Installation Registration Number) and NMI (National Meter Identifier) are used in this document interchangeably. A MIRN is a sub-class of National Metering Identifier (NMI).

2. METER INSTALLATION REGISTRATION NUMBER (MIRN)

1

2

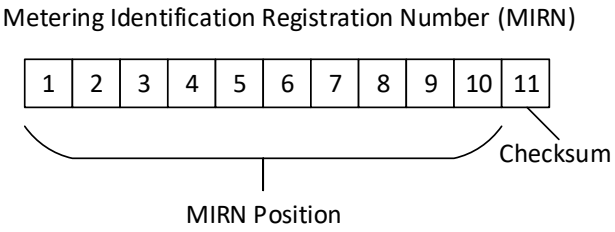
2.1. MIRN Overview

To maintain alignment with the protocols developed by the electricity industry, gas participants agreed to adopt the National Electricity Market numbering structure. Consequently NEMMCO (now AEMO) issued the subset of NMI's starting with "5" for use by the gas industry. NMIs in this subset are referred to as MIRNs and their use was implemented as part of the Full Retail Contestability (FRC) implementation program. MIRNs represent a unique identifier for supply points in the National Retail Gas Market.

Under the Retail Market Procedures (RMP), AEMO is the responsible party for allocating MIRN numbers ranges to distribution businesses.

2.2. MIRN Structure

The Metering Identification Registration Number (MIRN) is a ten-character unique identifier used to identify a supply point, the structure of which consists of alphanumeric components that contains no spaces.



The first three positions and the last two position of a MIRN contain business logic.

MIRN Position	Description
1	5 for Retail Gas Market CTM MIRNs start with, • 2 for MIRNs in NSW that are operated from VIC • 3 for MIRNs in VIC • 4 for MIRNs in QLD
2	State Identifier 2 – NSW/ACT 3 - Victoria 4 - Queensland 5 – South Australia
3	Distributor (Please refer to the table below for list of distributors in each jurisdiction) '0' indicates MIRNs administered by AEMO
4 to 8	Numeric component
9 to 10	For CTM MIRNs administered by AEMO (0 in MIRN position 3) In Victoria MIRN position 9 contains either P – Physical or L – Logical In Queensland MIRN positions 9 and 10 contain PC – Physical or LC - Logical

Distributor list by jurisdiction

Jurisdiction	Distributors
2 – NSW/ACT	2 – Australian Gas Networks (Albury NSW), formerly Stratus 4 – Jemena Gas Networks 5 – Australian Gas Networks (Wagga Wagga NSW) 6 – ActewAGL Distribution 7 – Central Ranges Pipeline
3 - Victoria	1 – Multinet Gas 2 - Australian Gas Networks 3 – Ausnet Services
4 - Queensland	1 – Allgas Energy 2 – Australian Gas Networks
5 – South Australia	1 – Australian Gas Networks (General) 4 – Australian Gas Networks (Mildura)

2.3. MIRN Checksum

To reduce the occurrence of incorrect transfers and data entry errors, a one digit checksum has been implemented. This Checksum value is in addition to the MIRN 10 character field and is always a numeric character. A general form of the algorithm used to create the MIRN checksum is:

1. Double the ASCII value of alternate digits within the MIRN beginning with the right-most digit.
2. Add the individual digits comprising the products obtained in step 1 to each of the individual unaffected ASCII value digits in the original number.
3. Find the next highest multiple of 10.
4. The check digit is the value obtained in step 2 subtracted from the value obtained in step 3. If the result of this subtraction is 10 then the check digit is 0.
5. The check digit does not apply to CTM or Gas Chromatographs.

2.4. Worked Checksum Examples

The logic of the algorithm can be summarised as:

1. Individually process each numeric character in the MIRN, starting with the right most.
2. For each character:
   (i) convert the character to its ASCII value; and
   (ii) for the right most character and each alternate character reading left, double the ASCII value obtained in Step 2(i) above; and
   (iii) calculate the sum of the individual digits of the ASCII value to a register holding the total added value for the MIRN checksum.
3. Subtract the total added value register from the next highest multiple of 10.

If the result is 10, the checksum is 0, otherwise the result is the checksum.

The MIRN for the example is 5600012357

Step	Description
1	Initialise variables used by the process • **Double_This_Char** is a Boolean that indicates whether the character currently being processed should be doubled. • **Char** is the character currently being processed, as it appears in the *MIRN*. • **ASCII_Char** is the ASCII value of Char. • **Total** is the running sum of the digits generated by the algorithm. • **Checksum** is the final result. At the start of the process: • **Double_This_Char** = True because the right most character, and then every alternate character, is doubled by the algorithm. • **Total** = 0 • **Checksum** = NULL
2	Read the *MIRN* character by character, starting with the right most character eg. Char = 7
3	Convert the character to its ASCII value eg. ASCII_Char = 55
4	Double the ASCII value if the character is the right most of the *MIRN* or an alternate eg. ASCII_Char = 110 Double_This_Char = Not Double_This_Char

Step	Description
5	Add the individual digits of the ASCII value to the Total eg. Total = Total + 1 + 1 + 0 (i.e. Total = 2)

Performing steps 2 through 5 for each character in our example *MIRN* gives the following results:

Character	Total Before	ASCII Value	Double?	Doubled Value	Total After
7	0	55	Y	110	2 (1+1+0)
5	2	53	N	53	10 (2+5+3)
3	10	51	Y	102	13 (10+1+0+2)
2	13	50	N	50	18 (13+5+0)
1	18	49	Y	98	35 (18+9+8)
0	35	48	N	48	47 (35+4+8)
0	47	48	Y	96	62 (47+9+6)
0	62	48	N	48	74 (62+4+8)
6	74	54	Y	108	78 (74+1+0+8)
5	83	53	N	53	91 (83+5+3)

The value of **Total** after processing the entire *MIRN* is 91.

The next highest multiple of 10 is 100.

Therefore, the MIRN checksum = 100 – 91 = 9

The following checksums samples were calculated using the methodology mentioned above. These samples of the checksums are provided to assist participants in checking their implementation of the MIRN checksum algorithm.

MIRN	*MIRN checksum*	*MIRN*	*MIRN checksum*
5500000278	4	5600000278	2
5500003074	5	5600003074	3
5500008129	2	5600008129	0
5500012357	1	5600012357	9
5500023478	0	5600023478	8
5500047359	4	5600047359	2
5500067253	5	5600067253	3
5500079467	6	5600079467	4
5500089000	8	5600089000	6
5500099352	6	5600099352	4
5500000278	4	5600000278	2

2.5. MIRN Allocation

Following sections contain for each jurisdiction, the allocation of numbers available for use as MIRNs for Distribution delivery points, in accordance with RMPs.

2.5.1. NSW/ACT

Organisation	Start Range	End Range
Jemena in NSW (supplied from NSW)	5240000000	5249999999
Australian Gas Networks – (Wagga Wagga NSW) (supplied from NSW)	5250000000	5259999999
ActewAGL in ACT (supplied from NSW)	5260000000	5269999999
Central Ranges Pipeline – (Tamworth NSW) (supplied from NSW)	5270000000	5279999999

2.5.2. Victoria

Organisation	Start Range	End Range
Multinet Gas	5310003000	5319999999
Australian Gas Networks (VIC)	5320003000	5329999999
Australian Gas Networks (NSW) – Albury & Murray Valley, supplied from VIC and operated as part of VIC Retail Gas Market	5220003000	5228999999
AusNet Services	5330003000	5339999999
AEMO	5300000000	5300009999
AEMO	5200000000	5200009999

Note: For Victoria, refer to Ref #7 (Guideline Identification of Victorian Contestable Transfer Points - section 3.2.2) in section 1.3 (Reference documents) for details about the initial allocation. It should be noted that the initial allocation of numbers (0000 to 3000) could have been allocated to a site that was originally a daily read site but has now been downgraded to a basic metered site.

2.5.3. Queensland

Organisation	Start Range	End Range
Allgas Energy - QLD	5410000000	5419999999
Allgas Energy – NSW (Tweed Heads), supplied from QLD and operated as part of QLD Retail Gas Market	5210000000	5219999999
Australian Gas Networks - QLD	5420000000	5429999999
AEMO - Qld	5400000000	5400009999
AEMO - NSW	5200000000	5200009999

2.5.4. South Australia

Organisation	Start Range	End Range
Australian Gas Networks SA	5510000000	5519999999
Australian Gas Networks SA (Mildura) supplied from SA and operated as part of SA Retail Gas Market	5340000000	5349999999