Open access and common communication standards review

Advisory Stakeholder Working Group: Meeting 2

31 OCTOBER 2013

Item 2: Principles and assumptions

Principles for the review

This review is to develop a framework which defines the minimum access and interoperability requirements, and provides the appropriate level of regulation, that allows DSP services to develop in an optimal manner when those services are provided to consumers using a smart meter.

To achieve this, the key principles we will consider are:

- Competition in DSP services – the framework should support and promote competition in DSP services through Open Access, Interoperability and competitive neutrality
- Consumer protection – the framework will provide appropriate arrangements to protect the interests of consumers

Principles for the review (continued)

- Innovation of DSP services – the framework should promote and encourage the development and innovation of DSP services in the market, either with or without the use of a smart meter
- Proportionality – the framework should provide a level of regulation that is proportional to the market's requirements
- National Electricity Objective (NEO) – the framework should promote the NEO

Assumptions for discussion

In carrying out the review, we are making a number of assumptions:

- The minimum functionality specification of smart meters determined by SCER applies. Under this review, we will assess the degree of regulation required for these functions.
- The framework for the regulation of third parties will be determined by SCER. To the extent necessary and appropriate, third parties and their roles will be considered under this review
- The role of a “metering coordinator” as recommended under the Power of Choice review will be created

Assumptions for discussion (continued)

- There will be metering contestability
- All participants will continue to have access to metering data and associated functions that they have under the existing rules
- Charges will apply to access data and functions of smart meters, other than the current arrangements for metering data. The framework for whether the charges should be regulated and whether certain data or functions should be free to certain parties are to be determined under this review.
- Ring fencing guidelines will be developed by the AER
- There are several projects which will have an impact on the review, and the development of these projects will need to be taken into consideration throughout the review.

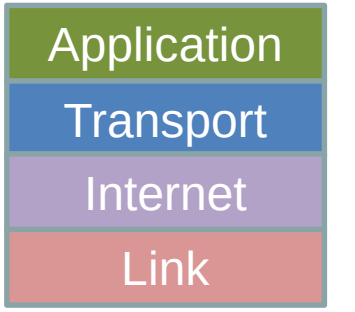
Item 3: Overview of previous meeting

Summary of advisory stakeholder working group meeting 10 October

- Purpose of the first stakeholder meeting was to establish a common framework for discussing open access and common communication standards.
- The AEMC is seeking to use this common framework in requesting and accessing submissions from industry
- This presentation is based on slides presented by Phacelift at the first stakeholder meeting

Internet Layers Model

- Upper layers send information to lower layers
- The interface between different layers defines
  - What is sent and
  - How the lower layers respond



Process-to-Process Communications

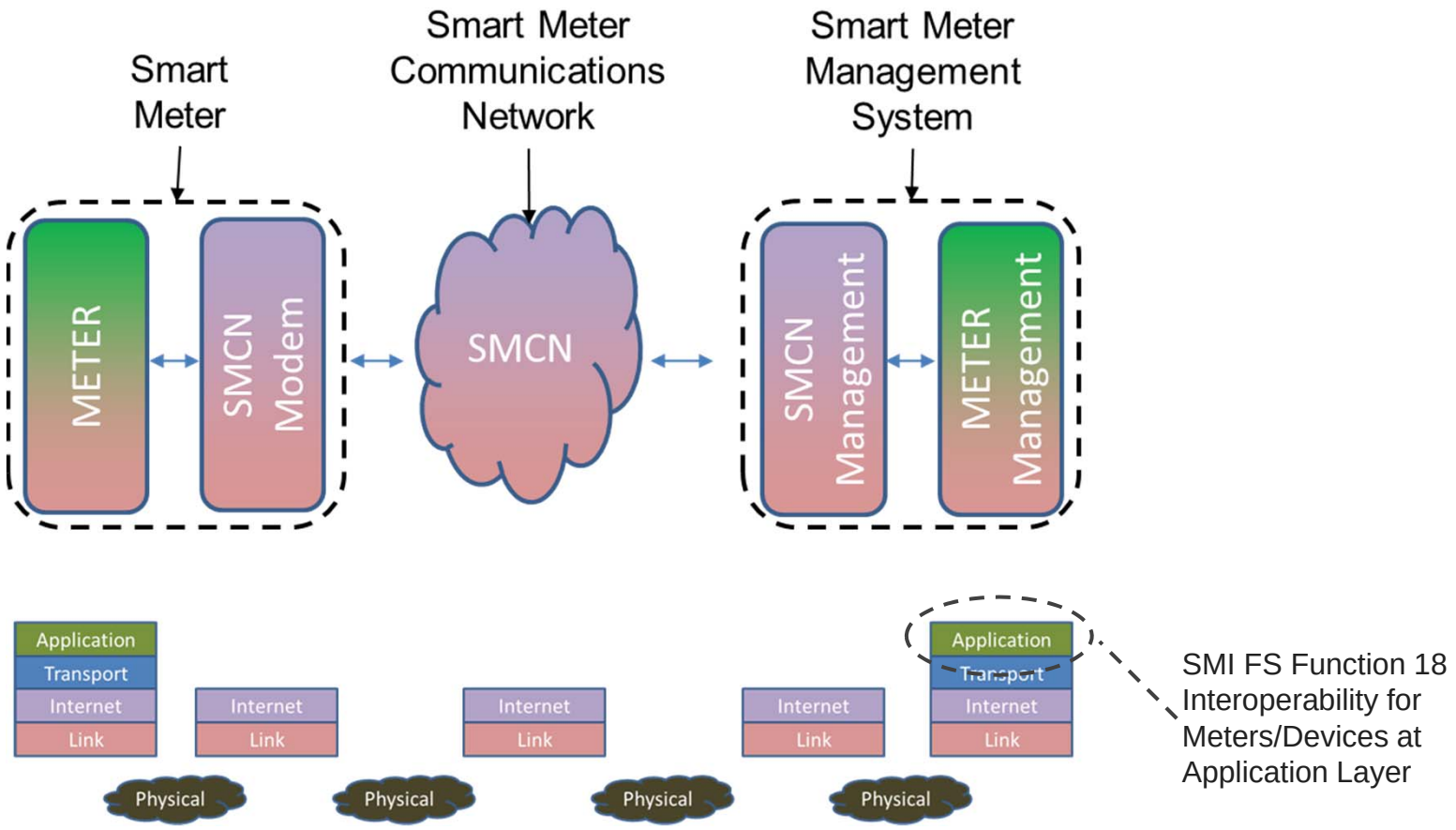
Host-to-Host Communications

Send Packets across (multiple) networks (inter-networking)

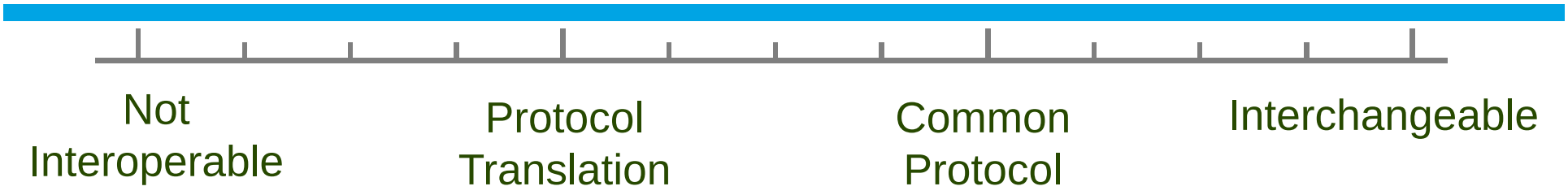
Sends Packets across a single link

How messages are sent over a physical connection (e.g. voltages, frequency)

When Smart Meters use the Internet Layers



Interoperability Spectrum



- **Not Interoperable**
  - No ability to interact with the meter (e.g. Unpublished proprietary protocol)
- **Protocol Translation**
  - Able to interact with the meter by converting protocols, however there may be some loss of functionality e.g. Itron MV90 is only able to read meter data it cannot alter meter settings
- **Common Protocol**
  - All meters use a common protocol so Accredited Parties are able to interact with all meters without loss of functionality (may offer different functionality)
- **Interchangeable**
  - One meter can be swapped with another with no system impacts. No need to change Head End Systems or communications (also referred to as “Fully Interoperable”)

Access to Meter Functionality

Direct Access

Accredited Parties able to access meters directly and use ALL functionality (generally referred to as “Open” Access)
e.g. Use of the Public Telephone Network to read meter types 1 to 4

Advanced Functions

Accredited Parties able to access advanced meter functionality
e.g. Enabling and disabling HAN devices

Metrology Functions

Accredited Parties can access meter functionality defined in the rules
e.g. AEMO B2B Gateway

Closed

Accredited Parties not given access to meter functionality

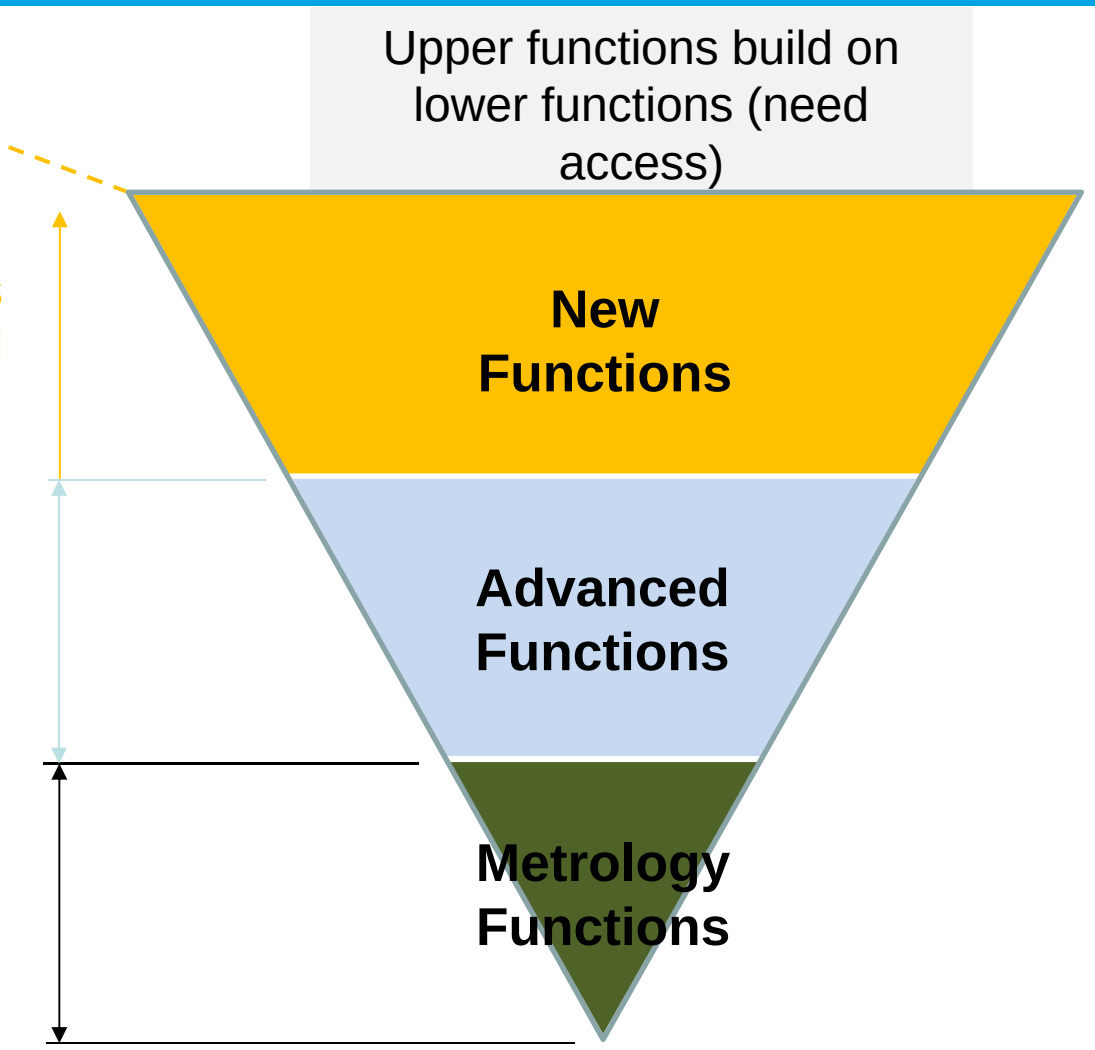
Smart Meter Functionality

Over time more new functions will be offered

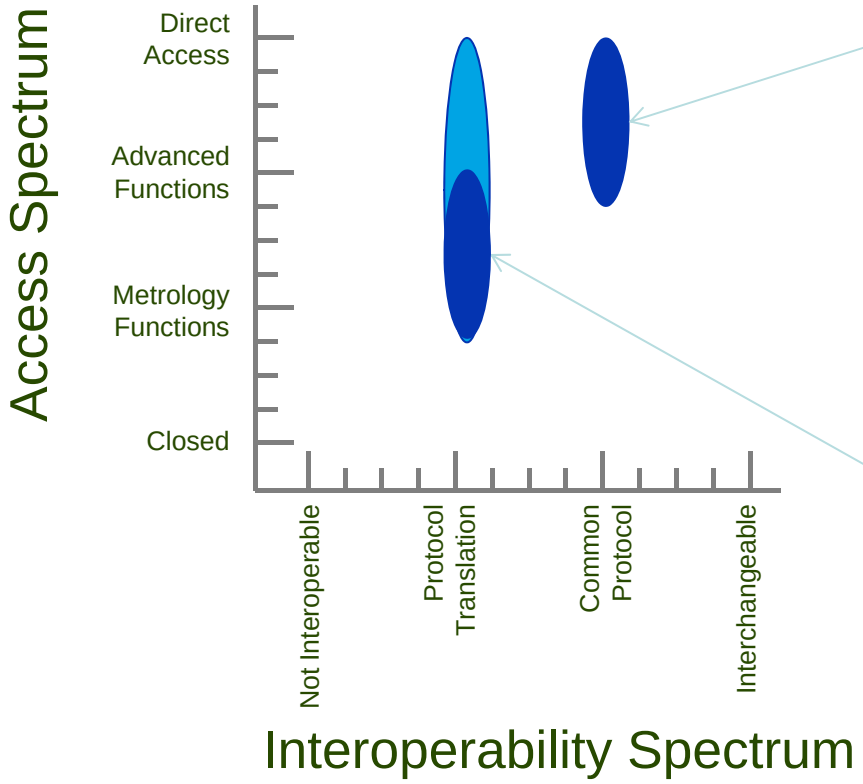
New (and specialist) Functions eg Inverter Power Factor control

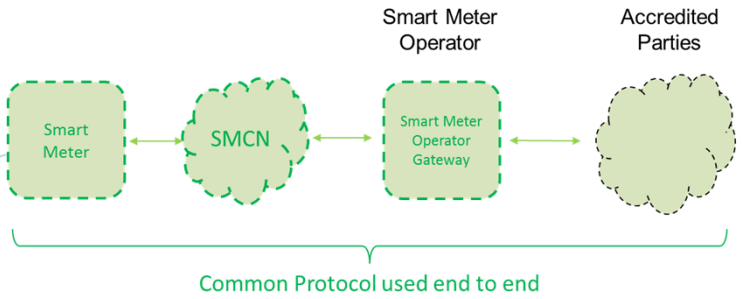
Advanced Functions typically found in Smart Meters and recognised in the Rules e.g. Enabling HAN devices

Functionality required to support the market and sufficiently stable to be documented in the Rules

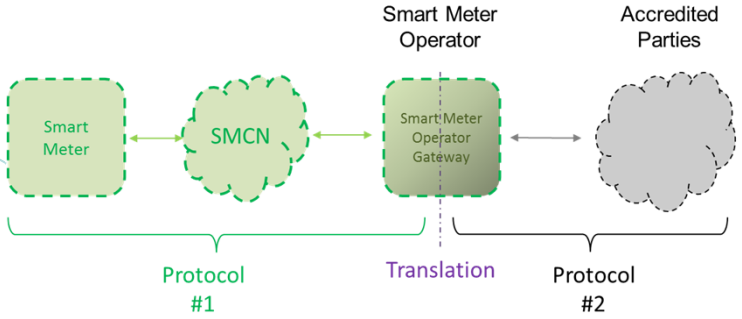


Access with and without a common protocol





Accredited Party can interact directly with the specified smart meter supporting use of New Functions



The software performing the Protocol Translation is unlikely to support New Functions

Item 5: Access and interoperability framework – high level questions

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Questions to answer

This review is to determine the minimum level of access and interoperability that is appropriate and desirable (taking into consideration the principles for the review)

The framework should allow industry and the NEM to develop and change within this framework

Questions we will answer by the end of the review include:

- What should be the minimum levels of:
  - Access?
  - Interoperability?

Questions to answer (continued)

- Access:
  - What level of access should be provided for which functions?
  - Do we require access to functions or access to the meter?
  - Who or what should be responsible for ensuring only accredited parties are provided access?
  - How is the prioritisation of messages to be managed?
- Interoperability:
  - Should a common market protocol be developed for Australia?
  - Has the international protocol matured sufficiently to be adopted by Australia?
  - Who would be the appropriate body to maintain these standards?

Item 6: Functionality – access to smart meter functions

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Access by accredited parties – introduction

- An important part of the open access and common communications standards review is to provide advice on who should have access to which functions of smart meters, and the level of regulation needed for this access.
- Purpose of this presentation is to begin the conversation of who should have access to which meter functions.
- Not a recommendation but a straw-man of possible access arrangements – to promote discussion.

Access by accredited parties – scope

- Each function of the National Smart Meter Program – Minimum Functionality Specification has been initially considered
- Characterise each function as either a “Metrology Function”, Advanced Function” or “New Function”
- How access is achieved is not part of this presentation
- Payment for access is not discussed in this presentation

Reminder of minimum functionality specification

S7.1 Measurement And Recording

S7.2. Remote Acquisition

S7.3 Local Acquisition

S7.4 Visible Display On Meter

S7.5 Meter Clock Synchronisation

S7.6 Load Management Through A Controlled Load Contactor Or Relay

S7.7 Supply Contactor Operation

S7.8 Supply Capacity Control

S7.9 Home Area Network using Open Standard

S7.10 Quality of Supply and Other Event Recording

Minimum functionality specification (2)

S7.11 Meter Loss Of Supply Detection

S7.12 Remote Meter Service Checking

S7.13 Meter Settings Reconfiguration

S7.14 Software Upgrades

S7.15 Plug and Play Device Commissioning

S7.16 Communications And Data Security

S7.17 Tamper Detection

S7.18 Interoperability For Meters/Devices At The Application Layer

S7.19 Hardware Component Interoperability

S7.20 Meter Communications: Issuing Messages And Commands

S7.21 Customer Supply (Safety) Monitoring

Access to metering data

- Access to metering data is a Metrology Function, and includes:
  - S7.1 Measurement And Recording
  - S7.2. Remote Acquisition
  - S7.5 Meter Clock Synchronisation
  - S7.3 Local Acquisition (available at physical meter)
  - S7.4 Visible Display On Meter (available at physical meter)
- SCER is submitting a rule change proposal to the AEMC to determine which parties are accredited to access this metering data. This is, therefore, outside of the scope of the AEMC's advice on open access and common communication standards.

Other support functions

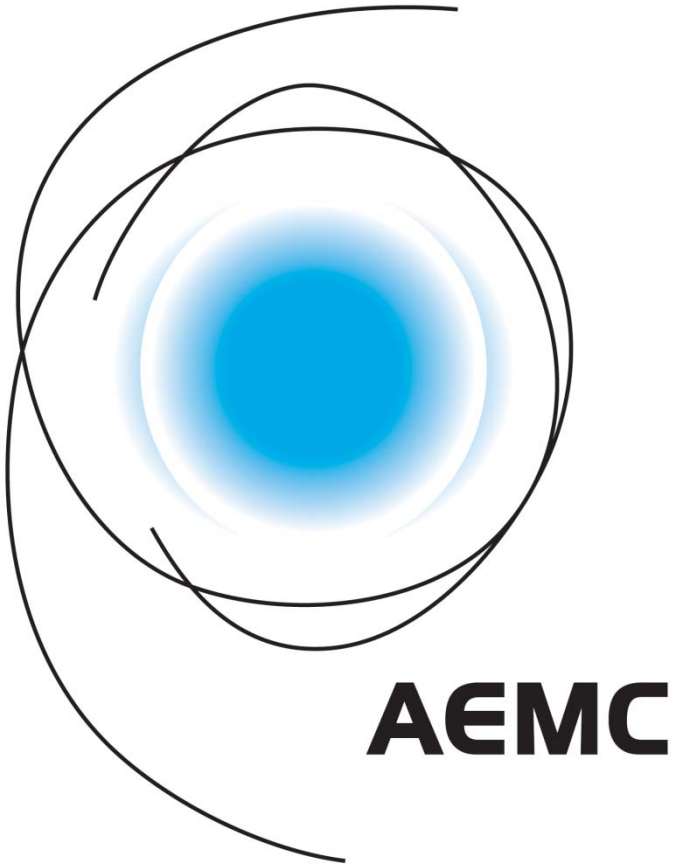
- Other support functions include:
  - S7.12 Remote Meter Service Checking
  - S7.13 Meter Settings Reconfiguration(see comment)
  - S7.14 Software Upgrades
  - S7.15 Plug and Play Device Commissioning
  - S7.16 Communications And Data Security
  - S7.17 Tamper Detection
  - S7.18 Interoperability For Meters/Devices At The Application Layer
  - S7.19 Hardware Component Interoperability
- Which Accredited Parties including the Metering Coordinator need access to these functions?
- Some functionality within S7.13 may need to be accessed by other accredited parties, eg in relation to tariffs

Load management functions

- Management of consumer load should be an Advanced Function and includes:
  - S7.6 Load Management Through A Controlled Load Contactor Or Relay
  - S7.7 Supply Contactor Operation
  - S7.8 Supply Capacity Control
  - S7.9 Home Area Network using Open Standard
  - S7.11 Meter Loss Of Supply Detection
- Any accredited party should have access to these functions provided the consumer has given informed consent.

Network related functions

- Network related functions should be Advanced Functions and include:
  - S7.10 Quality of Supply and Other Event Recording
  - S7.11 Meter Loss Of Supply Detection (also included above)
  - S7.21 Customer Supply (Safety) Monitoring
- Which Accredited Parties including the Local Network Service Provider should have access to these functions provided the consumer has given informed consent?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