24 JUNE 2015

REGISTRY MANAGER

DISTRIBUTOR WORKSHOP

COMPETITION · RELIABILITY · EFFICIENCY

THE REGISTRY

- The Code contains obligations for participants to maintain the registry – *times are maximums, not targets*

- Managed by Jade Corporation under contract to the Authority

  - Service Provider Agreement (SPA)

  - Functional specification (part of SPA)

- Is a real time, online 24/7 database, critical to most participants' operations

- Monthly reports published at http://www.ea.govt.nz/operations/market-operation-service-providers/registry-manager/registry-manager-monthly-reports/

- Statistics available on registry usage at "Inquiries/statistics"

THE REGISTRY – REFERENCE DOCUMENTS

- Supporting documents are available at

  - User Manual

    https://www.electricityregistry.co.nz/files/User_Documentation.zip

  - Participant Identifiers

    http://www.ea.govt.nz/operations/industry-participants/participant-identifiers/

  - Functional Specification

    https://www.electricityregistry.co.nz/files/FunctionalSpecification.zip

  - Registry Access Policy

    http://www.ea.govt.nz/operations/retail/the-registry/registry-access/

  - Help desk - 0800-652266 or registry.engineer@jadeworld.com

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WHAT THE REGISTRY DOES

- The registry is a critical enabler of the competitive electricity market. It enables
  - single version of the "truth" – participant not in breach if it uses registry information
  - transparency of information
  - customer choice of retailer
  - Invoicing
    - settlement in the electricity market
    - trader to consumers
    - use of network by distributors to traders
  - trader choice of meter equipment provider
  - Reports and reporting activities
  - compliance monitoring

REGISTRY FUNCTIONS

- Has a primary key of ICP identifier *(defined earlier)*

- ICPs require a checksum *(I have a calculator if anyone needs it)*

- Stores and makes available information

  - Is not a work flow tool, records are updated after an event

  - Records time sliced "ownership" of ICP identifiers by participants

  - Records time attributes relevant to ICP identifiers

  - Records static information required by the industry

  - Sends acknowledgements, notifications, and alerts when a change is carried out to an ICP identifier

  - Provides secure data hub for participants to exchange information

  - ICP outage management

CONCEPT OF EVENTS

- Registry uses a concept of events, multiple registry fields exist within an event
  - Network
  - Pricing
  - Address
  - Trader
  - Metering
  - Status

CONCEPT OF EVENTS

- Some business rules

  - on the Event Date, you must be the responsible participant

  - when updating an event, all fields should be updated

  - the Event Date can be different from the input date

  - changes take effect from the start of the day of the Event Date

  - event Date can be in the past but not the future

REGISTRY PARTICIPANTS
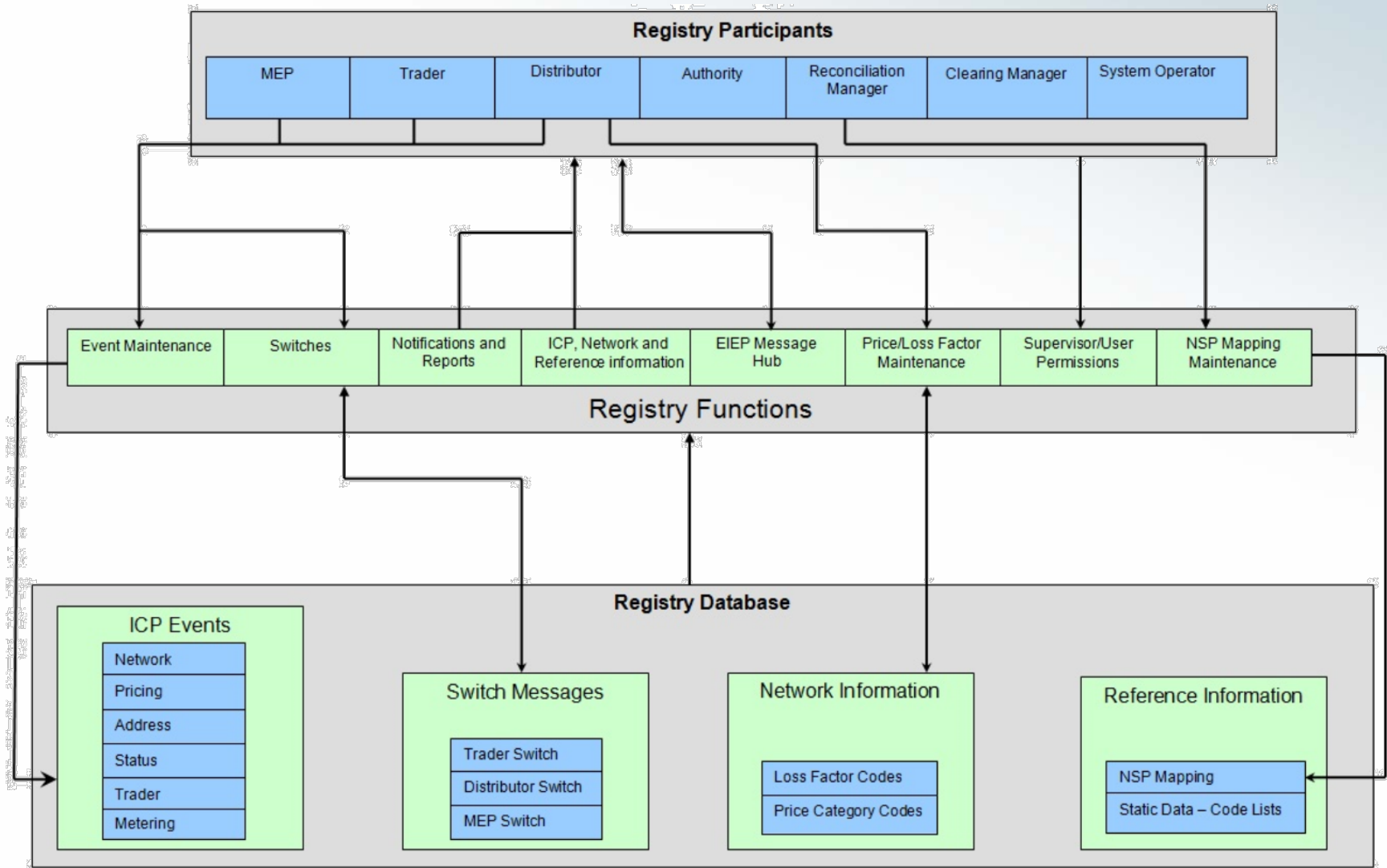
ACCESS TO THE REGISTRY

- Participants must apply to the Authority for access

- Authority usually only grants access to those parties that require it for Code purposes
  - registry access policy contains the Authority's terms and conditions at http://www.ea.govt.nz/dmsdocument/16031
  - participants must comply with the terms and conditions specified by the Authority (clause 11.28(2A)

- Access is by any one of the following – user choice
  - web browser screen
  - SFTP
  - web services

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ACCESS TO THE REGISTRY

- The Authority normally provides "supervisor" user access to a participant for a participant class

- Participant class restricts what fields a participant may write to

- Any participant may see any record

- The supervisor can create (or delete) access and privileges to any number of users

SEARCHES AND REPORTS

- Users can request standard reports from the registry, provided that they have the appropriate permissions

- Reports are output in CSV format and can only be received via SFTP

- Reports can be

  - Opened in MSExcel or

  - Imported into a back office system

EVENT TYPES

- Event type **Network**

  This event type groups together the attributes relating to network connection details and the network owner (Distributor)

- Event type **Pricing**

  This event type groups together the attributes relating to Distributor line charges and loss factors

- Event type **Address**

  Refer to the attribute section for details on the minimum requirements of a valid Address

- Event type **Trader**

  This event type groups together the attributes used for reconciliation and for identifying the current Trader

EVENT TYPES

- Event type **Metering**

  This event type groups together the attributes relating to the physical meters at the ICP site and for identifying the metering equipment provider.

- Event type **Status**

  This event type groups together the attributes relating to the precommissioning stage and energisation Status of the ICP (see ICP Status lifecycle)

SWITCHING OF ICP IDENTIFIERS

- Facilitates switching of responsibility for certain information for ICPs
- An ICP can switch between
  - distributor/network owner identifiers (distributor switching/ICP transfer)
  - trader identifiers (customer switching)
  - Meter owner identifiers (MEP switching)

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DISTRIBUTOR/NETWORK OWNER SWITCHING

- Schedule 11.2 of the Code sets out requirements and conditions

- Applicant distributor must notify the market administrator of the change using the prescribed form

- Notification must be at least 3 business days before the switching date

- Applicant distributor must give the market administrator confirmation that the written consent received from

  - losing distributors consent unless the transfer relates to the creation of an embedded network

  - every trader at any ICP being supplied from the NSP being transferred

- Please do not transfer ICPs mid month

TRADER IDENTIFIERS - CUSTOMER SWITCHING

- Schedule 11.3 of the Code sets out requirements and conditions
  - gaining trader initiates a switch request. Losing trader must respond
  - once a switch is started it must be completed or withdrawn
  - switches must be completed within Code required time periods
  - distributors receive notification of a switch completion
  - on switch completion, the registry will update the trader field and assign write access to the gaining trader

- Either trader may request a switch withdrawal once a switch is started (or within 2 months of being completed). Withdrawal undoes registry changes

- Traders may dispute switch event meter reading through a separate read revision process

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MEP SWITCHING

- Schedule 11.1 and 11.4 of the Code sets out requirements and conditions

  - trader updates MEP participant identifier in the registry

  - registry notifies gaining MEP of notification. Gaining MEP may accept, decline or do nothing

  - If gaining MEP accepts, registry will allow gaining MEP to update registry metering records

  - When gaining MEP performs that update, its participant identifier will become visible on the registry

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MEP SWITCHING – FOR CLARITY

- An MEP does not breach the Code if

  - it receives an "invite" to be an MEP and does nothing

  - it responds to an invite with an accept or reject and does nothing

  - a trader switches an ICP and does not have an arrangement with the MEP

  - it is asked by a trader to replace metering equipment and receives a service order but has not accepted a notification from the registry

- MEPs do breach the code if it

  - installs metering equipment without an arrangement with the responsible person

  - installs metering equipment and fail to update the registry correctly

  - fail to maintain metering installations it is responsible for in compliance with the Code

STATIC DATA TABLES

- All the codes and identifiers used in the registry are maintained by the registry manager

- The Authority approves all new codes and identifiers

- The Authority instructs the registry manager regarding the maintenance of these codes and identifiers

- Static data tables are viewable in the registry and can be downloaded

LOSS CATEGORY CODES AND LOSS FACTORS

- Distributors must maintain the table of loss category codes in the registry. Table may be viewed, searched and downloaded

- Loss category codes (LCC) are assigned to ICPs by distributors

- LCC and loss factors are used by

  - traders when calculating their retail price to consumers

  - traders preparing their submission information for the reconciliation process

  - reconciliation manager when loss adjusting submissions

- The Code requires unique LCC for any generator 10MW or greater nameplate and the distributor must advise the reconciliation manager of its existence

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LOSS CATEGORY CODES AND LOSS FACTORS

- Code requirements

  - for new or distributor switched ICPs LCC may be created immediately

  - for existing ICPs LCC must be populated in registry table 2 months before it is to be used

  - loss factors

    - must be no more than 2 per LCC

    - must be populated in registry table 2 months before it is to be used

    - registry table entry must have a start date

    - When loss factor no longer applies it must be end dated

    - If LCC is still used on an active ICP in the registry, there must always be an active loss factor

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PRICE CATEGORY CODES

- Distributors must maintain the table of price category codes (PCC) in the registry. Table may be viewed, searched and downloaded

- PCCs are assigned to ICPs by distributors

- PCCs are used by traders in assigning distributor tariffs to meter registers taking into account register content code and period of availability

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ACCURACY OF INFORMATION

- The registry is a database for the identifiers and attributes for all ICP identifiers

- Time frames give in the Code to provide information to the registry are maximums, and not targets

- The registry has strict Code obligations for accuracy and time periods to provide and update records

  - a participant does not breach the Code just because the participant does something relying on inaccurate records in the registry (clauses 10.4 and 11.32)

  - a participant must take all practicable steps to ensure that information provided to the registry is complete and accurate, not misleading or deceptive, and not likely to mislead or deceive

  - information provided to the registry is found to be in inaccurate must be corrected as soon as practicable (clause 11.2)

MADE A MISTAKE?

- Information in the registry is automatically propagated to other participants who may use that information in their processes and systems

- Clause 11.2 requires all participants to correct information as soon as practicable

- Registry errors are correctable. Registry errors may impact other parties and not be correctable or may take considerable effort

- Errors of the following types pose considerable difficulties

  - incomplete ICP lists for distributor switching
  - incorrect NSP, loss category code, loss factors, price category code
  - backdated changes to attributes
  - unclear pricing schedule requirements related to price category code
  - late creation of ICP identifiers
  - incorrectly managed shared unmetered load

MADE A MISTAKE?

Attributes input into registry	Participant that makes input to the registry	Comments	Consequence of an error	Error is recoverable	Participant with consequence of an error	Customer directly impacted
Network Event Date	Distributor	Date that the network information is to become effective from	Traders and MEPs may apply wrong information in their system leading to - traders – incorrect customer invoicing and market settlements - MEPs – incorrect metering installation configuration	Not entirely	Traders MEPs	Yes
Network	Distributor	Valid Participant Identifier for the Distributor.	File rejected	Yes	Distributor	Yes
POC	Distributor	A seven-character code that indicates the POC to which the ICP is connected. This information rarely changes but can do so if GXP boundaries change. POCs are assigned by the Reconciliation Manager as part of the NSP identifier and maintained in the NSP mapping table.	Traders and MEPs may apply wrong information in their system leading to - traders – incorrect customer invoicing and market settlements - MEPs – incorrect metering installation configuration	Not entirely	Traders MEPs	Maybe
Reconciliation Type	Distributor	A two-character code that indicates how the ICP consumption is reconciled. Values can be one of: GN grid connected network; EN embedded network; SB embedded network residual load; LE embedded network gateway; or SI shared unmetered load. Note: LE and SI Reconciliation Types are Distributor-only ICPs.	May cause - trader to provide incorrect submission information to the reconciliation manager - may cause volume or invoice disputes to be claimed that delay market settlement - may cause customer invoice issues	Yes	Traders	Maybe
Dedicated NSP	Distributor	If an ICP is located in a balancing area that has more than 1 NSP located within it, and the ICP will be supplied only from that particular NSP, or the ICP is a point of connection between a network and an embedded network, the ICP must be designated as "dedicated". A single character is used to indicate whether the ICP is dedicated. The character must be: Y—yes (the ICP is dedicated); or N—no (the ICP is not dedicated). This is the default character. The Reconciliation Manager uses the Dedicated NSP status as a priority order when moving volumes between NSP's to achieve balance.	Causes an incorrect reconciliation sequence, where consumption may be moved to an alternate GXP within the balancing area when it should not have been or vice versa. There may be spot energy cost differences that will be paid by the customer or the trader	Yes	Traders	Maybe
Installation Type	Distributor	A single-character code that can take one of the following three possible values: L—load; G—generation; or B—both.	Indicates to a trader and the Authority that distributed generation has been connected at the ICP. - may cause the trader to lose time querying the MEP and customer - may cause the MEP to incorrectly configure a metering installation - will lead to incorrect Authority reporting	Not entirely	Traders MEPs	Yes

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REGISTER CONTENT CODES AND PERIOD OF AVAILABILITY

- Set out in RFS, SD-020 and also registry static data table

- Register content code identifies
  - the functionality of a meter register
  - if electricity measured by the register is subject to network control

- Period of availability
  - identifies the minimum time period a register is active for
  - Will be a value between 1 and 24 – (*24 indicates there is no control applied to the electricity measured by the register)*
  - Currently is no default period of availability when a distributor does not define it

REGISTER CONTENT CODES AND PERIOD OF AVAILABILITY

- Could be used by networks for tariffs eligibility in its pricing schedules, for use by retailers in assigning tariffs to consumers

- EIEP12 contains optional fields for the register content and period of availability

- Some common faults
  - IN24 does not exist
  - In a number of cases, CN8 may actually be NC8
  - D register must have a corresponding N register and vice versa

THE REGISTRY – NETWORK PRICING FIELDS

Retailers use the Network pricing event to assess their liability to the Distributor

- Distributor Price Category Code

  - Use in conjunction with register content code/POA to determine fixed charges for ICP and variable charges per meter register

- Distributor Loss Category Code

  - Used to adjust pricing to allow for increase in energy cost due to losses

- Distributor Installation Details

  - May be useful but generally not

- Chargeable Capacity

  - For price category codes that have a capacity component (KW, KVA)

  - "A numeric value (decimal with two decimal places) that is used to facilitate the communication of additional line charging information between Distributors and Traders."

THE REGISTRY – NETWORK PRICING FIELDS

Good things not to do

It's a Price Category Code not a puzzle:

101
101103
101103127
101103153
101127
101128

It is a Network Charge not a Metering Charge

96
96M
96PP

If an ICP does not have a chargeable capacity component don't put one in, values that map to NULL don't help

Price Category	Chargeable Capacity
ABSN	14.00
ABSN	15.00
ABSN	16.00
ABSN	18.00

Good thing to do

Define the register content/POA codes that apply to your various network tariffs and include them in your schedules

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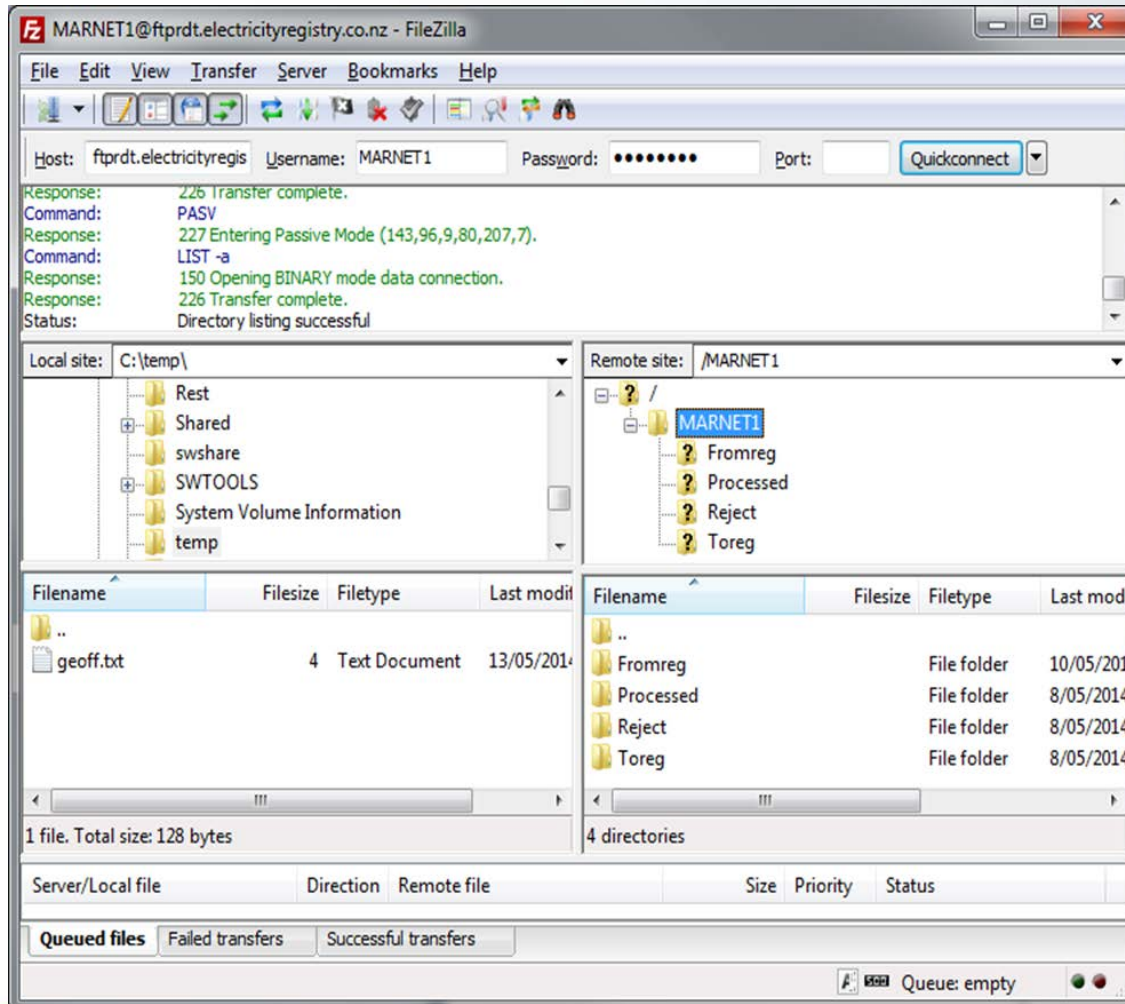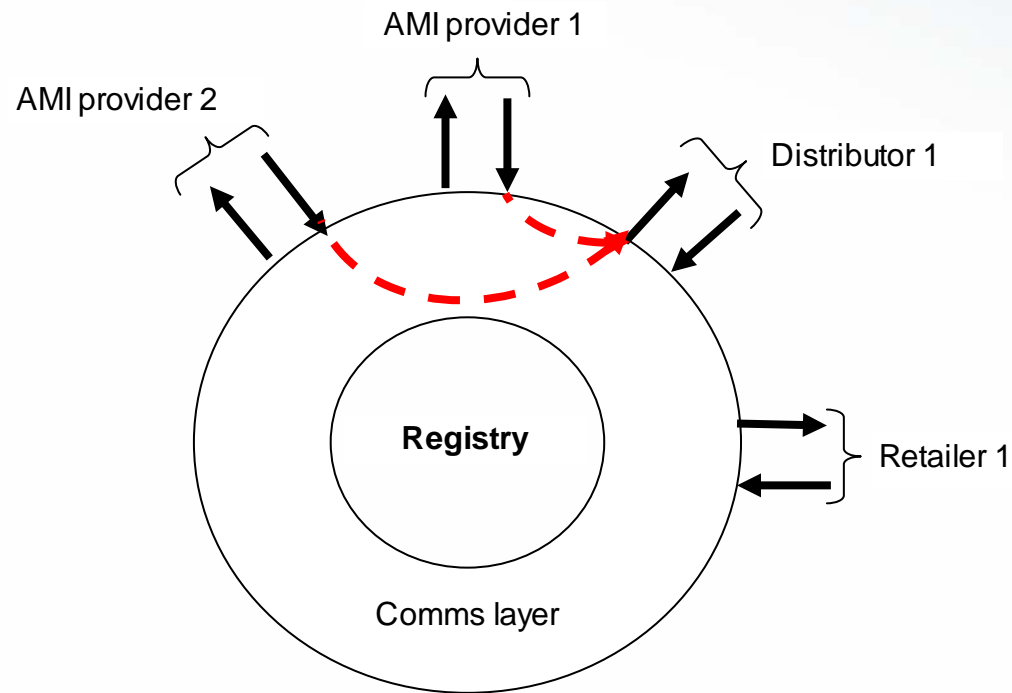
REGISTRY SFTP DIRECTORIES
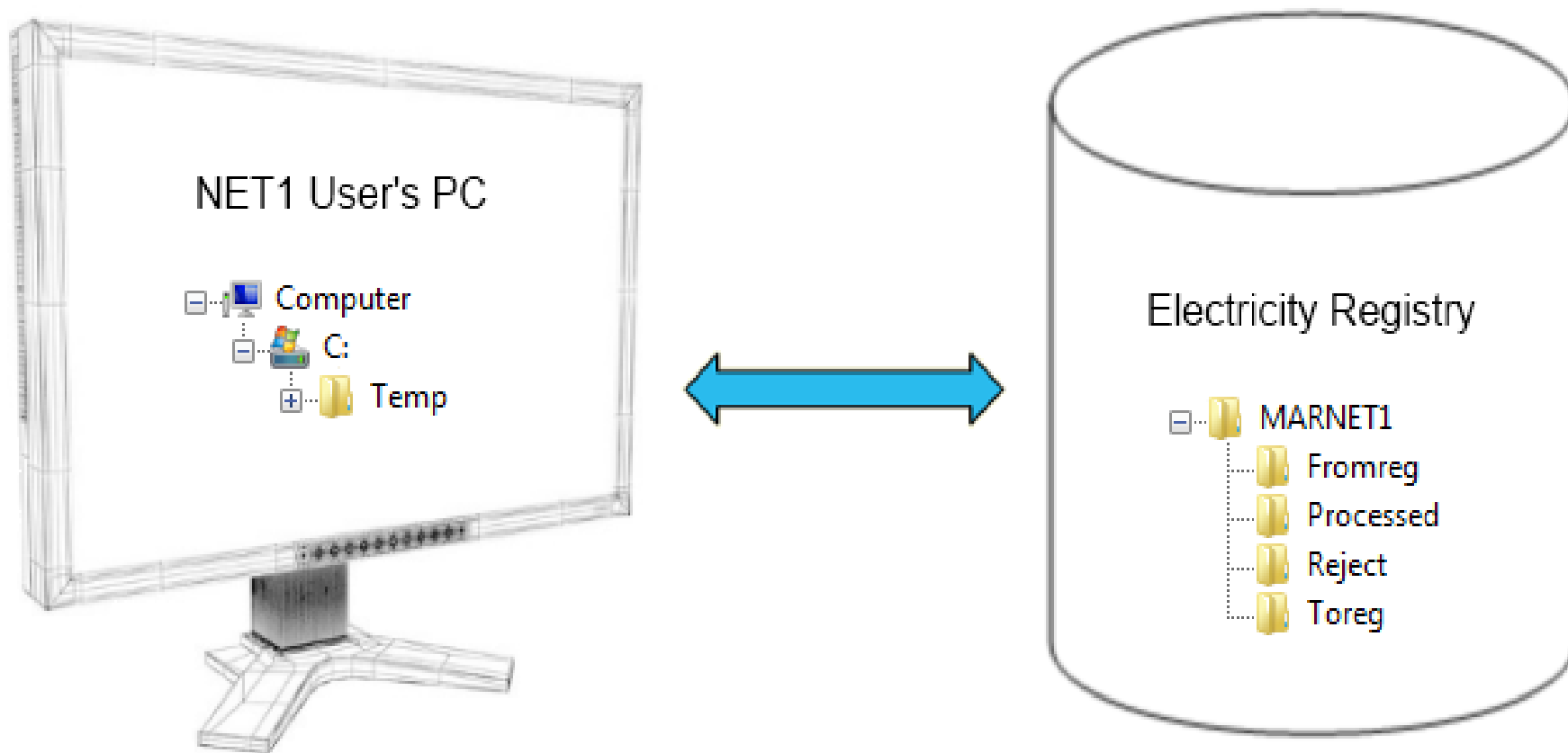
REGISTRY SFTP DIRECTORIES

- In the registry, there is a top level directory for each participant with the following subdirectories

Directory	Files are put here by the…
ToReg	Participant for the registry to process
Fromreg	Registry for user to see (reports, notifications and acknowledgements)
Processed	Registry after processing the corresponding file from the Toreg directory
Reject	Registry if the corresponding file in the Toreg directory has errors. Note the file extension of a rejected file is the error code; that is, the reason the file was rejected. Error codes are in registry static data tables
EIEPout(bound)	Registry after a correctly named file is delivered to the EIEP hub by another registry user
EIEPin(bound)	Participant for the Registry after a correctly named file is delivered to the EIEP hub by another registry user. But, if the corresponding file has an error it will be sent back to the EIEPin box with an error code

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SFTP CLIENT PROGRAM

THE REGISTRY – REGISTRY DATA HUB

AMI provider 1

AMI provider 2

Distributor 1

Registry

Comms layer

Retailer 1

THE REGISTRY – REGISTRY DATA HUB

- Send and receive files to any Registry Participant

- Notification settings are configurable, you can get emails advising when you have sent and/or received files

- As long as the filenames are compliant content will be transferred

  eg. SSSS_E_RRRR_GRAP015_YYYYMM_YYYYMMDD_NNNN.txt (or.zip)

  - SSSS Sender party code

  - RRRR Receiver party code

  - GRAP015 any 7 char filetype

  - NNNN unique no for the day

THE REGISTRY – REGISTRY DATA HUB

- SFTP – if you are sending file to the registry you have access to the Hub

- Use your SFTP credentials

Or

- Access via the browser (you may need it enabled for your logon by the supervisor function)

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THE REGISTRY – WEB SERVICES

- The registry Web Services provide the same lookup and search functionality as the Browser with the added benefit that it can be connected and integrated into your back office systems

- Location of the test web service interface:

  https://www.electricityregistry.co.nz/bin_public/jadehttp.dll?WebService

- Web services use any active browser logon and password

- From there you can access the WSDL (Web service description) that developers can use to connect your system with the registry

- For more info see the Registry Web Services Guide, available from the downloads page in the Registry

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THE REGISTRY – WEB SERVICES

WSRegistry

Method Name :

icpSearch_v1

Options :

To test the operation using the HTTP POST protocol, enter the parameters and click the Invoke button.

userName :		(String)
password :		(String)
unitOrNumber :		(String)
streetOrPropertyName :		(String)
streetOrPropertyFilter :		(String)
suburbOrTown :		(String)
region :		(String)
isExactMatch :		(Boolean)
ownIcpsOnly :		(Boolean)
commissionedOnly :		(Boolean)
Invoke		

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