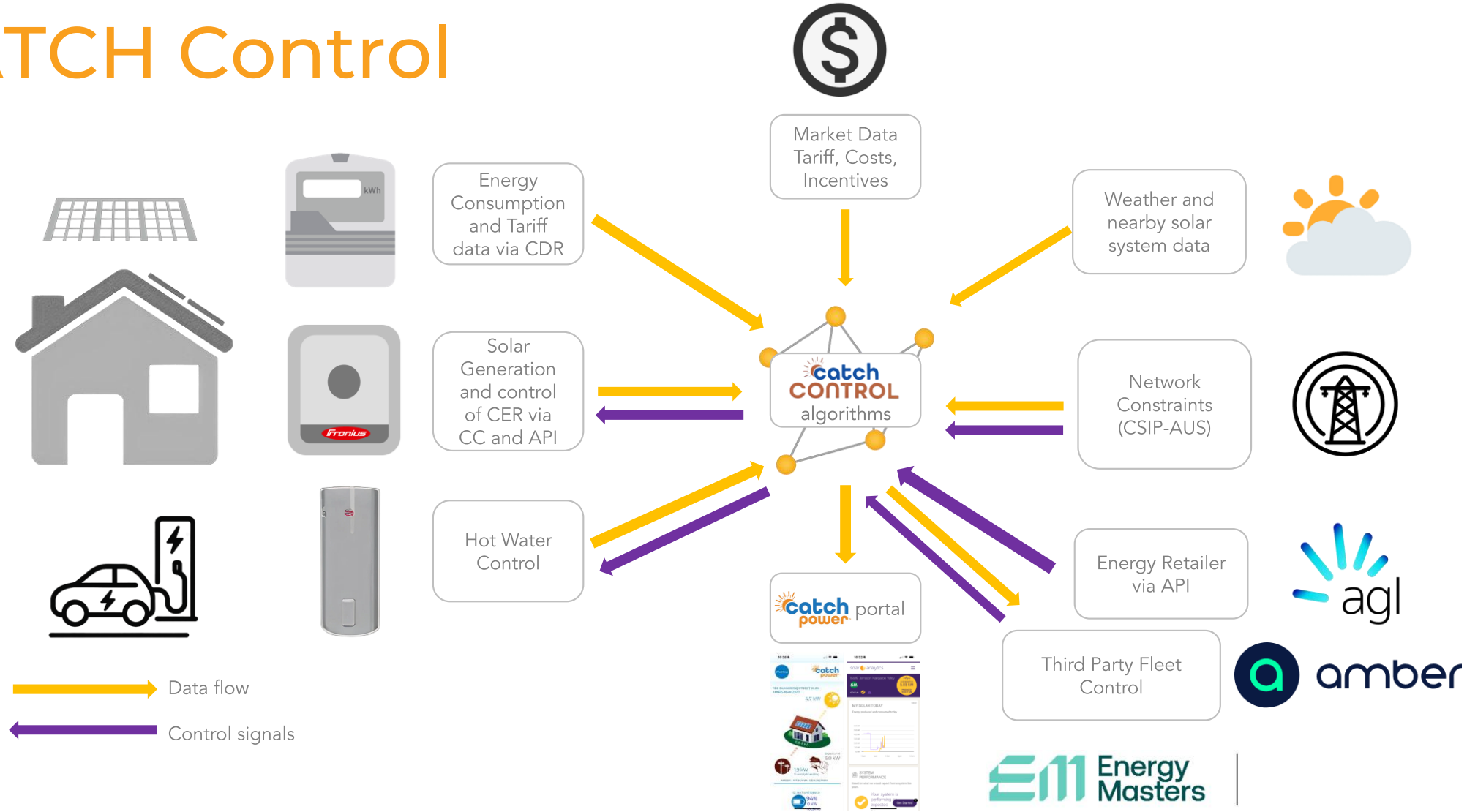
Dr. John Laird
2025-10

CATCH Control



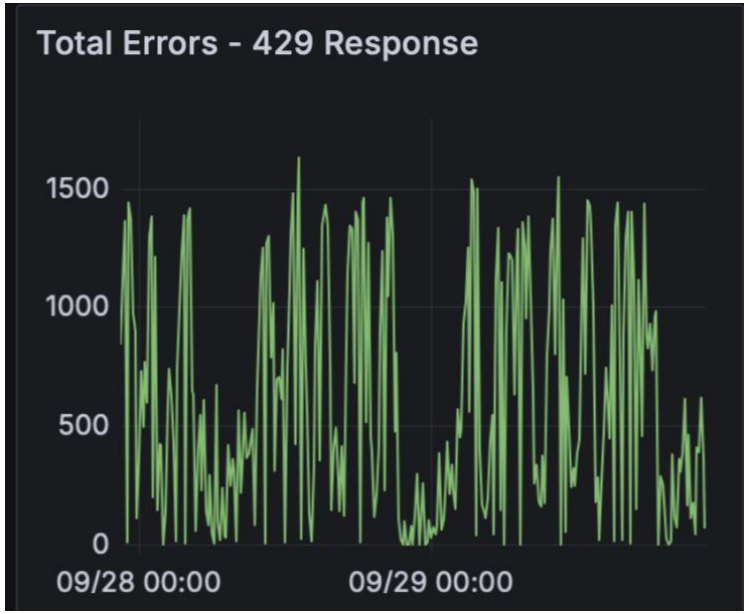
XML Challenges

- Validate XML payloads carefully due to limited DNSP server feedback
- Successful server responses may not actually be successful…
- Order and namespace usage in XML are crucial for compatibility
- Few concrete examples exist, making debugging time-consuming
- SA 5573 and CACTUS will ease future development through further standardisation (hopefully!)

POST /mup/2 201	1: Element '{urn:ieee:std:2030.5:ns}MirrorMeterReadingList': The attribute 'all' is required but missing. 1: Element '{urn:ieee:std:2030.5:ns}MirrorMeterReadingList': The attribute 'results' is required but missing. 11: Element '{urn:ieee:std:2030.5:ns}start': This element is not expected. Expected is ({urn:ieee:std:2030.5:ns}duration). 19: Element '{urn:ieee:std:2030.5:ns}dataQualifier': This element is not expected. Expected is one of ({urn:ieee:std:2030.5:ns}maxNumberOfIntervals, {urn:ieee …
POST /mup/3 201	1: Element '{urn:ieee:std:2030.5:ns}MirrorMeterReadingList': The

What is happening?!?

- Logging is incredibly important
- Suggest the ability to log and enable debug level by site
- Track DNSP server responses as metrics
- Provide internal support teams with the tools and dashboards to identify issues or outages



Certificates and Cyber Security

- Certificates for staging and production environments
- These should be managed separately and securely
- Internal documentation for using the certificates with your service (certificates provided differently with each DNSP)
- NEPKI?
- Further Cyber Security requirements should be expected, make sure you are prepared!

Commands to check if certs are valid:

```
openssl pkey -pubout -in dnsp-server-staging.privatekey
openssl req -noout -pubkey -in dnsp-server-staging.csr
openssl x509 -noout -pubkey -in dnsp-server-staging.crt
```

These commands will output the expected public key for each certificate

Test to make sure certificates are correct

```
openssl s_client -connect dnsp.server.host:20305 -servername dnsp.server.host.au
\
  -cert dnsp-production.crt -key dnsp-production.key \
  -CAfile dnsp-production.ca.pem -brief </dev/null

# Should return something like the following:

CONNECTION ESTABLISHED
Protocol version: TLSv1.2
Ciphersuite: ECDHE-ECDSA-AES256-GCM-SHA384
Requested Signature Algorithms: ECDSA+SHA256:ECDSA+SHA384:ECDSA+SHA512:Ed25519:Ed
448:RSA-PSS+SHA256:RSA-PSS+SHA384:RSA-PSS+SHA512:RSA-PSS+SHA256:RSA-PSS+SHA384:RS
A-PSS+SHA512:RSA+SHA256:RSA+SHA384:RSA+SHA512:ECDSA+SHA224:ECDSA+SHA1:RSA+SHA224:
RSA+SHA1:DSA+SHA224:DSA+SHA1:DSA+SHA256:DSA+SHA384:DSA+SHA512
Peer certificate:
Hash used: SHA256
Signature type: ECDSA
Verification: OK
Supported Elliptic Curve Point Formats: uncompressed:ansiX962_compressed_prime:an
siX962_compressed_char2
Server Temp Key: X25519, 253 bits
DONE
```

Server Quirks

- API rate limits, make sure there is logic to retry on HTTP 429 status code
- Pagination – never needed in onboarding, must have for production
- A lot of similarities, some breaking differences - inherit and override as needed

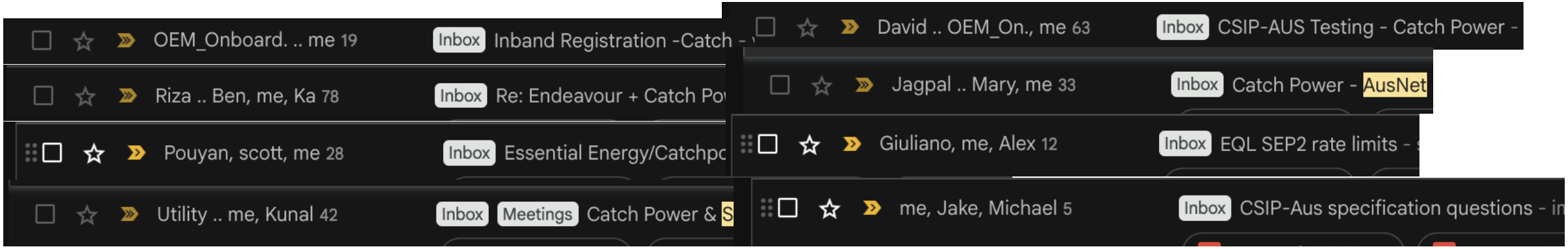
```
<MirrorUsagePoint href="/sep2/mup/2215068">
        <mRID>04E78BDF80936C259E256800059656</mRID>
        <description>Site Readings</description>
        <version>0</version>
        <roleFlags>03</roleFlags>
        <serviceCategoryKind>0</serviceCategoryKind>
        <status>1</status>
        <deviceLFDI>A0FC9BDA6E33778BDF80936C259E256800059656</deviceLFDI>
        <postRate>300</postRate>
</MirrorUsagePoint>
```

Success with Solar Installers…?

- Issues with pre-registration of site and incorrect NMI
- Different terminology from DNSPs and our installer App was confusing
- Installation Compliance – sometimes feels very optional
- Howto guide for improving Capability test success
- Make sure on site installers have information to understand the situation

Working with DNSPs

- DNSPs want CSIP-AUS to be a success
- Sometimes patience is needed, DNSPs have been on similar journeys as OEMs
- CSIP-AUS is an evolving standard
- Know the right contact details for each DNSP (all emails?)

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