Outage/Incidents

Addressing the Difficult Issues

nbn Wholesale Layer2 Provider

nbn®

12.5 MILLION

Ready to Connect Premises

8.6 MILLION

Connected Households & Businesses

7.7 Million square kilometres
121 Points of Retail Interconnect

Multi-Technology Access Network

- Business Services
- Fibre to Node
- Fibre to Building
- Hybrid Fibre Coax
- Fibre to Curb
- Fixed Wireless
- Fibre to Premise
- Satellite

Core Network

Core &
Transit Network

390,000+ km of fibre

Challenging Customer Incidents

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Bottom Line: Large amount of outside plant which is impacted by external influences such as Power Outages, Cable Cuts, Weather etc

Customer incidents resulting from external Influences such as Power Outages, cable cuts, Battery depletion , weather

What

No automated detection and alerting available. Many Services can be impacted by a single event across multiple active elements.

So What

Reactive processes are inefficient and often result in multiple costly truck rolls that may not resolve the root cause, ultimately affecting customer satisfaction. For example, deploying generators at the right time is crucial to maintain service continuity when the node is impacted by a power outage, and many customers have power.

Now What

To make informed decisions, maximise customer satisfaction, and deploy the right teams at the right time, we need more context than just active network events.

This requires integrating multiple internal and external data sources into a single, unified concept that can enable automation across our physical and active network.

Bottom Line: By utilising all data available from internal and external sources to improve customer experience

1

Reduce Costs: Avoid unnecessary truck rolls, significantly reducing operational expenses for crew dispatch, vehicles, and equipment.

2

Send Crews on high confidence: Real-time checks confirm if a node is operational or experiencing a minor fault (e.g., RCD tripping).

3

Speed Up Resolution for Real Issues: Utilise all data available localising the problem or a broader failure, ensuring crews are dispatched only when absolutely needed, fully prepared with the right tools and resources.

4

Availability of Resources: By sending the correct resources for critical, high-priority issues we enable resources to be available for other problems.

5

Minimise Customer Downtime: Faster fault detection and targeted dispatch reduce service disruptions, ensuring quicker restoration and improved reliability for customers.

Complex Power Outage Scenario

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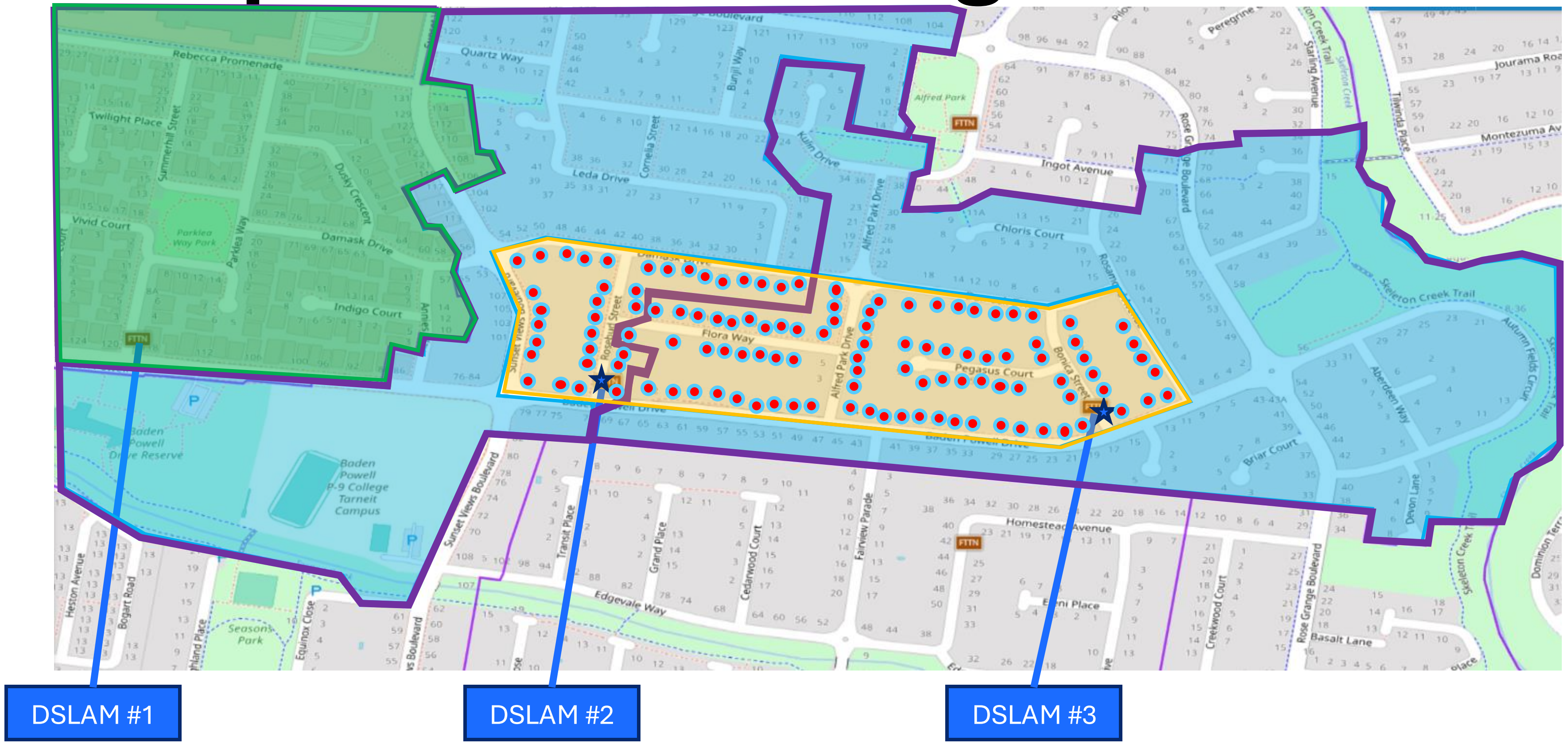


DSLAM footprint (group of service location id's associated with the DSLAM)

Example power outage footprint

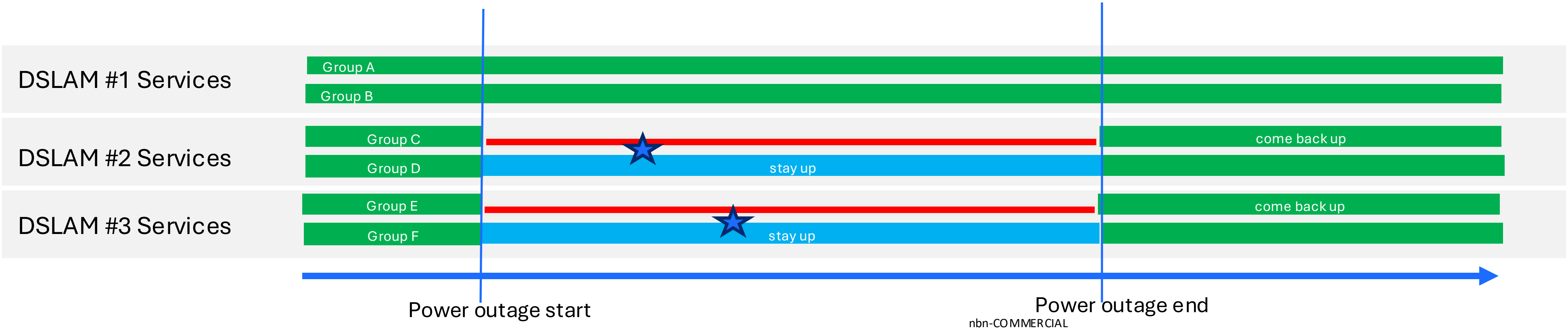
Services with mains power from DSLAM with power

Services with mains power from DSLAM with generator

Services with no mains power from DSLAM with generator

Services with no mains power from DSLAM with power

Generator deployed

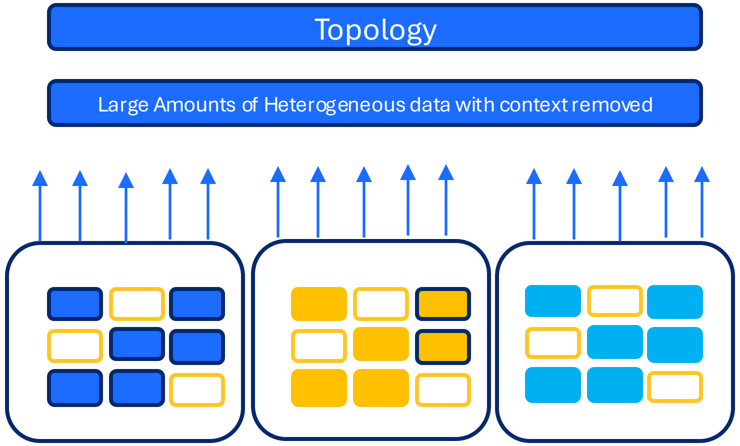


Power resumption detection logic:
Use the geographic pattern of offline services across the 2 DSLAM footprints to infer power outage footprint and time of power outage end

Resolving the Challenge

The problem we have today…

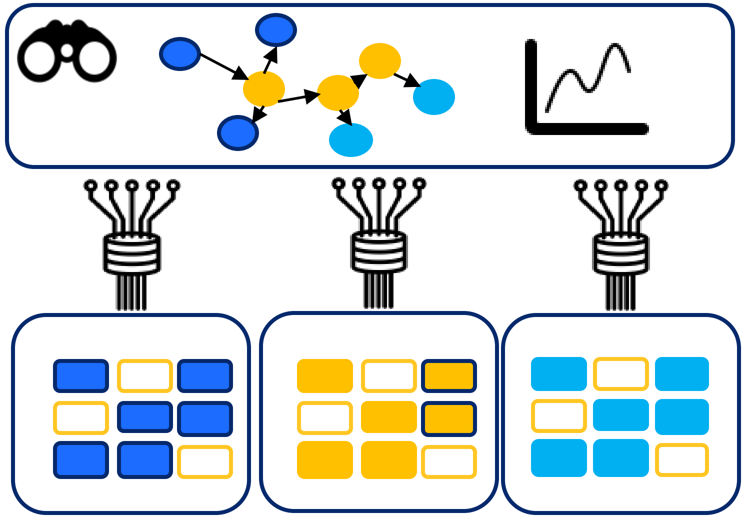
Network Operations faces overwhelming volumes of heterogeneous data without integrated context, forcing reliance on manual analysis to interpret network behaviour and impacts especially when dealing with passive networks and external failures. This reliance leads to delays in decision-making and increased operational costs, hampering efficiency and responsiveness.



Technology Domains

How we could do it differently…

By combining near real time telemetry with a graph-based approach, we can integrate context and relationships into the network view to give us comprehensive network observability. This allows us to automate analysis and empower the NMC operators to make faster, data-driven decisions.



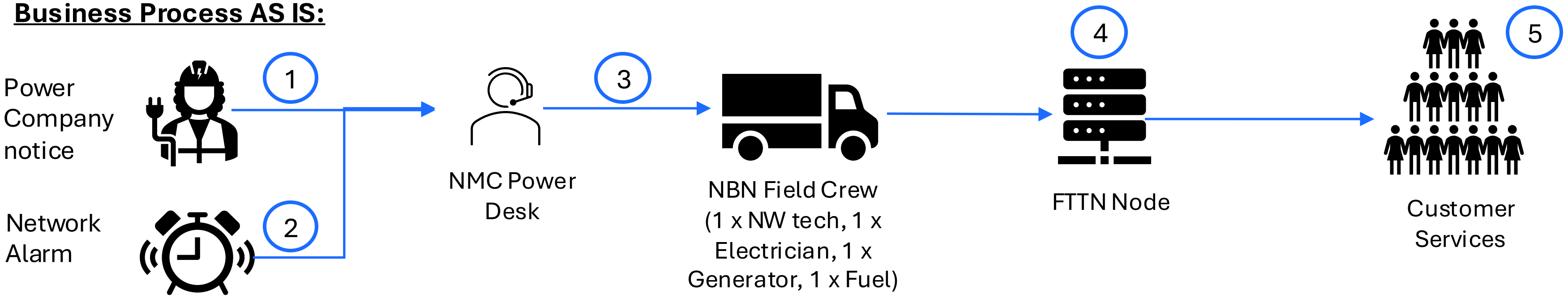
Technology Domains

FTTN Power

Business Problem: There is limited visibility of the FTTN customer impacts as a result of a Brownout or power outage as it is a passive network.

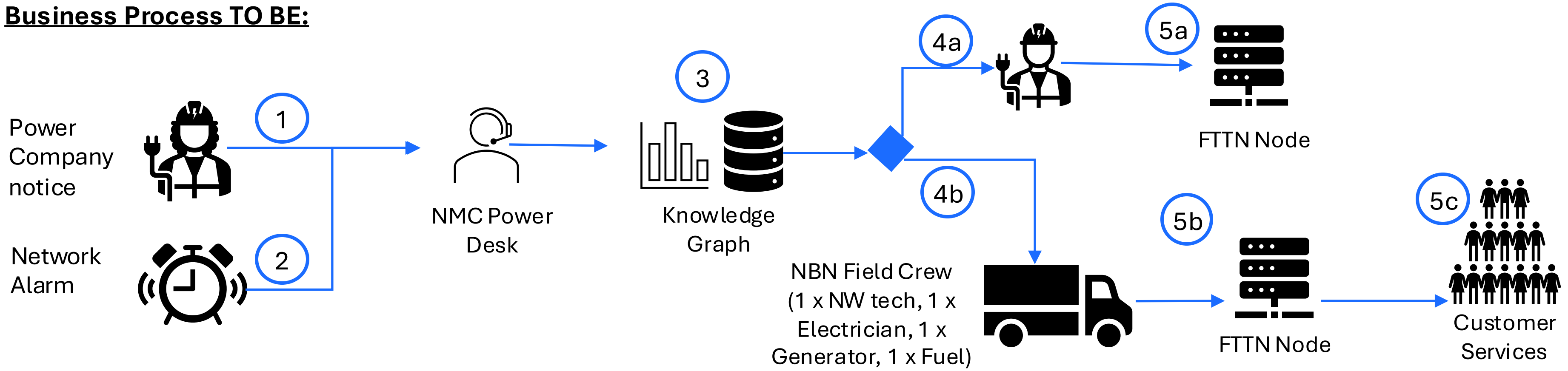
How can a network model that includes passive and external data improve understanding of power outages and allow it to take optimal action?

Business Process AS IS:



1. We receive a power outage notice
2. NMC receives a DSLAM power alarm
3. NMC Power team hold ticket for defined time waiting for power to restore. If the power outage is not restored within allocated time send a crew.
4. Crew attend FTTN node and power node or reset RCD
5. Customers may/may not have been impacted but will receive RSP notices for an outage and resolution

Business Process TO BE:



1. We receives a power outage notice
2. NMC receives a DSLAM power alarm
3. NMC Power team consult the knowledge graph for modem status on nodes

IF services are operating THEN
4a. Electrician dispatched to reset RCD
5a. FTTN RCD reset and alarm cleared
ELSE
4b. NMC Power team hold ticket for nominated time and if no power outage resolution notice received send a crew
5b. Crew attend FTTN node and power
5c. Customers service restored