

FME in Electric Utilities: From Data Integration to Workflow Automation

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Network Information Manager



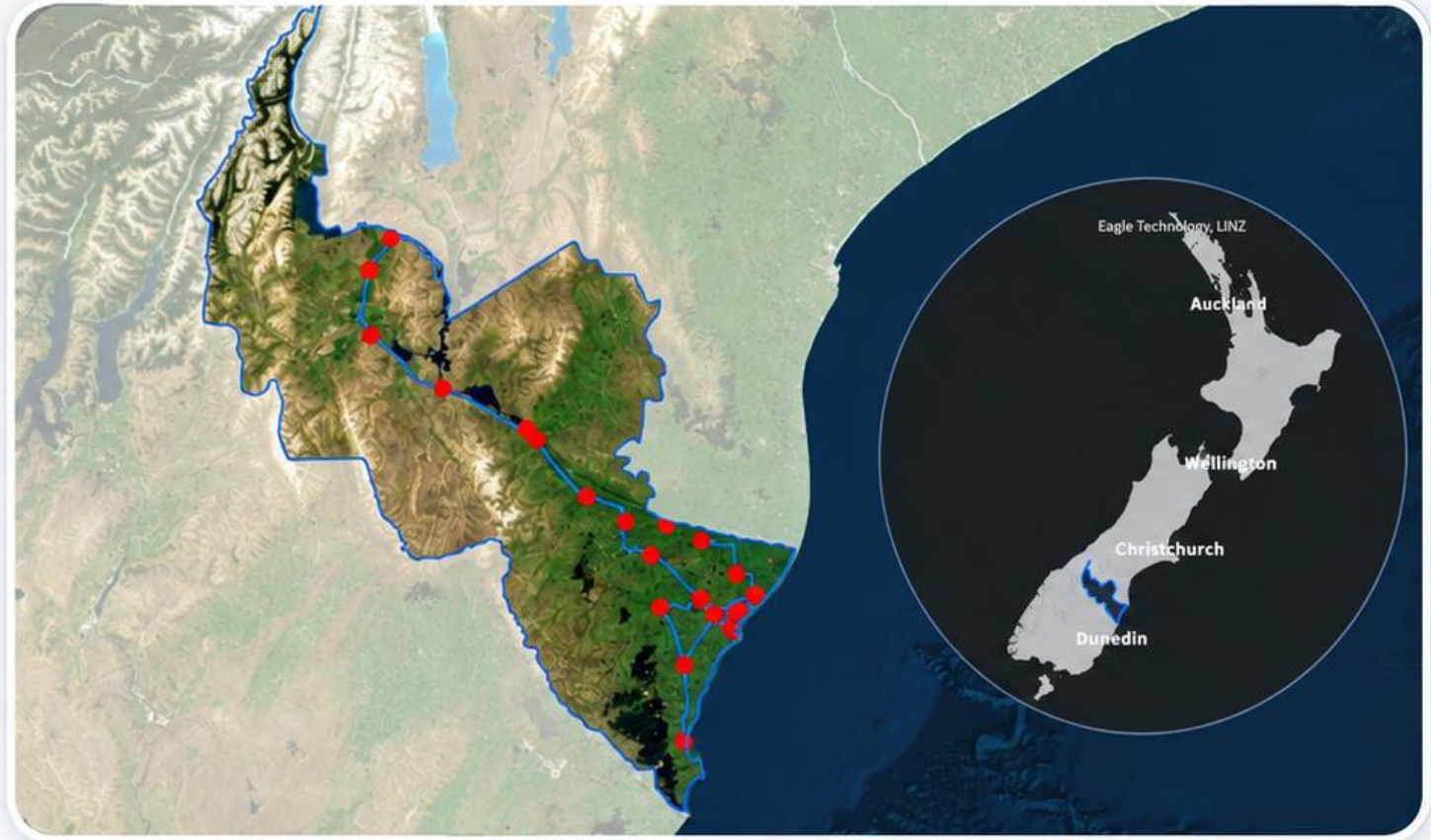
OUR NETWORK



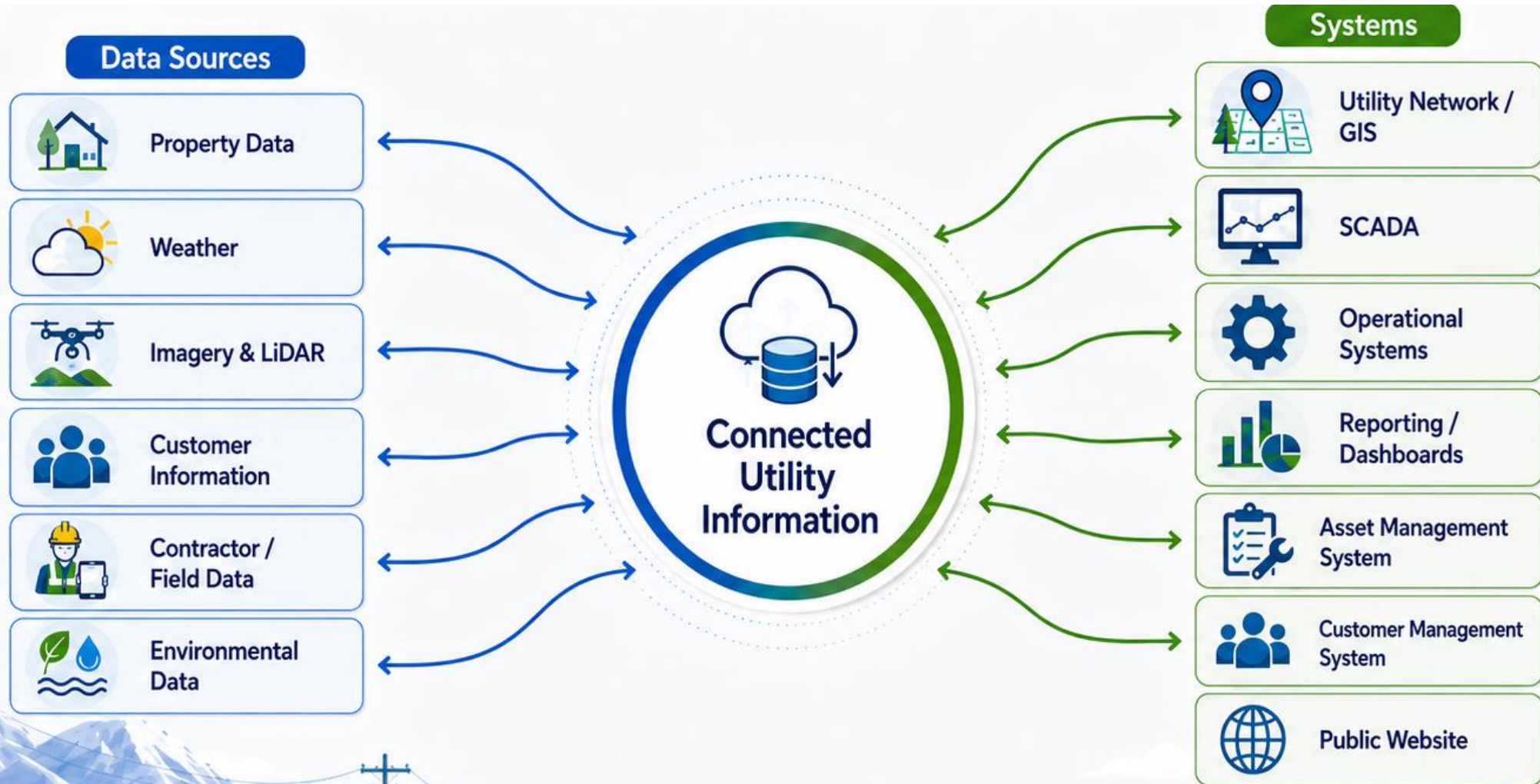
13,500
Customer Connections



7,000 km²
Network Area

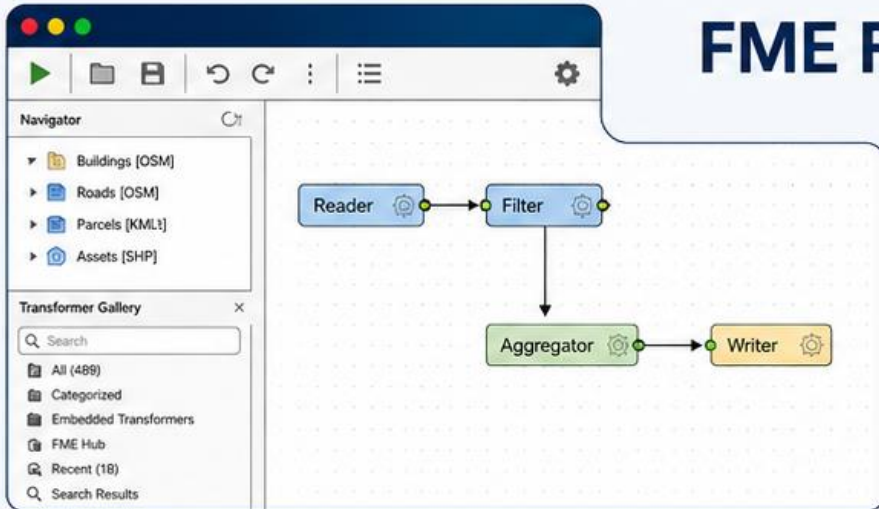


POWERING DECISION WITH CONNECTED INFORMATION



FME AT NETWORK WAITAKI

FME Form



Ad-hoc analysis



Data investigation



One-off transformations



Used by staff for interactive, desktop-based data work.



FME Flow



Reporting



Scheduled tasks



Moving data between systems



Automated workflows



Used for repeatable, scheduled and system-to-system processes.



Together, FME supports both ad-hoc data work and automated enterprise workflows.

UTILITY NETWORK



Detailed
Asset Model



End-to-End
Connectivity



Associations &
Terminals



Topology-Based
Tracing



Rules &
Validation



Subnetwork
Management

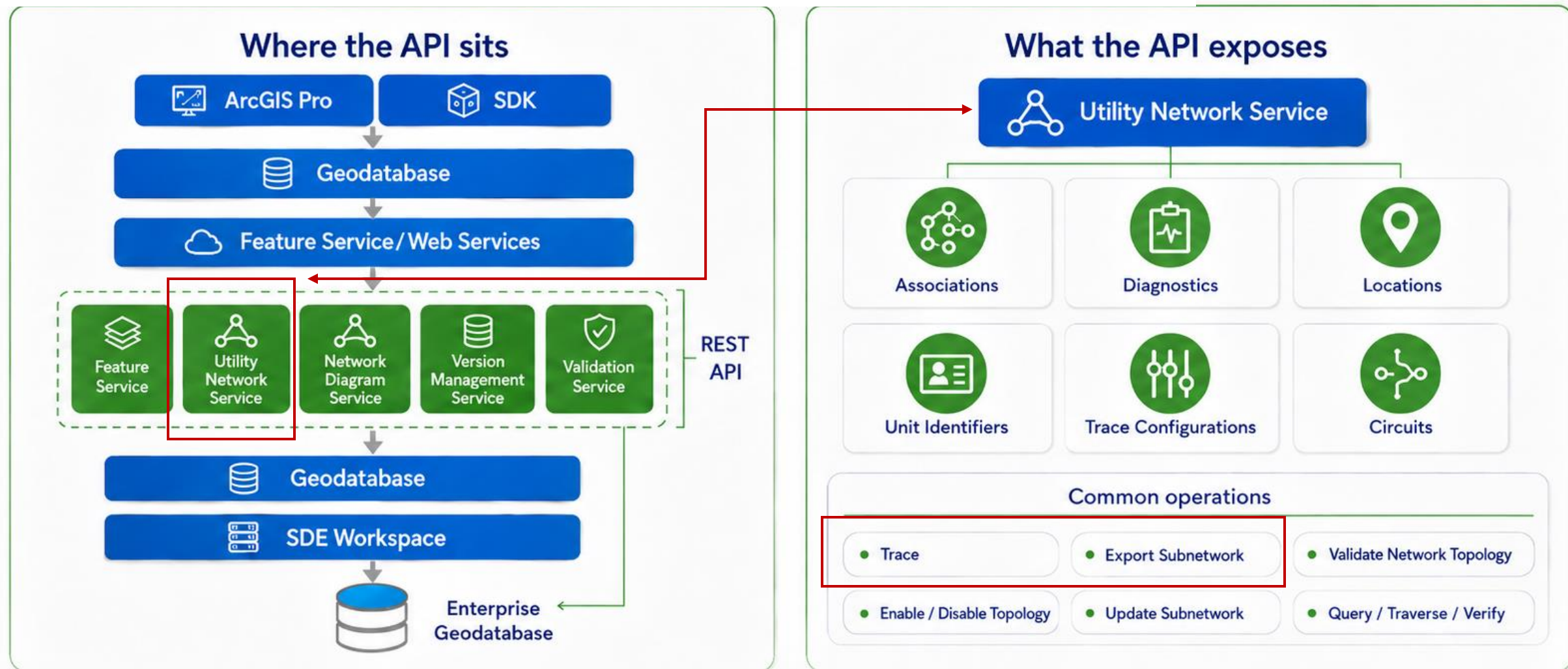


Rich API
Integration



Single Source
of Truth

UTILITY NETWORK – REST API



UTILITY NETWORK – REST END POINT EXAMPLE

Endpoint URL

`https://your-server.domain.com/arcgis/rest/services/YourServiceName/UtilityNetworkServer/trace`

Query Parameters

traceLocations

Starting locations for the trace (JSON). Can be points, features, or a mix.

traceType

Type of trace to perform: upstream, downstream, or connected.

traceConfiguration

Rules that control what the trace includes or excludes.

resultTypes

Defines what results are returned (e.g., features, connectivity) and which attributes to include.

gdbVersion

Optional geodatabase version name or moment (timestamp) to run the trace against.

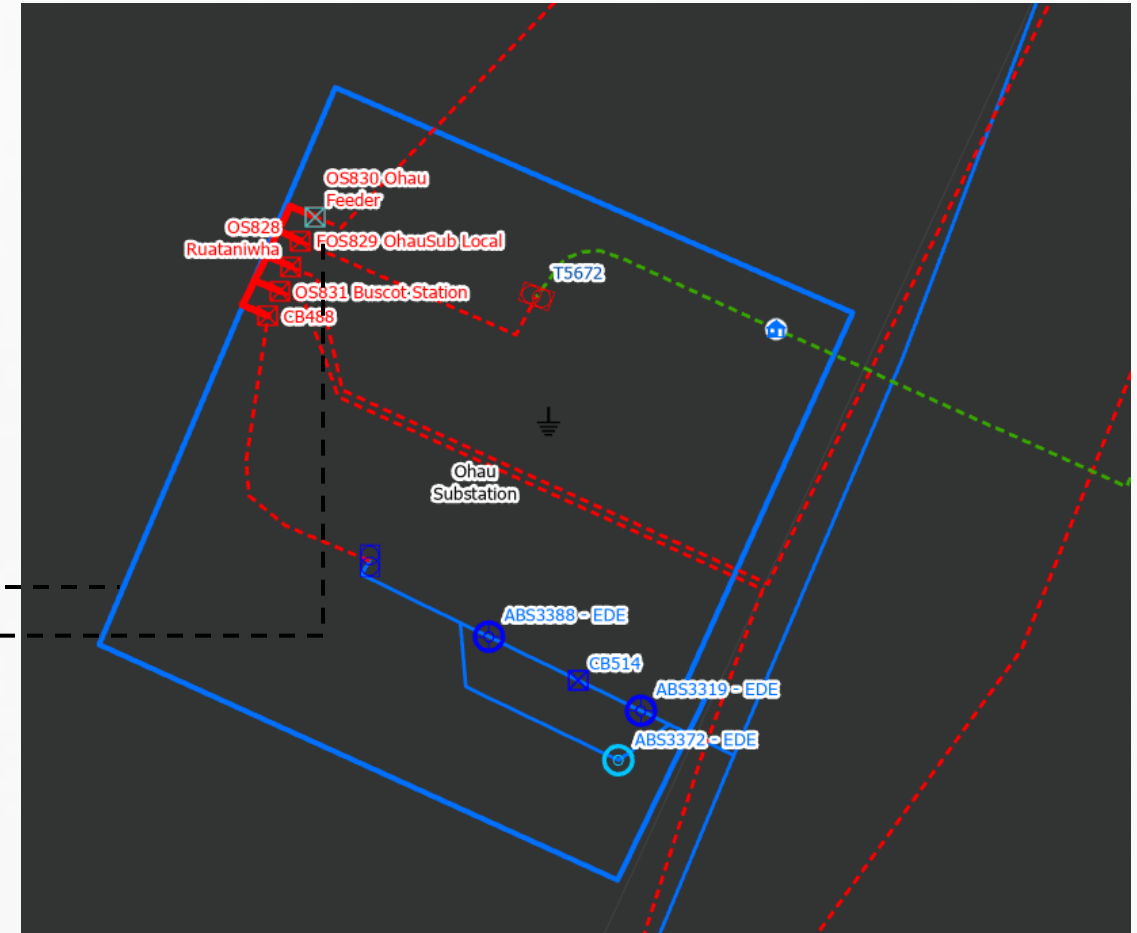
f, token

Response format (e.g., json, pjson) and authentication token (if required).

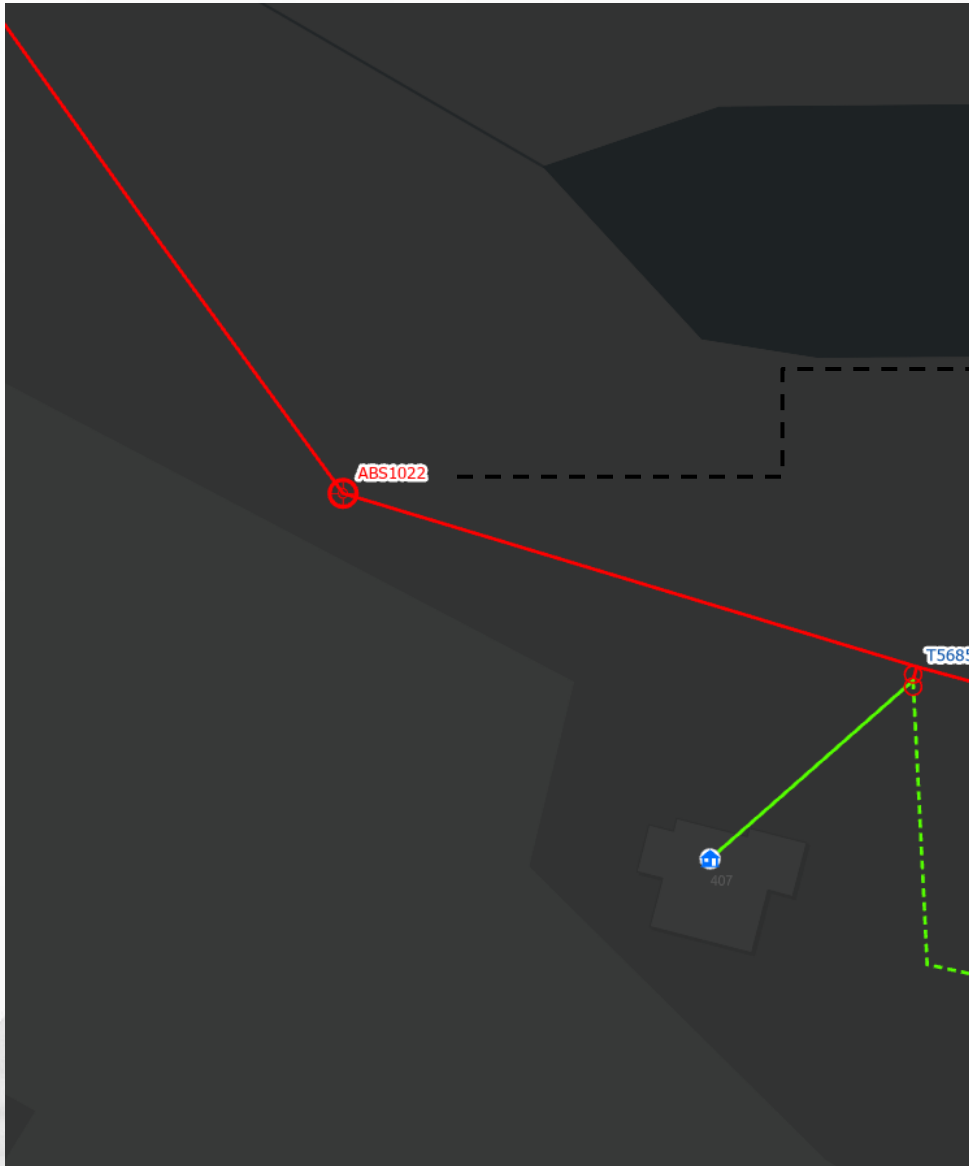


RESULT TYPE - ASSOCIATIONS

```
{  
  "associations": [  
    {  
      "associationType": "containment",  
      "fromGlobalId": "{42DA9597-1AC4-4D9E-97A6-1E06531198C4}",  
      "fromNetworkSourceId": 6,  
      "fromNetworkSourceName": "StructureBoundary",  
      "fromTerminalId": 1,  
      "fromTerminalName": "Single Terminal",  
      "toGlobalId": "{C39D7DC6-DBD7-41BA-A71A-12B2D83F063E}",  
      "toNetworkSourceId": 9,  
      "toNetworkSourceName": "ElectricDevice",  
      "toTerminalId": 6,  
      "toTerminalName": "Single Terminal"  
    }  
  ]  
}
```



RESULT TYPE - FEATURES



```
{
  "assetGroupCode": 5,
  "assetGroupName": "High Voltage Switch",
  "assetTypeCode": 1,
  "assetTypeName": "High Voltage Switch",
  "fieldValues": [
    {
      "fieldName": "asset_id",
      "value": "ABS1022"
    },
    {
      "description": "Closed",
      "fieldName": "switch_normal_state",
      "value": 2
    }
  ],
  "geometry": {
    "m": null,
    "x": 1356951.8139000004,
    "y": 5085177.0166,
    "z": 0
  },
  "globalId": "{B7905D95-F1E9-4339-8FD8-DDEF243E537C}",
  "networkSourceId": 9,
  "networkSourceName": "ElectricDevice",
  "objectId": 13136,
  "terminalId": 8,
  "terminalName": "Terminal 1"
},
```

RESULT TYPE - CONNECTIVITY

Node A

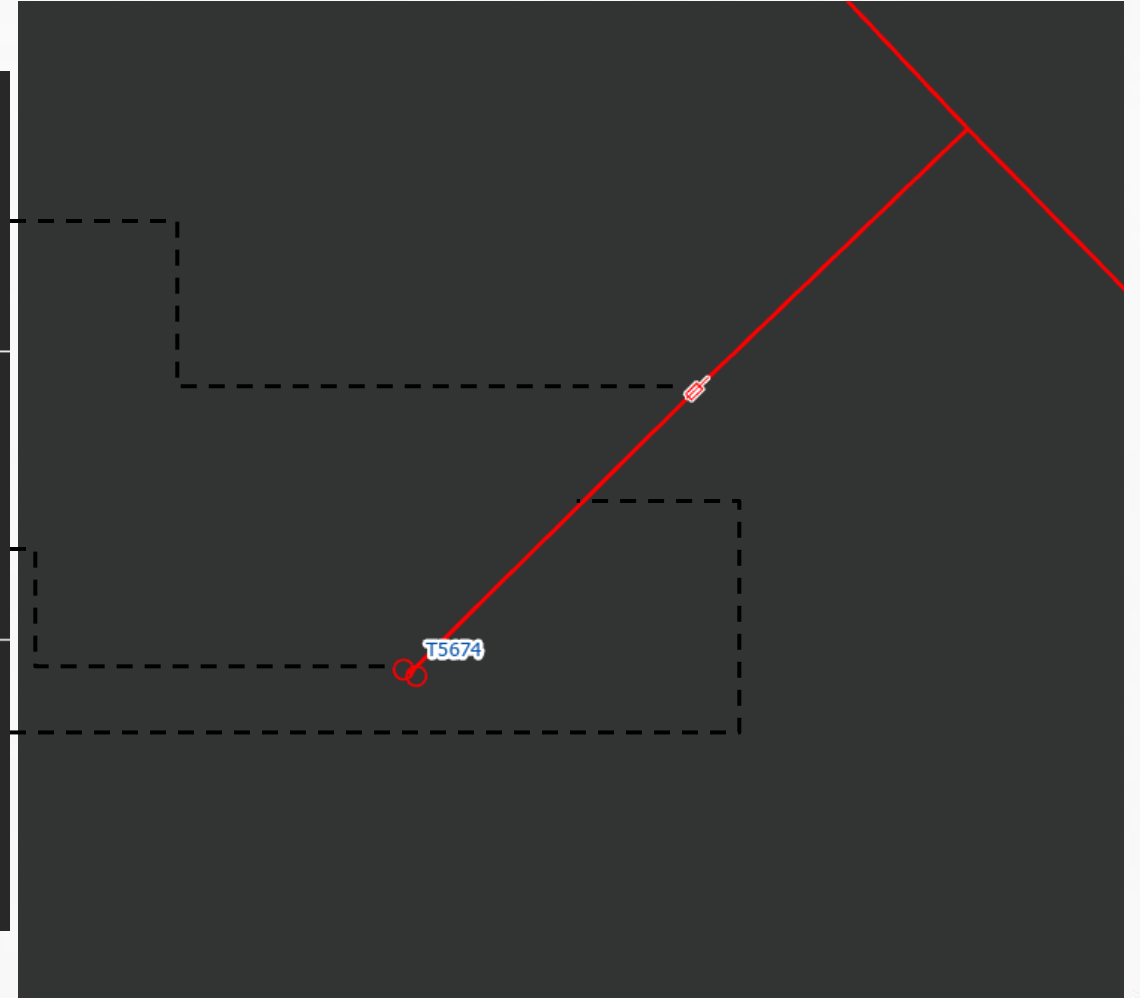
```
"fromGlobalId": "{C50956D1-EC6E-433D-AA2B-5031D6E22B87}",  
"fromNetworkSourceId": 9,  
"fromNetworkSourceName": "ElectricDevice",  
"fromObjectId": 976,  
"fromTerminalId": 1,  
"fromTerminalName": "Single Terminal",  
"toGeometry": {
```

Node B

```
"toGlobalId": "{B58CB42C-A6AD-45EE-9379-9042050A8ADB}",  
"toNetworkSourceId": 9,  
"toNetworkSourceName": "ElectricDevice",  
"toObjectId": 12249,  
"toTerminalId": 4,  
"toTerminalName": "XFR:Primary",  
"viaGeometry": {
```

Via
Edge

```
"viaGlobalId": "{E5FAD076-52BD-4F7B-B912-6F30EF9B9A35}",  
"viaNetworkSourceId": 10,  
"viaNetworkSourceName": "ElectricLine",  
"viaObjectId": 35177,  
"viaPositionFrom": 0,  
"viaPositionTo": 1  
},
```

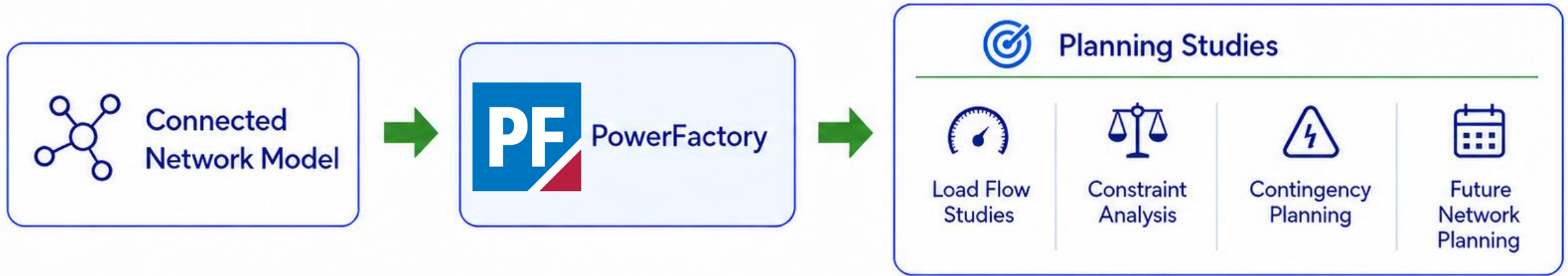


EXAMPLE 1



PowerFactory

Our Planning Team uses PowerFactory for Electrical Modelling.



Simple Connectivity Example





1 Make Trace Request

FME sends a REST request to the UN Trace endpoint with trace parameters.



2 Parse JSON Response

FME receives the JSON response and parses the connectivity data.



3 Create DGS Output

FME maps the parsed data to the DGS schema and writes the spreadsheet.



REST
REQUEST



JSON
RESPONSE

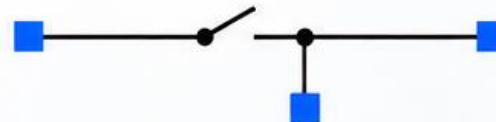


UN Service

Utility Network Trace

Process Trace Request

The UN service runs the trace on the Utility Network.



Return Connectivity (JSON)

The UN service returns the trace result as JSON connectivity.

```
{
  "resultType": "connectivity",
  "elements": [
    { "id": "1", "type": "line", ... },
    { "id": "2", "type": "junction", ... }
  ]
}
```

JSON



DGS Output

DGS Excel Workbook

DGS Spreadsheet Workbook (Example)

TypLine

ElmNet	TypLine	ElmCoup	ElmVolta	RefUse	...
N1	OHL	CB1	N/A	N/A	...
N1	SW	SW1	N/A	N/A	...
N1	OHL	CB2	N/A	N/A	...
N1	XFM	TX1	N/A	N/A	...
...	...	...	...	...	...

TypLine

ElmCoup ElmTerm StaCubic +

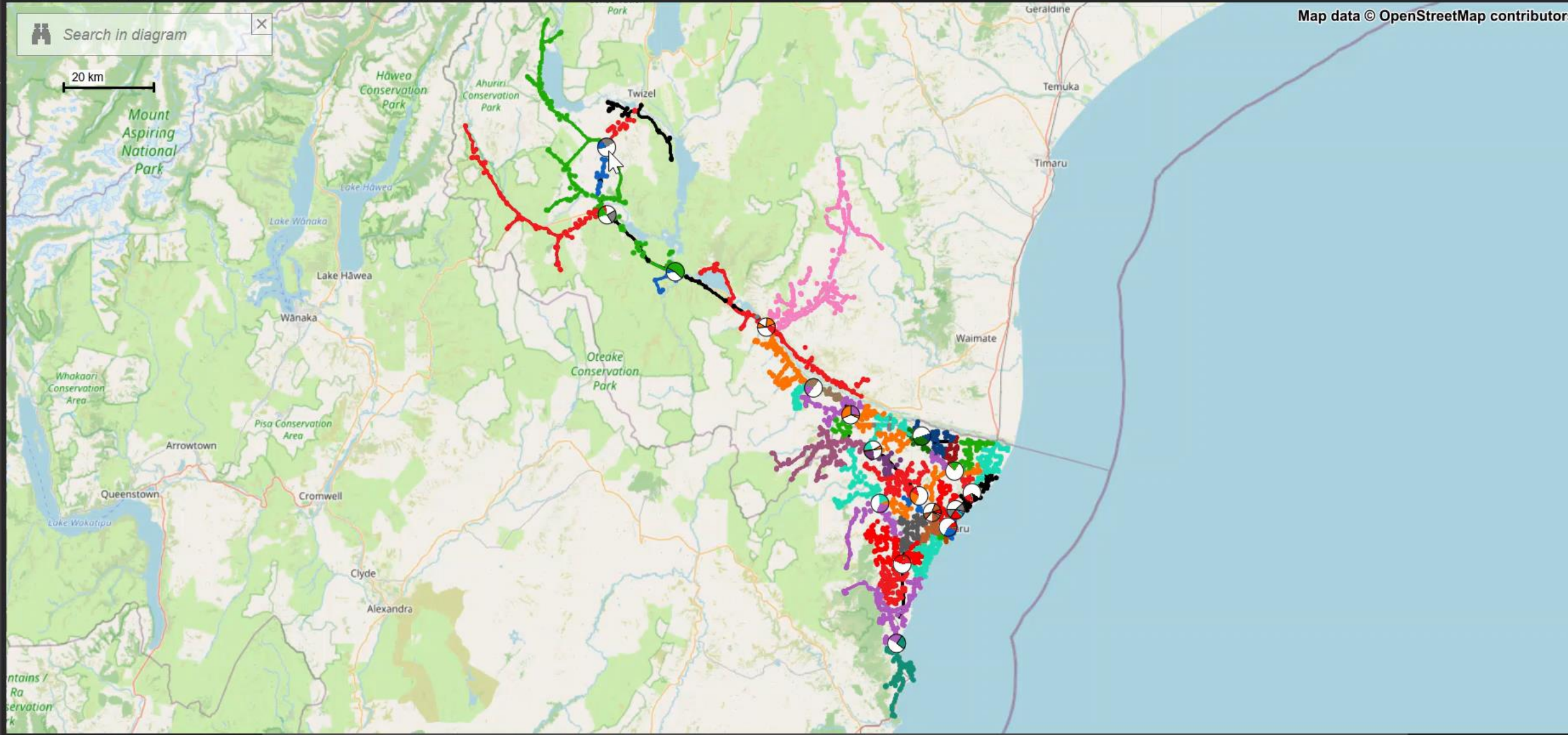
DGS FORMAT DATA



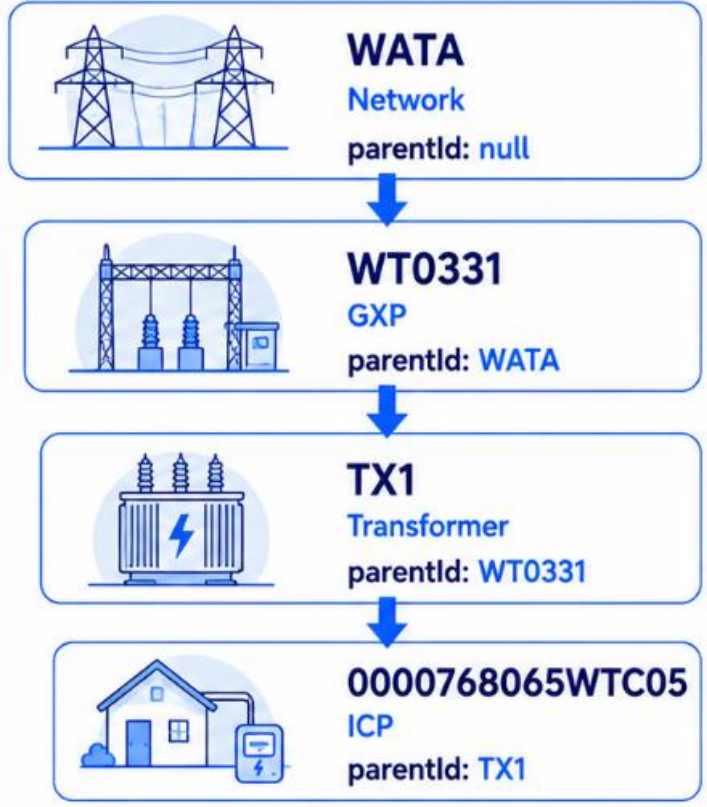
Project Overview
Drawing Tools

Geographic x +

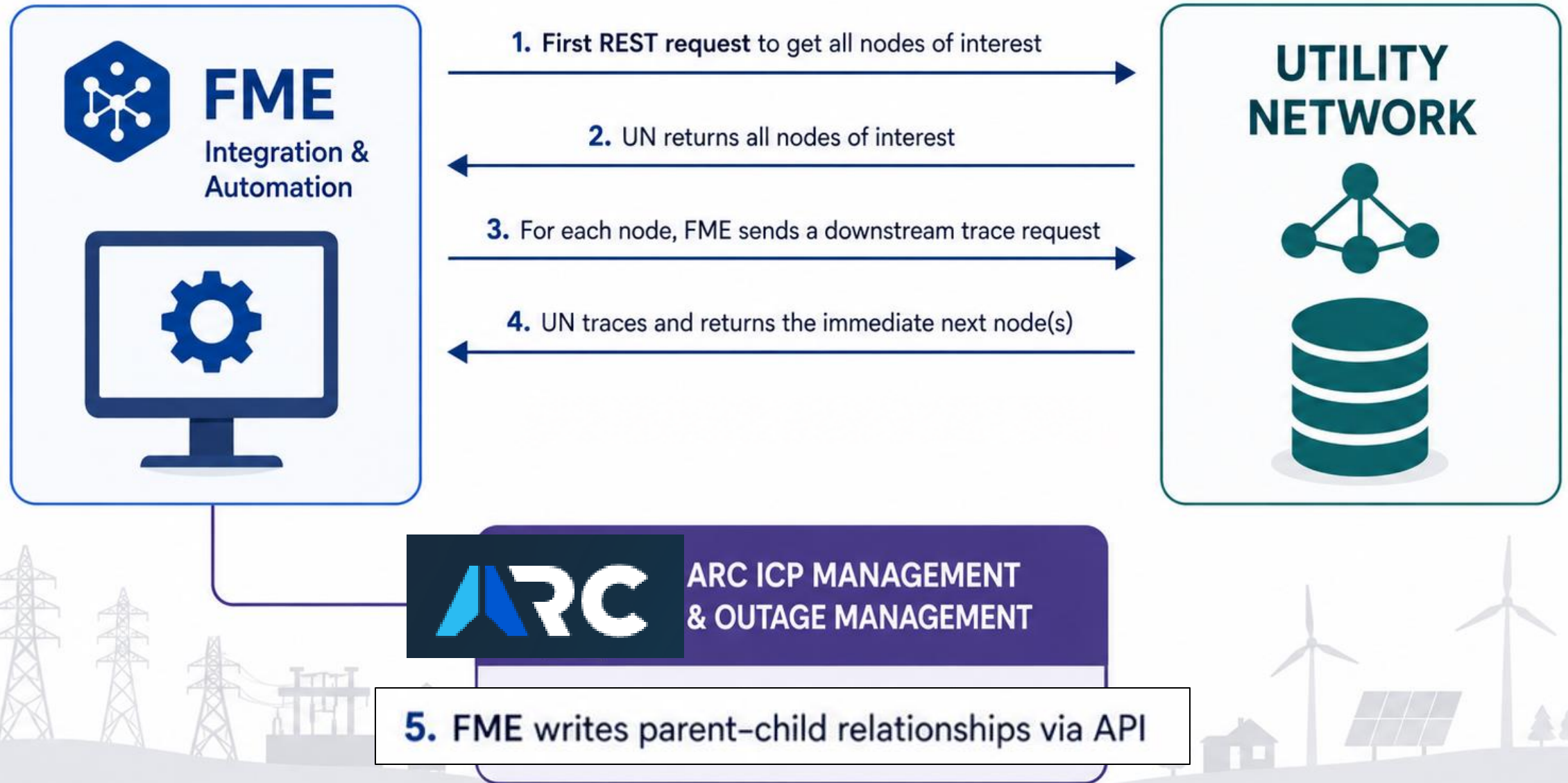
1:1084700 110 kV ABC



EXAMPLE 2



Building Parent-Child Relationships for Outage Management





Isolation Points

[+](#) [Configure Isolation Points](#)

No isolation points on this outage.

Attachments (0) [i](#)

[Manage](#)

No attachments

Outage Details

[Reason](#)
Test

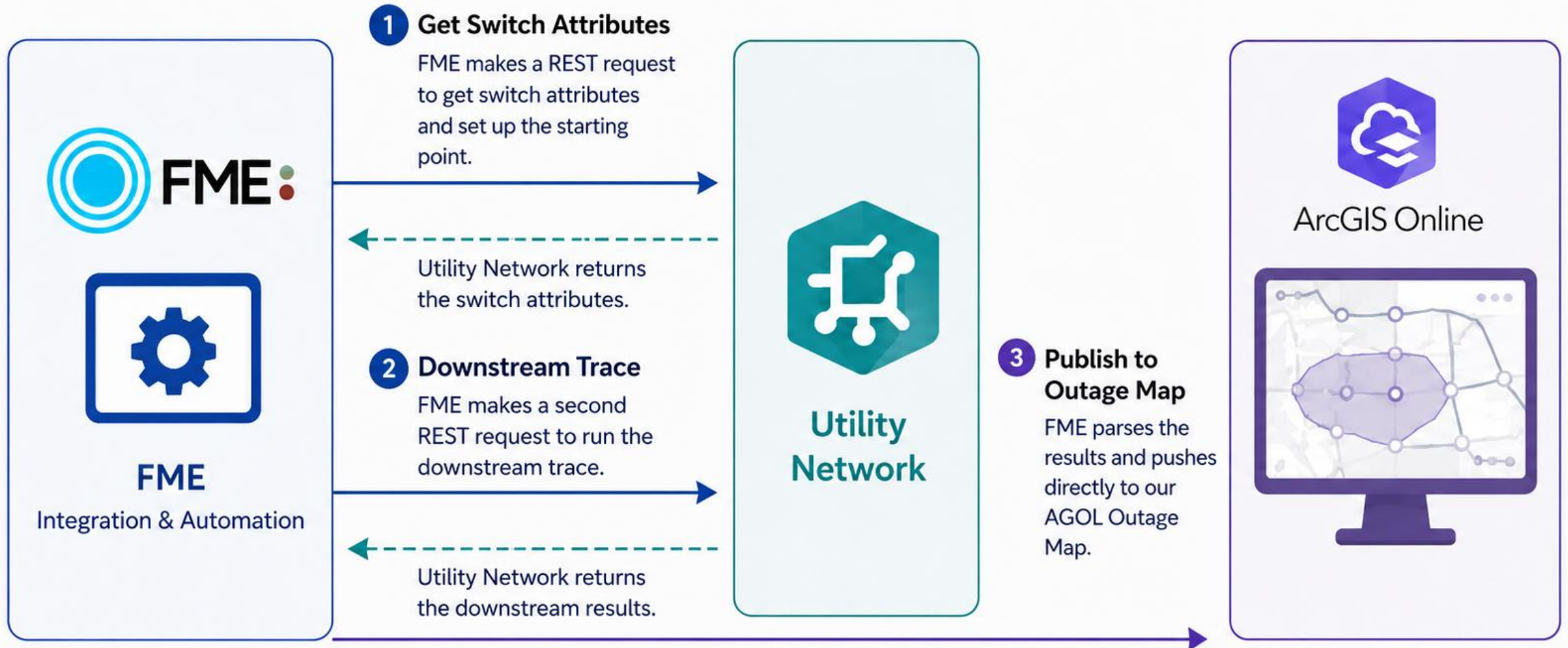
Actions

○ August 2026

[Created](#)

Actioned by **Geoff Rayner**
12/08/26 10:35

EXAMPLE 3





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Network Information Manager at Network Waitaki



THANK YOU!

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