

Safe Power Networks

Protecting Power Pole Networks
Increasing Productivity

What is SPN?

Safe Power Network **SPN** is a new technology designed and owned by **meshnet** that provides Power Utility Network companies with actionable reports associated with the stability and environmental conditions of each power pole.

As an example, **over a 50 year pole life**, current practice will see 13 intrusive pole stability inspections. With **SPN**, pole stability is measured over 5,000,000 times per pole over the same duration.



Utility Issues

Aging Network

Vegetation Clearance

- Unable to detect damage to SWER lines

Bushfire

- No Early Detection

Pole Top Fires

Dust levels – Arcing

Pole Stability

- Accidents
- Ground Disturbance

Emergency Issues

Wind Speed & Direction Data NOT Localised

No Smoke Detection

Rely on public/third party reporting – lost time

Automated Re-closers on tripped or broken lines

Increased potential for starting fires and electrocution

Limited or no cameras in remote areas

Delayed Response & Verification of Events

Utility Legacies

- Loss of Life
- Electrocution due to fallen wires
- Loss of Residential and Commercial Properties
- Singular through to Multiple losses
- Replacement of Destroyed Utility Owned Assets
- Class Actions
- Damage to Brand and Reputation
- Increased Insurance Premiums – potentially no insurance

SPN Monitor & Verifies:

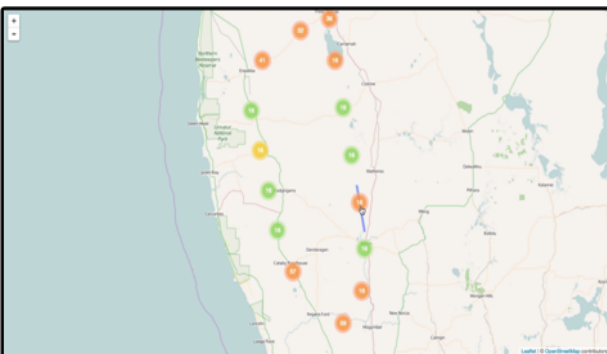
- Pole Stability
- Bushfires
- Pole Top Fires
- Dust Levels
- Wind Speed & Direction
- Cross Arm Condition
- Ambient Pressure, Temperature & Humidity
- Cable Tension
- Visualisation Package – including interface to SCADA

Additional Benefits

- **SPN** increases productivity
- **SPN** provides historical data of each asset that can be used as supporting evidence against a **NOT AT FAULT** claim
- **SPN** provides fast response times to notify Fire Rescue, Police, Emergency personnel, for bushfires and emergencies
- **SPN** will lower insurance premiums



Safe Power Networks (SPN) Design



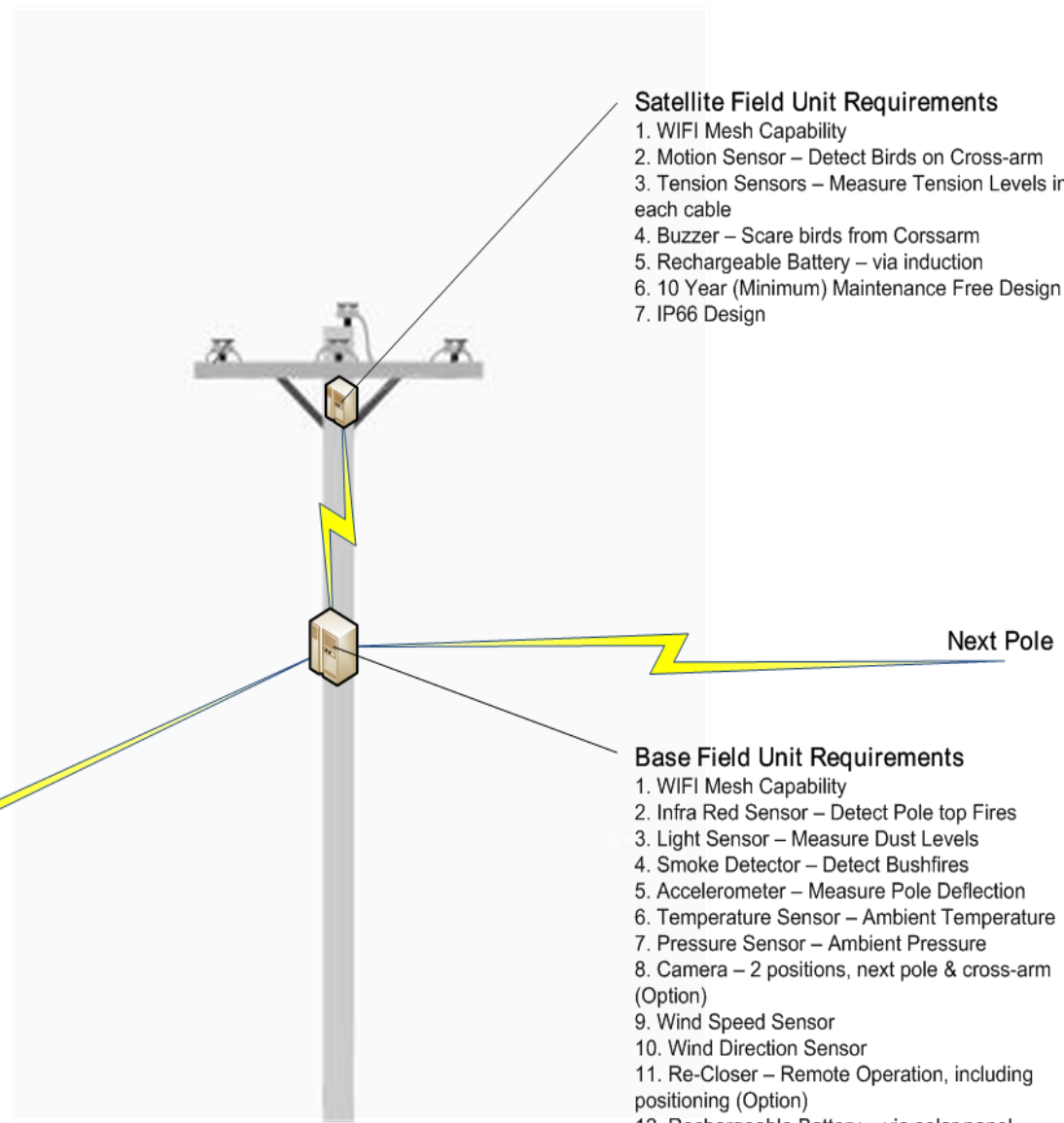
Visualisation Requirements

1. Provide an overview of the entire network, highlighting areas in alarm condition and allowing zooming to the required asset
2. Operator Selected Reporting
3. Storage of all data received from the Base Field Units
4. API Interface to Power Utility SCADA for alarm conditions
5. Provide the utility asset number within the summary of each pole



Main Access Point

1. 3G/4G Interface
2. Fibre Interface
3. Copper Interface



Summary

SPN:

- Monitors power pole stability and environmental conditions
- Decreases physical and manual inspection
- Creates an early warning predictive system for unstable poles
- Allows targeted pole strengthening or replacement
- Dramatically lowers pole **initiated bushfires** and power outages
- Enhances capacity through the network

