New Zealand Grid Travelling Wave Fault Location Experience

Good Experience with Two Terminal Overhead Circuit Travelling Wave Fault Location:
- Accurate - Usually within 1-2 tower spans
- Relays output various fault location methods in km and percentage
- SCADA application uses best method coverts it to tower location range and displays on Map
- Crews can quickly locate fault and restore circuit or fix

Observations with Travelling Wave FL on Hybrid Line/Cable Circuit:
- Were trialling TWFL on a hybrid overhead line/cable circuit
- Concept was to use TWFL to block auto-reclose for a cable fault
- Fault after commissioning showed TWFL was inaccurate
- Oscillations were identified in travelling wave
- It is suspected that as faults get closer to the cable terminal, reflections between the terminal and fault point cause oscillations in the travelling wave.