

SYNAPS Fault identification, classification & location

Project summary

Industry Partner(s):

Scottish and Southern Electricity Networks & UK Power Networks

Innovator:

Powerline Technologies Limited

Challenge:

Identify early transient faults on LV underground cable networks detecting, classifying and accurately locating the fault.

Approach:

Scottish and Southern Electricity Networks and UK Power Networks worked with Powerline Technologies to develop SYNAPS sensors, in a project facilitated by the EIC, to detect, classify and accurately locate transient faults before they cause recloser device operations and/or fuse failures.

Outputs:

The SYNAPS project captured voltage and current waveforms for transient fault events and utilised Artificial Intelligence machine learning algorithms to enable the prediction of fault locations, prior to any noticeable LV event activity. It identified and categorised different types of faults that have no industry-wide nomenclature to describe them.

Looking forward:

A follow-on project is being launched to take the solution from TRL6 to TRL8, to a pre-commercial prototype that will be deployed in a larger LV network trial with Scottish and Southern Electricity Networks and UK Power Networks.





Key benefit:

Shared Learning

All data collected, including current, voltage and fault waveforms, are available to the Distribution Network Operators (DNOs)



Additional benefits: Financial

Preventative, proactive maintenance and planned repairs lead to financial savings



Reduces power outages and significantly improves security of supply