



A TV White Spaces (TVWS) communication system with mesh networking capabilities has been developed to support autonomous collation of data captured by sensors attached to power grid infrastructure such as OG boxes or distribution substations and low voltage substations.

Figure illustrates a self-organising TVWS mesh network that relays periodic updates from TVWS Communications Nodes to a TVWS Gateway Node. Each Communications Node comprises a TVWS module, associated to one or more sensors, which is installed in an OG box, distribution substation, low-voltage substation or other infrastructures. The TVWS Gateway Node may be sited at a distribution substation or transmission power station and collates data from the various Communications Nodes. The collated data can then be sent to an alternate remote site via 3G or fibre backhaul.

Features

- Extension of communications coverage area
 - Multiple hops over mesh network
- Robust network
 - Self-organising network with multiple routes from Communications Nodes to Gateway Nodes
- Redundancy in network's backhaul
 - Support multiple gateways deployment

Applications

- End-to-end communications between back-end servers with on-site applications / devices via TVWS mesh network
- Collation of sensor data and video surveillance

Benefits

- Provides connectivity to existing power grid infrastructure for status monitoring and control



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