

# Telecommunications for operational tripping, timed and flexible connections Technical Solution Summary

# 1. General Packet Radio Service (GRPS) 2G/3G/4G APN (available now)

UK Power Networks can provide secure GPRS/3G/4G Supervisory Control and Data Acquisition (SCADA) connections provided using mobile networks. We will provide the approved mobile router, (with the specific configuration applied to allow access to the UK Power Network's network), aerial and the relevant Subscriber Identification Module (SIM) card registered to the UK Power Networks Access Point Name (APN) and install the equipment.

It is the responsibility of the customer to ensure there is sufficient network coverage at the relevant site.

This communications type has the advantage that it is cheap and easy to install, but the communications network availability could be variable.

# 2. Rented Asymmetric Digital Subscriber Line (ADSL) (available end 2016)

UK Power Network's will provide the approved ADSL router (with the specific configuration applied to allow access to UK Power Networks' network). It is the responsibility of the customer to arrange the installation of the phone line; UK Power Networks will then adopt the phone line and install the ADSL equipment.

This communications type has the advantage that it is easy to install, but the communications network availability could be variable.

# 3. Geostationary Satellite (available now)

UK Power Networks uses a dedicated and secure geostationary satellite system provided by our service provider. UK Power Networks will provide the approved Indoor Unit (IDU), antenna (and associated equipment), mounting bracket/pillar and carry out the installation as part of the non-contestable works.

It is the responsibility of the customer to ensure there is a suitable location to install the antenna (including the concrete base/ducts if a pillar is to be used).

This communications type has the advantage that it is easy to install and has high availability. It also has the capability of have power network resilience, depending on the battery capability installed at the substation.

#### 4. Fibre (available now)

UK Power Networks is currently installing a fibre network connecting many of the Grid substations and has satellite communications installed at most Grid and Primary substations. A fibre can be installed from the customer site to the nearest UK Power Networks substation with either fibre or satellite connectivity. The fibre can be installed by the customer and the equipment will be provided and installed by UK Power Networks.

This communications type has the advantage that it has very high availability and large bandwidth.

### 5. Rented Ethernet Access Direct (EAD) Fibre (available now)

UK Power Networks is currently installing a fibre network connecting many of the Grid substations and has satellite communications installed at most Grid and Primary substations. A rented EAD fibre can be installed from the customer site to the nearest UK Power Networks substation with either fibre or satellite. The circuits are installed by and managed by our service provider. It is the responsibility of the customer to arrange the installation of the fibre with the service provider, UK Power Networks will then adopt the fibre and install the EAD equipment.

This communications type has the advantage that it has very high availability and large bandwidth.