

Wireless networks for Rural Communities

Rural communities are inherently the most difficult of deployments for any infrastructure provider. The remoteness of the deployment, followed usually by harsh terrain or weather and the lack or scarcity of power and connectivity, make such network deployments a challenge. For these reasons, historically, traditional infrastructure providers like Telecom operators etc. have always hesitated from venturing into this sector of the market.

At Datasat we take this challenge as an opportunity. We have years of experience with deployments in the harshest regions of the world. We design our equipment to be versatile and rugged. Power can also be provided by solar and wind sources, and all the equipment is designed to be fully operable outdoors in extreme conditions. In addition, our experience in providing class leading satellite connectivity over the past 25 years, gives us the ability to provide the end to end turnkey solution for our customer.

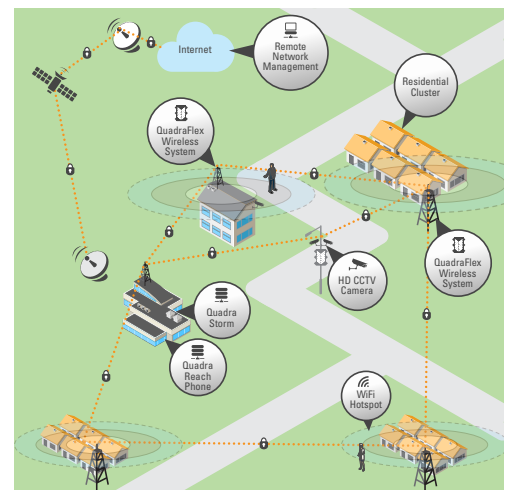
Whether it is providing satellite connectivity to establish a point of presence while a fibre circuit is being provisioned, or providing satellite as a backup route for traffic, we can make sure the commercial and operational model fit the customer's requirement.

Remote facilities, field operations and rural communities are part of the territory for most energy and natural resource operations. The nature of these operations mean equipment and employees are located in hard to reach areas with little or no core infrastructure.



> Versatile Configurations

For a number of applications, the versatility of the QuadraFlex DN100 and DN200 series of intelligent Access Points is ideal, especially for deployment in a closed community, such as mining or closed rural communities. The QuadraFlex series of products are designed to provide 802.11 a/b/g/n infrastructure to customers where reliability and performance are paramount. Datasat equipment is service agnostic and can support multiple services and multiple networks, with security and management built in.



The application illustration below shows how multiple services such as:

> Internet access

> Satellite backhaul

> Mobile Voice over IP (mVoIP)

> Surveillance and CCTV

> Secure Point to Point networks

1. Internet Access

The wireless infrastructure network set up can be used to provide internet access to people on the ground, or in locations nearby. Managed cloud coverage can be provided for best effort or QoS guaranteed internet access to families of employees, and small business establishments around the area. The bandwidth allocated to each user, and the Quality of Service (QoS) can be managed according to the overall traffic load on the system.

2. Satellite Backhaul

The one problem most wireless radio manufacturers have in a rural community deployment is the absence of connectivity to the internet, which is usually referred to as a Point of Presence (PoP). Datasat has been providing satellite backhaul for 25 years, and integrate this service with the wireless infrastructure seamlessly. We can provide and support services and provide the PoP needed to

fully utilise the infrastructure we set up, enabling our customers to fulfil corporate social responsibility or earn revenue, whichever model they develop. This enables Datasat to provide an end to end solution which works for its customers.

3. Mobile Voice over IP (mVoIP)

mVoIP is a service that is provided in conjunction with the Datasat Quadra Reach phone service. Using local wireless infrastructure Datasat can provide seamless connectivity to mobile phone customers who either do not have service or are on a roaming plan. By setting up a SIP number, any calls to and from the mobile phone are charged at near local rates, and areas where regular phone coverage is not present, get coverage through the Datasat Wireless Infrastructure. Depending on the requirement, this service is customised and is either run locally or run as a managed service from one of the Datasat Network Operating Centres.

4. Surveillance and CCTV

The nature of rural locations usually warrants some kind of surveillance. Datasat supports surveillance over the wireless infrastructure using sophisticated High Definition cameras, intelligent full rate multi camera recorders and a whole suite of products designed for surveillance and security. Whether it is Automatic Number Plate Recognition (ANPR) or video analytics, Datasat can integrate this into the solution to provide a truly bespoke network which works.

5. Secure Point to Point

As the Datasat DN100 and DN200 units are multi radio units, Datasat can run multiple radio networks using the same small form factor outdoor equipment. This means, Datasat can operate point to point links to nearby locations, where cloud based wireless coverage is not enough. This also enables Datasat to design networks which have resilience and redundancy built into them. The networks are secure, manageable and have multiple services running over them.

> The key advantages to using the Datasat solution are

- Wider coverage, both indoors and outdoors, requiring fewer Access Points than standard WiFi infrastructure. Fewer Access Points means easier network planning and management and with carrier-grade reliability, fewer maintenance and repair windows.
- Rugged vibration-tested climate-proof casing developed for challenging outdoor environments. With critical technology inside, we make sure the outside does not hamper performance. Designed to meet IP67 standards and extended operating temperatures, the Datasat difference is evident. This is a very critical performance feature as experience tells us that the conditions in most rural communities are not conducive to other outdoor digital technology.
- Enables employee, contractor and enterprise traffic to share the same network, effectively and securely segregating confidential or mission-critical 'Enterprise' traffic from other applications using traffic management technology.
- Fulfilling Corporate and Social Responsibility (CSR) by enabling content delivery, security, surveillance, and telephone service delivery over secure wireless networks.
- With Datasat delivered mVoIP technology support, the Datasat Secure Wireless Anywhere Network (SWAN) provides coverage in areas where little or no mobile coverage is present.
- Optimised for HD video and audio delivery, allowing training or entertainment services to be delivered to laptops, TVs, mobile devices and large screen displays.

Contact us today with your communications requirements on +44 (0)1707 665 320 or email us at sales@datasat.com