

## THE GBIS System – an Overview

As the GBIS client base expands with new clients, we think it would help if everyone had some basic knowledge of how the system works. This article gives an overview of the current system.

First, some terms need explaining.

1. The **Point of Presence (POP)** is the main access point connecting the broadband provider (for us Telus) with the rest of the network.

Initially, in 2011, our Telus feed was an E10 service, sharing 10Mbps with all subscribers. In 2013 we increased our speeds by moving up to an E30 service, then in 2015 increased to an E100 service.

2. A **backhaul** is the term used for the main wireless link between the POP and the rest of the system. This usually consists of two radios pointing at each other with a focused beam. Below is Manfred Burandt installing the backhaul radio at the Sunshine Coast Health Centre (SCHC). It is pointing at a similar radio on the Pocahontas tower. This radio has recently been replaced by a full-duplex radio that has a higher capacity.



3. A **Sector Antenna** is the piece of equipment, usually located at the top of the tower, that distributes the wireless signal directly to the client radios. Sector antennas come with different angles, so that a 90° sector will distribute over an angle of 90°. However, the wider the angle, the weaker the signal is at greater distances. For example, to cover Gillies Bay from Pocahontas, a 120° sector is sufficient as the distance is small, but to cover the Oasis area, a 90° sector would be more suitable.

4. **Client radios** receive the signal from the sector antenna and are typically mounted on the client's residence, then connect to the client's router or computer by an Ethernet cable.



The route of **the GBIS system** is indicated in red on the above map. The POP is located at the SCHC, with a short 8km backhaul to our Pocahontas tower. From there sector antennas cover Gillies Bay and areas north-west and south-east of Pocahontas.

We hope this introduction to the system is useful. We welcome feedback and suggestions to improve the system.

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