



# Campus to Campus Data/Voice Communications

## Case Study – Ballarat Secondary College (January 2009)

### The College

Ballarat Secondary College is the largest school in Ballarat with approximately 1500 students. The College was formed through the merger of the Ballarat East, Midlands and Wendouree Secondary Colleges at the start of the 1994 school year.

Today the College has three campuses, a centrally located senior campus in Barkly Street Ballarat, and two Year 7-10 campuses at East Ballarat and Wendouree.

### Inter-Campus Network History

The College's Inter-Campus data and voice communications immediately in the post amalgamation period were based on ISDN data and PSTN phone lines. As the College's networking requirements exceeded the capabilities of that system, the College began investigating alternative concepts.

In December 1998 the College engaged ADE Network Technology (presently known as Wave1) to implement an Inter-Campus data WAN based on a class licence wireless technology. The telephone network remained largely unchanged. Site surveys were carried out and as there was no line of sight between Wendouree and East campuses, a suitable repeater site was selected at Nerrina. The new WAN was commissioned in early 1999 and had served the College flawlessly, providing approximately 3 to 4Mbps of data capacity between the campuses. This was a substantial improvement on the previous setup and enabled the College to achieve a number of goals.

In November 2002, in order to keep up with its increasing networking requirements and to cater for anticipated network growth in the next three to five years, the College has embarked on a two-stage project to upgrade its wireless links. The project was concluded in May 2003. The old equipment was replaced with licensed frequency microwave equipment offering full duplex 36Mbps capacity. The new links catered for Fast Ethernet data connectivity, and also provided E1/G.703 channels which connected PABXs at each of the three campuses, integrating the College's telephone network into one "Virtual PABX".

### The Latest Inter-Campus Network Upgrade Project (2008-09)

In early 2008 the Victorian Department of Education and Early Childhood Development (DEECD) provided funding to Ballarat Secondary College to assist with communications infrastructure upgrades. The College obtained project quotes from a number of suppliers and again Wave1 was chosen to implement the latest upgrade. The three 36Mbps links were replaced with the latest carrier grade licensed microwave technology

capable of up to 400Mbps full duplex data throughput via Gigabit Ethernet interfaces and E1 channels for dedicated PABX connectivity. The project was implemented during the 2008-09 school break. The application of the latest technology and increased capacity will enable the College to cater for its immediate and future communications requirements, while at the same time substantially reducing operating costs.

Scott Burke, Network Manager of Ballarat Secondary College said: "With the introduction of government funding, the college was able to significantly upgrade its existing microwave solution from 36Mbps to 400Mbps. This will substantially change the way we approach content delivery across the college, allowing greater leverage and centralisation of applications. The upgrade project undertaken with Wave1 was a seamless cutover with minimal network downtime. Once again Wave1 has delivered totally on what they said they would, and the college is fully satisfied with the end product solution."

## Benefits

The new microwave inter-campus network provides the following benefits to the College:

### Data Network:

- Uniform high speed network access, login scripts, access to applications and data, regardless of location, for staff and students, especially those commuting between campuses, resulting in an improved utilisation of available resources
- Consolidated IT infrastructure and support resulting in reduced operating costs
- Network performance sufficient to run response sensitive applications such as CASES regardless of location
- Single Internet access to the entire network resulting in better internet bandwidth utilisation and reduced operating costs

### Telephone Network:

- Free inter-campus telephone calls resulting in reduction in operating costs
- Annual cost savings on inter-campus tie lines
- Single In-dial College phone number
- Integrated "virtual" PABX features, ability to dial extensions on different campuses as if they were local, flexibility in call handling and other PABX features such as voicemail and direct dial

## Contact Details

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# Ballarat SC Communications Network Diagram

