Bringing broadband to transit

BAI Communications
Bringing the connection to your journey
Across the globe, BAI Communications (BAI) delivers advanced broadband services to large-scale transit networks – improving outcomes for transit operators and enhancing the travel experience for passengers.

One shared communications network can enable fiber solutions and wireless services such as 2G, 3G, 4G/LTE, Wi-Fi, public safety and transit services. This network provides substantial cost and operational benefits for transit operators and other network users such as mobile carriers, public safety authorities and businesses operating in and near the transit system.

Demand for access to broadband services is increasing exponentially. Across cities – in cafés, stadiums, public spaces, malls and more – mobile wireless communication is now ubiquitous, and people have come to expect connectivity anytime, anywhere.

One of the hardest places to provide good wireless connectivity is a city’s or region’s transit network.

This is where BAI steps in. With proven technical and commercial expertise that draws upon a best-in-class system design, BAI implements wireless networks across some of the most complex transit networks in the world.

Our business model is designed to significantly increase Transit Authority efficiency and revenue as well as improve the commuter experience, safety and security.
High speed broadband
High speed broadband – delivered via 3G/4G services plus public access Wi-Fi networks – brings significant benefits to both passengers and Transit Authorities.

In a transit system, there are many applications that can be delivered economically and securely through the use of common network elements.

Public connectivity
• Voice and high speed broadband through 2G/3G/4G cellular and wholesale, roaming subscription and/or free public Wi-Fi

Public safety
• Help point intercom services, video surveillance, LTE-PS

Transit applications
• Fare payment systems
• Remote condition monitoring
• Back office/enterprise systems
• VoWi-Fi/PTTtoWi-Fi
• Passenger information systems (PIS)

• Digital signage
• Heat mapping and data analytics
• Beacon technology applications
• IoT/M2M applications

Common network elements used
• Fiber networks - trunk and station
• Data Centre/Base Station Hotel colocation facilities
• Remote nodes for cellular, Wi-Fi and public safety networks
• Power and cooling systems
• Traceside towers, conduits and ducts
• Equipment mounting systems
• Telemetry and Network Operations Centre

Sensible transit solutions
Passengers can email, read, listen to music and interact with their friends through social media or enjoy a variety of online services.

For Transit Authorities, wireless connectivity can enhance the performance of the rail network and reduce operating costs while increasing passenger numbers and customer satisfaction levels. It eliminates dead zones to enable the delivery of real-time information to all passengers – whether it be timetabling and ticketing updates, news on transit updates, important emergency service or public safety information. It can enable monitoring, video surveillance, advertising delivery, entertainment services, employee communications, private network functionality, crowd behavior measurement and many more possibilities.

It is all made possible through BAI as a network builder, operator and investor working in partnership with the Transit Authority.

Future-proofing the network
BAI’s wide band, multi-technology, multi-platform will enable new technologies such as 5G to co-exist.
BAI has an unparalleled track record across the globe in delivering secure, fast and highly reliable wireless solutions to Transit Authorities.

We custom design each network to suit the local environment, and deliver measurable benefits to the Transit Authorities and their customers.

BAI has implemented wireless solutions in two of the largest underground transits in North America – including New York’s iconic subway network and Toronto’s TTC subway – as well as in Hong Kong’s MTR.

Globally we are continually looking to expand our transit related portfolio and presence.
Transit Wireless, New York
Transit Wireless provides a neutral host wireless (cellular and Wi-Fi) and fiber network within the New York City subway system, one of the largest subway systems globally. The wireless network provides connectivity to more than 1.7 billion passenger rides each year as well as facilitating many transit operational applications through the deployment of cellular, Wi-Fi and fiber services to 278 underground stations. Partners include the Metropolitan Transportation Authority (MTA)/New York City Transit Authority (NYCT), AT&T, Sprint, T-Mobile, Verizon, and Outfront Media. The license with MTA/NYCT extends to 2038.

BAI Canada, Toronto
BAI Canada is licensed by the Toronto Transit Commission (TTC) to fund, deploy and operate a neutral host wireless network, providing cellular, Wi-Fi and fiber services to some 70 stations and connecting tunnels. The train network has an annual ridership of over 500 million each year.
Services provided include cellular, Wi-Fi and transit applications. Key customers include WIND, Metrolinx and Pattison. The license with TTC extends to 2032 with a 5-year extension highly likely.

RFE, Hong Kong
RFE, a BAI confined space coverage systems company, has over nearly 20 years designed and built subway wireless networks for a number of Asian transit operators including Hong Kong’s MTR system where recently a multi band MIMO network has been deployed in the West Island line system allowing commuters to experience world leading data services of up to 300 Mbps. The MTR network has some 86 stations with a ridership of over 1.6B each year.
The BAI advantage

By engaging BAI to deliver wireless and fiber connectivity to your transit network, you will gain access to the very best technical experts and infrastructure.

BAI delivers:

- Substantial cost and revenue benefits for the Transit Authority
  - Alternative investment approaches possible; BAI is a willing investor
  - One time construction process for all services that is future-proofed
  - Revenue share or other license fees
- Wide band, multi technology, multi-platform network
- Commercial simplicity through single point of contact to various users of the networks including mobile carriers
- Proven capacity to integrate cellular, Wi-Fi, transit and public safety communication networks, securely
- A consultative approach

How the BAI system works

BAI’s fiber and wireless connectivity solutions are facilitated through best in class Distributed Antenna System (DAS) technology and fiber to the edge Wi-Fi architecture to achieve maximum performance and customer experience – now, and in the future.

Colocation services are provided for all network users to simplify point of interface and operational needs. Typically, due to the confined space within transit networks, BAI Data Centres/Base Station Hotels are located close to but outside the transit environment in secure, resilient, fault tolerant facilities with redundant power and cooling systems. A city transit network may need a number of these base station hotels, reducing congestion within station precincts and enabling mobile carriers to efficiently perform maintenance without disruption to the transit operations.

A trunk fiber network is deployed to connect Base Station Hotels with stations and tunnels in the transit system.

Who is BAI Communications?

BAI Communications designs, builds and operates highly available communications networks – broadcast, radio, cellular, Wi-Fi, digital – for our customers across the globe.

We specialise in the delivery of complex transit and confined coverage solutions – putting cellular, wireless and Wi-Fi networks in difficult environments.

Our owners, the Canada Pension Plan Investment Board, are a long-term trusted infrastructure investor with C280 billion funds under management (as at 31 March 2016).

Contact us today

Speak to us today about your goals for wireless connectivity within your rail network. We will help you track the right course for your future wireless deployments.
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