BaiCells

New Zealand Blue Reach

Co-building, Co-sharing, Contributing to a new telecom world

Multiple vendors co-build and co-share Telecom Infrastructure

Based on Centralized RAN architecture, smoothly evolving to 5G

Scalable & Reliable core network

LTE-U

Embracing Future LTE-U and 5G

Blue Reach Services Limited is a New Zealand owned business. Blue Reach create smart services that compete with the best in the world through constant innovation and the development of smart intuitive features. It has introduced a wholesale fixed and mobile business and provides everything customers or partners need to operate a 4G business in New Zealand.
Blue Reach helps their customers or partners to:
- Build their own mobile/FWA network and be their own Telco
- Add mobility to their own business
- Sell mobile services on an Agency basis

Malcolm Dick, the founder, has extensive experience in the telecommunications sector over the past 25 years. He previously founded Call Australia (in 1992) and CallPlus (in 1997), both very successful telecommunication retailers.

Industry Trends

Telecom Infrastructure sharing is one of the future trends in the industry, aiming to reduce repeated, homogeneous network construction by ISPs.
What Blue Reach has been doing is where telecom industry is heading for. Blue Reach acquired 70MHz 2.6 GHz spectrum in New Zealand, and united several ISPs to co-build LTE network and share the revenues.

In the new business model, Blue Reach is responsible for building Centralized, Distributed core network and unified operation of ISPs networks in New Zealand. Regional RAN and user' data storage are left to ISPs to complete. One subscriber could roam into any ISP regional network.

Pain-Points

How to deal with interconnection of multiple partners' networks?

The unified Blue Reach Network consists of several regional ISPs' networks. If we want to realize that one subscriber could roam into any other regional ISP network, then the interconnection among the regional ISP network will be the key issue.

With more and more partners getting access to Core Network, how to guarantee sufficient capacity and effective cost?

Blue Reach intends to build a national network in New Zealand with multiple Retail Service Providers from different regions. And all the regional networks have to get access to Blue Reach Core Network. It is Blue Reach who is responsible for network performance. For Blue Reach, it is critical to build a reliable HA core network at a reasonable cost, promising sufficient capacity and accessibility all the time.

How to build a national LTE network with limited frequency spectrum resource?

Blue Reach already acquired 70MHz national spectrum and many ISP have access to 40MHz regional TDD frequency band. But for having a national LTE coverage in New Zealand, these spectrum resources are not enough. Considering future 5G approaching, much more frequency bands are needed to increase speed rate. Then how to make best use of limited frequency resource and how to have more spectrum to use, is an important problem.

Solution and Products

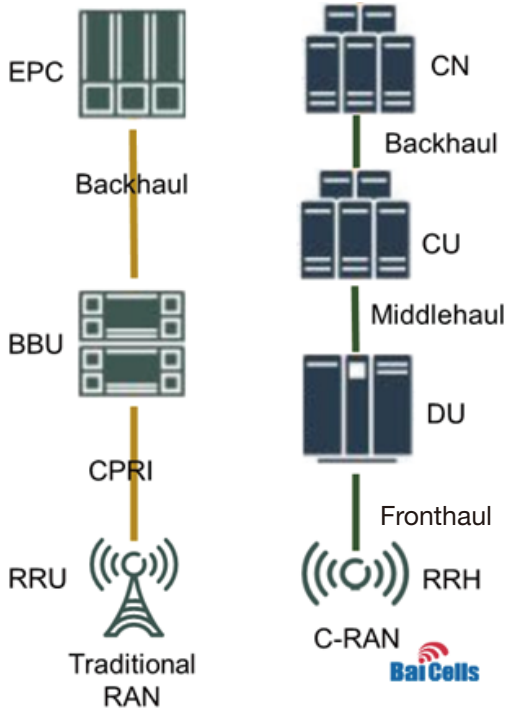
- Cloud EPC
- Integrated eNodeB
- Multiple bands CPE
- Centralized RAN architecture

Highlights:

Centralized RAN architecture, evolving towards 5G

Blue Reach Network is based on C-RAN architecture with Centralized and Distributed Core networks. The benefit is that real-time services could be handled in Distributed Unit (DU) near to users, reducing latency to improve users' experience and saving transmission cost; multiple DUs connect to Centralized Units, where regional IoT services (non-real time service) and Internet Services are massively processed.

Under this architecture, one subscriber could roam into another region's CPE. The traffic rating/charging is managed by the core EPC.



Scalable & Reliable Core Network

In the initial phase, it is not reasonable to have a core network with large capacity; but in the long term, as more ISPs join, it is necessary to consider sufficient volume. Then, Core Network based on Cloud EPC is the best choice for dynamic changing scenario. Besides, Centralized and Distributed core networks are mutual backup and remote disaster recovery, improving reliability.

Embracing Future LTE-U and 5G

Spectrum is limited and precious resource for any telecom operator. During the project, 2CCA eNodeB is adopted to make use of fragmented spectrum in order to improve spectrum efficiency and increase data rate. Right now, the policy about spectrum is more open than before. We have seen CBRS in USA and similar one in Japan. With the maturity of organism on open unlicensed spectrum, network sharing will be widely accepted.

Future Evolution

Blue Reach has united some ISPs including Compass Communications, Wireless Nation, Lighwire, and Full Flavour . The partners list is growing and the co-sharing network coverage is expanding. With wireless technology developing and open policy on frequency spectrum in the coming years. We could witness Blue Reach Network smoothly evolving to nationwide LTE.

I am very excited by the possibilities that the technology is enabling and I appreciate the ongoing Baicells support and capability.

Blue Reach CEO, Mike Lancaster

web: www.baicells.com Mail: contact@baicells.com Phone: 010 - 6260 7100