Leading the Small Cell Revolution

By Rupert Baines, VP Strategic Marketing and Marcom, Mindspeed Technologies Inc.

It's been a busy few months for Mindspeed and at Mobile World Congress we made our first public appearance after the acquisition of Picochip.

What was interesting at MWC this year was how small cells have really taken off, with many of the analysts listing small cells as one of the highlights of the show. Last year where there was a lot of talk from the network operators and equipment providers; this year it wasn't just talk, but actual products on show. For example, on the Mindspeed stand we had almost forty different small cell products from thirty different customers, and that was repeated and all over the show. Indeed, ALU's innovative Light Radio small cell ("the iPhone of infrastructure", to quote Light Reading) was providing indoor coverage at La Fira.

Among many announcements, Dr. Doug Pulley (Mindspeed's Chief Technology Officer for Wireless) shared results of a study to find out how many small cells Barcelona would need by 2015 for world-class mobile broadband. The number was 40,000 and with so many people squeezing into tall, stone buildings with narrow streets Barcelona is a textbook example of a city where it's difficult to get a signal – making it ideal for small cells. The research was carried out by. Although people know that data traffic is increasing exponentially, it is staggering to see how that requires so many basestations if the customers are to get what LTE is capable of – and that they are paying for.

At the show we also announced new customers and demonstrations. For example, we unveiled the world's first Long-Term Evolution (LTE) femtocell, and we are the only company to demonstrate working small cell time-division (TD)-LTE and Frequency Division duplexing LTE (FDD-LTE) solutions.

Some operator & customer announcements included a collaboration with JUNI [1] to jointly develop LTE femtocells [2] and other small cell dual-mode 3G/LTE solutions and a co-operation [3] with Contela, Inc. [4]to jointly develop advanced LTE femtocells and other small cell dual mode 3G/LTE solutions. There was also an announcement from Korea Telecom [5] (KT) that it has selected Mindspeed®'s Transcede [6]® System-on-Chip (SoC) baseband processors for its LTE small cell development - supporting the carrier's migration to dual mode (LTE and 3G). For the US market, TEKTELIC Communications [7] announced that the company has launched [8] what it claims is the industry's smallest fully integrated micro eNodeB, which was developed using Mindspeed technology and software from the Aricent Group.

To illustrate the significance of TD-LTE, we demonstrated the industry's first commercial-grade, production-ready TD-LTE small cell reference design [9] with Hong Kong Applied Science and Technology Research Institute [10] (ASTRI) as well as a demonstration of a tier one customer's TD-LTE small cell base station using Mindspeed's Transcede SoC baseband processor.

Mindspeed is the only company supporting all the flavours of 3GPP, with support for WCDMA, TD-SCDMA, LTE FDD and TD-LTE and we are the only company who can support dual mode (eg WCDMA + LTE FDD or TD-SCDMA and TD-LTE)

In total on our stand we had 39 unique femtocells and small cells, including those in commercial service with service providers from around the world for HSPA, LTE and TD-SCDMA. There was also real-world ecosystem participation from Mindspeed collaborators; Six different TDSCDMA femtocells and picocells for the Chinese market; HSPA and LTE picocell-class products for enterprise, metro and rural markets, with power levels ranging from 250mW to 2 x 5W; and seven different LTE small cells, including designs from KT, JUNI and Tektelic.

According to Informa, more than 53 carriers have now launched small cell services and they anticipate that the market will be over 50 million units by 2016.

Mindspeed helped pioneer the small cell market: it was great to see at MWC how that has crossed into the mainstream.

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