

LTE's IPR situation remains uncertain, Nortel's patents may swing the balance

- **Apple, Nokia and Google all expected to bid for Nortel's huge patents hoard**
- **Winner could help decide the licensing structures for LTE**
- **New entrants call for patent pool while incumbents persist with secret deals**

LTE deployments and trials may be stacking up but one significant aspect remains fraught with uncertainty – the patent position. In previous generations of mobile technology, individual IPR holders might argue bitterly over rights and royalties, but the process was well understood – and took place strictly behind closed doors, with bilateral agreements. At the 4G stage, the picture is more confused because there are two potential approaches to patent licensing. One is to stay with the 3G system. For obvious reasons, this is favored by the existing patent powerhouses, and Qualcomm, Ericsson and others are already claiming a long list of bilateral deals for their considerable stocks of IPR. The other is to adopt a pool approach, with a common framework that applies to all agreements, and with rules and charges published openly.

The case for a patent pool:

Why is there serious impetus to change the system this time around? Several factors are in play. Pools are the norm in many other technology areas, and players from the PC, industrial devices and consumer electronics worlds – all more accustomed than traditional cellphone makers to pools – are coming into the mobile sector. Major players that have not previously participated significantly in the mobile patent world, but expect to sell large numbers of products for 4G, do not want to be excluded or disadvantaged by a system that they perceive to be weighted in favor of the mobile establishment.

In addition, pools tend to bring with them other principles that can boost competition and reduce costs. One of these is the concept of 'fair reasonable and non-discriminatory' or FRAND royalties, as adopted (often rather vaguely) by patent pools and standards bodies like the IEEE. Another is the idea that all patent royalty claims should be made upfront, to prevent IPR holders emerging from the woodwork once a technology is established and causing 'bill shock' to vendors (this idea is increasingly being supported by standards bodies and by governments and their agencies, notably Europe's

ETSI). The increasing importance of standards and players that emerged from the PC and web worlds, like Wi-Fi and WiMAX, have introduced once foreign ideas to the mobile arena, and they cannot now be ignored.

In addition, some of the mobile bighitters themselves are struggling with the established licensing structures. 4G platforms are highly complex and many patents will be involved. This could add hugely to the time and expense of negotiating bilateral deals for each piece of IPR, and the number of royalty payments could wreck the chances of delivering the low cost devices that will be required to stimulate usage in many areas – not just affordable LTE handsets for emerging economies, but the tiny embedded gadgets that will underpin new revenue streams like machine-to-machine and smart grid applications. Even Nokia and Ericsson, two of the giants of cellular IPR, have lent their weight to setting a cap on royalty charges of 10% of the cost of a device. Yet this will be impossible to enforce if a manufacturer has to negotiate separate deals for scores of pieces of IPR.

The battle for LTE:

In 2011, we can expect significant intrigues and battles over the licensing structure for LTE, as the industry looks towards a mass market for the devices from 2012. Vendors will fight to maximize their patent holdings, which in turn will help them influence the overall approach to IPR, and they will fight over how those patents are to be assessed and licensed. In both areas, the first OFDMA-based 4G technology to be commercialized, WiMAX, provides some interesting precedents. Many of the technologies and patents in that platform are also key to the rather similar LTE and this is shifting the balance of power in 4G.

And that in turn may help supporters of a patent pool to have more impact – given that several WiMAX IPR heavyweights, such as Intel, have come from the very different structures of the PC industry. These firms will want to use their WiMAX patents and experience to gain a new position in the once-closed cellular world, and that will be simpler to achieve via a pool. Even some major mobile players like Samsung may well take the side of a more open system – despite its huge handset sales, Samsung has not been a major IPR player in 3G, but is in the top three for WiMAX, a strength it will aim to exploit in LTE also.

The final picture of LTE patents is far from drawn yet though, so for many suppliers the first step will be to load up their arsenals. Qualcomm has already signed licensing deals for its extensive OFDM patents with four of the top five phonemakers, and Ericsson claims to have 25% of the essential IPR in LTE, the largest slice – hitting back at claims earlier this year that it was only the fifth largest holder, coming after Qualcomm, InterDigital, Samsung and Huawei (Informa estimates). At the time, Ericsson’s chief intellectual property officer, Kasim Alfalahi, told *ConnectedPlanet* that most calculations have used one of two “flawed” methodologies – a keyword search of global patent application databases, which does not distinguish patents that are essential specifically to LTE; or a tally of the number of patent applications for LTE submitted globally. But while more precise, this does not take into account applications that will be rejected, or prove insignificant to LTE standards.

Nortel sells its patents:

One factor that could swing the balance of power is the huge pile of 4G-related patents held by bankrupt Nortel Networks, which are now coming up for sale. This is the last remaining asset of Nortel left to be sold, almost two years after the Canadian firm declared bankruptcy. It could be a major battle. The three firms fighting to define the new mobile experience - Apple, Nokia and Google - are all said to be bidding in an auction that could generate \$1bn for Nortel’s creditors, and others are sure to join in, probably including Ericsson, which has acquired the bulk of Nortel’s other wireless businesses. RIM had expressed interest in Nortel’s IPR last year, but is unlikely to be able to fend off the giants.

Nortel separated many of its formidable pile of intellectual property assets from the sale of other units, notably its 4G, CDMA and GSM businesses to Ericsson. At the time, there was controversy over the decision to keep many patents off the table, and Nortel was even considering keeping the IPR and retaining its brand as a licensing firm. However, with such high profile companies now reported to be interested, it is unlikely the Canadian company could satisfy the requirements of its creditors, and generate more value by keeping its patents than by selling them.

Citing unnamed sources familiar with the process, news agency Reuters reports that final bids for the 4,000 patents are due within

the next few weeks. The assets have been split into six groups in different technology areas, and these could presumably be sold separately.

The most valuable is likely to be the one for LTE. Nortel contributed significantly to both 4G standards, WiMAX and LTE, with R&D in key areas like OFDMA and MIMO. According to Reuters, Nortel owns seven of the 105 patent families likely to be essential to LTE. By comparison, Nokia holds 57 and Ericsson 14.

One of the largest companies building a business around wireless patents, InterDigital, told the new agency it was part of a consor-

Nokia moves its legal war with Apple to Europe:

Nokia has fired off yet another lawsuit at Apple, claiming infringement of 13 further patents by the iPhone, iPod Touch and iPad. This joins earlier US complaints covering 24 Nokia patents and raises the temperature yet again between the two warring smartphone makers.

The existing lawsuits, and cases brought by both sides before the International Trade Commission, are all in the US, but the new ones have been filed in the UK, Netherlands and Germany. Apple has countersued Nokia in the US, citing 13 of its own patents.

Among the new actions, the UK filing covers four Nokia patents related to the touch-based user interface, on-device app stores, signal noise suppression and modulator structures.

Two filings in Germany cover seven patents related to the touch UI, antenna structures, messaging and chipsets, as well as five patents concerning on-device app stores, caller ID, display illumination and the integration of multiple radios. The Dutch complaint involves two patents covering signal noise suppression and data card functionality.

Nokia's outstanding claims involve some smartphone specific IPR related to key elements like display, but tend to focus on more fundamental technologies involved in GSM, 3G and Wi-Fi standards. These are widely licensed round the industry. By contrast, Apple's claims mainly revolve around the user interface.

The original suits were brought in October 2009, and in December Nokia followed up with its ITC complaint, arguing that Apple "infringes Nokia patents in virtually all of its mobile phones, portable music players, and computers" and focusing on seven specific patents. These included IPR related to touchscreen input and on-device app stores, reportedly filed more than a decade before the launch of the iPhone – widely credited with bringing both these technologies to the mainstream.

Apple has yet to comment on the new suits.

tium bidding for the LTE IPR. "It's unusual for an asset like that to come to market," the company's CEO William Merritt said. Usually, patents are traded in small numbers, not en masse.

Success for a non-traditional mobile player on the LTE front, such as Google, could be a catalyst for a change in 4G licensing norms. Google, like Intel, would be more interested in opening up patents to stimulate a massive base of devices that could use its services, rather than becoming a royalty business in its own right. If we do not see a change of this nature, time may be running short to create a new framework for LTE, despite the rising pressure from some important power bases, such as the CE sector and the manufacturers of Taiwan.

Taiwan demands a pool:

The latter play a hugely important role in any device ecosystem and will enhance their place in the mobile world as a more open model, encompassing a wide range of wireless products, emerges. But the vendors' margins are thin, and they are concerned at the potential level of patent royalties that could be payable in LTE. The Taiwanese handset makers are calling for the LTE community to support a patent pool approach, rather than bilateral and secret agreements. And as the margins of the branded device makers get thinner too, they may find new allies.

According to *DigiTimes*, quoting local industry sources, the manufacturers are worried that, without a large patent pool supported by many of the IPR holders, the diversity of LTE patent ownership will make cross-licensing deals complex to negotiate and expensive to implement. The threat of being charged with patent infringement will deter investment and innovation in LTE products, argue the vendors.

Three patent pool operators – Sisvel, VIA Licensing and MPEG LA - have been trying to attract sufficient large numbers of patent owners to gain critical mass, but none has succeeded yet. They claim to have signed up 32, 14 and five companies respectively and the third of the pools is expected to back away from LTE.

Yung Hahn, president of the Open Patent Alliance (OPA) - which is seeking to build a licensing framework, based on the pool approach, for WiMAX – believes there is a window of opportunity for the

same to happen for LTE. Since the OPA was formed in 2008, it has argued that its WiMAX approach could form a blueprint for LTE, because of the similarities in the technologies. Hahn hopes to announce the WiMAX common licensing framework in the first months of the new year, saying that most major issues have now been resolved.

He said this week: “This would be an opportunity to get involved in the LTE ecosystem and develop a reference point there, but there is a finite window. It is not too late yet but there need to be moves in the first half of next year to create a transparent reference point.”

Without successfully establishing a broad-ranging pool and framework, he believes there is the danger of excluding small innovators, which have little to bring to the table in bilateral negotiations, and also non-traditional mobile device makers, such as consumer electronics players. He favors VIA’s pool, as he believes Sisvel is more tied into the big names and MPEG LA has a waning interest.

Note: Ericsson has agreed to pay \$50m for certain assets of GDNT (Guangdong Nortel Telecommunication Equipment), which has R&D, manufacturing and services operations in China. It has become an important supplier to Ericsson following the earlier acquisitions of Nortel’s CDMA and GSM businesses, said the Swedish firm. About 1,100 employees, including 550 R&D engineers, will join Ericsson following the deal. GDNT started in 1995 as a joint venture between Nortel and Chinese companies and telecoms operators. As well as the LTE, CDMA and GSM activities, Ericsson has also bought up Nortel’s stake in Korea-based LG Nortel, and the Canadian firm’s multiservice switch unit.

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