Intel Medfield chip on Motorola and Lenovo smartphones

Written by
Wednesday, 11 January 2012 04:13 -

Intel's new processor designed for mobile devices will be used by Motorola Mobility and Lenovo in upcoming Android-based smartphones.

The Medfield chip is designed to help Intel make headway in a sector dominated by processors based on designs by the UK firm Arm Holdings.

The announcement was made at the Consumer Electronics Show (CES).

The Motorola partnership is significant as Android's maker, Google, is in the process of taking over the phone maker.

This launch marks Intel's second attempt to get Atom-based chips used in smartphones.

LG unveiled a previous tie-up at CES in 2010, but the handset never went into production.

This time Intel has announced rough shipping dates for the new devices.

It said Lenovo would launch a Medfield-based phone in China before July, while Motorola would sell its first handset in the second half of the year with others devices to follow.

Battery life

Medfield's system-on-chip design packs an X86-architecture central processing unit (CPU), RAM memory, storage and an Imagination Technologies-designed graphics processing unit all onto the same chip using the firm's established 32 nanometre manufacturing technology.

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The chip is smaller than a fingertip and is designed to balance processing power against energy use in order to maximise battery life.

Intel said a prototype unit, which it built itself, could deliver eight hours of 3G voice calls, six hours of 1080p video decoding or five hours of 3G internet browsing.

"Battery life on this platform is not the best in the mobile market, but it is by far not the worst," Mike Bell, Intel's Ultra Mobility Group general manager, told the BBC.

"We are very effective and good at some tasks and sort of in the middle of the pack at others.

"Essentially we think you can build a smartphone based upon our processor with an ordinary sized battery that you see in today's smartphones that will provide a great experience. There will be no battery life issue on our platform."

Avoiding fragmentation

Intel said it has also taken steps to prevent existing Android apps from being incompatible or slow on its chips.

It will deploy a team of experts to advise creators of Java-based titles on how to optimise their code - something it already does to help PC program developers.

The firm says it has also developed a technology to tackle "the 25% of apps" designed specifically to run on Arm-based processors.

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"Applications that have native components or that were compiled natively for Arm - the majority of them, we think, by the time we ship will run just as well here as they do on other platforms. So the user won't have to worry about will it run on this or that phone," said Mr Bell.

"Compared to a native Intel version of the application it might use slightly more power if it is running under our technology, but the user wouldn't notice it.

"It will let those applications on day one run. And of course we are then going and evangelising to those people: 'Hey, if you recompile it it is going to run a lot faster on our platform as our platform is better.'"

Tablets

Intel said the chip could later be used in tablets.

However, for now it is promoting a separate Clover Trail processor, which was demonstrated on a tablet running the upcoming Windows 8 system software by chief executive Paul Ottellini during the CES keynote speech.

Despite showing off an Intel-designed Medfield prototype handset, Mr Bell said that the firm had chosen to pursue "a more horizontal ecosystem" with handset manufacturing left to others. However, he admitted that there had been discussions about Intel moving into the sector.

Intel's ability to crack the mobile device market could prove critical to its future success. Many analysts believe the division between smartphones and tablets versus PCs and laptops will become blurred over the coming years.

Microsoft's new system software has been designed to work on both Arm-designed processors as well as Intel's X86-based chips. Manufacturers have also experimented with Arm-based laptops running Linux operating systems.

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"There are somewhere between three to five billion smartphones in the world, if Intel wants to grow its business at a significant rate it must participate in this market, there is no alternative," said Ken Dulaney, vice president of mobile computing at the tech research firm Gartner.

"It also gives them a fallback if the Wintel monopoly begins to fall apart and the browser, rather than system, becomes king. They have been too tied to Microsoft for too long."

Source :bbc.co.uk