

## **Xsilon announces formation of Hanadu SIG and unveils Hanadu technical architecture for In-Home M2M**

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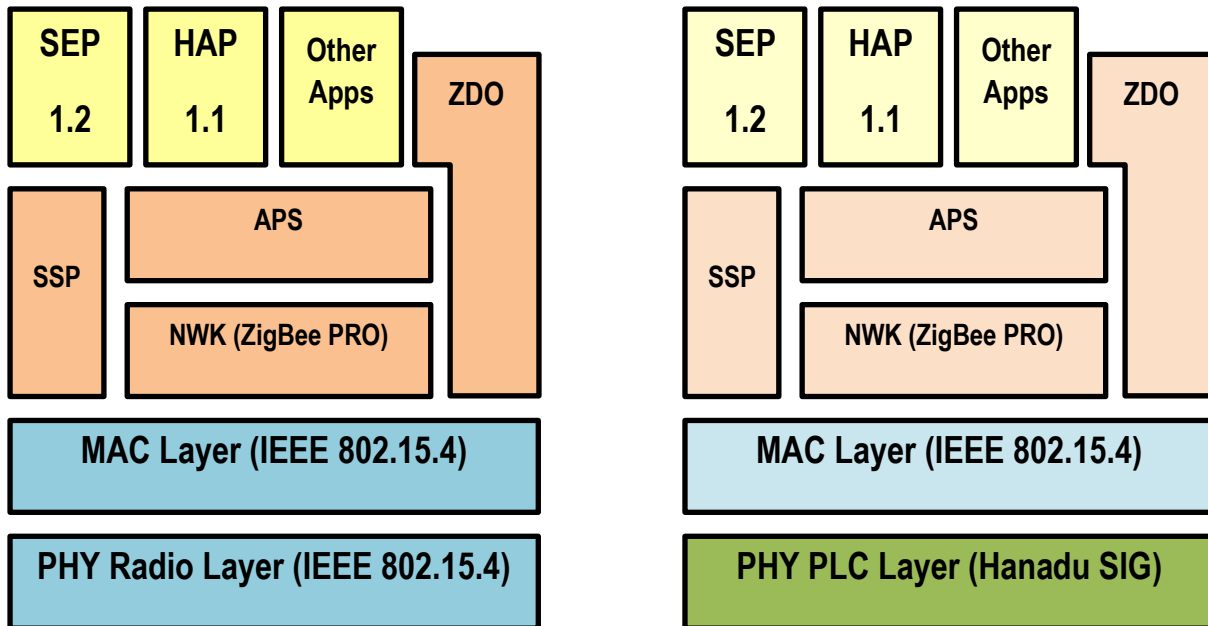
*Xsilon, the In-Home M2M connectivity innovator, has unveiled the technical architecture of its Hanadu technology for the first time in public. A Special Interest Group (SIG) is being formed to involve customers, users and other suppliers in the creation of a robust specification for the Hanadu communications protocol. The Hanadu architecture fits seamlessly with established standards such as IP and ZigBee, and works with them to extend the Internet of Things to the whole home – for the first time.*

Xsilon presented its Hanadu™ technology at the “Smart Grids and Cleanpower” conference held in Cambridge last week, appearing alongside leading organisations including DECC, National Grid, Ofgem, BP, Hitachi, ARM, Sainsbury’s, Energy Saving Trust and AlertMe. The company set out Hanadu’s In-Home M2M capabilities as a key enabler for the Internet of Things, which needs robust comms that can cope with the challenges of connectivity in the home. Hanadu is the only purpose-designed technology for this application. Xsilon has also announced the formation of a separate and independent organisation – the Hanadu SIG – to promote Hanadu’s market-wide adoption.

Hanadu is the first connectivity technology to be developed specifically for deploying machine-to-machine (M2M) services inside the typical home. As such, it offers “whole home” coverage, whereas previous solutions such as WiFi, HomePlug and ZigBee are acknowledged to struggle to provide adequate coverage for In-Home M2M, due to their original roots being elsewhere. Delivering the Internet of Things will require large-scale roll-outs of In-Home M2M services such as Smart Meter Displays, e-Health, Intelligent Homes, Assisted Living and Home Energy Management. These services require data connections between devices which are ubiquitous, reliable, work straight out of the box, secure, low cost, deployable anywhere, unobtrusive and low power. Hanadu is the first and only technology designed specifically to meet the challenging combination of all these goals.

Hanadu has been in development by Xsilon since 2008. It uses the home’s electrical wiring as its communications medium, dovetailing neatly with the energy monitoring needs of applications such as Home Energy Management. Where connectivity to untethered or battery-powered devices is required, Hanadu integrates easily with existing radio technologies such as ZigBee or wireless IP. Hanadu delivers 250 kbps of usable bandwidth, exceeding the throughput of alternative radio solutions, and around 10x-20x that of alternative powerline solutions; it is ample for M2M applications, even with large numbers of nodes in a single home. Although Hanadu can use meshing to deliver traffic to hard-to-reach locations within the home, in practice it connects to over 90% of locations without this, so maximising the network resources available to the M2M applications. Whereas previous generations of powerline communications have focussed on achieving high bandwidths over short distances, Hanadu has been engineered for “whole home” range, as well as extremely low power consumption and EMC-friendliness.

A key design goal for Hanadu has been to avoid burdening service providers or hardware vendors with the need to manage an additional network technology. Hanadu’s network architecture supports seamless integration with ZigBee, Z-Wave and IP networks (including WiFi). This is achieved by inserting Hanadu into existing protocol stacks built around the IEEE 802.15.4 standard. Wireless M2M networks for the Internet of Things already rely on 802.15.4 to connect devices together within the home. Hanadu appears to the network as part of the 802.15.4 family, leveraging existing investments by service providers and hardware OEMs in deployments based on 802.15.4 technology, including ZigBee and IP (via the IETF’s 6LoWPAN specification). As an illustration, the following diagram shows the simple change required to deploy Hanadu into an existing ZigBee stack, allowing Hanadu to support major ZigBee profiles such as Home Automation and Smart Energy.



Xsilon’s first Hanadu-based products will be available for commercial trials at the end of 2013. The take-up of In-Home M2M is best served by widespread adoption of Hanadu within the Internet of Things, and so Xsilon has been working with its partners to create a multi-vendor grouping that can develop and advocate the Hanadu specification. Following a route that has successfully introduced new technologies such as WiFi, HomePlug, Bluetooth, USB and ZigBee, Xsilon is establishing a multi-party Special Interest Group (SIG). The Hanadu SIG will work to complete the Hanadu specification, support it on its path to standardisation, develop propositions for particular applications and markets, and support a widespread adoption of Hanadu technology. The SIG will take over the development of the Hanadu specification from Xsilon, allowing offerings from multiple vendors to create a broad platform within the home.

The first wave of Hanadu SIG members will be announced during summer 2013. The SIG has its own website at [www.hanadu.org](http://www.hanadu.org), where new enquiries about joining the SIG can be made.

Russell Haggart, Xsilon’s chief executive, said: “This is an exciting time for the whole team at Xsilon. Having worked hard to create the Hanadu concept and to develop its technology base, we are now moving on to the next level as we open out the platform to our partners. We’ve had nothing but positive responses to Hanadu from all our partners and customers throughout its gestation, and now they are working with us to build real momentum in the market for Hanadu products.”

He continued by saying: “What has been obvious from the outset is that existing solutions are inherently unable to provide whole home coverage. This has been the consistent message from every single vendor and service provider with whom we’ve spoken. The Internet of Things needs In-Home M2M, and Hanadu is now here to enable true In-Home M2M for the mass market. Our integrated network architecture has been designed specifically for this market’s needs.”

#### About Xsilon Ltd:

Founded in 2008, Xsilon is a privately-held company headquartered in the UK. Its founding team leverages over 200 man-years of experience of technology and product development with leading US and European communications technology businesses. Xsilon’s patented Hanadu™ technology delivers low cost, small footprint, low power, high connectivity M2M capability to all appliances, wherever they are, within every home.

#### About Hanadu™:

Uniquely for an in-home connectivity solution, Hanadu is a cleansheet design; it is targeted to deliver four-nines connection rates to devices wherever they are in the home, whichever home they are in. Avoiding the inevitable compromises of legacy solutions, it is the first *Whole Home, Every Home*™ solution for In-Home M2M. Hanadu supports mainstream networking standards such as IPv6, 6LowPAN, Weightless, Bluetooth LE, Z-Wave and ZigBee profiles including HAP and ZSE. By design, Hanadu is compatible with all other in-home connectivity solutions, wired and wireless.



The first market targets for Hanadu include Home Energy Management solutions as well as Smart Meter Displays, Intelligent Lighting, Assisted Living and e-Health. Hanadu can work as the sole connectivity solution within a home, or with complementary wireless or wired solutions in a single network architecture. The Hanadu SIG is open to all interested parties seeking to develop the Hanadu specification and promote the use of Hanadu products. The SIG will control the core intellectual property relating to Hanadu, independently of Xsilon. Find out more at [www.hanadu.org](http://www.hanadu.org).

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