



In-Home M2M for the Internet of Everything

Connected Living needs... Connectivity

CIR Strategy: Smart Homes 2014

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<http://www.hvm-uk.com>

Russell Haggar, Xsilon

Smart Homes: Connected Devices



- ▶ Internet of Things is more than consumer electronics
- ▶ The *Internet of Everything* has to connect to every Thing
- ▶ Connecting up simple devices is not as simple as it looks
 - ▶ Connected Living needs:
 - Low cost
 - Low power
 - Ubiquity
 - Turn-key setup
 - ...
- ▶ Appliances are positioned for usability, not for connectivity

Connected Living in a Smart Home



E-Health



Energy-Smart Homes



Micro-generation monitoring



Home Automation



Intelligent Lighting



Assisted living



Smart appliances

Connected Living across the Home



*“Wi-Fi Wi-Fi everywhere,
But no guarantee of a link ...”*



E-Health

... in the bathroom ?



Energy-Smart Homes

... inside the garage ?



Micro-generation monitoring

... to the roof ?



Home Automation

... to the security system ?



Intelligent Lighting

... to the outside lights ?



Assisted living

... in every bedroom ?



Smart appliances

... in the utility room ?

Connected Living: An Unsmart Home

Hanadu

*“Wi-Fi Wi-Fi everywhere,
But no guarantee of a link ...”*



E-Health



Energy-Smart Homes



Micro-generation monitoring



Home Automation



Intelligent Lighting



Assisted living



Smart appliances

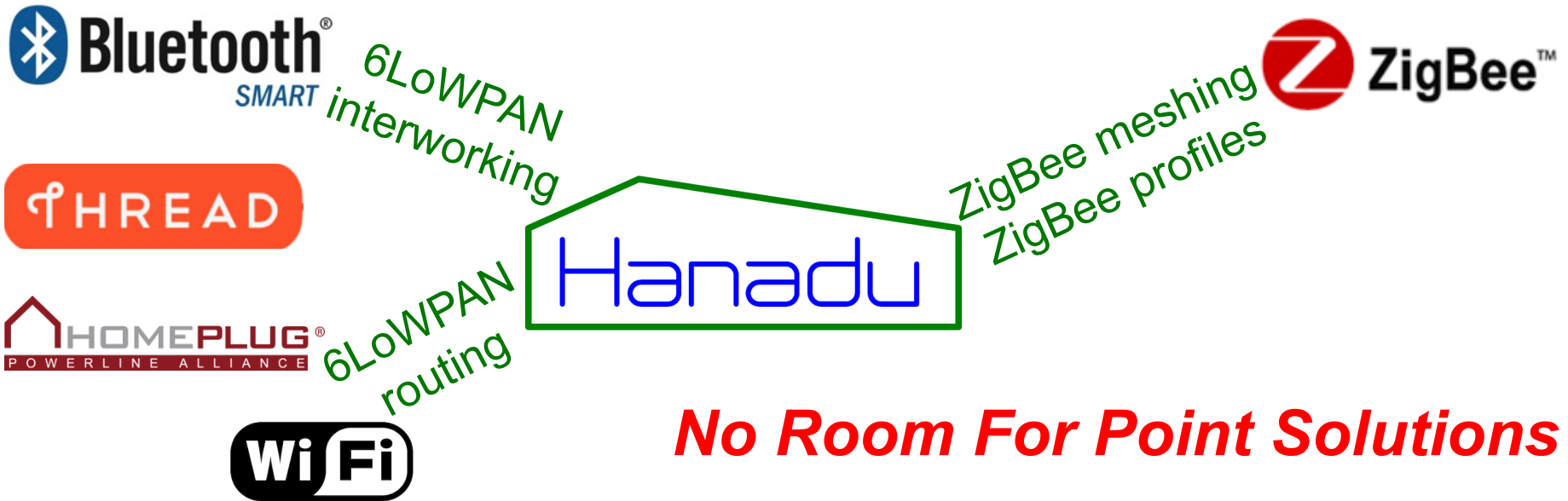


One more Point Solution ?

A Single Common Network



- ▶ Hanadu developed by Xsilon to plug the gap in the home
 - ▶ Uses existing network components, on the electrical wiring
 - ▶ Powerline becomes the key missing link for Connected Living
- Smart Homes need Smart Networks: not just “a radio”***

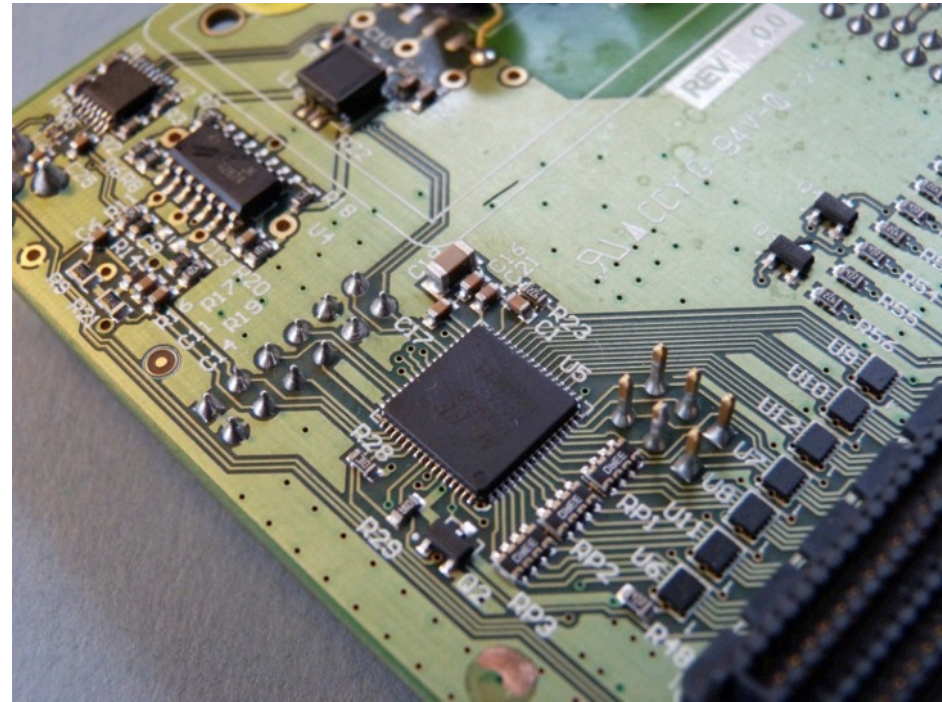


No Room For Point Solutions

Hanadu Capabilities



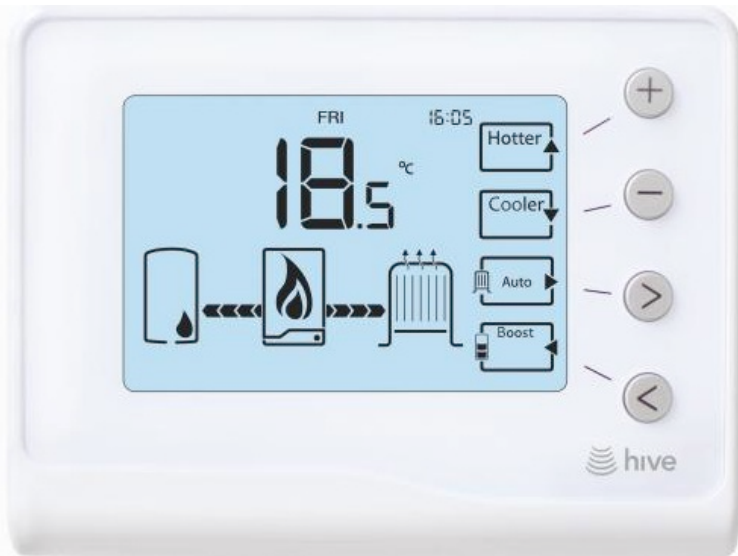
- ▶ Greenfield approach – No legacy obligations – Designed for In-Home M2M
- ▶ Open Specification (like ZigBee, Bluetooth, Thread, etc.)
- ▶ Full co-existence and integration with other home networking technologies
- ▶ Powerline addition to widely-used IEEE standard
- ▶ “Attic-to-Garage” connectivity
- ▶ Same price-point as Radio
- ▶ Tiny form factor
 - ▶ *Fits inside a mains plug*
- ▶ Hanadu SIG → Standardisation



Example: Home Energy Management

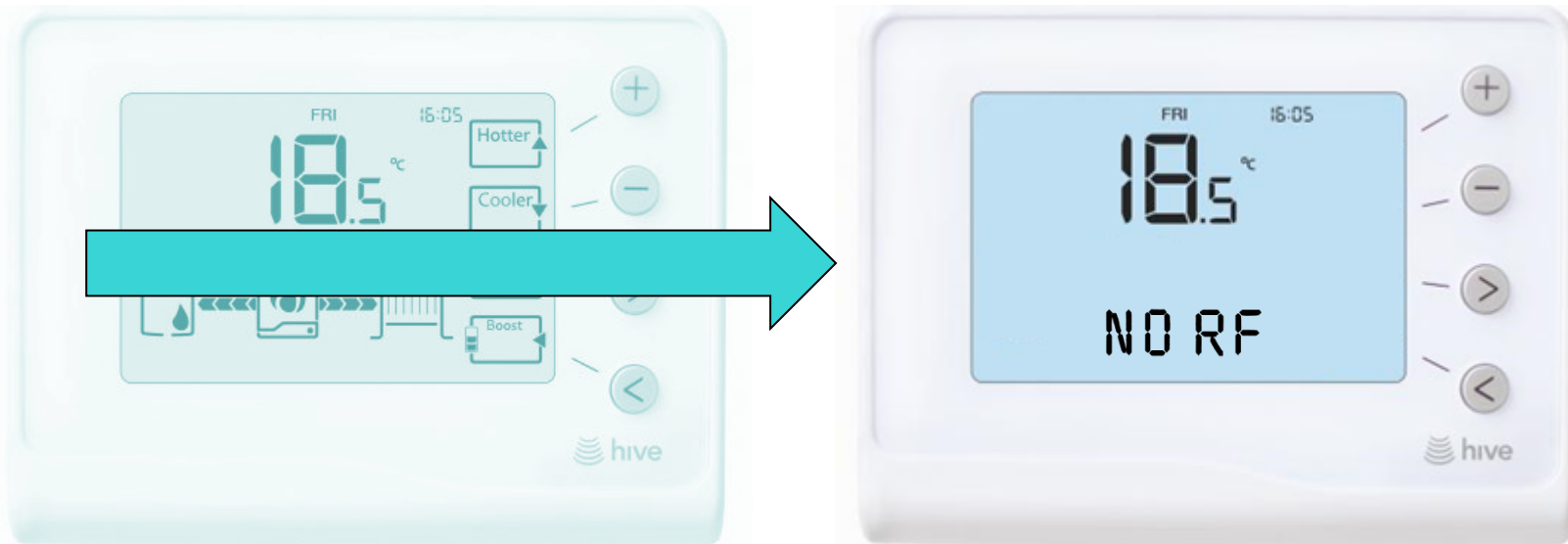


- ▶ Hive Active Heating: Uses ZigBee radios
 - ▶ ZigBee-connected “smart” thermostat
 - ▶ “Dumb” boiler control (ZigBee)
 - ▶ Web interface (ZigBee-to-Broadband)



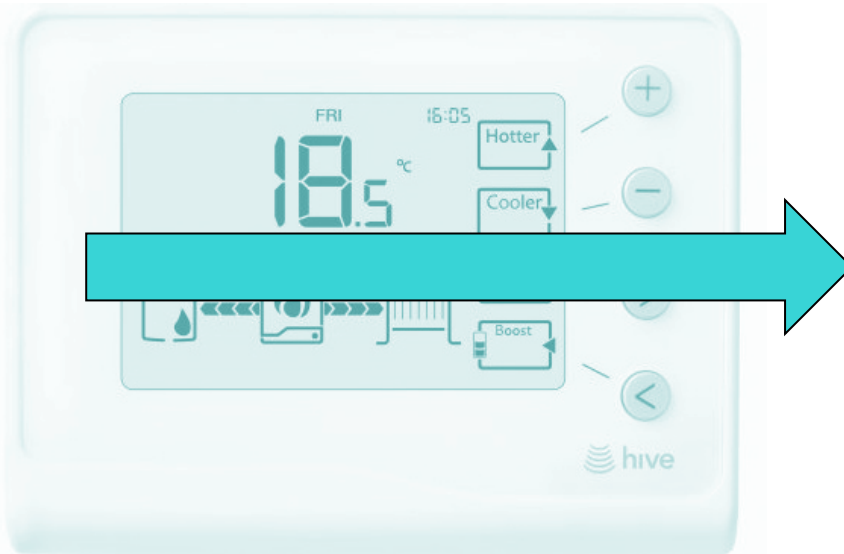
When Radio Is Not Enough ...

- ▶ Hive Active Heating: Uses ZigBee radios
 - ▶ ZigBee-connected “smart” thermostat
 - ▶ “Dumb” boiler control (ZigBee)
 - ▶ Web interface (ZigBee-to-Broadband)

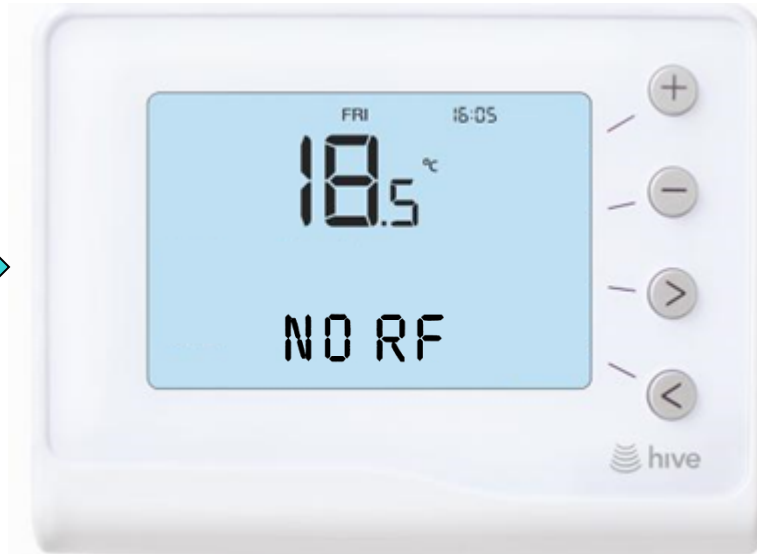


One Solution: More Radio

- ▶ Hive Active Heating: Uses ZigBee radios
 - ▶ ZigBee-connected “smart” thermostat
 - ▶ “Dumb” boiler control (ZigBee)
 - ▶ Web interface (ZigBee-to-Broadband)



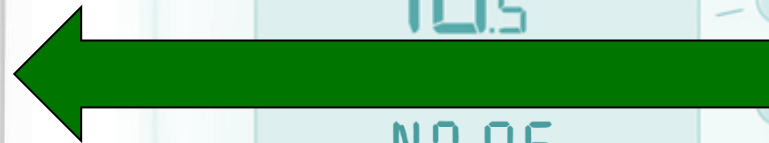
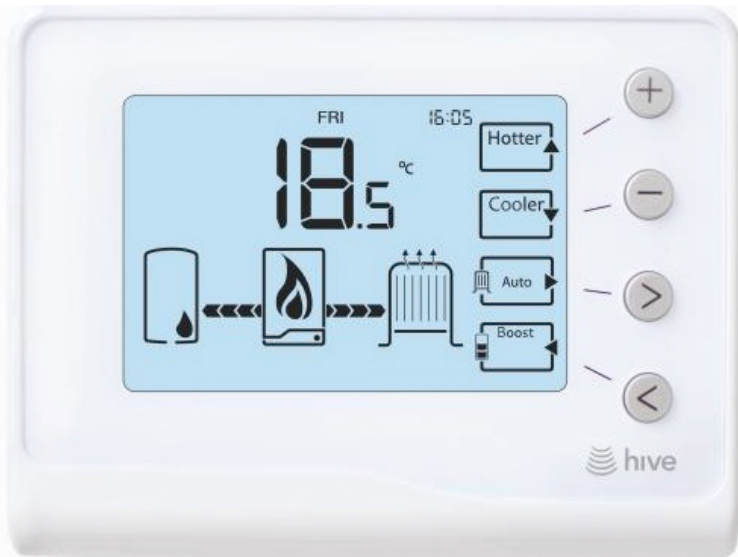
- ▶ Supplier's solution:



- ▶ Send additional ZigBee plug
- ▶ £30-40 net cost to the supplier

Better Solution: Horses for Courses

- ▶ Hive Active Heating: Uses ZigBee radios
 - ▶ ZigBee-connected “smart” thermostat
 - ▶ “Dumb” boiler control (ZigBee)
 - ▶ Web interface (ZigBee-to-Broadband Router)



- ▶ Radio/Powerline hybrid solution
- ▶ Hanadu connection to Boiler Control
- ▶ Hanadu/ZigBee bridge at Router

Xsilon

Creators of  Hanadu

Russell Haggar, Chief Executive
russell.haggar@xsilon.com +44 7889 607 855