

## News

Utilities & Sustainability



# Cellular technology crucial to powering smart meter roll-outs and connected homes

- *A new report commissioned by Telefónica Digital determines that cellular, supplemented with small-scale RF mesh networking, is the best option for connecting smart meters*
- *The global and open nature of cellular smart meter systems creates opportunities to build connected, innovative home services on top of the platform*

Cellular technologies, and not closed-off proprietary solutions, are the best solution for connecting smart meter systems across the world according to a new report from the [Centre for Communication Systems Research](#) at the University of Surrey.

[The report is available to download here.](#)

The report shows that a combination of cellular and mesh represents the ideal communications technology for smart meter deployments. Cellular is a proven, open, standards-based technology that is ready to support the needs of smart meters without requiring additional infrastructure.

### Cellular future-proofs the smart home

The new research paper found that cellular technology will future proof smart meters - the cornerstone and the communications hub of the connected home - enabling smart grid, smart home and e-health revolutions, all currently in their infancy. The university report, commissioned by [Telefónica Digital](#), found that the clear roadmap and continued development of cellular will support the smart meter as the technology continues to evolve to focus on high-speed capabilities, rich data services and an expansive coverage footprint.

The connected home market will reach \$101bn ([Visiongain](#)) by the end of 2013 offering enormous economic opportunities for businesses and entrepreneurs building connected services. The open, global standards-based nature of cellular technologies means services and products can be easily built on top of smart meter systems and rolled out globally with new smart meter deployments. Whereas proprietary systems limit innovation as smart home products cannot be rolled out effectively worldwide because they have to be re-engineered to support different systems and standards.



### Smart meter connectivity

The Surrey University research found that cellular provides the best breadth of coverage and commercial viability to connecting smart meters. Cellular coverage is well-established and extends to the majority of the habited world. For the remaining population, the report recommends mesh technology supplements cellular, providing coverage in more remote areas and hard to reach spaces.

The report also outlines the following benefits of cellular technologies in rolling-out smart meter systems:

- **Global standard** – cellular technology has high scalability with more than five billion connections worldwide and is based on Global System for Mobile Communications (GSM) meaning global inter-operability
- **Affordable cost** – the connectivity cost is decreasing continuously and the cellular solution is commercially cost effective through global economies of scale
- **Real-time communications** – average latency in the milliseconds
- **Trusted technology** – the mobile cellular business has a deep understanding of security, information privacy, quality of service and overall experience. Cellular technology is trusted by government and finance sectors
- **Customer experience** – cellular operators have rich heritage in understanding customers' needs and bring more than 27 years of experience dealing with people and businesses

### UK Government backing

Cellular was recently validated further when the UK Government selected the technology solution to deliver the majority of its smart meter roll-out across the country. Telefónica UK was [awarded two out of the three](#) communications service provider lots within the overall UK Smart Meter Implementation Programme (SMIP) tender. The initiative is the world's most ambitious smart meter roll-out which will see over 53m gas and electricity smart meters installed across the UK by 2020.

Smart meters are key for managing energy systems more efficiently in the future and providing new information and services to consumers which reduce costs and carbon emissions. The £11bn UK smart meter programme is expected to deliver a net benefit to the UK of £6.7bn through reduced energy consumption and more efficient management and deployment of energy across the country. It is estimated that a smart meter enabled industry could save 2bn tonnes of Co2 a year in 2020 (source: Smart 2020: enabling the low carbon economy in the information Age).



### About the research

The research was undertaken by Professor Rahim Tafazolli. He is the Director of the Centre for Communications Systems Research (CCSR) and 5G Innovation Centre (5GIC), Faculty of Engineering and Physical Sciences, The University of Surrey in the UK.

He has published more than 500 research papers in refereed journals, international conferences and as invited speaker. He is the editor of two books on “Technologies for Wireless Future” published by Wiley’s Vol.1 in 2004 and Vol.2 2006. He is currently chairman of EU Net!Works Technology Platform Expert Group, board member of the UK Future Internet Strategy Group (UK-FISG).

He was the lead academic on IoT UK Strategic Research, Development and Innovation Agenda, a study jointly sponsored by TSB and RCUK (EPSRC, AHRC and ESRC).

Recently, with his team, he actively contributed to the Machine Type Communication to 3GPP RAN1 Technical Report (TR36.888).

He was appointed as Fellow of WWRF (Wireless World Research Forum) in April 2011, in recognition of his personal contribution to the wireless world.

### About Telefonica Digital

[Telefónica Digital](#) is a global business division of Telefónica. Its mission is to seize the opportunities within the digital world and deliver new growth for Telefónica through research & development, venture capital, global partnerships and digital services such as cloud computing, mobile advertising, M2M and eHealth. It is also driving innovation in over the top communications under a new umbrella brand called TU and in Big Data through Telefónica Dynamic Insights. Telefónica Digital will deliver these new products and services to Telefónica’s 316 million customers as well as entering new markets. It is headquartered in London with regional centres in Silicon Valley, Sao Paulo, Spain and Tel Aviv. Axismed, Eleven Paths, giffgaff, Jajah, Media Networks Latin America and Terra are all managed under the Telefónica Digital umbrella.

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