

Test and Trial Ireland Drives Wireless Innovation

InterComms talks to Joe Lynch about how ComReg is actively exploiting Ireland's natural radio spectrum advantages in order to foster wireless innovation on Ireland's shores

Q: Can we talk about Test and Trial Ireland, why it was set up and the points that make Ireland unique?

A: Technology companies have been choosing to locate in Ireland and carry out their research and development activities here for a number of reasons – the educated English speaking workforce, the favourable tax-regime and because it is an entry point into the EU. But in the area of wireless technologies, Ireland has a number of unique advantages.

Ireland's geographic location on the western edge of Europe, its low population density, low State use of spectrum (such as by the Irish Defence forces) and single international border means that Ireland has a relative abundance of unused radio spectrum. Key radio bands for all types of electronic communications networks and services are available in Ireland. Ireland is well positioned as a location to test advanced wireless services including IoT, 4G, 4G+ and 5G.

Test and Trial Ireland offers multinational companies, small and medium indigenous businesses and innovators easy access to Ireland's radio spectrum resource for non-commercial tests and trials, without any of the usual red-tape processes.

ComReg has reduced the barriers to accessing radio spectrum by approving applications in less than ten days, making almost any radio frequency band available including the VHF, UHF and millimetric bands, and charging a minimal administration fee of €200 for a 12 month test licence.

Q: Could you explain the work that you have been completing with clients as diverse as Vodafone Ireland, Silver Spring Networks and Intel Labs Europe, and why they chose Ireland?

A: The clients we have helped are the ones who had an idea for a wireless product or service, or both, and needed to

validate their idea quickly for scale up (to European and/or global markets). Other clients sought to convert research into exploitable IP and save costs and time in doing so.

Vodafone Ireland Ltd successfully conducted 4G+ uplink tests and achieved new ground breaking speeds in terms of delivering capacity through its test base station network in Ireland. A demo 4G+ uplink was tested, which was a first for Europe (of any operator) and a first for Vodafone worldwide. The demo delivered data uplink speeds of over 140 Mbps, 3 times the uplink capability of its current 4G network and over 10 times than a standard fixed line offering.

In another test this year, Silver Spring Networks ("SSNI") completed wireless infrastructure tests for IoT applications prior to rolling out a commercial IoT network canopy in the town of Crossmolina in the west of Ireland. Together with a local partner, SSNI trialled networked intelligent street lighting controls and other energy efficiency engagements as part of a smart intelligent city project. SSNI's trial formed part of a comprehensive technical demonstrator of interest to the energy/utility, public service and consumer sectors. It is also a good example of the unique industry partnership model in Ireland, with various bodies and State agencies working in a coordinated manner. For ComReg's part, Test and Trial Ireland was a key pillar to facilitate innovation in radio spectrum use enabling SSNI to locally demonstrate and technically refine its products and services in a realworld environment.

In yet another scalable test, the Intel Labs Europe and its research partner, Trinity College Dublin, investigated a world's longest Internet of Things backbone using TV whitespace spectrum connecting a mesh of sensors around Dublin city to its headquarters on the out skirts of Dublin approximately 20km away. Like so many of our clients, Intel Labs Europe is a returning client and its test represents a

vote of confidence in what ComReg is offering; fast and low cost access to a wide variety of radio frequencies for testing in a realworld environment.

Q: Tell us about the Business in Excellence award ComReg received for its Test and Trial Ireland service?

A: ComReg has been awarded the Business in Excellence for Research and Development for its Test and Trial Ireland service in 2015 and 2016. The award is an honour to ComReg as it recognises the valuable contribution it makes to wireless innovation in Ireland. Facilitating a growing number of tests and trials directly links to our statutory objectives in relation to managing the radio spectrum and encouraging innovation and efficient use of Ireland's radio resources.

ComReg is a supportive regulator whose reputation and expertise in the wireless sector is widely recognised. For example, in the recent past ComReg has chaired the high level advisory group to the European Commission, the Radio Spectrum Policy Group, as well as the Body of European Regulators for Electronic Communications.

The award also recognises ComReg's education outreach activities in relation to wireless science. In particular, for eight years in a row, ComReg has sponsored an award in the

category of radio communications technology innovation at Ireland's national Young Scientist & Technology Exhibition.

Q: How do you view your role in the future of spectrum test and development and what would be your future utopia for Ireland?

A: As you can see there is a great diversity of industry sectors and organizations which have used Test and Trial Ireland. Our pitch to companies operating across the wireless technology sphere is "Come to Ireland and test it out first".

We believe Test and Trial Ireland can grow Ireland's wireless R&D environment and generate an efficient use of Ireland's radio spectrum to meet our statutory objectives. Ireland has a long standing tradition of excellence in radio communications with the first successful commercial transatlantic wireless telegraph sent from Clifden (in the west of Ireland, near Galway) to Nova Scotia (in the northeast of Canada) in 1907. ComReg's Test and Trial Ireland builds on that tradition and it puts Ireland in a unique position.

Visit our website for more information:
www.testandtrial.ie

Joe is passionate about radio science and propagation phenomena in wireless communications systems. He holds a Master of Science degree in Experimental Physics from Maynooth University and an Executive MBA degree from University College Dublin. Joe has thirteen year's communications experience in various positions in regulation including as a delegate for Ireland at the ITU Regional Radio Conference held in Geneva in two sessions between 2004 and 2006.



Commissioner Gerry Fahy and Joe Lynch