NOMINET

Radio Spectrum Policy Group [Draft] Opinion for public consultation on

A Spectrum Roadmap for IoT

Draft Opinion on the Spectrum Aspects of the Internet-of-things (IoT) including M2M

About Nominet

Nominet is a private internet company delivering public benefit, with a team of 150 people based in Oxford and London, and over 2,500 members who sell our domain names to businesses and the public. Nominet is responsible for one of the world's largest country code registries, running over 10 million domain names that end in .UK. Nominet also runs the Welsh Top Level Domains (TLDs) (.cymru and .wales), and provides registry services to a number of other branded and generic TLDs. Over 3 million businesses rely on Nominet's domain registry services.

The Nominet R&D team is exploring the further potential of the Domain Names System (DNS) and the challenges and opportunities around emerging internet technologies. This has led to the development of dynamic spectrum management tools to support the delivery of Internet of Things applications.

With the proceeds of its registry business Nominet set up and supports the Nominet Trust. The Nominet Trust is an independent charity which focus on providing support and funding to a wide range of projects and entrepreneurs that use technology to tackle social challenges. To date Nominet has donated over £35 million to the Nominet Trust.

We welcome the opportunity to contribute our view towards the Radio Spectrum Policy Group's work on a Spectrum Road Map for IoT.

Nominet's Position

Nominet notes the Radio Spectrum Policy Group (RSPG) draft opinion for public consultation states that there is currently no spectrum capacity issue impacting development of IoT but that, "*a complementary mix of general and individual authorisation for spectrum access will be needed to ensure that IoT has access to spectrum. There is no single authorisation framework and no single set of technical conditions for access to spectrum, which would cater for all possible demands*."

Looking at the accelerated take up rates of new technologies over the last decade, and policy commitments from a number of governments to support the roll-out of both IoT and 5G networks, Nominet believes that dynamic spectrum sharing techniques should be adopted now. This would create a platform that would ensure the predicted rapid growth of smartphones and IoT devices does not result in a wireless spectrum crunch. Such an approach would be in line with the European Commission's policy commitment to see spectrum used in the most economicaly efficient manner and to support investment in new technologies. The current static models used for allocating spectrum are inherently inefficient and unable to handle the fast moving nature of the technology market and the explosion of wireless data traffic.

The use of dynamic spectrum sharing in the TV band enabling TV white spaces communication in the UK and other countries has shown that innovative spectrum management techniques can be successfully implemented and allow an efficient use of the spectrum. Nominet believes that dynamic spectrum sharing can be used more widely in other spectrum bands.

Nominet encourages the RSPG to tackle regulatory policies that create artificial spectrum scarcity in favour of policies that will increase available bandwidth, reduce costs, promote competiton, and increase consumer choice. In particular, we observe that spectrum license auctions are inherently inefficient due to expensive and

long consultation processes, inflexible policies, and a fundamental lack of detailed information about the actual spectrum use and demand.

As the RSPG has noted, receipts from recent spectrum auctions have underperformed projections in a number of member states. Technology makes dynamic use of spectrum an easier proposition. Whilst continuing to designate spectrum bands for high power mobile use and licensing it to a single Mobile Network Operator (MNO) might generate relatively good revenue from an auction, we believe that the benefit of doing so will continue to decline over the medium to long term.

We therefore believe that the way spectrum policy should evolve is through the development of regulatory frameworks where access to the spectrum can be defined by rules and the use appropriately monitored by the National Regulatory Authority (NRA) of each respective Member State.

We welcome RSPG's interest in both general and individual authorisation models, and would welcome a strong position from the RSPG on the benefits to consumers and industry of dynamic spectrum management.

Our experience in running a geo-location spectrum database for access to the TV white spaces – which has been approved by the UK NRA Ofcom – gives us confidence that this approach can successfully support various authorisation models and can be employed in a number of other frequencies, with the appropriate changes required by the regulatory framework of each spectrum band. This approach would be beneficial to:-

- NRAs, which would be able to enforce policies, fine-tune them and immediately observe the results in a quantifiable way;
- Businesses, which won't have to wait for long pre-regulation periods before accessing the spectrum;
- Consumers, which will ultimately have access to better services as the spectrum will be used more efficiently.

For further information please contact:

We would be happy to discuss this further with you, and if you would like to know more please contact

Dr Pasquale Cataldi

Researcher

pasquale.cataldi@nominet.uk