IEEE 802 in the Regulatory Space

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Summary

- This document provides an overview of the mechanisms that IEEE 802 has developed to deal with matters in the "regulatory space".
  - There is nothing quite so unsettling to business - be it R&D, sales or continuing operations – than regulatory uncertainty.
- The results of regulatory uncertainty include:
  - Wasted R&D dollars – it works fine in the lab but you can't sell it or
  - Sure you can sell it, after you spend extreme sums of money fixing the rules
  - Meanwhile the rest of the industry moves on and can leave you in their dust.
- IEEE 802 does not have a perfect system – but there is a system and it works.
- It has allowed us to avoid confusing the regulators, be that the FCC, Ofcom, ANFR, ACMA, ITU-R, etc.
- By not confusing the regulators IEEE 802 has been able to become an influencer of events rather than a victim of them.

In the beginning……

- IEEE 802 is over 20 years old - as is IEEE 802.11 – but the effort to play in the regulatory space "only formally" began in July, 2002.
  - That was when – and knowing the 802 EC – after considerable debate the charter for the Radio Regulatory Technical Advisory Group was approved. Somehow that makes me think that this discussion probably went on for some time prior to that.
  - I haven't asked but the fact that the IEEE 802.11 Working Group (as in Wi-Fi) was formed in 1990 and that -
  - I was on the US Delegation at WRC-95 when some in the DoD were running around pulling their hair and crying out "the RLANS are coming, the RLANS are coming" that things likely got rather "interesting" in IEEE 802. "Interesting" is a non-technical regulatory term that means contentious meetings and some specialists or consultants being paid to stop something from happening or to make it happen.
- Believe it or not there was an element within the US Delegation that were really worried.
  - They had certain radars operating in the 3.4 – 3.7 GHz frequency band (not really, only in part of it…but they are/were very noisy,)
  - And those radars had a habit of really disturbing analogue systems.

In the beginning……2

- Of course the radar advocates had identified a new band to move to, eventually. It was called the 5 GHz frequency band and as early as 1995 they saw their world in danger.
- Add to that by WRC-97 only one country in the world wanted to reserve the 3.5 GHz frequency band for radars….all the others either quietly dropped it or recognized that newer digital systems could live there. ITU-R had identified it for FWA by 1999.
  - Even some in the USG saw that when they took commercial fixed satellite systems and put them on board ships and successfully operated them.
  - I was even involved in a project that essentially showed that a then new concept (10 slot TDMA) could live co-channel with the radars.
- So by the time the IEEE 802 EC took action things were getting very "interesting" indeed.
- Keep in mind that IEEE 802.18, the RR-TAG, wasn't chartered until July 2002 and it was WRC-2003 that identified the 5 GHz band for Wi-Fi/UNII) services.

So what the IEEE 802 EC did….

- So while all of this regulatory uncertainty was bubbling along the IEEE 802 EC chartered IEEE 802.18 and that charter says that the purpose of the TAG is:
  - To encourage collaborative participation in the radio regulatory process by members of the RR-TAG including official representatives from the wireless Working Groups – folks from different WGs and companies come in and work together.
  - To monitor the regulatory environment as it may apply to or affect existing IEEE 802 wireless standards or standards in process and advise the wireless Working Groups and the IEEE 802 SEC of issues of interest at their opening plenaries – oh yes, we have some really interesting discussions.
  - To prepare, review, and submit approved radio regulatory documents on behalf of the RR-TAG, the wireless Working Groups, and/or the IEEE 802 SEC that fairly reflect all points of view – no one sided documents, generally consensus based.
  - To serve as the official communications channel between the 802 wireless WGs, any relevant TAGs, and the IEEE 802 SEC and other standards and industry bodies on radio regulatory matters.
    - To liaise and seek cooperative relationships on radio regulatory matters of mutual interest with other standards and industry bodies

So what the IEEE 802 EC did….2

- To serve as the official communications channel between the 802 Wireless WGs, any relevant TAGs, and the IEEE 802 SEC and regulatory agencies and spectrum management bodies on radio regulatory matters
  - To establish and maintain contacts within, and understand the processes for interaction with, radio regulatory and spectrum management bodies
- To liaise on radio regulatory matters with such co-existence groups as may exist in the 802 domain.

- Over time IEEE 802.18 has developed working relationships with many government regulatory agencies well beyond the FCC:
  - New Zealand
  - Japan
  - South Korea
  - United Kingdom
  - France
  - Canada
  - Netherlands
  - Germany

How does the process work….

- Like any SDO we are contribution driven. Yes, there are items added to the IEEE 802.18 meeting agenda that either come from FCC or other national regulator's publications, from IEEE 802 WGs, from the ITU-R.
- We meet, we discuss, we try to come to a consensus. One general rule applies – if those in the room cannot reach a consensus on certain text then that text is not included in the document. That has, a few times, meant that nothing is said by IEEE 802, but our member's companies have the right to make their own statements. More often than not a compromise is reached that will allow IEEE 802.18 to vote on and approve a contribution to a regulatory body.
- Our next step is that the contribution goes before the IEEE 802 EC. And again, there can be debate but in general the changes are limited to editorial and not substantive or the document is not approved.

How does the process work….2

- Once approved by the IEEE 802 EC the document is filed with the appropriate regulatory agency.
  - If the FCC via the ECFS on line system
  - If Ofcom, Industry Canada or similar organization, those normally are also filed on line.
  - If it goes to the ITU-R the document then goes to the IEEE-SA ITU-R liaison who, among other things, makes certain both that the document is correctly formatted and that no other IEEE organization is filing a contradicting view. If there is one then it is becomes a negotiation between the various IEEE groups. The ultimate arbiter is the IEEE-SA Board of Governors. In the eight years that I have been the IEEE 802.18 chair that has never been necessary.
- What I wasn't told until after I was elected the IEEE 802.18 chair was that another role, an appointed collateral one, went with being the RR-TAG chair. That role, if you haven't already guessed it, was that of the IEEE-SA and IEEE ITU-R Technical Liaison. Happily that has been a peaceful role and should continue to be.

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Q&A

I'm only too happy to answer related questions. If anyone would like to email a question I can be reached at:

freqmgr@ieee.org

Happily (or not) that follows me around the world.

Thank you!