

Hewlett Packard Spectrum Affairs Objectives, Methodology, Current Successes and Status

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Objectives:

1. Global harmonization of spectrum for wireless access systems (Industry term is WAS including RLANs)
2. Global allocation of sufficient spectrum to enable long term growth of wireless systems and services
3. Global harmonization of regulatory certification rules and test methods

Methods for Obtaining Spectrum Harmonization and Allocation:

The primary method is the approval of World Radio Congress 2003 (WRC-2003) agenda item 1.5 (AI 1.5) with acceptable language and footnotes. WRC-2003 is from June 9 to July 4, 2003 and the next WRC will not be until 2006. If AI 1.5 is correctly written and passes it will mean that there is general worldwide agreement to allocate the same spectrum with the same rules for the use of WAS including RLANs.

Consensus on each agenda item is obtained by a process of presenting proposals and negotiating at technical meeting at the national, regional, and international level. The first step is for industry and government in each country to come to agreement on the national position. In the USA formal and informal meetings between industry, FCC, and NTIA (National Telecommunication Information Agency – the FCC for government side rules) do this. The final arbitrator is the State Department, which also names the ambassador and negotiating team to the WRC. The formal body in the USA for AI 1.5 is the USA ITU-R (International Telecommunication Union – Radio Communications Sector) WP8a Working Party for Mobile services), WP9b (Working Party for Fixed Services) and JRG 8a-9b committees (Joint Repertory Group). The informal body has been the DFS (Dynamic Frequency Selection) correspondence group lead by the NTIA with FCC and industry participation. The informal agreements are worked out in the correspondence group and WPs and formally documented in the JRG 8a-9b. These then become the official USA position documents that are passed on to the regional technical working groups (CITEL (Inter-American Telecommunications Commission) for North and South America) and the international groups (ITU-R WP8, WP9, JRG 8a-9b, and CPM meetings in Geneva). The ultimate goal is to achieve consensus in the ITU-R CPM report (WRC Conference Preparatory Meeting) so that the vote for approval in June is assured.

At each level industry and governments make proposals and negotiate to reach final consensus. Meetings typically run for a week at a time and last far into the night. The attendees break into drafting groups to write text and negotiate compromises. It is

important to be involved at each level, because the insertion or deletion of single words and sentences (like mandatory or optional) can make or break industries.

Current Successes for Obtaining Spectrum Harmonization and Allocation:

Agenda item 1.5 was proposed to be studied during WRC-2000 and has been hotly debated ever since. The wording industry prefers would allocate co-primary status to WAS including RLANs in the 5150-5350 MHz and 5470-5725MHz band with mitigation techniques of DFS and TPC (Transmit Power Control) to protect RADAR systems.

Europe has backed industry, Canada and a few other countries proposed a secondary status, and the USA did not want any allocation except 5150-5250MHz. For the last 6 months I have joined the fight with industry to persuade the USG to change its position. I have worked primary with Cisco, Motorola, Agere and a high-powered law firm hired by Microsoft and Intel. The rest of industry has been conspicuously absent to the embarrassment of the FCC, which agrees with industry. Through my initial involvement with IEEE 802.11, WFA spectrum, and WFA legislative committees, I realized HP government affairs, Stacie Albert, should be involved (actually pre-merger Compaq people, HP had no spectrum policy personnel) in legislative efforts to have Congress put pressure on NTIA. I provided her with the technical assistance. Within IEEE 802.11, I met with people from Microsoft and Intel CTO offices and others to plan strategy and next steps.

The break-through came on January 28, 2003. USG knew they would lose at WRC, because Europe and Americas were against them. The US delegation just got back from a JRG 8a-9b meeting in Geneva where they got beat up by Europe. Plus the Department of Commerce was putting pressure on NTIA to come up with a compromise with industry. Therefore, the chief NTIA negotiator (Charles Glass) went out on a limb and offered industry a compromise of DFS detection limits that would require pain for both industry and DoD, but the more lenient limits proposed by Europe would be far worse. DoD is protecting the RADAR band for the patriot missile system. I was one of only four industry representatives present. The NTIA needed an answer in two days, so that the proposal could be made at CITELE (last chance). Through my contacts at Intersil, RFMD, and TI, I was able to explain the proposal, and they agreed it was acceptable (by this time they had 2-4 hours to e-mail Charles). At first Agere and Atheros said no, then Motorola and Cisco said yes. After consulting with HP-Houston (Rabah Hamdi) and Stacey, Motorola, Cisco, Intersil, RFMD, and TI, I sent an e-mail to Charles saying HP agreed. By the next morning I found out the rest of industry had agreed. Friday morning Charles sent a letter to USG that the deal was made. If I had not been involved TI, Intersil, and RFMD and HP would have not even participated and the initial disagreement from Atheros and Agere may have persuaded Charles there was not enough industry agreement to proceed.

The deal will open the 5470-5725MHz and retain 5250-5350MHz bands in USA. FCC is in the process of opening a rule-making (called an NPRM (notice of proposed rule

making)- procedure FCC goes through to make rule for users of spectrum). The goal of world spectrum harmonization and sufficient allocation is in sight.

Current Status

The process is NOT over yet. Part of the agreement between industry and USG is that industry will “strongly” promote the compromise to Europe and the rest of the world. Half of Charles’ contacts in DoD believe industry will double-cross them. Industry must show them our commitment and loyalty to the compromise. The European weak DFS limits need to be changed. Again there are only four companies actively involved; HP, Cisco, Agere, and Motorola, and a law firm in Washington DC for Intel and Microsoft. Last week Cisco, Motorola, and Agere went with USG to CITELE to promote the DFS compromise. I went to Europe and met another Agere person to promote the DFS compromise at WP8 in Geneva and a EU CEPT meeting. In the first case there was initially an objection from the UK. During a break the USA delegation and I met with UK. (I was surprised to find out he recognized my name). UK compromised and USA position was accepted with only a small footnote added. In the second case we were the only industry representatives at the EU meeting promoting the DFS compromise. Other companies were just from Europe. We made a presentation and answered questions from commissioners and European industry afterward.

The main message commissioners need to hear is that WAS systems can be built to the USA limits – this can only come from us. Currently, after the CITELE meeting there is a strong disagreement between USA/industry and Canada/Brazil. USG needs the CITELE final draft to go to Geneva with the DFS limits in tact. Canada and Brazil have placed in the text a proposal that would over-protect Earth exploratory satellites and make WAS devices un-workable. I sent the technical details to Stacie and she enlisted HP people in Brazil and Canada to lobby their governments. Since these people generally do not know what is going on, I expect to have a teleconference with them.

Going back to the UK issue, after we all returned from Europe, the DoD let it be known that the footnote is not acceptable. Again, the regulators need to know that industry can make devices with the USA limits. So we all sent e-mails to the UK chief delegate assuring him devices can be made and urging him to remove the footnote.

Now we come to February 11, 2003. The USG thinks the current situation with Canada/Brazil and UK is so serious that they convene a last minute meeting with Deputy Assistant Secretary of State (Ambassador) David Gross (third level down from President). I am invited. The room is packed with FCC, NTIA, NASA, DoD and 6 people from industry. All the people are “Chief”, “Deputy Chief”, etc. This is an open discussion strategy meeting. I introduce myself to several new faces. (I know most guys from NTIA and FCC). The DoD and NASA chiefs recognize my name. Charles greeted me with a “thank you”. Outcome of the meeting:

1. Dept. of State will talk with Canada and Brazil.
2. FCC will open a rule-making with DFS compromise.
3. Industry will lobby Brazil, Canada, and UK.
4. There is still an open issue about what to do if Brazil/Canada will not budge.

5. At my request, NTIA will put the DFS compromise in an official document that industry can present in various forums.
6. After the meeting I was able to talk to FCC Deputy Chief Julius Knapp (second time we met in person) about opening a dialogue between JC-61 and FCC regulatory implications of the MAC-PHY interface we are working on. It was a topic in ITI TC-8 when we met last.

Next Steps and Global harmonization of regulatory certification rules and test methods:

During the next 3 months until WRC-2003, industry needs to strongly promote the DFS compromise primarily to Europe. There is still a misunderstanding that the weaker DFS limits are necessary for WAS systems, plus the general EU animosity toward USG. Industry will play a primary roll

An additional issue is the finer points about differences in test standards and implementation rules. These all need to be worked out before WRC as well. The European forum for the harmonization of test standards is ETSI-BRAN, which meets in France. There are meetings next week (Feb 19-21), and April 8-10. In parallel industry want to set-up a process under ITI TC-8 to draft a test standard for the FCC to use. Hopefully the FCC and ETSI test standards will be identical. I also want to present the DFS compromise and talk to European companies and uninformed European based delegates from US companies. The Spectrum manager from Cisco is “very pleased” that I will (hopefully) be going. There is a lot of trust and reliance built between HP, Cisco, Agere, and Motorola as we have worked together.

The next ITU-R meetings in Geneva will be April 7-14, and the WRC is June 6 – July 4. As part of the USA delegation to WRC, I can participate in closed-door strategy meetings and influence what industry wants. I will be able talk to other country delegates about industry views as well. It is not certain if a delegate needs to be there the whole time or just until after AI 1.5 is voted on. The US ambassador will decide.

These are the four main meetings already scheduled, but I am sure there will more meetings in Washington DC and last minute international technical meetings to resolve issues.