

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of )  
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Revisions of Part 2 and 15 of the Commission's )  
Rules to Permit Unlicensed National ) ET Docket No. 03-122  
Information Infrastructure (U-NII) Devices in )  
the 5 GHz Band )  
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**REPLY COMMENTS OF THE 5 GHz COALITION**

For about two and half years, the members of the 5 GHz Coalition<sup>1</sup> have worked with NTIA, DoD and many other interested parties to develop compliance measurement procedures to ensure that unlicensed devices can be put to productive use in the 5 GHz band without causing harmful interference to the military radar that also uses the band. This process, which was carried out by a Project Team led by NTIA, under the auspices of the International Telecommunication Advisory Committee – Radiocommunication (ITAC-R),<sup>2</sup> was thorough, painstaking, technically difficult -- and wholly successful. One commenter now proposes significant changes to the compliance measurement procedures developed by the ITAC-R Project Team. These proposed changes are without merit and should be rejected. Instead, the Commission should promptly adopt the procedures developed by the Project Team.

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<sup>1</sup> Cisco Systems, Inc., Dell, Inc., Intel Corporation, Motorola, Inc., and Nortel

<sup>2</sup> The ITAC-R is an open advisory committee under the Federal Advisory Committee Act.

## **BACKGROUND**

The ITAC-R Project Team was tasked with developing compliance measurement procedures that would ensure that commercial devices using the 5 GHz band could detect and avoid military radars using the band, so as not to cause interference to those radar systems. This task was particularly difficult because some of the military radars (and thus the radar signals that had to be detected) are classified. Indeed, only the cleared government engineers participating in the Project Team understood the interference protection actually needed by the military radar. To assist industry in the development of compliant 5 GHz devices, NTIA and DoD established a set of unclassified proxy radar signals that commercial 5 GHz devices were required to detect and avoid. The Project Team devised laboratory tests to determine whether the devices could detect and avoid the proxy signals. To ensure that these tests were sufficient, NTIA and military engineers then tested devices that had passed the laboratory tests, in the field, with operational military radar.

But the process, while lengthy, was extraordinarily successful. The prototype devices that passed the laboratory tests also were able to detect and avoid the operational radar in the field. Thus the laboratory tests devised by the Project Team became the detailed compliance testing procedures<sup>3</sup> submitted to the Commission on 3 March 2006, and put out for public comment last month.

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<sup>3</sup> See *Compliance Measurement Procedures for Unlicensed-National Information Infrastructure Devices Operating in the 5250-5350 MHz and 5470-5725 MHz Bands Incorporating Dynamic Frequency Selection*, National Telecommunications and Information Administration (March 03, 2006) available at [http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native\\_or\\_pdf=pdf&id\\_document=6518332391](http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6518332391) (“Compliance Document”).

## DISCUSSION

Most commenters, recognizing the detailed work that went into the proposed compliance measurement procedures, simply urged the Commission to adopt them quickly.<sup>4</sup> One testing laboratory, however, has submitted twenty-one pages of detailed edits to the proposed compliance measurement procedures. This test lab, Compliance Certification Services, Inc. (CCS), asserts that the proposed procedures “contain[] a large number of editorial and technical errors” and says that that all these errors “need to be corrected.”<sup>5</sup>

Simply put, the proposed compliance measurement procedures do not contain substantive “errors” as CCS would have the Commission believe. Rather, many of what CCS calls “errors” are carefully considered choices made by the Project Team that both protect military radar and allow robust use of the 5 GHz band by commercial devices.<sup>6</sup>

When its comments are parsed, CCS proposes many unimportant editorial changes to the compliance measurement procedures. It also proposes several important – and ill-considered – substantive modifications to the proposed compliance procedures.<sup>7</sup>

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<sup>4</sup> See: Comments of Motorola, Inc. (filed May 15, 2006) at p. 1; Comments of Covad Communications Group, Inc. (filed May 15, 2006) at 1,3; Comments of the Wi-Fi Alliance (filed May 15, 2006) at 1, 3. The technical parameters for transition to DFS requirements are well known, having been established in the Commission Report and Order that made an additional 255 MHz of 5 GHz spectrum available for U-NII devices. See *Revision of Parts 2 and 15 of the Commission’s Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, 18 FCC Rcd 24484 (2003) at 24494, 24525.

<sup>5</sup> Comments of CCS (filed May 11, 2006) at 1.

<sup>6</sup> *Compliance Document* at 1. As NTIA notes in its cover letter conveying the DFS compliance recommendations to the FCC, “We are confident that the final compliance and testing procedures will fully protect Federal government radars and will allow industry to move ahead quickly with the implementation of compliant DFS U-NII devices.”

<sup>7</sup> The CCS comments also address some measurement equipment issues. See e.g., Comments of CCS (filed May 11, 2006) at 3. However, in the *Compliance Document* NTIA notes, “General information about radio device compliance testing facilities and measurement techniques are assumed to be known and not covered here.” *Compliance Document*, Section 2 at 1. The 5 GHz Coalition agrees that it is

As is true for any document developed by a group, the compliance proposal can (at least in places) be better written. But the compliance proposal submitted to the Commission substantively captures all of the ITAC-R Project Team's views (including those of CCS's representative on the Project Team who agreed to the compliance proposal as submitted). Editorial changes should, therefore, be made carefully -- and only where they will have no substantive impact. The substantive modifications should simply be rejected. Some of these proposed changes would decrease device performance, and others would unnecessarily increase compliance testing burdens and costs -- but none of the proposed changes would provide any additional protection to military radar.

#### Channel Availability Check Proposal

Perhaps CCS's most significant proposal is to modify Section 5.2, Table 4 of the Compliance Document to make the sixty-second channel availability check (CAC) a "minimum" value rather than an absolute value as proposed by the ITAC-R Project Team. The sixty-second time value is the result of long and arduous discussions between Government and industry. It is based on carefully conceived radar sharing studies with wireless access systems and on the classified operational requirements of government radars. In arriving at this value, government officials balanced the need to ensure that a channel is free of radar activity before a 5 GHz device accesses that channel with the need to provide an environment where commercial devices can operate successfully.<sup>8</sup> Because the United States has led the world in opening the 5 GHz band to commercial

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unnecessary to go into details about equipment selection, measurement techniques and data interpretation in the *Compliance Document*.

<sup>8</sup> The concern is that extending the required CAC will result in extended times that 5 GHz devices are not engaged in their intended use. Naturally, too long of a "waiting" period is unacceptable to 5 GHz users.

devices, regulators overseas are watching these proceedings closely. If the Commission makes the sixty second time value a “minimum” value rather than an absolute value, it is likely some foreign regulators will establish longer than sixty-second CAC time values – making devices manufactured for the U.S. market unusable overseas. That will raise costs in the U.S. market and hurt U.S. manufacturers, while not providing any significant additional protection for military radar.

#### Expanded Testing Proposal

CCS also proposes to expand testing far beyond what members of the ITAC-R Project Team believe is necessary. CCS would significantly expand testing by requiring that the current *single* device detection bandwidth test be increased to require additional testing for every channel bandwidth the device is capable of.<sup>9</sup> Here again, the ITAC-R Project Team spent many hours discussing the appropriate specification and test procedure for detection bandwidth.<sup>10</sup> The CCS proposal, depending on a device’s configuration, would require an entire series of additional costly and time-consuming tests. However, the ITAC-R Project Team concluded that the single test was all that is needed to (for compliance measurement purposes) establish “the contiguous frequency spectrum over which a U-NII device detects a *radar waveform* above the DFS *Detection Threshold*.”<sup>11</sup> Moreover, as noted earlier, the sufficiency of this proposed procedure was verified by the field tests with operational radars. Thus, the only beneficiaries of these

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<sup>9</sup> See Comments of CCS (filed May 11, 2006), Section 7.8.1 at p. 13.

<sup>10</sup> The value for U-NII detection bandwidth is a minimum 80% of the U-NII devices 99% transmission power bandwidth. To determine this value, manufacturers are currently only required to use radar type 1. See *Compliance Document* at Section 5.3.

<sup>11</sup> See *Id.* Section 4.1 at 3.

additional tests will be the testing laboratories that would eventually be paid to conduct them.

#### Alternative Test Procedures

CCS also proposes to add additional text, providing alternate test procedures, to the “Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem”.<sup>12</sup> Under FCC rules, alternate test procedures can always be used provided that the test methodologies are fully explained to the Commission and it is demonstrated that the results obtained through alternate test procedures are equivalent to test results that would be obtained using the primary test procedures. It is unnecessary to insert additional specifics regarding alternate test methodologies at this juncture. CCS and others would be free to obtain Commission approval to use alternate test methodologies on a case-by-case basis.

#### CONCLUSION

The purpose of the proposed compliance measurement procedures is to ensure that robust commercial wireless devices can be deployed in the 5 GHz bands without causing harmful interference to military radars, many of which are classified. After more than two years of work, device manufacturers believe they can deploy robust commercial devices that pass these compliance procedures. NTIA and DoD believe devices that pass these compliance procedures will protect military radar. A single testing lab has now suggested substantive modifications to the procedure. But making these changes could undo much of what has been so painstakingly accomplished. CCS’s suggestions should

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<sup>12</sup> Comments of CCS (filed May 11, 2006) at 15. In this proposal, CCS again proposes to increase the number of U-NII Detection Bandwidth tests which is unnecessary as part of demonstrating that a DFS U-NII device will recognize proxy radar signals.

be rejected and the Commission should promptly adopt the proposed compliance measurement procedures.

Respectfully Submitted,

*Scott Blake Harris /s/*

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