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FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

September 14, 2001

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, S.W. TW-A325
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

RE: CC Docket No. 98-147, Ex Parte Presentation
CC Docket No. 96-98 , Ex Parte Presentation
CC Docket No. 99-216, Ex Parte Presentation

Dear Ms. Salas:

On September 14, 2001, Paul L Marrangoni of the Federal Communications Commission's Office of Engineering and Technology participated in a conference call of Focus Group 3 (FG 3) of the fifth Network Reliability and Interoperability Council (NRIC V). The members of FG 3 in attendance were: David Rosenstein (Covad), Pete Youngberg (Sprint), Paul Donaldson (WorldCom), Kevin Schneider (Adtran), Gene Edmond (SBC), Gary Tennyson (Bell South), Jamal Boudhauia (Qwest), John Unruh (Lucent), Brad Beard (AT&T), Jim Carlo (Texas Instruments) and the Chair of FG 3, Ed Eckert (Catena Networks). Members of the Commission's Common Carrier Bureau, Elizabeth Yockus, and Aaron Goldberger, also participated in the conference call.

The central focus of the conference call was to confirm concurrence for Recommendation # 7, titled: "Exchange of spectrum management information between loop owners, service providers and equipment vendors" (copy attached). All of the Focus Group 3 participants in the conference call voiced their acceptance of the Recommendation and indicated that it should be sent to the full NRIC Council's review and adoption. Ed Eckert indicated that he had received affirmations for the Recommendation from the Focus Group 3 members that did not participate in the conference call.

In accordance with section 1.1206(b)(2) of the Commission's rules, 47 C.F.R. § 1.1206(b)(1), the original and 5 copies of this letter and attachment are being filed with for inclusion in the public record of the listed proceedings.

Sincerely,



Paul L. Marrangoni
Office of Engineering and Technology
Federal Communications Commission

**NRIC V FG3 Recommendation # 7:
Exchange of spectrum management information between loop owners, service
providers and equipment vendors**

I. Background:

In the interest of wireline spectrum management and spectral compatibility, the FCC issued its Line Sharing Order¹, which required that certain information be shared between loop owners and those providing services on unbundled or shared copper loops². When the Line Sharing Order was adopted, the requirements for information exchange (a product of the NPRM process) seemed complete, fast and fair. Since that time, implementation of these rules have proven them to be incomplete, slowing the deployment of DSL services and causing both loop owners and service providers to incur undue expense. The recommendations NRIC V FG3 propose herein provide foundational understandings, a streamlined approach to the sharing of spectrum management information and a process to be followed prior to escalating to interference dispute. As an alternative to the current rules and practices, NRIC V FG3 believes that these recommendations will benefit DSL consumers.

The copper loop plant was designed, and is maintained, to provide voice-grade services (POTS). The economics for DSL assume that DSL can be deployed on this loop plant as a by-product of it being so maintained. The American National Standard "Spectrum Management for loop transmission systems" T1.417, is based on statistical modeling of the crosstalk coupling characteristics of this loop plant, and establishes limits on the power (and frequencies) which a DSL transceiver can inject on the loop. These power limits³ have been established such that DSL service providers can determine their own service deployment guidelines with an expectation that the interference on the loop is below a specified level. As a result, interference disputes should be rare events.

NRIC V FG3 recognizes that all parties involved in the deployment of DSL equipment in the public network must adhere to spectrum management guidelines for the provisioning of DSL loops to be successful in providing the maximum benefit to end users. We believe it is in the best interest of the industry to require that each service provider take responsibility for ensuring that its equipment is deployed according to the aforementioned spectrum management guidelines.

¹ *Deployment of Wireline Services Offering Telecommunications Capability and Implementation of Local Competition Provisions of the Telecommunications Act of 1996*, Third Report and Order in CC Docket No. 98-147, Fourth Report and Order in CC Docket No. 96-98, 14 FCC Rcd 20912 (Released December 9, 1999) ("Line Sharing Order").

² See Line Sharing Order, paragraph 204.

³ These power (or more accurately, Power Spectral Density) limits are not restricted to Power Spectral Density masks, they also include formula or calculation based criteria.

II. Recommendations:

A. As a consequence of these NRIC V FG3 Recommendations, the exchange of spectrum management and spectral compatibility related information (other than EWL as specified in section II.B.2 of this recommendation) is not required at the time the loop is provisioned⁴. Previous FCC action in Paragraph 204 of the Line Sharing Order requiring initial disclosure of spectrum management information is no longer valid. NRIC V FG3 therefore recommends that rules 51.231 (a)(3), (b) and (c) be rescinded.

B. NRIC V FG3 recommends that the loop providers' spectrum management responsibilities shall be:

1. Ensuring that the loop plant is maintained to an acceptable level to provide analog voice-grade service. Specific parameters will be included in an update to this recommendation⁵.
2. Upon request, providing the service provider with loop information that can be used to derive Equivalent Working Length (EWL) such that the service provider may determine conformance to T1.417⁶, and;
3. After all of the requirements have been met for escalating to an "interference dispute"(see section II.D. of this recommendation), identifying all service providers that it reasonably concludes might have an impact on the dispute as well as the circuit IDs and Connecting Facility Assignments of those services. This will allow the service providers to then start a process among themselves to resolve the conflict.

⁴ However, service providers are encouraged to disclose whether or not the service being provisioned is compatible with known disturbers, so the loop provider knows to choose facilities that avoid known disturbers if possible.

⁵ NRIC V FG3 has sent a liaison request to Committee T1's Technical Subcommittees T1A1 and T1E1 requesting assistance in specifying parameters to define loops acceptable for voice grade service. T1.TR-60 has been discussed and may form the basis for such requirements. It is intended that specific parameters will be included in an update to this recommendation.

⁶ Several automated methods for obtaining such information may be available; one example is obtaining a loop makeup from a database (e.g. LFACS). NRIC V FG3 is currently considering another possibility, where EWL could be inferred from capacitive loop length measurements. In addition, future DSL transceivers may have the ability to infer EWL based on characteristics of the received signal. Where an automated method to obtain the information exists, it should be used in lieu of manual compilation. It is the expectation that future revisions of T1.417 will more readily accommodate these automated measurements.

C. To enable adherence to spectrum management guidelines, it will be necessary for DSL equipment vendors, loop providers and service providers to exchange spectral management information at times (as specified in this recommendation) other than provisioning. This information shall be provided in a timely manner when requested, and any charges for costs associated with providing this information shall be fair and reasonable. NRIC V FG3 recommends the following requirements regarding compliance and exchange of spectrum management information:

1. Compliance to T1.417: On a going forward basis, service providers shall deploy DSL equipment in a manner that complies with the requirements of the American National Standard, "Spectrum Management for Loop Transmission Systems" T1.417. In the event of escalation to a spectral interference dispute, all involved service providers shall make relevant spectral management compliance information available to all parties involved in the dispute as follows:

- a) In cases where compliance is claimed using a SM Class, the specific SM Class information shall be provided.**
- b) In cases where compliance is claimed using technology specific guidelines, technology specific designations (e.g. TS xxx, per T1.417) shall be provided.**
- c) In cases where the analytical Method in Annex A of T1.417 has been used, the transmit PSD, analytical method calculations, and resulting maximum EWL of the specific technology shall be provided.**
- d) In all cases, EWL derivation(s) for the loop and all other data needed to demonstrate compliance to T1.417 shall be provided.**
- e) In all cases, all service providers shall identify those systems not covered by the requirements of T1.417 that they reasonably conclude might have an impact on the interference issue.**
- f) In all cases, all service providers should cooperate in an attempt to resolve all interference disputes in a timely manner.**

2. Spectral Compatibility Measurements and Calculations: The party, e.g., equipment vendor, responsible for verifying the spectral compliance of a particular service provider owned⁷ DSL product for use in the public network shall ensure that the equipment conforms to the requirements of T1.417-2001. Appropriate laboratory measurements or calculations used to determine this conformance shall be kept on file by this party, and made available to those service providers deploying that equipment.

3. Equivalent Working Length Information: For many loop technologies, compliance to T1.417 requires knowledge of the Equivalent Working Length (EWL). The service provider is responsible for estimating EWL, either from its own data or from data obtained per II.B.2. Service providers shall keep EWL information, and associated measurements or calculations, on file. Upon escalation to an interference dispute, this information shall be made available as necessary to parties in the dispute.

⁷ Spectral Compliance of end-user owned TU-R products must be covered under a future version of ANSI/TIA-968 or similar ACTA approved document for prevention of harms to the network.

D. There should be universal recognition that the DSL industry is best served if the incidence of 'Interference Dispute' is extremely rare. It should also be recognized that there will always be loops that qualify for DSL that will not support DSL. As a baseline, loops that are maintained to an acceptable level to provide analog voice-grade services⁵ are deemed acceptable. In fact, the experience of those in Focus Group 3 is that most conditions resulting in DSL 'troubles' will be detected as POTS 'trouble.' NRIC V FG3 recommends that escalation into 'Interference Dispute' will require the complainant service provider to first do the following:

1. Investigate if any additional customer equipment has been added to line;
2. Verify proper DSLAM and CPE operation;
3. Ensure that the service providers own internal deployment rules have been followed;
4. Ensure that the service degradation is not due to network congestion or a transport network fault.
5. Verify that the loop can provide analog voice-grade service⁵;
6. Verify that the DSL service is deployed in compliance with T1.417;
7. Make a wideband noise measurement to determine if an unacceptable level of interference exists.

III. Additional Considerations

1. The actual resolution of interference disputes is beyond the scope of this recommendation. Conditioning or rearrangement of loops (to resolve interference disputes) continues to be the subject of interconnection agreements or other regulations which should be considered unaltered by the contents of this recommendation.
2. It should be noted that the exchange of information other than the spectrum management and spectral compatibility related information specifically addressed by this recommendation is beyond its scope. Such information exchanges, especially with regard to provisioning, are the subject of interconnection agreements and should be considered unaltered by the contents of this recommendation.
3. The reader is encouraged to ensure that there is not confusion between an "interference dispute" and "repair". "Interference dispute" denotes that service providers are convening to jointly resolve an interference problem. "Repair" denotes that a loop provider is working to correct a loop that did, but now does not, meet the analog voice-grade service parameters⁵. Therefore, the time during which a complainant service provider is performing the duties enumerated in Part D of these recommendations as well as time spent in "interference dispute" among service providers should not be counted towards a loop provider's MTTR metrics.
4. Work has been done in the industry to create many NC/NCI codes for service ordering. These codes have been created with the rules of 51.231 (a)(3), (b) and (c) in mind and therefore are associated with specific spectrum management information, often including technology type, SM Class or PSD mask. In order to be consistent with the NRIC V FG3 recommendations contained herein, NC/NCI codes containing spectrum management information should not be used on a going-forward basis. Efforts to address this discontinuity are the subject of liaison work between the NC/NCI Tag and NRIC V FG3. The NC/NCI Tag is Co - chaired by Bob Mierzejewski (732) 699-5420 and Rick Gonzalez (732) 699-5842.