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SOURCE¹: GlobespanVirata, Inc.

TITLE: Proposed New Spectrum Management Work Item.

ABSTRACT

There is growing interest in the DSL industry to deploy services with bit rates significantly higher than those currently defined in ADSL and ADSL2. In order to support higher bit rates, the resulting bandwidths of the corresponding signals deployed in the cable will also increase. Development of VDSL and VDSL2 standards are currently under consideration in the ITU-T. As defined in G.993.1 VDSL uses bandwidths up to 12 MHz. In addition to standards based systems, proprietary systems with bandwidths greater than that of ADSL are also being deployed in the access network. In order to keep these wide band systems from interfering with each other via crosstalk, we need to define spectral compatibility criteria for signals in the cable operating with frequencies above 1.1 MHz. **Given that the current JJ100-01 Spectrum Management standard only defines spectral compatibility criteria for signals using frequencies up to 1.1 MHz, we recommend that a new work item be opened to define spectral compatibility rules and criteria for frequencies above 1.1 MHz.**

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Discussion

In the DSL industry, there is growing interest in the achievement and deployment of signals supporting bit rates significantly higher than those supported by ADSL and ADSL2. G.992.5 (ADSL2plus) uses 512 tones in the downstream channel that effectively doubles the capacity of G.992.3. The definition of VDSL uses frequencies up to 12 MHz.

At the 21-31 October 2003 ITU-T SG15 meeting, there was interest expressed by numerous companies to develop an optional extension to G.992.5 Annex C in support of 1024 tones (4.4 MHz Spectrum). Although there is no consensus in Q4/15 to consent such a specification, there is a goal to develop text for this capability whereas at the April 2004 ITU-T SG15 meeting a decision would be made on the decision for consent of any resulting text.

With regards to VDSL, while a consensus for a single line code selection has not been reached in the ITU-T there is a general support for defining a VDSL1 Recommendation that contains a specification based on DMT in the main body and QAM in an annex; in addition the group will define a VDSL2 specification based only on DMT to further advance the work of VDSL (D.753 modified). Although there is not consensus in Q4/15 for the above position, the WP1 noted in the meeting report the wide support for the above position and “urged Q.4/15 participants to develop text with the goal of implementing the proposals made in D.753 (modified).”

In addition to the above work on wideband spectra, we acknowledge the fact that there are numerous proprietary systems with frequency spectra containing bandwidth greater than those currently defined by ADSL standards that are either being deployed or will be deployed in the Japan Access Network. Given the growing interest in higher bit rates, we can foresee other innovative wideband systems being defined for possible deployment in the Japan Access Network in support of advanced services. In fact, concerns were expressed at previous TTC SMS meetings regarding the impact of propose quad spectrum PSDs on VDSL. To properly manage deployment of such wideband systems, we need to define spectral compatibility criteria for the Japan Access Network on the deployment of signals that use frequencies above 1.1 MHz. With this we provide the following recommendation.

Recommendation

Given the growing interest in higher bit rates and that the current JJ100-01 Spectrum Management standard only defines spectral compatibility criteria for signals using frequencies up to 1.1 MHz, we recommend that a new work item in the Spectrum Management Working Group be opened to define spectral compatibility rules and criteria for signals using frequencies above 1.1 MHz.