Filed on behalf of TQ Delta, LLC
By: Peter J. McAndrews
McAndrews, Held & Malloy, Ltd.
500 W. Madison St., 34th Floor
Chicago, IL 60661
Tel: 312-775-8000
Fax: 312-775-8100
E-mail: pmcandrews@mcandrews-ip.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC., DISH NETWORK, LLC,
COMCAST CABLE COMMUNICATIONS, LLC,
COX COMMUNICATIONS, INC.,
TIME WARNER CABLE ENTERPRISES LLC,
VERIZON SERVICES CORP., and ARRIS GROUP, INC.,
Petitioner,

v.

TQ DELTA, LLC
Patent Owner

Case No. IPR2016-01021[1]
Patent No. 8,718,158

PATENT OWNER MOTION FOR OBSERVATION REGARDING CROSS-EXAMINATION OF DR. JOSE TELLADO

[1] DISH Network, L.L.C., who filed a Petition in IPR2017-00255, and Comcast Cable Communications, L.L.C., Cox Communications, Inc., Time Warner Cable Enterprises L.L.C., Verizon Services Corp., and ARRIS Group, Inc., who filed a Petition in IPR2017-00417, have been joined in this proceeding.

Patent Owner moves for observation regarding the cross-examination of Dr. Jose Tellado, the reply declarant of Petitioner (transcript filed as Ex. 2013).

Observation #1

In Ex. 2013, at 43:24–44:20, Dr. Tellado testified:

> Q. The noise profiles that you reference in your paragraphs 9 through 13, you didn't actually apply those in selecting your 182 random carriers and 52 Shively carriers, did you?
>
> A. ADSL transceivers have to work over many combinations of loops, gauges, crosstalk attenuation. I didn't go through all the combinations. I just picked one combination to justify my simulation.
>
> I only need to find one example to justify a simulation. There is many other combinations.
>
> Q. And do you believe that the one 12,000-foot attenuation curve that you picked justifies your selection of those carriers?
>
> A. So my simulation shows that 182 QAM random carriers, 52 structured carriers has high PAR implementing Shively's techniques.
>
> To come up with 182 and the 52, I need to justify where I get the 182 and 52, and I could have done it through combinations of loss and crosstalks. There is infinite number of combination. I pick one to justify it, and then it applies more generally.

That testimony is relevant to Dr. Tellado's second declaration, Ex. CSCO-1026, at ¶¶ 7-14 (pp. 3-9), where he discusses a number of noise profiles and states that "Shively states that bit-spreading is a way to 'compensate for high attenuation ***and/or high noise***'" (emphasis in original) and "[s]ince noise can occur on a line of any length, a POSITA would not have considered Shively's bit-spreading technique to be limited to being used on only long lines." The testimony is

relevant because it shows that Dr. Tellado "just picked one combination to justify [his] simulation," and that simulation was not based the long lines with high attenuation and noise addressed by Shively, but was instead based on a line of 12,000 feet that is not a long line and does not have high attenuation or high noise.

Observation #2

In Ex. 2013, at 45:23–46:5, Dr. Tellado testified:

> Q. Do you know which attenuation and noise characteristics Dr. Short relied on in choosing his random, Shively and unusable carriers?
>
> A. I believe Dr. Short used Figure 6 or variants of it, and he selected one of these high-attenuation loops, and I believe he used the thin-gauge, high-loss AWG26 that's marked 18,000 in this figure.

That testimony is relevant to (1) Dr. Tellado's statement, in Ex. CSCO-1026 at ¶ 7 (p. 4), that Shively (Ex. CSCO-1011) "describes using its bit spreading technique 'to compensate for high attenuation and/or high noise in those parts of the communication channel frequency band that would otherwise not be usable due to noise and attenuation effects'" and (2) to the teaching in Shively, Ex. CSCO-1011, at 9:65–10:1, that "[i]n long loop systems where cable 3 is of length of the order 18,000 feet or more, high signal attenuation at higher frequencies (greater than 500 kHz) is usually observed[]" and, at 11:11-12 that "[s]uch noisy and/or highly attenuated sub-bands can occur for example in long-run twisted pair conductors." The testimony is relevant because it shows that the opinions of

Patent Owner's expert, Dr. Short, are based on the long loops with high attenuation and noise to which Shively's teachings are directed.

Observation #3

In Ex. 2013, at 46:10–47:20, Dr. Tellado testified:

Q. Did you run a simulation --

A. Yes.

Q. -- using an 18,000-foot loop with the attenuation characteristics shown in Figure 6 on page 18 of your declaration?

A. So in this AWG26 loop of 18,000 feet, I did a quick estimate.

Q. But you didn't run a full simulation on it?

A. Not a full simulation.

***

Q. What did you determine from your quick estimate?

A. That Dr. Short's approximation of a Gaussian approximation was poor. It was worse than -- than Dr. Short said.

Q. How much worse?

A. I don't recall. It was significantly worse.

Q. You don't recall. Did you run a simulation?

A. I said I ran a quick estimate to see if the Gaussian approximation was good, and it was not.

Q. How did you do that quick estimation?

A. Using similar techniques to the ones that I provided.

Q. Where is that simulation?

A. So when I started working the declaration, I just did a quick estimate to see if the Gaussian approximation was correct, and I determined it was not.

Q. Did you use MATLAB for that?

A. Yes.

Q. Where are the results of that MATLAB?

A. I don't have them.

That testimony is relevant to the credibility of, sufficiency of, and factual basis for Dr. Tellado's statement, in Ex. CSCO-1026 at ¶ 29 (p. 17), that "Dr. Short's analysis is flawed …." The testimony is relevant because (1) it shows that, in evaluating Dr. Short's analysis, Dr. Tellado did not run a "full simulation," he does not "recall" the results, and he no longer has the results, and (2) that simulation would show whether Dr. Short's analysis is flawed.

Observation #4

In Ex. 2013, at 50:6–56:17, Dr. Tellado testified:

Q. Are you suggesting that Dr. Short's -- if you had run a full simulation on Dr. Short's 18,000-foot loop, assuming the 88 usable carriers and 16 Shively carriers and the remainder unusable, are you telling me that that would be worse than your Scenario 1 here?

A. I didn't say that. I just said it was diverging relative to a Gaussian process.

***

Q. If we were to run a Gaussian on the 104 carriers that you ran this quick simulation on, where would that line show up in graph 2 on your -- page 30 of your declaration?

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