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Red Bank, New Jersey, 21 - 25 May 2001

Question: 4/15

SOURCE<sup>1</sup>: VOCAL Technologies Ltd. (<http://www.vocal.com>)

TITLE: G.gen.bis: G.dmt.bis: G.lite.bis: Does it makes sense a G.992.1.bis and G.992.2.bis without advance coding?

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### ABSTRACT

This contribution presents discussion about if it makes sense to have a new recommendation without the advance coding improvement. This paper is in the same line that previous document AB-076 and also consider previous document IC-089.

## 1. Introduction

This contribution presents discussion about if it makes sense to have a new recommendation without the advance coding improvement. This paper is in the same line that previous agreed document AB-076 and also consider previous document IC-089.

## 2. G.992.1.bis and G.992.2.bis without Turbo Codes

In previous agreed document AB-076 “What a minimum added value ADSL-bis recommendations provide?” it was pointed out that the best way to obtain longer loop reach and the increased data rate needed for the next generation of G.lite and G.dmt, is the use of Turbo Codes.

If Turbo codes are not included in the next generation of G.lite and G.dmt, It seems useless to issue a new generation of systems that does not provide the improvements needed for the ISP community.

In previous document IC-089 “ADSL Improvements for Determination in October, 2001” it was pointed out that the ADSL-based customer in service today in the USA are around 2 millions of lines, from other sources it is known that the ADSL-based lines installed in the USA are around 4 millions.

It is impressive the number of line installed in a short period of time. It is also important to take into account the total number of lines in the USA, around 600 millions. It is usual that each house/business in the USA has 2 lines, this means that the potential market for ADSL-based services is around 200 of

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<sup>1</sup> Contact: Alberto Torres, Ph. D.  
Victor Demjanenko, Ph. D.  
Frederic Hirzel  
VOCAL Technologies Ltd.

E: jatorres@vocal.com  
E: victord@vocal.com  
E: frederich@vocal.com  
T: +1-716-688-4675  
F: +1-716-639-0713

millions, so ONLY 1 % of the houses/business are using ADSL-based services, and ONLY with this VERY LOW percentage it is known that the ISP really has problems to include ADSL-based services in a lot of areas in the USA. Indeed only a few areas with a high or medium income salary had been attended, and a lot of frustrated “want to be” ADSL-based customer are in the “waiting list”.

Another important fact, is how many lines already have voiceband modems, that are, in principle, possible customers for ADSL-based services. In the USA is assumed that 60% of the houses/business may use internet services, from the fact that more than 60% of the houses in the USA has PC. This means that the possible target for ADSL-based services in the USA is around 120 millions, so ONLY 1.7 % of the possible ADSL-based customers had been attended.

The best way to attend more customer in the USA is with longer loop reach, and so far, the only way to do that in an efficient way is using Turbo Codes.

### **3. What means Q-mode for G.992.1.bis and G.992.2.bis**

Q-mode in ADSL-based services does not introduce any factor to increase the number of possible customer and indeed does not make any different in power saving. Q-mode is something “nice-to-have”, but it will not solve any problem to the ISPs.

### **4. Summary**

The present paper relates to a technique for implementation of Turbo Code for DSL modems. Taken into account the benefits of Turbo Codes for DSL modems it is recommend to include turbo Codes in the next DSL’s ITU Recommendations.

1. Agenda Item: G.992.1.bis issue 4.6 and G.992.2.bis issue 10.14.
2. Expectations: The committee accepts the inclusion of Turbo codes for G.992.1.bis, G.992.2.bis.