UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

CALIFORNIA INSTITUTE OF TECHNOLOGY,
Patent Owner.

Case IPR2017-00210
Patent 7,116,710

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

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I. INTRODUCTION

The Patent Owner Response ("POR") filed by Caltech fails to rebut Petitioner's showing that the challenged claims are unpatentable. First, Caltech's arguments are based on mischaracterizing the teachings of the Frey and Divsalar references. Second, Caltech's alleged pre-filing activity fails to antedate the Frey reference. Third, Caltech has failed to demonstrate secondary considerations of non-obviousness. Finally, Caltech mischaracterizes the testimony of Petitioner's expert, Prof. Davis.

II. ARGUMENT

A. Frey Anticipates Claims 1 and 3

The POR repeats Caltech's "partitioning" argument from its Patent Owner Preliminary Response ("POPR"), and argues Frey does not disclose the "block of data in the signal to be encoded" and the "rate" limitations. POPR, 19-22; POR, 20-30. The Board should reject these arguments.

1. *Frey discloses the "partitioning" limitation*

Caltech argues that Frey's Figure 2 caption, which refers to "codeword" bits, shows that the circles on the bottom are output, not input, bits, and that therefore partitioning of those circles does not meet the "partitioning" limitation. POR, 21-24.

Caltech's argument fails because Frey teaches that its code is systematic. Ex. 1002, Abstract; Ex. 2004, ¶¶ 90, 99, 112. In a systematic code, the information

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bits are part of the codeword. Ex. 1006, ¶ 31; Ex. 1062, 28:8-11. That is, in a systematic code, the information bits are the input to the code, and they also form part of the output. Therefore, far from showing that the circles on the bottom are not input bits, Frey's Figure 2 caption merely identifies the circles at the bottom as information bits, which are part of the codeword. Ex. 1065, ¶22.[1]

Caltech's argument is also rebutted by its own POPR, which states that each circle at the bottom of Frey's Figure 1 represents an "individual systematic bit" (*i.e.*, an information bit),[2] POPR, 20, and that "Figure 2 of Frey is simply a different illustration of the exact same individual bit copying process of Figure 1," POPR, 21 (emphasis removed). The POPR identifies these information bits in Figure 1 with a red arrow:

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[1] After submitting his declaration, Dr. Davis relocated to Europe pursuant to a Fulbright Global Scholar Award. As a result, he was unavailable to work on the Reply. Petitioner's Reply is instead supported by the Declaration of Dr. Frey.

[2] It is undisputed that Frey's Fig. 1 shows irregular repetition of the systematic bits, and that the "systematic" bits are information bits. Ex. 1064, 198:25-199:5, 207:21-25.

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