UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FORD MOTOR COMPANY
Petitioner

v.

PAICE LLC & THE ABELL FOUNDATION
Patent Owner

Case IPR2014-00579
Patent 7,104,347

DECLARATION OF NEIL HANNEMANN
IN SUPPORT OF THE PATENT OWNER'S RESPONSE

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A. There is no motivation or reason to combine the Bumby references. 32

1. The "sub-optimal" control algorithm leads to excessive gear shifting. 33

2. The "sub-optimal" control algorithm results in poor fuel economy 34

B. The Bumby references do not disclose or suggest each and every limitation of the challenged claims. 37

1. The Bumby references do not disclose or suggest the "first electric motor" of claims 1 and 8 37

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2. The Bumby references do not disclose or suggest the use of "setpoints (SP)" as required by claims 1, 7, and 23 43

a) The "sub-optimal" control algorithm fundamentally requires the use of a transmission. 44

b) The "sub-optimal" control algorithm compares demand power to a range of power outputs. 48

3. The Bumby references do not disclose or suggest use of "road load" in claims 7 and 23 56

4. The Bumby references do not disclose or suggest the battery charging mode of claim 1 or 23 59

a) The Bumby references do not disclose or suggest the battery charging mode of claim 1 60

b) The Bumby references do not disclose or suggest the battery charging mode of claim 23 66

IX. CONCLUSION 74

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DECLARATION EXHIBITS

Patent Owner Exhibit Number	Exhibit Description
PAICE Ex. 2103	Neil Hannemann CV
PAICE Ex. 2104	Masding, Philip Wilson (1988) "Some drive train control problems in hybrid i.c engine/battery electric vehicles," Durham theses, Durham University.
PAICE Ex. 2105	Bosch Handbook, 4th Edition (excerpts)
PAICE Ex. 2106	Gregory Davis Deposition Transcript (Jan. 13, 2015)

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I, Neil Hannemann, hereby declare the following:

I. INTRODUCTION

1. I have been retained by counsel for Paice LLC and the Abell Foundation (collectively, "Paice" or "Patent Owner") to investigate and analyze certain issues relating to the validity of claims of U.S. Patent No. 7,104,347 ("the '347 patent") (Ex. 1001).

2. Specifically, for purposes of this declaration, I have been asked to analyze the arguments made by Ford Motor Company ("Ford" or "Petitioner") in the matter of the *Inter Partes* Review of the '347 patent, Case No. IPR2014-00579. I have reviewed Ford's petition, along with the declaration of Ford's expert, Dr. Gregory Davis, and the documents cited therein. I have reviewed the Patent Trial and Appeal Board's ("the Board") decision to institute, as well as the Board's claim constructions. My analysis is based on the Board's claim constructions.

3. I understand that the Board has instituted review of the following claims of the '347 patent (the "challenged claims"): 1, 7, 8, 18, 21, 23, and 37.

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