UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TRW AUTOMOTIVE U.S. LLC,
Petitioner,
v.

MAGNA ELECTRONICS INC.,
Patent Owner.

Case IPR2015-00436[1]
Patent 8,599,001 B2

DECLARATION OF DR. RALPH ETIENNE-CUMMINGS

[1] Cases IPR2015-00437, IPR2015-00438, and IPR2015-00439 have been consolidated with this proceeding.

Magna 2003

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I. Introduction

I, Dr. Ralph Etienne-Cummings, hereby declare as follows:

1. I understand that in response to a Petition submitted by TRW Automotive U.S. LLC ("TRW"), the Patent Trial and Appeal Board ("Board") instituted an *inter partes* review as to claims 1–15, 24, 28, 32, 34-40, 42-50, 53-66, 69, 71, 73-79, 81-85, 87-100, and 102–08 of U.S. Patent No. 8,599,001 ("the '001 Patent"). I understand that the '001 Patent is titled "Vehicular Vision System" by Kenneth Schofield *et al*. and that the '001 Patent is currently assigned to Magna Electronics Inc. ("Magna").

2. I have been retained on behalf of Magna to provide expert opinions in connection with this *inter partes* review proceeding. Specifically, I have been asked to provide my expert opinion relating to the patentability of claims 1-15, 24, 28, 32, 34-40, 42–50, 53-66, 69, 71, 73-79, 81–85, 87-100, and 102-08 of the '001 Patent relative to the instituted grounds based on the Vellacott, Kenue, Yanagawa, Denyer, Schofield, and Venturello references.

II. Qualifications

3. I am expert in the field of computer vision, having designed and implemented image sensors and vision algorithms hardware and software.

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