UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MERCEDES-BENZ USA, LLC and
MERCEDES-BENZ U.S. INTERNATIONAL, INC.,

Petitioner

v.

VELOCITY PATENT LLC,

Patent Owner

_____

Inter Partes Review of U.S. Patent No. 5,954,781
Patent Issue Date: September 21, 1999
Patent Title: Method and Apparatus for Optimizing Vehicle Operation
Case IPR No.: *To Be Assigned*

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DECLARATION OF DR. CHRIS G. BARTONE, P.E.
IN SUPPORT OF MERCEDES' PETITION
FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 5,954,781

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I, Dr. Chris G. Bartone, P.E., declare:

I. INTRODUCTION

A. Engagement

1. I have been retained by Hogan Lovells US LLP, counsel for Petitioner Mercedes-Benz USA, LLC and Mercedes-Benz U.S. International, Inc. (together, "**Petitioner**" or "**Mercedes**"), to submit this Declaration in connection with this proceeding.

2. I have been asked to analyze the state of the art of the technology described in U.S. Patent No. 5,954,781 (the "**'781 Patent**") as it relates to Claims 31-32 of this patent. This analysis is not intended to be an exhaustive validity analysis, but rather concentrates on the elements of Claims 31-32 of the '781 patent and to what extent these elements are disclosed in select pieces of prior art.

3. I am being compensated for my time at a rate of $750 per hour, plus actual expenses. My compensation is not dependent in any way upon the outcome of this proceeding.

B. Background and Qualifications

4. I am a Professor of the School of Electrical Engineering and Computer Science ("**EECS**") at Ohio University. I have over 30 years of professional experience with communications, navigation, and surveillance ("**CNS**") systems. I currently teach graduate and undergraduate classes in the

School of EECS. I received an undergraduate Bachelor of Science degree in Electrical Engineering from the Pennsylvania State University in 1983. I received a Master's of Science degree in Electrical Engineering from the Naval Postgraduate School in 1987. I received a Ph.D. in Electrical Engineering from Ohio University in 1998.

5.   From 1983 to 1998, prior to my full-time position at Ohio University, I worked as an electronics engineer at the Naval Air Warfare Center in Patuxent River, Maryland. My work at the Naval Air Warfare Center included various projected dealing with CNS systems and, in particular, with radar/secondary-radar systems. In 1998, after being awarded a Ph.D. in Electrical Engineering, I joined the faculty of Ohio University as a Visiting Assistant Professor. I was promoted to Assistant Professor in 1999 and to Associate Professor in 2004, and became a full Professor in 2009.

6.   My teaching at Ohio University has covered undergraduate and graduate level courses in electrical engineering. At the graduate level, I teach courses in the area of radar systems, navigation systems, microwave and antenna theory, and communication systems. At the undergraduate level I have concentrated my teachings in the area of electromagnetics courses that deal with similar topics (but less advanced than the graduate courses I teach). Each of these

courses has included coverage of vehicular applications, including automotive applications.

7.   In addition to my teaching, I have led and performed various research efforts involving vehicular applications. These have included efforts in the area of surface/land, including automotive applications. These research efforts have included studies and experiments with, among other things, automotive radar systems as used for obstacle detection and avoidance.

8.   My curriculum vitae, detailing my background and qualifications, is submitted herewith as Exhibit 1011. I am familiar with the subject matter of this case, and consider myself an expert in, among other things, radar systems, including as applied to vehicular systems and including as used for obstacle detection and avoidance.

C.   Information Considered

9.   My analyses are based on my years of education, research, and work experience, as well as my investigation and study of relevant materials. In my analyses, I have considered the materials that I identify in this Declaration and those listed in Attachment A.

10.   I may rely upon these and additional materials to respond to arguments raised by the Patent Owner. I may also consider additional documents

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