

DECLARATION OF SCOTT ANDREWS

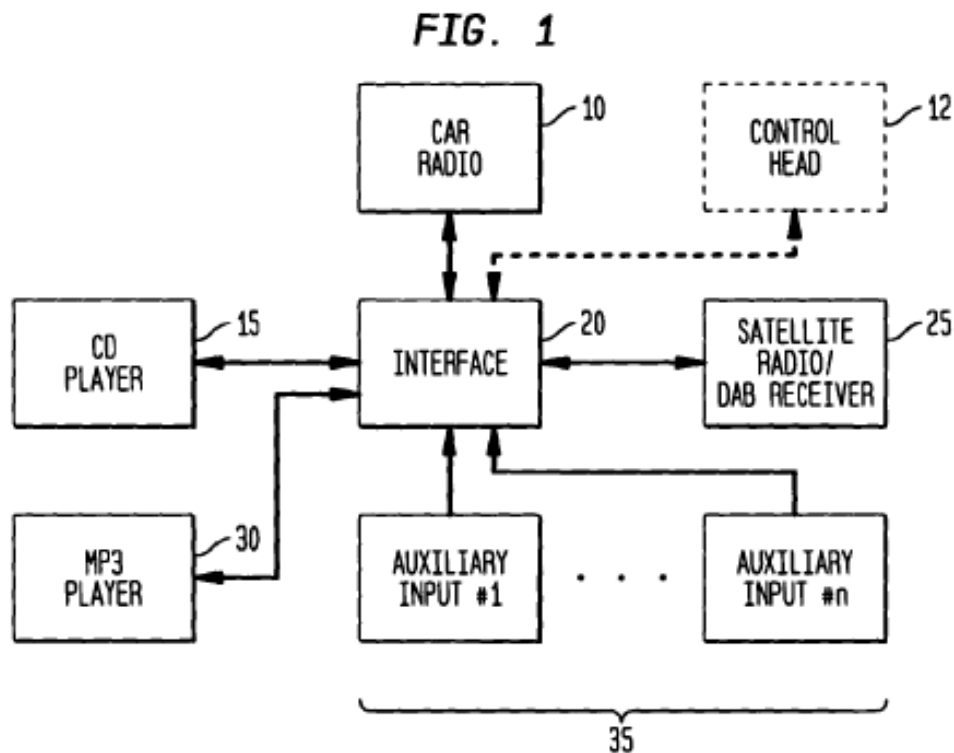
I, Scott Andrews, declare as follows:

1. I hold a B.Sc. degree in Electrical Engineering from University of California–Irvine and a M.Sc. degree in Electronic Engineering from Stanford University. In various positions at, among others, TRW and Toyota, I have been responsible for research and development projects relating to numerous vehicle electronic systems, information systems, and user interface systems. My qualifications are further set forth in my *curriculum vitae* (Exhibit A). I have been retained by Volkswagen Group of America, Inc. in connection with its petition for *inter partes* review of U.S. Patent No. 7,489,786 (the “’786 patent”). I have over 25 years of experience in fields relevant to the ’786 patent, including vehicle infotainment systems and device integration systems.

2. I have reviewed the ’786 patent, as well as its prosecution history and the prior art cited during its prosecution. I have also reviewed U.S. Patent Application Publication No. 2002/0084910 (“Owens”), U.S. Patent No. 6,175,789 (“Beckert”), U.S. Patent No. 5,774,793 (“Cooper”), U.S. Patent Application No. 2001/0028717 (“Ohmura”) and U.S. Patent No. 6,559,773 (“Berry”).

The '786 Patent

3. The '786 patent describes an audio device integration system for integrating after-market components such as satellite receivers, CD players, CD changers, MP3 players, Digital Audio Broadcast (DAB) receivers, auxiliary audio sources, and the like with factory-installed (OEM) or after-market car stereo systems. See '786 patent, col. 1, lines 7 to 12. The integration system is also described as "interface system." See '786 patent, col. 5, lines 14 to 15. A block diagram of the integration system is illustrated in Fig. 1 of the '786 patent (reproduced below):



4. As shown above in Fig. 1, the interface can be connected to a plurality of devices and auxiliary inputs and can be integrated with a car stereo. The interface converts control signals from the car stereo into a format that is compatible with an

after-market external device, and vice versa, thus allowing commands input at the car stereo to control the external device and display of after-market external device information on the car's display. Information from the audio device, including track, disc, song, station, time, and other information, is received, processed, converted into a format recognizable by the car stereo, and dispatched to the car stereo for display thereon. *See* '786 patent, Abstract, col. 4, lines 27 to 46, col. 5, line 15 to col. 8, line 15. One or more auxiliary input sources can be integrated with the car stereo, and selected between using the controls of the car stereo. *See* '786 patent, Abstract, col. 4, lines 43 to 46.

5. The interface includes a microcontroller performing the described functions (*see, e.g.*, '786 patent, at col. 8, lines 46 to 64, col. 9, lines 45 to 67, col. 10, lines 49 to 62, col. 11, lines 30 to 46, col. 12, lines 4 to 14).

**The Disclosures of Owens, Beckert, and Cooper
Claims 1, 2, 13, 14, 23, 24, 44 and 47**

6. Owens, Beckert, and Cooper describe systems and methods for integrating electronic devices with a vehicle audio system.

7. Owens describes an expandable automotive multimedia system having a bus for integrating, *e.g.*, MP3 players, CD players, TV monitors, VCRs, or game stations, to the vehicle's OEM head unit and speaker system, subject to control at the head unit, which "offers enormous versatility for a traveling family." *See*

Owens, ¶¶ [0006]–[0010], [0025]–[0026]. The bus carries “control commands from the head unit to the modules, and commands from the modules to the head unit.” *See* Owens, ¶ [0027].

8. Beckert describes a vehicle computer system designed to integrate and control, *e.g.*, audio, navigation, and communication systems, which “allows for easy expandability.” *See* Beckert, col. 2, lines 8 to 30. The system includes three modules: a support module, a faceplate module and computer module. The support module includes a logic unit, “which is responsible for facilitating communication among peripheral devices,” and which can be implemented as a microprocessor or other processing device. *See* Beckert, col. 5, lines 40 to 55.

9. Cooper describes a docking system for interfacing a variety of devices having different control and command formats to a bus having a known universal signal format, providing “ease of manufacture and updating the system to accommodate new models and makes of cellular telephones, as well as changes to command signal structure of existing cellular telephones and devices.” *See* Cooper, col. 1, lines 19 to 23 and col. 2, lines 16 to 20. An interface device includes a microcontroller “which contains, in its non-volatile memory, a data control program having a plurality of firmware drivers;” these drivers “have the operating circuitry and commands necessary for controlling the selected cellular telephone.” *See* Cooper, col. 3, lines 12 to 22 and col. 4, lines 34 to 39.

10. Owens, Beckert, and Cooper describe “an audio device integration system comprising a first connector electrically connectable to a car stereo.” Owens describes “an expandable system” for “serial additional of modules,” such as A/V sources, and further describes a “bus cable” connecting the head unit to the modules, including to an A/V interface module. *See* Owens, Abstract, ¶¶ [0006] and [0025]. Beckert describes a vehicle computer system that is capable of integrating diverse and separate systems and can serve as, e.g., a multimedia entertainment system. *See* Beckert, col. 2, lines 8 to 11 and col. 5, lines 3 to 6. Cooper describes a system for connecting a plurality of cellular telephones to an automotive electronics and communications system; a cable (shown as no. 44 in Fig. 2) connects the interface unit to a bus connector of the electronics and communications system. *See* Cooper, Abstract, col. 3, lines 42 to 45, and Figs. 1 and 2.

11. Owens, Beckert, and Cooper describe “a second connector electrically connectable to an after-market audio device external to the car stereo.” Owens describes that A/V devices (i.e. after-market audio devices), such as TV monitors, VCRs, tuners, game stations, etc., may be connected to a “source selector,” which is connected to the A/V interface module. *See* Owens, ¶ [0026]. Beckert describes that the “support module” is connected to a USB hub, which provides connections to peripheral devices, such as CD-ROM changers, TV tuners, etc. *See* Beckert, col.

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