

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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MARVELL SEMICONDUCTOR, INC.,  
Petitioner,

v.

UNILOC 2017 LLC,  
Patent Owner.

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IPR2019-01349

U.S. Patent No. 7,016,676

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**PETITION FOR *INTER PARTES* REVIEW**

**OF U.S. PATENT NO. 7,016,676**

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**EXHIBIT LIST**

<b>Exhibit No.</b>	<b>Description</b>
<b>1001</b>	U.S. Patent No. 7,016,676 to Walke <i>et al.</i> (“the ’676 patent”)
<b>1002</b>	Prosecution File History for the ’676 patent
<b>1003</b>	Declaration of Dr. Sumit Roy
<b>1004</b>	U.S. Patent No. 7,031,274 (“Sherman”)
<b>1005</b>	U.S. Patent No. 7,039,358 B1 (“Shellhammer”)
<b>1006</b>	U.S. Patent No. 6,215,982 (“Trompower”)
<b>1007</b>	Y. Akaiwat et al., “An integrated voice and data radio access system”, 1992 Proceeding Vehicular Technology Society 42nd VTS Conference – Frontiers of Technology, May 10-13, 1992. (Including authenticating declaration from IEEE) (“Akaiwa”)
<b>1008</b>	US Provisional Application No. 60/175,262 (“Shellhammer ’262 provisional”)
<b>1009</b>	US Provisional Application No. 60/196,979 (“Shellhammer ’979 provisional”)
<b>1010</b>	U.S. Patent No. 6,377,608 (“Zyren”)
<b>1011</b>	US Provisional Application No. 60/261,935 (“Sherman provisional”)
<b>1012</b>	Declaration of Dr. Sylvia Hall-Ellis
<b>1013</b>	Uniloc 2017 LLC v. Microsoft Corporation Complaint for Patent Infringement, No. 8:18-cv-02053, Dkt. 1
<b>1014</b>	G. Bark, “Power control and active channel selection in an LPI FH system for HF communications”, Proceedings of MILCOM 97, November 3-5, 1997 (Including authenticating declaration from IEEE) (“Bark”)
<b>1015</b>	U.S. Patent No. 6,643,278 (“Panasik”)
<b>1016</b>	Uniloc Infringement Contentions (from IPR2019-01125, Exhibit 1003)

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Wireless radio systems proliferated in the 1990s, leading to several standards such as IEEE 802.11 (“Wi-Fi”), Bluetooth, and HIPERLAN/2 that operated in the same frequency bands. Interference became a known issue, and coexistence techniques were developed in the prior art to allow popular standards to share the same frequency bands.

For example, Sherman taught a Hybrid AP that alternated between IEEE 802.11a and HIPERLAN/2 on a common channel, using the 802.11a point coordination function (“PCF”) for reserving time for HIPERLAN/2 and then relinquishing the channel for 802.11a. Another reference Shellhammer taught 802.11 and Bluetooth coexistence by alternating between the two standards.

The ’676 patent purports to invent a coexistence technique for 802.11a and HIPERLAN/2, where a control station such as an “Access Point AP” controls the alternate use of a common frequency band, using the 802.11a PCF to reserve time for HIPERLAN/2 stations, and if they do not request access, rendering the band available for 802.11a. In district court, Patent Owner (“PO”) accused 802.11 and Bluetooth coexistence techniques of infringement.

## **I. BACKGROUND**

By the late 1990s, the unlicensed 5 GHz and 2.4 GHz industrial, scientific and medical (“ISM”) bands had become overcrowded with many standards including Bluetooth and IEEE 802.11. *See* Ex. 1010, 1:21-50. Thus “it is essential

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