

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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**FACEBOOK, INC. and INSTAGRAM LLC,**  
Petitioners,

v.

**SKKY, LLC,**  
Patent Owner.

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Case **IPR2017-00092**  
Patent **9,124,717**

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**PETITIONERS' REPLY**

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**List of Exhibits**

**Currently Filed**

<b>Exhibit No.</b>	<b>Title of Document</b>
<b>1068</b>	Excerpts from Michael D. Scott, <i>Internet and Technology Law Desk Reference</i> , Aspen Law and Business, pp. 541-542 (1999)
<b>1069</b>	Excerpts from <i>The American Heritage Dictionary</i> , p. 1398 (4th ed. 2000)
<b>1070</b>	“Patent Owner’s Response to Petition for <i>Inter Partes</i> Review of U.S. Patent No. 7,548,875,” IPR2014-01236, Paper 21 (Apr. 29, 2015)
<b>1071</b>	“Appellant Skky, Inc.’s Corrected Opening Brief” filed Aug. 9, 2016 in <i>Skky, Inc. v. MindGeek, S.A.R.L. et al.</i> , Case No. 16-2018 (Fed. Cir.)
<b>1072</b>	“Appellant Skky, Inc.’s Reply Brief” filed Nov. 21, 2016 in <i>Skky, Inc. v. MindGeek, S.A.R.L. et al.</i> , Case No. 16-2018 (Fed. Cir.)

**Previously Filed**

<b>Ex. No.</b>	<b>Description of Document</b>
<b>1001</b>	U.S. Patent No. 9,124,717 to John Mikkelsen et al., entitled “Media Delivery Platform”
<b>1002</b>	Declaration of Tal Lavian, Ph.D.
<b>1003</b>	U.S. Patent No. 7,065,342 to Devon A. Rolf, entitled “System and Mobile Cellular Telephone Devices for Playing Recorded Music”
<b>1004</b>	Excerpts from Ben Forta et al., <i>WAP Development with WML and WMLScript</i> , Sams Publishing (September 2000)

<b>Ex. No.</b>	<b>Description of Document</b>
<b>1005</b>	Alan Gatherer et al., <i>DSP-Based Architectures for Mobile Communications: Past, Present and Future</i> , IEEE Communications Magazine (January 2000)
<b>1006</b>	U.S. Patent No. 5,726,978 to Carl Magnus Frodigh et al., entitled “Adaptive Channel Allocation in a Frequency Division Multiplexed System”
<b>1007</b>	EP 1039683 A2 to Laroia et al., entitled “Frequency hopping multiple access with multicarrier signals”
<b>1008</b>	U.S. Patent 5,815,488 to Williams et al., entitled “Multiple User Access Method Using OFDM”
<b>1009</b>	Cheong Yui Won et al., <i>A Real-time Sub-carrier Allocation Scheme for Multiple Access Downlink OFDM Transmission</i> , IEEE (1999)
<b>1010</b>	Wonjong Rhee et al., <i>Increase in Capacity of Multiuser OFDM System Using Dynamic Subchannel Allocation</i> , IEEE (2000)
<b>1011</b>	EP 1033894 A2 to Masatoshi Saito, entitled “Portable telephone terminal apparatus for receiving data and data receiving method”
<b>1012</b>	U.S. Patent No. 6,423,892 to Muralidharan Ramaswamy, entitled “Method, Wireless MP3 Files from the Internet”
<b>1013</b>	Excerpts from John Hedtke, <i>MP3 and the Digital Music Revolution</i> (1999)
<b>1014</b>	Gene Frantz, <i>Digital Signal Processor Trends</i> , IEEE Micro (2000)
<b>1015</b>	E. Lawrey, <i>Multiuser OFDM</i> , Fifth International Symposium on Signal Processing and its Applications (Aug. 1999)
<b>1016</b>	U.S. Patent No. 5,732,113 to Timothy Schmidl, entitled “Timing and Frequency Synchronization of OFDM Signals”
<b>1017</b>	U.S. Patent No. 6,711,221 to Maxim Belotserkovsky, entitled “Sampling Offset Correction in an Orthogonal Frequency System Multiplexing System”

<b>Ex. No.</b>	<b>Description of Document</b>
<b>1018</b>	Richard Van Nee et al., <i>OFDM for Wireless Multimedia Communications</i> (2000)
<b>1019</b>	U.S. Patent No. 3,488,445 to Robert W. Chang entitled “Orthogonal Frequency Multiplex Transmission System”
<b>1020</b>	Chang, R.W., <i>Synthesis of band-limited orthogonal signals for multi-channel data transmission</i> , Bell Labs Technical Journal, no. 45, pp. 175-1796 (Dec. 1966)
<b>1021</b>	5th International OFDM Workshop 2000
<b>1022</b>	6th International OFDM Workshop 2001
<b>1023</b>	17th International OFDM Workshop 2012
<b>1024</b>	Rainer Grünheid et al., <i>Adaptive Modulation and Multiple Access for the OFDM Transmission Technique</i> , Wireless Personal Communications (May 2000)
<b>1025</b>	Excerpts from <i>Comprehensive Dictionary of Electrical Engineering</i>
<b>1026</b>	IEEE Std 802-11a-1999, Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications: High-speed Physical Layer in the 5 GHz Band
<b>1027</b>	U.S. Patent No. 6,125,124 to Jari Junell, entitled “Synchronization and Sampling Frequency in an Apparatus Receiving OFDM Modulated Transmissions”
<b>1028</b>	U.S. Patent No. 7,133,352 to Zion Hadad, entitled “Bi-Directional Communication Channel”
<b>1029</b>	U.S. Patent No. 6,108,810 to Brian Kroeger, entitled “Digital Audio Broadcasting Method Using Puncturable Convolutional Code”
<b>1030</b>	Ahmad R.S. Bahai, <i>Multi-Carrier Digital Communications</i> (1999)

<b>Ex. No.</b>	<b>Description of Document</b>
<b>1031</b>	Leonard J. Cimini, Jr., <i>Analysis and Simulation of a Digital Mobile Channel Using Orthogonal Frequency Division Multiplexing</i> , IEEE Trans. Commun., Vol. 33, No. 7, pp. 665-675 (July, 1985)
<b>1032</b>	Giovanni Santella, <i>Performance Evaluation of Broadband Microcellular Mobile Radio in M-QAM OFDM Systems</i> , IEEE (1996)
<b>1033</b>	H. Rohling et al., <i>Performance of an OFDM-TDMA Mobile Communication System</i> , IEEE (1996)
<b>1034</b>	Antti Toskala et al., <i>Cellular OFDM/CDMA Downlink Performance in the Link and System Levels</i> , IEEE (1997)
<b>1035</b>	Fredrik Tufvesson et al., <i>Pilot Assisted Channel Estimation for OFDM in Mobile Cellular Systems</i> , IEEE (1997)
<b>1036</b>	Branimir Stantchev et al., <i>An Integrated FSK-signaling Scheme for OFDM-based Advanced Cellular Radio</i> , IEEE (1997)
<b>1037</b>	J. C-I Chuang, <i>An OFDM-based System with Dynamic Packet Assignment and Interference Suppression for Advanced Cellular Internet Service</i> , IEEE (1998)
<b>1038</b>	Branimir Stantchev et al., <i>Burst Synchronization for OFDM-based Cellular Systems with Separate Signaling Channel</i> , IEEE (1998)
<b>1039</b>	Kevin L. Baum, <i>A Synchronous Coherent OFDM Air Interface Concept for High Data Rate Cellular Systems</i> , IEEE (1998)
<b>1040</b>	Li Ping, <i>A Combined OFDM-CsDMA Approach to Cellular Mobile Communications</i> , IEEE Transactions on Communications, Vol. 47, No. 7, pp. 979-982 (July 1999)
<b>1041</b>	Justin Chuang et al., <i>High-Speed Wireless Data Access Based on Combining EDGE with Wideband OFDM</i> , IEEE Communications, Vol. 37, No. 11, pp. 92-98 (Nov. 1999)

<b>Ex. No.</b>	<b>Description of Document</b>
<b>1042</b>	Justin Chuang et al., <i>Beyond 3G: Wideband Wireless Data Access Based on OFDM and Dynamic Packet Assignment</i> , IEEE Communications Magazine (July 2000)
<b>1043</b>	Chi-Hsiao Yih et al., <i>Adaptive Modulation, Power Allocation and Control for OFDM Wireless Networks</i> , IEEE (2000)
<b>1044</b>	Fumilhide Kojima et al., <i>Adaptive Sub-carriers Control Scheme for OFDM Cellular Systems</i> , IEEE (2000)
<b>1045</b>	Chi-Hsiao Yih et al., <i>Power Allocation and Control for Coded OFDM Wireless Networks</i> , IEEE (2000)
<b>1046</b>	U.S. Patent No. 5,828,650 to Esa Malikamaki, entitled “Combined Modulation—and Multiple Access Method for Radio Signals”
<b>1047</b>	EP 0786890 A2 to Mitsuhiro Suzuki, entitled “Resource Allocation in a Multi-User, Multicarrier Mobile Radio System”
<b>1048</b>	WO 1997030531 A1 to Roger Larsson, entitled “Improvements in or Relating to OFDM Systems”
<b>1049</b>	U.S. Patent No. 6,188,717 to Stefan Kaiser, entitled “Method of Simultaneous Radio Transmission of Digital Data Between a Plurality of Subscriber Stations and a Base Station”
<b>1050</b>	U.S. Patent No. 6,711,120 to Rajiv Laroia, entitled “Orthogonal Frequency Division Multiplexing Based Spread Spectrum Multiple Access”
<b>1051</b>	U.S. Patent No. 6,553,019 to Rajiv Laroia, entitled “Communications System Employing Orthogonal Frequency Division Multiplexing Based Spread Spectrum Multiple Access”
<b>1052</b>	U.S. Patent No 6,922,388 to Rajiv Laroia, entitled “Signal Construction, Detection and Estimation For Uplink Timing Synchronization and Access Control in a Multi-Access Wireless Communication System”

<b>Ex. No.</b>	<b>Description of Document</b>
<b>1053</b>	U.S. Patent Appl. Pub. No. 2001/0021182 to Takashi Wakutsu, entitled “Transmitter Apparatus and Receiver Apparatus and Base Station Making Use of Orthogonal Frequency Division Multiplexing and Spectrum Spreading”
<b>1054</b>	Laurie Ann Toupin, <i>Flash-OFDM ‘Hops’ Wireless Data Communications into the Main Stream</i>
<b>1055</b>	U.S. Provisional Patent Application No. 60/167,179 to Devon Rolf, filed November 23, 1999, entitled “System, Method, and Device for Playing Recorded Music on a Wireless Communications Device”
<b>1056</b>	Redline Comparison of U.S. Patent No. 7,065,342 and U.S. Provisional Patent Application No. 60/167,179
<b>1057</b>	Excerpts from Andy Rathbone, <i>MP3 for Dummies</i> (1999)
<b>1058</b>	Excerpts from Scot Hacker, <i>MP3 The Definitive Guide</i> (March 2000)
<b>1059</b>	U.S. Patent No. 6,560,577 to Jay G. Gilbert, entitled “Process for Encoding Audio from an Analog Medium into a Compressed Digital Format Using Attribute Information and Silence Detection”
<b>1060</b>	Date-stamped excerpts of Ben Forta et al., <i>WAP Development with WML and WMLScript</i> , Sams Publishing (September 2000)
<b>1061</b>	Date-stamped excerpts of Scot Hacker, <i>MP3 The Definitive Guide</i> (March 2000)
<b>1062</b>	U.S. Patent No. 6,693,236 to Eric J. Gould et al., “User Interface for Simultaneous Management of Owned and Unowned Inventory”
<b>1063</b>	Excerpts from <i>Random House Webster’s College Dictionary</i> (1999)
<b>1064</b>	Biography of Mark R. Weinstein
<b>1065</b>	Declaration of Mark R. Weinstein ISO Motion for Admission Pro Hac Vice
<b>1066</b>	Biography of Yuan Liang

<b>Ex. No.</b>	<b>Description of Document</b>
<b>1067</b>	Declaration of Yuan Liang ISO Motion for Admission Pro Hac Vice

## I. INTRODUCTION

The Petition established that claims 1, 2, 4 and 5 are obvious over Rolf in view of Forta, Gatherer, Frodigh, and Gould, and that claims 3 and 6 are obvious over Rolf in view of Forta, Gatherer, Frodigh, Gould, and Hacker. The Petition was supported by extensive evidence, including dozens of contemporaneous documents and a comprehensive expert declaration from Dr. Lavian. The Patent Owner did not depose or cross-examine Dr. Lavian, nor did the Patent Owner submit any expert declaration of its own. The evidence set forth in the Petition is thus uncontested.

The Patent Owner's Response instead recycles the same failed arguments the Board and/or the Federal Circuit have rejected. With respect to the OFDM limitations, for example, the Patent Owner asserts that a person of ordinary skill in the art would not have been motivated to utilize OFDM with the cell phone of Rolf. But the Board rejected this same argument in its Final Written Decision in *MindGeek, S.A.R.L. et al. v. Skky, Inc.*, IPR2014-01236, which was affirmed by the Federal Circuit in *Skky, Inc. v. MindGeek, S.A.R.L.*, 859 F.3d 1014 (Fed. Cir. 2017). As the Board recently observed in a related proceeding, "in *MindGeek*, the Board and the Federal Circuit similarly concluded that it would have been obvious to utilize OFDM for Rolf's system of delivering music files to a cellular telephone." (IPR2017-00550, Paper 11, at 10.)

The Patent Owner also recycles arguments—almost verbatim—from its

Preliminary Response, adding little to no analysis responsive to the Board’s stated rationales for rejecting those arguments in the Institution Decision. For example, the Patent Owner repeats apparent claim construction arguments from its Preliminary Response with respect to the phrases “providing a website” and “processing,” which the Board correctly rejected in its Institution Decision. The Patent Owner’s arguments are based on unduly narrow interpretations that have no support in the specification, and the Patent Owner has offered no new evidence or argument to justify a departure from the Institution Decision.

Finally, with respect to the “digital signal processor” (DSP) limitation, the Patent Owner asserts that Rolf and Gatherer cannot be combined because Rolf is directed to a 3G wireless communication system and Gatherer to a GSM/2G system. But as the Board correctly and repeatedly found, this argument is based on a gross mischaracterization of both references. For the reasons set forth below and in the Petition, the Petitioners respectfully requests that the Board find claims 1-6 unpatentable based on the instituted grounds.

## **II. PATENT OWNER’S CONSTITUTIONAL ARGUMENTS ARE WITHOUT MERIT**

The Patent Owner devotes the first seven pages of its Response to asserting that *inter partes* review (IPR) is unconstitutional. The Federal Circuit thoroughly considered and rejected those arguments in *MCM Portfolio LLC v. Hewlett-Packard Co.*, 812 F.3d 1284 (Fed. Cir. 2015), *cert. denied*, 137 S. Ct. 292 (2016). The

Petitioners are obviously aware that the Supreme Court agreed in *Oil States* to take up the issue of the constitutionality of the IPR procedure. *Oil States Energy Servs., LLC v. Greene's Energy Grp., LLC*, 639 F. App'x 639 (Fed. Cir. 2016), cert. granted in part, 137 S. Ct. 2239 (2017). But until a decision in *Oil States* issues, *MCM Portfolio* remains controlling law.

### III. CLAIMS 1-6 OF THE '717 PATENT ARE UNPATENTABLE

#### A. "Providing a Website"

Claim 1 recites "**providing a website to the cell phone; wherein the website is associated with the at least one compressed digital audio and/or visual file.**"

Recycling an argument it unsuccessfully made pre-institution, the Patent Owner argues that Forta does not disclose this limitation because, according to the Patent Owner, Forta instead teaches "a simplified, menu based representations of a website viewable on cellular phones." (Response, at 26.) According to the Patent Owner, Forta "recognizes that such depictions are not the same as a website viewed on a conventional computer, noting that 'the results can be far from optimal.'" (*Id.* (quoting Forta, at p.100).) The Board rejected this argument in its institution decision, reasoning that the claim language does not require "that the cell phone display the website in the same manner as a conventional computer, nor does it exclude a website with a simplified menu." (Institution Decision, Paper 7, at 7.)

The Board's decision is supported by the patent specification, which makes

clear that a full-blown website designed for a conventional desktop computer is not required. The specification merely states that “a website suitable for viewing and selecting downloading sound and/or image clips or entire files may be used.”<sup>1</sup> (’717, 3:36-41.) The specification, in fact, expressly contemplates that the digital audio or visual files may be “accessible by way of a specialized website” that may be accessed by a “cell phone” or “other hand held device.” (’717, 5:3-11 (“The present invention may include a number of modules .... These modules include a server of the files accessible by way of a specialized website for viewing, ... files or portions thereof .... A telephone, be it conventional, cell phone or other hand held device with access to a communication network can access the server ... through the website.”).) This is also consistent with extrinsic evidence showing that courts have understood the term “website” to simply refer to “[a] group of related documents sharing a Web ‘address.’” (Ex. 1068, at p.541.) The Patent Owner presents no evidence to support its narrow interpretation of the claimed website.

The Patent Owner’s narrow interpretation is also inconsistent with Forta, which refers to these so-called “simplified representations” as mobile websites. (Forta, p.99 (“Figure 13.2 shows what the Amazon.com site looks like when it comes through an HTML/WML Translator.”), p.100 (“This is the Amazon.com site that is

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<sup>1</sup> All underlining has been added for emphasis.

written explicitly for phones with a WAP browser in them.”.) The combination of Rolf and Forta therefore disclose the claimed “website.”

The Patent Owner also argues that “[t]he simplified representation in Forta is devoid of any compressed audio or audio-visual data files.” (Response, at 26.) But the Petitioners did not rely on Forta for the “compressed digital audio and/or visual file” recited in the claim. Rolf itself discloses the ability of a client device to connect to the server via a website (Petition, at 19 (citing Rolf, 5:32-34, 12:52-55)), and the ability to select a music recording from a “menu or listing of recordings.” (Petition, at 23-24 (quoting Rolf, 5:30-39, 9:4-6).) The Petition cited Forta because it provides concrete examples of how the “menu or listing of recordings” in Rolf could have been provided through a website with interactive menus. (Petition, at 27 (citing Forta, Figs. 13.3, 13.5, p.317), 28.) The Patent Owner’s attempt to focus individually on Forta, and ignore the combination of Forta with Rolf, should be rejected. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (“Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.”). The Petition also provided an extensive explanation of the motivation to combine, as the Board recognized in its institution decision. (Petition, at 21-23; Institution Decision, at 7.)

Finally, the Patent Owner asserts that “[n]either Forta nor Rolf explains how to overcome these limitations and modify the simplified representation to function

with the device disclosed in Rolf.” (Response, at 27; *see also id.*, at 28.) But the Patent Owner does not explain why the alleged limitations of the mobile websites would have made them unsuitable for the system of Rolf. The claim language does not require that the provided “website” be complex—in fact, claim 1**[b]** requires only that the website provide “at least one compressed digital audio or audio-visual data file,” and as such, could be satisfied by a simple website listing only one file. As the Petition explained, Forta specifically discloses that mobile websites can be used to provide displayable menus for e-commerce, such as selecting items from an on-line store. (Petition, at 20-23; Lavian, Ex. 1002, ¶¶91, 92.) Accordingly, the Patent Owner’s arguments should be rejected. *Cf. The Toro Company v. MTD Prods. Inc.*, IPR2016-01352, Paper 9 at 10-11 (PTAB Jan. 4, 2017) (declining to institute where, unlike the present case, patent owner explained why the proposed modification “may have unintended consequences,” while the petitioner provided “essentially no explanation”).

**B. “Plurality of Visual Images Associated with at Least One Compressed Digital Audio and/or Visual File for Selection of at Least One Compressed Digital Audio and/or Visual File”**

Claim 1 recites “wherein the website includes a **plurality of visual images associated with at least one compressed digital audio and/or visual file for selection of at least one compressed digital audio and/or visual file.**” The Patent Owner first attacks Forta and characterizes it as limited to “a simplified

representation of a website for viewing by way of WAP” that is “devoid of any compressed audio or audio-visual data files.”<sup>2</sup> (Response, at 28.) But this “focused attack” on Forta ignores how Forta is combined with Rolf, which undisputedly discloses the claimed “at least one compressed digital audio and/or visual file.” *See Soft Gel Techs., Inc. v. Jarrow Formulas, Inc.*, 864 F.3d 1334, 1341 (Fed. Cir. 2017); *see also In re Merck*, 800 F.2d at 1097 (“Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.”).

Patent Owner also attacks Gould in a similar vein, asserting that it does not “relate to cellular devices, but instead teaches the display of a user interface on the screen of a conventional computer.” (Response, at 24; *see also id.*, at 28-29.) As an initial matter, contrary to the Patent Owner’s assertion, Gould is expressly not limited to “conventional computers”: “While the invention has been described in

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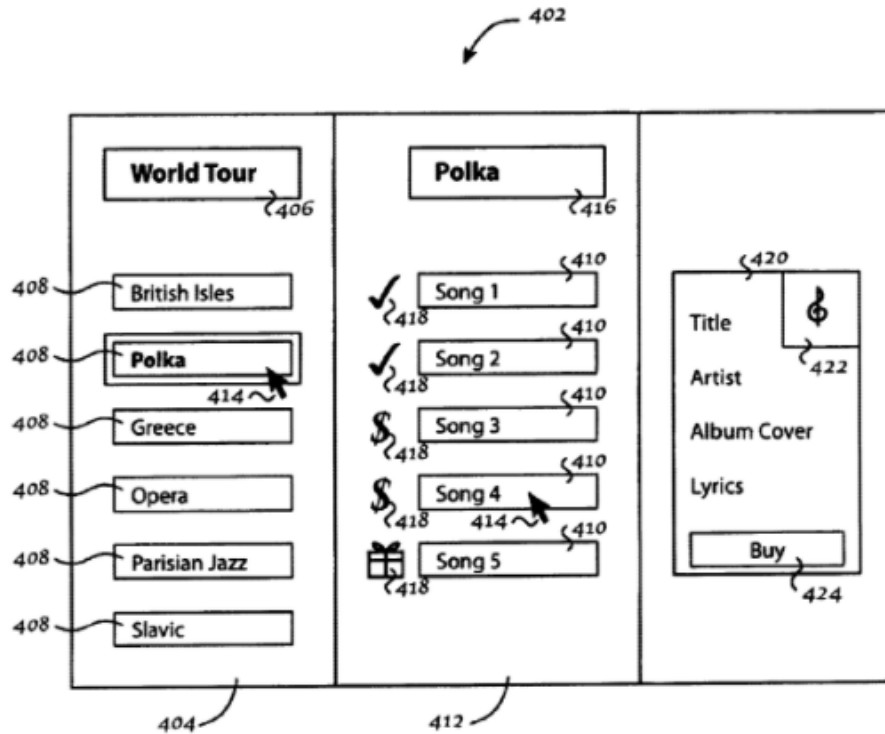
<sup>2</sup> The Board already correctly found a similar attack on Forta to be “not persuasive,” (Institution Decision, at 7) and Patent Owner has introduced no new evidence or argument in its Response to rebut Petitioners’ initial proffer. Any attorney argument regarding what Patent Owner believes was or was not available on Amazon.com “at the time” is entirely unsupported and does not affect the record. (*See* Response, at 26-28.)

terms of use a personal computer, those skilled in the art will recognize that the present invention can be used in connection with other similar electronic equipment such as a hand held device...” (Gould, 4:46-50.) And as this Board has emphasized in a related proceeding, “[p]rior art references must be considered as a whole for all that they teach, regardless of the specific problems to which they are directed.” (IPR2017-00089, Paper 7, at 14.)

Moreover, as explained in the Petition, it would have been obvious to combine Rolf with Forta and Gould, and this combination would have resulted in a website that provides compressed digital audio or audio-visual data files to the cell phone in Rolf according to the menu, selection, and visual image techniques taught by Forta and Gould. (Petition, at 31-32 (citing Lavian, ¶ 100).) The Petition further explained in detail why “[a] person of ordinary skill in the art would have found it obvious to associate visual images with the plurality of compressed digital audio in Rolf using the interactive menu and display techniques described in Forta and Gould.” (Petition, at 32 (citing Lavian, ¶102).) For instance, the Petition explains several motivations to combine Rolf and Forta: “Rolf already discloses a server on the World Wide Web accessible to cell phones, but does not provide a detailed discussion of the website it provides. A person of ordinary skill in the art would have found this omission insignificant because techniques for providing websites to cell phones, such as the WAP techniques described in Forta, were already well-

known.” (Petition, at 21-22 (citing Rolf, 5:30-35, 5:46-53, 5:64-66, 9:10-15, 12:49-55 and Lavian, ¶¶84).) Forta also disclosed its general utility in providing websites on mobile devices and underscored that “WAP will succeed because it is supported by almost every major hardware, software, device, data carrier, and telecom vendor.” (Petition, at 22 (citing Forta, p. 1).) As further explained by Dr. Lavian, one of ordinary skill in the art would have understood the value in using WAP as disclosed by Forta when implementing a system such as that disclosed in Rolf. (Petition, at 22 (citing Lavian, ¶¶84, 85).) For the same reasons, one of ordinary skill would have been confident that such an attempt would be successful.

The Petition also provided a robust rationale for combining Rolf and Gould. “Gould explains that the user interface can be ‘used with music which can be downloaded directly from a network such as the Internet using MP3 or similar technology.’ Rolf is directed to a system for downloading music recordings (including MP3 files) over a network such as the Internet.” (Petition, at 32-33 (citing Gould, 6:1-3 and Rolf, 3:17-21).) Further motivation is also described. “Rolf and Gould both further disclose a menu or listing-based interface and the ability of the user to initiate a purchase of a recording from the interface.” (Petition, at 33 (citing Rolf, 3:64-4:6, 6:53-59, 9:10-15 and Gould, 3:23-30, 5:57-60, Fig. 4).)



(Petition, at 29-30 (Gould, Fig. 4).) Dr. Lavian’s declaration is also cited to support the Petition’s explanation that “[a] person of ordinary skill in the art would have been motivated to improve the interface of Rolf by incorporating the display of visual images (including the album cover graphics taught in Gould) in order to provide a richer, more informative visual experience.” (Petition, at 33 (citing Lavian ¶¶103, 104).)

Finally, the Patent Owner asserts that “[n]either Gould nor Rolf explains how to bridge the gap from a conventional computer system to a mobile device.” (Response, at 29.) But by focusing on Rolf and Gould, the Patent Owner ignores the fact that, as explained at length by Petitioners and Dr. Lavian, the entirety of Forta is dedicated to teaching how to develop and deliver websites to mobile devices.

(Petition, at 7-8, 19-21, 26-28 (discussing Forta); Lavian, ¶¶60-62, 79-82, 89-90, 94-96 (same).) For the foregoing reasons, Petitioners have sufficiently shown that the limitation “wherein the website includes a plurality of visual images associated with at least one compressed digital audio and/or visual file for selection of at least one compressed digital audio and/or visual file” would have been obvious.

### C. “Digital Signal Processor”

Claim 1 recites a “cell phone having a digital signal processor.” The Petition explained that “[i]t would have been obvious to a person of ordinary skill in the art to combine Rolf with Gatherer, predictably resulting in the cell phone **12** of Rolf having a digital signal processor.” (Petition, at 36.) In an attempt to find fault with this straightforward combination, the Patent Owner mischaracterizes Rolf as being directed to 3G wireless, and Gatherer as being directed to GSM/2G wireless. From these false premises, the Patent Owner argues that a person of ordinary skill “would not be motivated to apply GSM or 2G principles to 3G knowing that the technologies could evolve in very different ways.” (Response, at 31.) This argument should be rejected.

The Board correctly recognized that “although Rolf states that encoded music data is ‘preferably transmitted’ by a 3G network, Rolf is not limited to a 3G network.” (Institution Decision, at 14.) Indeed, Rolf makes clear that data can be transmitted over a “packet switched network,” which need not be 3G. (Rolf, 3:21-

25, 13:13-15.) Likewise, nothing in Gatherer limits the applicability of DSPs to 2G systems. Although Gatherer discusses the use of DSPs in 2G/GSM systems in existence at the time of its publication, Gatherer also provides extensive discussion on the use of DSPs in 3G systems. (E.g., Gatherer, p.85 (“With the advent of wireless data applications and the increased bandwidth of 3G, we expect this trend to accelerate.”), p.86 (“As the industry shifts from second-generation to 3G wireless we see the percentage of the physical layer MIPS that reside in the DSP going from essentially 100 percent in today’s technology for GSM to about 10 percent for wide band code-division multiple access (WCDMA).”), p.87 (“In this section we discuss how coprocessors can complement the function of programmable DSPs in the implementation of a flexible 3G platform.”), p.89, (“We estimate that to support 240 3G voice channels ... would require a 45K gate coprocessor and only 6 MHz of DSP processing on a C6x.”).) As such, far from dissuading a person of ordinary skill from using a DSP with the cell phone of Rolf, Gatherer’s extensive discussion on the use of DSPs for future 3G technology provides a further motivation to combine with a 3G-compatible system. Thus, in attempting to draw a false distinction

between the technologies in Rolf and Gatherer, the Patent Owner has highlighted yet another express motivation to combine.<sup>3</sup>

The Patent Owner further argues that “Petitioners have not provided sufficient evidence that one of skill would have a reasonable expectation of success that the proposed combination would work.” (Response, at 31.) This argument ignores the extensive explanation that the Petition provided on this subject. The Petition explained, for example, that DSPs were widely-available, off-the-shelf components that had already been incorporated into cellular phones. (Petition, at 37-38 (citing Lavian, ¶118.) Dr. Lavian explained in his unrebutted declaration that off-the-shelf DSPs had existed since at least the early 1980s, and that “[b]y the time of the alleged invention, DSPs were standard components in cell phones.” (Lavian, ¶¶30, 32.) Dr. Lavian also cited several contemporaneous publications (in addition to Gatherer)

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<sup>3</sup> Indeed, even the very sentence from Gatherer the Patent Owner cites to argue that “the application of GSM principles to 3G technology is ‘debatable’” (Response, at 31), Gatherer goes on to suggest the existence of a close kinship between GSM and 3G technology with respect to the use of DSPs in cellular telephony. (Gatherer, p.84, (“The assumption is, of course, that third-generation cellular (3G) products will evolve in a similar manner to GSM, which is in itself debatable, but we believe that history does have some good points to make with respect to 3G.”).)

demonstrating that DSPs had already been deployed for precisely the purposes contemplated by the claims. (*Id.*, ¶¶30, 31.) Dr. Lavian explained that the prior art references cited in the combination provided sufficient detail to allow the combination to be practiced without undue experimentation, and that one of ordinary skill certainly “could have done so, due to the maturity of those technologies” and the fact that the technologies were “well-known” and “subject of extensive public documentation.” (*Id.*, ¶¶193-195.) Indeed, Gatherer explains in detail how DSPs could be—and historically had been—successfully included in cell phones. (*E.g.*, Gatherer, p.84, Abstract (“Programmable DSPs are pervasive in the wireless handset market for digital cellular telephony.”).) In sum, the record contains overwhelming evidence that the combination of Rolf and Gatherer would have been successful. The Patent Owner tellingly submitted no evidence to the contrary.

#### **D. “Processing”**

Claim 1 further recites “cell phone having a digital signal processor and a receiver for receiving and **processing** compressed digital audio and/ or visual files transmitted using orthogonal frequency-division multiplex (OFDM) modulation.” The Patent Owner urges that the term “processing” be construed as “preparing a digital audio and/or visual file for storage in memory and playback.” (Response, at 12.) According to the Patent Owner, processing does not include playing the file, “because, according to the specification, it occurs after the file is processed.” (*Id.*, at

12-13.) The Patent Owner further asserts that “[b]y relying only on playback as processing, Petitioners fail to meet their burden” to show that the “processing” limitation is disclosed by the prior art. (*Id.*, at 33.)

The Patent Owner has grossly mischaracterized the Petitioners’ arguments. The Petitioners did **not** rely solely on playback to satisfy the “processing” limitation. For example, the Petition explained that the claimed “processing” could take place through the receipt and demodulation of OFDM signals by the OFDM receiver in Frodigh. (Petition, at 43-44.) Similarly, the Petition later explained that “one of ordinary skill in the art would have found it obvious that, when included in a cell phone that receives files transmitted by OFDM modulation, the digital signal processor could process received OFDM signals.” (*Id.*, at 45-46.) The Petition therefore identified processing of received files in OFDM form (which is separate from and occurs before playback) as satisfying the “processing” limitation. The Patent Owner’s assertion that the Petition relied “only on playback as processing” (Response, at 33), is therefore demonstrably false.

But even if the Petitioners had relied exclusively on Rolf’s disclosure that the cell phone can “play” the music files received (which it did not), this disclosure would satisfy the claimed “processing.” (Petition, at 39 (citing Rolf, 1:20, 5:19, 6:21).) Nothing in the claim language or specification supports limiting “processing” to “preparing a digital audio and/or visual file for storage in memory

and playback.” The Patent Owner’s sole support for this construction is a single passage from the specification stating that the sounds of an audio clip can be “processed by the DSP (digital signal processor-‘demodulated’) 300 to the same digital data form initially stored on the database **212** (e.g., in MPEG audio format). In this form, the sound clip data are written into the flash memory **302** of the device **204.**” (’717, 18:43-49; *see also* Response, at 12.) The Board correctly rejected the Patent Owner’s proposed construction in a related proceeding because “although the specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments.” (IPR2017-00687, Paper 9, at 7.) The Patent Owner’s attempt to import extraneous details from the specification into the straightforward term “processing” should be rejected.

Other portions of the patent specification make clear that the processing performed by the DSP (digital signal processor) **300** is not limited to “preparing a digital audio and/or visual file for storage in memory and playback.” For example, DSP **300** “performs” a number of “computational tasks,” including “reception of packed sound clips through the phone analogue or digital interface, unpacking and then playing back sound clips through a built-in speaker connected to the analogue

interface of the accessory unit **204**.”<sup>4</sup> (’717, 14:58-15:3.) The “perform[ance]” of these additional “computational tasks”—which include playing back the sound clips—provides further examples of “processing” the digital audio or audio-visual data files. (*See also, The American Heritage Dictionary* (4th ed. 2000), Ex. 1069, p.1398 (defining “process” as “[t]o perform operations on (data)”).) The Patent Owner’s proposed construction of “processing” would exclude many of the examples of processing in the specification and thus must be rejected.

Moreover, even were the Board inclined to adopt the Patent Owner’s limiting construction, it still provides no basis to distinguish Rolf. As explained by the panel in a related proceeding, “Rolf’s disclosure of ‘playing’ the music files necessarily requires that the cell phone is configured for receiving and processing files.” (IPR2017-00550, Paper 11, at 10.) The Patent Owner does not assert that the cell

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<sup>4</sup> Although the passage quoted in the text refers to features of accessory unit **204**, the specification makes clear that those features apply equally to cell phone embodiments that do not include an accessory unit. (’717, 14:26-32 (“Although the system **200** is described as incorporating an accessory unit, it should be understood that a chip performing the same functions of the board may instead be embedded in the phone itself, or a software system may be integrated with the existing hardware chip of a conventional cellular phone without the need for additional hardware.”).)

phone in Rolf is capable of “playing” a received music file without first having prepared that file for storage in memory and playback.

**E. “OFDM”**

The Patent Owner’s arguments with respect to the OFDM limitation do little more than rehash the same arguments rejected by the Board’s decision in IPR2014-01236, which the Federal Circuit affirmed in *Skky, Inc. v. MindGeek, S.A.R.L.*, 859 F.3d 1014 (Fed. Cir. 2017). As the Board recently observed in a related proceeding, “in *MindGeek*, the Board and the Federal Circuit similarly concluded that it would have been obvious to utilize OFDM for Rolf’s system of delivering music files to a cellular telephone.” (IPR2017-00550, Paper 11, at 10.)

Undeterred by its previous failures, the Patent Owner again argues that there would have been no motivation to apply an OFDM transmission scheme to Rolf. But this time, the Patent Owner offers no expert testimony or other evidence to support its arguments. The gist of the Patent Owner’s argument is:

Rolf and Frodigh are premised on two entirely different systems of network communication. The invention in Rolf relies on a 3G mobile network which uses Code Division Multiple Access (CDMA), not OFDM. Frodigh teaches an allocation method specifically directed to OFDM and is not applicable to 3G. Thus, a person of ordinary skill would not be motivated to combine the two references.

This is especially true because, in the late 1990s, persons of extraordinary skill in the art chose CDMA, and rejected OFDM, for use in the 3G standard.

(Response, at 35 (citation omitted); *see also id.*, at 37.)<sup>5</sup>

There are a number of flaws with the Patent Owner’s argument. As this Board has found (and discussed further above), “Rolf is not limited to a 3G network.” (Institution Decision, at 14.) Moreover, as the panel in a related proceeding has articulated in response to this same argument by the Patent Owner, “persons of

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<sup>5</sup> These arguments are substantially identical to the arguments previously presented and rejected by the Board and Federal Circuit in *MindGeek*. (See IPR2014-01236, Paper 21, Ex. 1070, at 44 (“Rolf explicitly teaches the use of 3G modulation protocols instead of OFDM. Indeed, the standards setting organization that created the 3G standard considered, and ultimately rejected, using OFDM in 3G. Because 3G does not use an OFDM modulation scheme, Rolf teaches away from the process in OFDM/FM.... Given that the modulation schemes of OFDM and 3G were not compatible and that OFDM was rejected during the creation of 3G, these references teach away from the proposed combination by Petitioners.”) (citations omitted); Appellant Skky, Inc.’s Corrected Opening Brief, Ex. 1071, at 67 (similar arguments); Appellant Skky, Inc.’s Reply Brief, Ex. 1072, at 33-34 (similar arguments).)

extraordinary skill in the art do not provide the proper frame of reference from which to view obviousness.” (IPR2017-00687, Paper 9, at 15 (quotation marks omitted).) And as this Board observed, “the evidence cited by [Patent Owner] regarding the SMG’s decision to use CDMA in the 3G standard indicates that there were advantages and drawbacks to both OFDM and CDMA.” (Institution Decision, at 15 (citing Ex. 2004, 1-4).)

In fact, the documents submitted by the Patent Owner relating to the SMG’s decision further supports Petitioners’ rationale that OFDM, as a “multiple access” scheme, would have been obvious to try. (Petition, at 42.) For example, the SMG noted that OFDM modulation is “robust[.]” and “performs well in all kind [sic] of environments, and could be quite efficient in presence of large delay spread.” (Ex. 2004, at p.1.) Although CDMA was eventually chosen, the SMG’s evaluation and comparison of different multiple access schemes, including OFDM, WB-TDMA, TD/CDMA, and W-CDMA (Ex. 2004, at pp.1-4), confirms that OFDM would have been obvious to try because it was one of a finite number of identified, predictable solutions, and that its application to a cellular system would have had a reasonable expectation of success. (Petition, at 42; Lavian, ¶124.)

The Patent Owner further argues that “[t]he Petition does not provide evidence that one of ordinary skill of the art would have a reasonable expectation of successfully streaming data files via OFDM.” (Response, at 37-38.) Not so. With

respect to the OFDM limitation, the Petition explained that “a person of ordinary skill in the art would have had every expectation of success in combining Frodigh with Rolf in the manner described above,” referring to the extensive analysis provided earlier in the Petition. (Petition, at 42; Lavian, ¶124.) Indeed, the Petition explained that the use of OFDM as a transmission scheme dates back to the 1960s, and by 2001, was well-known. (Petition, at 12 (citing Lavian, ¶38).) The accompanying declaration of Dr. Lavian identified nearly two dozen references dated prior to June 2001 describing the use of OFDM in cellular or wireless communication systems. (Lavian, ¶¶39-42; *see also* Petition, at 12-13.) One of those references, entitled “Multi-Carrier Digital Communications: Theory and Applications of OFDM,” stated in no ambiguous terms that “OFDM has been particularly successful in numerous wireless applications.” (Ex. 1030, p.14; *see also* Petition, at 13 (quoting Ex. 1030); Lavian, ¶39 (same).) Dr. Lavian also explained that Rolf and Frodigh provide sufficient detail to allow the combination to be practiced without undue experimentation, and that one of ordinary skill in the art certainly “could have done so, due to the maturity of those technologies” and the fact that the technologies were “well-known” and “subject of extensive public documentation.” (Lavian, ¶¶193-195.)

The record is thus replete with evidence that a person of ordinary skill in the art would have had every expectation that Rolf and Frodigh could have been

successfully combined. Rolf itself makes clear that “streaming” is no more than a way of transmitting digital data. (Rolf, 3:53-56, 6:26-30.) The Patent Owner does not argue that the “streaming” of data files would have rendered transmission by OFDM unpredictable, and has submitted no evidence showing that using OFDM to stream data files would have been unsuccessful.

The Patent Owner’s remaining arguments attempt to impermissibly attack Frodigh individually, ignoring its combination with other references. *See In re Merck*, 800 F.2d at 1097 (“Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.”); *Soft Gel Techs., Inc.*, 864 F.3d at 1341 (“Soft Gel’s focused attack on the Khan ’786 patent does not undermine the Board’s decision, which is based on a combination of references.”). For example, the Patent Owner characterizes “[t]he goal in Frodigh” as “to provide fewer dropped calls and calls with better quality,” and thus argues that “Frodigh is not relevant to the claimed method.” (Response, at 34; *see also id.*, at 37-38.) But, borrowing the words of this Board, “[e]ven if correct, the fact that Frodigh is directed to solving a different problem does not discount [Petitioner]’s asserted motivation for making the combination or prevent its usage in an obviousness combination with Rolf. Prior art references must be considered as a whole for all that they teach, regardless of the specific problems to which they are directed.” (Institution Decision, at 16-17.)

Frodigh, as explained in the Petition, describes in detail the use of OFDM modulation for cellular systems and its advantages, and further recognized that “data,” in addition to “voice,” can be received by a mobile device over the cellular connection. (Petition, at 39-41 (citing Frodigh, 1:59-2:18, 7:51-63, Fig. 2, 8:1-9, 8:10-14, 8:33-63, 1:62-63, 2:38-60), 42 (citing Frodigh, 7:58-59), 38-39; *see also* Institution Decision, at 16-17.) Petitioners have thus sufficiently demonstrated that the OFDM limitations would have been obvious.

#### IV. CONCLUSION

The Patent Owner does not raise any additional arguments with respect to other claims beyond what has been addressed above. The Board should therefore reject Patent Owner’s arguments and enter a final decision finding claims 1-6 invalid under § 103.

Dated: October 12, 2017

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**CERTIFICATE OF COMPLIANCE WITH WORD COUNT**

Pursuant to 37 C.F.R. § 42.24(d), I certify that this reply complies with the type-volume limits of 37 C.F.R. § 42.24(c)(1) because it contains 5,194 words, according to the word-processing system used to prepare this reply, excluding the parts of this reply that are exempted by 37 C.F.R. § 42.24(a).

DATED: October 12, 2017

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**CERTIFICATE OF SERVICE**

I hereby certify, pursuant to 37 C.F.R. Section 42.6, that a complete copy of the attached **PETITIONERS' REPLY** is being served via electronic mail on the 12th day of October, 2017, upon counsel of record for the Patent Owner as follows:

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