IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ARENDI S.A.R.L., Plaintiff, v. GOOGLE LLC, Defendant.	C.A. No. 13-919-LPS **Original Version Filed: March 5, 2021** **Public Version: March 11, 2021**
ARENDI S.A.R.L, Plaintiff, v. MOTOROLA MOBILITY LLC f/k/a MOTOROLA MOBILITY, INC.. Defendant.	C.A. No. 12-1601-LPS **Original Version Filed: March 5, 2021** **Public Version: March 11, 2021**

DECLARATION OF EUGENE LHYMN

I, Eugene Lhymn, declare as follows:

1. I am over 21 years of age, and have personal knowledge of, and am competent to testify, regarding the following.

2. I am currently CEO and Founder of Sherman Patent Search Group (SPSG), a patent search firm headquartered in Pasadena, CA, with offices in Washington, D.C. SPSG is a medium-sized search firm that has technical experience that spans across all technology areas.

3. I graduated from Penn State University with a bachelor's degree in mechanical engineering in 2004.

4. Between 2000 and 2004, I held various engineering positions at Bayer Corporation, Applied Research Lab (PSU), and Air Products and Chemicals.

5. Between 2004 and 2005, I was a patent examiner in the Art Unit 3727 (mechanical) at the United States Patent and Trademark Office.

6. Between 2005 and 2012, I was a senior patent analyst at Cardinal IP, where I performed patent searching

7. I have extensive patent searching experience. Throughout my career as a private and public patent searcher, I have performed approximately 2,500 searches. In addition to these searches, I have performed a managing role for another approximately 4,500 patent searches. I have personally performed more than 250 searches in the software field.

8. I have been asked by counsel for Arendi S.à.r.l. whether certain references could have been found by a skilled searcher's diligent search. I have been told that one way of showing a skilled searcher's diligent search is (1) to identify the relevant search string and search source that would identify the allegedly unavailable prior art and (2) present evidence, likely expert testimony, why such a criterion would be part of a skilled searcher's diligent search.

9. Specifically, I have been asked to provide an opinion as to whether the prior art references mentioned below would have been located by a skilled searcher's diligent search, used by the defendant on December 2, 2014 or at any time during the four months preceding that date (the

"timeframe") by someone searching for patents in the technical field of the '843 Patent. I understand that Motorola Mobility LLC and Google LLC (collectively, "Defendants") filed for *inter partes* review ("the IPR") in connection with the U.S. Patent No. 7,917,843 (the '843 patent) on December 2, 2014. In particular, I focused on the subject matter of Claims 1, 8, 23, 30 of the '843 Patent. Claim 8 depends from Claims 1, so the subject matter of Claim 1 was necessarily a part of my search regarding Claim 8. Claim 30 depends from Claim 23, so the subject matter of Claim 23 was necessarily a part of my search regarding Claim 30.

10. A skilled searcher conducting a diligent search with regard to Claims 1, 8, 23, 30 of the '843 patent in the timeframe would have conducted a search for prior art references to the '843 patent in a variety of ways, including using search terms, patent classification codes, citations, cross-citations among prior art references, assignee-based searching, inventor-based searching, jurisdiction-based searching, and/or combinations thereof. For Claims 1, 8, 23, 30 of the '843 Patent, the relevant classifications include at least:

- IPC class G06F (ELECTRIC DIGITAL DATA PROCESSING), subclass 17* (all subclasses under 17/00 - Digital computing or data processing equipment or methods, specially adapted for specific functions).
- CPC class Y10S (TECHNICAL SUBJECTS COVERED BY FORMER USPC CROSS-REFERENCE ART COLLECTIONS [XRACs] AND DIGESTS), subclass 715* (all subclasses under 715/00 - Data processing: presentation processing of document, operator interface processing, and screen saver display processing)
- CPC class G06F (ELECTRIC DIGITAL DATA PROCESSING)

11. A skilled searcher would have conducted a prior art search for the '843 patent using a variety of prior art search databases, including both patent and non-patent literature databases. A

skilled searcher would also have conducted a prior art search for the ’843 patent using prior art search databases indexing English language references as well as foreign language references. I was personally familiar with several prior art search tools available throughout the timeframe, including Patbase, which is a prior art search tool that provides prior art searching functionality across patent prior art databases in both English and foreign languages. Patbase includes (and did include during the timeframe) search features to search across all patent fields, including titles, abstracts, summaries, claims, detailed description, classification codes, citations, and full text. Patbase also includes English titles and abstracts of foreign language references. A skilled searcher during the timeframe would have understood this and, using Patbase as one of their search tools, would have used English keywords to search for prior art references.

12. A skilled searcher would also have searched all prior art references cited on the face of the ’843 patent. A skilled searcher during the timeframe would have examined every prior art reference listed on the face of the ’843 for potential relevance. Non-patent literature (NPL) references cited on the face of the ‘843 patent would have been located by utilizing PAIR, ordering the File Wrapper from the USPTO, or by visiting the USPTO library and obtaining the physical File Wrapper, which includes copies of cited NPL references.

13. A skilled searcher would have frequently searched prior art references cited on the face of prior art references reviewed during the search. This process is known as citation searching. For example, as a search string hits list is reviewed, it is common for a skilled searcher to also review prior art references listed on the face of the reviewed prior art references in the hit list. A skilled searcher during the timeframe would have performed such citation searching. Non-patent literature (NPL) references cited on the face of prior art references would have been located by

utilizing PAIR, ordering the File Wrapper from the USPTO, or by visiting the USPTO library and obtaining the physical File Wrapper, which includes copies of cited NPL references.

14. A skilled searcher would have used multiple different techniques for identifying prior art references, including generating search strings using terms from the claim and specification language of the patent at issue. A skilled searcher during the timeframe would have generated and used multiple different search strings, and variations thereof, to identify relevant references, and would have run each of these search strings in prior art searching tools, such as Patbase. These search strings would have been generated in a variety of ways, including using terms from the '843 patent claims and synonyms of those terms, different logical search operators (e.g., AND, OR), and proximity operators to require combinations of terms together. Based on my experience and review of Claims 1, 8, 23, and 30 of the '843 patent, it is my opinion that a skilled searcher during the timeframe would have generated at least the following search strings and used these search strings to located prior art references related to the subject matter of Claims 1, 8, 23, and 30:

- SFT[1]=((word* w2 process*) and ((search* w8 database*) w25 address*)) and STAC[2]=((search* w8 database*) and updat*) This string incorporates terms that appear in the specification of the '843 patent.
- SFT=((word w5 process*) and database and (menu)) This string incorporates terms that appear in the specification of the '843 patent.
- SFT=(((search* w40 database) w40 address*) w40 (word w5 process*)) This string incorporates terms that appear in the specification of the '843 patent.

[1] SFT is a Boolean command that searches for the keywords in the full-text in the same document
[2] STAC is a Boolean command that searches for the keywords in the title, abstract, or claims in the same document

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