

UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Hays *et al.*
U.S. Patent No.: 5,659,891
Issue Date: August 19, 1997
Appl. Serial No.: 08/480,718
Filing Date: June 7, 1995
Title: Multicarrier techniques in bandlimited channels
IPR: IPR2017-00640

DECLARATION OF DR. JAY P. KESAN

1. My name is Dr. Jay P. Kesan. I understand that I am submitting a declaration for Mobile Telecommunications Technologies LLC (MTel”), offering technical opinions in connection with the above-referenced *Inter Partes* Review (IPR) proceeding pending in the United States Patent and Trademark Office for U.S. Patent No. 5,659,891 (the “’891 Patent”), and prior art references relating to its subject matter. My current *curriculum vitae* is attached as Appendix A.
2. I also provide selected background information here relevant to myself, my experience, and this proceeding.
3. I am a Professor at the University of Illinois at Urbana-Champaign, where I am appointed in the College of Law, the Department of Electrical and Computer Engineering, the Coordinated Science Laboratory, and the Information Trust Institute. I have a Ph.D. in Electrical and Computer Engineering from the University of Texas at Austin and a J.D., *summa*

cum laude from Georgetown University. I have also worked as a research scientist at the IBM T.J. Watson Research Center, and I am a named inventor on several United States patents. I have also served as a technical expert and legal expert in patent infringement lawsuits. I have been appointed to serve as a Special Master in patent disputes.

Additionally, I have been appointed as a Thomas Edison Scholar at the United States Patent and Trademark Office (“USPTO”).

4. My opinions in this report are based on my experience and expertise in the field relevant to the Asserted Patents. To prepare this Report, I have reviewed and considered materials shown in Appendix B and referred to herein, principally including the ‘891 Patent, the *MTel Petition*, ‘960 *Publication*, and *Petrovic* references, and the extrinsic evidence cited.
5. I anticipate using some of the above-referenced documents and information, or other information and material that may be produced during the course of this proceeding (such as by deposition testimony), as well as representative charts, graphs, schematics and diagrams, animations, and models that will be based on those documents, information, and material, to support and to explain my testimony before the Board regarding the validity of the ‘891 Patent.

6. This report is based on information currently available to me. To the extent that additional information becomes available (whether from documents that may be produced, from testimony that may be given or in depositions yet to be taken, or from any other source), I reserve the right to continue the investigation and study. I may thus expand or modify my opinions as that investigation and study continues. I may also supplement my opinions in response to such additional information that becomes available to me, any matters raised by and/or opinions provided by MTel's experts, or in light of any relevant orders from the Board.
7. Throughout this report, I cite to certain documents or testimony that support my opinions. These citations are not intended to be and are not exhaustive examples. Citation to documents or testimony is not intended to signify and does not signify that my expert opinions are limited by or based solely on the cited sources.
8. I am an attorney, registered to practice before the United States Patent and Trademark Office, and a legal expert in United States Patent Law.
9. A person of ordinary skill in the art at the time of the invention (PHOSITA) of the '891 Patent would possess a bachelor's degree in electrical or its equivalent and about four years working in the field of wireless telecommunications networks, or the equivalent.

10. Independent Claims 1, 3, and 5 of the '891 Patent are challenged in the Petition in the above referenced IPR.
11. Claim 1 recites transmitting a plurality of paging carriers “from the same location.” Claim 3 recites transmitting at least two paging carriers “from the same location.” As a result, both Claims 1 and 3 recite transmitting multiple carriers from the same location.
12. FIGs. 1 and 2 of the '891 Patent, reproduced below, show that all of the paging carriers emanate from the same location or antenna (antennas 15 and 25, respectively).

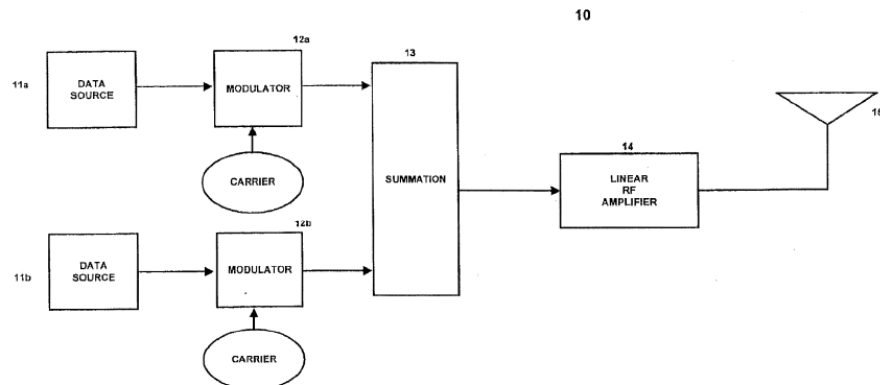


FIGURE 1

Ex. 1001 at FIG. 1.

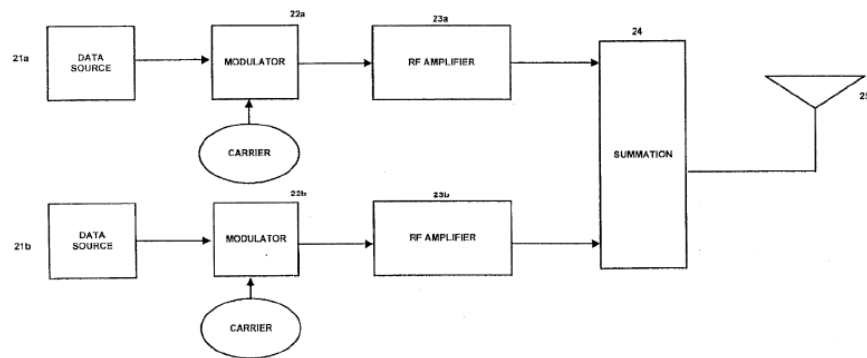


FIGURE 2

Id. at FIG. 2.

13. A PHOSITA, therefore, would understand that, according to the '891 Patent, transmitting multiple carriers from the same location means that “the multiple paging carriers emanate from the same location or antenna.” This limitation can be referred to as the Same Location Limitation.
14. Claim 5 recites “a plurality of mobile receiving units independently receiving one of said plurality of carriers.”
15. The Specification of the '891 Patent also describes “independent receiving units capable of receiving one of said plurality of carriers.” Ex. 1001 at 2:53-54.

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