

UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Cameron *et al.*
U.S. Patent No.: 5,915,210
Issue Date: June 22, 1999
Appl. Serial No.: 08/899,476
Filing Date: July 24, 1997
Title: Method and system for providing multicarrier simulcast
transmission
IPR: IPR2017-00637

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. 5,915,210 (the “’210 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 ‘210 Patent, the *Rault, Mojoli, Nakamura*, and *Saalfrank* 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 ’210 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 (POSA) of the '210 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. I previously reviewed the '210 Patent and *Saalfrank* in IPR2016-00765 (“the ARRIS IPR”). Ex. 2001 is a copy of my declaration (“the ARRIS Declaration”) in the ARRIS IPR.
11. Independent claims 1, 10, and 19 of the '210 Patent are challenged in the Petition in the above referenced IPR.
12. In the ARRIS IPR, I found that “the limitation of independent claims 1, 10, and 19 of the '210 Patent that each of the first plurality of carrier signals represent a portion of the information signal substantially not represented by others of the first plurality of carrier signals can be referred to as the non-redundancy limitation.” Ex. 2001 at 23. I understand that the Board referred to this limitation as the “No Redundancy Limitation” in the decision not to institute of the ARRIS IPR. As a result, I will hereinafter refer to this limitation as the “No Redundancy Limitation.”
13. I understand that in the Petition of this IPR is it asserted that *Rault* teaches or suggests the No Redundancy Limitation of claims 1, 10, and 19 of the '210 Patent.
14. *Rault*, in its abstract, describes that it is directed to a coded orthogonal frequency division multiplexing (COFDM) system designed within the framework of the DAB (Digital Audio Broadcasting) EUREKA 147

- project. Ex. 1004 at 7. In the first section of the paper, *Rault* recalls the characteristics of the urban radio channel and introduces the problems which have to be solved in order to ensure transmission of high bit rates. *Id.* In the second section of the paper, *Rault* deals with the general principles of the COFDM technique that is proposed in order to cope with the multipath propagation. *Id.*
15. As the Board summarized in the ARRIS IPR with regard to *Saalfrank*, I provided several exhibits discussing DAB and COFDM to support my contention that the type of DAB and COFDM described in *Saalfrank* necessarily includes substantial redundancy and would, therefore, not satisfy the No Redundancy Limitation. Ex. 2008 at 10.
16. In this IPR, I submit that the type of DAB and COFDM described in *Rault* is the same type of DAB and COFDM *Saalfrank*. Therefore, *Rault* necessarily includes substantial redundancy and would also not satisfy the No Redundancy Limitation.
17. I understand that in the Petition of this IPR is it asserted that *Nakamura* teaches or suggests the No Redundancy Limitation of claims 1, 10, and 19 of the '210 Patent.
18. *Nakamura* is directed to a method to achieve good performance of a 256 QAM modem with 400 Mbit/s transmission capacity. Ex. 1019 at

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