

DECLARATION OF GERARD P. GRENIER

I, Gerard P. Grenier, am over twenty-one (21) years of age. I have never been convicted of a felony, and I am fully competent to make this declaration. I declare the following to be true to the best of my knowledge, information and belief:

1. I am Senior Director of Content Management of The Institute of Electrical and Electronics Engineers, Incorporated (“IEEE”).
2. IEEE is a neutral third party in this dispute.
3. Neither I nor IEEE itself is being compensated for this declaration.
4. Among my responsibilities as Senior Director of Content Management, I act as a custodian of certain records for IEEE.
5. I make this declaration based on my personal knowledge and information contained in the business records of IEEE.
6. As part of its ordinary course of business, IEEE publishes and makes available technical articles and standards. These publications are made available for public download through the IEEE digital library, IEEE Xplore.
7. It is the regular practice of IEEE to publish articles and other writings including article abstracts and make them available to the public through IEEE Xplore. IEEE maintains copies of publications in the ordinary course of its regularly conducted activities.
8. The article below has been attached as Exhibit A to this declaration:

A.	Y. Akaiwa et al., “An integrated voice and data radio access system”, 1992 Proceedings Vehicular Technology Society 42nd VTS Conference - Frontiers of Technology, May 10-13, 1992.
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9. I obtained a copy of Exhibit A through IEEE Xplore, where it is maintained in the ordinary course of IEEE’s business. Exhibit A is a true and correct copy of the Exhibit, as it existed on or about June 24, 2019.
10. The article and abstract from IEEE Xplore shows the date of publication. IEEE Xplore populates this information using the metadata associated with the publication.

11. Y. Akaiwa et. al, "An integrated voice and data radio access system" was published in the 1992 Proceedings of the Vehicular Technology Society 42nd VTS Conference - Frontiers of Technology. The 42nd VTS Conference - Frontiers of Technology was held from May 10-13, 1992. Copies of the conference proceedings were made available no later than the last day of the conference. The article is currently available for public download from the IEEE digital library, IEEE Xplore.
12. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001.

I declare under penalty of perjury that the foregoing statements are true and correct.

Executed on:

25 June 2019

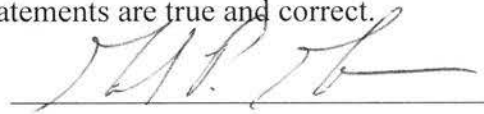
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3 Author(s) Y. Akaiwa ; T. Nomura ; S. Minami [View All Authors](#)

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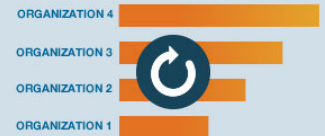
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Abstract: A method for a digital mobile radio communication system to incorporate data transmission into full-duplex digital voice transmission channels is presented. In this method a voice terminal sends a short packet to a base station prior to sending a voice signal. When the base station receives the short packet or detects a collision between the short packet and data packet, it inhibits data transmission. Finding a pause period of voice signal transmission, the base station broadcasts a message to enable the data transmission. The results of computer simulation with voice data from real telephone conversations show that through the present system the almost maximum performance of the slotted ALOHA system is reached. Applying the proposed method to a 12-channel, 32-kb/s voice coding TDMA system, one can get a data transmission channel with average capacity of 270 kb/s on the voice communication system.<>

Published in: [1992 Proceedings] Vehicular Technology Society 42nd VTS Conference - Frontiers of Technology

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