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Mr. H. Franklin Wright
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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In re: Ericsson Business Communications, Inc.
Experimental Authorization KF2XEF
File No. 3054-EX-MR-98
Experimental Report No. 7

Dear Mr. Wright:

Pursuant to the conditions set forth in the above-referenced authorization, this letter will serve as the seventh Experimental Report of Ericsson Business Communications, Inc. ("Ericsson") for Experimental License KF2XEF. In this regard this report will be a summary of the results of operation under the experimental authorization to date.

The CT3 access technology using the Ericsson DCT900 equipment has been undergoing extensive experiments and trials since the first quarter of 1991.

The system uses Time Division Multiple Access (TDMA) with Time Division Duplex (TDD). It uses multiple carriers and decentralized continuous dynamic channel allocation.

The multicarrier system consists of four 1 MHz carriers. The frequencies used under the experimental authorization are 862-866 MHz and 944-948 MHz.

Initially Ericsson used a single carrier (1 MHz) system located in areas in which SMR equipment was in use. The DCT900 portable telephone is an intelligent device which continually updates itself on the activity of the spectrum it is using as well as on the activity of its own and other systems around it.

When the portable detects, for example, an SMR signal on the

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carrier it moves to another time slot in an attempt to avoid the interfering signal. Depending upon the time length and strength of the interfering signal in the initial experiments the portable equipment either was successful in maintaining the connection with a weak interference signal or it terminated the call if a clear time slot was not found.

The purpose of this test was to check the continuous dynamic channel allocation aspect of the CT3 technology as well as the C/I ratio parameters. As only a single carrier was used the channel selection activity could easily be monitored. In one test there were over 800 changes of state in a one and a half hour period without the call being dropped. There was however a degradation in the voice quality due to muting during strong interference signal reception.

Ericsson's next testing stage was to test a CT3 multicarrier system, i.e., a CT3 system using four 1 MHz carriers. These systems were tested in areas similar to those in which the single carrier system was tested.

In the multicarrier system tests the portables immediately moved to clear time slots and clear carriers when interference was detected. The continuous dynamic channel allocation aspect of CT3 technology was able to find a suitable time slot and carrier under a variety of diverse conditions such that the call was maintained with a high quality voice connection. In fact, in a test of the multicarrier system in the same geographic area referred to above in which some 800 changes of state were recorded on the single carrier system, very different results were obtained. In the multicarrier test the changes of state were reduced by a factor of 10. The signal strength of the CT3 equipment was 20 microvolts/meter and the interference to the SMR equipment was not measurable.

The CT3 system was first tested without antenna diversity and then it was tested with antenna diversity. In both sets of tests the coverage patterns were recorded.

In the non-diversity tests additional base stations were needed and installed to provide adequate coverage. The various delay properties were observed and the reduced cell coverage areas were recorded. When antenna diversity was introduced in the base stations Ericsson found that the cell sizes had increased and the additional base stations which had been installed to ensure adequate coverage for the non-diversity tests could be deactivated. The number of channel and time slot changes were also found to have been reduced.