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December 18, 1998

PAL_STA

Federal Communications Commission
Transportation Infrastructure Radio Service
P.O. Box 358320
Pittsburgh, PA 15251-5320

FAXed to 717-338-2696 PMRS
Attn: PMRS 717-338-2665

Dear Analyst:

In accordance with Section 90.145 of the Commission's Rules, we request special temporary authority ("STA") to operate a non-multilateration Location and Monitoring Service system for the purpose noted below on the Pre-Authorized Automated Lane (PAL).

A FCC Remittance Advice Form 159 with the fee for PALM \$45 is being sent by courier to Mellon Bank.

In support of this request, the following is shown:

1. Applicant's Name and Address:

TransCore, An SAIC Co.
10260 Campus Pt. Dr. MS K2
San Diego, CA 92121-1522

Attn: Richard W. Doering
ph 619-552-4763
fax 619-552-4736

Approved STA should be FAXed back to the applicant.

2. Need for Special Action:

The STA is requested in order for us to startup new Transportation Infrastructure Radio Service equipment being operated as a non-multilateration Location and Monitoring Service (LMS) system on a highway at a border inspection point. The first location must be operational for a test January 5, 1999.

3. Type of Operation:

The type of operation is field testing and initial system operation at selected sites.

The equipment uses two types of transmitters. First low power, short 20 microsecond interrogation pulse or data burst will be transmitted periodically every 9.2 milliseconds by each antenna into a lane where vehicles travel. Secondly, a backscatter burst for 6 milliseconds will illuminate a second type of vehicle-mounted transponder, every 9.2 milliseconds, synchronized out of phase with the first type of pulses. Accordingly we request authority for continuous transmission.

4. Purpose of Operation:

The LMS system will be used in a special lane of the highway to automatically identify vehicles, perform a permit status lookup, and expedite their passage, providing convenience plus time and pollution savings. This identification is performed at three points, each separated by 1000 from each other along the highway, with both types of transmitters at each point. The system consists of a reader that transmits a wake-up trigger in each lane to a Part 15 type accepted vehicular mounted transponder, that responds with a unique identification number and other trip related data using either low power transmission powered from an internal battery, or a backscatter reflection of data.

5. Date of Operation:

The initial field test is scheduled to start January 5, 1999. All of this system equipment and installation is funded.

6. Class of Station The station class is LR Radiolocation, Land

7. Location of Proposed Operation:

Highway	Latitude N deg-min-sec	Longitude W deg-min-sec	Elev. feet	# Transmitters
I-5 at Border Inspection Point, San Onofre	33-21-06 N	117-31-01 W	110	6 (2 each at 3 spots separated by approx 1000 feet on road)

8. Equipment to be Used, number of fixed TX and mobiles

The first type of equipment to be used consists of the LMS tag readers developed by Mark IV IVHS to meet requirements of the both E-ZPass NY/NJ/PA Interagency Group, and in operation for the last three years in New York City, and in Virginia. Each reader unit contains up to 8 RF modules (transmitters) that are operated in sequential fashion to poll transponders in the lanes. A particular lane's antenna is connected by low loss coax to the RF module for that lane.

The second type of equipment to be used is manufactured by Amtech (now part of Intermec).

The maximum number of transmitters for each location is shown on the attached table.

9. Frequency: The first type of equipment operates on a frequency of 915.075 MHz. The second type of equipment transmits at 903 MHz for the uplink, and 912.75 MHz for the downlink.

10. Output Power:

1st type Transmitter power output = 4 watts peak (into in-pavement antenna)

2nd type Transmitter power output = 2 watts maximum (into overhead antenna)

11. Type of Emission

The first transmitter emission is 6M00PON and 6M00P1D. It is a trigger pulse of 20 microseconds repeated every 9.2 milliseconds. Data transmission is at 500 Kbps for 700 microseconds when the transponder is being programmed by the reader. RF module frequency emissions masking and frequency stability meet the new LMS requirements, with RF modules being type accepted FCC ID JQU800495. The transponders are type-accepted under Part 15: FCC ID JQU800720.

The second transmitter emission is 800K1D and 830KL1D at 903 MHz, and 6M00L1D at 912 MHz. FSK signaling at 1,200 and 300 KHz in bursts of 2.4 and 3.5 milliseconds - for 6 milliseconds maximum. It is an Amtech IT 2611 RF module.

12. Overall Height of Antenna above Ground

The 1st transmitter uses an antenna mounted in the pavement that has linear loading across the lane of traffic, and some absorption of energy at the end of the antenna for a loss of over 18 db. This results in an effective radiated power of less than 100 milliwatts, mainly directed upward from the pavement.

The 2nd transmitter lane mode antenna will be less than 18 feet above the ground, and mounted to the bottom side of a plaza canopy or traffic signal arm/sign bridge, looking almost directly down. The maximum peak effective radiated power will be 8 watts or less. With the

Transmitter power output = 2 watts peak

Antenna gain = 13 db

antenna beamwidth 3 db down just 32 degrees E-Plane, 35 degrees H planes

antenna front to side 15 db

Feedline loss 3 to 8 db

the typical site-specific adjusted power (using additional attenuators) is 6 watts peak ERP. Since the antenna has such a focused beam, and front to side is 15 db, the radiated power directed at the horizon is considerably less than 1 watt ERP.

13. Statement of Eligibility

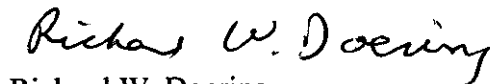
This STA is for a system operation under subpart M The Transportation Infrastructure Radio Service, being renamed to the Intelligent Transportation System Radio Service. TransCore is a subsidiary of Science Applications International Corporation, and designs and installs state-of-the-art Transportation Systems.

14. Anti-Drug Abuse Certification

The applicant hereby certifies that neither it, its officers and directors, nor any party with a five percent or greater interest in this request for special temporary authority has been convicted of offenses consisting of the distribution or possession of controlled substances, as such terms are defined in Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.

If there are any questions about this application, please contact the undersigned:
Thank you for your prompt attention to this request. Please FAX a response back to the undersigned.

Respectfully:



Richard W. Doering

Senior Staff Engineer

TransCore, an SAIC Company (The Project's System Integrator)

10260 Campus Point Drive, MS K2

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