

DELAWARE RIVER PORT AUTHORITY
of Pennsylvania & New Jersey

Robert A. Box
Director of Engineering/Chief Engineer
Engineering Division

0077-EX-ST-1999

February 25, 1999

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 Delaware River Port Authority. This STA request is to extend Call Sign WNET537, expiring 3-1-99 while permanent license processing is underway.

Since the Delaware River Port Authority is a bi-state agency of the Commonwealth of Pennsylvania and the State of New Jersey, exemption from the fees is requested.

In support of this request, the following is shown:

1. Applicant's Name and Address:

Delaware River Port Authority
One Port Center
2 Riverside Drive
Camden, NJ 08101-1949

Attn: Bob Box, Chief Engineer
Ph. 609/968-2062
Fax 609/968-2113

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 toll bridge system. A permanent license

DRPA is an equal opportunity employer

Mailing Address: PO Box 1949 Camden New Jersey 08101-1949 Telephone: 609.968.2062 Fax: 609.968.2113
215.218.3750

application is being submitted in accordance with the new rules published March 23, 1995, as updated.

3. **Type of Operation:**

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

The equipment uses a low power, short 20 microsecond interrogation pulse or data burst that will be transmitted periodically every 6 to 11 milliseconds by each antenna into a lane where vehicles travel. Accordingly we request authority for continuous transmission.

4. **Purpose of Operation:**

The LMS system will be used at the toll collection plazas, to automatically identify vehicles, collect the toll, and expedite their passage, providing convenience plus time and pollution savings. 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 a low power transmission powered from an internal battery.

5. **Date of Operation:**

The initial field test has begun. Installation of planned lane transmitters will proceed over the first half of 1999. All of this system equipment and installation is funded. We are filing a permanent license application.

6. **Class of Station:**

The station class is LR. Radio location, Land

7. **Location of Proposed Operation:**

The sites planned for operation under this STA are shown in the attached table. These sites are all toll plaza sites at the lat/long locations described.

8. **Equipment to be Used, Number of Fixed TX and Mobiles**

The equipment to be used consists of the LMS tag readers developed by Mark IV IVHS to meet requirements of both the E-Z Pass 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 maximum number of transmitters for each location is shown on the attached table.

9. Frequency: This equipment operates on a frequency of 915.075 MHz.

10. Output Power:

Transmitter power output - 4 watts peak

11. Type of Emission

The emission is 6M00PON and 6M00P1D. It is a trigger pulse of 20 microseconds repeated every 6 to 11 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.

12. Overall Height of Antenna above Ground

The lane mode antenna will be less than 18 feet above the ground, and mounted to the bottom side of a toll plaza canopy or traffic signal arm/sign bridge, looking almost directly down. The maximum peak effective radiated power will be 16 watts or less. With the

Transmitter power output = 4 watts peak

Antenna gain = 13 dB

Antenna beamwidth to 3 dB down just 28 degrees (H and V planes)

Antenna front to side 19 dB

Feedline loss 3 to 8 dB

the typical site-specific adjusted power (using additional attenuators) is 6 watts ERP. Since the antenna has such a focused beam, and front to side is 19 dB, the radiated power directed at the horizon is considerably less than 1 watt ERP.

13. Statement of Eligibility

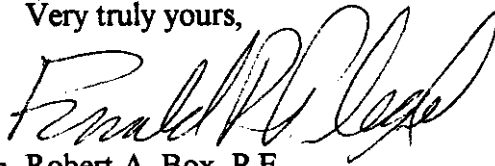
This STA is for a system operation under subpart M The Transportation Infrastructure Radio Service, being renamed to the Intelligent Transportation System Radio Service. The Delaware River Port Authority is a bi-state agency of the Commonwealth of Pennsylvania and the State of New Jersey.

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.

Very truly yours,



For Robert A. Box, P.E.
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Delaware River Port Authority
One Port Center
2 Riverside Drive
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Camden, NJ 08101-1949

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List of Locations

Bridge	Latitude N deg-min-sec	Longitude W deg-min-sec	Elev. feet	# Transmitters
Ben Franklin	39-56-56 N	75-07-06 W	41	15 (incl. service center)
Betsy Ross	39-58-39 N	75-02-55 W	44	3
Commodore Barry	39-48-36 N	75-21-08 W	42	2
Walt Whitman	39-54-34 N	75-09-15 W	45	8