



0239-EX-5T-1999

The Illinois State Toll Highway Authority
One Authority Drive
Downers Grove, Illinois 60515-1703
630/241-6800
Fax: 630/241-6100
T.T.Y. 630/241-6898

June 30, 1999

IL_STA

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

FAXed to 717-338-2696 PMRS
Attn: Wanda Grothen 717-338-2619

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 Illinois State Toll Highway Authority.

Since the Illinois State Toll Highway Authority is an independent public agency in the State of Illinois, exemption from the fees is requested.

In support of this request, the following is shown:

1. Applicant's Name and Address:

Illinois State Toll Highway Authority
2700 Ogden Avenue
Downers Grove, IL 60515

Attn: Neal D MacDonald, Manager Toll Services
Ph. 630-241-6800 x 2100
FAX 630-241-6100

2. Need for Special Action:

The STA is requested in order for us to startup new Transportation Infrastructure Radio Service equipment at new sites for traffic management in the Location Monitoring Service (LMS) system on a toll highway. A permanent license application is being

submitted in accordance with the new rules published March 23, 1995, as ammended by various reports and orders, the most significant released September 16 (97305) allowing blanket licensing of sites.

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 8 to 19 milliseconds by each antenna into a lane where vehicles travel. Accordingly we request authority for continuos transmission.

4. Purpose of Operation:

The LMS system will be used for toll collection and traffic management at ramps and plazas, to automatically identify vehicles, to both collect the toll and to log travel times annomously, to expedite their passage, and provide traffic information, 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 of the traffic management functionality is scheduled to start July 19, 1999. Installation of most planned lane transmitters will proceed over the following 6 months in the last half of 1999. All of this system equipment and installation is funded. We will be filing a permanent license application.

7. Location of Proposed Operation:

The sites planned for operation under this STA are shown in the attached table. These sites are all toll plazas or ramps or traffic management/sign bridge sites at the intersections or lat/long locations described.

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

The equipment to be used consists of a new generation of LMS tag readers developed by Mark IV IVHS to meet requirements of the both E-ZPass NY/NJ/PA Interagency Group and the Illinois State Toll Highway Authority. These readers RF signals for a particular lane are identical to the E-ZPass readers, and those readers 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 915.750 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 8 to 19 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 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 peak 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 Intelligent Transportation System Radio Service. The Illinois State Toll Highway Authority is an independent state public agency.

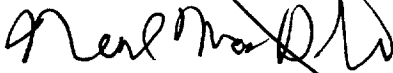
14. Anti-Drug Abuse Certification

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 back a the approved STA.

Respectfully:



Neal D MacDonald

Manager Toll Services
Ph. 630-241-6800 x 2100
FAX 630-241-6100

Cc: Information Prepared by:
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Detailed Site Survey List 6/30/1999				FCC STA							
IL_RF05.xls		Type	Mile-Post	PL #	TX	App. North		West	M Elev	City	County
Location-Plaza Name						Latitude	Longitude				
Traffic Management Sites											
a.	I-80/94, W of 394 Calumet	TM			3	41-34-39	87-37-58	195		Lansing	Cook
b.	I-290 at 88/294 split	TM			3	41-52-26	87-54-15	206		Hillside	Cook
c.	I-90, W of Cumberland	TM			5	41-59-00	87-50-33	192		Rosemont	Cook
d.	I-355, North of 55	TM			4	41-42-40	88-01-54	228		Bollingbrook	Will
e.	I-94, North of Russel	TM			4	42-29-13	87-56-49	228		Russel	Lake
f.	I-94, Edens, South of Spur	TM			3	42-08-22	87-47-24	201		Glencoe	Cook
Combined Traffic Management and Toll Sites											
	S. Beloit on I-90	MB	75	1	13	42-26-41	88-59-35	239		Rockford	Boone
	E. Riverside & I-90	ramp	66	2	2	42-19-02	88-57-56	240		Rockford	Boone
	Cherry Valley & I-90	ramp	61	3	4	42-14-46	88-57-41	235		Rockford	Boone
	Belvidere on I-90	MB	56	5	12	42-14-00	88-51-10	219		Belvidere	Boone
	Marengo on I-90	MB	41	7	12	42-10-02	88-35-20	255		Harmony	McHenry
	Randall Rd & I-90	ramp	27	8	4	42-04-47	88-20-11	251		Sleepy Hollow	Kane
	ELGIN & I-90	MB	25	9	13	42-04-12	88-18-22	251		Elgin	Kane
	Barrington Rd & I-90	ramp	17	10	4	42-03-59	88-08-34	247		Hoffman Estates	Cook
	IL 31 & I-90	ramp	24	11	4	42-04-08	88-17-33	247		Elgin	Kane
	Roselle Rd & I-90	ramp	13	12	3	42-03-49	88-04-43	234		Schaumburg	Cook
	IL 25 & I-90	ramp	23	13	2	42-03-53	88-15-39	251		Elgin	Cook
	IL 59 & I-90	ramp	19	14	6	42-03-56	88-11-49	253		Hoffman Estates	Cook
	IL 53 & I-90	ramp		15	4	42-03-28	88-01-53	220		Schaumburg	Cook
	Beverly	ramp		16	2	42-04-00	88-13-10	267		Elgin	Cook
	Devon Ave. on I-90	MB	2	17	14	41-59-54	88-52-38	216		Des Plaines	Cook
	Arlington Hgts Rd & I-90	ramp	8	18	6	42-03-28	88-02-05	216		Arlington Heights	Cook
	River Rd & I-90	MB	0	19	11	41-59-20	87-51-45	195		Rosemont	Cook
	Buckley Rd - 137 & I-294	ramp	64	20	4	42-18-49	87-54-21	212		Green Oaks	Lake
	Waukegan on I-294	MB	74	21	16	42-25-55	87-57-03	228		Rosecrans	Lake
	IL 60 & I-294	ramp	59	22	4	42-14-28	87-54-09	234		Lake Forrest	Lake
	IL 22 & I-294	ramp	56	23	4	42-12-07	87-53-26	219		Lincolnshire	Lake
	Pfingsten on I-94 Edens Spur	MB	51	24	12	42-08-59	87-51-39	259		Northbrook	Cook
	DEERFIELD on I-294	MB	54	25	6	42-09-44	87-52-29	259		Deerfield	Lake
	Lake-Cook Rd. & I-294	ramp	53	26	8	42-09-10	87-52-22	259		Deerfield	Lake
	Willow Rd & I-294	ramp	49	27	12	42-06-09	87-52-07	255		Prospect Hgts	Cook
	IL 58 Golf Rd & I-294	ramp		28	6	42-03-18	87-52-10	218		Des Plaines	Cook
	TOUHY AVE on I-294	MB	42	29	13	42-00-07	87-52-00	195		Des Plaines	Cook
	O'Hare Ramps & I-294	ramp	40	32	8	41-59-02	87-52-25	201		Rosemont	Cook
	IRVING PARK RD on I-294	MB	39	33	18	41-57-47	87-52-32	198		Schiller Park	Cook
	75th St-Willow Springs Rd & I-294	ramp	22	34	6	41-45-15	87-52-25	183		Justice	Cook
	CERMAK RD on I-294	MB	30	35	30	41-51-15	87-55-12	201		Westchester	Cook

82nd ST on I-294	MB	20	36	14	41-44-30	87-50-04	186	Hickory Hills	Cook
Joliet Rd - I-55 & I-294	ramp	24	37	10	41-45-53	87-54-26	216	Countryside	Cook
95th St & I-294	ramp	18	38	4	41-43-01	87-48-22	190	Hickory Hills	Cook
83rd St on I-294	MB	20	39	14	41-44-20	87-49-30	186	Hickory Hills	Cook
159th St & I-294	ramp	6	40	8	41-36-07	87-40-47	207	Markham	Cook
163 RD ST. on I-294	MB	6	41	22	41-35-25	87-40-48	187	Markham	Cook
I-80 on I-294	MB	5	45	10	41-34-54	87-40-42	188	Hazel Crest	Cook
Halstead & I-80/294	ramp	3	47	6	41-34-44	87-38-00	190	Harvey	Cook
YORK Rd. & I-88	MB	154	51	20	41-50-59	87-56-21	222	Oak Brook	Du Page
Spring Rd & I-88	ramp	153	53	3	41-50-44	87-56-54	221	Oak Brook	Du Page
Midwest Rd. & I-88	ramp	152	55	2	41-50-36	87-58-17	219	Oak Brook	Du Page
Highland Ave & I-88	ramp	150	56	4	41-49-53	88-00-59	219	Downers Grove	Du Page
Naperville Rd & I-88	ramp	143	57	3	41-48-27	88-07-18	229	Naperville	Du Page
Winfield Rd & I-88	ramp	142	58	4	41-48-27	88-10-11	227	Warrenville	Du Page
Farnsworth & I-88	ramp	135	59	4	41-48-02	88-16-53	244	Mary Woods	Kane
AURORA on I-88	MB	133	61	14	41-47-49	88-18-36	198	Aurora	Kane
IL 31 & I-88	ramp	132	63	2	41-47-40	88-19-41	245	N. Aurora	Kane
Orchard & I-88	ramp		64	4	41-47-38	88-22-40	246	N. Aurora	Kane
DeKalb East (Peace Rd) & I-88	ramp	110	65	4	41-54-09	88-43-22	277	Dekalb	Dekalb
DEKALB & I-88	MB/r	107	66/67	10	41-54-11	88-46-41	272	Dekalb	Dekalb
DIXON on I-88	MB	70	60/70	6	41-49-15	88-28-08	274	Dixon	Lee
ARMY TRAIL ROAD on I-355	MB	29	73	19	41-55-27	88-02-19	230	Swift	Du Page
North Ave & I-355	ramp	28	75	6	41-54-06	88-02-14	223	Lombard	Du Page
Roosevelt Rd & I-355	ramp	25	77	4	41-51-29	88-02-27	212	Lombard	Du Page
Butterfield Rd & I-355	ramp	23	79	4	41-49-55	88-01-41	232	Downers Grove	Du Page
Ogden & I-355	ramp	20	81	7	41-48-17	88-03-16	227	Lisle	Du Page
Maple Ave & I-355	ramp	18	83	6	41-47-14	88-03-22	226	Downers Grove	Du Page
63rd St & I-355	ramp	17	85	6	41-46-25	88-02-44	216	Downers Grove	Du Page
75th St & I-355	ramp	16	87	6	41-45-02	88-02-00	232	Woodridge	Du Page
BOUGHTON RD. & I-355	MB	14	89	20	41-43-57	88-02-13	183	Bollingbrook	Du Page
Boughton Rd & I-355	ramp	14	90	4	41-43-45	88-02-13	183	Bollingbrook	Will
127th St & I-355	ramp	11	91	4	41-39-33	88-01-17	228	Lemont	Cook
139th St & I-355	ramp	9	92	4	41-36-07	88-00-47	236	Lockport	Will
159th St & I-355	ramp	7	93	4	41-36-24	88-00-45	238	Lockport	Will
167th St - MAINLINE on I-355	MB	5	94	18	41-34-40	87-59-57	229	Lockport	Will
Lincoln HWY & I-355	ramp	3	95	4	41-32-59	87-58-19	218	New Lenox	Will
subtotal				547					
Lisle Office	test			1	41-48-17	88-05-42	228	Lisle	Du Page