

**ADDENDUM NUMBER ONE**  
**TO**  
**REQUEST FOR EXPRESSIONS OF INTEREST (RFEI)**  
**FOR**  
**PROVISION OF WIRELESS BROADBAND SERVICES**  
**IN**  
**MTA LONG ISLAND RAIL ROAD**  
**AND**  
**MTA METRO-NORTH RAILROAD**  
**TRAINS AND STATIONS**

**AUGUST 24, 2009**

**MTA LONG ISLAND RAIL ROAD AND METRO-NORTH RAILROAD  
WIRELESS BROADBAND RFEI**

**ACKNOWLEDGEMENT OF RECEIPT**

**OF**

**ADDENDUM NUMBER ONE**

**BY**

**RESPONDER**

**Company Name** \_\_\_\_\_

**Name / Title** \_\_\_\_\_

**Authorized Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

**BELOW ARE RESPONSES TO QUESTIONS AND INQUIRIES THAT WARRANT CONSIDERATION AT THIS TIME:**

**1. THE DEADLINE FOR THE SUBMISSION OF RESPONSES TO THIS RFEI IS SEPTEMBER 1, 2009. THE DUE DATE HAS NOT CHANGED. HOWEVER, RESPONDENTS WHO SUBMIT A RESPONSE ON OR BEFORE SEPTEMBER 1, 2009 MAY SUBMIT SUPPLEMENTS TO THEIR INITIAL RESPONSE NO LATER THAN SEPTEMBER 30, 2009.**

**2. Can MTA give us a detailed description of the rolling stock? Description of Types. Are the trains all Fixed or variable consists, number of motorcars, etc?**

**LIRR**

There are 3 types of passenger fleets.

**M3 Fleet**

M3's are electrical Multiple Unit married-pair heavy rail passenger cars which are self propelled and provided running power via invertors (from 3rd rail) to the low voltage system which will provide power to onboard hardware. The MU married-pairs are joined together with couplers. The cars are 85' in length. The train consists range in length from 6 cars to 14 cars.

Total number of M3 Fleet Cars: 170

**C3 Fleet**

C3's are single non-propelled push-pull bi-level coaches which are single units. There are three types, trailer, trailer-toilet, and coaches. The cars are 85' in length. These cars require DE and (or DM) locomotives to propel and to provide hotel power to them. On larger consists, 2 locomotives are required to provide ample traction. The train consists range from 2 cars to 14 cars. The DM locomotives are "dual mode" which means they are capable to operator on electrical "third rail" and "diesel" power. The DE locomotives solely operate on diesel power.

Total number of C3 Fleet Cars: 134

Total number of DM locomotives: 22

Total number of DE Locomotives: 23

### **M7 Fleet**

M7's are electrical Multiple Unit married-pair heavy rail passenger cars which are self propelled and provided running power via invertors (from 3rd rail) to the low voltage system which will provide power to onboard hardware. The MU married-pairs are joined together with couplers. The cars are 85' in length. The train consists range in length from 6 cars to most, 14 cars.

Total number of M7 Fleet Cars: 836

### **MNR**

Types of rail cars:

Coach: 213

#### **EMUs**

M3: 140

M7: 336

M2: 234

M4: 54

M6: 48

M8: 300+

### ***3. Is there an Ethernet or other communication link between the cars?***

#### **LIRR**

There is no Ethernet installed on LIRR cars. Below is an outline of the technology utilized, however, LIRR does not propose to share such services with a third party.

#### **M3 Fleet**

Strictly uses discreet train line signals from car- to- car.

#### **C3 Fleet**

Utilizes a RS485 multi-drop network for the communications and diagnostics system. All else is controlled via discrete train lines.

#### **M7 Fleet**

Utilizes a proprietary "E1" train line which channels "Lonworks" protocol data throughout the train consist for onboard monitoring and diagnostics for all the connected cars. There are also GPS and 1xRTT units aboard all the "A" cars for tracking and wayside transmissions.

**MNR Response**

Only on the M7 and future M8 fleets.

**4. Is there Mobile coverage in the tunnels?**

**LIRR**

There is limited CDMA 1XEV communications available in the East River tunnels.

**MNR**

Currently there is no wireless broadband coverage in the Park Avenue Tunnel.

- 5. The RFEI states that "Certain of the stations, track and passenger cars are not owned by MTA, MTA Long Island Rail Road or MTA Metro-North Railroad." – are we still expected to install our solution at or on these stations, track and passenger cars so as to be able to provide wireless broadband connectivity at or on all stations, track and passenger cars? If not, what is excluded (e.g. number of stations, number of cars, etc.)?**

In most instances the Railroads own the station buildings and platforms. However, in case of Metro-North, any activity at stations in Connecticut will require concurrence with the Connecticut Department of Transportation ("CDOT").

- 6. Does the MTA have access to any spectrum that could be used by the Respondent (e.g. 4.9GHz public safety spectrum license)?**

The Railroads do not plan to make any licensed spectrum available for use by third parties.

- 7. Does the MTA own or have access to fibre in the trackside ROW? If so, how much and where? Would it be made available for use by the Respondent and on what terms (e.g. free issue)?**

The Railroads do not plan to make any fiber optic cable or capacity available for use by third parties.

- 8. Are there any restrictions relating to the use of existing infrastructure (e.g. existing poles, catenaries, etc.) or is it all (within reason) available for use by the Respondent?**

**LIRR**

Any third party use of LIRR's infrastructure would need to be approved by LIRR.

**MNR**

There are numerous restrictions that would need to be addressed prior to any determination regarding the availability or utilization of the infrastructure subject to MMR's approval.

9. *The RFEI states "Respondents should be aware that there are other wireless technology initiatives within the areas served by the Railroads. Metro-North expects to award a license agreement that will provide a distributed antenna system within Grand Central Terminal, the GCT Train Shed and the Park Avenue Tunnel. As part of that agreement, a license for a distributed antenna system providing wireless telecommunications and WiFi services is being awarded for those facilities." Can the Respondent assume that it will be able to make use of this infrastructure (on reasonable commercial terms, i.e. at lower cost than building and maintaining its own duplicate infrastructure)?*

Responders may assume that access to the wireless infrastructure would be available subject to terms and conditions of an agreement with the licensed service provider.

10. *The RFEI states, "Certain of the right-of-way on which the Railroads operate is owned by and under the control of Amtrak (LIRR: East River Tunnels and portions of Penn Station; MNR: Connecticut) or New Jersey Transit (Port Jervis and Pascack Valley commuter rail services to Orange and Rockland Counties)." Is the MTA aware of any major restrictions imposed by these ROW owners on trackside network deployments (e.g. must not operate in XGHz spectrum)?*

Responders would need to address this matter with Amtrak.

11. *The LIRR passenger counts are for 2006 and the Metro-North for 2007 – does the MTA have growth rates from then to 2009 and indeed forecasts for passenger volumes on each rail route beyond 2009 (e.g. to 2014)?*

**LIRR**

Branch forecasts are not available. The ridership forecast for 2009 is 84.1 million passengers, while the 2014 forecast is 86.4 million passengers.

**MNR**

Additional information is not available at this time.

12. *Has the Internet awareness/usage survey amongst MTA's ridership been updated since 2007?*

The survey data has not been updated since 2007.

**13. Does the MTA have any existing advertising, marketing or other relationship with third party companies that will impact the ability of the Respondent to generate advertising, sponsorship and the like revenue on either LIRR or Metro-North from the provision of wireless broadband services?**

Although MTA is currently exploring and testing a number of technologically based initiatives which may impact the wireless broadband service, all Responders are encouraged to develop comprehensive proposal which include such revenue generating elements such as advertising, sponsorship based on possible future cooperative partnerships with existing vendors and licensees.

**14. Will the Respondent be able to generate revenue from the provision of a wireless entertainment offering directly to passengers' access devices? Will there be any restrictions regarding the type of entertainment services that can be offered (obviously adult services will not be acceptable)? Will the MTA consider the use of in-car screens as an addendum to the wireless service?**

MTA is open to Responders' ideas regarding wireless entertainment services to passengers' access devices.

**15. Can the MTA provide further information on its potential operational uses, specifically:**

- a. E-ticketing and management of passenger information;**
- b. Transmission of train diagnostic information and tracking information;**
- c. Passenger Information System and Automated Station Identification (PIS/ASI);**
- d. Feed for advertising and agency related communications?**

a. MNR and LIRR are very much interested in expanding the utilization of wireless capabilities for ticketing sales opportunities, etc.

b. At the current time, the MNR's M7 fleet is utilizing cellular for its train diagnostics. The benefit of wireless broadband is added coverage and bandwidth. However, the major concern that needs to be addressed is security (cyber-invasion) and possible interference (EMI) with the currently available hardware

c. At the current time, the M7 fleet is utilizing cellular for its PIS/ASI. The benefit of wireless broadband is added coverage and bandwidth. The downside is security (cyber-invasion) and possible interference (EMI) with the currently available hardware. These issues would need to be addressed more closely.

d. MTA is open to Responder's ideas, including cooperative initiatives with existing advertising licensees. Also, see response to question 13 above.

**16. Is the MTA considering using the wireless broadband infrastructure for security purposes, e.g. real-time interrogation of on-train DVRs and cameras in the event of an emergency, streaming of video from ROW cameras to drivers and a central control center, etc.? What are the MTA's plans regarding security on both routes over the next 5+ years?**

MTA anticipates that Wireless Broadband services will provide support for future operational considerations and improvements, i.e. streaming live video from a PDA of the details of an event (i.e. derailment, cable cut, pole line down, tree on tracks, etc) in the field via broadband network to operational/administrative centers. It could also be a potential tool useful for maintenance (data, video, etc) from/to field forces.

**17. Do Metro-North and Long Island Rail Road trains consists remain fixed? That is, is the passenger cars frequently moved among different consists and lines?**

No train consists remains fixed. The LIRR fleets are interconnected within their own types (M3, C3, and M7) and are transported throughout the electrified rail network. All LIRR M3/M7 fleet married-pairs and C3 coaches are interchanged onto a train consists based on availability. The C3 fleet is the only passenger fleet that travels to non-electrified "outlying" areas on eastern Long Island (Port Jefferson, Greenport, and Montauk branches).

For MNR, coaches run on all lines. M3/M& run only on Hudson and Harlem Lines. M2/M4/M6/M8 primarily run on the New Haven Line.

**18. Would it be possible to obtain a diagram or illustration of the different types of passenger cars for both Metro-North and the Long Island Rail Road?**

MTA was unable to arrange for the inspection of typical rail cars and associated diagrams prior to the RFEI submission due date; however, subject to agency requirements, Responders will be able to request appointments to review rail cars diagrams and conduct limited inspections of rail cars after September 1, 2009.