THE METROPOLITAN TRANSPORTATION AUTHORITY
ACTING BY THE
MTA CONSTRUCTION AND DEVELOPMENT

RFI-0000424591

Request for Information for

Providing Communication Based Train Control Equipment on the "R142" and "R142A" Class Trains for Operation on NYCT's A-Division Subway Lines

2 Broadway, 8th Floor
New York, NY 10004-2207

Construction & Development

January 13, 2023

Subject: RFI-0000424591 - Providing Communication Based Train Control Equipment on the "R142" and "R142A" Class Trains for Operation on NYCT's A-Division Subway Lines

Dear Interested Parties:

MTA Construction and Development Company ("MTA C&D") is seeking proposed solutions for retrofitting existing MTA-owned R142 and R142A class rolling stock with on-board Communication Based Train Control ("CBTC") equipment so that those trains can operate on future NYCT A-Division lines equipped with a wayside CBTC-based train control system.

I am MTA C&D's designated Point of Contact for this RFI and I can be reached at fabrizio.raho@mtacd.org. All communications related to this RFI, including Respondent's RFI response should be directed to me by **February 27, 2023 at 5:00pm EST**.

Thank you for your participation.

Sincerely,

Fabrizio Raho

Fabrizio Raho
Contracts Supervisor

1 INTRODUCTION

To expedite the safe introduction of a Communication Based Train Control ("CBTC") based train control system on MTA-New York City Transit's A-Division (subway lines operating with services designated by numbers 1, 2, 3 etc.), MTA must equip its current fleet of "R142" and "R142A" class train cars operating on the A-Division with on-board CBTC equipment, to enable those trains to communicate with the future wayside CBTC-based train control system installed on the A-Division.

The purpose of this RFI is to identify safe, cost effective, and innovative solutions to retrofit and equip both the existing R142 and R142A rolling stock with on-board CBTC equipment. Proposed solutions should emphasize efficiency of installation, testing and commissioning with the key goals of minimizing downtime per train unit and reducing the overall impact of the project on the R142 and R142A fleets in operation.

This RFI is issued exclusively to elicit information. It is not a Request for Proposal or any promise that a Request for Proposal will be issued to a Respondent in the future. This RFI does not commit MTA C&D to contract for any material or services and MTA C&D will not pay for any information or any costs incurred in responding to this RFI. MTA C&D shall have the right to use any information submitted in response to this RFI without obligation or compensation.

2 INFORMATION SOLICITED FOR EQUIPPING R142 AND R142A TRAINS WITH ON-BOARD CBTC EQUIPMENT

What solution do you propose to equip the R142 and R142A trains with on-board CBTC equipment that:

- Can be efficiently implemented by MTA;
- Minimizes train downtime for installation; and
- Can be implemented cost effectively?

For each proposed solution please provide:

1. An overview of the proposed solution;

2. Description of proposed CBTC equipment placement on the R142 and R142A train cars;

3. Description of any modifications to the existing train and train systems required to accommodate on-board CBTC equipment. The proposed solution may include:

    a. Modifications to the train's interior layout to create space for the CBTC equipment;
    b. Modifications to allow and/or create interfaces between the CBTC equipment and the existing network equipment on the trains.
    c. Modifications to existing, or creation of new, discrete inputs and outputs;
    d. Modifications to the train propulsion and braking systems to work in coordination with CBTC;
    e. Modifications to the train operator's interface;
    f. Modifications to provide for a new CBTC train operator display and to convert the existing train operator display into a backup CBTC train operator display;
    g. Modification to existing, or creation of new, switches and buttons on the cab console and/or other panels within the operating cabs;
    h. Modification to existing CBTC on-board network design(s) in use by the MTA, including changes to inter-car and trainline connection requirements;
    i. Addition of sensors for odometry and positioning; and
    j. Addition of antennas for radio communication.

4. Description of proposed installation approach;

5. Description of the proposed implementation plan, which including:

    a. Feasibility demonstration/s or proof of concept on each car class;
    b. Estimated design effort and duration required and;
    c. Estimated procurement lead times for the equipment proposed.

6. Description of the impact and changes necessary to MTA's CBTC Interoperability Interface Specification 2.2D and current CBTC system if the proposed solution is implemented;

7. Statement of whether the proposed solution would apply to only the R142 or R142A class train, or if it would apply to both trains;

8. Records of safe and proven applications and the reliability, availability, and maintainability of the proposed solution based on past performance or testing (if available);

9. Contact information for other transit agencies that have incorporated the solution for MTA and NYCT reference (if available);

10. Description of any additional known benefits to the proposed solution.

3 GUIDANCE IN PREPARATION OF THE RFI

1. While minimizing cost is critical, the most important characteristic of any proposed solution should be ease and efficiency of implementing the solution to minimize the out-of-service down time required to install the CBTC equipment on the trains, while adhering to MTA and NYCT safety requirements for CBTC equipment and operations.

2. Answers to this RFI may also include general architecture recommendations for example, such as for the redundancy management and the train consist management.

3. Respondent's solutions need not comply with MTA's Interoperability Interface Specification 2.2D and the current technical approach for CBTC on MTA's B-Division. However, Respondent should identify known differences between its proposed solution and the current technical approach utilized for the B-Division.

4. All responses must clearly identify any portion of a proposed solution that the Respondent asserts is confidential and/or proprietary.

4 CONFIDENTIAL INFORMATION TO BE SHARED BY MTA C&D AS PART OF THIS RFI

To aid development of a response, interested Respondents may obtain an electronic copy of the following documents:

1. Bid drawings from Contract S-32723, Flushing Line CBTC showing an MTA produced concept of equipping of the R142 class train cars with CBTC equipment. (57 pages).

2. Interface Control Document for on-board CBTC systems from Contract S-32723, Flushing Line CBTC. (78 pages).

3. NYCT Department of Subways – Passenger train envelope limits. (3 pages).

These documents listed in paragraph 4.1-3 above, are Confidential Information as that term is defined in the attached Non-Disclosure and Confidentiality Agreement and can only be obtained following the execution of the NDA by the Respondent. Therefore, all interested Respondents must execute and return an electronic copy of the NDA attached to this RFI to MTA C&D's Point of Contact. Upon return of the executed NDA, MTA C&D's designated Point of Contact will send the Respondent an electronic copy of the requested documents.