



**SOFTWARE: 5000 TCMS AND PROPULSION; UPGRADE; DEVELOPMENT, TESTING,
DELIVERY, AND SUPPORT**

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1. SCOPE

- 1.1 This specification will describe the requirements for the development, testing, delivery, of a complete and fully operational software update for the Train Control Management System (TCMS) and Propulsion on the Chicago Transit Authority's (CTA's) 5000 Series Railcars.

2. GENERAL INFORMATION

2.1 ACRONYMS

2.1.1 TCMS: Train Control Management System

2.1.2 CTA: Chicago Transit Authority

2.1.3 OEM: Original Equipment Manufacturer

2.1.4 PTE: Portable Test Equipment

2.1.5 PTU: Portable Test Unit

2.2 APPLICABLE INFORMATION

2.2.1 The version of a standard, code, statute, or guideline referenced herein that is current on the date of release applies.

2.2.2 Sub-sections that are "Not Applicable" to this specification are indicated with "N/A."

2.2.3 The Contract Document will provide information for contacting the appropriate CTA contact personnel.

3. DELIVERABLES

3.1 PRE-AWARD

3.1.1 The potential Contractor must provide the following items with its bid or within five (5) business days of CTA's request:

- a. Documentation: Contractor's experience developing, testing, delivering, Alstom software detailed in this specification (see paragraph 4.2.1).



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3.2 POST-AWARD

3.2.1 The Contractor must provide the following items after award of Contract or within five (5) business days of CTA's request:

- a. Software Development Plan and Schedule (see paragraph 4.2.2)

4. CHICAGO TRANSIT AUTHORITY CONTRACT REQUIREMENTS

4.1 CONTRACTOR REQUIREMENTS

4.1.1 The Contractor must be a professional business entity with at least five (5) years' experience developing, testing, delivering, Alstom software. The CTA requires documentation meeting the requirements of this specification with the bid response package, or within five (5) business days of the CTA request.

4.1.2 Software Development Plan and Schedule: The Contractor must submit a software development plan and schedule for review and approval by the CTA four (4) weeks following contract award. This plan must include submittals, check points, testing, deliveries, meeting dates, etc. The plan must identify key personnel, resources, and subcontractors, etc.

4.1.3 The Contractor must be an authorized distributor of Alstom, software products.

4.2 DETAILED REQUIREMENTS

4.2.1 The complete Train Control Management System and Propulsion software update must include the following features or characteristics:

4.2.1.1 New TCMS software. The vehicle propulsion would be enabled via a PIN-input on the cab HMI in lieu of the present card reader.

4.2.1.2 Enable the track brake by default when the wheel slide protection is active.

4.2.1.3 Provide an additional digital output when propulsion is in coast for use by non-motorized work trains for brake release.

4.2.2 The Portable Test Unit (PTU) diagnostics software new version needs to be developed to have the following changes from version currently used by CTA:

4.2.2.1 Update PTU software of the TCMS and Propulsion System to provide compatibility with Windows versions up to and including Windows 11.



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- 4.2.2.2 Read access within the Propulsion PTU for the DC link current.
- 4.2.2.3 The Propulsion PTU will be upgraded to allow for IP connectivity.
- 4.2.3 In addition to updating the implements listed above, the following activities must also be performed:
 - 4.2.3.1 Perform lab testing to verify that the software update functions as intended, and no unintended failures were introduced into the software revision.
 - 4.2.3.2 Perform all necessary software development tasks required to make the software parameter changes.
 - 4.2.3.3 Update all software documents, including detailed software installation instructions, and deliver these updated documents to the CTA. This must include Bench Test Equipment instructions where applicable.
 - 4.2.3.4 Perform regression testing to ensure that the updated TCMS and Propulsion software still performs correctly.

4.3 WARRANTY INFORMATION

- 4.3.1 The software must carry a manufacturer guarantee to be free from flaws ("bugs") for the standard warranty period of no less than 1 year from the date the product has been placed in service.
- 4.3.2 The Contractor agrees to promptly correct any issues found due to failure of the software to properly function as required by this contract or due to the introduction of unintended software "bugs" that may develop within the standard warranty period. Additionally, if such "bugs" cause subsequent damage to any hardware components, those components must be replaced with new components at no charge to the CTA. The Contractor will be given the opportunity to determine if the fault is due to the software or another determining factor causing the damage.
- 4.3.3 Contractor must provide appropriate support contact telephone numbers to the CTA Manager or designee.
- 4.3.4 Support will be provided via telephone, Internet based Web site and Email response to questions and error messages



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4.4 ADDITIONAL INFORMATION FOR POTENTIAL CONTRACTORS

- 4.4.1 Potential Contractors requiring any additional information must contact the CTA Procurement Administrator or Buyer listed in the Contract Documents. Potential Contractors requiring additional information from a person or persons potentially listed in the Special Conditions section of the Contract Documents must route their request through the Procurement Administrator or Buyer. Potential Contractors who contact any CTA personnel other than the Procurement Administrator or Buyer during the open bidding period will be in violation of the provisions set forth in the Contract Documents.

DISTRIBUTION LIST:

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REVIEWER / Writer(s):

DS/ds – Initial Specification – 08/29/25