



London Breed, Mayor

Gwyneth Borden, Chair
Amanda Eaken, Vice Chair
Stephanie Cajina, Director

Steve Heminger, Director
Fiona Hinze, Director
Manny Yekutieli, Director

Jeffrey Tumlin, Director of Transportation

September 1, 2022

The Honorable Members of the Board of Supervisors
City and County of San Francisco
1 Dr. Carlton Goodlett Place, Room 244
San Francisco, CA 94102

Subject: Request for Approval – Ordinance Waiving Administrative Code section 21.9(a)(2) and Authorizing the SFMTA to Solicit Proposals for a Contract with a Term Longer than 10 Years for a Communications Based Train Control System

Honorable Members of the Board of Supervisors:

The San Francisco Municipal Transportation Agency (SFMTA) currently uses an automatic train control system (ATCS) that first went into service in 1998. The ATCS is reaching the end of its useful life and must be completely overhauled or replaced. Following the 2019 Muni Reliability Working Group’s identification of train control as a significant factor impacting rail service, SFMTA has made replacement of the ATCS system a top priority.

The Ordinance you will be considering for approval requests that the San Francisco Board of Supervisors waive Administrative Code section 21.9(a)(2) (which prohibits departments from soliciting contracts with a term longer than 10 years) and approve an ordinance authorizing the SFMTA to issue a Request for Proposals for a contract with a term longer than 10 years for a new Communications Based Train Control System (CBTC). The total term of the proposed contract will be up to 28 years and last through the system’s expected life.

The proposed contract for the new CBTC System will consist of two parts. The first part of the contract will have a term of up to eight years, and will cover CBTC System design, procurement of software and equipment, oversight of equipment installation on light rail vehicles, on trackways, and in control rooms, testing, and CPUC service certification.

The second part of the contract will cover system support, high level maintenance that SFMTA employees cannot perform, (discussed further in the “Alternatives” section below), supply of spare and replacement parts, trouble shooting, software updates, and related professional services to assist the SFMTA in maintaining and operating the CBTC System. The term for the second part of the contract will be a 10-year initial term and two five-year extension options, so that following design, installation and testing of the CBTC System, the selected CBTC System vendor will provide parts, equipment, software updates, and support services for the entire expected 20-year life of the CBTC System.



Background

As stated previously, the ATCS controls trains in the 7-mile Market Street Subway and in the 1.6-mile long Central Subway. The ATCS first went into service in 1998; it is now reaching the end of its useful life and must be completely overhauled or replaced. The ATCS increased the throughput of trains in the Market Street Subway compared to the previous fixed-block train control system. A new CBTC will further increase the efficiency of the subway system. The SFMTA proposes to expand the CBTC system to the surface portions of the Muni Metro system to provide greater systemwide control and coordination. Expanding the train control system to the surface will reduce delays and provide greater reliability by coordinating train movements with street traffic signals, managing surface junctions according to priority, varying speed and dwell times to keep trains evenly spaced, eliminating portal check-ins, and providing the SFMTA Transit Management Center with oversight and management of the entire rail network rather than just the subway.

Scope of Work and Project Approach

The new CBTC will be installed in phases along existing light rail lines to give the SFMTA beneficial use of the system before it is installed on all rail lines, and to provide break points where the new system's performance and stability can be assessed before proceeding. An initial Pilot phase will launch the CBTC on the surface along the Embarcadero and the northern half of the Third Street corridor, while installing CBTC equipment on the new Siemens LRV4 light rail vehicles. Once the CBTC System has been proven in service, the Project will shift to the Replacement phase to install the CBTC System in the subway and retire the legacy ATCS. Following a successful cutover in the subway, the Expansion phase of the Project will extend CBTC coverage along each of the surface rail lines leading into the subway, until the entire Muni rail network is covered by the CBTC System.

Selection Process and Procurement Approach

The goal of the RFP will be to secure a single contract for design, procurement, testing, commissioning, and long-term support of a state-of-the-art CBTC. The SFMTA will select a CBTC supplier using the "best value" selection process and contract negotiation, as authorized by Charter section 8A.102(b)(1) and Administrative Code sections 21.05(b) and 21.4(a). The SFMTA will score proposals based on the suppliers' expertise, experience, system procurement costs, and support costs. The SFMTA will seek to negotiate a contract that will incentivize the CBTC supplier to design and deliver a system which has high reliability.

CBTC systems are proprietary, meaning that the system software and much of the equipment can only be obtained from the system supplier. The proprietary nature of these systems requires the contracting agency to obtain follow-on support contracts, which the supplier has a significant advantage in negotiating once their system is installed. The SFMTA believes it will obtain better contract terms and prices if it negotiates system support requirements at the same time it negotiates system design and performance requirements.



The CBTC supplier will design the system and provide detailed engineering plans and will furnish all CBTC software and proprietary equipment. To increase competition and business opportunities, the SFMTA intends to contract with eligible Small Business Enterprise contractors (of which San Francisco LBE firms are included) to install the system on the vehicles, along the trackway, and at the control center. The CBTC supplier will monitor contractors' installation of CBTC equipment and infrastructure in the wayside (trackways), control centers, data centers, and the vehicles. At the end of each phase, the CBTC supplier will test the system to ensure that it meets performance, quality and safety standards and certify each portion of the system for revenue service as it is completed. The CBTC supplier will warrant the equipment and software for one year after the start of revenue service. The CBTC supplier will assign technical staff to assist SFMTA maintenance in troubleshooting, maintenance, and diagnostics. The CBTC supplier will also provide regular software updates, including product-wide enhancements and security updates, and an obsolescence management plan to keep the system current. The CBTC supplier will maintain a two-year inventory of spare parts locally and replenish the parts as necessary to maintain reliable service.

Alternatives Considered

CBTC systems comprise highly specialized proprietary hardware and software, which the suppliers license to transit agencies. For commercial and system safety reasons, CBTC system suppliers will not allow transit agencies access to the software source code or the proprietary tools and test equipment necessary to perform more than routine system maintenance. The SFMTA is not capable of maintaining its train control system without the ongoing support of the CBTC supplier, because the SFMTA does not have (and does not expect to be able to hire) staff with detailed knowledge of the unique, proprietary hardware and software which makes up the train control system. The SFMTA does not consider operating its train control system without the CBTC supplier's support to be a viable alternative.

The SFMTA considered the following alternatives for obtaining support from the train control supplier described above: (1) minimally maintaining the existing ATCS system, without upgrading it, (2) pursuing a program of incremental upgrades and support through sole source contracts with its current ATCS supplier; and (3) advertising a procurement only contract, then later awarding a sole source support contract to the selected supplier.

In the first alternative, the SFMTA would continue to invest resources necessary to maintain the existing ATCS system, with the intent to keep the system in a state of good repair for as long as possible. This approach would confer no additional operational benefits and would result in increasing costs as parts become obsolete and scarce. Also, this would result in the continuation and probable escalation of failures as the system approaches the end of its useful life. Eventually the system will fail and be unable to be repaired, at which point it would need to be abandoned and replaced under a more urgent timeline and at greater cost.



The second and third alternatives only differ in that the second alternative would continue the relationship with the incumbent supplier, by contracting for system upgrades without conducting a competitive procurement. In the third alternative, the SFMTA would first competitively select a vendor and then implement a new system. In both of those scenarios, the SFMTA would later negotiate support services under separate contracts. If the SFMTA pursues a procurement-only contract with either the incumbent or a new CBTC supplier, the SFMTA will have no choice but to enter into a sole-source support contract with that same supplier after the procurement contract has been awarded. In both scenarios, the SFMTA will have lost the potential leverage to negotiate a support service contract on terms advantageous to the Agency. Additionally, the supplier may not agree to the terms the SFMTA deems necessary to improve subway performance.

Stakeholder Engagement

The SFMTA conducted extensive outreach to Agency staff from Operations, Transportation Management Center, Fleet, Safety, IT, Vehicle, Maintenance of Way, and Signal Maintenance groups, who provided input as to the scope of services, as well as desired and required CBTC functionality. Importantly, these stakeholders all identified reliability and maintainability as a priority for the new system. The procurement approach bundling performance-based support terms in the CBTC supplier contract was in part developed due to this stakeholder priority.

The project team has also given periodic briefings to the SFMTA and SFCTA Citizen's Advisory Committees, as well as MTC, SFCTA staff, and funding partners, and incorporated their feedback as appropriate. This project is in the early planning stages. As more design details become known, the Agency will reach out to the communities and stakeholders who may potentially be impacted by construction, as well as to the transit riders who will benefit from the improved rail service.

Funding Impact

The Train Control Upgrade Project will be funded through the SFMTA's Capital Improvement Program funds. Additionally, regional, state, and federal grants have been awarded to this project and more grant awards are expected. The total cost of the project including escalation, agency project staffing, consultant support, and third-party contracts, is estimated to be \$560,000,000.

In conclusion, we would like to thank you for your time and consideration of this legislation which will waive Administrative Code section 21.9(a)(2) (which prohibits departments from soliciting contracts with a term longer than 10 years) and approve an ordinance authorizing the SFMTA to issue a Request for Proposals for a contract for a new CBTC System with a term longer than 10 years.



Please let us know if you have any questions. We will be reaching out to offer briefings in advance of the Ordinance being heard in committee and look forward to discussing this with you further.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jeffrey P. Tumlin'. The signature is fluid and cursive, with a prominent initial 'J'.

Jeffrey P. Tumlin
Director of Transportation