

**City and County of San Francisco  
Airport Commission  
P.O. Box 8097  
San Francisco, California 94128**

**Modification No. 2**

THIS MODIFICATION (this "Modification") is made as of May 20, 2014, in San Francisco, California, by and between **Bombardier Transportation (Holdings) USA Inc.** ("Contractor"), and the City and County of San Francisco, a municipal corporation ("City"), acting by and through its Airport Commission or the Commission's designated agent, hereinafter referred to as "**Commission.**"

RECITALS

WHEREAS, City and Contractor have entered into the Agreement (as defined below); and

WHEREAS, City and Contractor desire to amend the Agreement on the terms and conditions set forth herein to address the replacement of obsolete equipment; and

WHEREAS, the Commission awarded this contract to Contractor on September 16, 2008, pursuant to an agreement to settle a dispute among the City and County of San Francisco, Bombardier Transportation (Holdings) USA, Inc., and Factory Mutual Insurance Company which was filed in the United States District Court for the Northern District of California, case number C 04-5307 PJH, and further pursuant to Resolution No. 08-0173; and

WHEREAS, pursuant to San Francisco Charter Section 9.118, the Board of Supervisors by its Resolution No. 266-08, adopted November 18, 2008, approved the contract to Contractor; and

WHEREAS, Commission approved Modification No. 1 pursuant to Resolution No. 13-0156 on July 23, 2013; and

WHEREAS, pursuant to San Francisco Charter Section 9.118, the Board of Supervisors by its Resolution No. 0429-13, adopted December 10, 2013, approved the modification to the Agreement; and

WHEREAS, Commission approved this Modification No. 2 pursuant to Resolution No. 14-0104 on May 20, 2014; and

WHEREAS, pursuant to San Francisco Charter Section 9.118, the Board of Supervisors by its Resolution No. 328-14, adopted September 9, 2014, approved the modification to the Agreement but reduced the not to exceed amount by \$4,340 for a new not-to-exceed amount of \$100,543,834; and

NOW, THEREFORE, Contractor and the City agree as follows:

**1. Definitions.** The following definitions shall apply to this Amendment:

**a. Agreement.** The term "Agreement" shall mean the Agreement dated September 16, 2008 between Contractor and City, as amended by the:

Modification No. 1, dated August 1, 2013.

**b. Other Terms.** Terms used and not defined in this Modification shall have the meanings assigned to such terms in the Agreement.

2. **Section 4. Services Contractor Agrees to Perform** of the Agreement is amended to address the replacement of obsolete equipment as detailed in the New Appendix G, Tasks 1-4.

3. **Section 5. Compensation** is hereby amended to increase the total compensation payable by an amount not to exceed One Million Eight Hundred Forty Three Thousand Eight Hundred Thirty Four Dollars (1,843,834) for a new total not to exceed amount of One Hundred Million Five Hundred Forty Three Thousand Eight Hundred Thirty Four Dollars (100,543,834).


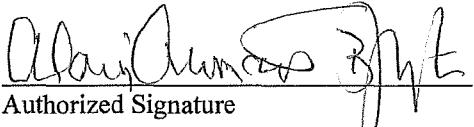
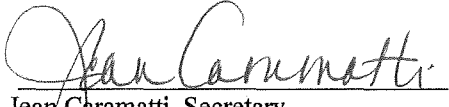
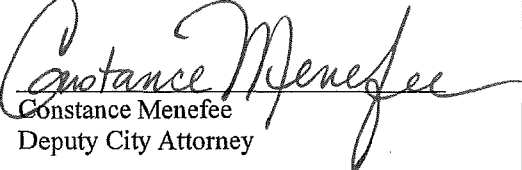
4. **Appendix E. Spare Parts, Tools, and Equipment List** is hereby replaced in its entirety with the new Appendix E-1.

5. **New Appendix G. Appendix G** is hereby added to the Agreement to address replacement of obsolete equipment covered under the contract. Performance of the Tasks in Appendix G is subject to mutually agreeable terms and conditions, which shall be established prior to the start of each task.

6. **Effective Date.** Each of the modifications set forth in Section 2 shall be effective on and after May 20, 2014.

7. **Legal Effect.** Except as expressly modified by this Modification, all of the terms and conditions of the Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, Contractor and City have executed this Amendment as of the date first referenced above.

| CITY   | CONTRACTOR   |
|--|--|
| AIRPORT COMMISSION<br>CITY AND COUNTY OF<br>SAN FRANCISCO  |  |
| By: <br>John L. Martin, Airport Director                | <br>Authorized Signature |
| Attest:  | Alain Aumais B. J. Hampton<br>Printed Name   |
|  | VP VP<br>Title   |
| By: <br>Jean Caramatti, Secretary<br>Airport Commission | Bombardier Transportation (Holdings) USA Inc.<br>Company Name  |
| Resolution No: 14-0184   | 40554<br>City Vendor Number  |
| Adopted on: May 19, 2014   | 1501 Lebanon Church Road<br>Address  |
| Approved as to Form:   | Pittsburgh, PA 15236<br>City, State, ZIP   |
| Dennis J. Herrera<br>City Attorney   | (412) 655-5700<br>Telephone Number   |
| By: <br>Constance Menefee<br>Deputy City Attorney     | 25-1579550<br>Federal Employer ID Number   |

## Appendix G

### Task 2: AirTrain UPS Replacement

#### General Project Scope

Contractor will replace 128 light-emitting diode (LED) signs currently used at all AirTrain stations with 46" liquid-crystal display (LCD) monitors using existing support beams and infrastructure.

The LCD sign replacements shall be fully compatible with the current RS-422 serial network. The signs shall be fully addressable and controlled by the Bombardier supplied Computer Interface Control System (CICS) already installed.

The signs shall be mounted to the existing support beams at each AirTrain station using off-the-shelf mounting hardware and in a fashion that allows for easy replacement. The signs shall operate fully on the existing signal and power wiring. Contractor shall perform over-site of all phases of the installation.

#### Mechanical

Contractor will replace the current double-sided LED signs with two single sided 46" LCD signs. Both signs must be identical; they must be configured with the same RS-422 address and content look-up table currently used by the Bombardier CICS in order to display identical content.

- LCD: 46"
- Resolution: 1920 X 1080
- Brightness: 700 Nits
- Weight: 35KG

#### Electrical Components

- RS422-to-RS232 Serial Adapter with daisy chain out and surge suppression.
- 120/240VAC Power Supply with standard 3-prong AC Plug input, IEC-320-C14.  
Power consumption: ~120W per display

#### Software Requirements

Contractor will load each unit with customizable VideoPoster-111 firmware running on Windows based software, which is required to generate the content and playlists for the retrofit signs. The playlist will be a "bit map (BMP)-trigger content lookup table". The software will allow the user to generate a playlist and specify a specific file in the playlist using a BMP-trigger. This playlist and a BMP-trigger data will be uploaded to the VideoPoster-111 via USB flash drive.

#### Installation

The following will be done at each display location:

- Remove existing LED sign, disconnect AC power, and remove two support tubes from bottom of 8" x 4" horizontal support arm.
- Install AC junction box to bottom of support arm
- Install Peerless SLT646 mount to each side of support arm using (4) Hillman W' Strap-toggles per mount.
- Displays will be located as high as possible off the floor.
- AC for displays will be hardwired in the AC junction box.
- Connect data cable.

## Appendix G

### Task 2: AirTrain UPS Replacement

- Old LED signs will be removed from each station.

#### Final Acceptance:

The following will be performed to verify final acceptance:

- Upon final completion of software design the contractor will provide one complete LCD sign unit to the SFO site for demonstration purposes.
- Demonstration unit must be operating on final design software.
- Demonstration unit will be connected to the sign controller to verify proper functionality.
- Demonstration unit must fully recognize and properly display both automated and operator generated text from CICS sign controller.
- Demonstration sign will operate continuously without failure for 14 days to verify software design.
- Upon completion and approval from AirTrain management of the above functions contractor will proceed with manufacturing all units.
- Once units arrive on site a quality assurance inspection will be performed prior to installation.
- After QA inspection the installation of each unit can begin. Installation process will be inspected to confirm proper mounting.
- A final test of each unit will be performed after installation to ensure communication with existing sign controller.
- Contractor to ensure any debris from project has been removed from all areas upon completion of job.

#### Warranty

Each unit will carry a standard warranty of 1 year on all parts from date of purchase.

#### Task Cost

|   |                  |
|---|------------------|
| Software Engineering and Development  | \$48,000         |
| Mechanical Design of Enclosure  | \$7,500          |
| On Site Demonstration - LCD and controller to confirm functionality             | \$2,000          |
| Complete two LCD set with controller and enclosure for Demonstration (material) | \$10,000         |
| 128 units plus 4 spares (material)  | \$357,600        |
| CA Sales Tax- 8.75% on material only  | \$32,165         |
| FCC Certification Testing   | \$5,000          |
| Installation labor and LCD mounting hardware                                    | \$70,000         |
| Onsite training and commissioning   | \$8,000          |
| Shipping of material to site  | \$5,000          |
| Develop Graphic Content -- Illium Co.   | \$25,000         |
| Bombardier Project Management Fee (15%)   | \$80,715         |
| CA Sales tax - 8.75% on Mark-up   | \$7,063          |
| <b>Total Task 1 Cost</b>  | <b>\$658,043</b> |

## Appendix G

### Task 2: AirTrain UPS Replacement

#### General Project Scope

Contractor will replace 13 obsolete UPS units used to supply back-up power to vital AirTrain equipment. UPS locations and sizes are as follow:

| Location                 | Equipment Description | Manufacturer | Model        |
|--------------------------|-----------------------|--------------|--------------|
| Bldg. 679 PDS            | 10kVA IPM UPS         | IPM          | BPII-30-2020 |
| Bldg. 679 PDS            | 10kVA IPM UPS         | IPM          | BPII-10-2020 |
| Lot C                    | 20kVA IPM UPS         | IPM          | BPII-10-2020 |
| Bldg. 679 Control Center | 20kVA IPM UPS         | IPM          | BPII-25-2020 |
| Westfield Road           | 10kVA IPM UPS         | IPM          | BPII-25-2020 |
| Int. Garage - A          | 10kVA IPM UPS         | IPM          | BPII-30-2020 |
| Int. Terminal - A        | 10kVA IPM UPS         | IPM          | BPII-25-2020 |
| Rental Car Center        | 20kVA IPM UPS         | IPM          | BPII-25-2020 |
| Terminal - 1 Garage      | 10kVA IPM UPS         | IPM          | BPII-25-2020 |
| Terminal - 2 Garage      | 10kVA IPM UPS         | IPM          | BPII-25-2020 |
| Terminal - 3 Garage      | 10kVA IPM UPS         | IPM          | BPII-25-2020 |
| Int. Terminal - G        | 10kVA IPM UPS         | IPM          | BPII-25-2020 |
| Int. Garage - G          | 10kVA IPM UPS         | IPM          | BPII-25-2020 |

The UPS replacements shall be fully compatible with current power and network requirements. The UPS shall be able to communicate current operating and alarm conditions to the Bombardier supplied Computer Interface Control System (CICS). The UPS units shall have maintenance by-pass switches allowing complete bypass of each unit for maintenance purposes. Under a loss of input power condition, each UPS unit shall have the ability to supply power to all connected equipment for a minimum of 120 minutes.

The UPS units shall be mounted onto existing maintenance pads using standard hardware. UPS unit shall operate using existing power input voltage and existing communication wiring. Contractor shall perform oversight of all phases of the installation.

#### Technical Specifications

Contractor shall properly mount each UPS unit onto existing maintenance pad provided at each location. Each unit shall utilize maintenance free batteries and have adequate ventilation to keep batteries at proper operating temperatures. Each UPS units shall meet the following criteria:

- Efficiency – better than 90% at full load and 85% at half load.
- Be Field Upgradable
- Inverter/Rectifier – Transformer Free IGBT with PWM
- Audible Noise – Less than 50db
- Battery – Maintenance free with external battery cabinet
- Charging Method – ABM Technology
- Integrated maintenance bypass switch
- Comply with the following standards – IEC 6204-1, IEC 60950-1, IEC 62040-2, IEC 62040-3
- X Slot – 2 Communication Bays
- Serial Ports – 1

## Appendix G

### Task 2: AirTrain UPS Replacement

- Relay Input/output Ports – 2 programmable

#### Electrical Components

- Input wiring – 3phase
- Input Voltage – 208/380 at 50.60hz configurable
- Frequency – 45–60HZ
- Input THD – Less than 45%
- Soft Start Capability
- Internal Back-up Protection
- Output wiring – 3phase
- Output Voltage – 208/380 at 50/60hz

#### Installation

At each UPS location, Contractor will:

- Re-configure power around existing UPS units to allow the AirTrain system continued operation without interruption while UPS unit is being replaced.
- Remove existing UPS units and all batteries.
- Install new UPS unit onto existing maintenance pads.
- Install maintenance bypass switch
- Test each unit to confirm communication with CICS.
- Load test unit battery operation to confirm 120 minute run time
- Remove old UPS unit and batteries from site.

#### Final Acceptance:

The following will be performed to verify proper function of each UPS unit.

- Inspect each UPS unit to verify all technical specifications have been met.
- Inspect each unit to confirm build quality.
- Inspect each unit for proper mounting to existing maintenance pad.
- Inspect each units wiring for proper termination upon final connection.
- Test each unit under full load conditions to verify it meets the 120 minute run time requirement.
- Test each unit to ensure proper transmission of operating status and alarm conditions to control center.
- Verify proper disposal of all old UPS units and all batteries.

#### Warranty:

Each unit will carry the following on-site warranty: 90 days labor and 1 year parts from date of purchase.

## Appendix G

### Task 2: AirTrain UPS Replacement

#### Cost of Project

| Item | Qty | Description  | Unit     | Price     |
|------|-----|--|----------|-----------|
| 1    | 3   | Eaton 9355 Powerware Series 20kVA/18kW 3-Phase UPS System with Internal Batteries, 18 Minute Runtime At Full Load, Input/Output 208V/208V, Unit Is Scalable To 30kVA with Connect UPS-X Web/SNMP Card Part #KB201310000010. For locations, Lot C, Bldg. 679 Control Center and Rental Car Center   | \$15,300 | \$45,900  |
| 2    | 6   | 9355 20kVA 4 String Line & Match Extended Battery Cabinet and Batteries. Two EBC72's Per UPS In Addition To Internal Batteries Will Achieve 114 Minutes Of Run Time At Full Load Part#103004868. For locations, Lot C, Bldg. 679 Control Center and Rental Car Center  | \$8,999  | \$53,994  |
| 3    | 10  | Eaton 9355 Powerware Series 10kVA/9kW 3-Phase UPS System With Internal Batteries, 8 Minute Runtime At Full Load, Input/Output 208V/208V, Unit Is Scalable To 15kVA With Connect UPS-X Web/SNMP Card Part# KA101110000010. For Locations Bldg. 679 PDS, Bldg. 679 PDS, Westfield Road, Int., Garage – A, Int. Terminal A, Terminal 1 Garage, Terminal 2 Garage, Terminal – 3 Garage, Int. Terminal – G, Int. Garage - G | \$10,271 | \$102,710 |
| 4    | 20  | 9355 10kVA 2-High Line & Match Extended Battery Module And Batteries. Two EBM96's Per UPS In Addition To Internal Batteries Will Achieve 124 Minutes Of Run Time At Full Load Part #103004193-5501. For Locations Bldg. 679 PDS, Bldg. 679 PDS, Westfield Road, Int. Garage – A, Int. Terminal A, Terminal 1 Garage, Terminal 2 Garage, Terminal – 3 Garage, Int. Terminal – G, Int. Garage - G                        | \$5,849  | \$116,980 |
| 5    | 13  | Maintenance Bypass Panels For PW9355 10kVA And 20kVA   | \$1,648  | \$21,424  |
| 6    | 13  | Remove Old UPS Systems, Batteries and Battery Rack   | \$1,879  | \$24,427  |
| 7    | 1   | Three Phase 480 to 208 30kVA Transformer For 20kVA UPS At Lot C  | \$1,947  | \$1,947   |
| 8    | 13  | Labor - UPS Electrical Installation. This includes work that can be completed during regular business hours as well as work performed after hours. Also includes all electrical materials. Current electrical box attached to lower back of existing UPS units will be used and properly installed to the existing pad as an Input/Output box.   | \$3,900  | \$50,700  |



Appendix G

Task 2: AirTrain UPS Replacement

| Item | Qty | Description  | Unit | Price            |
|------|-----|--|------|------------------|
| 9    | 13  | Factory Startup & 1-Year Warranty (During Regular Business Hours)            | -    | Included         |
| 10   | 1   | Freight (Cost Based On Complete Shipment – No Split Shipments)               | -    | \$9,992          |
| 11   | 1   | Labor - Removal from Site and proper Disposal of UPS units and all batteries | -    | \$12,000         |
| 12   | 1   | CA Sales Tax on material at 8.75%  | -    | \$32,146         |
| 13   | 1   | Project Management – Bombardier (15%)  | -    | \$66,011         |
| 14   | 1   | CA Sales tax - 8.75% on Mark-up  | -    | \$5,776          |
|      |     | <b>Total Task 2 Cost</b>   |      | <b>\$544,007</b> |

## Appendix G

### Task 3: AirTrain Vehicle Flooring Replacement

#### General Project Scope

Contractor will replace worn flooring in all 38 AirTrain vehicles. Contractor shall use the following product for all vehicles:

- **Dura-Tile LT-50**, Manufactured by the Pawling Corporation
- **Height:** 3/8" (+1/8"-0")
- **Size:** 12" x 12" tiles
- **Installation:** Glue-down using waterproof marine based glue
- **Material:** 100% Recycled Rubber
- **Color:** Blue
- **Construction:** Rugged tire cord bonded to fiberglass backing
- **Static Coefficient of Friction Ratio:** Dry 0.67, Wet 0.89 (ASTM D-2047)
- **Flammability:** Exceeds (FF-1-70) flammability rating

#### Installation

Contractor will perform the following on each vehicle:

- Demolition and disposal of existing flooring and upholstery material (recycle where possible).
- Clean and prepare floor for new material.
- Installation of 270 Sqft of 12" X 12" LT-50 carpet tiles per vehicle.
- Replace existing carpet on both end compartments with customer supplied carpet.
- Quotation based on the availability of two (2) vehicles at a time.

#### Final Acceptance

- Each vehicle will be inspected by AirTrain manager to ensure installation quality prior to vehicle being released from the shop.

#### Warranty

Each vehicle will carry the following on-site warranty: 90 days labor and 1 year on material from date of purchase.

#### Task Cost

|   |                  |
|---|------------------|
| AirTrain Flooring Installation x 38 Vehicles (Includes Freight) | \$166,585        |
| CA Sales Tax- 8.75% on Material                                 | \$14,576         |
| Labor to Remove and Install Flooring                            | \$111,430        |
| Labor to Install Side Wainscoting                               | \$17,100         |
| Bombardier Project Management Fee (10%)                         | \$29,511         |
| CA Sales tax - 8.75% on Mark-up                                 | \$2,582          |
| <b>Total Task 3 Cost</b>  | <b>\$341,784</b> |

## **Appendix G**

### **Task 4: Replacement of Worn or Obsolete Equipment**

#### **Scope**

As indicated in Appendix B General Requirements, 7.0 Repair and Replacement of Parts, Components or Materials, Contractor when necessary will replace parts, components, or materials associated with the operation and maintenance of the AirTrain that have either become worn beyond repair or obsolete and can no longer be serviced.

#### **Total Task 4 Cost**

Contractor shall promptly repair or replace the equipment at a not-to-exceed cost of \$300,000 over the three-year contract term.