

Memorandum



Date: October 3, 2012

To: Mario Goderich, Deputy Director
Miami-Dade Department of Regulatory & Economic Resources,
Small Business Development Division

From: Milton L. Collins, Associate Director *MLC*
Miami-Dade Aviation Department, Minority Affairs Division

Subject: REVISED Invitation To Bid - Satellite E APM Replacement and O&M Services Project
Phase 1 and 2
ITB-MDAD-04-12

REVISED RECOMMENDATION:

The MDAD Minority Affairs Division was advised to proceed with the Satellite E project as an Invitation to Bid, in lieu of an Invitation to Negotiate. The new Project Number that has been assigned is ITB-MDAD-04-12. The Scope and Term(s) remain the same.

This is a request for the Small Business Development Division to approve the attached Invitation to Negotiate in order for the Aviation Department to proceed with the **Satellite E APM Replacement and O&M Services Project Phase 1 and 2, Project No. ITB-MDAD-04-12**. The Miami-Dade Aviation Department requires the services of a qualified team under a Design, Build, Operation and Maintenance (DBOM) contract arrangement and will be divided into two phases. Phase 1 involves the design, construction, manufacture, installation and testing/commissioning of the replacement APM System and Phase II involves the follow-on Operations and Maintenance (O&M) of the System. As was done for the MIA Mover Project, due to the specialized nature of the APM system portion of this project, the breakdown presented herein is divided into work that will be done on-site versus off-site work.

The estimated project cost for Phase I is \$30,000,000.00. The estimated project cost for Phase II is \$10,000,000.00. This project will be funded from the Reserve Maintenance Funds. The term for Phase I will be for Three (3) years. Phase II of the contract will include Operations and Maintenance of the System for a five (5) year period with options for the County to extend Phase II in two, five (5) year increments for an additional ten (10) years. The estimated annual cost (in Year 2012 dollars) for Phase II work is \$2,000,000.00 which will be subject to escalation under the terms of the contract. **Attachment A** provides an estimated breakdown of the different types of work to be performed in Phase II.

The Minority Affairs Division staff has evaluated the subject project and recommends the following Contract Measure Goals:

CSBE – Construction Component 12.69%
CBE-A/E – Design 22.24%
CBE-A/E-CIS - 35%
SBE – Procurement of Replacement APM System 1.42%
Community Workforce Program (CWP) – Currently 10%

The DBOM contract will occur in two distinct phases as described below:

Phase 1 includes: (1) the design of the Operating System and Fixed Facilities and the removal/demolition of the existing APM System; (2) the construction of the Fixed Facilities and removal/demolition of the existing APM System; (3) analysis, manufacture, supply, fabrication, assembly, factory testing, shipping, and installation of the APM System; (4) on-site inspection and testing of the Fixed Facilities; (5) on-site integration and verification testing and other preparations for start-up of the APM Operating System; and (6) related project management, control and administration.

Breakdown for Phase 1

The work to be done under Phase 1 of the DBOM contract is distinguished between (1) the supply/installation of the proprietary APM Operating System Technology (train) and (2) the design and construction of the Fixed Facility infrastructure which will support the operation of the APM System technology (train).

Attachment A provides a summary breakdown of the budget costs for the Operating System, Fixed Facility Construction and Fixed Facility Design in current 2012 dollars.

Details on each aspect of the Phase 1 work are provided below:

Phase 1 APM Operating System Work

APM Operating Systems use proprietary designs that must be procured as complete packages. The major subsystems (e.g., vehicles, tracks, switches, control systems, station equipment, etc.) from different suppliers cannot be mixed to form a system. Therefore, the Operating System must be procured under a turnkey design, supply and installation contract. The Operating System of an APM application is specially configured using "off the self" equipment designs that are applied to satisfy site-specific requirements. The APM system equipment designs are proprietary and are different for each of the suppliers. Due to the highly specialized nature of this work, there is a limited number of qualified, responsible suppliers for the APM system. Known AGT manufacturing firms that may be capable of meeting the requirements of this contract are located in Pennsylvania, Canada, Europe and Japan; there are no known local AGT manufacturing firms.

The work associated with adapting the proprietary designs to site specific conditions is performed at the suppliers' engineering facilities. The manufacturing of the specialty equipment is expected to be performed at the site of their factories. The installation of the equipment is expected to occur at the project site.

Estimated budget costs for the work associated with the APM Operating System supply/installation are provided in **Attachment B**.

The costs have been broken down in accordance with the CSI Divisions; additionally, these budget costs have been further broken down into work that can be expected to be performed at the local project site and at the "APM Factory".

Phase 1 Fixed Facility Design and Construction

Phase 1 of the DBOM contract will also include the design and construction of all fixed facilities required for the APM System.

The exact scope of work may vary depending on the selected supplier but will largely involve refurbishment and/or modifications to the running surface for the train and refurbishment passenger station doors, system support facilities and equipment rooms. Maintenance of traffic on the AOA will also be a critical component of this work.

The Fixed Facility designs and construction are similar to that expected for the traditional design-build project, with the added special requirements for integrating the requirements of the proprietary AGT system that may be proposed.

Fixed Facility Design

The teaming structure of the DBOM Team can be in several forms such as a General Contractor may be Prime, a System Supplier may Prime or it may be a Joint-Venture between a General Contractor and the System Supplier. However, it can be reasonably assumed that the design A/E type effort for the Fixed Facilities work will be performed by A/E firm team members who are either part of the Joint-Venture or under subcontract to the Prime (or Joint Venture) leading the DBOM Team. However, all work related to the adaptation of proprietary Operating System technologies to the project would be performed by the Operating System supplier and not by A/E firms.

Attachment C provides a breakdown of the estimated budget costs for the different design services broken down between "prime" and sub-consultant A/E firms; in this case, the "prime" is assumed to be a primary design firm that would still be part of the DBOM Team Joint-Venture or under subcontract to the DBOM team Prime (or Joint venture). The sub-consultant could be smaller design A/E firms supporting the "prime", and may be under direct subcontract to the DBOM Team Prime.

Fixed Facility Construction

The estimated budget cost in 2012 dollars is provided in **Attachment D** and distributed by CSI division. The Fixed Facility construction budget costs are based on a concept level engineer's estimate. Design development and further designs (to 100% completion) will be performed by the design A/E firms that are expected to be part of the DBOM Team. Since the distribution is based on the concept level work, it must be noted that the actual distribution may vary based on each DBOM Teams' proposed designs for the project to be provided in their proposals.

Attachment D-II provides the estimated breakdown for the Community Workforce Program (CWP).

Phase II Operation and Maintenance (O&M) of the APM System

The APM System requires proprietary and specialty equipment. Its operations and maintenance are performed by personnel who are trained and certified by the APM System supplier.

As part of the O&M work, the APM System supplier also provides spare parts and other equipment necessary for the performance of the operation and maintenance functions. **Attachment E** provides an estimated breakdown of the different types of work to be performed in Phase II.

If you have questions, I can be reached at (305) 876-7221 or C. Corrales at (305) 876-7991. For Technical questions, you can contact Pedro Hernandez, Division Director MDAD at (305) 876-7928, or Dan McFadden, Lea & Elliott at (305) 869-1621.

Attachments (Project Breakdown Estimates)

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Project File

**SUMMARY OF PROJECT BUDGET COST
SATELLITE E APM REPLACEMENT DBOM**

(See Attachment B, C, D for detailed breakdowns for work aspects noted below)

ATTACHMENT A

SATELLITE E APM SYSTEM REPLACEMENT- DBOM CONTRACT PROJECT BUDGET		
		Prepared - 7/31/2012
Project No.	Description	Estimated Equipment and Construction Value
		Year 2012 Dollars
Project #	Satellite E APM Replacement DBOM	
CONSTRUCTION COST		\$ 29,558,003
<i>Operating System (DBOM)</i>	<i>Operating System - supply/install/commission proprietary technology; including O/S General Conditions (See Attachment B - O/S for breakdown of estimate of work)</i>	\$26,986,920
<i>Fixed Facilities (construction)</i>	<i>Construction Costs and General Conditions. (See Attachment D-1 for breakdown of estimate of work)</i>	\$2,571,083
DESIGN COST		\$ 403,431
Fixed Facilities (Design)	<i>Design Services under DBOM (See Attachment C-I for breakdown of estimate of work)</i>	\$89,711
Fixed Facilities (Construction Inspection Services)	<i>Construction Oversight (CA) Services under DBOM but by Design Team (See Attachment C-II for breakdown of estimate of work) (See Attachment B: Note -B1 at the bottom for breakdown of estimate of work)</i>	\$313,720
SUBTOTAL		\$ 29,961,434
Other Costs		
3	Fixed Facility Allowance Account	\$ -
4	AIPP for Fixed Facility (1.5% of FF Contr. cost)	\$ 38,566
TOTAL Project Budget		\$ 30,000,000

ATTACHMENT B
Breakdown of Budget Estimate for Work and Construction (O/S and FF)
SATELLITE APM REPLACEMENT DBOM CONTRACT
(See Attachment A for Summary of Estimate of all Work)

Construction Specification Institute Divisions (CSI Divisions)	System Elements	Units	Quantity	Operating System Design Build Operate Maintain (O/S - DBOM) Costs			Fixed Facility Construction Cost Estimates (FF - Part of DBOM Team) (see Attachment D for details)			
				O/S Total Costs	Costs			FF Total Costs	Costs	
					Work Location				Work Location	
					At Construction Site		Factory Work		At Construction Site	
			BY Prime	By CSBE		BY Prime A/E or JV	By CSBE			
Division 1: General Requirement	Lot		\$ 603,174	\$ 3,137,195	\$ 1,045,732	\$ 2,760,247	\$ 1,162,609	\$ 941,160	\$ 221,449	
Division 2: Site Construction	Lot		\$ 63,978	\$ 21,597	\$ 32,387	\$ -	\$ 174,903	\$ 69,961	\$ 104,942	
Division 3: Concrete Guideway							\$ 236,754	\$ 71,026	\$ 165,728	
Division 4: Masonry							\$ 41,504	\$ 12,451	\$ 29,053	
Division 5: Metals Guideway Station and M&SF							\$ 205,858	\$ 123,515	\$ 82,343	
APM specific Finish outs	SF	15,000	\$ 107,856	\$ 64,774	\$ 43,182	\$ -				
Division 6: Woods and Plastics										
Division 7: Thermal and Moisture Protection PDS room	SF		\$ 17,978	\$ 7,007	\$ 10,511	\$ -	\$ 88,436	\$ 44,218	\$ 44,218	
Division 8: Doors and Windows Maintenance Floor			\$ 60,438				\$ 64,970	\$ 32,485	\$ 32,485	
Doors/Window	Lot	0		\$ 12,613	\$ 8,408	\$ -				
Station Equipment Rooms Doors/Window	Lot			\$ 8,274	\$ 5,616	\$ -				
Power Sub-Stations Doors/Window	Lot			\$ 33,376	\$ 22,251	\$ -				
Stations Automatic Platform Doors	Lot	16		\$ -	\$ -	\$ -				
Division 9: Finishes: Floors, Walls, Ceilings Maintenance Floor			\$ 152,197				\$ 187,727	\$ 93,864	\$ 93,864	
Finish-Out	SF	10000		\$ 63,064	\$ 42,043	\$ -				
Station Equipment Rooms Finish-Out	SF	1200		\$ 41,371	\$ 27,580	\$ -				
Power Sub-Stations Finish-Out	SF	2500		\$ 168,880	\$ 111,254	\$ -				
Control Center Finish Out	SF	2000		\$ -	\$ -	\$ -				
Guideway Finish Out	Feet	2791		\$ -	\$ -	\$ -				
Division 10: Specialties Maintenance Floor			\$ 235,788				\$ 23,466	\$ 14,080	\$ 9,386	
Raised - special Flooring/Signage	SF	10000		\$ 8,409	\$ 2,102	\$ -				
Station Platforms Raised Flooring/Signage	Lot	2		\$ 5,516	\$ 1,379	\$ -				
Power Sub-Stations Floor/Signage	Lot	1		\$ 22,250	\$ 5,583	\$ -				
Other Signage Signage	Lot	1		\$ 168,423	\$ 42,108	\$ -				

ATTACHMENT B

Breakdown of Budget Estimate for Work and Construction (O/S and FF)
SATELLITE APM REPLACEMENT DBOM CONTRACT
 (See Attachment A for Summary of Estimate of all Work)

Construction Specification Institute Divisions (CSI Divisions)	System Elements	Units	Quantity	Operating System Design Build Operate Maintain (O/S - DBOM) Costs			Fixed Facility Construction Cost Estimates (FF - Part of DBOM Team) (see Attachment D for details)			
				O/S Total Costs	Costs			FF Total Costs	Costs	
					Work Location				Work Location	
					At Construction Site		Factory Work		At Construction Site	
BY Prime	By CSBE		BY Prime or JV	A/E	By CSBE					
Division 11: Equipment										
Maintenance Floor										
Maintenance Tools and Equipment	Lot	1		\$ 16,817	\$ 4,204	\$ 1,191,211				
Station										
APM Station Equipment/Provisions	Lot	2		\$ 11,032	\$ 2,769	\$ 781,439				
Power Sub-Stations										
Equipment	Lot	1		\$ 44,502	\$ 11,125	\$ 3,152,182				
Central Control Facility										
Data Communication Equipment	Lot	1		\$ 70,071	\$ 17,518	\$ 3,328,385				
GUIDEWAY										
Equipment	Lot	1		\$ 148,818	\$ 37,204	\$ -				
Division 12: Furnishings										
Division 13: Special Construction							\$ 104,224	\$ 52,112	\$ 52,112	
Division 14: Conveying Systems										
M&SF										
Guideway										
Guidance/Trackwork and Equipme	Lot	1				\$ 1,860,218				\$ -
Vehicles (Complete)	Lot	2				\$ 7,785,696				\$ -
Division 15: Mechanical							\$ 109,188	\$ 54,594	\$ 54,594	
Division 16: Electrical							\$ 171,444	\$ 85,722	\$ 85,722	
Maintenance Floor										
Maintenance Tools and Equipment	Lot	1		\$ 12,613	\$ 8,408	\$ -				
Station										
APM Station Equipment/Provisions	Lot	2		\$ 8,274	\$ 5,516	\$ -				
Power Sub-Stations										
Equipment	Lot	1		\$ 33,376	\$ 22,251	\$ -				
Central Control Facility										
Data Communication Equipment	Lot	1		\$ 15,766	\$ 10,511	\$ -				
GUIDEWAY										
Equipment	Lot	1		\$ 148,818	\$ 37,204	\$ -				
Others				\$ 240,000	\$ 60,000	\$ -				
Summary Costs				\$ 26,986,920	\$ 4,610,829	\$ 20,859,378	\$ 2,571,083	\$ 1,595,187		
TOTAL Estimated CSBE Opportunity = Sum of (\$ 1,616,714	end	\$ 976,896) =	\$ 2,592,609			
TOTAL SYSTEM CONSTRUCTION COST				\$29,558,003						

Note-B-1: Reduced 25% of site oversight (a reduction of \$313,720 from Prime or JV) for Design oversight under Construction Inspection Services, that are typically performed by CBE Design A/Es, in a DBOM Project. This is carried under "Design Services" in Attachment C and in the Summary sheet.

ATTACHMENT D - I
FIXED FACILITY CONSTRUCTION BUDGET
SATELLITE E APM REPLACEMENT - DBOM Contract
 (see Attachment A for Summary for all work)
 (work could be self performed or available for subcontracting)

DESCRIPTION OF WORK	TOTAL COST		COST BREAKDOWN		
	Cost Estimate		Material/ Equipment Cost	Labor Cost	GP and Profit
DIVISION 1 - GENERAL REQUIREMENTS		\$1,162,609	\$ 174,391	\$ 174,391	\$ 813,826
	\$1,162,609		15%	15%	70%
DIVISION 2 - SITE CONSTRUCTION		\$174,903			
02220 Demolition	\$174,903		\$26,235	\$96,197	\$52,471
Run. Surface Concrete removal	\$0		15%	55%	30%
Guideway (No hazardous work)	\$104,222				
Station (2) (No hazardous work)	\$49,927				
Power Distribution Substation(PDS)	\$20,752				
DIVISION 3 - CONCRETE		\$236,754			
03100 Concrete Forms and Accessories (Total)	\$59,189		\$94,702	\$71,026	\$71,026
Run. Surface Concrete removal	\$16,690		40%	30%	30%
Guideway (No hazardous work)	\$25,035				
Station (2) (No hazardous work)	\$3,195				
Power Distribution Substation(PDS)	\$14,269				
03300 Concrete (Total)	\$177,566				
Run. Surface Concrete removal	\$16,690				
Guideway (No hazardous work)	\$108,486				
Station (2) (No hazardous work)	\$9,584				
Power Distribution Substation(PDS)	\$42,806				
DIVISION 4 - MASONRY		\$41,504			
04810 Concrete Forms and Accessories (Total)	\$41,504		\$10,376	\$20,752	\$10,376
Power Distribution Substation(PDS)			25%	50%	25%
DIVISION 5 - METALS		\$205,858			
05120 Structural Steel	\$205,858		\$72,050	\$72,050	\$61,757
Run. Surface Concrete removal	\$0		35%	35%	30%
Guideway (No hazardous work)	\$0				
Station (2) (No hazardous work)	\$182,392				
Power Distribution Substation(PDS)	\$23,466				
DIVISION 6 - WOODS AND PLASTICS		\$0			
Not Applicable		\$0			
DIVISION 7 - THERMAL AND MOISTURE PROTECTION		\$88,436			
07400 Roof and Wall Panels	\$88,436		\$30,952.60	\$30,952.60	\$26,530.80
Station (2) (No hazardous work)	\$46,932		35%	35%	30%
Power Distribution Substation(PDS)	\$41,504				
DIVISION 8 - DOORS AND WINDOWS		\$64,970			
08100 Doors and Frames	\$64,970		\$22,739.50	\$22,739.50	\$19,491.00
Station (2) (No hazardous work)	\$23,466		35%	35%	30%
Power Distribution Substation(PDS)	\$41,504				

ATTACHMENT D - I
FIXED FACILITY CONSTRUCTION BUDGET
SATELLITE E APM REPLACEMENT - DBOM Contract
(see Attachment A for Summary for all work)
(work could be self performed or available for subcontracting)

DESCRIPTION OF WORK	TOTAL COST		COST BREAKDOWN		
	Cost Estimate		Material/ Equipment Cost	Labor Cost	GP and Profit
DIVISION 9 - FINISHES		\$187,727	\$ 93,863.50	\$ 56,318.10	\$ 37,545.40
09510 Acoustical Ceilings			50%	30%	20%
09700 Wall Finishes					
Station (2) (No hazardous work)	\$187,727				
DIVISION 10 - SPECIALTIES		\$23,466	\$ 11,733.00	\$ 7,039.80	\$ 4,693.20
Station (2) (No hazardous work)	\$23,466		50%	30%	20%
Wayfinding, MIA Station Interior					
DIVISION 11 - EQUIPMENT					
Not Applicable					
DIVISION 12 - FURNISHINGS					
Not Applicable					
DIVISION 13 - SPECIAL CONSTRUCTION		\$104,224	\$ 52,112.00	\$ 31,267.20	\$ 20,844.80
13100 Lightning Protection	\$104,224		50%	30%	20%
13920 Fire Pumps					
13975 Standpipes and Hoses					
DIVISION 14 - CONVEYING SYSTEMS		\$0			
Not Applicable					
DIVISION 15 - MECHANICAL		\$109,188	\$ 54,594.00	\$ 32,756.40	\$ 21,837.60
15051 Basic Mechanical Requirements for HVAC	\$109,188		50%	30%	20%
Station (2) (No hazardous work)	\$46,932				
Power Distribution Substation(PDS)	\$62,256				
DIVISION 16 - ELECTRICAL		\$171,444	\$ 85,722.00	\$ 51,433.20	\$ 34,288.80
16060 Grounding and Bonding			50%	30%	20%
16520 Site Lighting / CCTV etc.					
Station (2) (No hazardous work)	\$85,722				
Power Distribution Substation(PDS)	\$85,722				
FIXED FACILITY CONSTRUCTION COST ESTIMATE & GEN. CONDITIONS		\$2,571,083	\$729,472	\$666,923	\$1,174,688

COMMUNITY WORKFORCE BREAKDOWN (CWP)

ATTACHMENT D-II

**ATTACHMENT D- II (CWP)
FIXED FACILITY CONSTRUCTION ESTIMATE
SATELLITE E APM REPLACEMENT - DBOM Contract**

PROJECT LABOR REQUIREMENTS TO SUPPORT LOCAL WORK									
Specification Division	Crew Designation (per RS MEANS)	Trade	Hours per Day	Number of Persons	Number of Crews	Number of Days	Total Job Hours	Division Subtotal Hours	
Div -1 General Requirements									
			Not applicable for CWP						
Div -2 Site Construction- 02220 Demolition	B16	Foreman	8	1	4	6	192		
		Laborer	8	6	4	6	1152		
		Truck Driver	8	2	4	6	384		
	B34	Truck Driver	8	1	2	6	96		
		Laborer	8	2	2	6	192		
Division Subtotal								2,016	
Div -3 Concrete - 03100 and 03300 (Elevated work)	C-8E	Foreman	8	1	4	4	128		
		Laborer	8	7	4	4	896		
		Cement Finisher	8	2	4	4	256		
		Equipment Operator (light)	8	1	4	4	128		
		Concrete Pump.	8	1	4	4	128		
		Division Subtotal							
Div -4 Masonry - 04810	D11	Foreman	8	1	1	12	96		
		Bricklayer	8	2	1	12	192		
		Bricklayer helper	8	2	1	12	192		
		Division Subtotal							
Div -5 Metals - 05120	E-5	Foreman	8	1	2	5	80		
		Steel worker	8	6	2	5	480		
		Equipment Operator	8	2	2	5	160		
		Welder	8	2	2	5	160		
		Equipment Operator (oiler)	8	1	2	5	80		
		Division Subtotal							
Div -7 Thermal and Moisture Protection - 07400	G-3	Foreman	8	1	2	3	48		
		Sheet metal worker	8	5	2	3	240		
	G-5	Roofer foreman	8	1	2	3	48		
		Roofer composition	8	2	2	3	96		
		Roofer application	8	2	2	3	96		
		Division Subtotal							

PROJECT LABOR REQUIREMENTS TO SUPPORT LOCAL WORK								
Specification Division	Crew Designation (per RS MEANS)	Trade	Hours per Day	Number of Persons	Number of Crews	Number of Days	Total Job Hours	Division Subtotal Hours
Div -8 Doors and Windows - 08100	G-3	Foreman	8	1	2	4	64	
		Sheet metal worker	8	2	2	4	128	
	L-3	Carpenter	8	1	2	4	64	
		Carpenter	8	2	2	4	128	
		Helper	8	2	2	4	128	
Division Subtotal								384
Div -9 Finishes - 09510, 09700	Carpet Installer Layin Clg	Carp	8	4	2	5	320	
		Layin Clg	8	4	2	5	320	
Division Subtotal								640
Div -10 Specialties -	Q-12	Sprinkler Installer	8	2	1	2	32	
		Sprinkler Apprentice	8	3	2	2	96	
		Division Subtotal						
Div -13 Special Construction - Sound/vibration 13080, Preengineered/ special systems 13100	Carpenter	Carp	8	2	2	5	160	
		Laborer	8	2	2	5	160	
		Carp Helper	8	4	2	5	320	
		Division Subtotal						
Div -15 Mechanical and Building Services - 15050	Q-1	Plumber	8	2	2	8	256	
		Plumber helper	8	2	2	8	256	
Division Subtotal								512
Div -16 Electrical and Lighting Building Services - 16200, 16510 and 16520	R-1	Electrician Foreman	8	1	2	11	176	
		Electrician	8	3	2	11	528	
		Helper	8	2	2	11	352	
		Division Subtotal						
TOTAL JOB HOURS								7,824