



SUPPLEMENTAL / BID BULLETIN NO. 03

**REPLACEMENT OF ILS for FRANCISCO BANGOY (DAVAO) INTERNATIONAL AIRPORT**  
(Bid No. 19-035-09)

5 November 2019

- I. Please note the following amendments/ revisions/ clarifications to the Bidding Documents:

Reference	Remarks	Requirement/ Specification
<b>Query: Under Section 2.3.4.6 (a) of the Technical Specifications "Made from glass fiber reinforced plastic". Is frangible aluminum mast acceptable in lieu of fiber glass? In the Philippines and in most other countries around the world are using aluminum frangible masts including the existing masts at Davao International Airport.</b>	Additional information/ requirement	We recognize different GP frangible antenna mast design. However, the design and costing for this project is based on the technical specifications required in this section. Different design of GP frangible antenna mast shall be accompanied with OEM certification and proof of use in airports.
<b>Query: We would like to request to please provide the latest Flight Check Report.</b>	Additional information	Copy of latest Flight Check Report of ILS Davao Airport will be provided.
<b>Query: We would like to confirm if the existing cable routing or cable ducts from runway to tower equipment room are available to install the additional cables like power cables, fiber optic, etc.... Can we remove the existing old cables?</b>	Additional information	Yes, there are existing cable routing from runway to tower equipment. Existing cables maybe operational and shall be subject for discussion during the pre-construction meeting.
<b>Query: Do we need to remove the existing concrete foundations of ILS Localizer Antenna, GS and its Shelters then provide and construct a new ILS and GS foundations?</b>	Additional information	Yes, the existing foundations are old and needs to be replaced with new concrete foundations.
<b>Query: Due to the complexity of the project for tender and the voluminous documents that is part of the required submittals, our foreign partner and Evercon would like to respectfully request for a 15 days extension of tender submission date to have an ample time to prepare complete bid.</b>	Additional information	Revise date: 19 November 2019 at 2:00PM

II. **Revised date of submission and opening of bids:**

**Revised date: 19 November 2019 at 2:00PM**

**This bid bulletin shall be an integral part of the Bidding Documents and the same shall be enclosed in the technical bid envelop/component and shall be marked/tabbed accordingly.**

**For the information and guidance of all concerned.**

  
**CAPTAIN DONALDO A. MENDOZA**  
Chairman, Bids and Awards Committee

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ILS-DME FLIGHT INSPECTION REPORT & CERTIFICATE – ICAO Category I

GENERAL					
TYPE OF FLIGHT INSPECTION:		<input type="checkbox"/> COMMISSIONING	<input checked="" type="checkbox"/> PERIODIC	<input type="checkbox"/> SPECIAL	DATE: 04 APRIL 2019
FACILITY:		ILS 23		LOCATION: Davao International Airport	
EQUIPMENT TYPE:		Normarc		CO-LOCATED DME: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> LLZ <input checked="" type="checkbox"/> GS	
FREQUENCY:		109.9 Mhz / 338.8 Mhz		F/C AIRCRAFT: Learjet 31	
Localizer WGS84 Coordinates	LATITUDE:	07 06 53 8644 N		Glide Slope	LATITUDE: 07 08 0.2875 N
	LONGITUDE:	125 38 00.5882 E		WGS84 Coordinates	LONGITUDE: 125 39 11.9411 E

FLIGHT INSPECTION RESULT				
LOCALIZER PARAMETERS	TX1	TX2	ICAO SPECS/ TOLERANCE	REMARKS
<b>GENERAL</b>				
Total Modulation (@ Centerline)	40.1 %	39.5 %	40% ± 4%	
Course Width (CW)	3.57°	3.54°	3° to 6°	
Course Symmetry	49.2 %	48.6 %	50% ± 5%	
Course Structure (Zone 1)**	+10.7 µA	+9.7 µA	± 30µA	
Course Structure (Zone 2)**	+5.1 µA	+5.3 µA	Linear Decrease to ± 15µA	
Course Structure (Zone 3)**	+6.8 µA	+4.0 µA	± 15µA	
Course Alignment @ Rwy CL	+3.1 µA	+4.1 µA	± 15µA	
Transmitter Difference	0.03°		<10% CW	
Polarization (Aircraft @ 20° roll)*	-	-	± 15µA	
LLZ Usable Distance (NM)*	-	-	min -114dBm, 30% total mod	
LLZ Signal Strength (AGC)*	-61.0 dBW/m <sup>2</sup> (8NM)	-68.7 dBW/m <sup>2</sup> (8NM)	≥ -114 dBW/m <sup>2</sup> (40 µV/m)	
Identification Code (Morse Code)	.. --- --- ---	.. --- --- ---	Correctness	
Identification Letters	IDVO	IDVO	Correctness	
<b>MONITOR ALARM</b>				
Coverage @ RF Power Alarm *	-	-	≥ -114 dBW/m <sup>2</sup> (40 µV/m)	
Alignment Monitor Alarm	-	-	± 15µA	
Narrow Course Alarm	-	-	min 83% CW	
Wide Course Alarm	-	-	max 117% CW	
Course Alarm Check Position	-	-	air / ground	
<b>GLIDESLOPE PARAMETERS</b>				
<b>GENERAL</b>				
Total Modulation (@ Glide Angle)	79.2 %	79.5 %	80% ± 5%	
Glide Angle (θ)	3.02°	2.98°	± 0.05° of Commissioned Angle	
Path Width (PW)	-	0.71°	± (0.12θ ± 0.02θ)	
Path Symmetry (% 90Hz)	45.7 %	45.1 %	50% ± 17%	
Path Structure (Zone 1)**	-6.8 µA	-10.8 µA	± 30µA	
Path Structure (Zone 2)**	-15.7 µA	-12.3 µA	± 30µA	
Path Structure (Zone 3)**	-3.8 µA	-1.6 µA	± 30µA	
Transmitter Difference	0.04°		<0.2°	
GS Usable Distance (NM)*	-	-		
GS Signal Strength (AGC)*	-69.3 dBW/m <sup>2</sup> (10NM)	-67.2 dBW/m <sup>2</sup> (8NM)	≥ -95 dBW/m <sup>2</sup> (400µV)	
<b>MONITOR ALARM</b>				
Glide Angle Alarm	-	-	± 7.5% of θ	
Narrow Path Alarm	-	-	min 78% PW	
Wide Path Alarm	-	-	max 122% PW	
Alarm Check Position	-	-	air / ground	
<b>DME PARAMETERS</b>				
DME Coverage Range (NM)*	-	-		
DME Signal Strength (AGC)*	-53.9 dBW/m <sup>2</sup> (4NM)	-56.6 dBW/m <sup>2</sup> (4NM)	≥ -89 dBW/m <sup>2</sup> (20µV)	
Distance Information	Correct	Correct	Correctness	
False DME Locks	none	none	None	
Identification Code (Morse Code)	.. --- --- ---	.. --- --- ---	Correctness	
Identification Letters	IDVO	IDVO	Correctness	

**OVERALL OPERATIONAL SERVICE ASSESSMENT**

*This is to certify that the above named facility (ILS23) was inspected to the Flight Inspection Procedures and Standards in accordance with the Civil Aviation Regulations for Air Navigation Services (CARANS) Part 10 and was found to be:*

**Useable(Unrestricted)**       **Useable with Restrictions**       **Unusable**

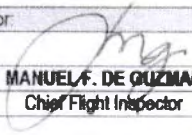
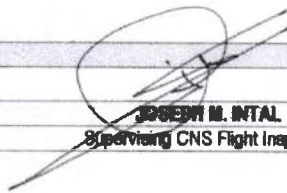
**Remarks:**    1. Recommended for operational use until 04 October 2019.

2. Pilots:

*Capt. Saturnino B. dela Cruz ( CAAP Flight Inspection Pilot)*  
*Capt. Roberto Andres A. Morico (CAAP Flight Inspection Pilot)*  
*Capt. Arnel Agbayani (AAC Corporate Pilot)*

**Notes:**

- \* - Performed only during Commissioning & Special flight inspection or upon request of maintenance personnel.
- \*\* - Minus (-) sign indicates 90 hz side; Positive (+) sign indicates 150 hz side

CNS Flight Inspector:	
Signature/ Initial	
Name	<b>MANUEL F. DE GUZMAN</b> Chief Flight Inspector
	
	<b>JOSEPH M. INTAL</b> Supervising CNS Flight Inspector



ILS-DME FLIGHT INSPECTION REPORT & CERTIFICATE – ICAO Category 1

GENERAL						
TYPE OF FLIGHT INSPECTION:		<input type="checkbox"/> COMMISSIONING	<input checked="" type="checkbox"/> PERIODIC	<input type="checkbox"/> SPECIAL	DATE: 04 APRIL 2019	
FACILITY:		ILS 05		LOCATION: Davao International Airport		
EQUIPMENT TYPE:		Normarc		CO-LOCATED DME: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> LLZ <input checked="" type="checkbox"/> GS		
FREQUENCY:		109.1 Mhz / 331.4 Mhz		F/C AIRCRAFT: Learjet 31		
Localizer WGS84 Coordinates	LATITUDE:	07 08 07.3567 N		Glide Slope WGS84 Coordinates	LATITUDE:	07 07 5.100 N
	LONGITUDE:	125 39 26.0511 E			LONGITUDE:	125 38 19.90 E

FLIGHT INSPECTION RESULT				
LOCALIZER PARAMETERS	TX 1	TX 2	ICAO SPECS/ TOLERANCE	REMARKS
<b>GENERAL</b>				
Total Modulation (@ Centerline)	39.7 %	39.4 %	40% ± 4%	
Course Width (CW)	3 75°	3 78°	3° to 6°	
Course Symmetry	49.3 %	48.4 %	50% ± 5%	
Course Structure (Zone 1)**	+ 6.0 µA	+ 5.0 µA	± 30 µA	
Course Structure (Zone 2)**	+ 6.0 µA	+ 6.5 µA	Linear Decrease to ± 15 µA	
Course Structure (Zone 3)**	+ 6.8 µA	+ 6.2 µA	± 15 µA	
Course Alignment @ Rwy CL	+ 2.9 µA	+ 2.9 µA	± 15 µA	
Transmitter Difference	0.03°		<10% CW	
Polarization (Aircraft @ 20° roll)*	-	-	± 15 µA	
LLZ Usable Distance (NM)*	-	-	min -114dBm, 30% total mod	
LLZ Signal Strength (AGC)*	-70.2 dBW/m <sup>2</sup> (8NM)	-68.2 dBW/m <sup>2</sup> (8NM)	≥ - 114 dBW/m <sup>2</sup> (40 µV/m)	
Identification Code (Morse Code)	** --- ---	** --- ---	Correctness	
Identification Letters	IDAO	IDAO	Correctness	
<b>MONITOR ALARM</b>				
Coverage @ RF Power Alarm *	-	-	≥ - 114 dBW/m <sup>2</sup> (40 µV/m)	
Alignment Monitor Alarm	-	-	± 15 µA	
Narrow Course Alarm	-	-	min 83% CW	
Wide Course Alarm	-	-	max 117% CW	
Course Alarm Check Position	-	-	air / ground	
<b>GLIDESLOPE PARAMETERS</b>				
<b>GENERAL</b>				
Total Modulation (@ Glide Angle)	78.3 %	77.9 %	80% ± 5%	
Glide Angle (θ)	3 04°	3 03°	± 0.05° of Commissioned Angle	
Path Width (PW)	0 70°	0 69°	± (0.129 ± 0.028)	
Path Symmetry (% 90Hz)	45.7 %	47.9 %	50% ± 17%	
Path Structure (Zone 1)**	- 4.4 µA	- 2.4 µA	± 30 µA	
Path Structure (Zone 2)**	- 8.6 µA	- 9.9 µA	± 30 µA	
Path Structure (Zone 3)**	- 3.4 µA	- 2.2 µA	± 30 µA	
Transmitter Difference	0.01°		<0.2°	
GS Usable Distance (NM)*	-	-		
GS Signal Strength (AGC)*	-68.3 dBW/m <sup>2</sup> (10NM)	-57.7 dBW/m <sup>2</sup> (10NM)	≥ -95 dBW/m <sup>2</sup> (400µV)	
<b>MONITOR ALARM</b>				
Glide Angle Alarm	-	-	± 7.5% of θ	
Narrow Path Alarm	-	-	min 78% PW	
Wide Path Alarm	-	-	max 122% PW	
Alarm Check Position	-	-	air / ground	
<b>DME PARAMETERS</b>				
DME Coverage Range (NM)*	-	-		
DME Signal Strength (AGC)*	-52.5 dBW/m <sup>2</sup> (4NM)	-43.2 dBW/m <sup>2</sup> (4NM)	≥ -89 dBW/m <sup>2</sup> (20µV)	
Distance Information	Correct	Correct	Correctness	
False DME Locks	none	none	None	
Identification Code (Morse Code)	** --- ---	** --- ---	Correctness	
Identification Letters	IDAO	IDAO	Correctness	

**OVERALL OPERATIONAL SERVICE ASSESSMENT**

***This is to certify that the above named facility (ILS05) was inspected to the Flight Inspection Procedures and Standards in accordance with the Civil Aviation Regulations for Air Navigation Services (CARANS) Part 10 and was found to be:***

***Useable(Unrestricted)***       ***Useable with Restrictions***       ***Unusable***

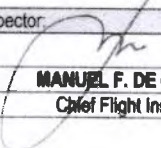
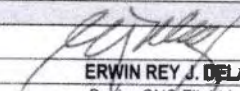
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	CNS Flight Inspector	
Signature/ Initial		
Name	<b>MANUEL F. DE GUZMAN</b> Chief Flight Inspector	<b>ERWIN REY J. DELA CRUZ</b> Senior CNS Flight Inspector