

Patents, Certifications and References



For more information visit our website: www.argosingegneria.com

September 2013

Airport Safety System

- Runway Safety Area Monitoring System (RSAMS) for a Runway Incursion detection
Patent - RM 2002A000408 dated July 31st 2002
- Ground Vehicle Management System (GVMS) for vehicle monitoring in the airport
Patent - RM2007A000157 dated March 21st 2007

Photometric Systems

- SMF/Mobile system for AGL measurement
Patent - RM2007A000099 dated February 21st 2007
- SMF/PAPI system for PAPI measurement
Patent – Italy RM2007A000679 dated December 28th 2007
Patent – U.S. 12/536648 dated July 2009

Certifications

Airport Safety System

- Italy - Runway Safety Area Monitoring System (RSAMS) by ENAV (doc. 0138068 dated July 04th 2008) and by ENAC (doc. 0139842/IOP dated October 10th 2011)
- Italy - Ground Vehicle Management System (GVMS) by ENAV (doc. 0213769 dated October 23th 2007)

Photometric Systems Main Validations / Acknowledgments

- Italy - ENAC (Italian CAA), ENAV (Italian Air Traffic Control Agency) and major Airports
- Bangladesh – CAAB
- Bureau Veritas (Independent third part laboratory)
- Canada – Transport Canada
- Colombia – Unidad Administrativa Especial de Aeronautica Civil
- Greece – Hellenic CAA
- Indonesia – Angkasa Pura II
- Korea – YouYang (AGL manufacture)
- Mexico – Direccion General de Aeronautica Civil
- Nigeria - NCAA
- Spain - AENA
- Russian Federation – Azimut (Service Provider Company)
- South Africa – SA CAA
- Thailand – Thai CAA
- Turkey – DHMI
- U.S. – Intertek-ETL (FAA appointed laboratory)

SMF/PAPI and SMF/Mobile Validations / Acknowledgments – ENAC (Italian Civil Aviation Authority)



ENAC
Ente Nazionale per l'Aviazione Civile
Via di Villa Ricotti, 42
00161 Roma
tel. +39 06 44185600
fax +39 06 44185602
regolazione.aeroporti@enac.rupa.it
www.enac-italia.it

Il Direttore Centrale
Regolazione Aeroporti

Spett. Argos Ingegneria S.p.A.
Via Tiburtina, 1166
00156 Roma

OGGETTO: Sistema di Misurazione Fotometrica luci PAPI (SMF/PAPI) –
Dichiarazione di conformità

- Vista la seguente normativa di riferimento:
 - ICAO - Annesso 14 - § 5.3.5 (*Visual approach slope indicator systems*),
 - ENAC - Regolamento Aeroporti - Cap. 6 - § 4.3 (*Caratteristiche PAPI e APAPI*),
 - ENAC - Allegato alla Circolare APT 13/A - (*Manuale dei criteri di accettabilità per gli aiuti visivi aeroportuali*),
- Vista lo Standard Tecnico-Operativo ENAC APS-01 "Dispositivi per la misurazione in campo dei parametri degli indicatori ottici della pendenza di avvicinamento (IOPA);
- Vista la seguente documentazione fornita dal costruttore:
 - norma di collaudo SMF/PAPI ARG/DT/AC-84-07 - Rev. 1.0;
 - specifiche tecniche caratteristiche;
 - certificato di calibratura;
 - manuale d'impiego per le varie modalità operative e di manutenzione;
- Accertata la rispondenza dell'apparato SMF/PAPI Argos rispetto ai precedenti riferimenti normativi;
- Considerato l'esito favorevole delle prove in laboratorio e delle verifiche sul campo;
- Si dichiara che il seguente apparato:

Articolo	Descrizione
ARGOS - SMF/PAPI PA0001 ()	Misuratore caratteristiche fotometriche unità PAPI

è conforme allo standard tecnico-operativo ENAC - APS-01.

Il Direttore Centrale
Ing. Alessandro Cardì

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SMF/PAPI



ENAC
Protocollo del 03/06/2009

Il Direttore Centrale
Regolazione Aeroporti

Argos Ingegneria S.p.A.
Via Tiburtina, 1166
00156 Roma

0036044 / DIRGEN / ATA

SUBJECT: SMF/M - Mobile devices for AGL photometric measurements –
Statement of conformity

- Having regard to following reference regulation:
 - ICAO - Annex 14 - § 5.3 "Lights" and Appendix 2;
 - ENAC - Aerodromes Regulation - Chapter 6;
 - ENAC - Attachment to Circular APT 13/A - (*Manual on Aerodrome visual aids acceptance criteria*);
 - ENAC - Circular APT 28 "Aerodrome devices acceptance criteria".
- Having regard to Technical-Operational Standard ENAC APS-02/2nd Edition "Mobile devices for measuring photometric features of AGL on the field".
- Having regard to following manufacturer's documents:
 - test standard SMF/M ARG/DT/AC/110-08-Rev. 2;
 - technical specifications - ARG/DT/AC/042-07-Rev. 2;
 - calibration certificate issued on September 10th, 2008 (40-CCAM-1001-08-36);
 - operating manual ARG/DT/BR/131-09-Rev.1 software user manual and ARG/DT/AC-140-06-Rev.3;
 - maintenance manual ARG/DT/LB-167-06-Rev.4.
- Whereas SMF/M Argos device fulfils preceding regulatory references.
- Whereas both laboratory and on the field tests issued a positive outcome.
- ENAC hereby states that the following device:

Article	Description
ARGOS SMF/M - P/N 1-40-SMFB-2 S/N 40-SMFB-1005-29-06	Mobile AGL photometric measuring system

conforms with Technical-Operational Standard ENAC APS-02/2nd Edition.

Il Direttore Centrale
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SMF/M

SMF/PAPI and SMF/Mobile Validations / Acknowledgments – TechnoSky (Italian Service Provider for 24 ENAV airports)



16 FEB 2011



L'Amministratore Delegato

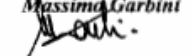
To whom it may concern

Techno Sky, an ENAV Company, declares that all the measurements activities requested to check the conformity of AGL to ICAO recommendations in the airports under the responsibility of ENAV (see list below) will be performed by Techno Sky personnel using SMF/M and SMF/PAPI equipments manufactured by Argos Ingegneria S.p.A.

The performances of the equipments are in conformity with the ENAV requirements, while the reports issued by SMF/M and SMF/PAPI are acknowledged by ENAC Department responsible for the release of AGL certification.

Airports where AGLS is under responsibility of ENAV

- Torino
- Palermo
- Genova
- Catania
- Trieste
- Parma
- Alghero
- Reggio Calabria
- Pescara
- Lampedusa
- Crotone
- Foggia
- Bologna
- Napoli
- Firenze
- Bari
- Lamezia terme
- Olbia
- Ancona
- Forlì
- Cuneo
- Albenga
- Perugia
- Padova

Massimo Garbini


SMF/PAPI Validations / Acknowledgments – AENA (Spanish Civil Aviation Authority) through Bureau Veritas

Industry & Facilities Division	
INSPECTION CERTIFICATE Nr R2022/10/MM/mm	
BV Job Nr: 10.IT.714340.726	

PROJECT: na	Ref:na
BV Client: ARGOS S.P.A.	P/o nr: 016/10 <i>(client to BV)</i>
Manufacturer: ARGOS S.P.A.	P/o nr: <i>(client to Manufacturer)</i>
Inspection requested by: GRP / AENA	

SUPPLY / SUBJECT OF INSPECTION	ITEM / TAG Nr	QTY
ARGOS INGEGNERIA S.P.A. SMF/PAPI S/N AA0011	PAA0101	1

Scope of inspection:

- > Particulars: NA
- > Reference documents used for inspection:
"Norma di Collaudo del Sistema di Misurazione Fotometrica per l'Allineamento delle Luci PAPI denominato SMF/PAPI" Doc: ARG/DT/AC-84-07 REV.2.0 DATA 21.01.2010;
- > Place of inspection & date or period:
Laboratory: O.C.E.M. S.p.A. San Giorgio di Piano (Bologna) Italy
Date: 23rd February 2010
- > Marking and stamping:
Metallic Name Plate
- > Annexes to this certificate:
 - 1) CERTIFICATION No. 5353574 "Measuring System OPTRONIK SMS 10 C";
 - 2) CERTIFICATE No: 091209-14 "PAPI CLINOMETER CERTIFICATE OF CALIBRATION"
 - 3) CALIBRATION CERTIFICATE No. 90200/K01894
 - 4) TEST # 1 MEASUREMENT REPORT PAPI UNIT VERTICAL COLOR TRANSITION ANGLE
 - 5) TEST # 2 MEASUREMENT REPORT PAPI UNIT VERTICAL COLOR TRANSITION ANGLE
 - 6) TEST # 3 MEASUREMENT REPORT PAPI UNIT VERTICAL COLOR TRANSITION ANGLE
 - 7) TEST # 4 MEASUREMENT REPORT PAPI UNIT LIGHT COLOR
 - 8) TEST # 5 MEASUREMENT REPORT PAPI UNIT LIGHT INTENSITY
 - 9) INSTRUMENT TEST REPORT (PAPI UNIT PARAMETERS MEASUREMENT) COLLECTIVE TEST DATA

Industry & Facilities Division	
INSPECTION CERTIFICATE Nr R2022/10/MM/mm	
BV Job Nr: 10.IT.714340.726	

The undersigned, inspector to Bureau Veritas, certifies that the here above mentioned supply was inspected in conformity with the applicable requirements of the purchase order and the contractual requirements governing the mission entrusted to Bureau Veritas without any remarks. The supply has been tested with results in compliance with Manufacturer specifications indicated in the procedure ARG/DT/AC-84-07 rev 2.0 table 1 and table 2.

Inspected by:
Name: Maurizio MONTAGNARI Signature 



Date of issue: 24th February 2010

Inspection centre: BV ROME - ITALY

Distribution: CLIENT MANUFACTURER

SMF/PAPI Validations / Acknowledgments – AENA (Spanish Civil Aviation Authority)



D. José Manuel Mouton Asenjo, en calidad de Director del Expediente Nº DIA 818/09 “SUMINISTRO DE UN EQUIPO DE MEDIDA DE MEDIDA DE PARAMETROS EN CAMPO DE LOS SISTEMAS VISUALES INDICADORES PENDIENTE DE APROXIMACION (PAPI)” de **Aena**, declara que el equipo de medida SMF/PAPI (SN AA0011), ha sido adquirido a la firma GRP Iluminación S.A. como representante en España del fabricante ARGOS Ingeniería S.p.A., cumpliendo satisfactoriamente con los requisitos indicados en el correspondiente Pliego de Prescripciones Técnicas de **Aena** para dicho Expediente, que incluye el control de calidad de producción certificado, satisfactoriamente, por el Bureau Veritas, como Entidad Inspector Independiente.

Dicho equipo ha sido adquirido con el fin de ser utilizado en los aeropuertos de la red de **Aena** para:

- Comprobaciones previas a la certificación de los sistemas PAPI;
- Estudios y corrección de posibles anomalías en el reglaje que puedan presentar los sistemas;
- Mantenimiento de las unidades PAPI.

Y para que conste a los efectos oportunos firmo la presente en Madrid, a 15 de Abril de 2010.



SMF/Mobile Validations / Acknowledgments – AENA (Spanish Civil Aviation Authority)



TO WHOM IT MAY CONCERN

Mr. Alejandro de las Heras Valiente acting as Director of Construction support and coordination responsible of Barcelona airport (Aena Aeropuertos)

HEREBY CERTIFIES

that the System SMF/M from the company Argos Ingeniería, Spa for Airfield Photometric has been successfully operated in the AGL measurements sessions performed in Barcelona airport in February 2012.

Signed in Barcelona on the 17th of October 2012.



(signature and stamp)

SMF/PAPI Validations / Acknowledgments – HCAA (Hellenic Civil Aviation Authority)

ΕΠΙΣΗΜΗ ΜΕΤΑΦΡΑΣΗ TRADUCTION OFFICIELLE OFFICIAL TRANSLATION

- 1 -

#117619

HELLENIC REPUBLIC
MINISTRY OF INFRASTRUCTURE, TRANSPORTATION & NETWORKS
CIVIL AVIATION AUTHORITY
DIRECTORATE GENERAL OF AIR TRANSPORTATION
DIRECTORATE OF ELECTROMECHANICAL INSTALLATIONS (D8)
DEPARTMENT B*

Address: P.O. box 70360, Glyfada GR 16610

Information: I. Staikouras

Tel. 2108916114

Glyfada, 12.09.2011

Reference no: D8/B/28531/5437

To Mr. Benecos Georgios
11, Sikelianou Street, Neo Psychiko
GR 15451

Re: Certificate of proper operation of system SMF/PAPI manufactured by ARGOS
INGEGNERIA

Ref. Your application under reference no D8/5403/08.09.2011

To whom it may concern

This is to certify that the Civil Aviation Authority has conducted a proper operation test of the system of ground control and adjustment of PAPI equipment type SMF/PAPI manufactured by the company ARGOS INEGNERIA. The test was conducted on PAPI units of runways 12/30 of the State Airport of Kastoria on June 27, 2011.

The system produced the expected results and the adjustments made were flight checked by our airplane CESSNA CITATION registered SX ECI, which made the flight check on the same afternoon and officially confirmed, with the minimum specified test passages, the results of the ground control and adjustment, without further intervention of the units.

ΜΕΤΑΦΡΑΣΤΙΚΗ ΥΠΗΡΕΣΙΑ ΥΠΟΥΡΓΕΙΟΥ ΕΞΩΤΕΡΙΚΩΝ, ΑΘΗΝΑ
HELLENIC REPUBLIC, MINISTRY OF FOREIGN AFFAIRES, TRANSLATION BUREAU, ATHENS
REPUBLIQUE HELLENIQUE, BUREAU DES TRADUCTIONS
MINISTERE DES AFFAIRES ETRANGERES, ATHENES

ΕΠΙΣΗΜΗ ΜΕΤΑΦΡΑΣΗ TRADUCTION OFFICIELLE OFFICIAL TRANSLATION

- 2 -

#117619

For D8 Director
G. Vardakas
True certified copy of the original
The head of Central Secretariat
I. Petropoulos

Internal communication: D8/B (2)

Exact translation of the original in Greek attached herewith.

The official translator: Maria K. Karageorgou

22/9/2011

ΜΕΤΑΦΡΑΣΤΙΚΗ ΥΠΗΡΕΣΙΑ ΥΠΟΥΡΓΕΙΟΥ ΕΞΩΤΕΡΙΚΩΝ, ΑΘΗΝΑ
HELLENIC REPUBLIC, MINISTRY OF FOREIGN AFFAIRES, TRANSLATION BUREAU, ATHENS
REPUBLIQUE HELLENIQUE, BUREAU DES TRADUCTIONS
MINISTERE DES AFFAIRES ETRANGERES, ATHENES

*SMF/Mobile Validations / Acknowledgments –
Benecos Company (Argos partner in Greece)*

ΜΠΕΝΕΚΟΣ ΓΕΩΡΓΙΟΣ του Ιωάννου

Μηχανολόγος Ηλεκτρολόγος Ε.Μ.Π.-Ε.Δ.Ε.

BENECOS GEORGE Mech. Engineer

11 SIKELIANOU str NEO PSIHIKO 154 51 GREECE
PHONE NO + 30 210 6741879/GSM +306944301799/FAX+30 210 6756972
ΑΦΜ 016798894 ΔΟΥ ΨΥΧΙΚΟΥ VAT no EL 016798894
e-mail : benecosgeorge@hotmail.com

Athens 17 October 2012

TO WHOM IT MAY CONCERN

This letter is to acknowledge that Argos Ingegneria Spa provided us with the Airfield Photometric Systems SMF/M in June 2011 and that system have been successfully operated in the AGL measurements performed by our Company in the Kastoria airport. The presentation has been made in presence of personnel of the Greek CAA and the whole system has been officially approved by the Greek CAA.

For the company **BENECOS GEORGE**


ΓΕΩΡΓΙΟΣ ΙΩΑΝ. ΜΠΕΝΕΚΟΣ
ΔΙΠΛΩΜ. ΜΗΧΑΝΟΛΟΓΟΣ ΜΗΧΑΝΙΚΟΣ
ΕΘΝΙΚΟΥ ΜΕΤΣΟΒΙΟΥ ΠΟΛΥΤΕΧΝΕΙΟΥ
ΜΕΛΟΣ Τ.Ε.Ε. ΑΡΙΘΜΟΣ ΜΗΤΡΩΟΥ: 23027
ΣΙΚΕΛΙΑΝΟΥ 11 - Ν. ΨΥΧΙΚΟ Τ.Κ.: 154 51
ΤΗΛ.: 210 6719825, 6756971 - FAX: 210 6756972
Α.Φ.Μ.: 016798894 - Δ.Ο.Υ.: ΨΥΧΙΚΟΥ

SMF/PAPI and SMF/Mobile Validations / Acknowledgments – Azimut JSC (Argos partner in Russian Federation)



AZIMUT JSC
2 Bldg, 5 Naryshkinskaya Alley, Moscow 125167, Russia
Tel +7 (495) 748 05 60, Fax +7 (495) 926 37 69
mailboxmk@azimut.ru, www.azimut.ru

May 30, 2012 № 519

To whom it may concern
/ По месту требования

This letter is to acknowledge that Argos Ingegneria S.p.A. provided AZIMUT JSC with the Airfield Photometric Systems SMF/M and SMF/PAPI in December 2010 and that systems have been successfully tested in the AGL measurements performed by our Company at Moscow Domodedovo airport on March 2011.

Настоящим письмом мы подтверждаем, что Аргос Инженерия С.п.А. предоставила ОАО «АЗИМУТ» Аэродромные Фотометрические Системы SMF/M и SMF/PAPI в декабре 2010г., и данные системы были успешно протестированы измерениями параметров ОБИ, выполненными нашей компанией в Московском аэропорту Домодедово в марте 2011г.

AZIMUT JSC General Director / Генеральный директор ОАО «АЗИМУТ»
Mr. Asker Saidov / Г-н Аскер Саидов



SMF/PAPI and SMF/Mobile Validations / Acknowledgments – MAK Company Limited (Argos partner in Turkey)

MAK COMPANY LIMITED

Project Engineering Consultants, Representatives and Trade

MAK : 05 / ARGOS / 12

29 June 2012

SUBJECT : SMF - PAPI
SMF M.
SMF L Performance evaluations

TO WHOM IT MAY CONCERN

This letter is to acknowledge that subject equipment manufactured by Argos Ingegneria Spa Italy were supplied and tested to the General Directorate of State Airports Authority (DHMI) Turkey, through MAK co. Ltd.

- Photometric Measurement System (SMF) Precision Approach Path Indicator (PAPI) was supplied and tested in the year 2011 and
- Photometric Measurement System (SMF) Mobile (M) and SMF/Laboratory (L) were both supplied and tested in 2012.
- These systems have been successfully tested and operated in measurements and alignments operations performed by DHMI with MAK co. Ltd. supervision at Istanbul Ataturk International Airport.

Please be informed.

Please do not hesitate to call us for additional information and/or explanation that may be required

Sincerely



Aydin USTUN
General Manager

SMF/PAPI Validations / Acknowledgments – U.S. Intertek-ETL (FAA appointed laboratory)

Intertek

TEST, TEST METHODS AND RESULTS OF TESTS

TEST RESULTS SUMMARY

The Argos SMF/PAPI instrument determined the transition elevation angle in the range of 0° to 10° with the accuracy of 1' required by ICAO recommendations. The instrument measured the overall inclination of the output beam of a PAPI in degraded service condition, with simulated varied terrain under the tripod, using the built-in self-stabilising platform. The average time required for each measurement was 4 minutes.

The optics of the PAPI LHA under test were re-focused based on the information provided by the SMF/PAPI system.

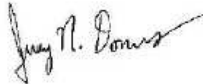
The SMF/PAPI instrument demonstrated the determination of the transition elevation angle through external observation of the PAPI optical beam as with flight inspection methods.

The measured performance of the instrument was in compliance with the specifications provided by the Manufacturer.

Manufacturer's Specifications:

- Accuracy for color transition elevation angle: better than 1 arc-minute
- Precision: better than 1 arc-minute
- Accuracy for intensity tests: 10 %
- Accuracy for chromaticity: 0.03 on CIE x, y coordinates
- Diagnostic capabilities for optimal aligning and focusing the PAPI unit optics
- Operating temperature: -10°C / +35°C (Instrument set to temperate climate)
- Capable of use on variable terrain
- Instrument tripod positioning done without special equipment

In Charge Of Tests:



Jeremy N. Downs, P.E.
Engineering Team Leader
Lighting Division

Report Reviewed By:



Christopher W. Metcalf
Project Engineer
Lighting Division

Attachment: Four picture pages
Signed Instrument Test Report (6 pages)

SMF/PAPI Validations / Acknowledgments – FAA (U.S. Civil Aviation Authority)

ARGOS Activity Report at NBP SMF PAPI Calibration and Training

The activities were held at the request of the FAA at NBP site, 1480 N. Claremont Blvd., Claremont (CA) from September 24 to September 27, 2012 and attended by:

FAA: Lesley Duncan
Ndubuisi Nnorom
Mike Smith
Dina Zotkina
OHIO University: Jamie Edwards
NBP: Rick Angeloni
Antoine Kanaan
Aiden Ozuna
ARGOS: Mario Zitelli

September 24, Monday

Installation of the new software SMFPapiField 2.0.9 and Parge 2.3.2 on SMF/PAPI system SNAA0006.

Generation of geographic license for GPS use.

Provision of:

- 1 GPS antenna
- 2 Operating manuals for the new software
- 2 System manuals for the new software
- 1 System software and manuals on DVD
- 1 License certificate for the new software
- 1 Power pack (jump starter), 12 V, 18 Ah.

Calibration of SMF/PAPI SNAA0006 elevation test functionality, using the reference instrument SMF/CLC, SNAE02003. Provision of SMF/CLC calibration certificate dated July 23, 2012 and Konica Minolta calibration certificate no 20010413 dated 29.06.2012.

Check of SMF/PAPI Elevation test accuracy and repeatability using an LED PAPI LHA, model FA-30200 from NBP.

SMF/PAPI has performed correctly all tests on LED PAPI, with 53 arc-seconds accuracy and 18 arc-seconds repeatability.

September 25, Tuesday

Check of SMF/PAPI Intensity and Chromaticity test accuracy and repeatability using an LED PAPI LHA from NBP.

SMF/PAPI has performed correctly all tests on LED PAPI, showing accuracy below 8% and repeatability (standard deviation) below 1% on intensity, accuracy below 0.026 and repeatability (standard deviation) below 0.005 for CIE x and y values.

Provision of a new Calibration certificate for SMF/PAPI SN AA0006 dated September 24, 2012. Personal training to Mr. Rick Angeloni on SMF/PAPI testing of LED PAPIs provided by NBP. Performance of elevation, intensity and aperture tests on LED PAPI.

September 26, Wednesday

Theory training course at the attendees listed above on SMF/PAPI use with the new software SMFPapiField 2.0.9.

Practice on SMF/PAPI use with NBP LED PAPI. Several tests have been performed by the attendees of elevation angle, intensity, chromaticity, aperture angle and intensity diagram. Diagnostics capabilities (focusing, alignment) of SMF/PAPI on LED PAPIs have been discussed and properly tested on NBP LED PAPI.

September 27, Thursday

Practice on SMF/CLC calibration tool with SMF/PAPI.

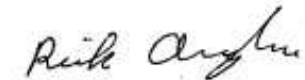
Practice on LED PAPI LHA alignment.

Practice with Parge report generator software.

Discussions on SMF/PAPI utilization.

Provision of course certificates to the attendees.

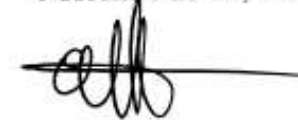
Rick Angeloni, NBP



Jamie Edwards, Ohio University



Ndubuisi Nnorom, FAA



Mario Zitelli, Argos Ingegneria Spa



SMF/PAPI Validations / Acknowledgments – Transport Canada (Canadian Civil Aviation Authority)



Advisory Circular			
Subject:		Precision Approach Path Indicator Maintenance and Inspection (PAPI)	
Issuing Office:	Standards	Document No.:	AC 300-006
File Classification No.:	Z 5000-34	Issue No.:	01
RDIMS No.:	7341288-V17	Effective Date:	2012-10-12

1) INTRODUCTION

This Advisory Circular (AC) is provided for information and guidance purposes. It describes an example of an acceptable means, but not the only means, of demonstrating compliance with regulations and standards. This AC on its own does not change, create, amend or permit deviations from regulatory requirements, nor does it establish minimum standards.

2) PURPOSE

The purpose of this document is to provide guidance for the inspection, commissioning and maintenance of Precision Approach Path Indicator/Abbreviated Precision Approach Path Indicator (PAPI/APAPI) systems.

3) APPLICABILITY

This document applies to all aerodromes, and airport operators that provide PAPI/APAPI systems, aviation lighting manufacturers and installers, and Transport Canada Civil Aviation (TCCA) inspectors. This information is also available to the aviation industry for information purposes.

4) REFERENCES AND REQUIREMENTS

Transport Canada publication, TP 312, 4th Edition – Aerodrome Standards and Recommended Practices (revised 03/2005).

5) PREVENTIVE MAINTENANCE INSPECTION PROCEDURES

This section contains a Preventive Maintenance Inspection (PMI) schedule for the PAPI system with step-by-step instructions for performing the PMI. The PMIs establish a recommended routine which may be altered to suit local conditions. The manufacturer's operating and maintenance instructions should also be consulted as may be applicable to specific product designs.

	D	W	M	Q	SA	A	U
Check lamps/filters for operation.	X						
2. Check operation of controls			X				
3. Check for damage by service vehicles or aircraft.			X				
4. Clean lamps and filters.				X			
5. Check mechanical parts for damage			X				
6. Check lightning arresters			X				
7. Check for water damage or insect infestation.			X				
8. Check for presence of rodents.			X				
9. Record output current and input voltage of adapter (if used).			X				

10. Check alignment and aiming of light boxes			X				
11. Check levelling and operation of tilt switch.			X				
12. Check integrity of obstacle-free approach plane.				X			
13. Check insulation resistance of underground cables.					X		
14. Check resistance of grounding system.					X		
15. Check after heavy snowfall							X
16. Check condensation/frost prevention system					X		

D = Daily Q = Quarterly U = Unscheduled
W = Weekly SA = Semi-Annual
M = Monthly A = Annual

6) MAINTENANCE PROCEDURE

7) VERIFICATION OF PRECISION APPROACH PATH INDICATOR (PAPI) SETTING ANGLES

8) SUMMARY

The PAPI system is maintained to ensure that the units are set at the proper vertical angles for the associated glideslope. The setting angles are established and maintained by means of the aiming instrument [clinometer] and should be verified initially and at periodic intervals by an independent method.

9) RESPONSIBILITIES

It is aerodrome operators' responsibility to ensure that the PAPI or APAPI is correctly installed, inspected and maintained in accordance with published specifications of TP 312, manufacturers' specifications and recommended maintenance procedures; including the verification of the angle settings for the individual light units.

The PAPI system is maintained to ensure required light output and that the units are set at the proper vertical angles for the associated glideslope. The setting angles are established and maintained by means of the aiming instrument [clinometer] and should be verified initially and at periodic intervals to validate the accuracy of the settings established using the clinometer.

10) CONTACT OFFICE

For more information, please contact the:
TCCA Regional Office listed at the following address
<http://www.tc.gc.ca/enp/regions.htm>

Suggestions for amendment to this document are invited, and should be submitted via:

AARTInfoDoc@tc.gc.ca

Original signed by:

Aaron McCorie
Director, Standards
Civil Aviation
Transport Canada

*SMF/PAPI and SMF/Mobile Validations / Acknowledgments –
IDS North America (Argos partner in Canada and U.S.)*



October 4, 2012

To whom it may concern,

This letter is to acknowledge that Argos Ingegneria Spa provided us in 2011 with the Airfield Photometric Systems SMF/M and SMF/PAPI.

IDS North America has been using successfully this equipment for AGL measurements performed at various Canadian airports.

Sincerely,



Benoit Tardif
Director of Operations & Marketing
Air Navigation Division

SMF/PAPI Validations / Acknowledgments – DGAC (Direction General de Aeronautical Civil – Mexican CAA)

(SCT-02-209.9172-DIC/2011)
DIRECCIÓN GENERAL DE AERONÁUTICA CIVIL
DIRECCIÓN GENERAL ADJUNTA DE AVIACIÓN
DIRECCIÓN INGENIERÍA, NORMAS Y CERTIFICACIÓN
4.1.335.- CRT-0555/11

"2011, Año del Turismo en México"

México, D.F., a 07 de Julio de 2011.

SECRETARÍA DE
COMUNICACIONES
Y TRANSPORTES



SCT

ALMAR TELECOMUNICACIONES Y CONSTRUCCIONES, S.A.

Cto. Abanicos No. 154
Club de Golf San Gil
C.P. 76800, San Juan del Rio, QRO.

At'n: Ing. Juan Almar J.
Gerente.

En atención a su escrito de fecha 12 de Julio del año en curso, por medio del cual solicita la Certificación del Sistema SMF/PAPI (Equipo Calibrador de Luces PAPI) marca Argos Ingeniería S.P.A, modelo SMF/PAPI y número de parte PAA0101, para lo cual adjunta las pruebas realizadas por el laboratorio Intertek de acuerdo con la Legislación y Reglamentación Internacional siguiente:

- OACI – Anexo 14 - § 5.3.5 (Sistema Indicador de Pendiente de Aproximación Visual).
- ENAC – Regolamento Aeroporti – Cap 6 - § - 4.3 (Caratteristiche PAPI e APAPI).
- ENAC – Allegato alla Circolare APT 13/A – (Manuale dei criteri di accettabilità per gli aiuti visivi aeroportuali).
- ENAC – APS-01- Dispositivi per la Misurazione in campo dei parametri degli indicatori ottici della pendenza di avvicinamento (IOPA).

Al respecto, le comunico que no existe inconveniente por parte de esta Dirección de Ingeniería, Normas y Certificación para que realice únicamente las actividades propias de Mantenimiento y Calibración de Luces PAPI, este equipo puede ser utilizado para Certificación de estas Luces PAPI.

Con base a carta dirigida de la Ente Nazionale Per L'Aviazione Civile Italian Civil Aviation Authority (ENAC); en donde confirma que el equipo está provisto con la precisión y exactitud requerida por OACI y en Italia es aceptado para Certificación de dichas Luces.

ATENTAMENTE.

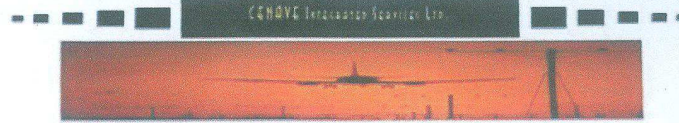


P.1
ING. PABLO CARRANZA PLATA.
DIRECTOR DE INGENIERÍA, NORMAS Y CERTIFICACIÓN



ECHB'CPG'EAR

SMF/PAPI and SMF/Mobile Validations / Acknowledgments – Cenave Integrated Services Ltd (Argos partner in Nigeria)



Date: May 18, 2012

Dear Sir,

TO WHOM IT MAY CONCERN

This letter is to acknowledge that Argos Ingegneria Spa provided CENAVE Integrated Services Ltd (CISL) with the Photometric System SMF/PAPI in the year 2010. CISL in conjunction with Argos conducted on the equipment usage training for the end user staff of Nigerian Civil Aviation Authority (NCAA).

The system has been in use by NCAA and operates optimally in PAPI measurements and alignments at:

- Murtala Mohammed International Airport - Lagos
- Nnamdi Azikiwe International Airport - Abuja
- Mallam Aminu Kano Airport - Kano
- Port Harcourt International airport - Port Harcourt

CISL earnestly reserve the honour to be at your service in any related field of aviation at your call, with quality service delivery and promptness.

CISL look forward to being at your disposal, while appreciating your valued time to read this information.

Respectfully yours



NWOKORO CHIMEZIE
Chief Desk Officer
for MD

CENAVE Integrated Services Ltd Office Address:

BEFS Plaza Suite 161, Second Floor, 21 Ajose Adeogun Street, Utako District, Abuja, Nigeria
P.O.Box 10684 Garki Abuja, Nigeria. Tel: +2347037561331, +2348121868574, +2348094567212
Website: <http://www.cevaveld.com>

SMF/Mobile Validations / Acknowledgments – Axiomatic CO. ltd (Argos partner in Thailand)



AXIOMATIC CO.,LTD.

บริษัท แอคซิโอมेटริก จำกัด

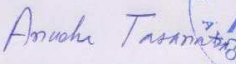
5/440 หมู่ 11 ต.อ้อมน้อย อ.กระทุ่มแบน จ.สมุทรสาคร 74130 โทรศัพท์ (02) 463-2900, 089-7987722 โทรสาร (02) 463-2901
5/440 Moo 11 Aomnoi Kratumban Samutsakorn 74130 Tel. (02) 463-2900, 089-7987722 Fax. (02) 463-2901

May 30, 2013.

TO WHOM IT MAY CONCERN

This letter is to acknowledge that Argos Ingegneria SpA provided Axiomatic Co.,Ltd. with the Airfield Photometric Systems SMF/M in August 15,2012 and that systems have been successfully tested and operated in the AGL measurements performed by Axiomatic Co.,Ltd. at:

- UDONTHANI AIRPORT	12-19 November 2012
- KRABI AIRPORT	1-7 December 2012
- PHARE AIRPORT	15-22 December 2012
- MEA-HONG-SON AIRPORT	5-12 January 2013


(Mr. Anucha Tasnarong)
Managing Director



Argos Latest Achievements

- SMF/PAPI Training course for FAA and PAPI measurement session at Vero Beach Airport (USA)
- SMF/PAPI measurement session at OFFUTT Airport (U.S.)
- PAPI LED FAT performed by FAA at NBP premises using SMF/PAPI (U.S.)
- PAPI measurement session at Montreal Airport (Canada)
- SMF/PAPI training course for Rapidexxus Technicians (Colombia)
- PAPI measurement session at Kastoria Airport (Greece)
- PAPI measurement session at Domodedovo Airport (Russian Federation)
- PAPI and AGL measurement session at Kazan airport (Russian Federation)
- SMF/PAPI and SMF/M Training course for DHMI technicians and measurement sessions at Esemboga - Ankara airport and Istanbul – Ataturk airport (Turkey)
- AGL measurement session at Barcelona airport (Spain)
- Training course and PAPI measurement session for Nigerian CAA in Lagos and Abuja (Nigeria)
- SMF/PAPI Training course for SA CAA (South Africa Civil Aviation Authority)
- SMF/PAPI and SMF/SIGN training course for YouYang technicians (Korea)
- SMF/M and SMF/MCT Training course for Thai DCA (Thailand)
- SMF/PAPI Training course for PT. Angkasa Pura II (Indonesia Civil Aviation Authority)

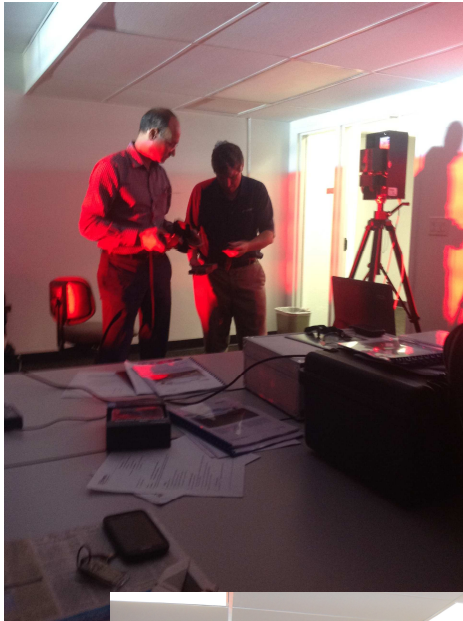
*SMF/PAPI Training course for FAA at Vero
Beach Airport (USA)*



*SMF/PAPI measurement
session at OFFUTT Airport
(U.S.)*



PAPI LED Factory Acceptance Test by FAA at NBP premises (U.S.)



SMF/PAPI at Montreal Airport (Canada)



*SMF/PAPI training course for UAEAC
(Unidad Administrativa Especial de
Aeronautica Civil in Colombia)*



SMF/PAPI at Kastoria Airport (Greece)



SMF/PAPI at Domodedovo Airport (Russian Federation)



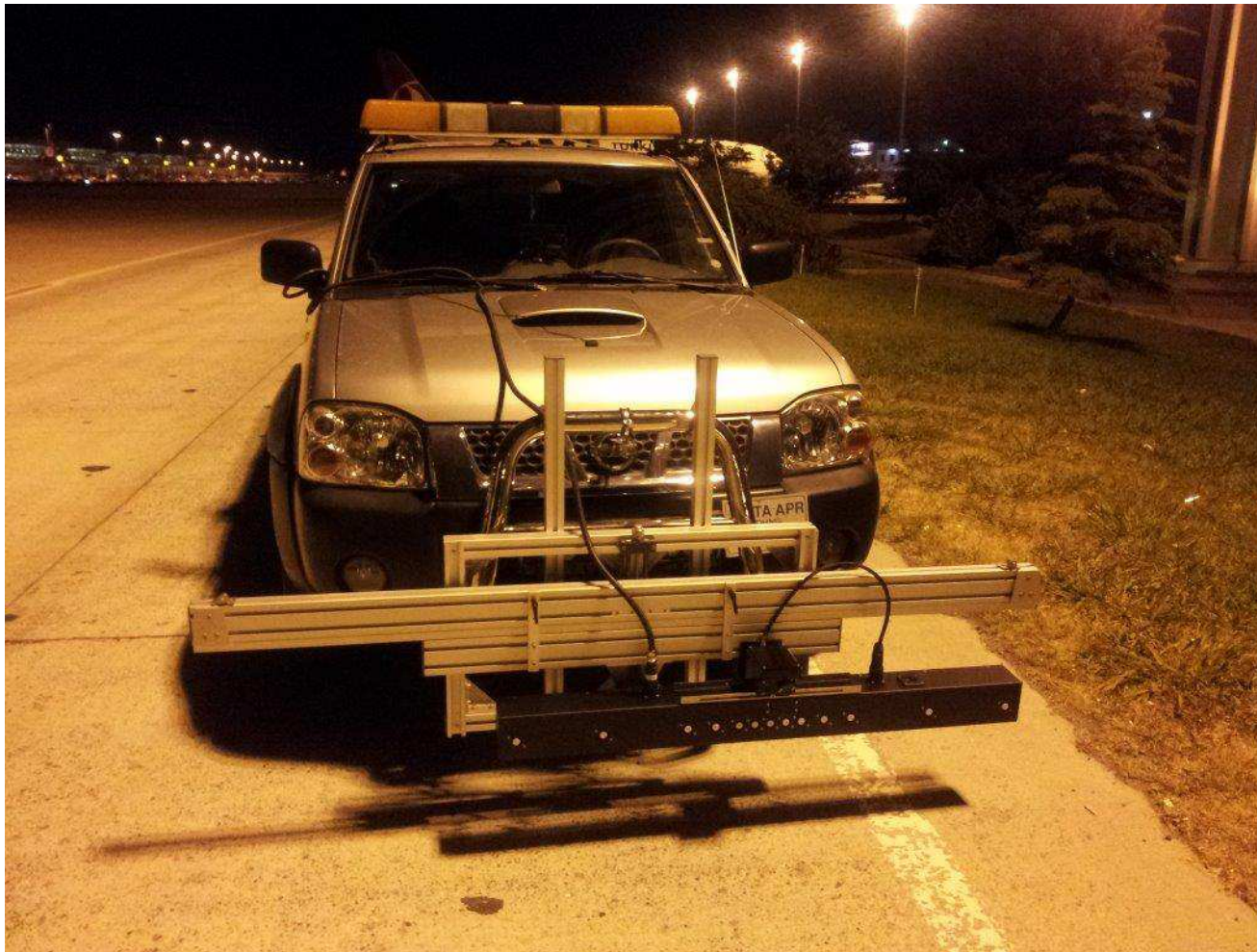
*SMF/PAPI and SMF/M measurement session at Kazan airport
(Russian Federation)*



SMF/PAPI Training Course Session at Esemboga – Ankara (Turkey)



*SMF/M measurement session at Istanbul - Ataturk airport
(Turkey)*



SMF/M measurement session at Barcelona airport (Spain)



SMF/PAPI Training course for Nigerian CAA in Abuja (Nigeria)



SMF/PAPI training course for SACAA (South Africa Civil Aviation Authority)



SMF/PAPI and SMF/Sign Training course for YouYang technicians (Korea)



SMF/M and SMF/MCT Training course for Thai DCA (Thailand)



SMF/PAPI Training course for PT. Angkasa Pura II (Airport Management Company in Indonesia)

