

SMF/PAPI PAPI Alignment dedicated Photometric Measurement System

*FAA Training Course Synopsis
15-17 July 2009 c/o Vero Beach Municipal Airport*

ACS International LLC



OHIO
UNIVERSITY



SMF/PAPI

FAA Training Course Synopsis

*PAPI Alignment dedicated
Photometric Measurement System*



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On July 15th and 16th 2009, in Vero Beach Airport, FL (US) a Training Course has been held by Argos Ingegneria SpA.



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People

- **Argos Team was composed of:**
 - Alberto Coletti, Sr. Engineer
 - Bernardino Ricci, PhD
- **The Audience was distributed in the following way:**
 - 9 people coming from the FAA (Washington, Atlanta, New York, etc.) Theory
 - 1 person coming from Ohio University
 - 1 person coming from SAIC
 - 1 person coming from VRB Airport
 - 2 people coming from ACS International LLC



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Agenda of the Training Activities

- **THEORY – [First Day] → July 15, 9:30 am – 4:30 pm**
 - Opening Remarks
 - Introduction of all Participants
 - Theory
 - Equipment Description
 - Operation of Equipment
 - Setup
 - Functional Tests/Verification of Proper Setup
 - Computer Interface & Capturing the Measurements
 - Logging of Parameters
 - Analyzing Results
- **PRACTICE – [Second Day] → July 16, 9:30 am – 4:30 pm**
 - Meet at Airport
 - Transport Equipment to first PAPI site
 - Argos Trainers demonstrate setup and measurements procedures
 - Move Equipment to second PAPI site
 - Students setup and perform measurements
 - Printing out measurements Results
 - Interpreting the Results
 - Maintenance, Calibration, Handling and Storing of Equipment

Theory Summary

- **Theory: what is a PAPI System?**
 - How does a PAPI work?
 - ICAO Compliant Light Intensity Diagrams: Annex 14
 - ICAO Aerodrome Design Manual Requirements
 - ICAO Harmonization with ILS
- **Description of SMF/PAPI**
 - SMF/PAPI System Inventory List
 - Turning-On SMF/PAPI For the First Time
 - Handling the Instrument
 - Power Supply Connection
 - Laptop Connection
 - Diagnostic LEDs on the Back Panel
- **Preliminary Operations: Setup, Functional Tests, Logging of Parameters**
 - Instrument Heating
 - Instrument Positioning
 - Instrument StartUp and Laptop Configuration
 - Starting Window of the PAPI Tool © Software
- **Capturing the Measurements**
 - Performing Elevation Measurements: “Test→ Elevation”
 - Aiming at the PAPI through the “Starting Window” Commands
 - Measurement Control Buttons
 - PAPI Tool © Measurement Window
 - Analyzing Results: What to do in case of ‘excessive’ tilt-angle?
 - Performing Azimuthal Angle Measurements: “Test⊗ Aperture”
 - Report Preview
- **Printing Out Elevation Measurements ‘.pdf’ Reports**
 - SMF/PARGE © i.e. SMF/PAPI REport GEnerator
- **Storing & Maintenance**
- **Trouble Shooting**
- **For Your Safety**

Classroom System Set-Up



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Field Tests



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Field Tests



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Field Tests



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Field Tests



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Field Tests Results

Measurement Progressive Number	Alpha Unit	Elevation
1		2.24.50
2		2.24.50
3		2.25.04
4		2.25.33
5		2.25.42
6		2.25.03
7		2.25.55
Average Value		2.25.17
Standard Deviation		0.00.26

Standard Deviation equals +/- to the Precision/Repeatability of the instrument for that source)
All measurements were taken by different people at different positions

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Next Steps

- **The Ohio University will compare field results obtained with SMF/PAPI to the ones obtained through flight checks in order to assess its Repetibility and Reproducibility features.**
- **Afterwards, the system will be delivered to FAA laboratories in order to assess Accuracy.**