

Company Presentation



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

Company Introduction

Argos Ingegneria was established in 1995 as an experienced group of managers and senior engineers lead by Umberto Di Nardo.

Argos invests its technical experience and skills in several branches in the field of aerodromes as designer, manufacturer and service provider:



→ **Air Traffic Control (ATC)**

Design & development based on COTS components for:

- Retrofit of existing radar
- New Radar Solution

→ **Airport Safety System**

- Runway Safety System (through microwave sensor)
- Ground Vehicle Monitoring (through GPS)

→ **Photometric Measurement Systems**

- Airport Ground Lights (AGL)
- Precision Approach Path Indicators (PAPI)

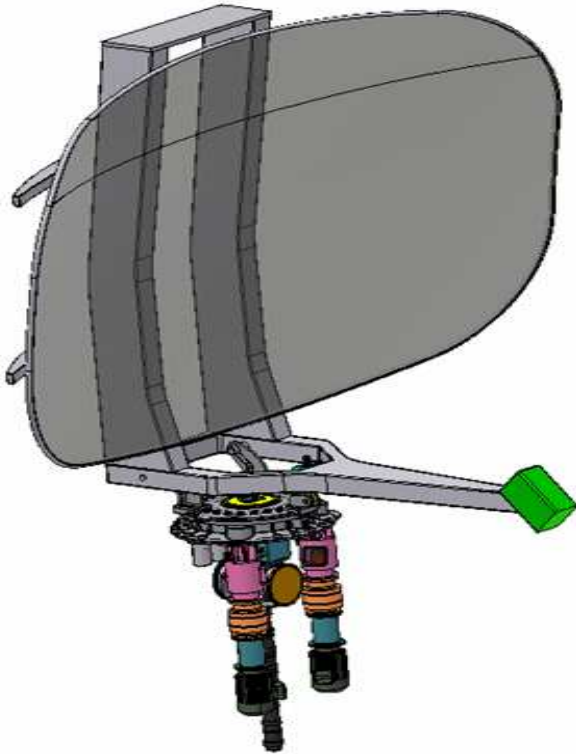
→ **Airspace Architecture & Airport Design**

→ **Logistic Support**

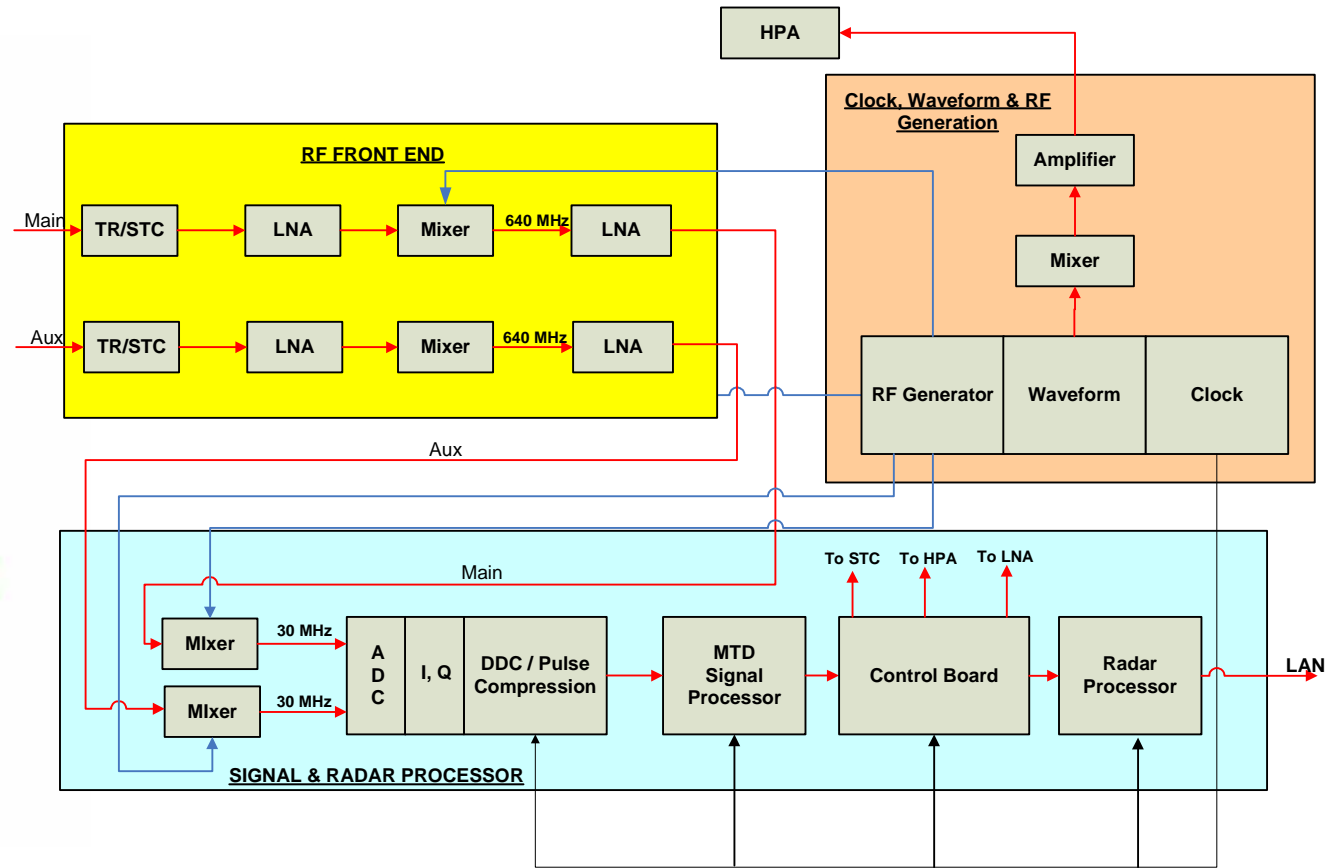
- New radar solutions to be used in “Terminal Movement Area”, based on COTS components:
 - Technical System Requirements
 - System Performances modelling based on Argos proprietary platform
 - Receiver design
 - Receiver SW development
 - Setting up, Tuning and Calibration
 - Test range requirements

- Upgrade, through COTS components integration, of existing radar Receiver section (recovering Transmitter and Antenna) in order to:
 - Solve the problem of components obsolescence
 - Increase the system life
 - Simplify the calibration, tuning and maintenance procedures
 - Reduce the space needed
 - Reduce the electrical power consumption

Primary Radar 2700 MHz: Antenna and Receiver

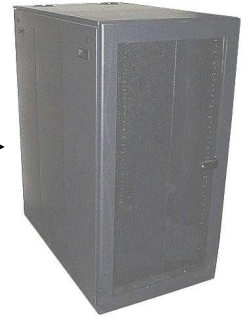
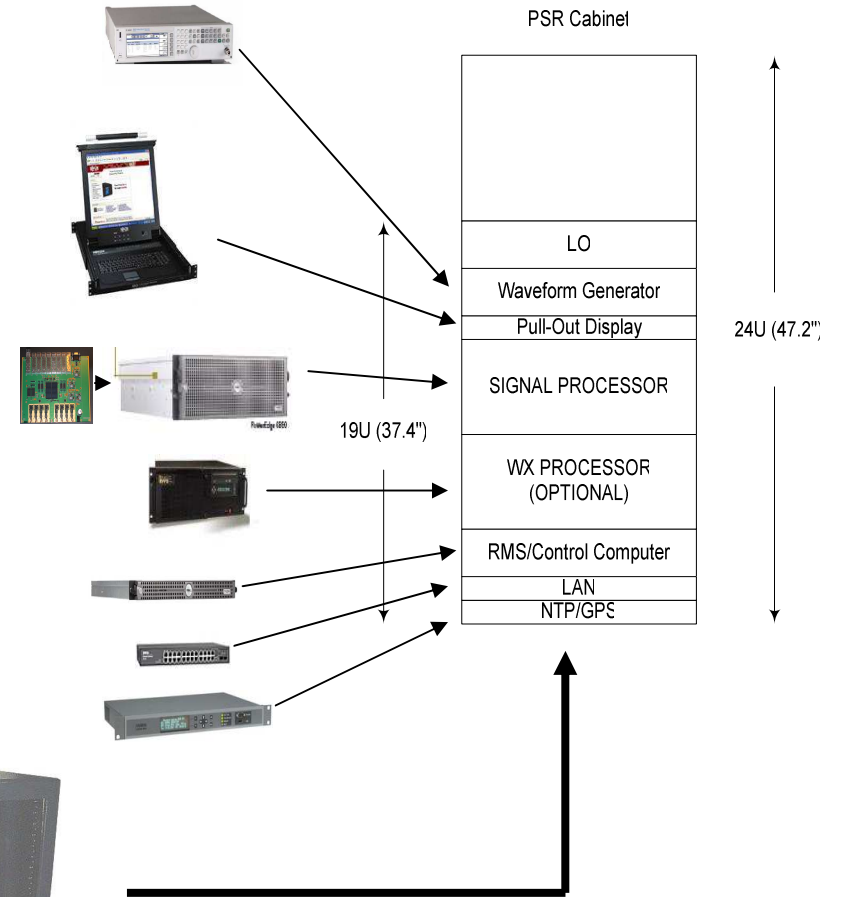
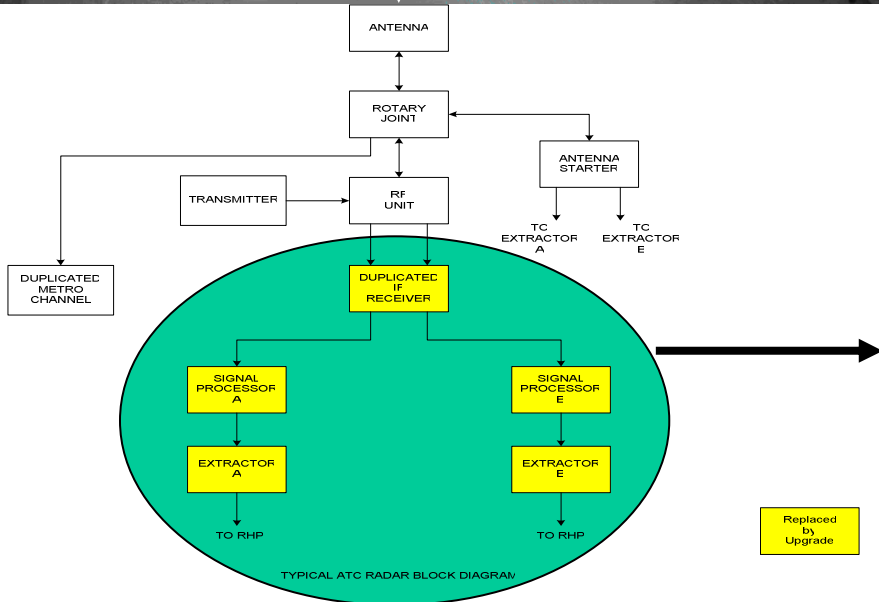
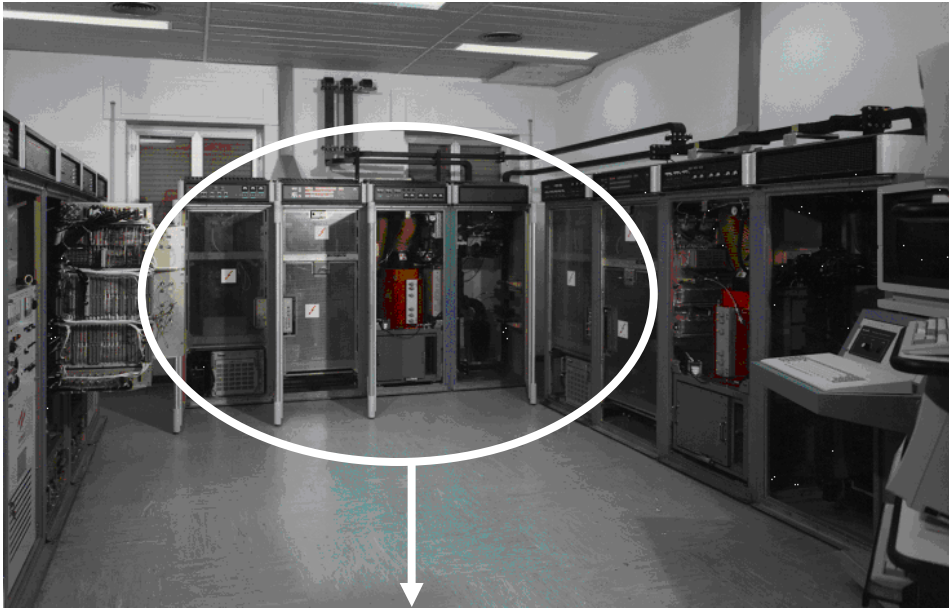


Antenna



Receiver – Block Diagram

Upgrade of Receiver of existing radar



Airport Safety System

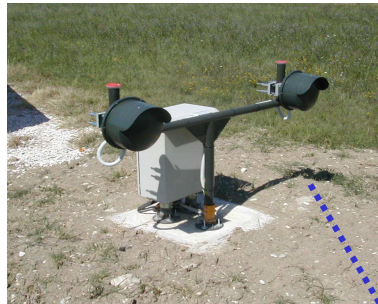
- RSAMS (Runway Safety Area Monitoring System)
 - Patent - RM 2002A000408 dated July 31st 2002
 - Validation – ENAV doc. 0138068 dated July 04th 2008
 - Validation – ENAC doc. 0139842/IOP dated October 10th 2011

- GVMS (Ground Vehicle Management System)
 - Patent - RM2007A000157 dated March 21st 2007
 - Validation - ENAV doc. 0213769 dated October 23rd 2007

Runway Safety Area Monitoring System (RSAMS)

RSAMS creates a “safety net” around the runway by means of microwave sensors able to monitor all holding positions in order to alert with acoustic and visual alarms the Control Tower if any violation is committed by an aircraft or vehicle. RSAMS is installed in several Italian airports

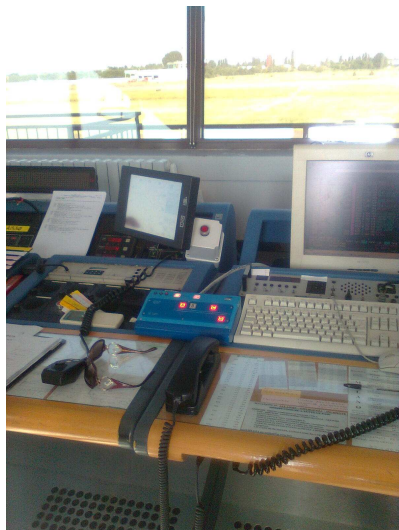
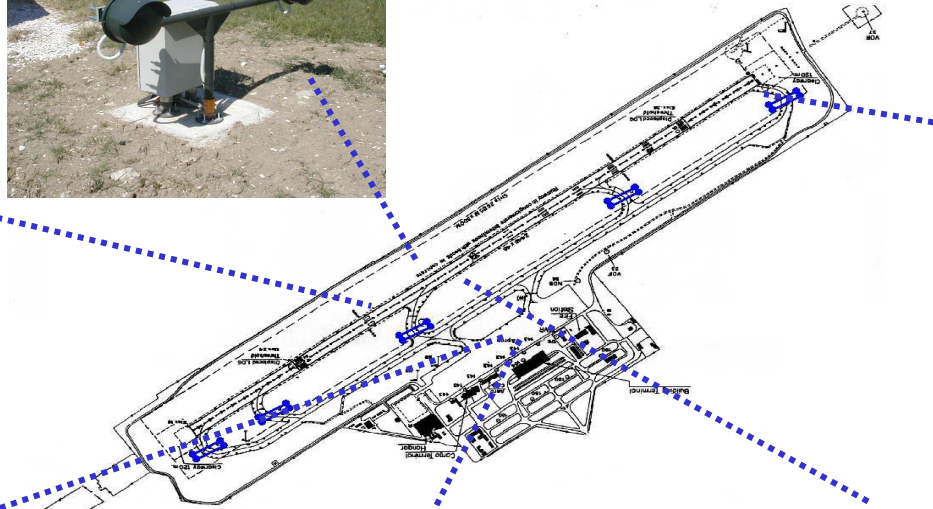
Master Cabinet



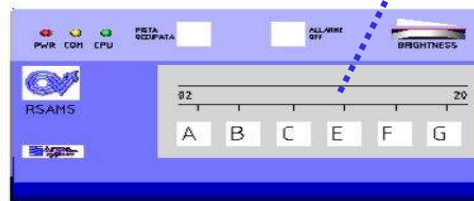
Runway/Taxiway intersection



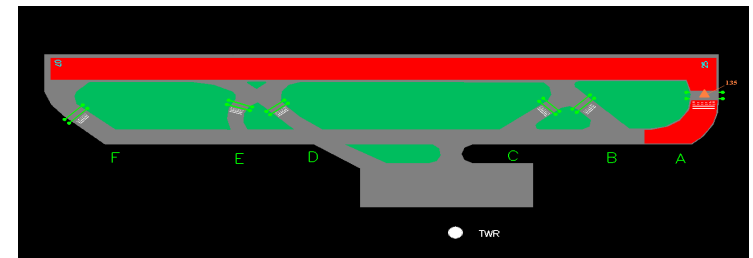
Road



Parma Airport -Italy



Human Machine Interface



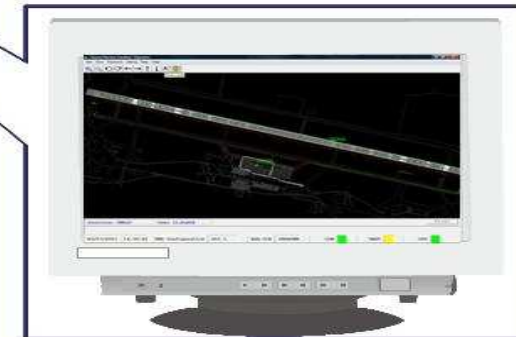
Ground Vehicles Management System (GVMS)

Using D-GPS technology, GVMS displays on Ground Controller Workstation the position of all equipped vehicles moving inside the airport. The driver is allowed to point out the locations requiring maintenance activities and to support the maintenance team to find these locations as quickly as possible.

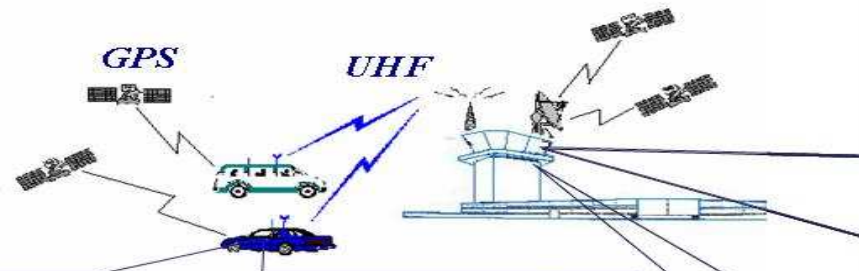
GVMS is today installed in several airports including Milano Malpensa and Rome Fiumicino.



Maintenance Room



Operative Room



ACE-M



Display on-board

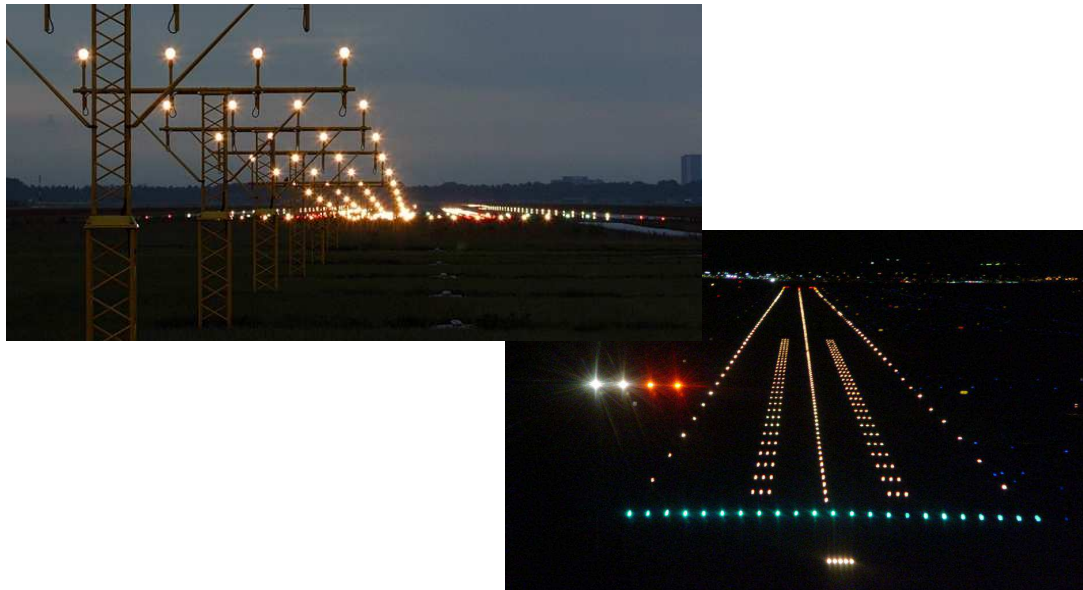


Photometric Measurement Systems

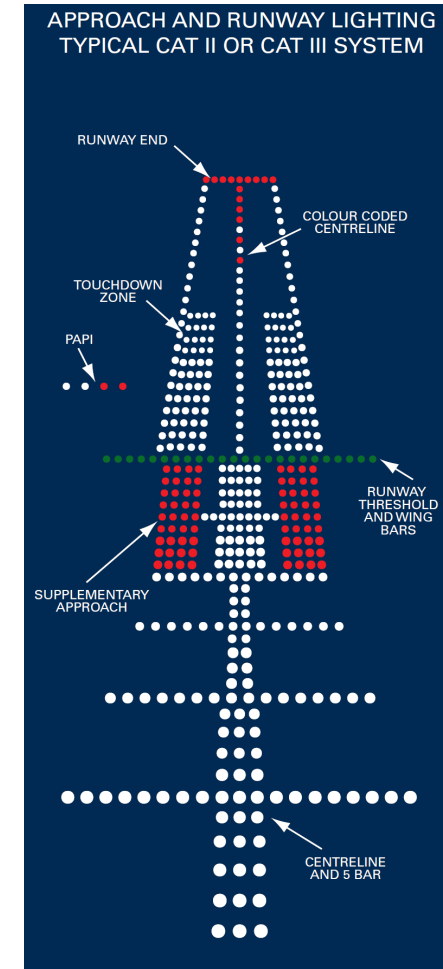
- SMF/PAPI (Photometric Measurement System / PAPI)
- SMF/CLC (SMF/PAPI Calibration tool)
- SMF/M (Photometric Measurement System / Mobile)
- SMF/MCT (SMF/M Calibration Tool)
- SMF/L (Photometric Measurement System/ Laboratory)
- SMF/SIGN (Photometric Measurement System / Vertical Signs)
- SMF/ALS (Photometric Measurement System / Approach Lighting Systems)
- SMF/ODS (Photometric Measurement System / Obstacle Detection System)

Classification of AGLS measurements (I)







The Airfield Ground Lighting Systems (AGLS) are complex systems of crucial importance for the air navigation which may assume various configurations according to ICAO rules



A significant share of airport safety in both night time and daytime under low visibility condition depends on the operation efficiency of AGL



Classification of AGLS measurements (II)

 <p>AGLS</p>	<p>Airfield Ground Lighting System</p>
 <p>PAPI</p>	<p>Precision Approach Path Indicators</p>
 <p>WORKSHOP & REPAIR</p>	<p>Verification of the fixtures post-repair and/or pre-installation</p>
 <p>24C - 6C K SIGNS</p>	<p>Illuminated Vertical Signs</p>
 <p>ALS</p>	<p>Approach Lighting System</p>
 <p>OBSTACLES DETECTION</p>	<p>Obstacle detection for Approach and Takeoff Surfaces (AS & TOCS)</p>

SMF Products

Product	Fixture	System + Calibration tool
SMF/PAPI		
SMF/M		
SMF/L		
SMF/SIGN		
SMF/ODS		
SMF/ALS		

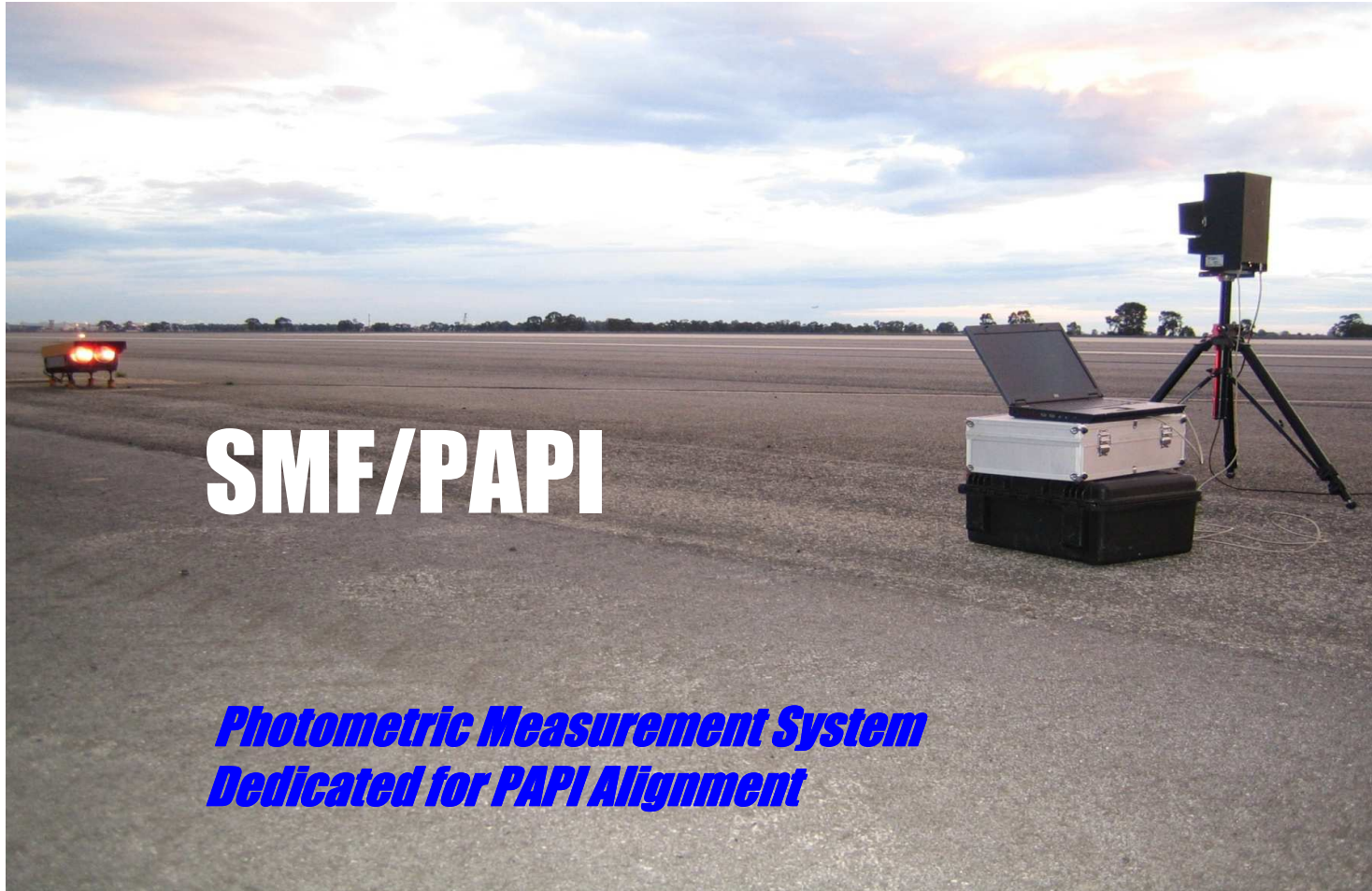
Patents & Certifications

Patents

- SMF/M (RM2007A000099 dated February 21st 2007)
- SMF/PAPI Italy (RM2007A000679 dated December 28th 2007)
- SMF/PAPI U.S. (12/536648 dated July 2009)

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 Aeronautical Civil
- Nigeria - NCAA Spain - AENA
- Russian Federation – Azimut (Service Provider Company)
- Spain - AENA
- South Africa – SA CAA
- Thailand – Thai CAA
- Turkey – DHMI
- U.S. – Intertek-ETL (FAA appointed laboratory)

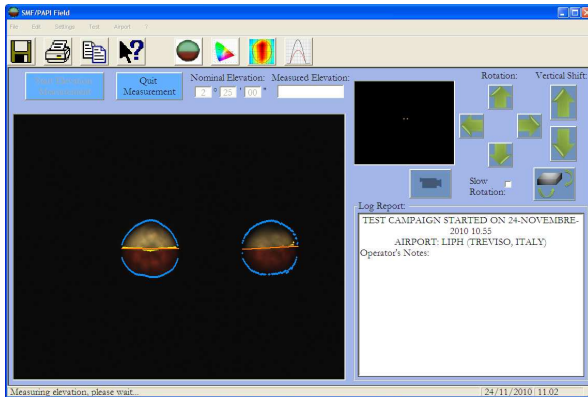


SMF/PAPI

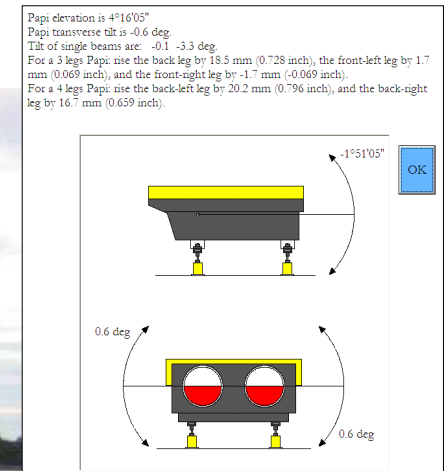
***Photometric Measurement System
Dedicated for PAPI Alignment***

SMF/PAPI – Overview

Portable device able to determine all the photometric parameters of a PAPI unit, including beam elevation alignment, via a fully automatic procedure with 1' (1/60 degree) accuracy, 10 times better than that of Flight Check.



HMI – Measurement in progress



HMI – Real time result



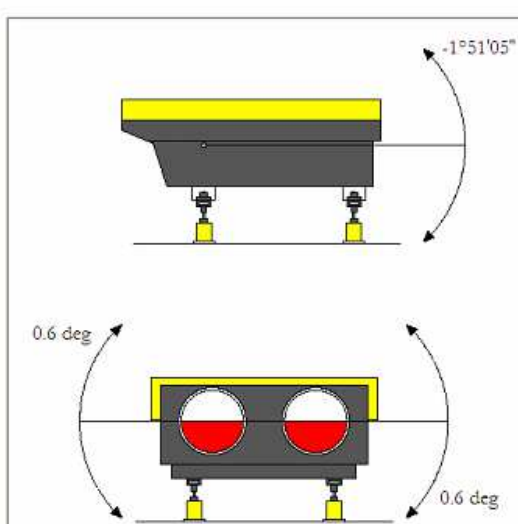
Operations at Fiumicino Airport



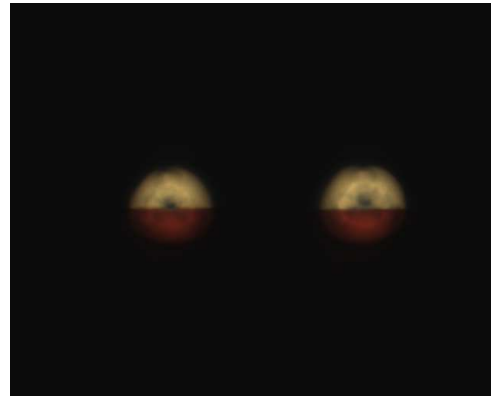
Reduced Power Pack₁₅

Elevation, Intensity, Chromaticity, Beam aperture and Photometric Diagram

Papi elevation is $4^{\circ}16'05''$
 Papi transverse tilt is -0.6 deg.
 Tilt of single beams are: -0.1 -3.3 deg.
 For a 3 legs Papi: rise the back leg by 18.5 mm (0.728 inch), the front-left leg by 1.7 mm (0.069 inch), and the front-right leg by -1.7 mm (-0.069 inch).
 For a 4 legs Papi: rise the back-left leg by 20.2 mm (0.796 inch), and the back-right leg by 16.7 mm (0.659 inch).



OK

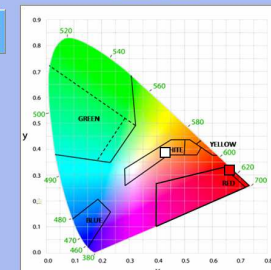


Unit illuminance [lx]:	White: 54	Red: 74
Unit intensity [cd]:	20334	8206

Unit colors:	White: CIE x: 0.43, CIE y: 0.39	Red: CIE x: 0.67, CIE y: 0.32
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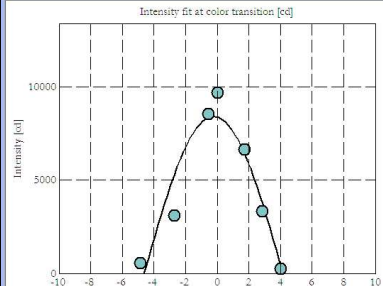
Beam parameters:		
Beams Intensity [cd]:		
White, beam 1	11046	
White, beam 2	8693	
White, beam 3		
White, beam 4		
Red, beam 1	4479	
Red, beam 2	3688	
Red, beam 3		
Red, beam 4		

Beams Chromaticity:		
CIE x, CIE y		
White, beam 1	0.43	0.39
White, beam 2	0.43	0.39
White, beam 3		
White, beam 4		
Red, beam 1	0.67	0.32
Red, beam 2	0.66	0.32
Red, beam 3		
Red, beam 4		



OK

Intensity fit at color transition [cd]

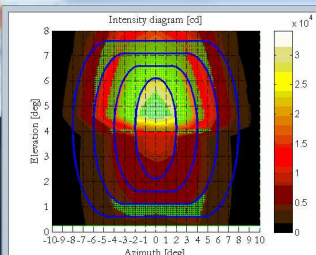


Measured points #:	Azimuth [deg]	Elevation [deg]	Intensity [cd]
4	1.72	4.18	6648
5	2.86	4.18	3339
6	4.00	4.19	243

Measured Aperture:	
At -3 dB [deg]:	5.9
At -6 dB [deg]:	7.3
At -10 dB [deg]:	8.1

Add Point
Evaluate Diagram
Quit

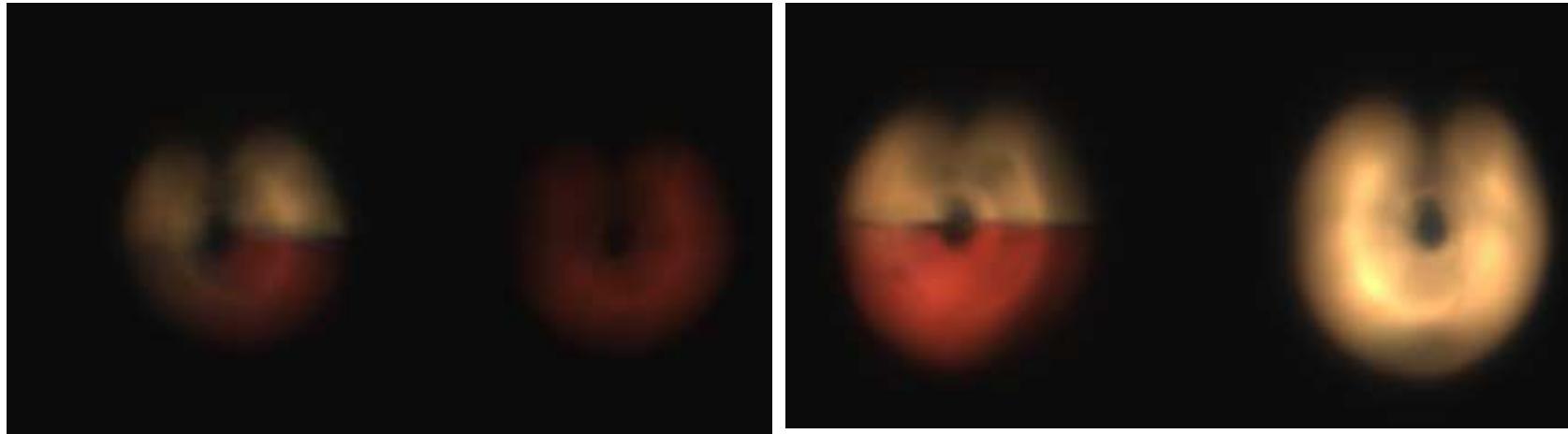
SMF/PAPI Field



Add Point
Evaluate Diagram
Quit

Measured points							
#:	Azimuth [deg]	Elevation [deg]	Intensity [cd]	CIE x:	CIE y:	Color:	Compliant:
1	-10.00	8.20	142	0.45	0.41	white	Compliant
2	-8.00	8.20	1146	0.45	0.41	white	Compliant
3	-6.00	8.20	3710	0.45	0.41	white	Compliant
4	-4.00	8.20	8277	0.45	0.41	white	Compliant

**ELEVATION DIFFERENCES BETWEEN THE MECHANICAL
REFERENCE AXIS AND THE OPTICAL AXIS**



BEAMS NOT ALIGNED

SMF/CLC



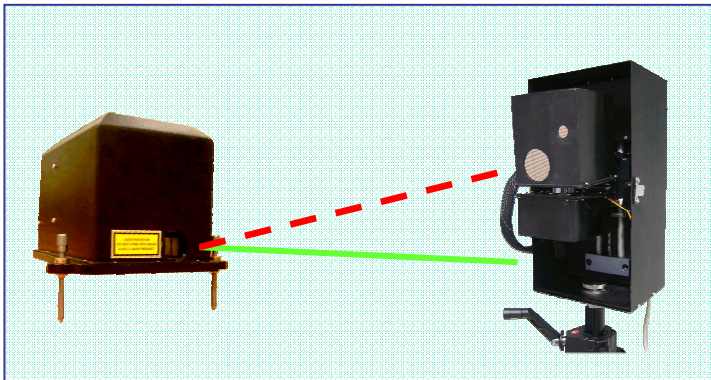
SMF/PAPI Calibration Tool

SMF/CLC – Overview

SMF/CLC is an equipment designed to check the calibration of SMF/PAPI and then to assess the conformity of request accuracy in Elevation measurement.

The tool is strongly recommended for:

- manufacture, for final factory acceptance test before the delivery
- End User, to periodically check the SMF/PAPI performance





SMF/Mobile

***Photometric Measurement System
Dedicated to fast AGL testing***



SMF/M – Overview

Mobile photometric system is able to perform measurement of airfield lights while moving (non-stop) along runways and taxiways at the speed up to 70 Km/h.



Light beam detectors



Power Supply

Alignment monitor
and camera



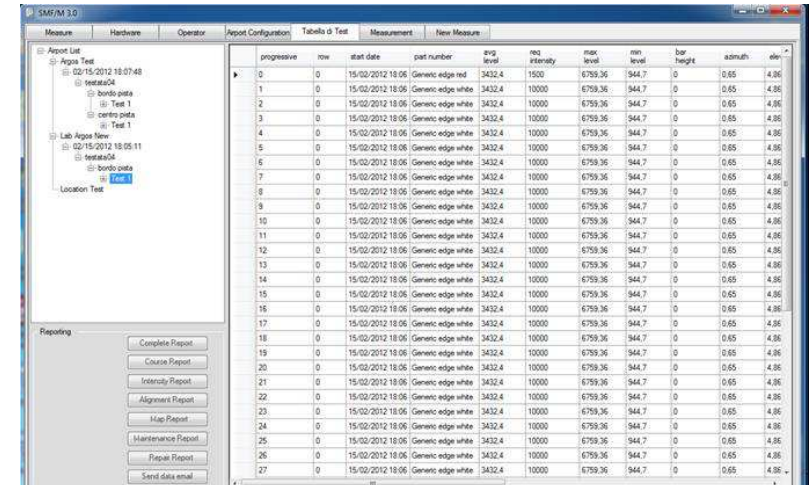
Odometer



Data Reporting

Several types of PDF formats are available and selectable for report production:

- complete single light Report
- course detailed Report (with map)
- maintenance report (50% < average intensity < 60%)
- alignment Report
- repair Report (average intensity ≤ 50%)



progressive	row	start date	part number	avg. level	req. intensity	min. level	bar height	admuth.	eliv.	
0	0	15/02/2012 18:06	Generic edge red	3432.4	10000	6759.36	944.7	0	0.65	4.86
1	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
2	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
3	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
4	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
5	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
6	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
7	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
8	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
9	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
10	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
11	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
12	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
13	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
14	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
15	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
16	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
17	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
18	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
19	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
20	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
21	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
22	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
23	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
24	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
25	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
26	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86
27	0	15/02/2012 18:06	Generic edge white	3432.4	10000	6759.36	944.7	0	0.65	4.86



ReportForm

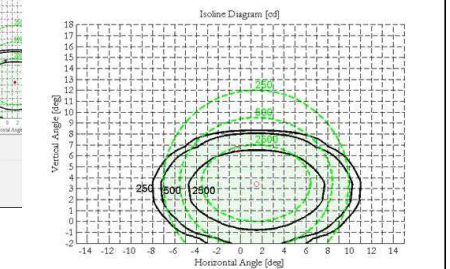
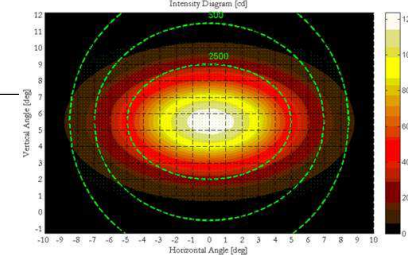
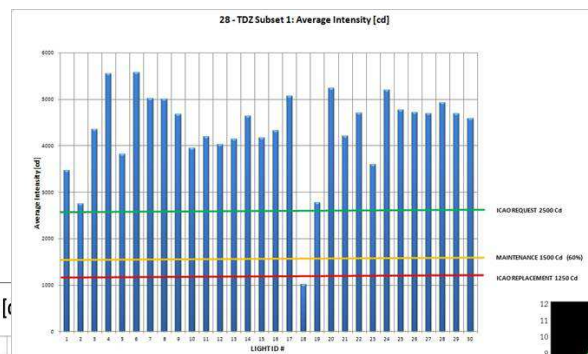
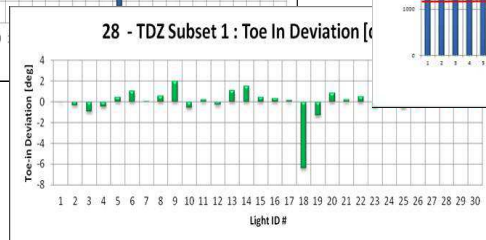
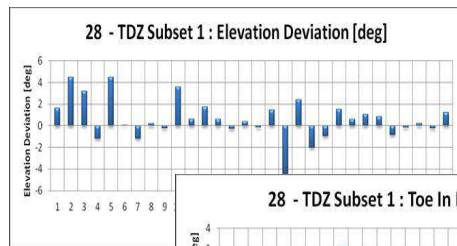
AQL FIXTURE REPORT TEST CODE: 20111219144226 TEST DATE: 19/12/2011 RUNWAY HEAD: 28

LIGHT ID # 1 RESULT PASS

LIGHT SUBSET -

Lamp Type: Hwy center line cat LI (15 m) Latitude: 45° 39' 53.47" N Longitude: 9° 43' 23.87" E

PROPERTY	CAO	MODEL	MEASURE
Colour	white	white	
Requested Intensity	5000	-	6119
Average Intensity	-	-	11801
Max Intensity	-	-	1549
Min Intensity	-	-	1.45
Toe In	0	0	3.87
Elevation	5	4.5	1.58
Max Intensity Elevation	-	-	2.41
Max Intensity Azimuth	-	-	0.28
Max Intensity Elevation	-	-	6.90
Min Intensity Azimuth	-	-	7.62
Max Intensity / Min Intensity	-	-	0.4255
X-CIE	-	-	0.2112
Y-CIE	-	-	



SMF/MCT



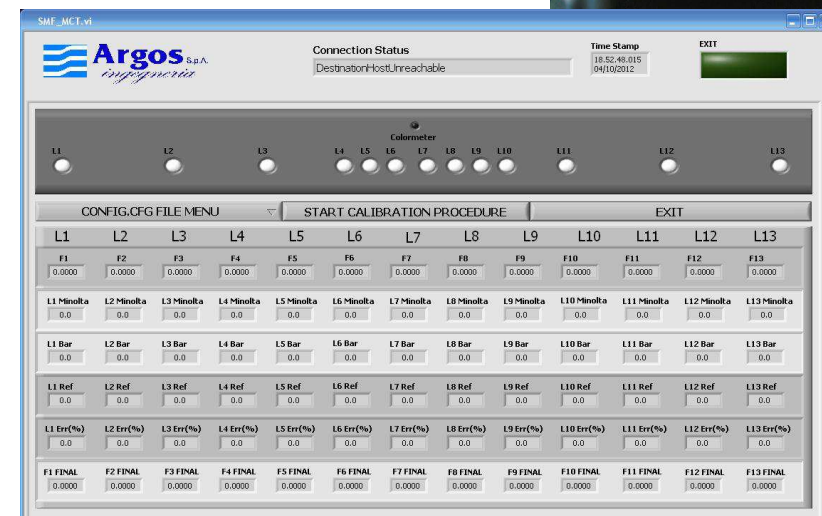
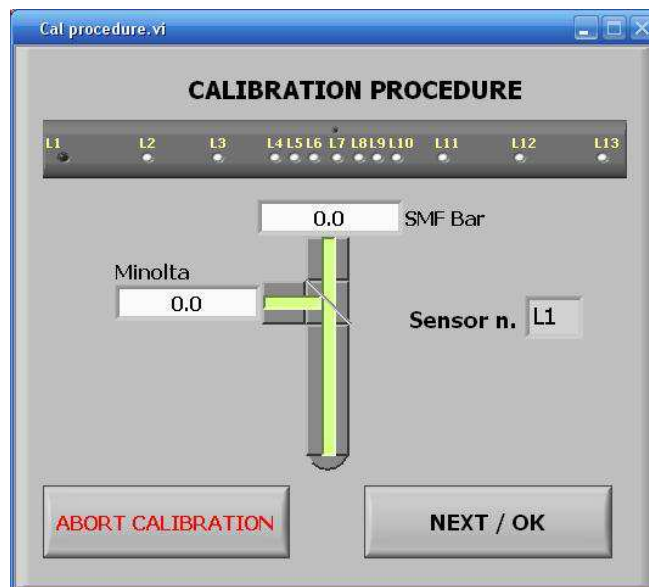
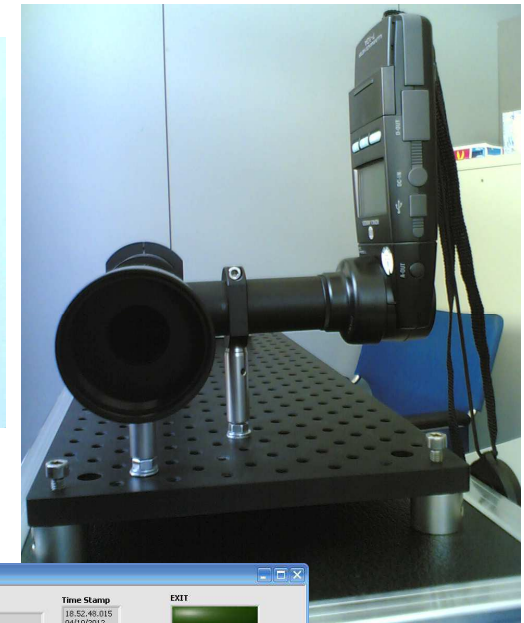
SMF/Mobile Calibration Tool

SMF/MCT – Overview

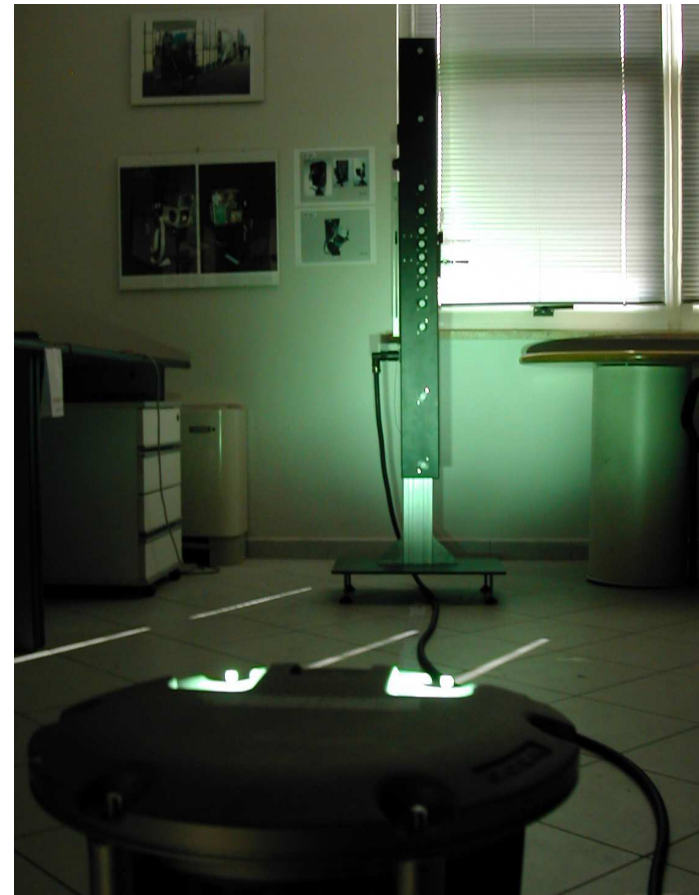
SMF/MCT is an equipment designed to check the calibration of lux sensors installed on SMF/M measurement bar and then to guarantee the requested accuracy in measurement.

SMF/MCT is based on:

- a stable reference light source
- a reference instrument (Minolta T-10M)
- dedicated software which step by step the Operator during the calibration procedure



SMF/LAB- CHS



***Photometric Measurement System
Dedicated to Indoor AGL fixtures testing***

SMF/Lab – Overview

Workshop instrument for *indoor* photometric measurement of airfield lights.

The measurement bar is the same employed in the SMF/M system and is installed on a special support in a vertical position.

During the measurement, the fixture under measurement rotates under control of an automated turn table which allows the measurement of both light directions in the same session.

SMF/Lab is particularly efficient for:

- verification of the lights before the installation;
- test of a new supply;
- test after repair;
- check after dismantled lights.

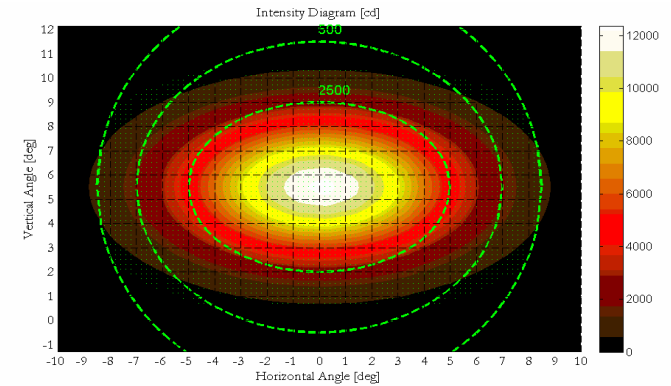


SMF/Lab – Output data

Once the scanning is completed, the general form is recalled and the results of measurement are shown in the window containing all the records related to the lamp under measurement.

For each measured light a complete printable report is produced with:

- ➔ Average, Maximum and Minimum Intensity
- ➔ Isocandela Diagram and Contour
- ➔ Elevation and Toe-in angles
- ➔ Maximum and Minimum positions
- ➔ Colour
- ➔ Compliancy to ICAO standards

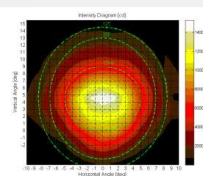
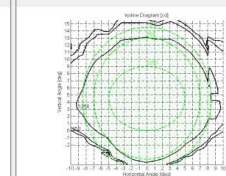


AGL FIXTURE REPORT TEST CODE: 20111219144226 TEST DATE: 19/12/2011

Lamp P/N - S/N RCLF-I-CR-090-1P-0 - 00011 RESULT PASS

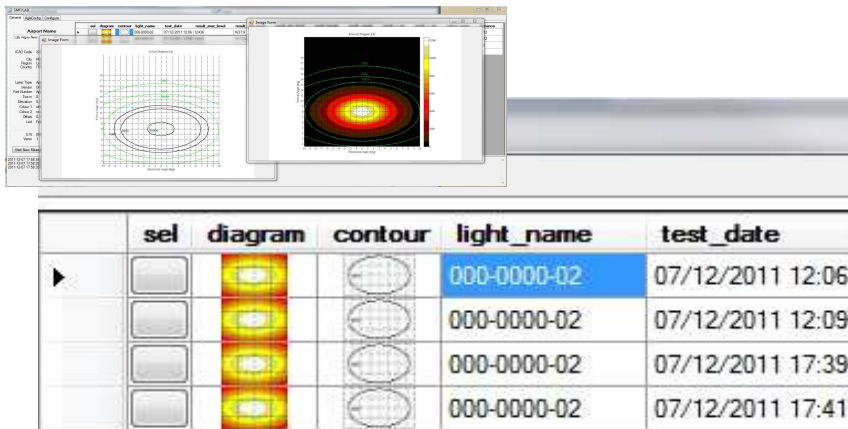
Manufacturer OCEM
Lamp Type Fly center line cat LII (15 m)
Side A













PROPERTY	ICAO	MODEL	MEASURE
Colour	white	white	white
Requested Intensity	2500	-	-
Average Intensity	-	-	9630.01
Max Intensity	-	-	15228.6
Min Intensity	-	-	5500.06
Toe-In	0	1.75	-
Elevation	5	4.5	7.31
Distance	-	-	2.7
X-CIE	-	-	0.42
Y-CIE	-	-	0.39

Diagram  Contour 

13x13 Matrix

630.8	831	1290.5	1619.2	1746.5	1899.9	2023.4	1861.3	1775.7	1775.3	1438.4	1040.5	652
984.8	1314.8	1839.2	2254.9	2507.9	2727.6	2902.3	2786.8	2670.9	2554.5	2094.5	1566.1	1069.1
1431	1844.5	2626.9	3232.1	3584.2	3892.4	4136.8	3926.7	3731	3551	2961.3	2260.9	1535.7
1981.7	2616.2	3565.2	4371.7	4976.5	5261	5501.3	5370.5	5094.7	4760.1	3828.4	2974.8	2136.6
2559.4	3467.9	4728.4	5791	6580.2	7139.7	7560.1	7303.2	6847.7	6119.6	5010.4	3804.2	2766.1
3153.2	4337.7	5823.1	7253.5	8609.4	9255.1	9603	9211.9	8526.6	7508.7	6154.3	4713.3	3454.2
3785.2	5251.1	7287.4	9212.9	10991.6	11757.6	12116.6	11564.2	10732.5	9484.7	7616.8	5685.5	4099.3
												1.6
												44539
												6.8
												4289.4
												6.9
												3655
												1.6



	sel	diagram	contour	light_name	test_date
▶				000-0000-02	07/12/2011 12:06
				000-0000-02	07/12/2011 12:09
				000-0000-02	07/12/2011 17:39
				000-0000-02	07/12/2011 17:41



SMF/LAB

Measure Config Standards

Location
Lab Argos New

Id Location: 0007
City: argos
Region: LAZIO
Country: ITALIA

Lamp Type: Fly center line cat LII (15 m)
Vendor: OCEM
Part Number: fly_center_line_15m_cat
Toe-in: 0
Elevation: 3.5
Colour 1: white
Colour 2: yellow
Offset: 0.3
Led: False

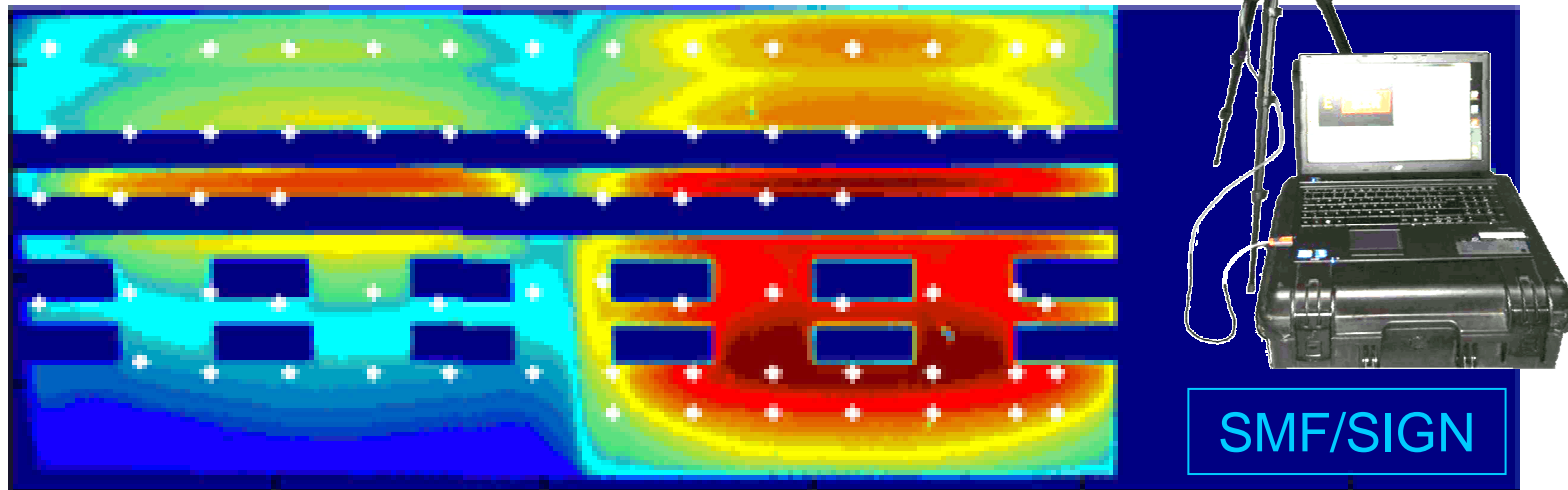
S/N: 0001
Side: 1

Start New Measure Back

angle	sensor0	sensor1	sensor2	sensor3	sensor4	sensor5	sensor6	sensor7	sensor8	sensor9	sensor10	sensor11	sensor12
11	2.8	4.6	9.7	9.4	20.7	9.1	24.3	4.1	49.9	22.4	19.9	22.3	21.4
10	69.6	101.5	167.7	232.4	381.4	325.5	454.8	493.6	507.9	326.3	244.6	240.2	205.7
9	39.1	61.6	101.7	194.4	483.8	485.9	622.1	644.3	609	394.5	120.3	44.1	67.6
8	125	178.7	309.9	762.6	1123.9	1177.6	1309.1	1444.7	1307.6	809	344.3	94.9	209.2
7	186.9	192.6	620.6	1041.9	1592.9	1817.6	2019.8	1999.5	1788.2	1103.3	593	229.7	48.1
6	206.1	440.7	1029.9	1686.1	2523.5	3114.1	3229.7	3237.6	2668.6	1724.5	1029.1	514.9	239
5	129.7	432.9	1149.4	1979	3348	4265.9	4446.5	4081.5	3335.2	2048.5	1097.6	496	103.2
4	294.7	937.9	1839	2292.9	3703.7	4422.9	4691	4694.1	3649.9	2100.6	1327.5	642.1	291.7
3	140.5	941.9	995.2	1629.9	3308.3	3743.2	3678.4	3968.1	3078.2	1850.6	856.4	363.1	39.9
2	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0

2011-12-20 11:40:16:4581 WARN unable to open second data diagram
2011-12-20 11:40:18:5792 WARN unable to open second data diagram
2011-12-20 11:40:19:1842 WARN unable to open second data diagram
2011-12-20 11:40:19:1842 WARN unable to open second data diagram
2011-12-20 11:40:24:0216 WARN unable to open image
2011-12-20 11:40:24:0216 WARN unable to open second data diagram
2011-12-20 11:40:24:7435 WARN unable to open image

SMF/SIGN



***Photometric Measurement System
Dedicated to Airfield Vertical Guidance Sign***

SMF/Sign – Overview

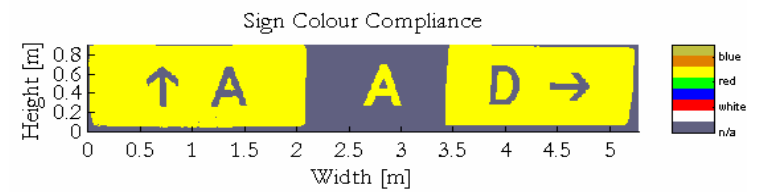
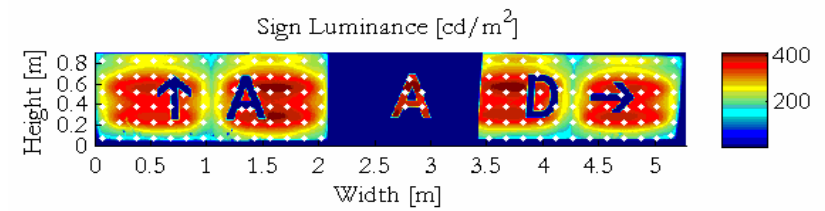
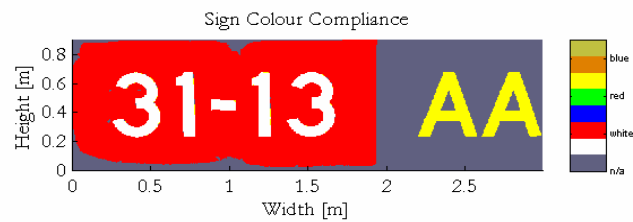
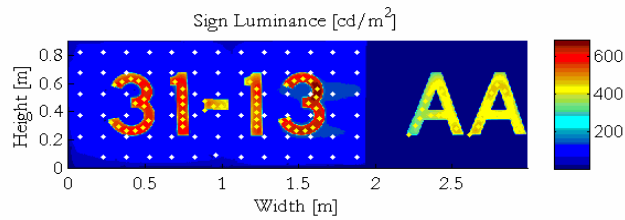
It's a new generation automatic instrument, consisting of a digital camera, luminance sensor and laptop, able to perform extremely fast measurements of photometric characteristics of each type of airfield illuminated vertical signs to assess the conformity with the recommendations of ICAO Annex 14 and ENAC APT 13-A.

SMF/SIGN provides in output:

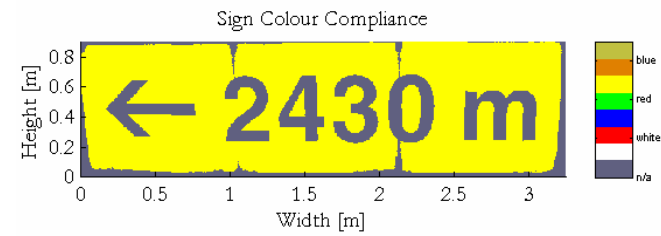
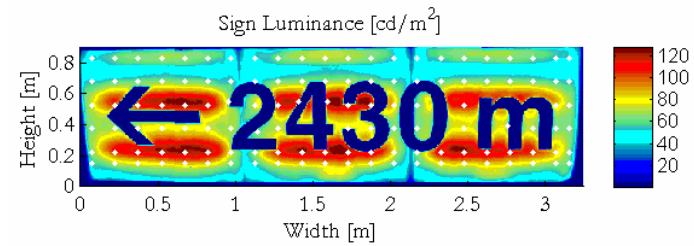
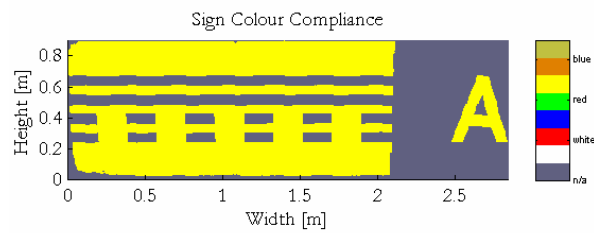
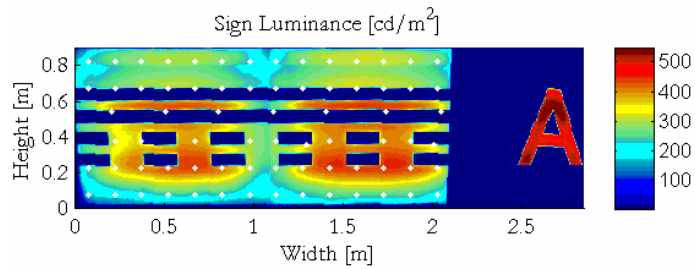
- False colour image of the Sign luminance, with a resolution of 1 mm
- Colour map image of ICAO admitted colours (white, red, yellow, black, green, orange), with 1 mm resolution
- Average Luminance for each colour
- Chromaticity for each colour
- Luminance Ratio between adjacent points on the grid for each colour
- Luminance Ratio between maximum and minimum values points on the grid for each colour
- Luminance Ratio of red colour to the white
- Luminance factor (given the luminance of the standard D65 illuminating source)
- Dimensional Ratio of characters fonts in the Sign



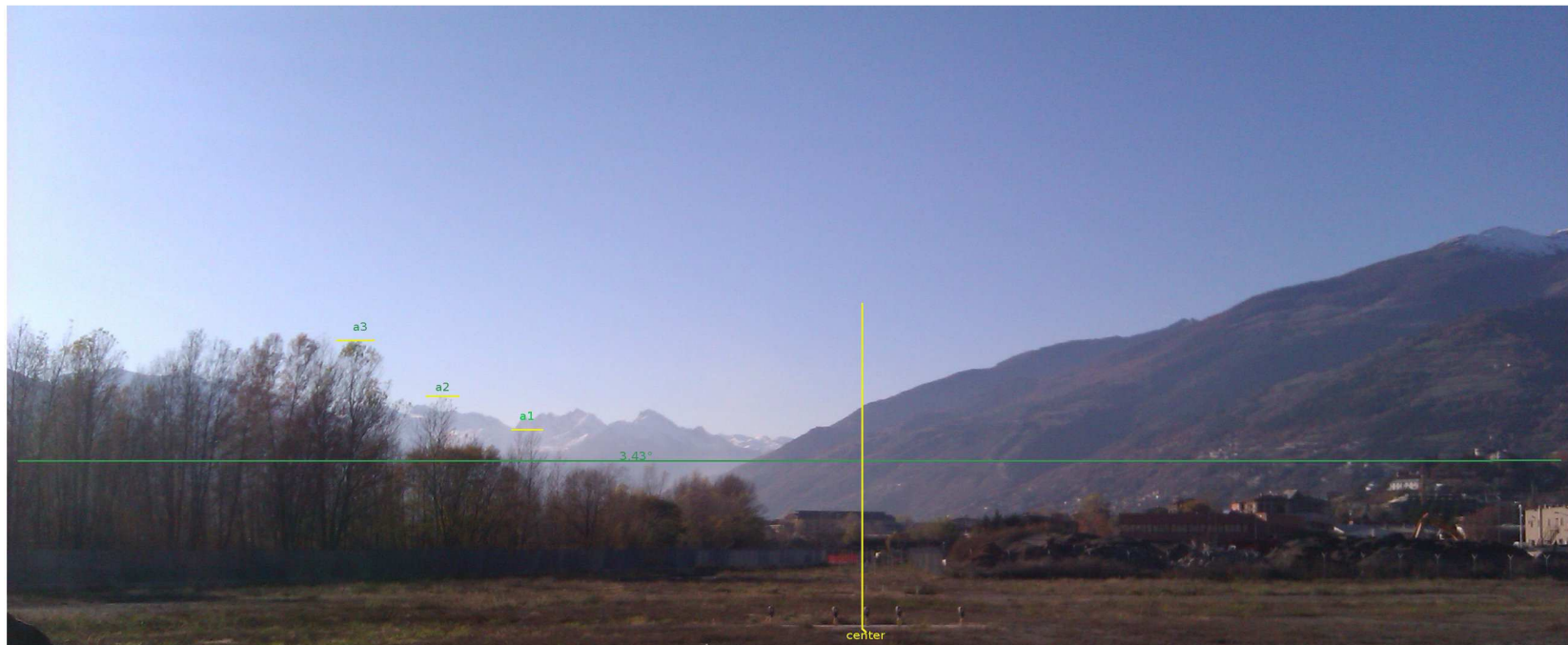
SMF/Sign – Output data (I)



SMF/Sign – Output data (II)



SMF/ODS



Obstacle Detection System

SMF/ODS – Overview

It's a state-of-the-art instrument able to detect automatically the presence of objects penetrating the Approach Surface (AS) of the runway.

The operation is based on the scan of the surface under test at given elevation, using two different ranges:

- The range of AS closer to the runway head (< 3 Km) is measured by SMF/PAPI system
- The farer range (> 3 Km) is measured by the camera xxx with SMF/PAPI system in order to impose the right elevation angle

The result of image processing is a curve following the contour of the obstacles, integrated with additional information, such as elevation angle of obstacles with respect to gravitational horizon and azimuthal angle with respect to the runway centerline or with respect to the point where the measurement was performed.

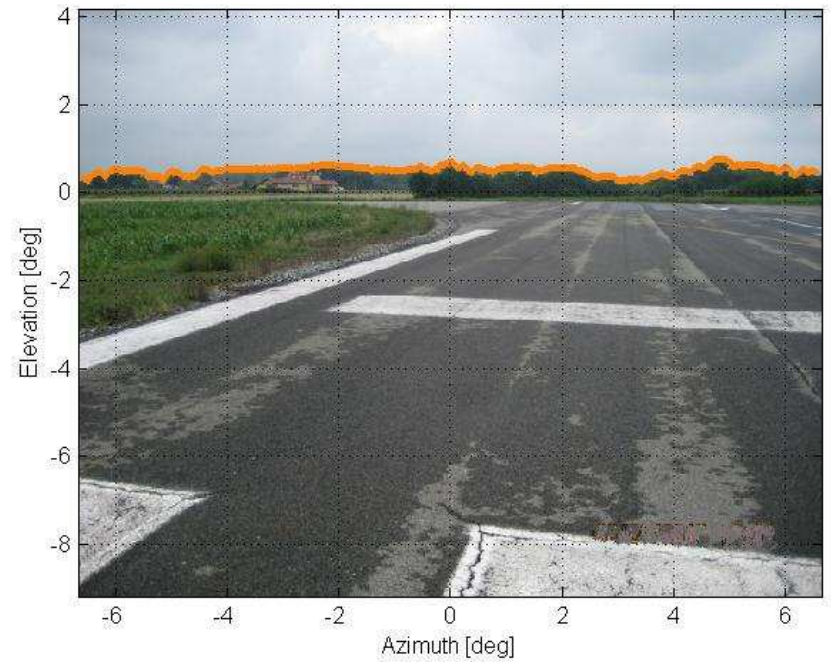
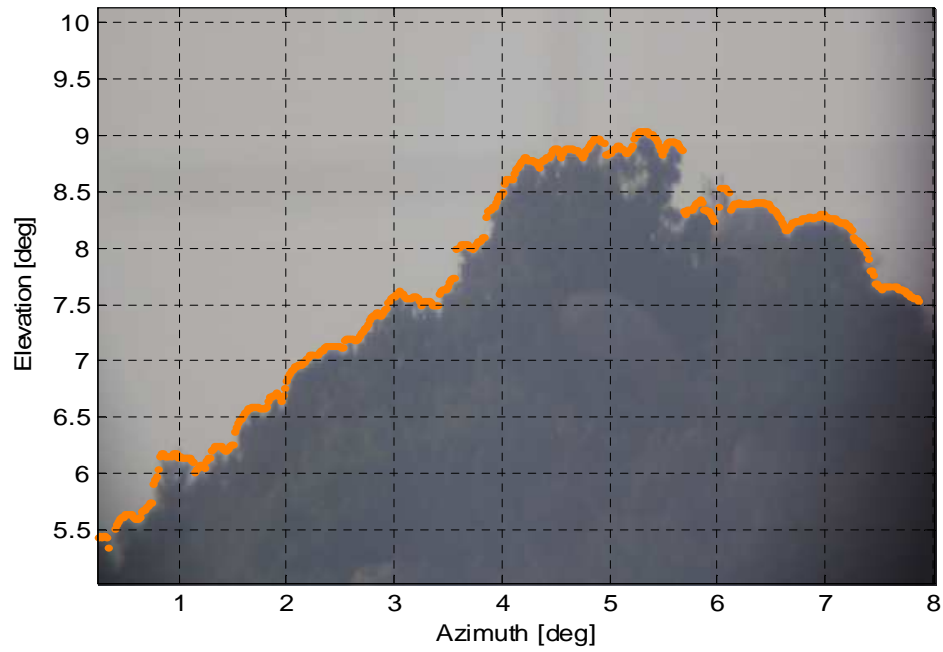
The entire measurement process takes just a few minutes and the resolution of obstacle detection is of 13 cm at the distance of 15 km.



SMF/ODS – Output data (I)



SMF/ODS – Output data (II)



SMF/ALS



***Photometric Measurement System
Dedicated to Approach Lighting Systems***

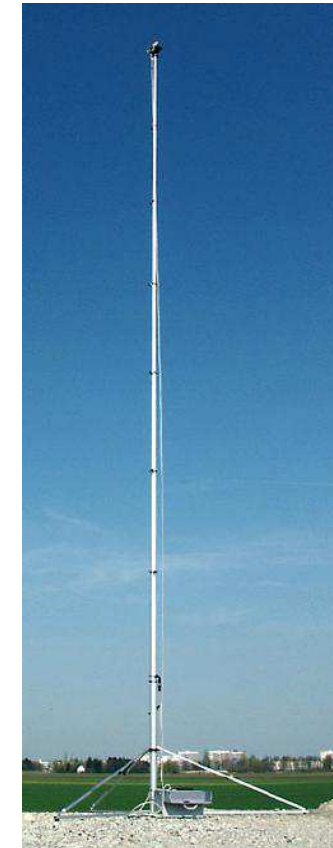
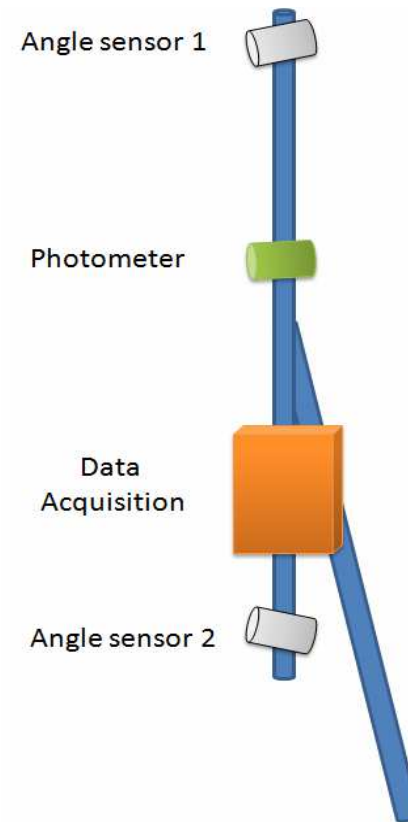
SMF/ALS - Overview

New advanced tool to measure photometric performances of elevated approach signals mounted on masts.

SMF/ALS is based on a special sensor able to detect the angle under which the light source appears.

It is mounted on a lightweight telescopic mast extensible up to 6 mt height.

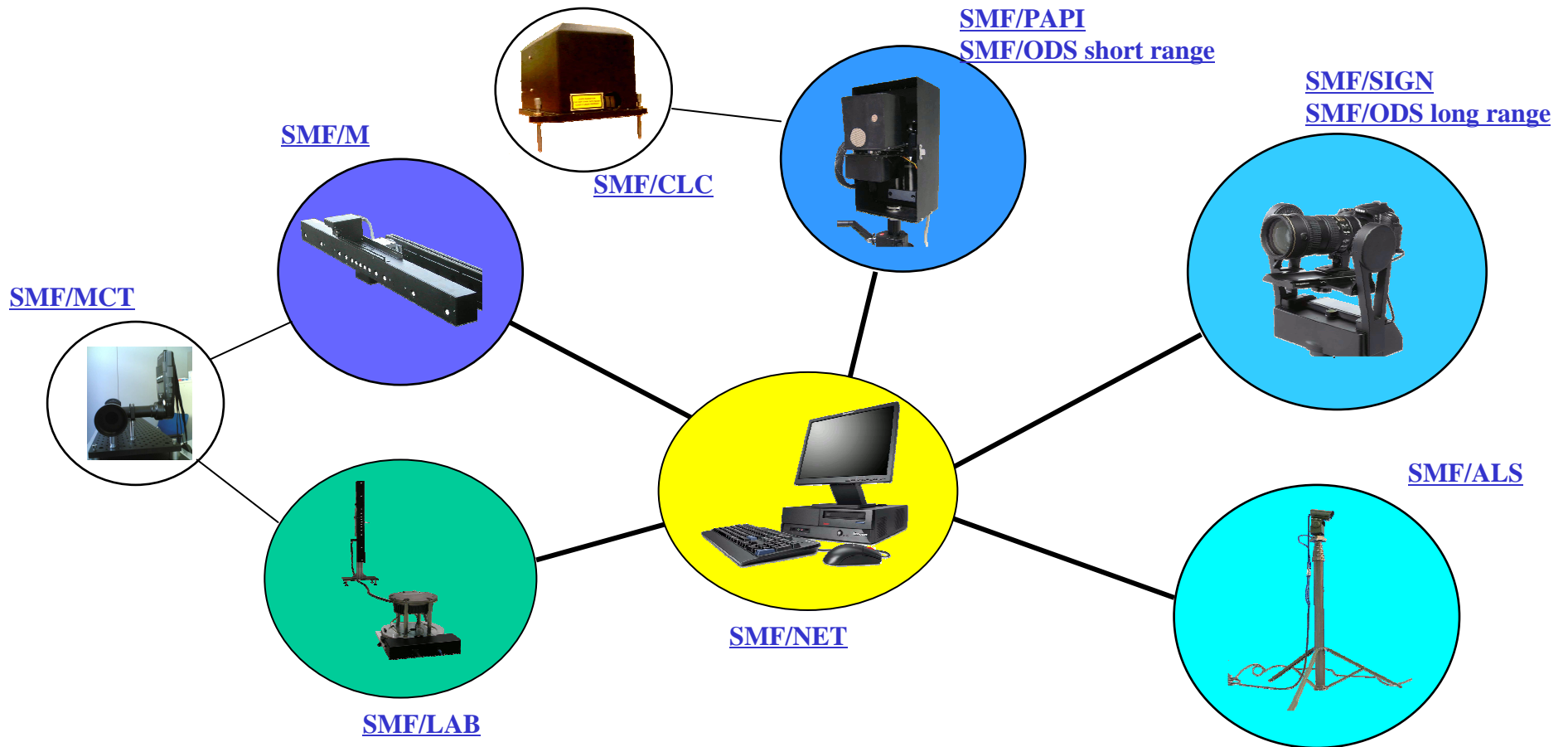
SMF/ALS can be installed on a mobile trolley or a vehicle.



SMF/NET

***Photometric Measurements Central Control System
Dedicated to AGL Maintenance***

SMF Net – Overview



Airspace Architecture & Airport Design

- Preliminary, final and executive design of airport infrastructures (terminal and aerodrome)
- Studies of airport layout for improved airport capacity, risk assessment and environmental compatibility, processing of instrumental flight procedures (STARs, IALs, MA, SIDs)
- Master plan development for new airports and/or for extension of existing airports
- Availability and Reliability studies



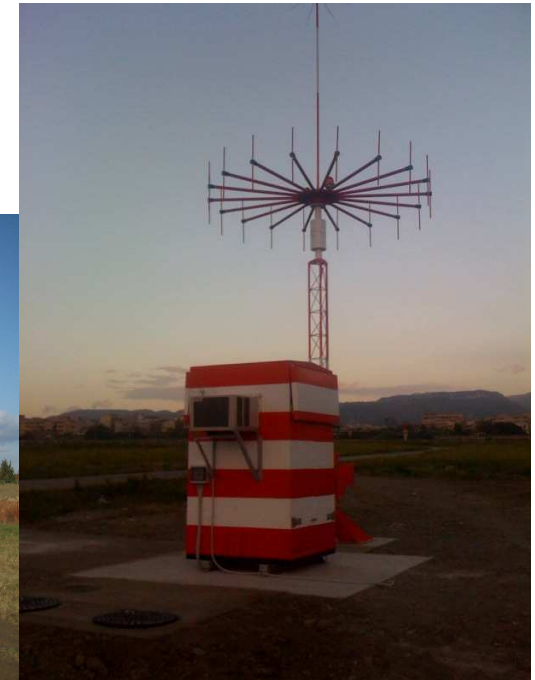
Logistic Support

Maintenance

- First and second level maintenance of airport low/medium/high power distribution systems.
- First and second level maintenance of Argos/Others systems.
- After sales services (training courses, hot-line technical support, etc)

Turn-key installation

- Installation Project / As-Built
- Civil Works and Electrical
- Equipments installation
- Configuration and set-up
- Support to final commissioning



Argos - Italian Market

N.	Airport	Customer
1	Albenga	ENAV
2	Alghero	ENAV
3	Ancona	ENAV
4	Aosta	AVDA
5	Bari	ENAV
6	Bergamo	SACBO
7	Biella	SACE
8	Bologna	ENAV
9	Bolzano	ABD
10	Brescia	SIEM
11	Brindisi	ADP/COFELY
12	Cagliari	SOGAER
13	Catania	ENAV
14	Crotone	ENAV
15	Cuneo	ENAV

N.	Airport	Customer
16	Firenze	ENAV
17	Foggia	ENAV
18	Foligno	Comune
19	Forlì	ENAV
20	Genova	ENAV
21	Lamezia T.	ENAV
22	Lampedusa	ENAV
23	Marina di Campo	AERELBA
24	Milano - Linate	SEA
25	Milano-Malpensa	SEA
26	Napoli	ENAV
27	Olbia	ENAV
28	Oristano	SOGEAOR
29	Padova	ENAV
30	Palermo	ENAV

N.	Airport	Customer
31	Pantelleria	ENAV
32	Parma	ENAV
33	Perugia	ENAV
34	Pescara	ENAV
35	Pisa	SAT
36	Reggio Cal.	ENAV
37	Reggio Em.	SGA
38	Rimini	AERADRIA
39	Roma CPO	ADR
40	Roma FCO	ADR
41	Salerno	SGA
42	Taranto	ADP/COFELY
43	Treviso	AERTRE
44	Torino	ENAV
45	Trieste	ENAV
46	Venezia	SAVE
47	Verona	SIEM

Argos - Sales & Services International Market: Final customer

Geographic Area	Country	Final Customer
Far & Middle East	Bangladesh	CAA Bangladesh
	Korea	YouYang
	Indonesia	Angkasa Pura II
	Malaysia	MAG
	Taiwan	CAA Taiwan
	Thailandia	CAA Thailand
Africa	Angola	CAA Angola
	Nigeria	CAA Nigeria
	South Africa	SA CAA
	Sudan	CAA Sudan
North America	Canada	NAV-Canada
	United States	FAA / ACS
South America	Colombia	CAA Colombia

Geographic Area	Country	Final Customer
Europe	Russian Federation	CAA RF
	United Kingdom	CAA UK
	Denmark	CAA Denmark
	Greece	Kastoria Airport
	Spain	AENA
	Turkey	DHMI

