

Cloud Base & Visibility Sensors for Aviation

CASE STUDY

Automatic Weather Station To Support The Operations Of A Military Air Base



AUDIMOBIL recently installed in a Portuguese Military Air Base, an Automatic Weather Station for supporting the air operations, in accordance with ICAO and WMO recommendations for equipment and infrastructures.

The system was fitted with a set of sensors oriented for this application and can be expanded in accordance with future needs.

SENSORS AND DATALOGGER

- Datalogger Campbell Scientific CR1000
- Ceilometer Campbell Scientific CS135
- Visibility sensor Campbell Scientific CS120
- Air temperature & relative humidity Vaisala HMP155
- Barometric pressure Vaisala PTB330 (2 Class A sensors)
- Precipitation sensor R.M. Young 52203
- Wind sensor Gill WindSonic





info@campbellsci.eu

NDOS EM TEMPO REAL		05/12/12 16:51:22 UTC		ÚLTIMOS 2m	ÚLTIMOS 10m		1
₩ ₩ ₩ 1 m 27 c	ós E	VEL. VENTO [nós]	VIS [m]	W 1 nós	E	H ⁴ W 1 nó	• •
PRECIPITAÇÃO	* 0,00 mm	1	100 10 1 32.000 m	PRECIPITAÇÃO VEL. VENTO	8 0,00 mm 1,11 nós	PRECIPITAÇÃO VEL, VENTO	0,00 mm
VEL. VENTO	1,17 nós	BaseN	3573 pēs	DIR. VENTO	25 oN	DIR. VENTO	28 oN
DIR. VENTO	27 oN	nBases Base 1		RAJADA	1,17 nós	RAJADA	1,34 nós
TEMP.	12,52 °C	Base 2	3573 pēs	DIR. RAJADA	25 oN	DIR. RAJADA	38 oN
	9,28 °C		///// pés		23 01	Directorota	50 014
P.ORV			///// pes	METAR / SPECI			
HR	80,58 %	Base 3		METAK) SPECI			
	80,58 % 1.013,71 hPa 1.023,52 hPa	Base 4 VIS V	///// pēs	METAR LPTN 051650Z AUTO	03001G01KT 9999NDV ///	///// // ///036 12/09 Q1024	

Case Study Summary

Appication: Military Air Base Operations

Location: Portugal

Organisation: Audimobil

Campbell Products Used: CR1000, CS120 Visibility Sensor, CS135 Ceilometer

Measured Parameters:

Cloud Base Visibility Temperature Relative Humidity Wind Speed & Direction Barometric Pressure Precipitation

INFRASTRUCTURE/ COMMUNICATIONS/ POWER

- Red and white painted frangible mast with ICAO type A Obstruction Light;
- 2.4 GHz Radio communications with central PC;
- Mains power supply with backup battery.

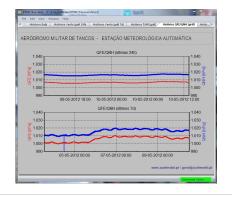
In order to make it easy the readings of the information generated by the station, easy reading interface was developed, with instantaneous information from several sensors, and the processing of these information, which speeds the decision making.

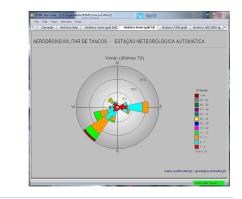
Highlights:

- Graphic and numeric real time information;
- Processing of average and running totals for the last 2 and 10 minutes;
- Automatic generation of METAR and SPECI codes;
- Graphic and numeric historical information of the station;
- Validation of the sensors information;
- The station history is maintained in a file registry;

Maintenance Alarms.

R DE TANC	OS - ESTA	ÇÃO METEC	ROLÓGICA	AUTOMÁTIC	۵							
		ERÓDROMO MILITAR DE TANCOS - ESTAÇÃO METEOROLÓGICA AUTOMÁTICA										
QFE méd	QNH méd	Temp inst.	Temp méd	Temp máx	Temp min 🗠							
1.007,266	1.017,01	29,22	27,95	29,46	26,93*							
1.007,449	1.017,194	27,17	26,07	27,4	24,86							
1.007,52	1.017,266	24,95	23,76	25,28	22,2							
1.007,682	1.017,429	22,3	20,71	22,49	19,15							
1.007,327	1.017,071	19,38	17,58	19,43	15,9€							
1.006,843	1.016,583	16,01	15,37	16,41	14,18							
1.006,274	1.016,008	14,27	13,92	14,51	13,51							
1.005,975	1.015,706	14,22	14,31	15,08	13,6							
1.006,01	1.015,741	14,75	15,1	15,65	14,£							
1.006,055	1.015,787	15,26	16,05	17,53	15,0€							
1.006,379	1.016,114	15,95	16,64	18,48	15,62							
1.006,789	1.016,528	18,29	18,32	18,86	17,76							
1.006,766	1.016,504	18,1	18,69	19.62	17.25							
1.006,869	1.016,609	19,14	18,85	20,35	18,13							
1.006,611	1.016,348	19,92	20,28	21,11	18,82							
1.006,204	1.015,938	20,05	21,19	22,64	20,05							
1 005 97	1.015.6	22.60	25.42	27.27	22 AF "							
	1.007,449 1.007,52 1.007,682 1.007,327 1.006,843 1.006,274 1.006,075 1.006,075 1.006,379 1.006,789 1.006,786 1.006,869 1.006,611	1007,2286 1017,01 1.007,249 1.017,194 1.007,842 1.017,206 1.007,882 1.017,206 1.007,882 1.017,207 1.006,843 1.016,808 1.006,843 1.016,808 1.006,975 1.015,707 1.006,037 0.105,707 1.006,379 1.016,508 1.006,786 1.016,508 1.006,786 1.016,504 1.006,809 1.016,308	1007,200 10,17,01 29,22 1007,400 10,17,01 22,17 1007,420 10,17,200 24,35 1007,821 10,17,201 24,35 1007,822 10,17,201 24,35 1007,822 10,17,071 19,38 1000,823 10,66,83 10,61,701 1000,824 10,15,000 14,27 1000,855 10,15,707 14,227 1000,857 10,15,704 14,227 1000,857 10,15,704 14,227 1000,857 10,15,707 14,227 1000,857 10,15,707 14,227 1000,857 10,15,707 15,261 1000,790 10,05,548 16,299 1000,859 10,15,548 16,299 1000,891 10,16,509 19,141 1000,891 10,16,348 19,292	1007,200 1077,01 29,22 27,95 1007,409 1071,714 27,17 28,07 1007,822 1071,206 24,95 23,07 1007,822 1071,206 24,95 23,07 1007,822 1071,206 24,95 23,07 1007,822 1071,671 19,38 17,58 1006,843 10,610,583 16,01 15,53 1006,974 101,506 14,27 13,32 1006,975 10,706 14,27 13,32 1006,975 10,707 15,26 16,06 1006,970 10,706 14,27 15,32 1006,970 10,706 14,27 15,36 1006,970 10,707 15,26 16,06 1006,970 10,707 15,26 16,06 1006,970 10,75,48 16,29 16,29 1006,961 10,14 15,86 16,92 1006,909 10,16,504 16,14 16,86 1006,914 11,94 <td< td=""><td>1007280 1017.01 29.22 27.95 29.46 1007480 1017.94 21.71 28.07 27.44 1007480 1017.96 24.96 22.07 22.44 1007480 1017.96 24.95 22.07 22.44 1007480 1017.76 19.98 17.58 19.43 1007582 1017.071 19.98 17.58 19.43 1005454 1016.08 14.27 13.92 14.51 10050575 1015.00 14.22 14.31 15.06 10006037 1016.08 14.27 13.92 14.31 10006037 1016.08 14.27 13.92 16.31 10006037 1016.08 16.29 13.32 16.80 10006037 1016.02 18.29 13.32 16.80 10006070 1016.02 18.29 13.32 16.80 10006070 1016.04 18.10 19.02 10.32 10006070 1016.04 18.10 19.02</td></td<>	1007280 1017.01 29.22 27.95 29.46 1007480 1017.94 21.71 28.07 27.44 1007480 1017.96 24.96 22.07 22.44 1007480 1017.96 24.95 22.07 22.44 1007480 1017.76 19.98 17.58 19.43 1007582 1017.071 19.98 17.58 19.43 1005454 1016.08 14.27 13.92 14.51 10050575 1015.00 14.22 14.31 15.06 10006037 1016.08 14.27 13.92 14.31 10006037 1016.08 14.27 13.92 16.31 10006037 1016.08 16.29 13.32 16.80 10006037 1016.02 18.29 13.32 16.80 10006070 1016.02 18.29 13.32 16.80 10006070 1016.04 18.10 19.02 10.32 10006070 1016.04 18.10 19.02							







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