

Success Story

Forecasting System
for Malta International
Airport



SUCCESS STORY

Forecasting System for Malta International Airport



MicroStep-MIS started cooperation with Malta International Airport in 2012. The first project that we delivered was the installation of a Radar MMR.

In this project, we used the previous radar shield and replaced the non-functioning radar with the latest technology. Mini Meteorological Radar MMR is unique portable X-band weather radar which provides real time insight into the weather situation up to a 200 km range. The radar by MicroStep-MIS answers the needs of MIA for weather monitoring. Additionally, real time data is also updated on a daily basis on the website of MIA www.maltairport.com



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Project | Forecasting System

- > Meteorological Data Processing System
- > MMR-50 Weather Radar + Nowcasting (2013 - 2014)
- > SADIS receiving station (2014)
- > Message Switching System (2014)
- > Briefing and Forecasting Software (2014)
- > Climatological Database + network of nine (9) Automatic Weather Stations (2015)
- > Radar integration into OPERA system (2016)
- > Runway condition information system, aquaplaning nowcasting (2017)
- > MMR-116 Weather Radar (2020)

Client | Malta International Airport

Malta Airport is the only airport serving the Maltese Islands, connecting them to more than 80 destinations in Europe, North Africa and the Middle East. The airport handled 4.2 million passengers in 2014 and its terminal is spread across 74,000 square meters.

The Malta Airport Met Office is the National Meteorological Office providing aviation and non-aviation related services to various entities and organizations.



"MicroStep-MIS' small and compact radar is designed for all-weather phenomena. Its unique features make it suitable for assisting meteorologists in their day-to-day work. Distinctive as it has a user-friendly interface with other met-systems. A truly indispensable and worth investing product for met-forecasting."

- Joseph Schiavone

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MIA was satisfied with the Radar MMR and we have received another order, this time to work on the delivery of software solutions. In 2014, we installed IMS4 Briefing which supplies meteorological information to aviation users in order to ensure the safety and regularity of air navigation.

Afterwards, we started to develop the new IMS4 Weather Studio designated for forecasters. It is a tool for processing, analyzing, and graphic presentation of meteorological, radiation and climatological data. During the customization phase we have paid special attention to the needs of forecasters and tailored the solution according to their preferences.

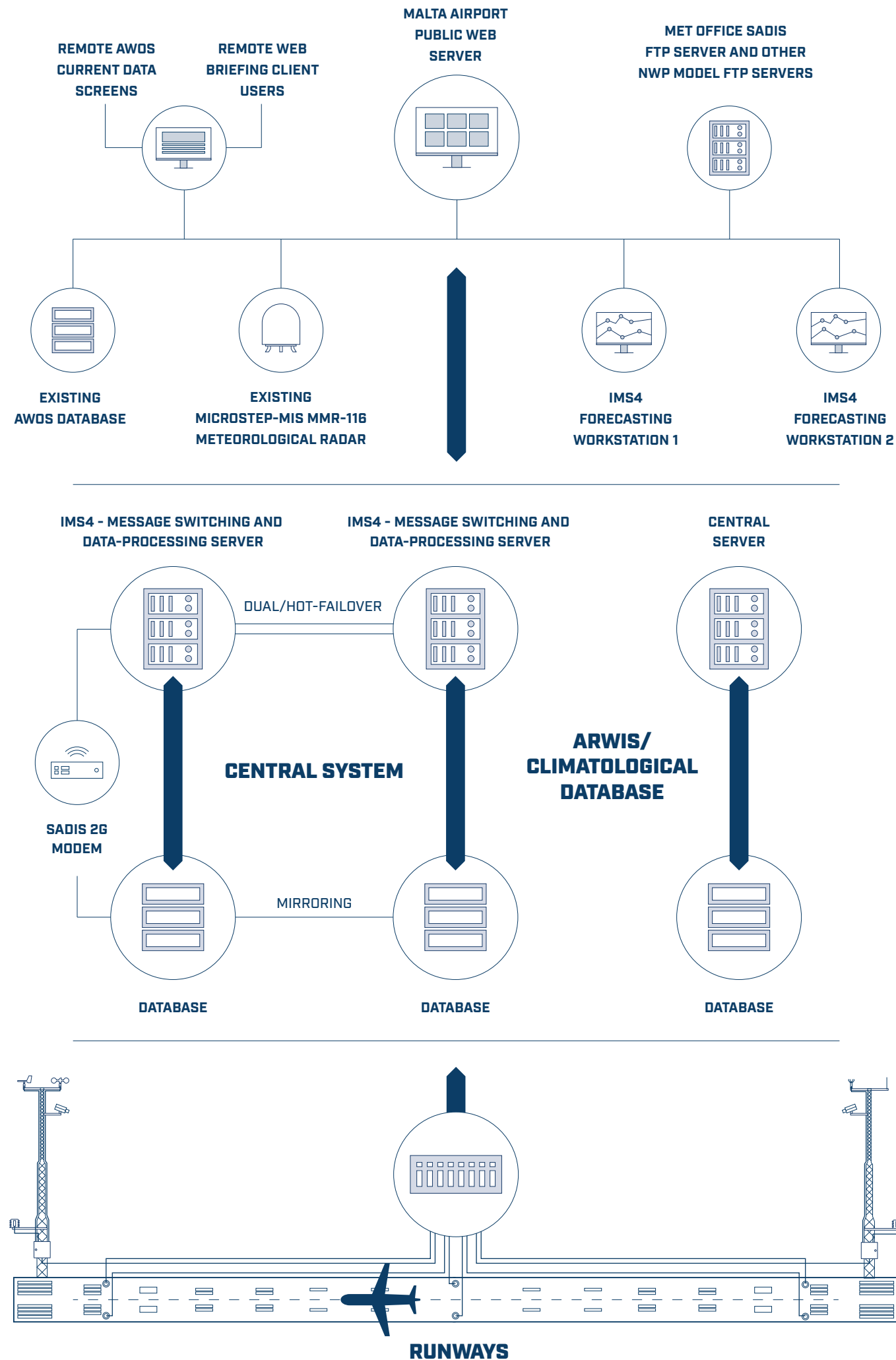


In 2015, we delivered 9 AWS stations which measure precipitation, solar radiation, air and soil temperature, relative humidity, atmospheric pressure, wind speed and direction. This extension is still in progress. So far, 6 AWS stations have been installed and we have trained staff to install the remaining 3 stations.

Based on the excellent level of cooperation and top quality of MicroStep-MIS technologies, the customer decided to replace the MMR-50 by the new Mini Meteorological Radar MMR-116. The new radar provides data in higher quality.

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Selected forecasting products:

- Wind+Temp chart A AMERICAS, B EURSAM, C EURAFI, D EURASIA, E INDOC, EURO, F PACIFIC, I PACIFIC (NORTH PACIFIC), J SOUTH POLAR, M PACIFIC NORTH, MID, NAT levels 100 hPa (FL530), 150 hPa (FL450), 175 hPa (FL410), 200 hPa (FL390), 225 hPa (FL360), 250 hPa (FL340), 275 hPa (FL320), 300 hPa (FL300), 350 hPa (FL270), 400 hPa (FL240), 500 hPa (FL180), 600 hPa (FL140), 700 hPa (FL100), 850 hPa (FL050) forecasts: Forecast + 6h, Forecast +12h, Forecast +18h, Forecast +24h, Forecast +30h
- Upper air forecasts from NWP
- Cross section
- BUFR coded SIGWX
- Station model
- VAG (volcanic ash)
- Custom charts: isobar charts, wind charts

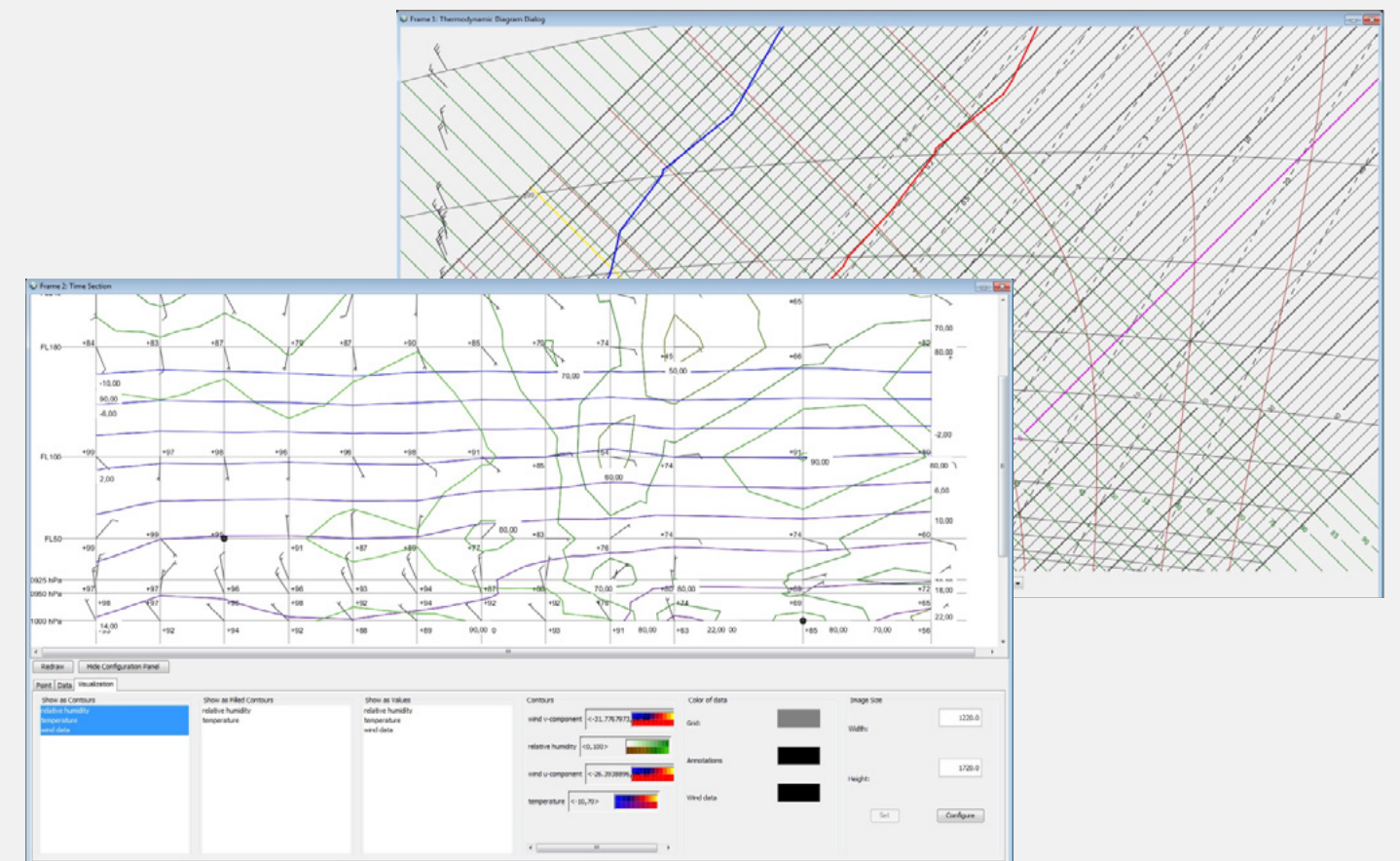
Irregular: Marine Forecast
 Blight Forecast, Civil Wind Warning, Marine Wind Warning, Forecast Request, Heat Advisory, Preliminary Gregale Advisory, CPD Precipitation Advisory, Current Conditions, Weather Report, Occurrence Report, Precipitation Advisory, Sigmet Free Text, Luqa Airfield Lightning Activity Level, CPD Lightning Activity Level, Strong Winds Advisory

Radar products:

- PPI (Plan Position Indicator) one radar elevation
- CAPPI (Constant Altitude PPI) horizontal cross section
- RHI (Range Height Indicator) vertical cross section
- Echo Tops heights of cloud tops
- Composite Reflectivity (Column max) maximas in columns
- VIL (Vertically Integrated Liquid Water) column sums
- Rainfall Accumulation
- Storm cell identification
- Storm cell nowcasting
- OPERA composite radar situation

Text forecasts prepared manually using web forms:

1x daily: 2-day Airfield Forecast, Five Day Forecast
 2x daily: Local Area Forecast



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Briefing products: pre-flight information

bulletins:

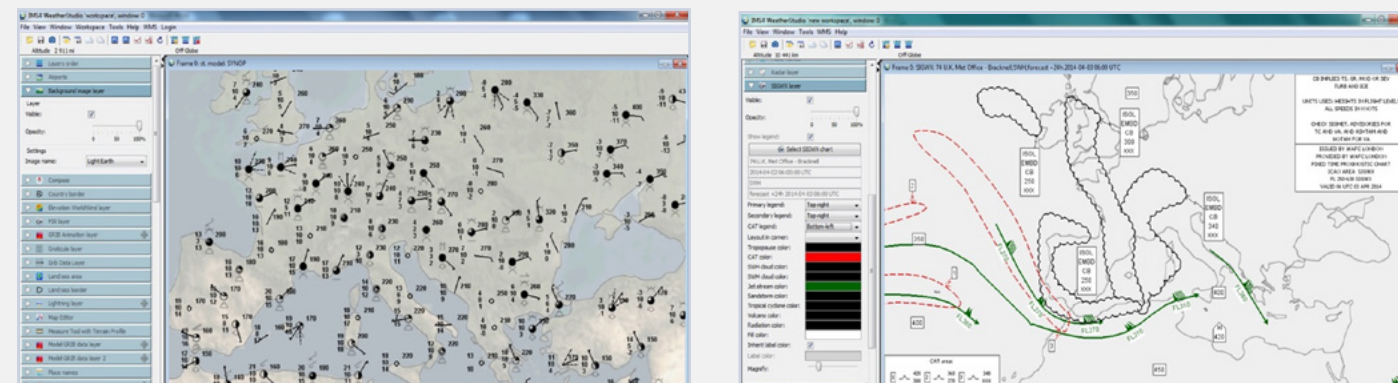
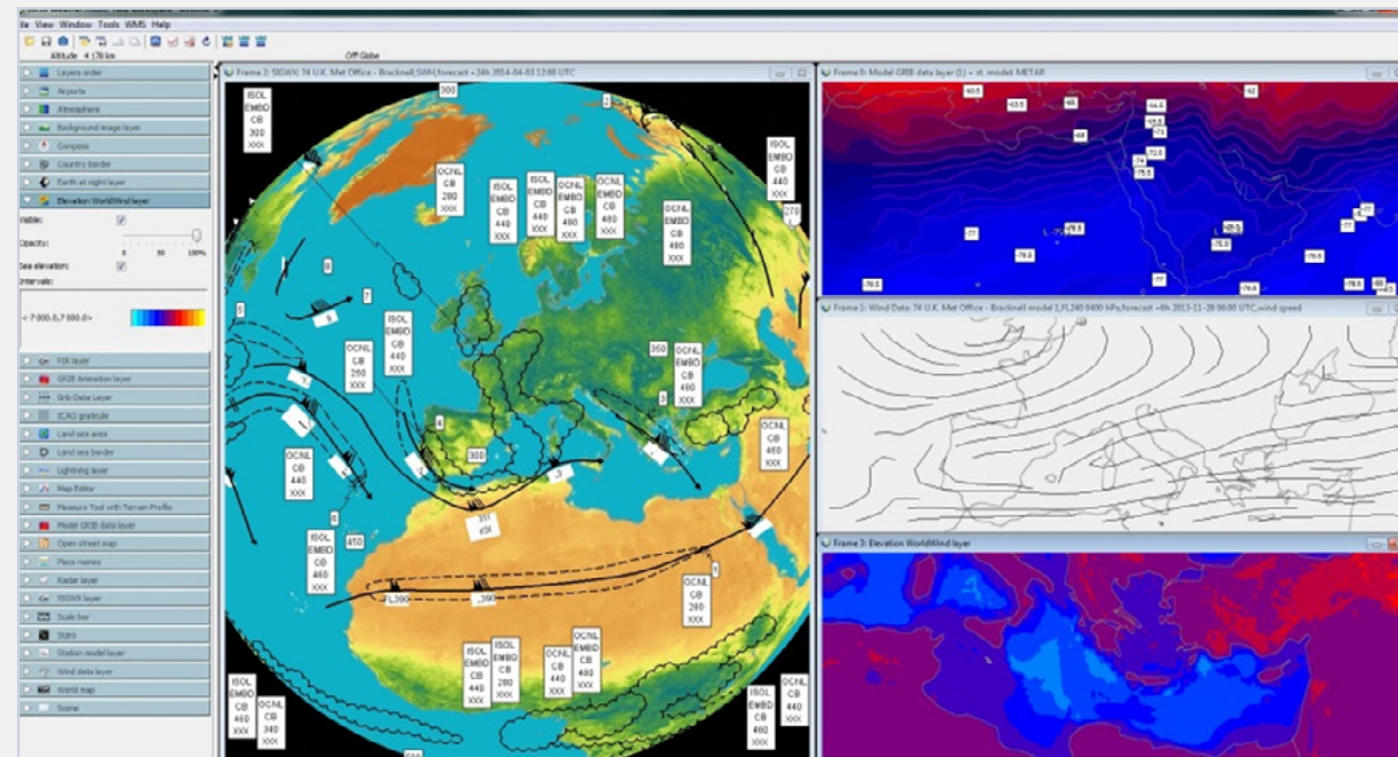
- Flight information
- Takeoff forecast, landing forecast
- OPMET data
- Upper wind/temperature charts
- SIGWX charts
- Other pre-selected information

Cross sections:

- Temporal profiles
- Multi-parameter spatial cross sections
- Thermodynamic diagrams (Emagram, Stüve diagram, Skew-T log-P, Tephigram)

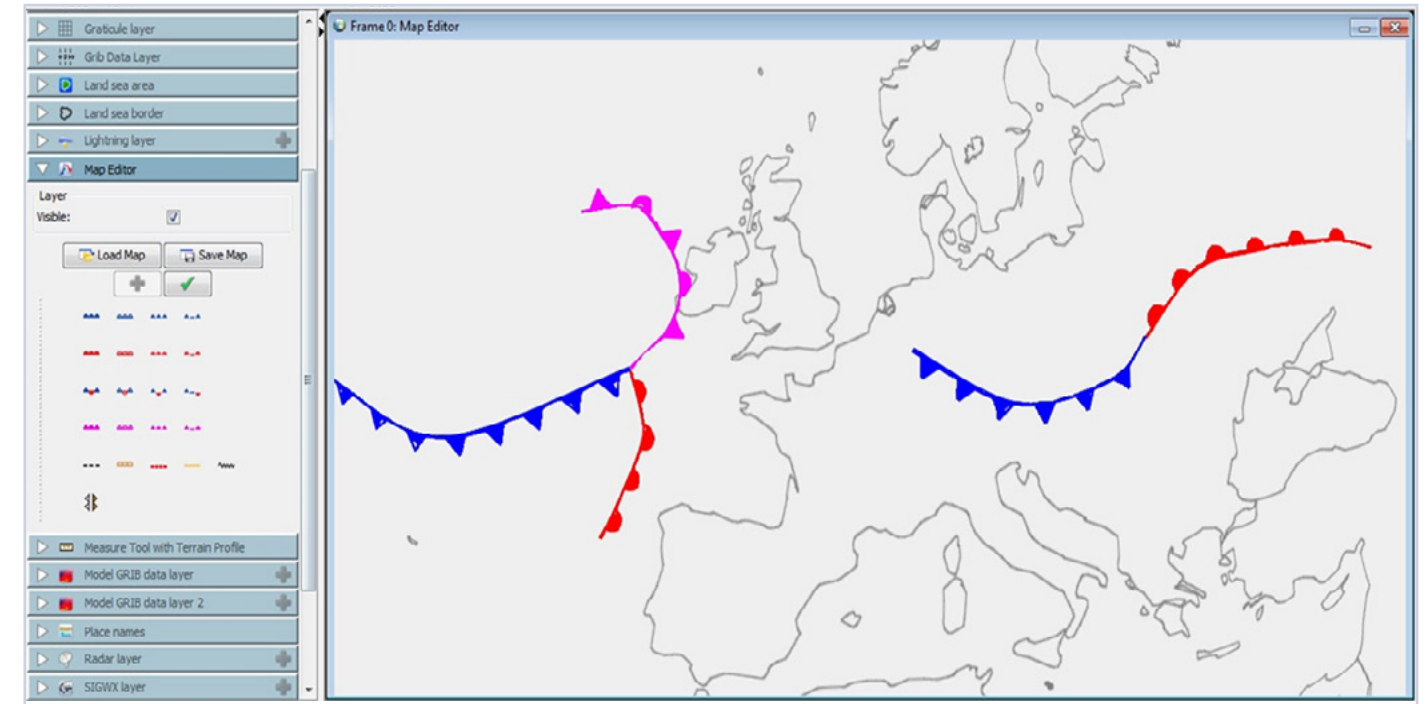
ARWIS / Runway Condition products:

- Runway Condition Report
- Runway condition alerts (detection + nowcasting)



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Report generated by software IMS4.1 by **MicroStep-MIS** **MALTA AIRPORT METOFFICE**

metoffice@maltaairport.com 23696689

humidity (%)	temperature (°C)
	-62
	-54
	-48
	-47
	-47
	-46
	-43
	-36
52	-23
52	-15
36	-7
51	3

Flight: VFR

From: LMML Luqa 2018-01-11 04:08 UTC
To: LICC Catania Fontanarossa 2018-01-11 07:08 UTC

Compiled: 2018-01-11 04:08 UTC

The standard time used throughout this folder is UTC.

SELECTED SIGNIFICANT WEATHER ABBREVIATIONS:

- Light	+ Heavy	VC In vicinity	MI Shallow
BC Patches	DR Low Drifting	BL Blowing	SH Shower
TS Thunderstorm	FE Supercooled	DZ Drizzle	RA Rain
SN Snow	SG Snow Grains	IC Diamond Dust	PL Ice Pellets
GR Hail	GS Small Hail	BR Mist	FG Fog
FU Smoke	DU Widespread Dust	SA Sand	RZ Haze
PO Dust/Sand	SQ Squalls		

Pre-flight information bulletin example

370+

**supplied
aviation weather
systems**

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