PRODUCTION TOOL FOR FRENCH OVERSEAS TERRITORIES

Brigitte Benech, METEO-FRANCE, Toulouse France Pascal Venzac, Meteo-France International, Toulouse France

1. Introduction

French tropical and overseas territories meteorological services of Martinique, Guadeloupe, French Guyana, Reunion island, New Caledonia and French Polynesia (Fig1) have specific needs for customers' production, especially concerning awareness and tropical events.



Fig1- Red spots= location of French tropical territories

So, Meteo-France International Company(MFI) and Meteo-France have adapted to those specific needs a system named Meteo-Factory and which had been previously developed by MFI for international purposes.

Meteo-Factory is a web -based tool (Fig2), which is also linked to the Synergie system for data access and graphical expertise production.

Synergie is a software which focuses on weather forecast and which has been developed by Meteo-France for its weather forecasters, including overseas forecasters. It supports forecaster expertise and batch production(see References).

In this presentation we will show the main functionalities of Meteo-Factory and some examples of products.



Fig2 -Homep age of Meteo-Factory

2. A modular system composed of three main modules

2.1 General presentation

Meteo-Factory is a modular system that allows National Meteorological Services to deliver automatically to their end-users the meteorological products and services they need in the right format and at the right time.

It is an answer to all National Meteorological Services' duties:

- To ensure security of people and goods
- To provide suitable meteorological information in all economic sectors

Basically Meteo-Factory :

- Ingests raw meteorological data
- Processes the data and stores XML data
- Produces automatically tailored services and products in text, pdf, png format.

Technically, Meteo-Factory is divided into three main modules (see Fig3 below):

- Weather data integration (in green)
- Integrated production system (in yellow)
- Dissemination system (in blue)



Fig3- Meteo-Factory architecture

The interface exists in English and French. Any language can be implemented.

2.2 Weather data integration: forecasting module

The weather data are directly extracted from the Synergie server (models data, satellite pictures...) or from the expertise of the forecasters.

The "forecasting" module includes :



weather forecast.

The weather forecast can be updated automatically from models data, and then corrected by forecasters (Fig4.1).



Fig4.1-Here, New Caledonia is divided into 14 areas.

Meteorological parameters (significant weather, temperatures, rain amounts, wind, waves...) are assigned to these areas automatically or by a "click" of the forecaster through this Graphical User Interface

Weather parameters can also be initialized through objects which have been drawn by the forecasters on Synergie work stations (Fig4.2 below).



Fig4.2-Objects design Graphical User Interface on Synergie workstation. One map= one forecast every six hours- Here Wednesday 12utc, 18utc, Thursday 00utc The area number 1 is an object. All locations within this area will have the same significant weather: overcast and rainy





of severe events.

The chief forecaster has to create at least one event a day (severe or not).

Severe events types are previously defined by the administrator: heavy rains, thunderstorms, strong winds, swell, cyclone....

Each event type is associated to a meteorological parameter. Each parameter is represented by a pictogram.

In case of occurrence of one or several events, the forecaster will assign the relevant pictograms to various areas of a map.

A severe event is defined by orange or red level. A non severe event is defined by yellow or green event. When there is a severe event, the forecaster must enter a report (Fig5)



Fig5-Awareness module interface. Here, strong winds have been assigned to some areas (in yellow) of New Caledonia. The color level for this event is orange.



Reports: this module allows the forecaster to edit blocks that will be stored in the data base before being reused for the end-users production (Fig6)



Fig6-An example of report, named weather report. The forecaster has to fill each block . Here, the first one is entitled "today", the second "tomorrow" . Each block can be reused independently in the end-users' production

All outputs from these three expertise modules (MetEditor, AwareMet and Reports) are then sent to the production data base, and will be used to create the final products.

2.3. Integrated production system: Newsmet module

The purpose of the function is to define layouts and to create new products to be delivered to customers.

Newsmet layouts are defined via a svg (Scalable Vector Graphics file) template.

Some standards svg templates are delivered with MeteoFactory. But it is possible to modify these templates or to create one's own templates with a Vector Graphics Editor, SVG Compliant and open source.

A template defines which data will be displayed in the product. It defines also the format of data and the layout of the product. Various products can be available: plain texts, charts, graphs...or "ready to print" products for newspapers. See examples figures below (fig 7.1, 7.2,7.3).



Fig7.1-Example of forecast for Martinique Island designed for the local Newspaper. Values of pictograms on the map and text come from the Meteo-Factory data base



Fig7.2-Trajectory of a cyclone, not far from New Caledonia

	Prévisio	ns du : 05/0	1/09 à 08	h				
mpérature	lun 5 jan		mar 6 jan		mer 7 jan		Tendance	
							jeu	ven
	Matin	Après-midi	Matin	Après-midi	Matin	Après-midi	8 jan	9 jan
Temps	\times	2		2	2	2	\$	200
Vent	X	modéré	/ moděré	modéré	modéré	faible	modéré	modéré
itat de a Mer	Très agitée	Très agitée	Très agitée	Très agitée	Très agitée	Très agitée	Très agitée	Très agitée
mpérature ini / Maxi	6	(30)	62	(31)	61	(32)	(33)	34

Fig7.3- Met gram over Fort de France (Martinique)

Beforehand the customized templates are created by an administrator according to the sales units specifications.

But it is possible for a forecaster assistant to display and modify them if needed, just before publishing and dissemination to customers.

Actually, a product can be generated and published fully manually or automatically.

With the manual publishing option and using the template function, you can : display the template, import an icon into the template, group a report with a graphical object, specify the data that will replace the icon, save the template.

2.4. Dissemination and monitoring modules:

The dissemination customer management facility allows the administrator to manage the list of customers, broadcast groups and broadcast parameters (email, ftp and/or fax)

The purpose of the monitoring function is to:

- check the products generations and publications on the production server (Fig8),
- check the integration of Synergie products into the production server,
- check the input and output of products through the dissemination server

If the colour of the line is	
Blue	Report already written
Green	The report has to be
	written. The production
	time has been reached
	but the deadline is still
	far away
Orange	The report has to be
	written urgently. The
	production time has
	been reached and the
	deadline is close.
Red	The report has to be
	written very urgently. The
	production time has
	been reached and the
	deadline is very close.
Brown	The deadline to write the
	report was exceeded
Grey	The production time is
	not reached

Fig8-Production monitoring board, concerning the production of reports. The colour of the lines is linked to the production time and deadline.

Centre de controle

Les heures sont en UTC Liste des bulletins pour les zone(s) :Martinique-Guadeloupe-Saint Martin / Saint Barth-Guyane-Dirag

Bulletins	Clé	Caractères	Heure de production	Heure limite	fréquence
CPS Large Matin	martlargematin	Latin	05h00	06h30	Lun Mar Mer Je
CPS Anglais Matin	martseamorning	Latin	07h00	10h00	Lun Mar Mer Je
Mart Tempé mini	marttempernini2	Latin	08h00	10h00	Lun Mar Mer Je.
Mart previ matin	martprevimatin	Latin	08h00	12h00	Lun Mar Mer Je.
Guad Barrage Dumanoir	guadbarrageduma	Latin	08h00	10h00	Lun Mar Mer Je.
GuyaPreviMatin	guyaprevimatin	Latin	08h30	09h15	Lun Mar Mer Je.
essai arnold 2	essaiamold2	Latin	12h00	22h00	Lun Mar Mer Je.
GuyaPreviMidi	guyaprevimidi	Latin	14h00	14h45	Lun Mar Mer Je.

3. Coming next:

Meteo-Factory has been installed in French overseas territories in 2008 and new methods of production are still being defined and organised. The production tasks are being re organised to take advantage of this new tool.

Within a few months, the Met services will draw the conclusions from this first experiment. An upgrade is planned in 2009 to add new functionalities: automatic alert messages based on

meteorological thresholds, SMS dissemination, and particularly an attractive web production for dynamic websites.

4. Conclusion:

Meteo-Factory is a powerful tool which allows the forecaster to refocus on the heart of his expertise: weather forecasting.

Meanwhile, the production is designed as close as possible to the needs of the customers without extra load for the forecasting.

Meteo-Factory will be the bridge between the world of experts in meteorology and the end-users applications.

5. References

Daabeck J., 2005: Overview of meteorological workstation development in Europe, AMS 21st Conf IIPS

Lasserre-Bigorry, A., Degrace J.N., Voidrot M.-F., Arbogast E., 2008: Synergie, French Forecasters Workstation – specific tool for Tropical Cyclone, AMS 24nd Conf IIPS.