

# SYNERGIE Updates and plans

Antoine Lasserre-Bigorry



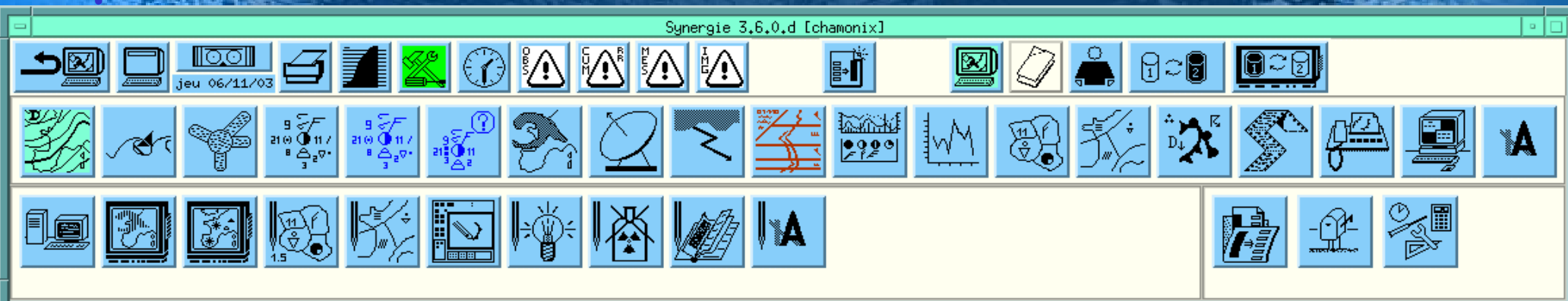
# METEO FRANCE

# Part 1 : SYNERGIE Programme

## Orientations in Météo France on Meteorological and Production Workstations

## Part 2 : Synergie tool

### Metéo-France Meteorological workstation improvements



Part 1:  
**SYNERGIE** Programme  
and  
Orientations in *Météo France* on  
Meteorological and Production  
Workstations

# Summary

- SYNERGIE in brief
  - Main objectives
  - Some numbers
- New Orientations for SYNERGIE
  - Commercialisation
  - Convergences with MF Production Systems
  - Include new functionalities

**-Main objectives**

-Some numbers

>New Orientations

•Commercialisation

•Convergences with MF  
Production Systems

•Include new  
functionalities

# 1. Strategy

- Support Météo France Strategy, Organisation and Main Projects
- Contribution to cooperation and commerce

# 2. Regulation

- Optimisation of Human and Financial investment
- Coordination of Requirements, Development, Operations, Training

# 3. Developments

- Valorisation of all the meteorological data
- Tools for the forecasters and forecasting activities

# 4. Operations

- Deployment on national and international sites
- Administration and supervision within a common framework

See O. Rouzaud presentation Thursday

**PART 1 :**  
**SYNERGIE**  
**Programme**

>SYNERGIE in brief

-Main objectives

**-Some numbers**

>New Orientations

•Commercialisation

•Convergences with MF  
Production Systems

•Include new  
functionalities

- 7.6 MEuros investissment until 1989
- 130 men years for 13 years
- 90 % home made
- 100 % meteorological and computer standards
- 1 500 000 Code lines
- 13 new operational releases since 1993 (V3.6 today)
- 46 sites in the world (23 MF, 7 Army, 16 Export)
- 180 workstations in the world (130 in MF)
- About 1000 meteorologists using Synergie

**PART 1 :**  
**SYNERGIE**  
Programme

➤ SYNERGIE in brief

- Main objectives

- Some numbers

➤ **New**  
**Orientations**

▪ Commercialisation

▪ Convergences with MF  
Production Systems

▪ Include new  
functionalities

# • Commercialisation

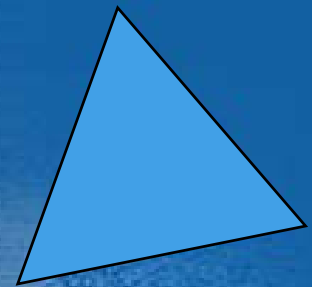
- Météo-France in France
- Météo-France International outside France(2002)

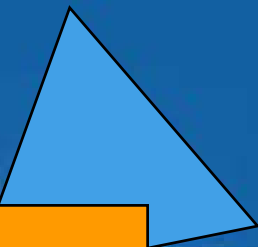
# • Convergences with Production Systems in MF

- Commun Organisation for Requirements Management
- Commun Functionalities (Forecasters Tools)
- Commun End users Production (Climatology, Forecasting)
- Commun Technologies (Operations)

# • Include new functionalities

- Nowcasting
- Local forecast Symposium project
- Tropical cyclone forecast tools





Part 2 :  
Synergie tool :  
Meteo-France Meteorological  
workstation improvements



- Introduction

- 3.6 Release improvements

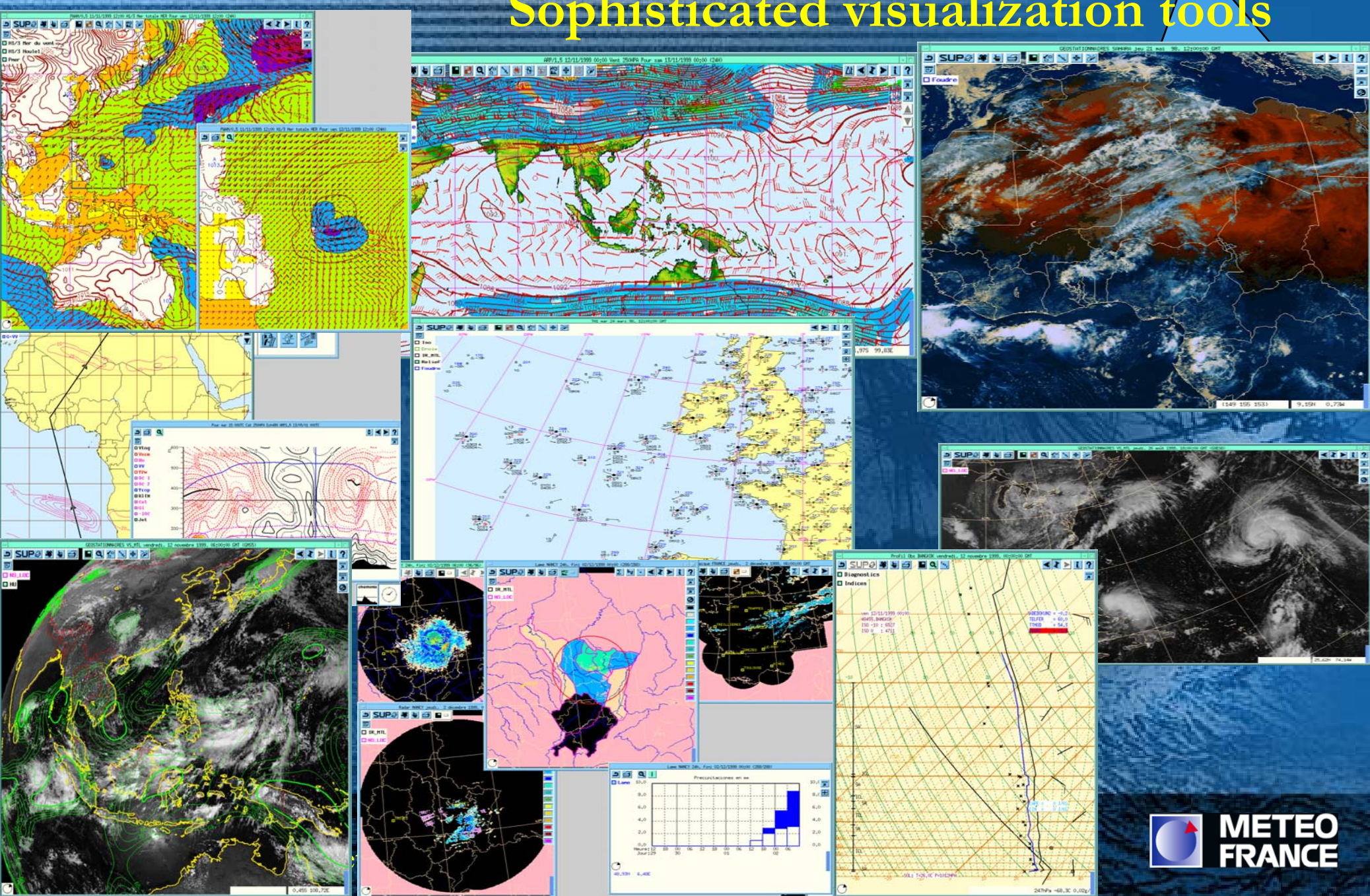
- New observations (Seawind on Quikscat)
- Inclusion of BUFR objects
- Nowcasting including Rapid Developing thunderstorm (RDT) products
- Radar water waves
- MSG

- Futur Developments

- Linux

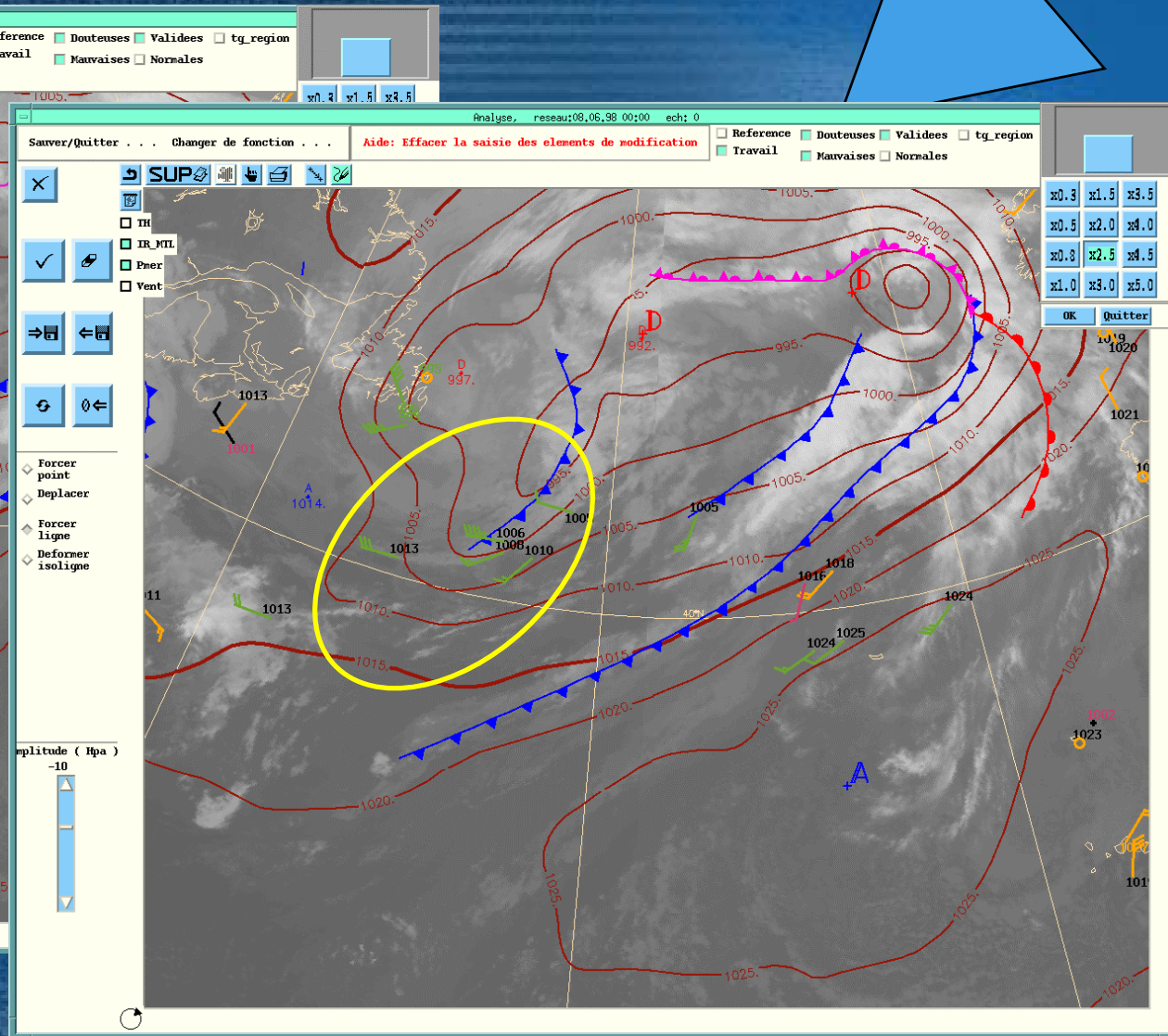
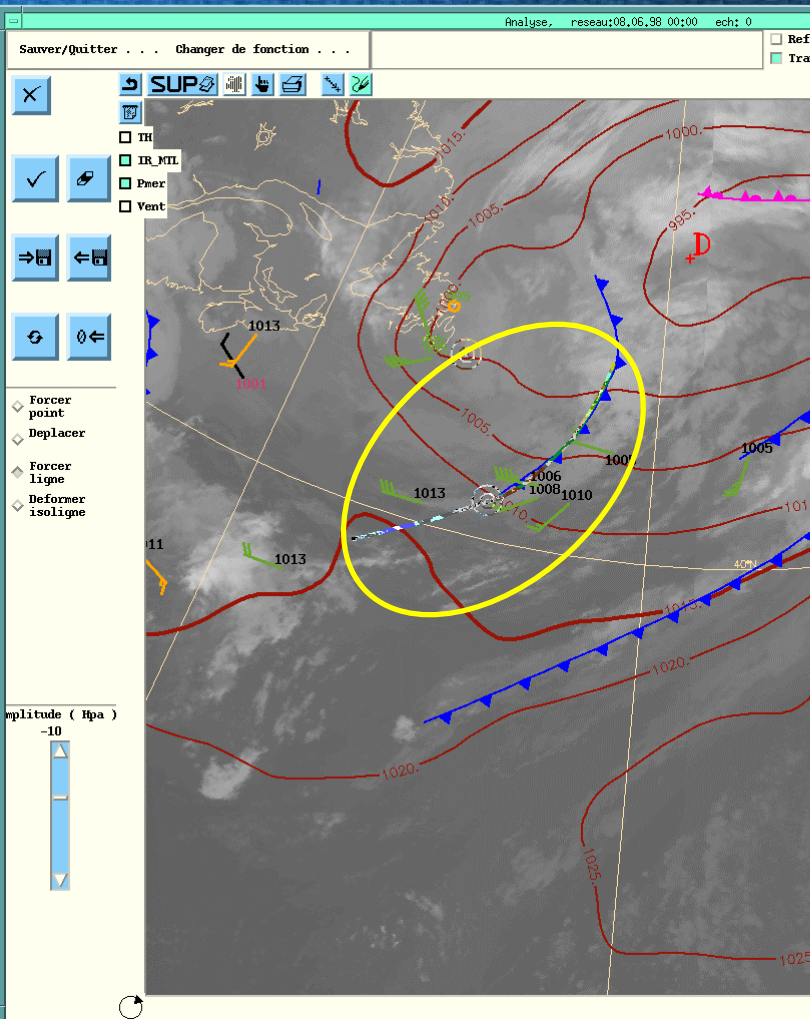
# Introduction

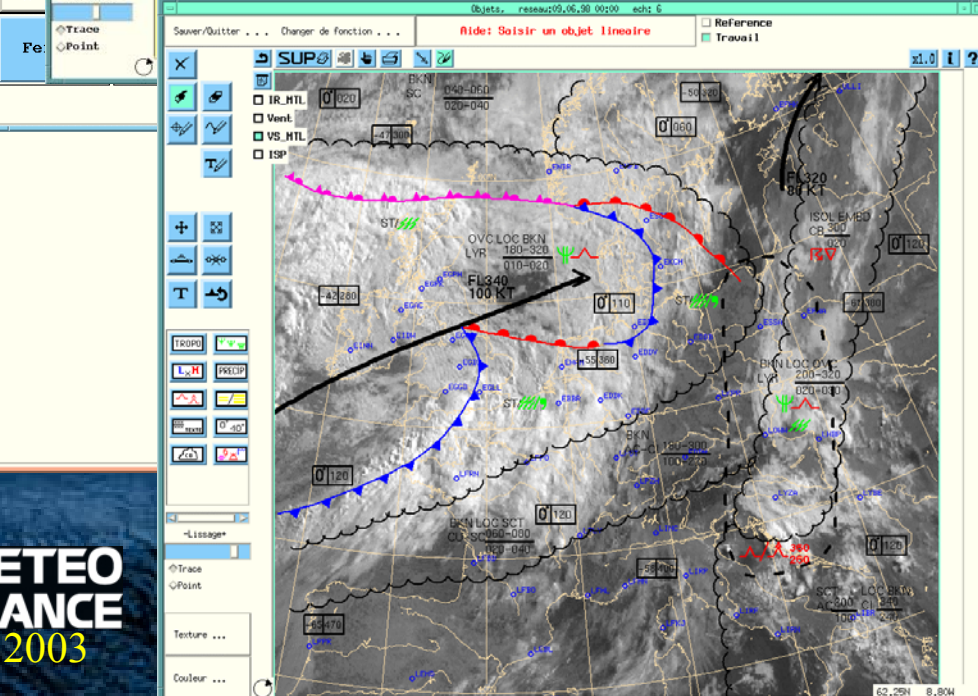
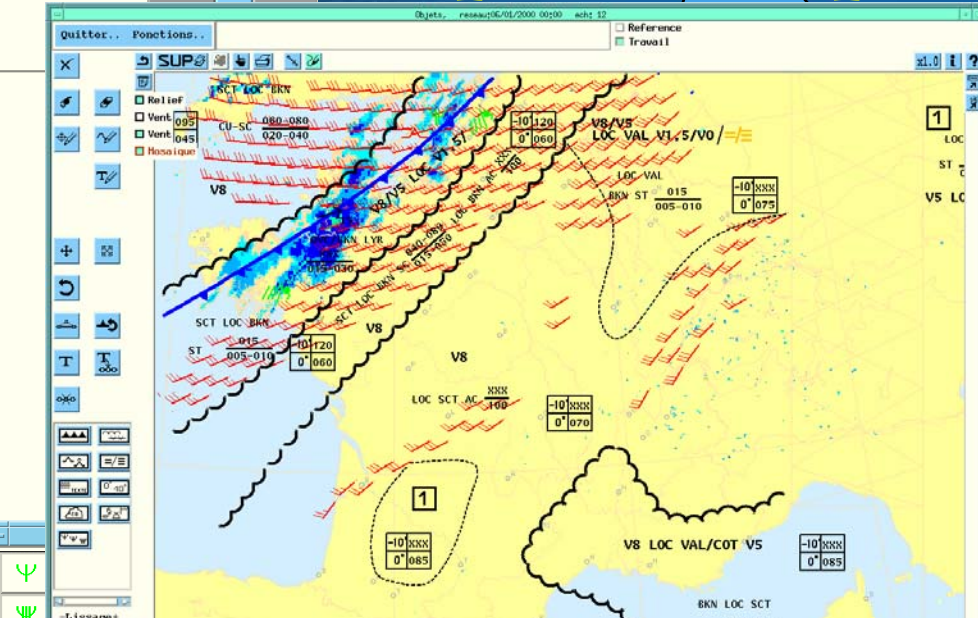
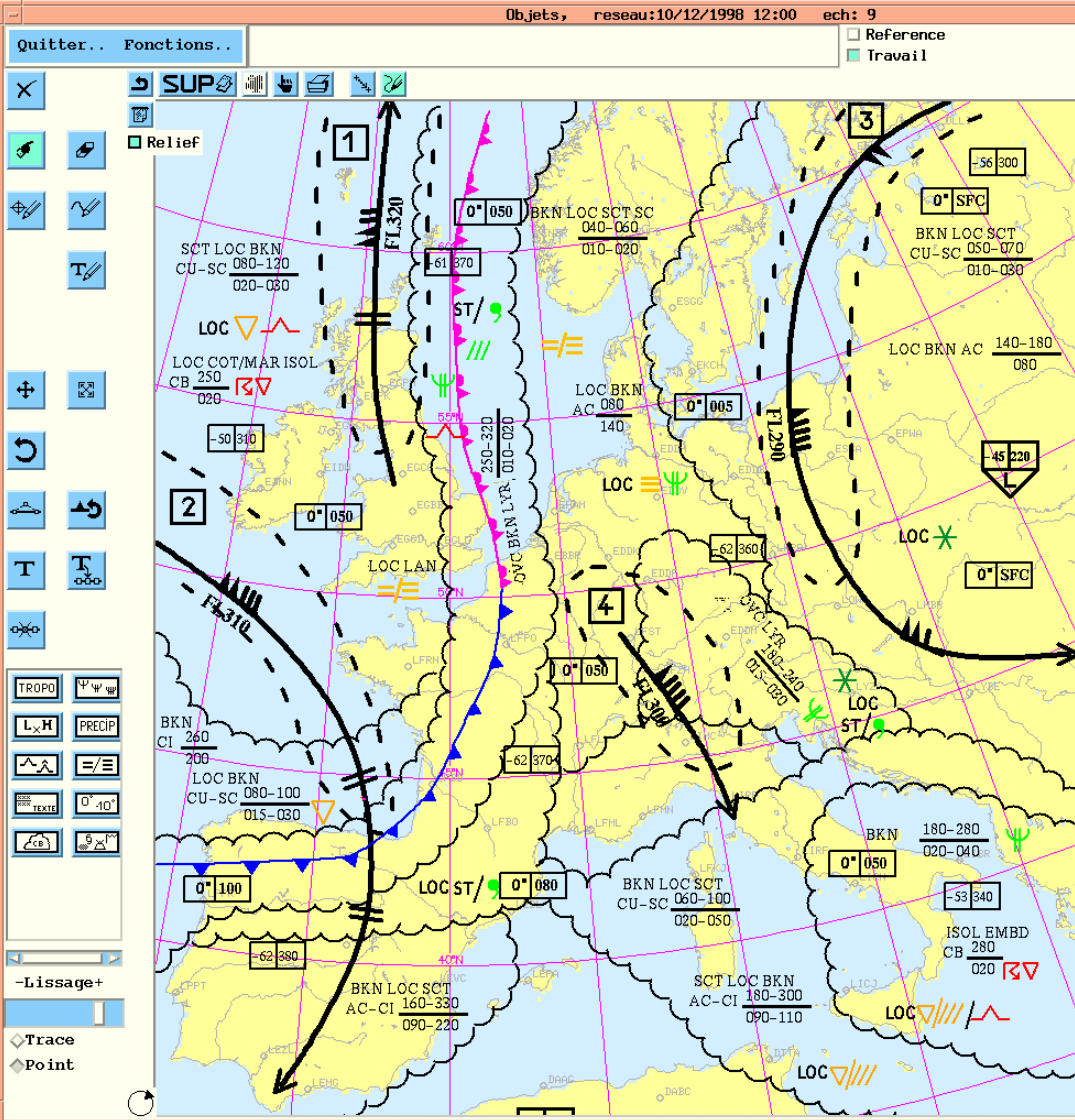
# Sophisticated visualization tools

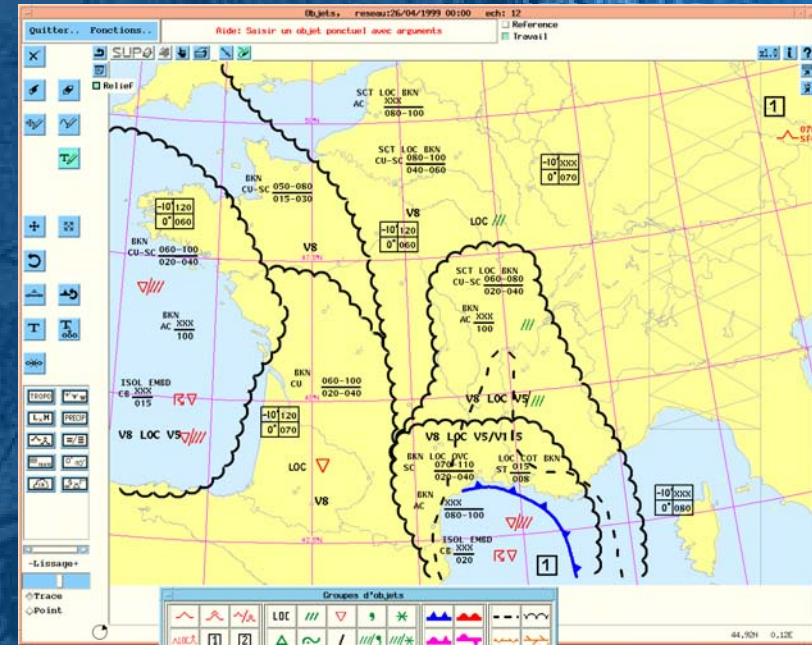
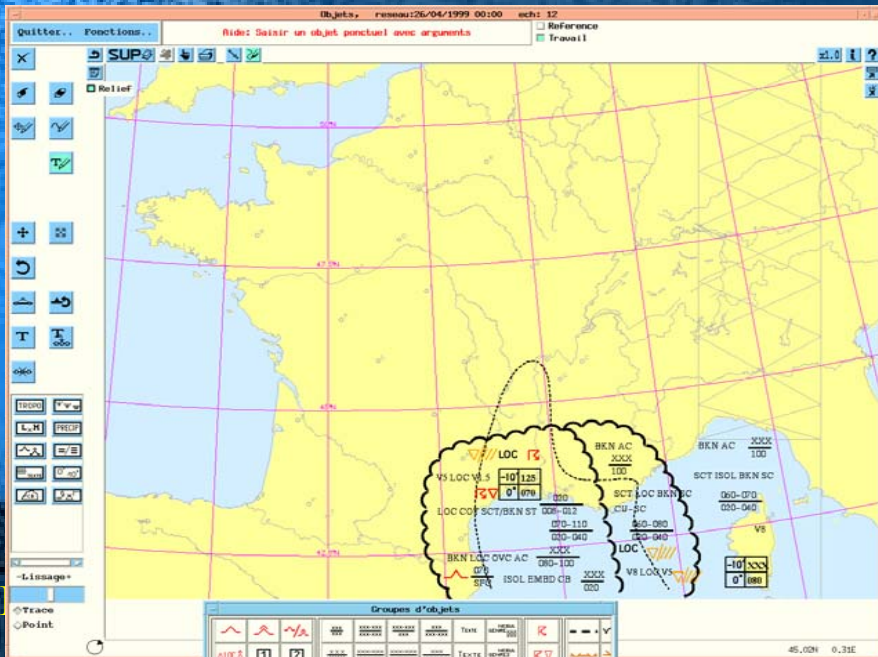
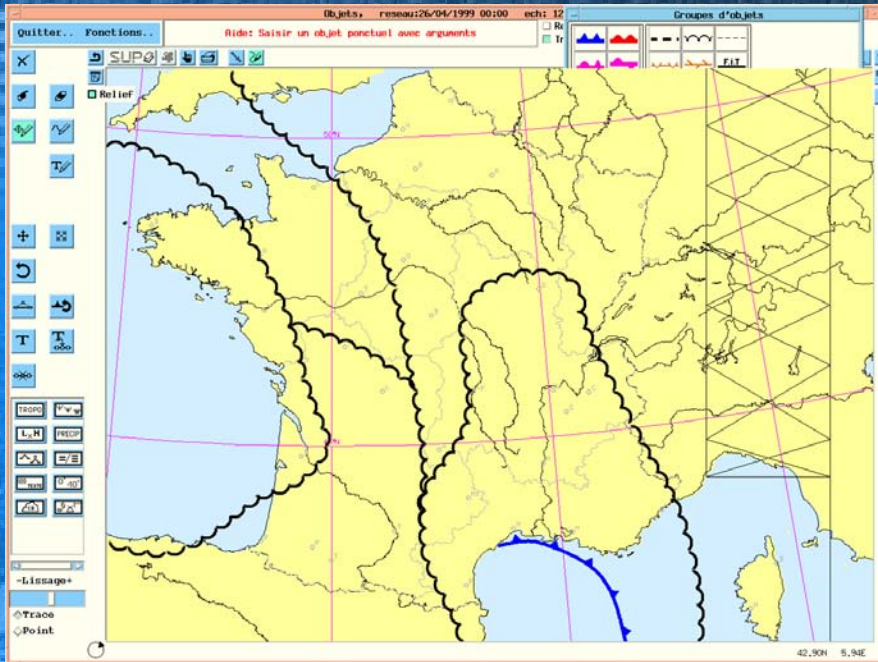


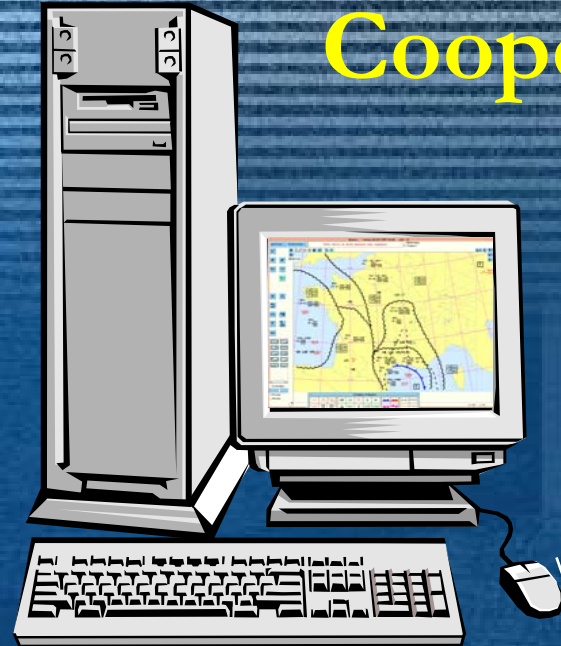
# Introduction

# Fields modification



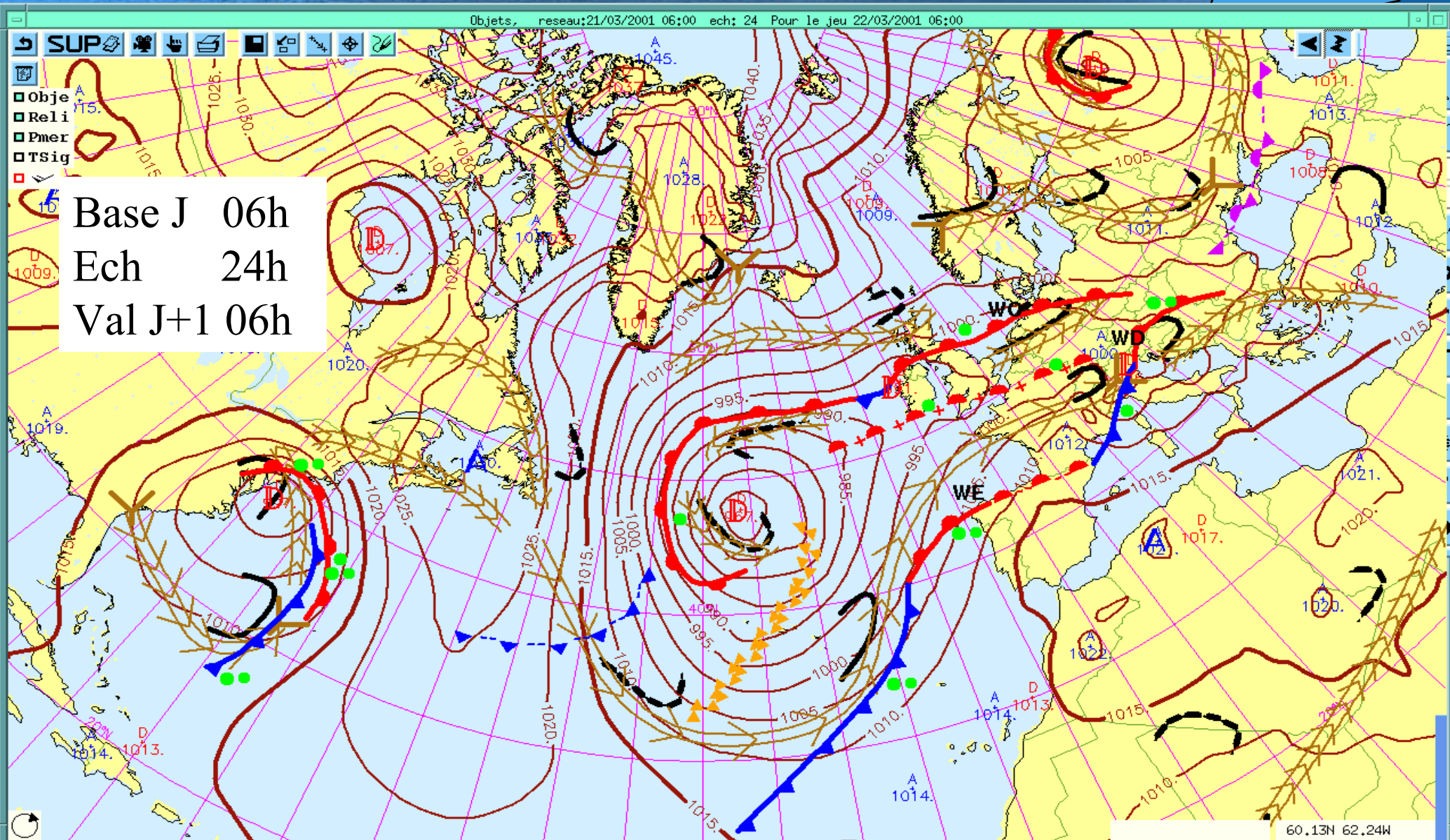




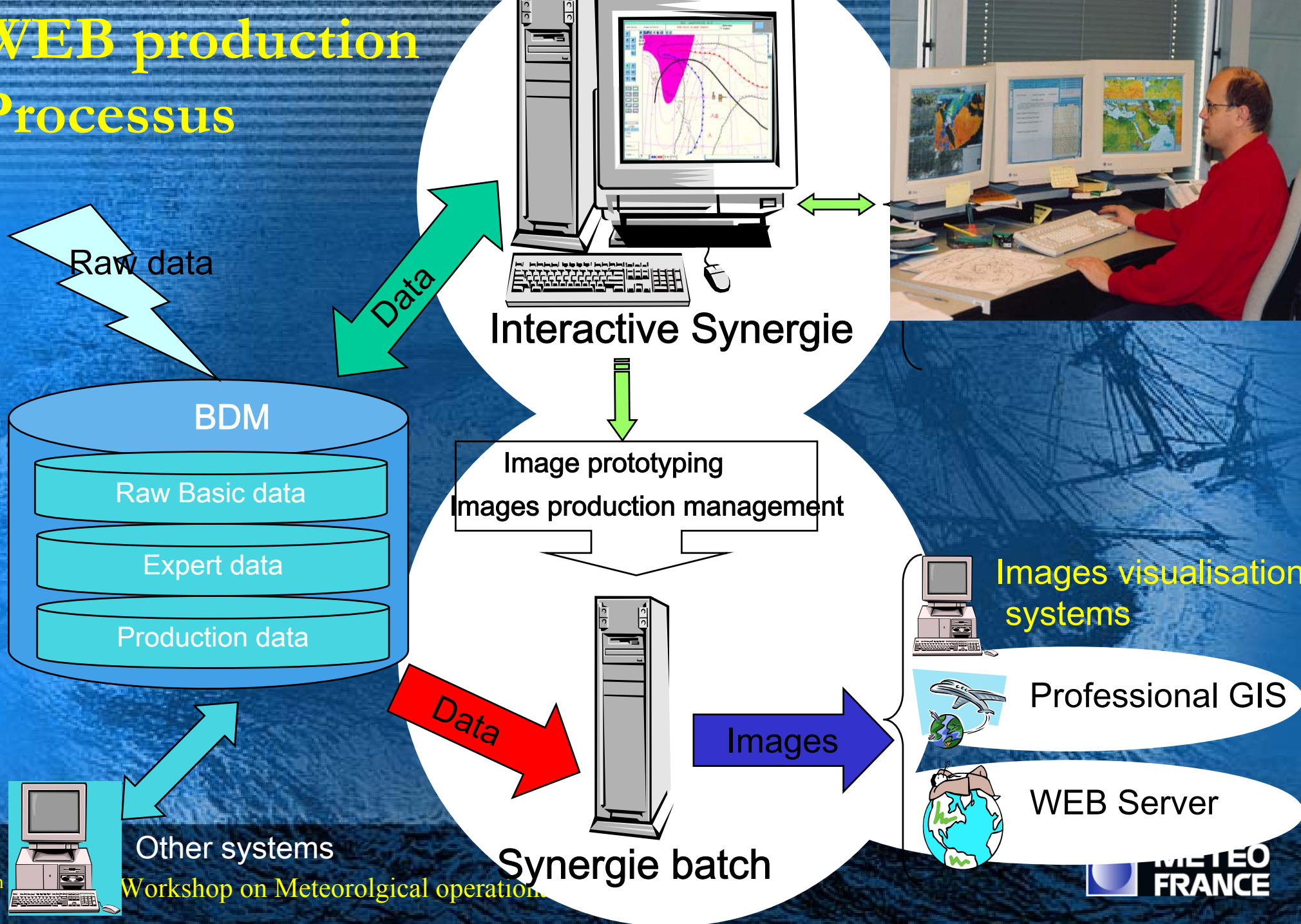


**Network**

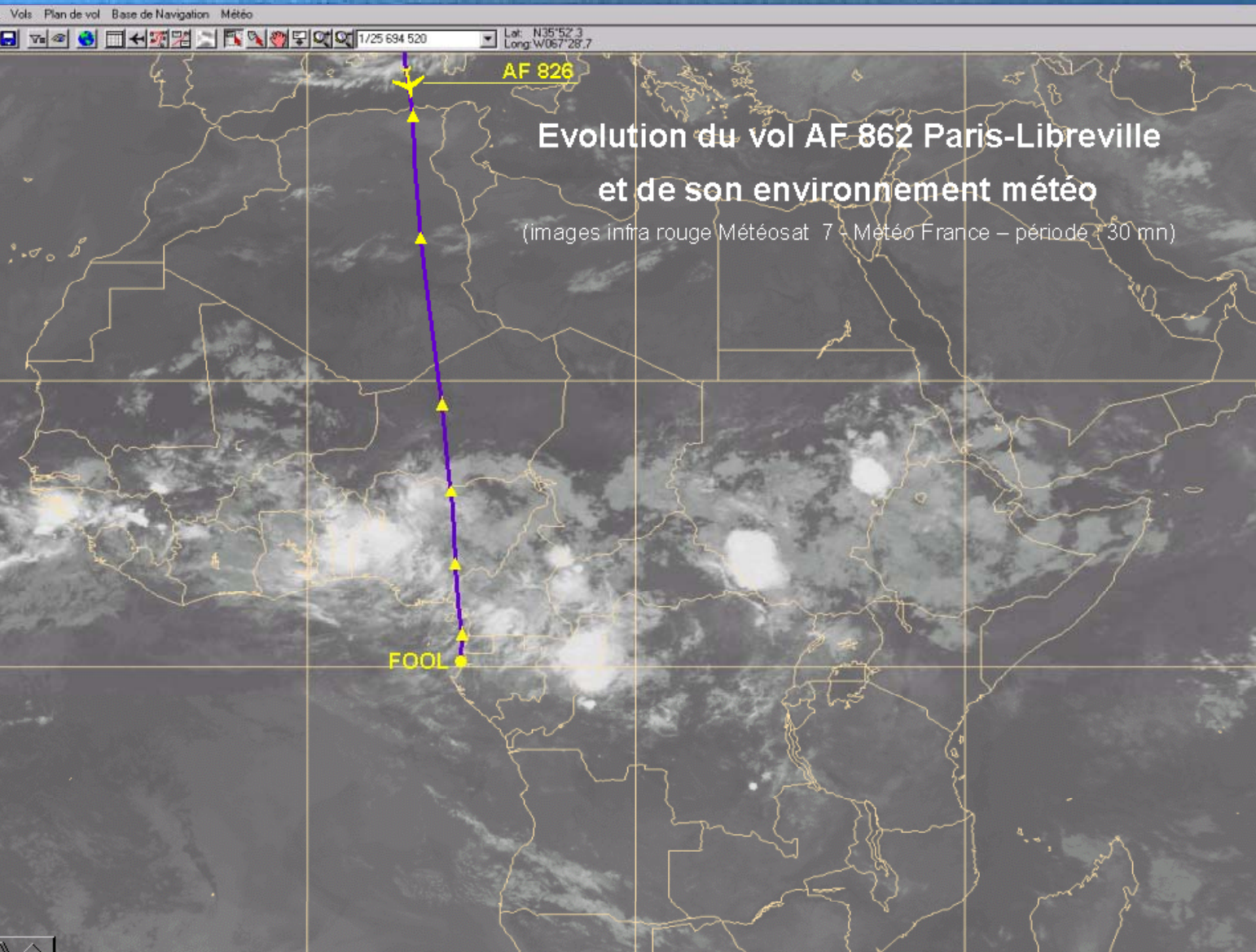




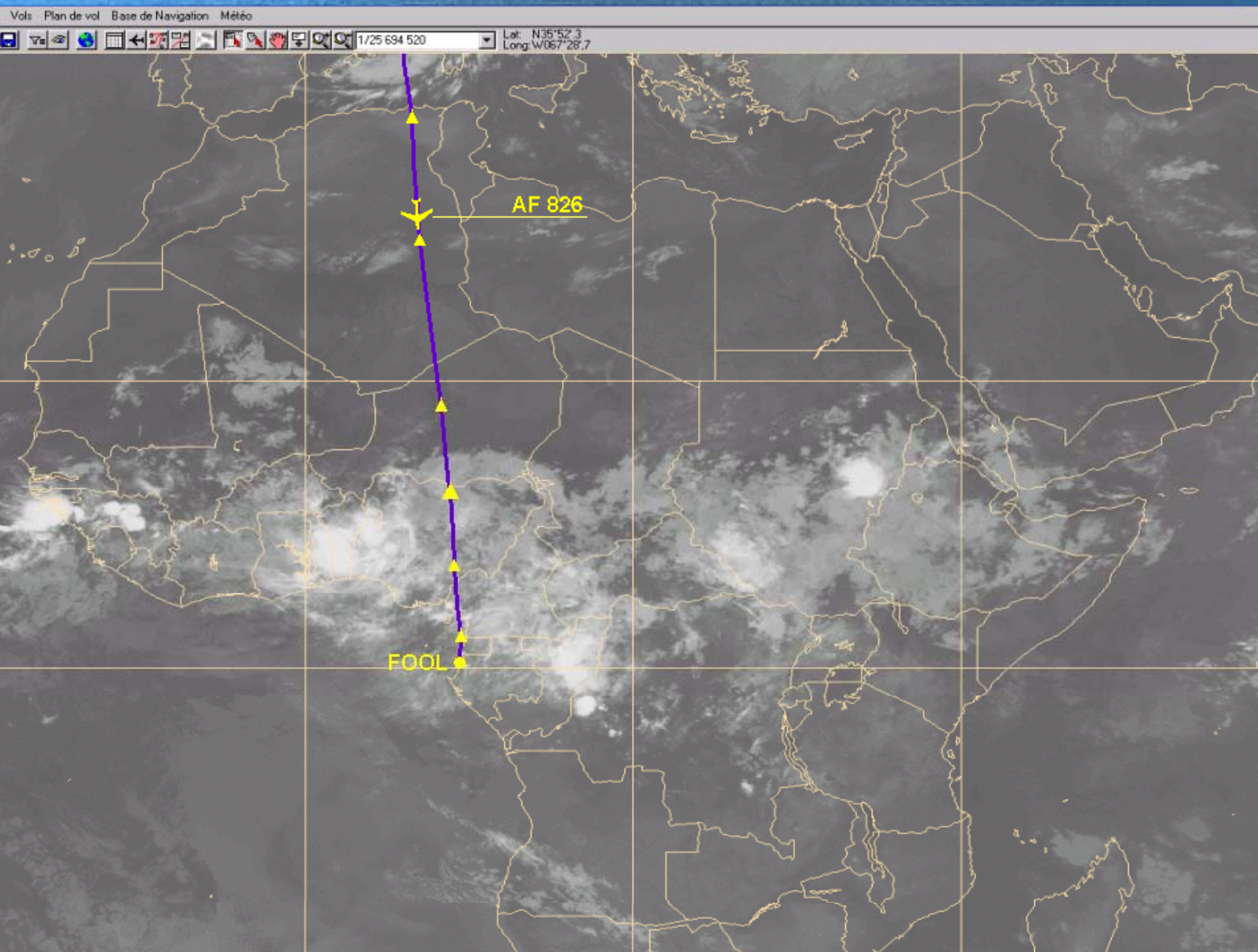
# WEB production Processus



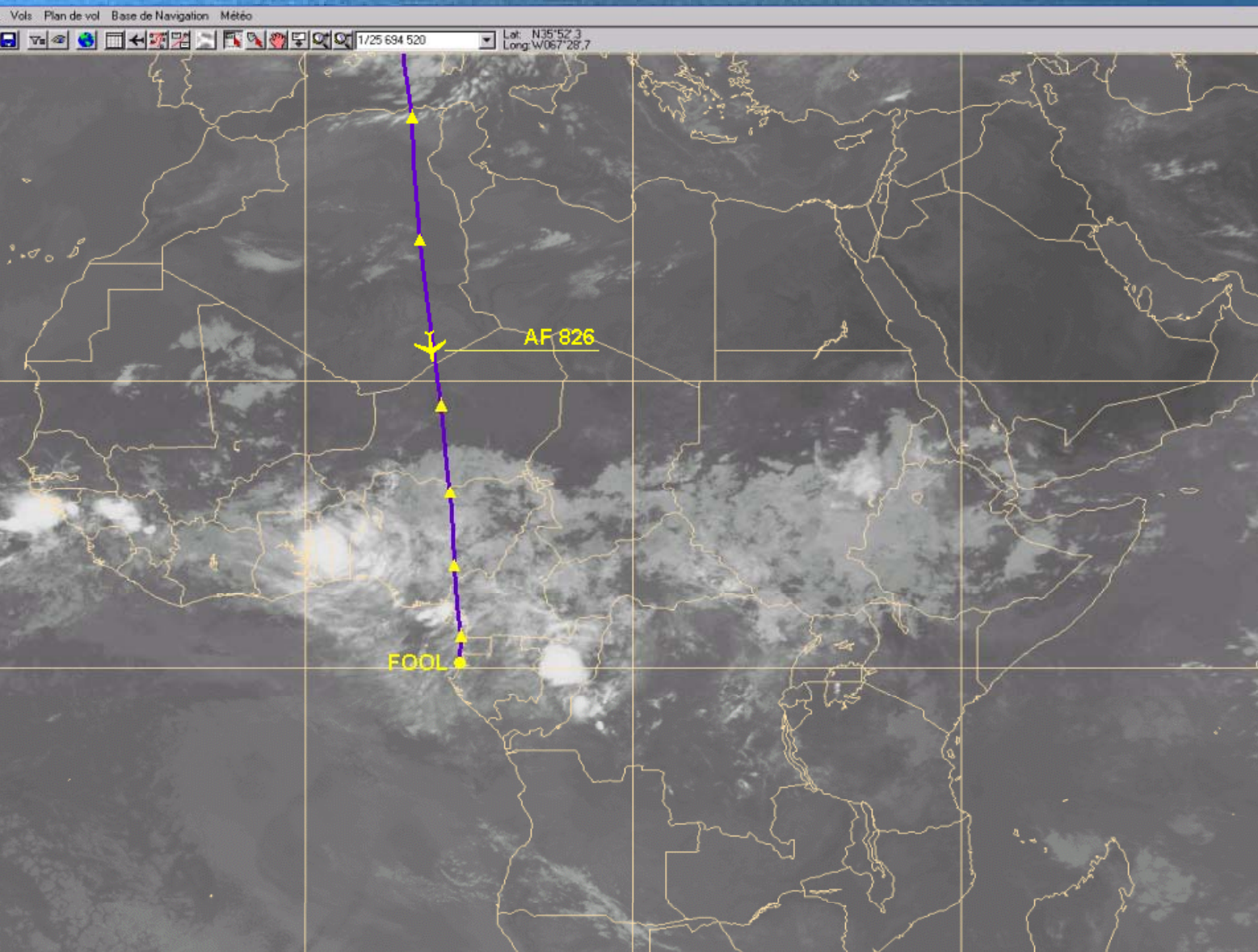




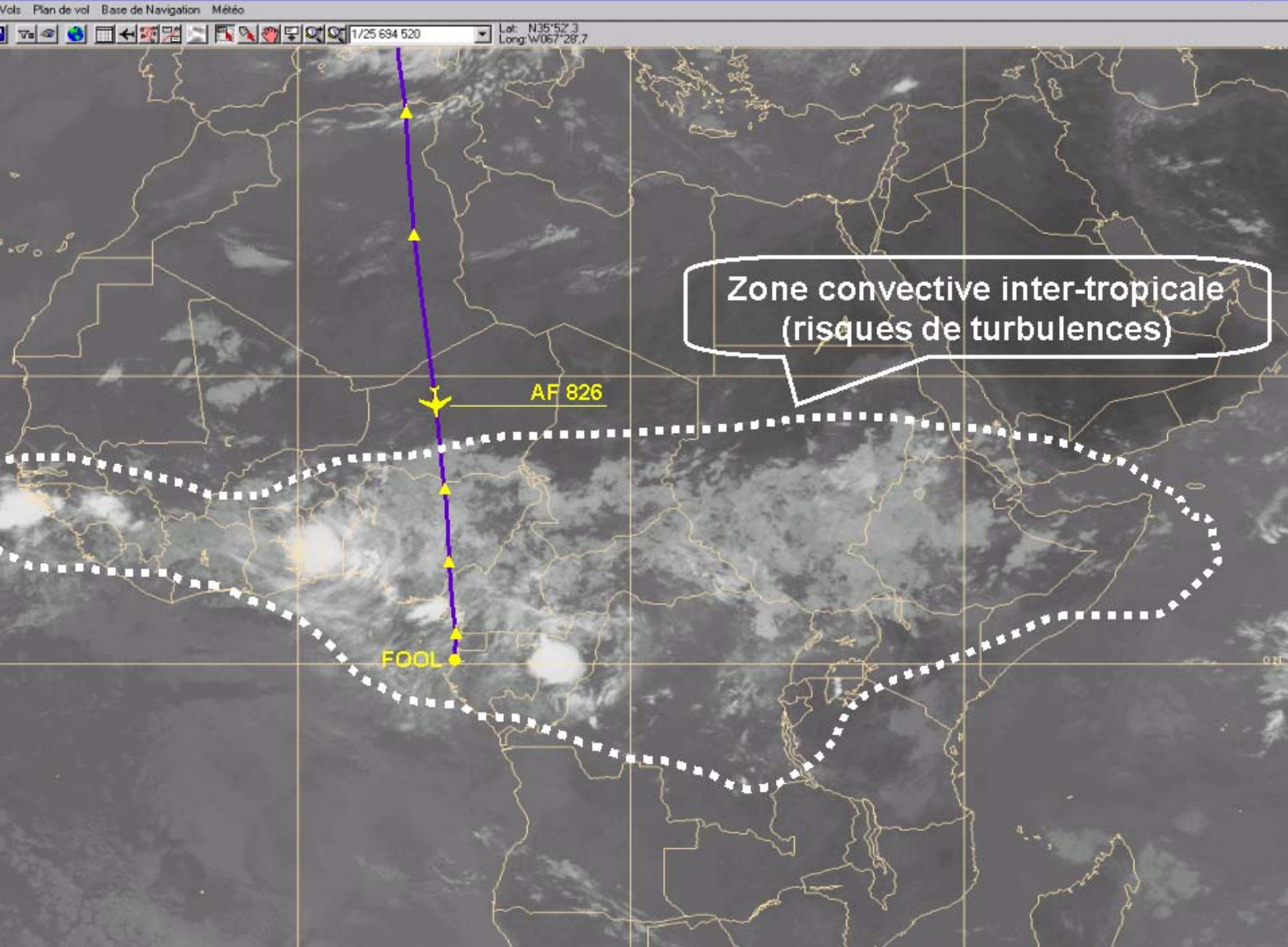
**Example of  
use:  
Professional  
Information  
System  
integration  
for decision  
helping**



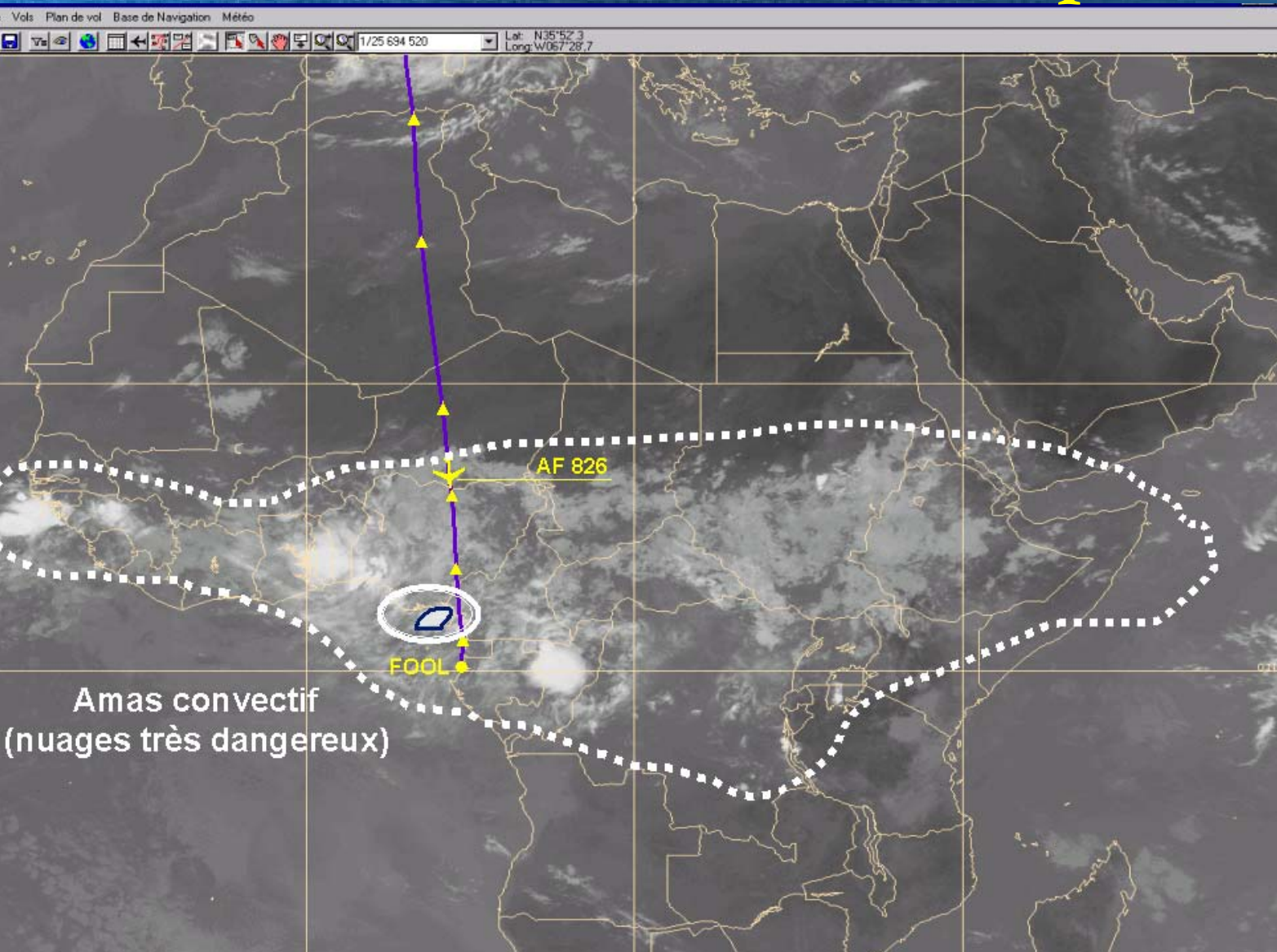
Example of  
use:  
**Professional  
Information  
System  
integration**



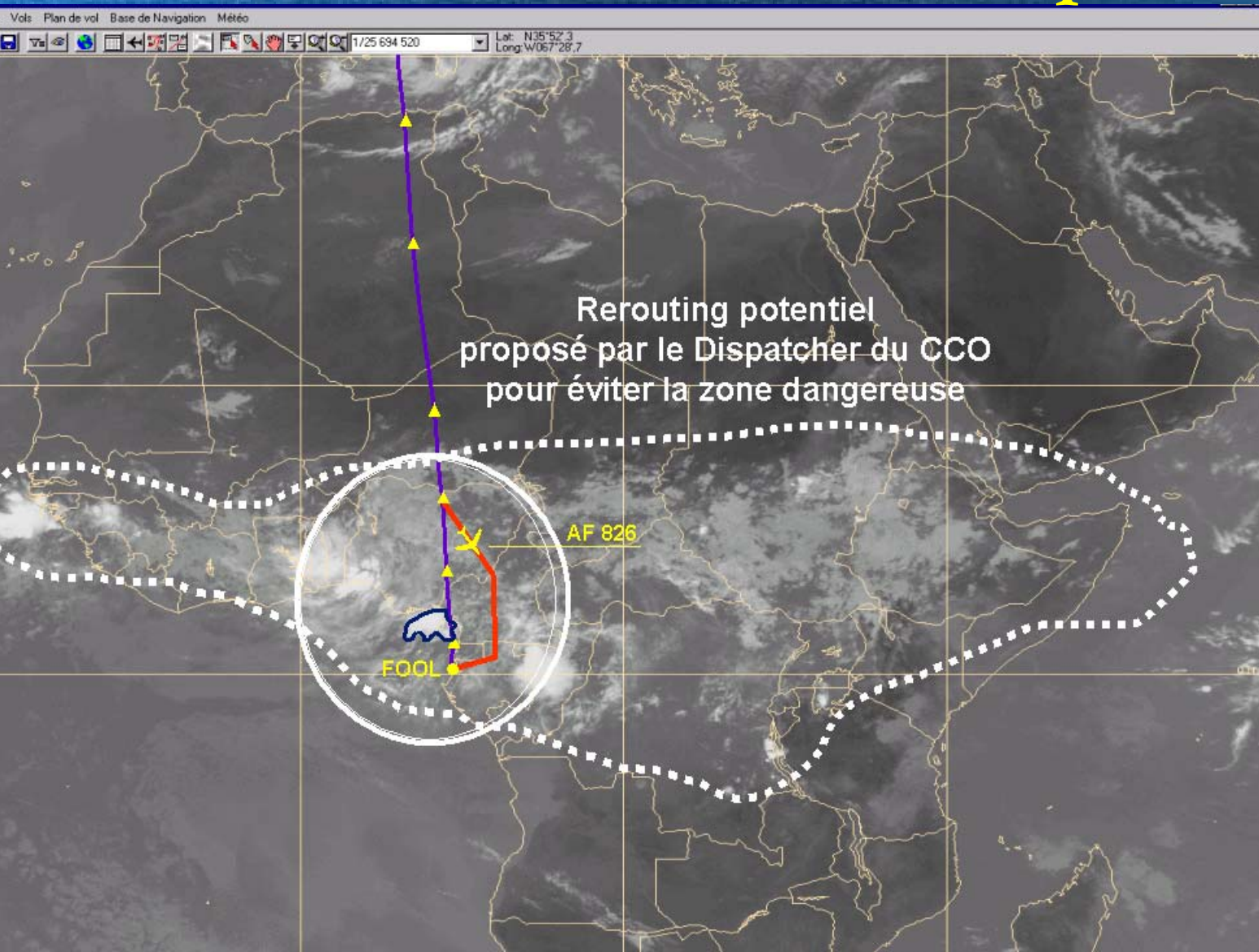
Example of  
use:  
**Professional  
Information  
System  
integration**



Example of  
use:  
Professional  
Information  
System  
integration



Example of  
use:  
Professional  
Information  
System  
integration



Example of  
use:  
**Professional  
Information  
System  
integration**

Abonnement-> Reinit Tri -> Nb Bip -> Config Info

Veille Active Prolongee Alerte

Les changements d'état recents sont sur fond noir

Nom	Seuil	Domaine	Etat sur 03 h 00 mn	E
<b>BMS LARGE MEDITERRANEE</b>				
tend	<=-30 1/10hpa	FRANCE		<input type="checkbox"/>
ww grele		FRANCE		<input type="checkbox"/>
<b>ww orage</b>		<b>FRANCE</b>		<input type="checkbox"/>
visi	<=100m	FRANCE		<input type="checkbox"/>
n hbase	<=150m	FRANCE		<input type="checkbox"/>
vent raf	>=60km/h et <80	FRANCE(alt<500m)		<input type="checkbox"/>
rr24	>=20mm	FRANCE(alt<500m)		<input type="checkbox"/>
rr6	>=35mm	FRANCE(alt<500m)		<input type="checkbox"/>
foudre nb15mn	>=2 et <=15	FRANCE_ELARGIE		<input type="checkbox"/>
<b>cumul 1h</b>	<b>&gt;=5mm et &lt;=20</b>	<b>FRANCE_ELARGIE</b>		<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

Details Graph. **Caracterist.** Historique Modifier

Quitter

Caracteristiques detaillees de la surveillance

Synergie 3.4.0.b [europal]

Etats des Surveillances durant les 3 dernieres heures 0 minutes

Abonnement-> Reinit Tri -> Config -> Info

Inconnu **Veille** Active Prolongee Alerte

Les changements d'etat recents sont sur fond noir

Nom : Seuil ;	Domaine	Etat sur 03 h 00 mn	Nom : Seuil ;	Domaine	Etat sur 03 h 00 mn
vent moy: >=35km/h et <65;	EUR_ELAR		vent raf10: >=100km/h;	FRANCE (alt<500m)	
vent raf10: >=60km/h et <80;	EUR_ELAR		tend: <=-50 1/10hpa;	FRANCE	
vent moy: >=65km/h;	EUR_ELAR		vent raf10: >=80km/h et <100;	EUR_ELAR	
visi: <=100m;	FRANCE		vent raf10: >=100km/h;	EUR_ELAR	
<b>visi: &lt;=1500m;</b>	<b>FRANCE</b>		vent moy: >=35km/h et <65;	FRANCE (alt<500m)	
visi: <=800m;	FRANCE		td: <=-1dg;	FRANCE (alt<500m)	
ww brouillard:;	FRANCE (alt<500m)		tend: <=-30 1/10hpa;	FRANCE	
vent moy: >=65km/h;	FRANCE (alt<500m)		vent raf10: >=60km/h et <80;	FRANCE (alt<500m)	
ww orage:;	FRANCE		rr24: >=20mm;	FRANCE (alt<500m)	
ww vent de sable:;	FRANCE		rr24: >=50mm;	FRANCE (alt<500m)	
t: <=-5dg;	FRANCE (alt<500m)		rr6: >=35mm;	FRANCE (alt<500m)	
t: >=-5dg et <=0;	FRANCE (alt<500m)		ww chutes de neige:;	FRANCE (alt<500m)	
t: >=30dg;	FRANCE (alt<500m)		neige frai: >=1cm et <5;	FRANCE (alt<500m)	
t: >=35dg;	FRANCE (alt<500m)		neige frai: >=5cm et <10;	FRANCE (alt<500m)	
ww trombe:;	FRANCE		neige frai: >=10cm;	FRANCE (alt<500m)	
ww brouillard givr:;	FRANCE (alt<500m)				
ww pluie vergl:;	FRANCE (alt<500m)				
ww grele:;	FRANCE				
tend: <=-200 1/10hpa;	GLOBE_1				
tend: <=-200 1/10hpa;	EUR_ELAR				
tend: <=-100 1/10hpa;	FRANCE				
vent_raf10: >=80km/h et <100:	FRANCE (alt<500m)				

Ok Quitter Det.

formati marief ENM 47\_910 Termin DocUt

TH vendredi, 8 juin 2001, 07:00:00 GMT [Surv WW]

SUP

TH Iso Croi Reli

fier

TH MP CM

xt

45.31N 3.28W 45.31N 3.28W



# PART 2 : Synergie tool

➤ Introduction

➤ 3.6 Release improvements

## ■ New observations

■ Inclusion of BUFR objects

■ Nowcasting

■ Radar water waves

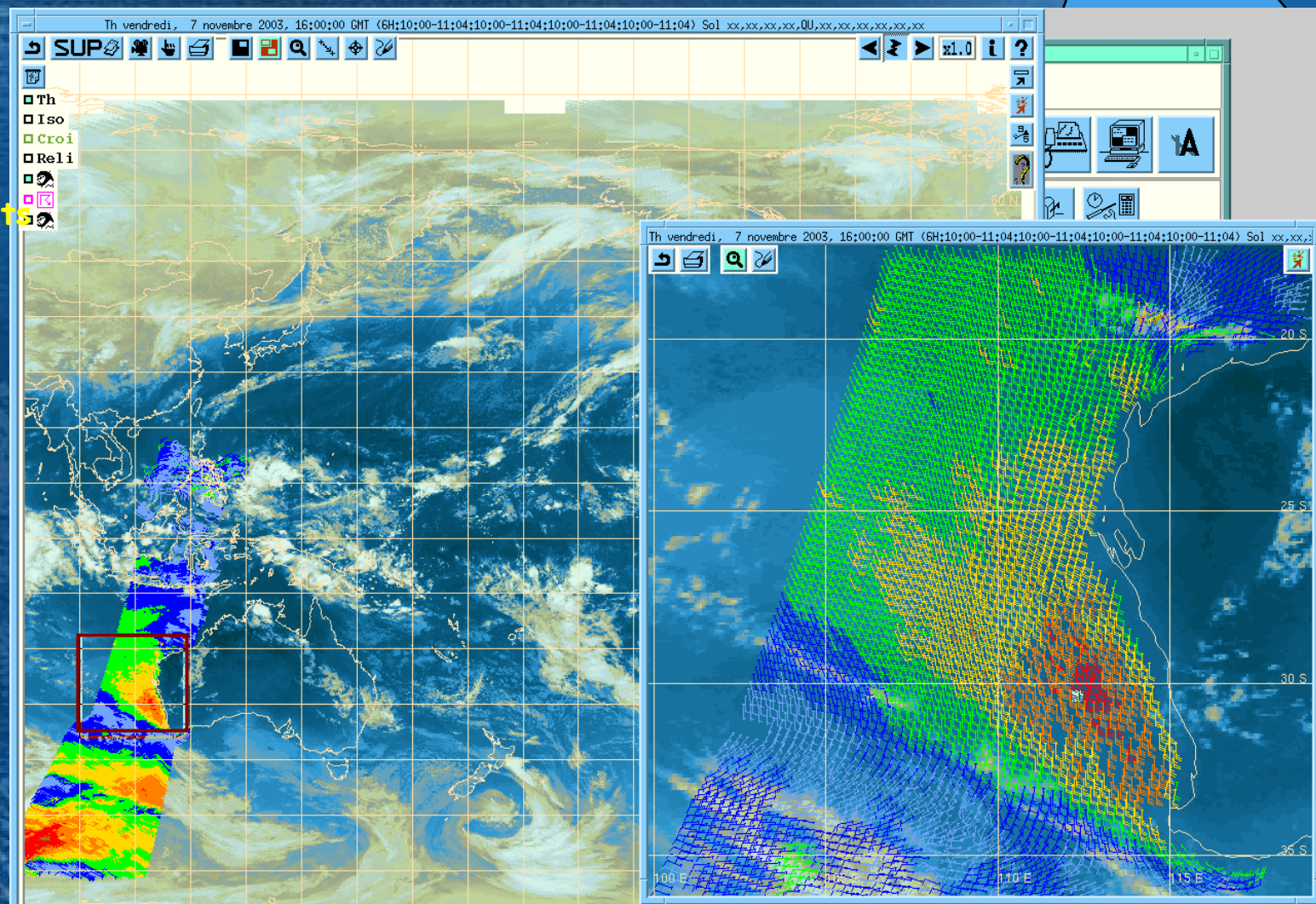
■ MSG

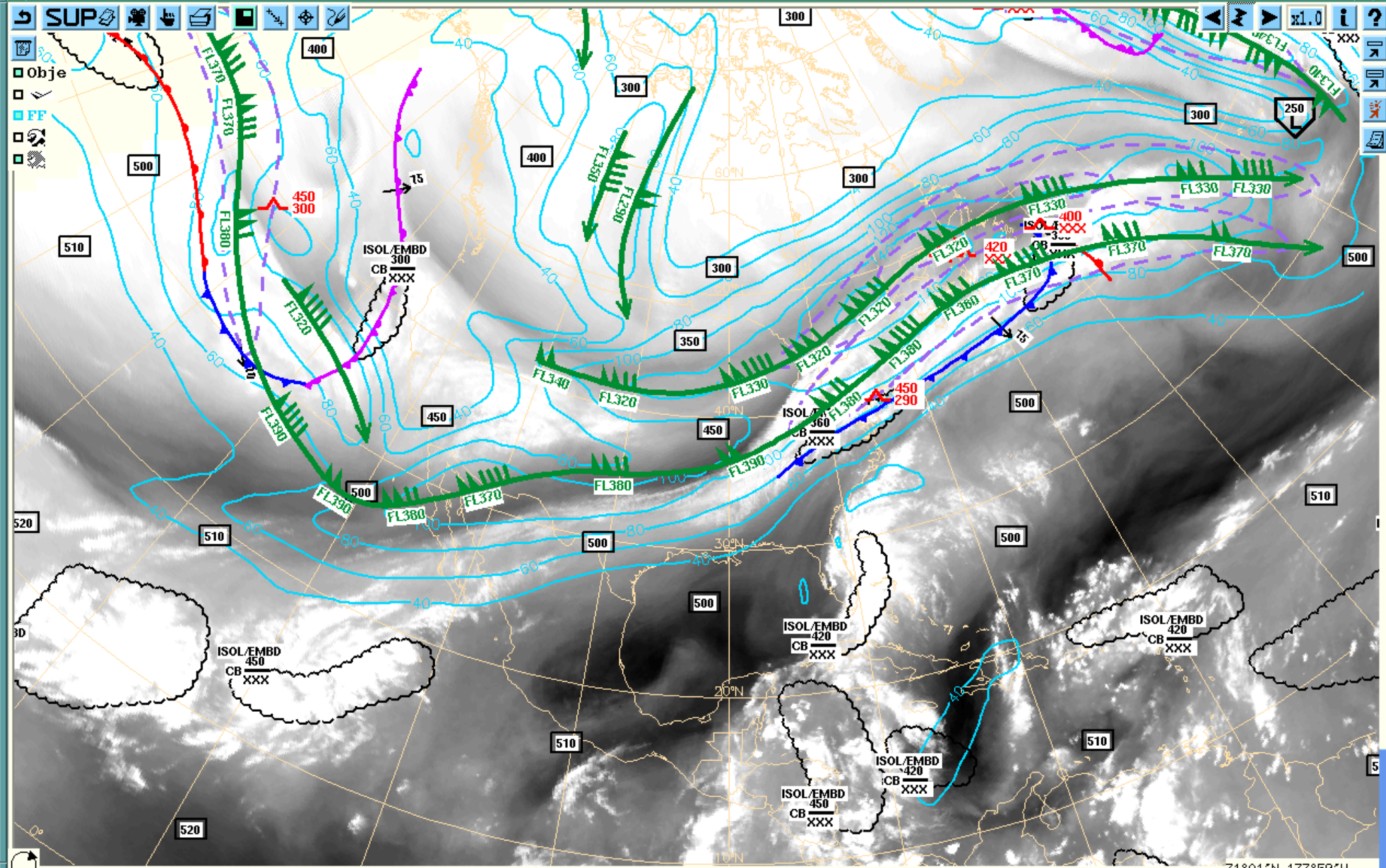
➤ Futur developments

➤ Linux

## • Seawind

# New observations





# PART 2 : Synergie t

➤ Introduction

➤ 3.6 Release i

▪ New observat

▪ Inclusion of  
objects

▪ Nowcasting

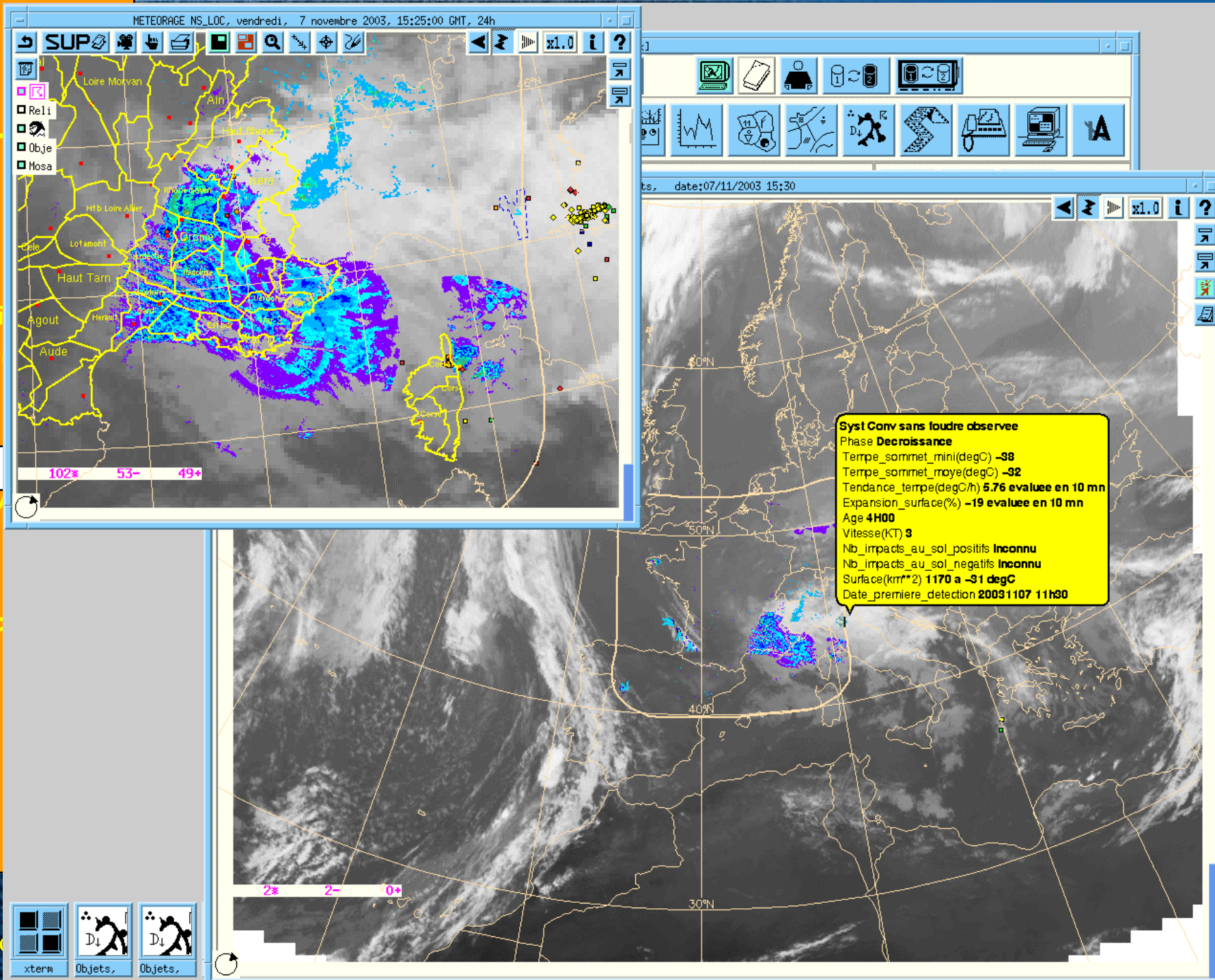
▪ Radar water v

▪ MSG

➤ Futur develop

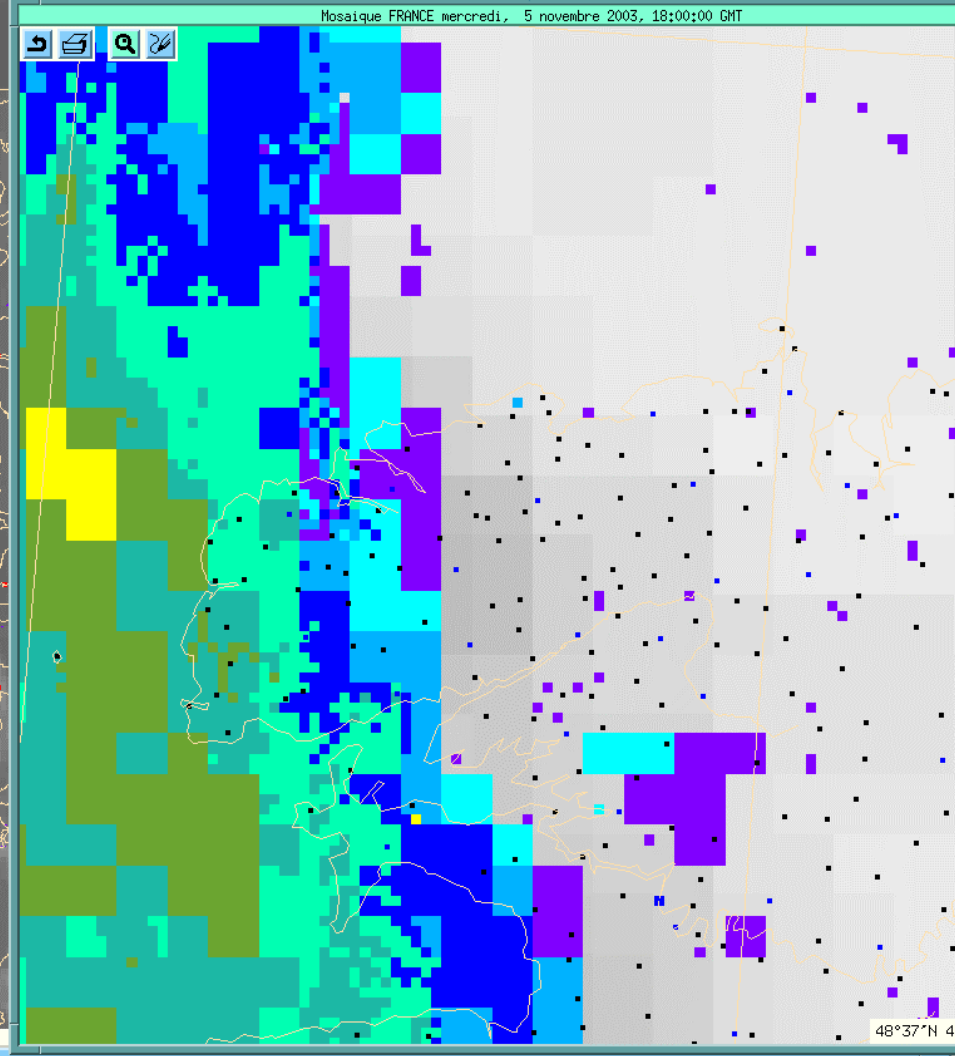
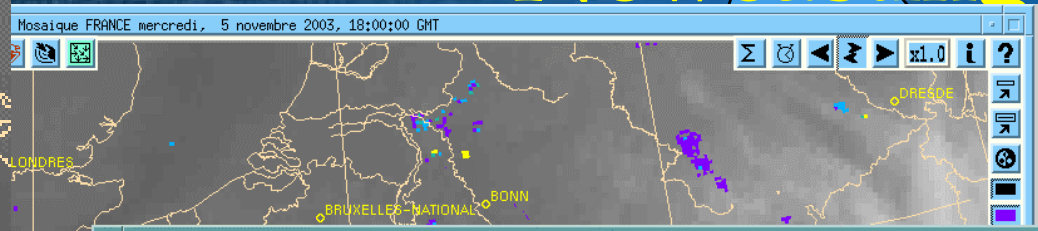
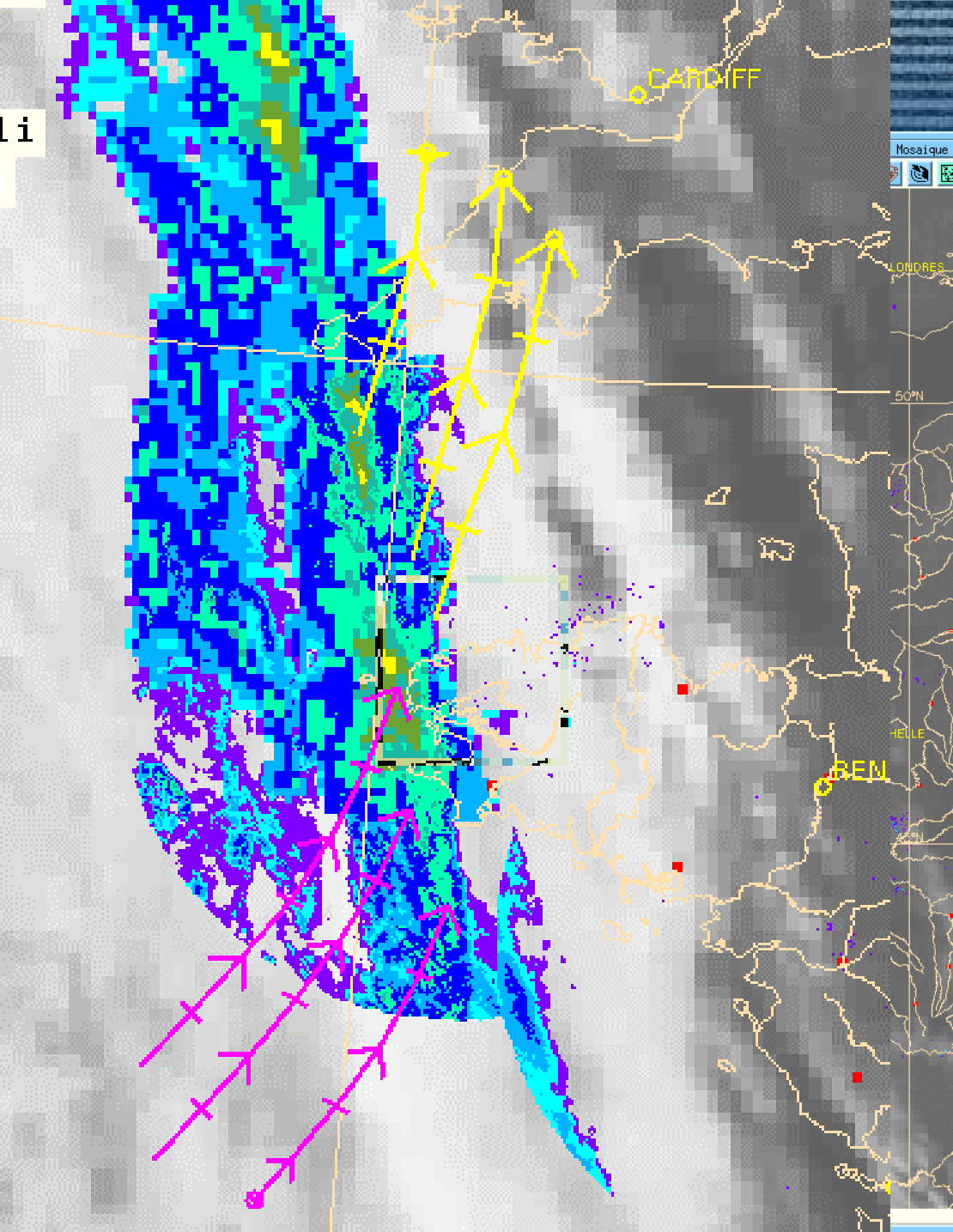
➤ Linux

9<sup>th</sup> ECMWF W



# Nowcasting

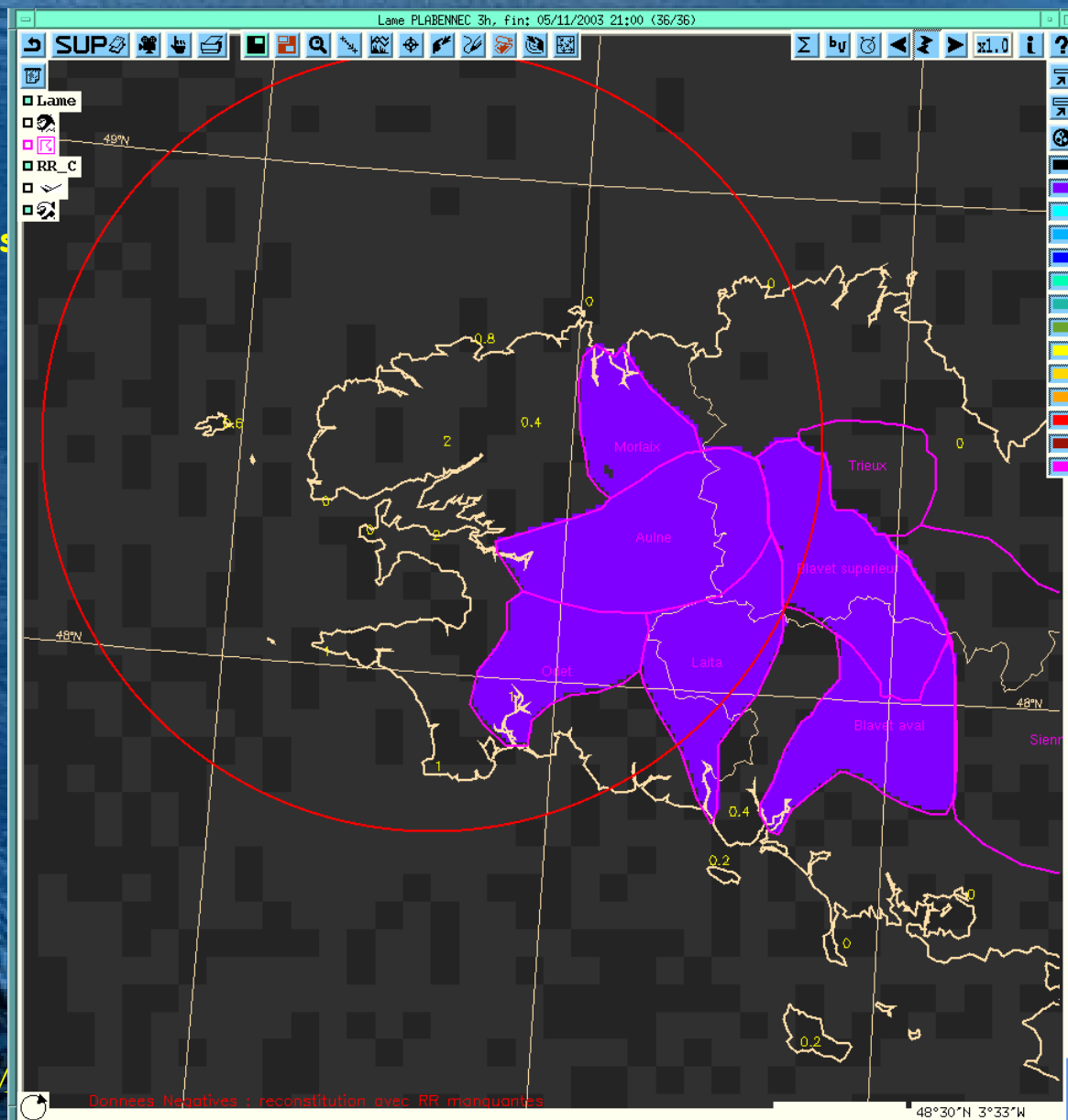
Li



# PART 2 : Synergie tool

- Introduction
- 3.6 Release improvements
  - New observations
  - Inclusion of BUFR objects
  - Nowcasting
- Radar water waves
- MSG
- Futur developments
- Linux

# Radar water vaves



## PART 2 : Synergie tool

### ➤ Introduction

### ➤ 3.6 Release improvements

- New observations
- Inclusion of BUFR objects
- Nowcasting
- Radar water waves

### ▪ MSG

### ➤ Futur developments

### ➤ Linux

The screenshot displays the MSG Synergie tool interface. The main window shows two satellite imagery windows, both titled "GEOSTATIONNAIRES IR\_MTL mardi, 20 mars 2001, 11:30:00 GMT (METEOSAT7)". The top window shows a standard IR image with a color scale from grey to red. The bottom window shows the same image with a blue and white color scale. Both windows have a toolbar with icons for zooming, panning, and other navigation functions. To the right of the top window is a configuration panel titled "CN1" with a list of options: "CN simplifíee magics", "CN simplifíee wave", "Tout sauf surfaces claires", "Surfaces claires", "Nuages bas", "Nuages bas stratiformes", "Nuages bas cumuliformes", "Nuages moyens", "Cirrus", and "Nuages epais". Below the list are two sliders labeled "Mini :out" and "Maxi :hors palette", and two checkboxes labeled "Seuillage par transparences" and "Seuillage opaque". At the bottom of the panel are "OK" and "Quitter" buttons. A similar configuration panel is visible on the left side of the bottom window. The bottom window also shows a status bar at the bottom right with the text "-45.1 deg C" and "43.40N 3.12W".

## PART 2 :

### Synergie tool

- Introduction
- 3.6 Release improvements
  - New observations
  - Inclusion of BUFR objects
  - Nowcasting
  - Radar water waves
  - MSG

### ➤ Futur developments

- Linux

## Sympo II

And further future ???

# SYMPO II + SYNERGIE

First Guest Objects Production in the National Center

Tableau de bord de Production Presyg

Expertise

Choix de l'initialisation

ARP/1.5    CEP/1.5    PRESYG/1.0

Thu 15/02/2000 12:00

Choix de la superposition

ARP/1.5 Humidite Rel 700HPA    PREISO/1.5 Pmer SOL

ARP/1.5 Humidite Rel 700HPA    TH

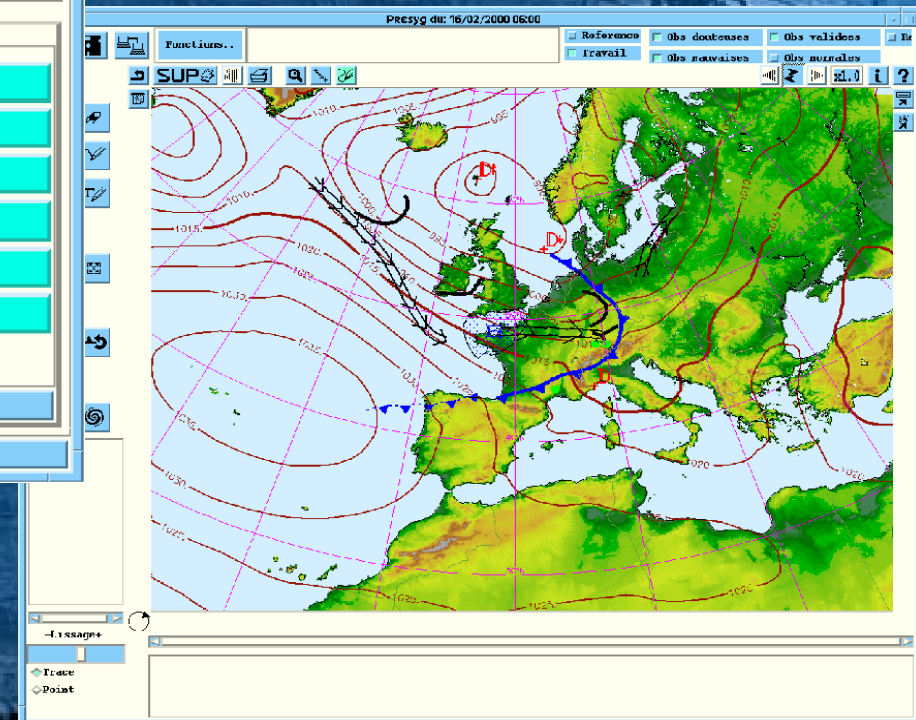
Expertise

PRESYG(s) du Thu 15/02/2000 12:00 sur le domaine Euram\_Preiso

✓ 0H:ARP/1.5	3H	✓ 6H	9H
✓ 12H:ARP/1.5	15H	18H	21H
24H:ARP/1.5	27H	30H	33H
36H:ARP/1.5	39H	42H	45H
48H:ARP/1.5	51H	54H	57H
60H:ARP/1.5	63H	66H	69H
72H:ARP/1.5			

Valider les échéances principales    Valider le train

Ok    Compacter    Quitter





# SYMPO II + SYNERGIE

Cooperative work between  
Regional centers and  
National Forecast center

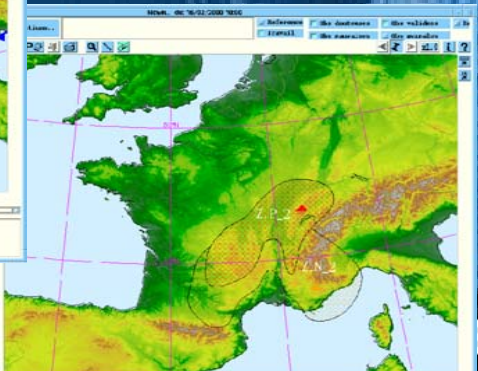
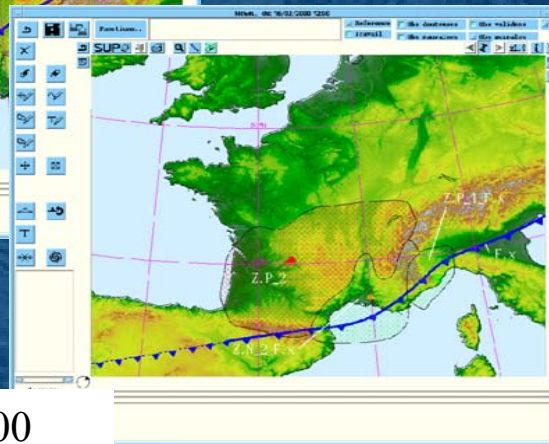
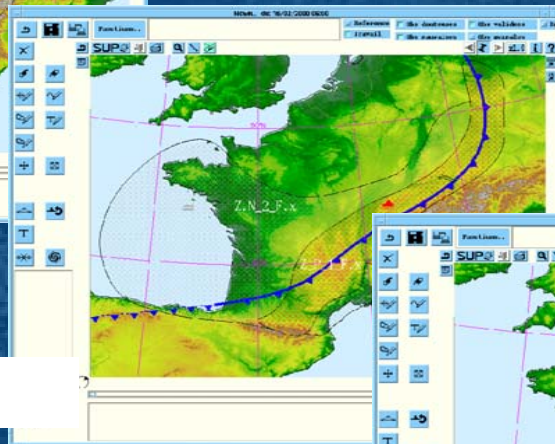
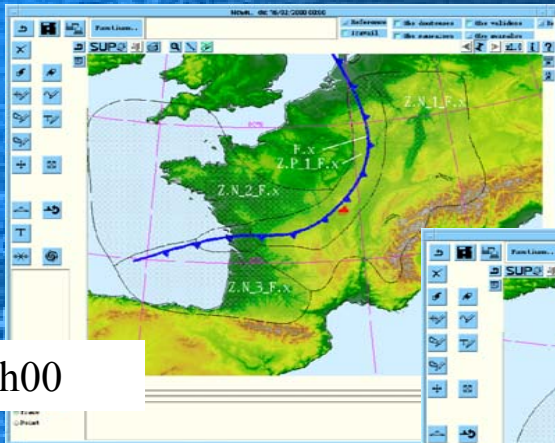
Regional centers

National  
Forecast  
Center



# SYMPO II + SYNERGIE

## Objects Temporal Interpolation at Regional Centers



18

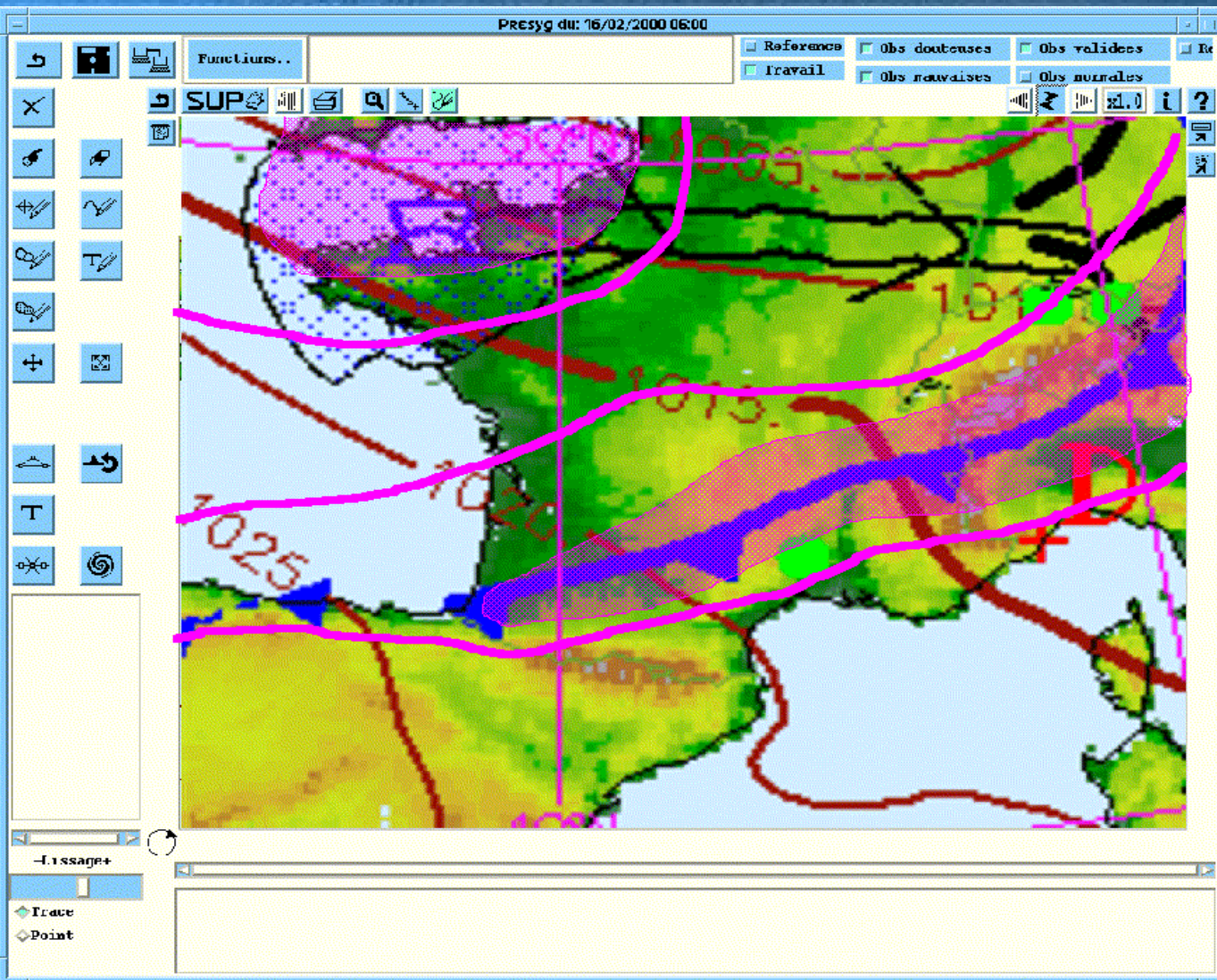
06

12h00

18h00

ETEO  
ANCE

# SYMPO II + SYNERGIE



Meso Scale Objects  
Prototypes Illustration

## PART 2 :

### Synergie tool

- Introduction
- 3.6 Release improvements
  - New observations
  - Inclusion of BUFR objects
  - Nowcasting
  - Radar water waves
  - MSG

### ➤ Futur developments

- Linux

And further future ???

## Sympo II

### More functionalities for Nowcasting

## PART 2 :

### Synergie tool

- Introduction
- 3.6 Release improvements
  - New observations
  - Inclusion of BUFR objects
  - Nowcasting
  - Radar water waves
  - MSG

### ➤ Futur developments

- Linux

And further future ???

## Sympo II

### More functionalities for Nowcasting

### Tropical Cyclone

Fonctions...

SUP

Date de référence  
Date d'affichage  
Sat 29/01/2000 00:00  
Sat 29/01/2000 00:00

CONNIE

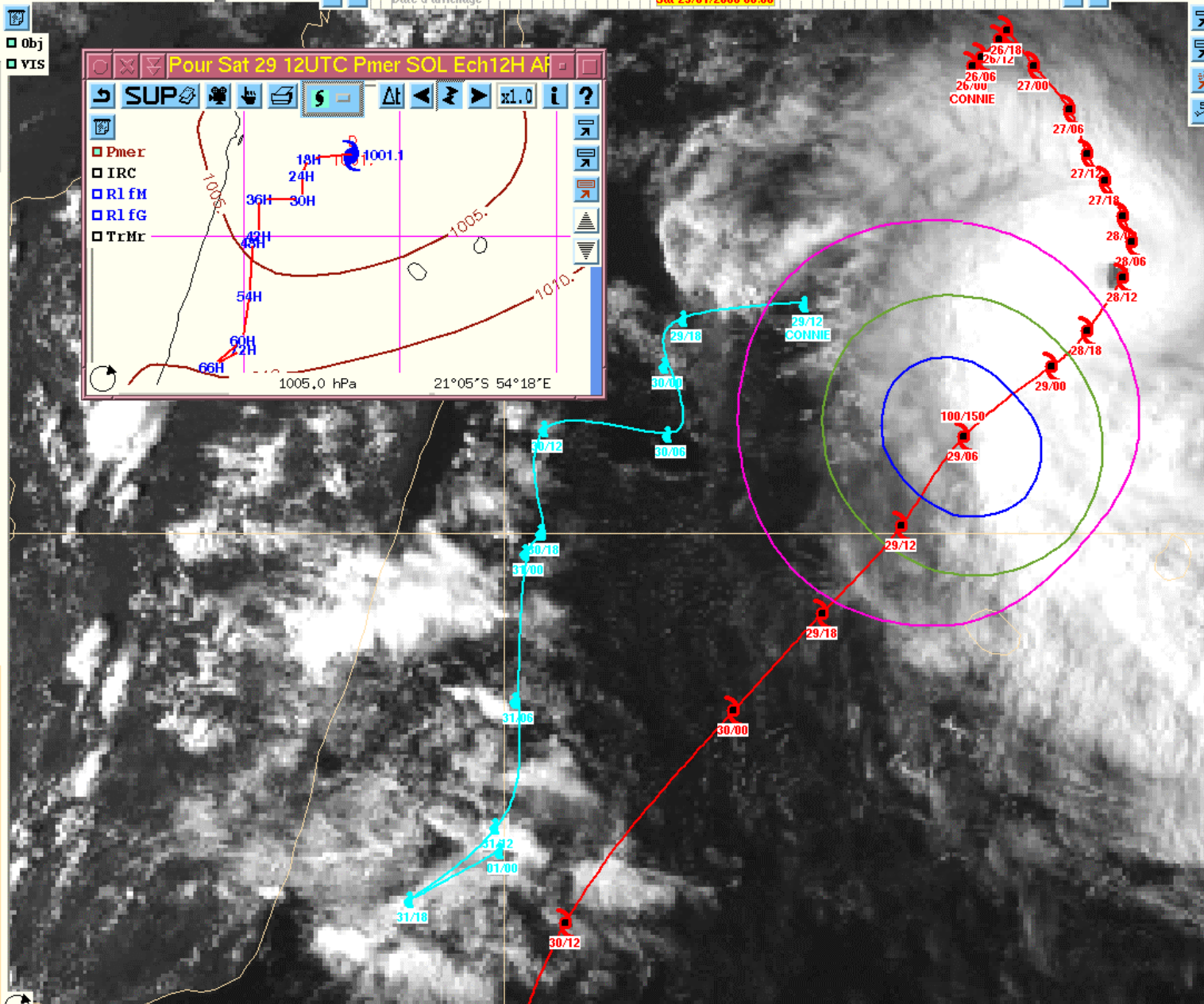
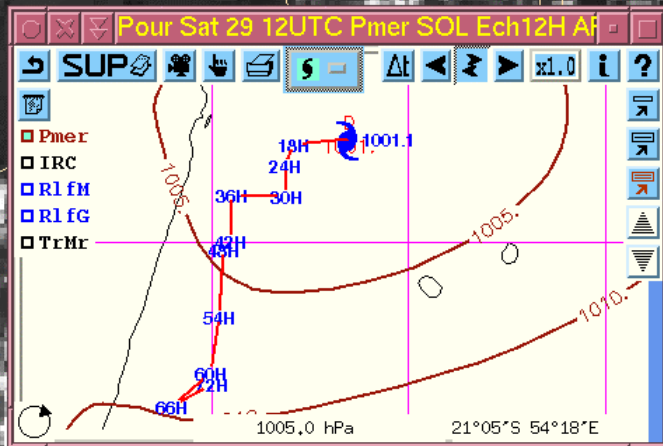
Trajectoires observées:

- Obj
- VIS

- en temps reel
- primaire
- analysee

Trajectoires prévues

- ARP1.5 29/01/2000 00:00
- Prévision 02/02/2000 12:00



Extrapoler

Gamma

Spirale

## PART 2 :

### Synergie tool

- Introduction
- 3.6 Release improvements
  - New observations
  - Inclusion of BUFR objects
  - Nowcasting
  - Radar water waves
  - MSG

### ➤ Futur developments

- Linux

And further future ???

## Sympo II

More functionalities for Nowcasting

Tropical Cyclone

Quality : integration in ISO 9000  
Météo-France certification

## PART 2 :

### Synergie tool

- Introduction
- 3.6 Release improvements
  - New observations
  - Inclusion of BUFR objects
  - Nowcasting
  - Radar water waves
  - MSG
- Futur developments

### ➤ Linux

# A Synergie PC release under Linux

In order to answer SMN and French army needs at lower costs

In order to have a transportable plateforme  
For demonstrations  
For exceptional assistances

Preparation for the hardware renewal planed for 2004 or 2005, including 4.0 version



Thank you for your attention  
Feel free to ask Questions



**METEO  
FRANCE**

Mail : [antoine.lasserre@meteo.fr](mailto:antoine.lasserre@meteo.fr)

*ECMWF – November 2001*