Synergie PC
Updates and Plans

A . Lasserre-Bigorry,
B. Benech
M-F Voidrot, & R. Giraud

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1. Introduction
2. Migration to PC-Linux
3. Synergie 4.0 features
4. Perspectives for 2006

1 Introduction

In 9th workshop « future »

- New functionalities for nowcasting
- Visualisation of MSG products
- Tropical cyclone

- Synergie-PC under Linux in operation for forecasters on duty during 2004 or 2005.

Nowcasting

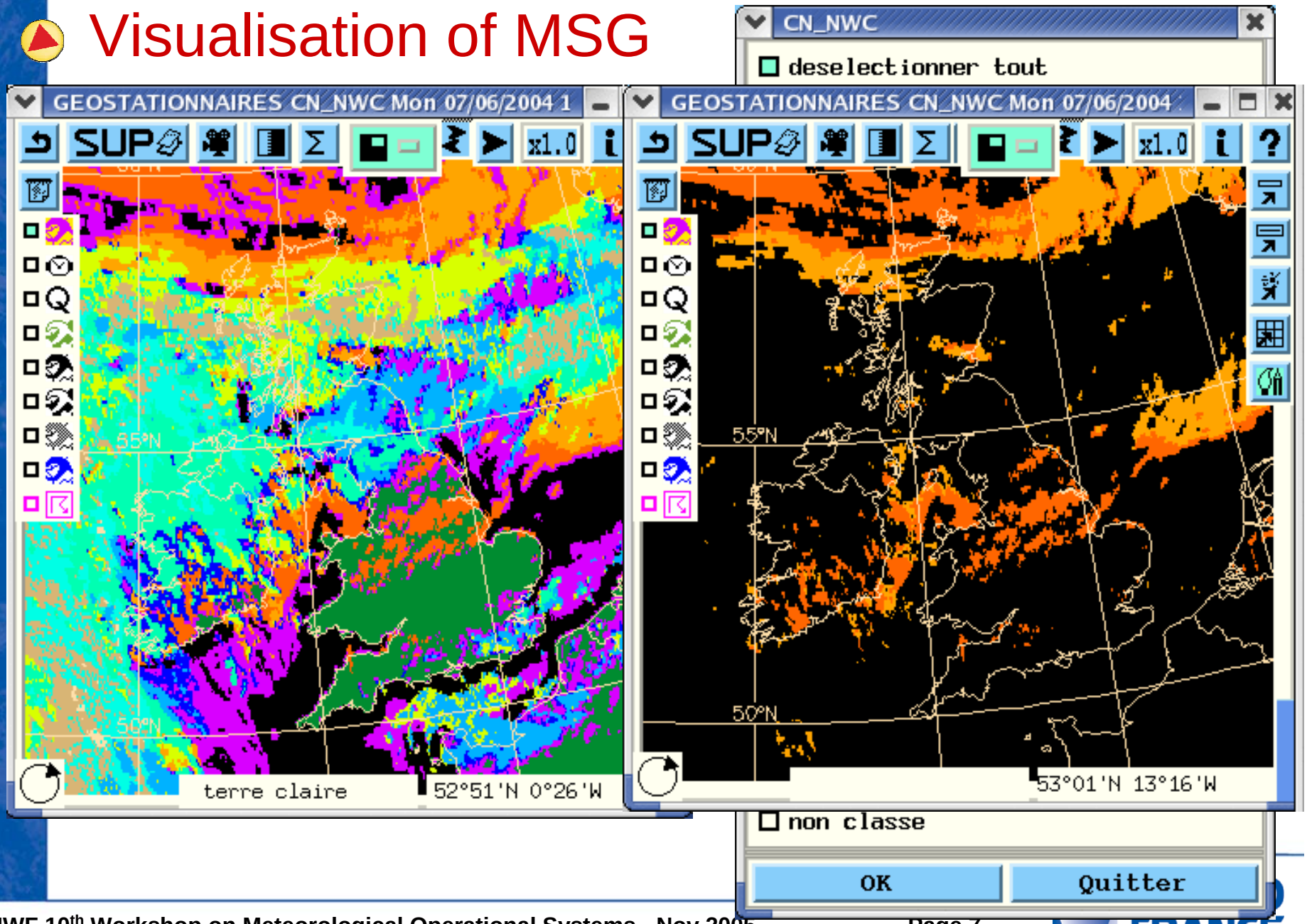
- Synergie is used by forecaster in test mode to visualize specific nowcasting products under development.

- Two experiments during autumn 2004 and 2005 to include expertise from forecasters on severe thunderstorm events.

Operational integration of MSG products

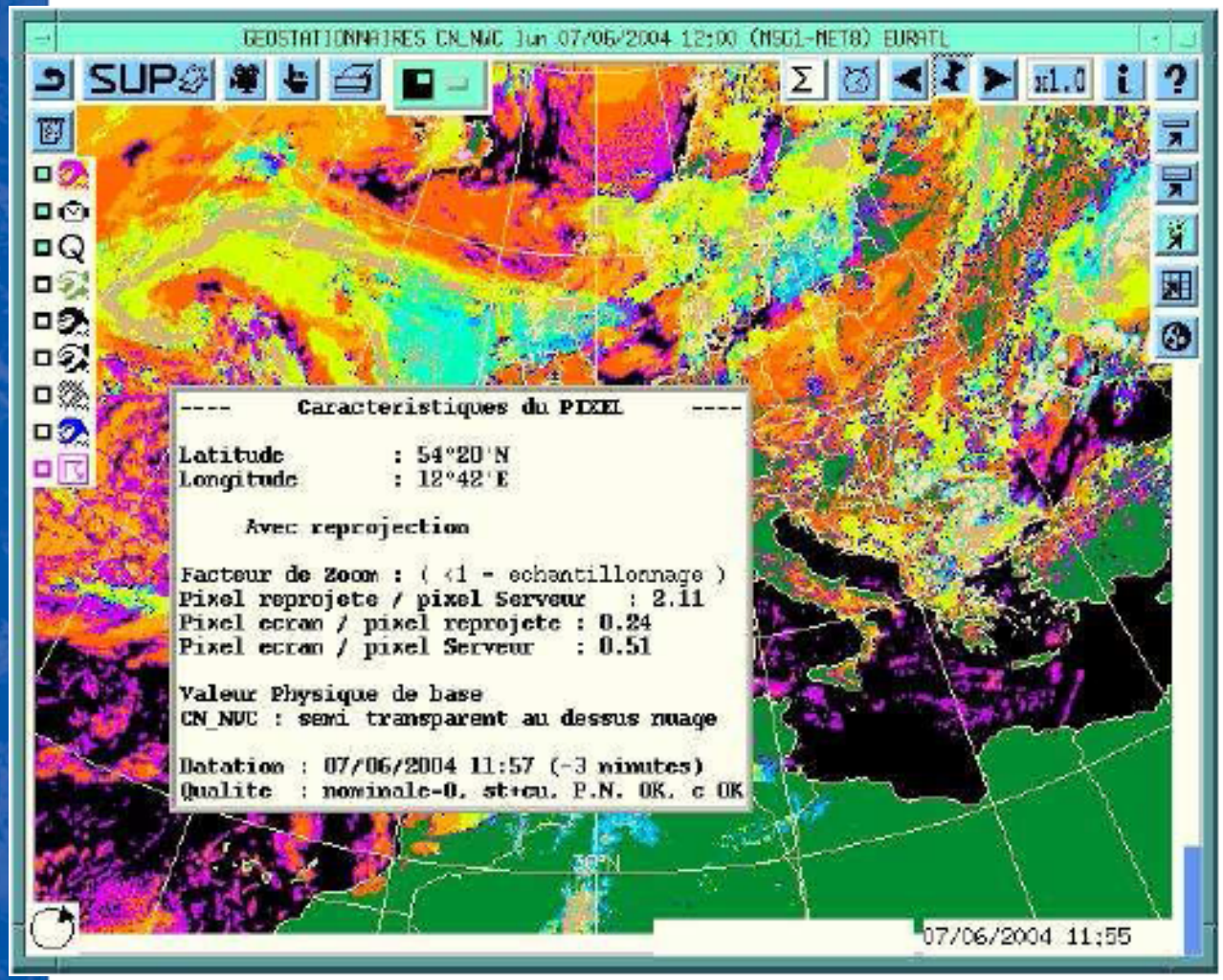
- In February 2004, MSG has been declared operational
- With Synergie 3.6 visualisation of most MSG products was available, but with many constraints for forecasters, due to too big images
- With 3.7 release, faster animation in compressed mode, and more products.

Visualisation of MSG



Visualisation of MSG

Information at pixel level



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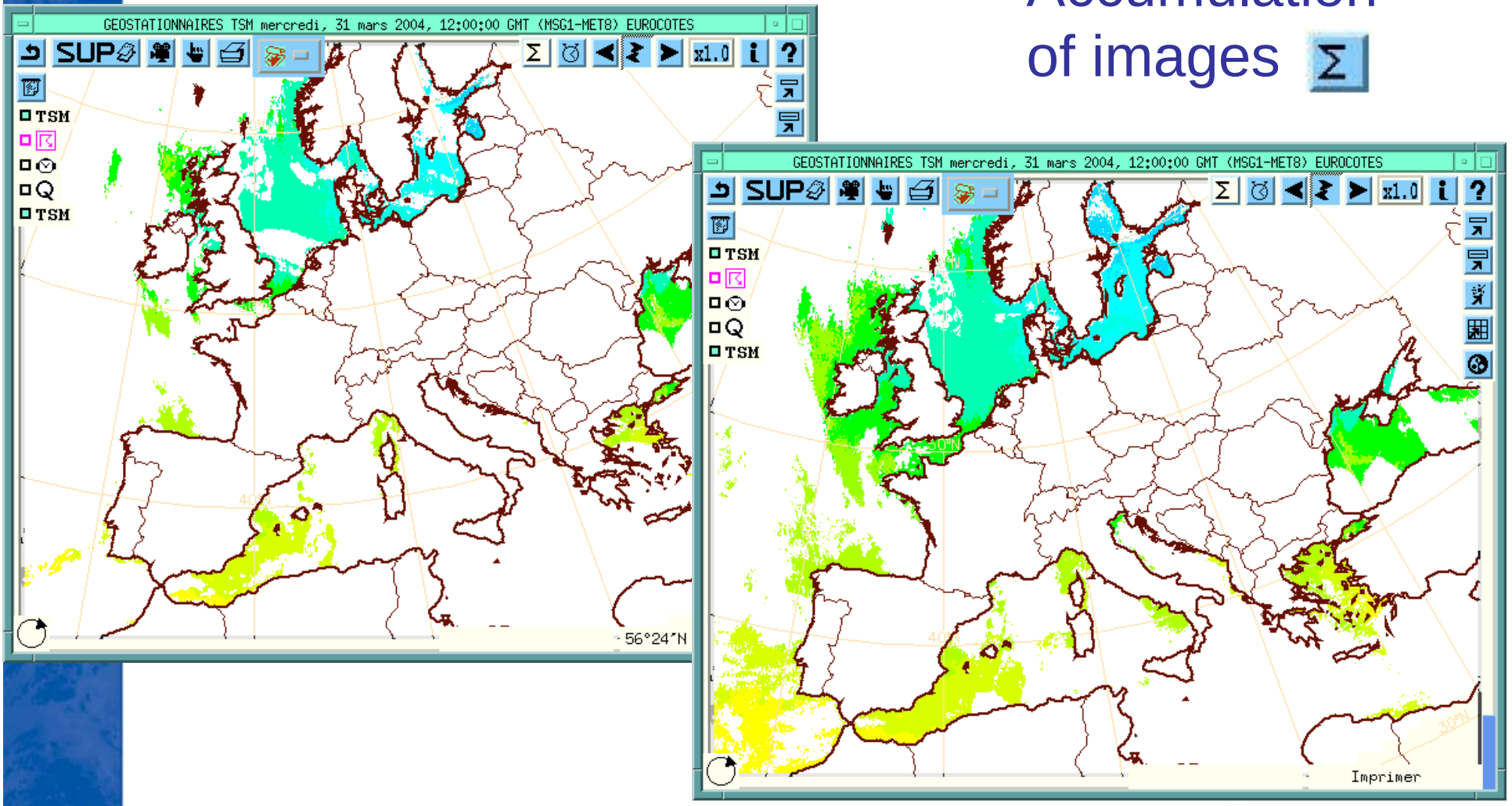
Visualisation of MSG

Accumulation of images Σ



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Tropical cyclone

- This functionality will be described in next part of this talk.
- It is under test in overseas territories

2 Migration to PC-Linux

To ensure the continuity of service for forecasters and end users

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Météo-France hardware tender

- The aim was to replace all the forecasters workstations in National and Regional centres (including overseas territories) within one year.

- We had to replace:
  - 36 servers
  - 159 stations
  - About 200 screens
- A budget of 650k€ was planned for 2005.

- And at the same time annual software upgrade from Synergie 3.7 to new release:

  SYNERGIE 4.0

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Why this Migration ?

- Sun Workstation from 1999
- Increasing support costs
- Too slow for new data flows Meteosat 8, high resolution NWP, METOP……
- Not enough disk space for these data flows, and need of high cost disk upgrades.

Why Linux ?

- Low cost
- Unix Compatible, Synergie has been developed under Linux architecture since 2002
- Portable on PC, for light configuration
- Mature Linux distributions

……

And lower cost

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The choice

- End User station ~ 1 000 € (without screen)
  - IBM IntelliStation Mpro 6225
  - Mono processor Pentium 4 3.4 GHz
  - Ram 1Gb DDR2
  - HD 80 Gb
  - 2 double video cards PCI express
  - Up to 4 19" TFT screens
  - WhiteBox (free Linux release, no commercial (COTS) packages)

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The choice (2)

- Server station ~ 4 000 €
  - IBM xSeries X346
  - Bi-processor Xeon EMT 64 2.8 GHz
  - Ram 4 Gb SDRAMECC
  - HD from 109 to 429 Gb,
  - 2 HD 36 Gb dedicated for Linux system.
  - RedHat 3.0 ES

- Cost including 3 years on site warranty

Final conclusion of migration

- Mean Improvement of performances by factor 7 as regards previous hardware Sun.
- Cost reduced by a factor 6 as regards previous hardware deployment.
- All the customers will follow us in this migration.
- No major problem for this evolution
- **Upgrade software and hardware, has been completed between June and November 2005 for all centres including overseas territories.**

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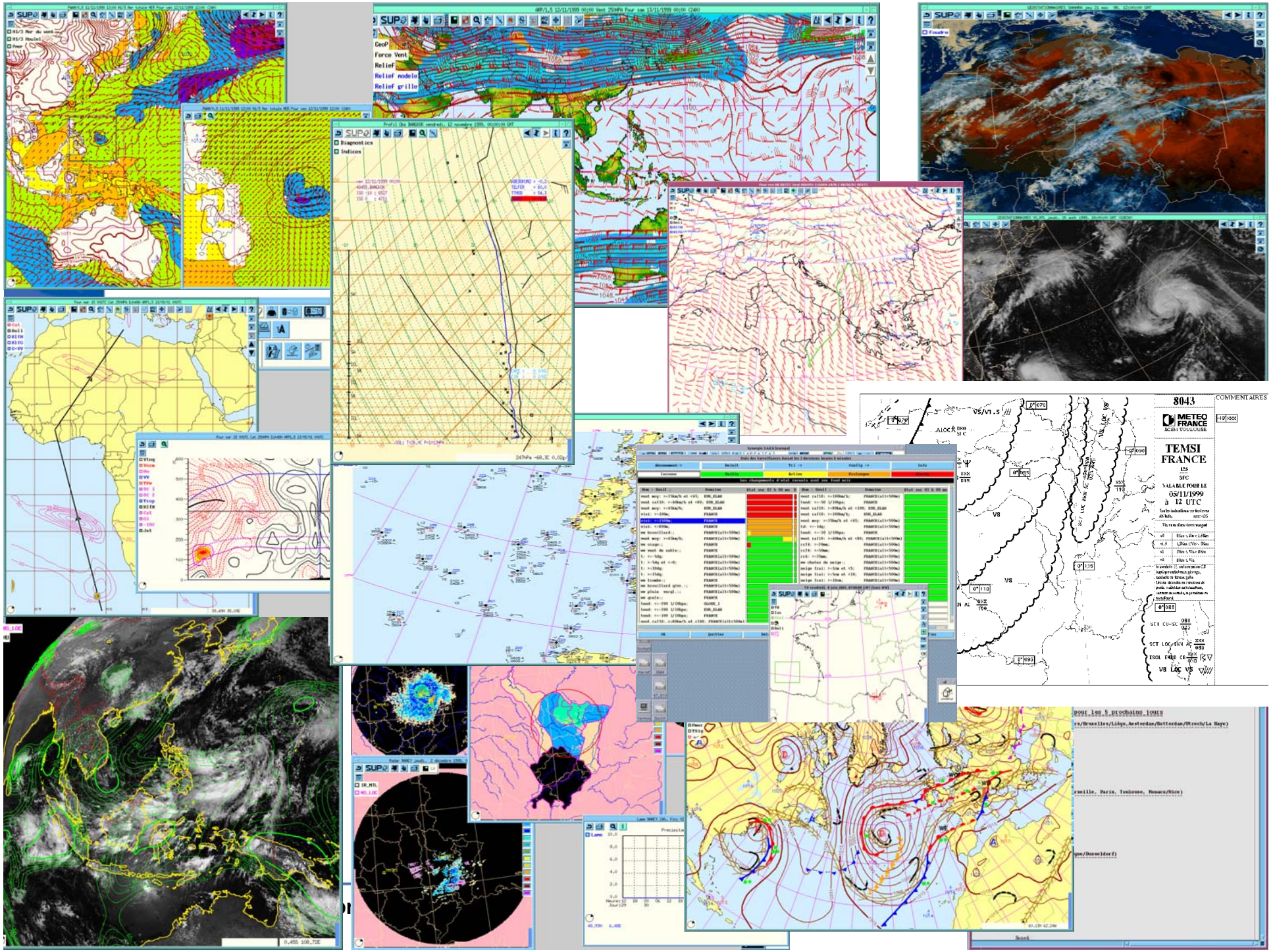
3 Synergie 4.0 Features

Main Features

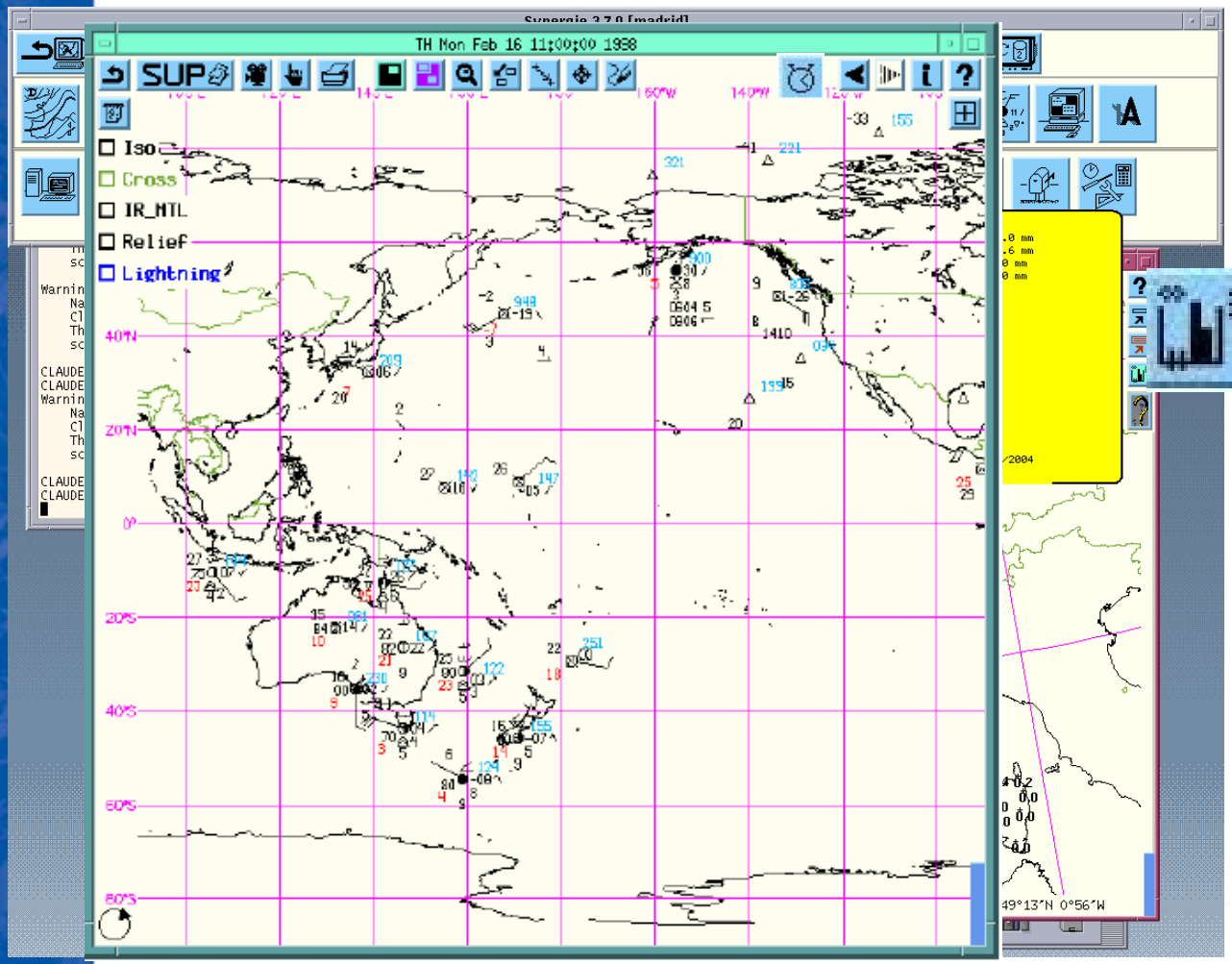
- Visualisation of all available data (model, observation, radar, lightning, satellite, objects – from WAFS, fronts, RDT, …)
- Superposition and animation
- Cross section on 3D data
- Production of objects (fronts, ANASYG, SIGWX)
- Production of maps and charts
- Modification of PV to re-run model (TSR)
- Macro or short cuts.
- Batch production


8043
METEO FRANCE
SCEI TOULOUSE
TEMSI
FRANCE
VALABLE POUR LE
05/11/1999
à 12 UTC
COMMENTAIRES

New functionalities in 4.0

- Improvement of observation visualisation
- Meteogram
- VIRAP : radar data and rain gauge ratio
- Visualisation of surge model
- WAFS BUFR objects
- Tools for convection diagnostics
- Analysis and production of RSMC for tropical cyclone (French overseas territories)
- TDA products for military purposes
- GUI for remote client connected by ftp
- GUI to access specific applications

Observation visualisation



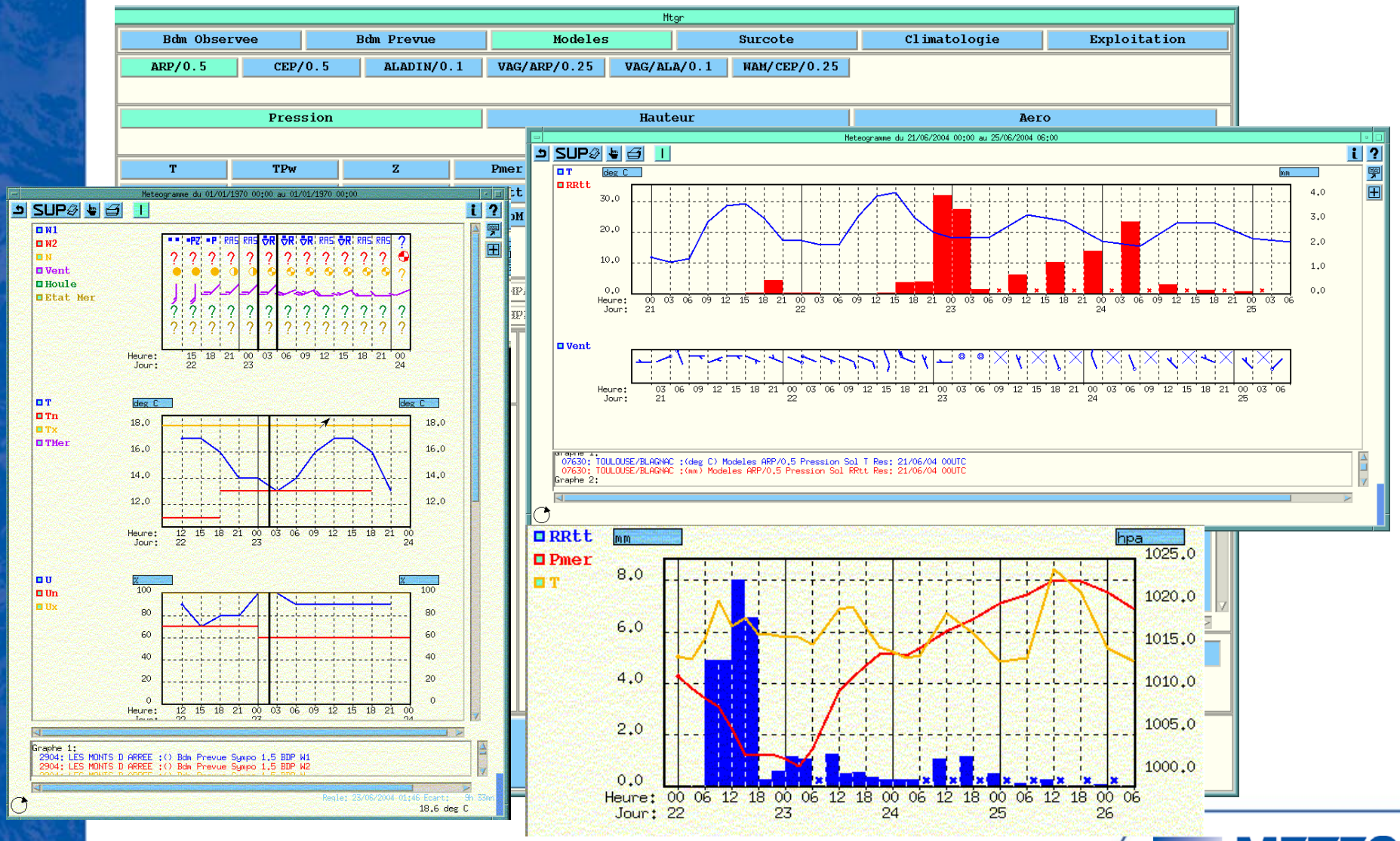
New « watch » button:

- Real time update of observation visualisation

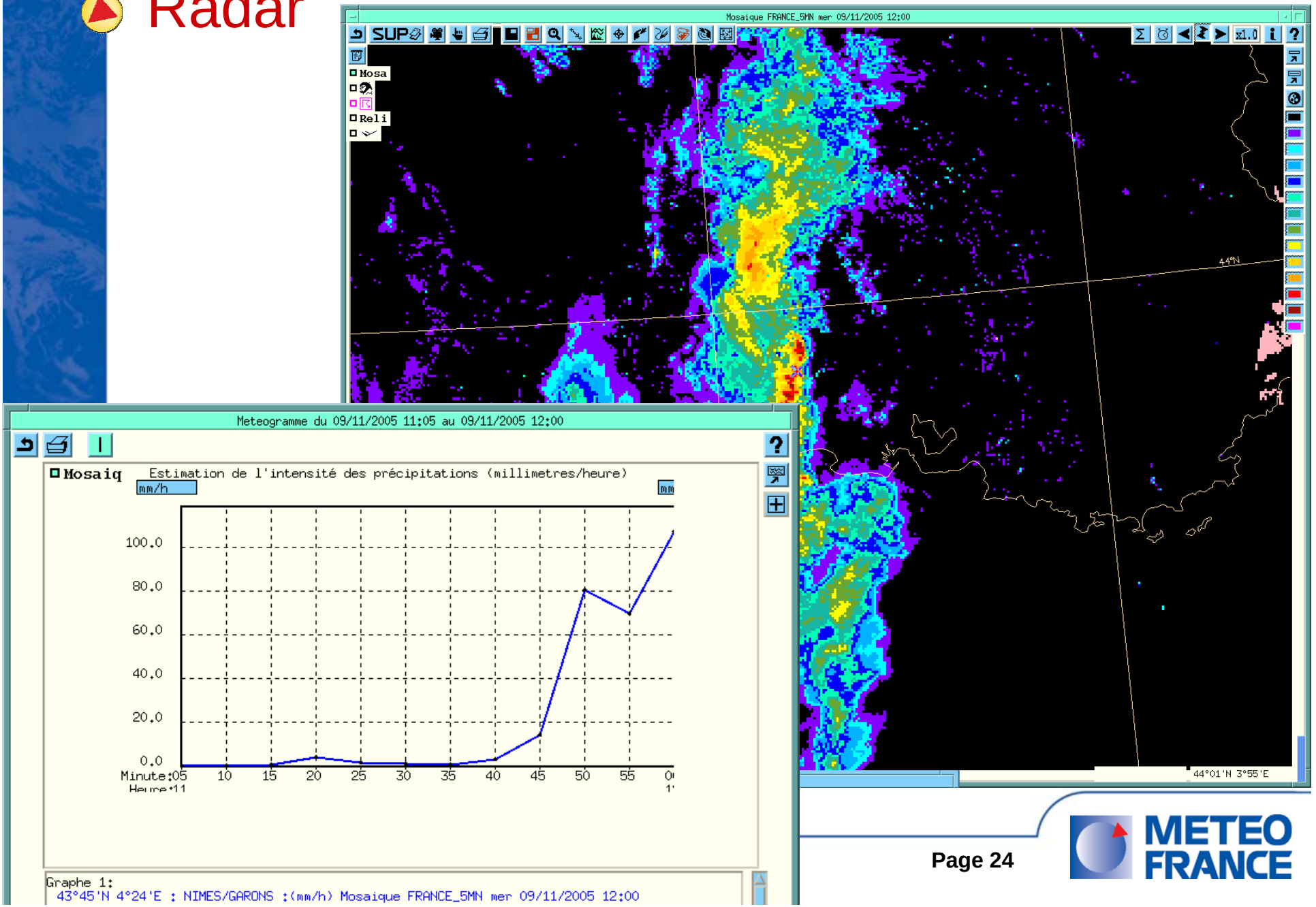
Rainfall accumulation can be calculated from or for

- accumulation for 11 hours coloured depending on sensible weather but in magenta if accumulations in 24h >150mm

Meteogram on observation, model, clim



Radar



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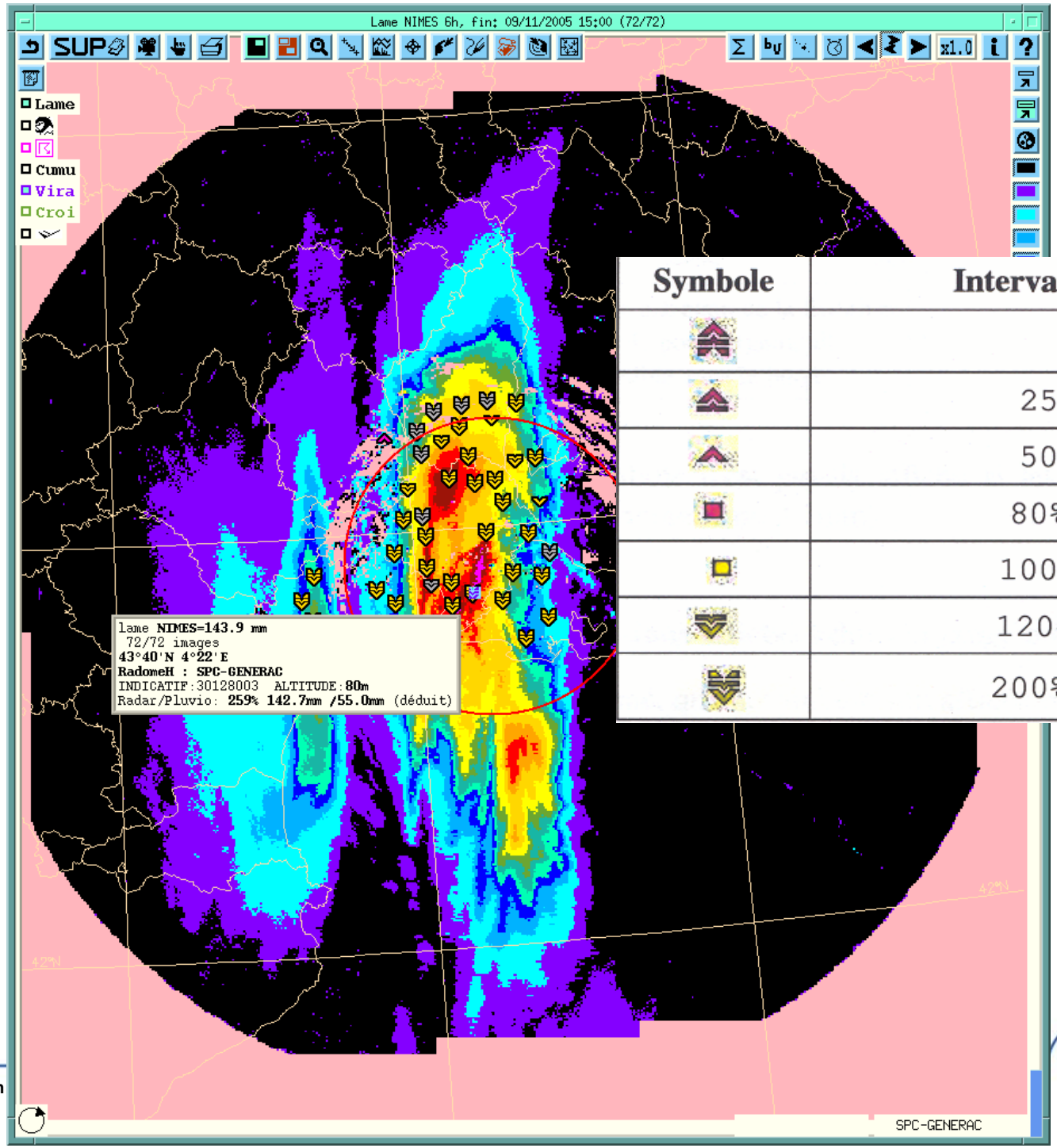

6 hours

Symbole	Intervalle du rapport virap
	v ≤ 25%
	25% < v ≤ 50%
	50% < v ≤ 80%
	80% < v ≤ 100%
	100% < v ≤ 120%
	120% < v ≤ 200%
	200% < v

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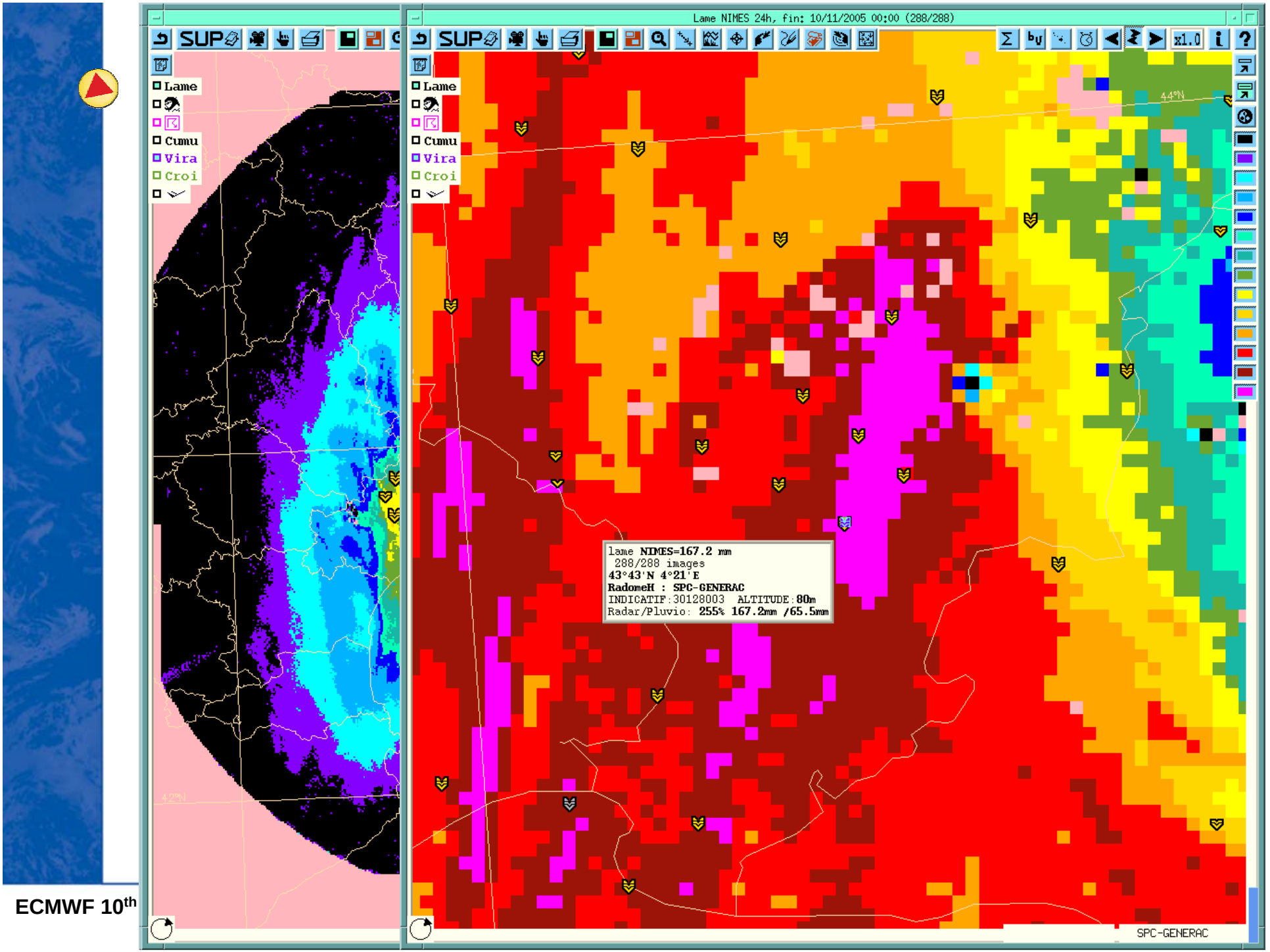
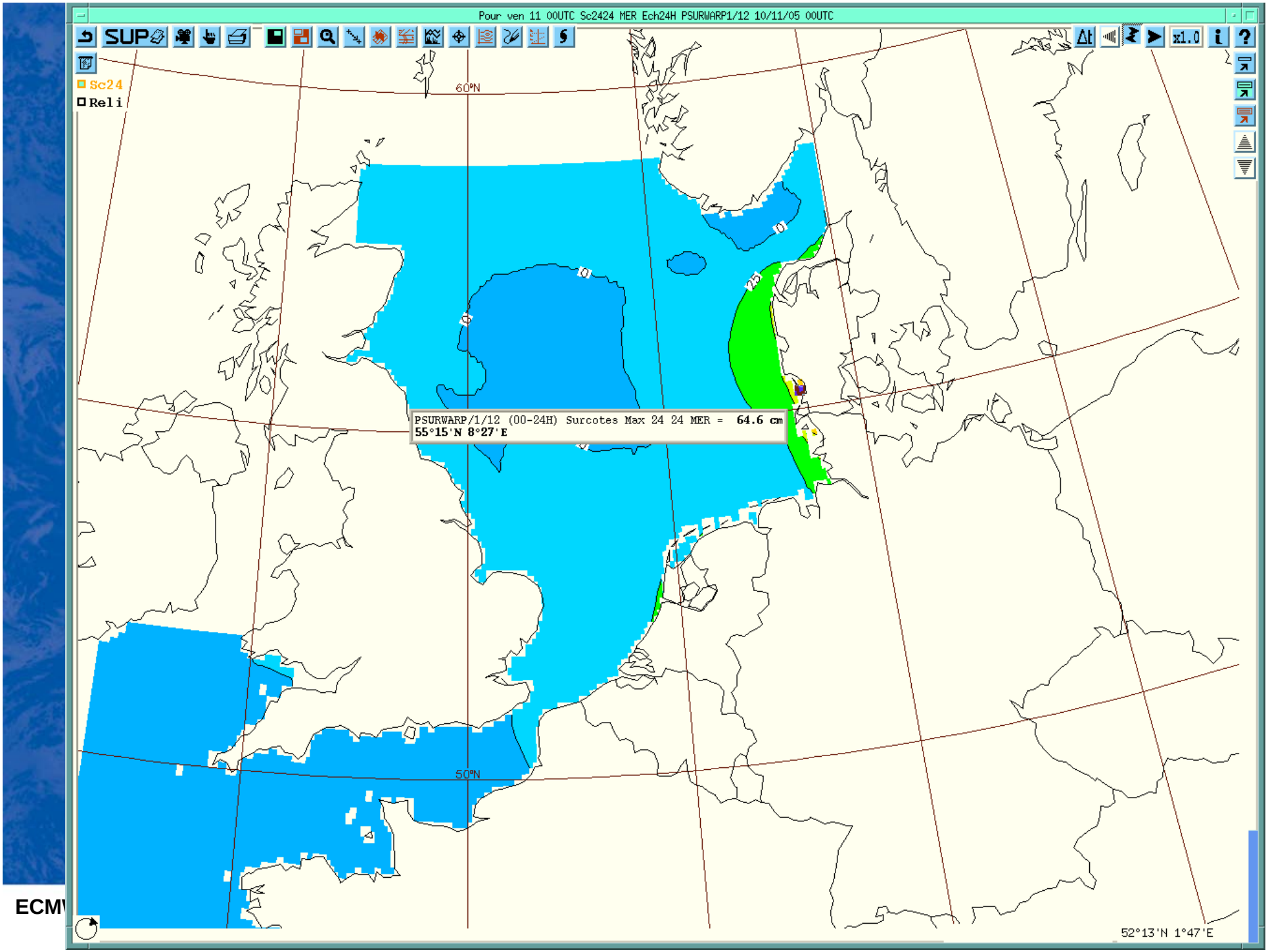
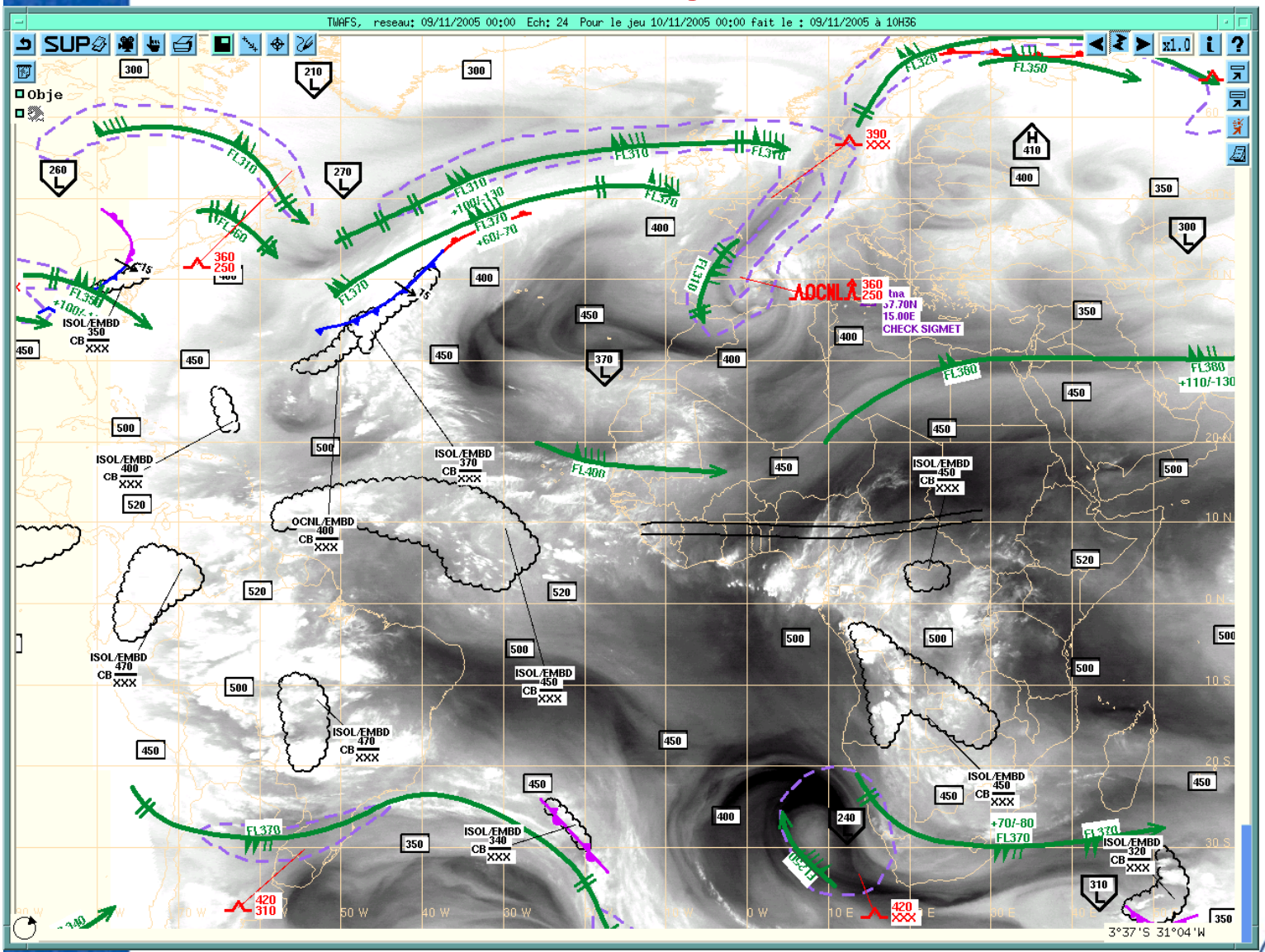

Lame NIMES 24h, fin: 10/11/2005 00:00 (288/288)
SUP
Lame
Cumu
Vira
Croi
x1.0
44°N
lame NIMES=167.2 mm
288/288 images
43°43'N 4°21'E
RadomeH : SPC-GENERAC
INDICATIF:30128003 ALTITUDE:80m
Radar/Pluvio: 255% 167.2mm /65.5mm
SPC-GENERAC

ECMWF 10th

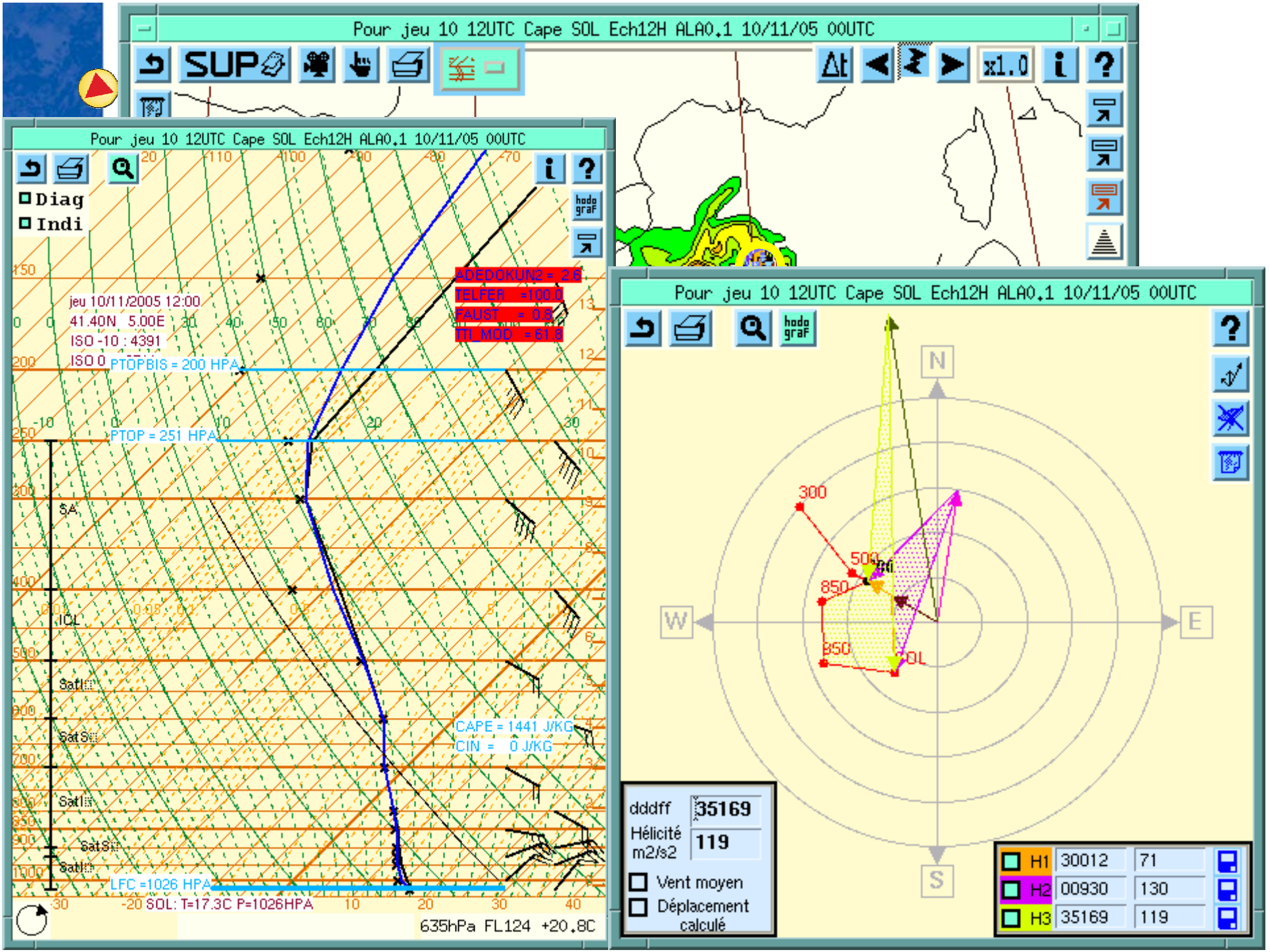

Pour ven 11 00UTC Sc2424 MER Ech24H PSURWARP1/12 10/11/05 00UTC
SUP
x1.0
Sc24
Reli
60°N
50°N
PSURWARP/1/12 (00-24H) Surcotes Max 24 24 MER = 64.6 cm
55°15'N 8°27'E
52°13'N 1°47'E

ECMW

WAFS BUFR objects

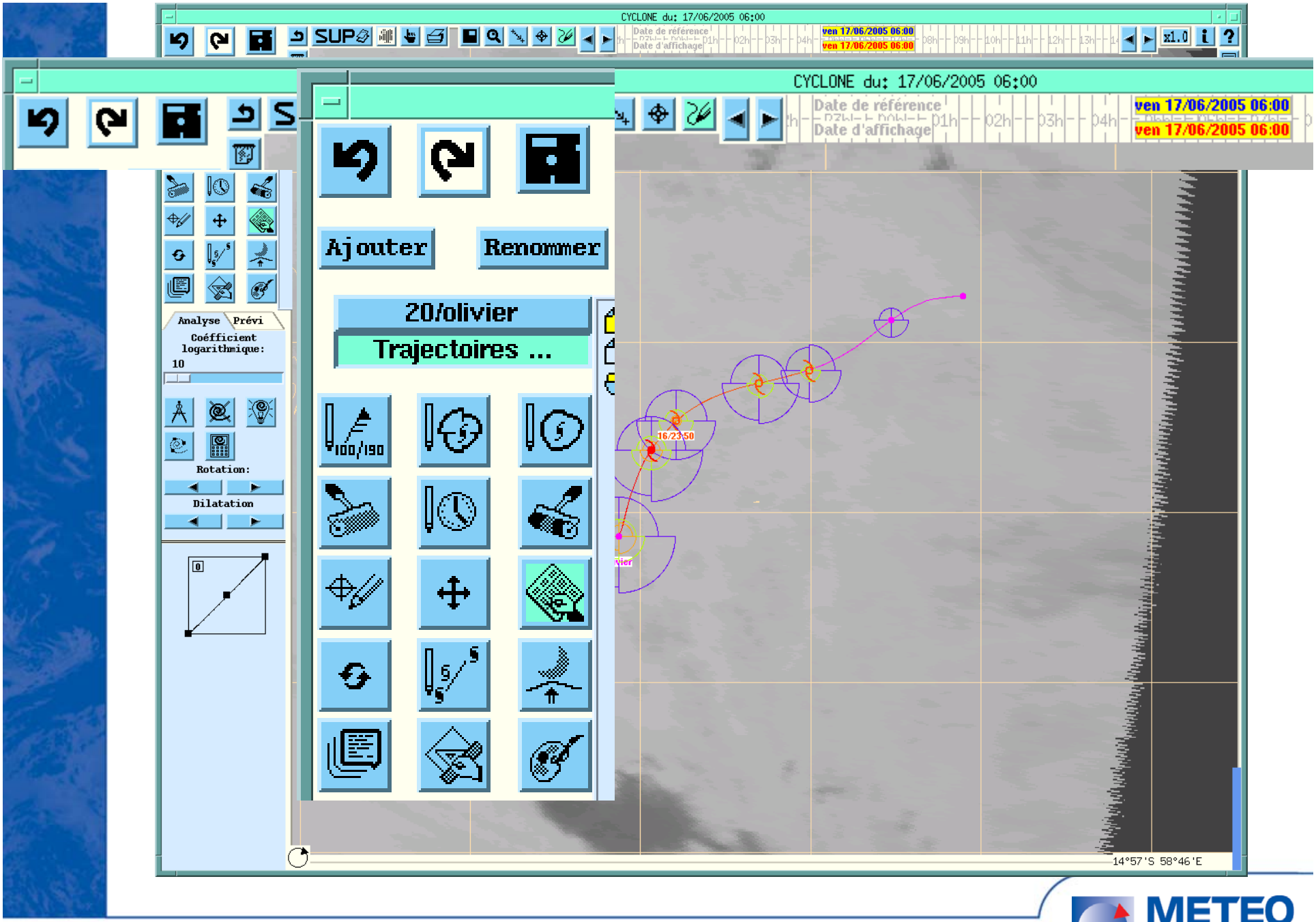


METEO FRANCE


Pour jeu 10 12UTC Cape SOL Ech12H ALA0.1 10/11/05 00UTC
SUP
Δt
x1.0
Pour jeu 10 12UTC Cape SOL Ech12H ALA0.1 10/11/05 00UTC
Diag
Indi
hodo graf
ADEDOKUN2 = 2.6
TELFER =100.0
FAUST = 0.8
TTI_MOD = 61.8
jeu 10/11/2005 12:00
41.40N 5.00E
ISO -10 : 4391
ISO 0
PTOPBIS = 200 HPA
PTOP = 251 HPA
SA
ICL
SatI
SatSi
SatI
SatSi
SatI
LFC =1026 HPA
CAPE = 1441 J/KG
CIN = 0 J/KG
-20 SOL: T=17.3C P=1026HPA
635hPa FL124 +20.8C
Pour jeu 10 12UTC Cape SOL Ech12H ALA0.1 10/11/05 00UTC
hodo graf
N
W
E
S
300
500
850
850
SOL
dddff 35169
Hélicité m2/s2 119
Vent moyen
Déplacement calculé
H1 30012 71
H2 00930 130
H3 35169 119

Tropical cyclone

- New tool to be able to :
  - Expertise TC :
    - Analyse position and intensity of TC with Dvorak techniques
    - Forecast trajectory and intensity using all models (ECMWF, Met Office, JTWC, Météo-France,…) and other forecasts from other centres available.
  - Produce objects and then, advisories and specific bulletins.



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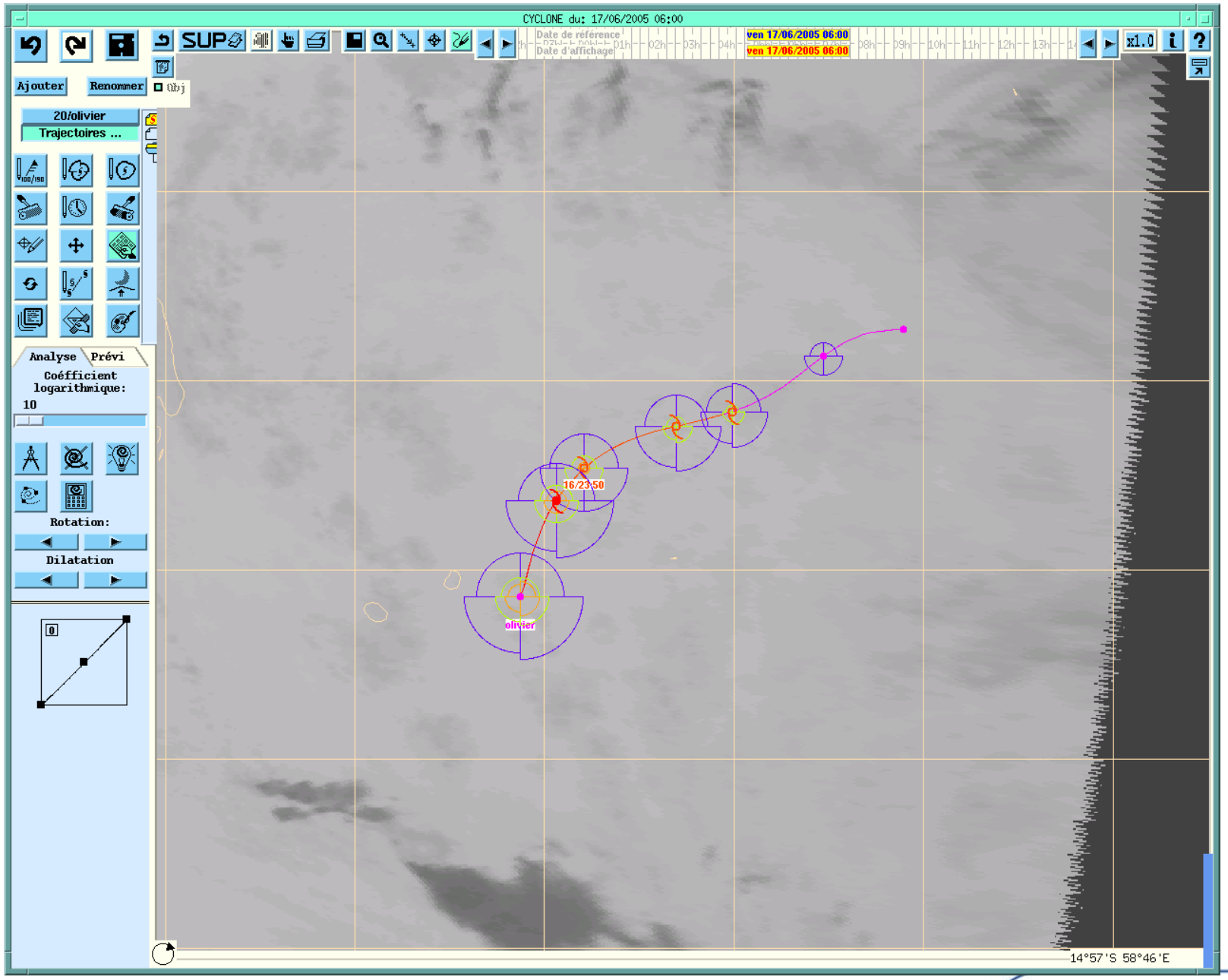

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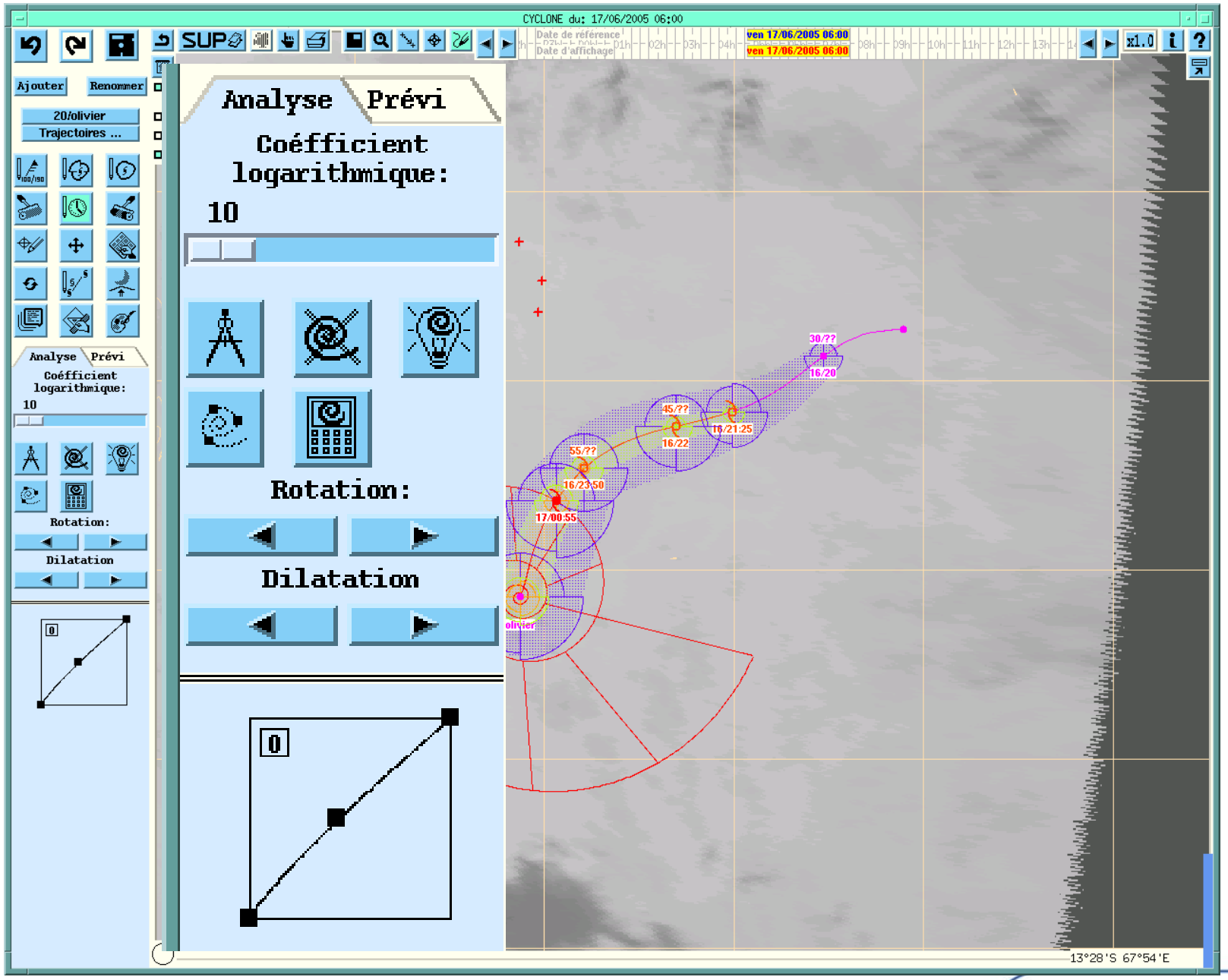

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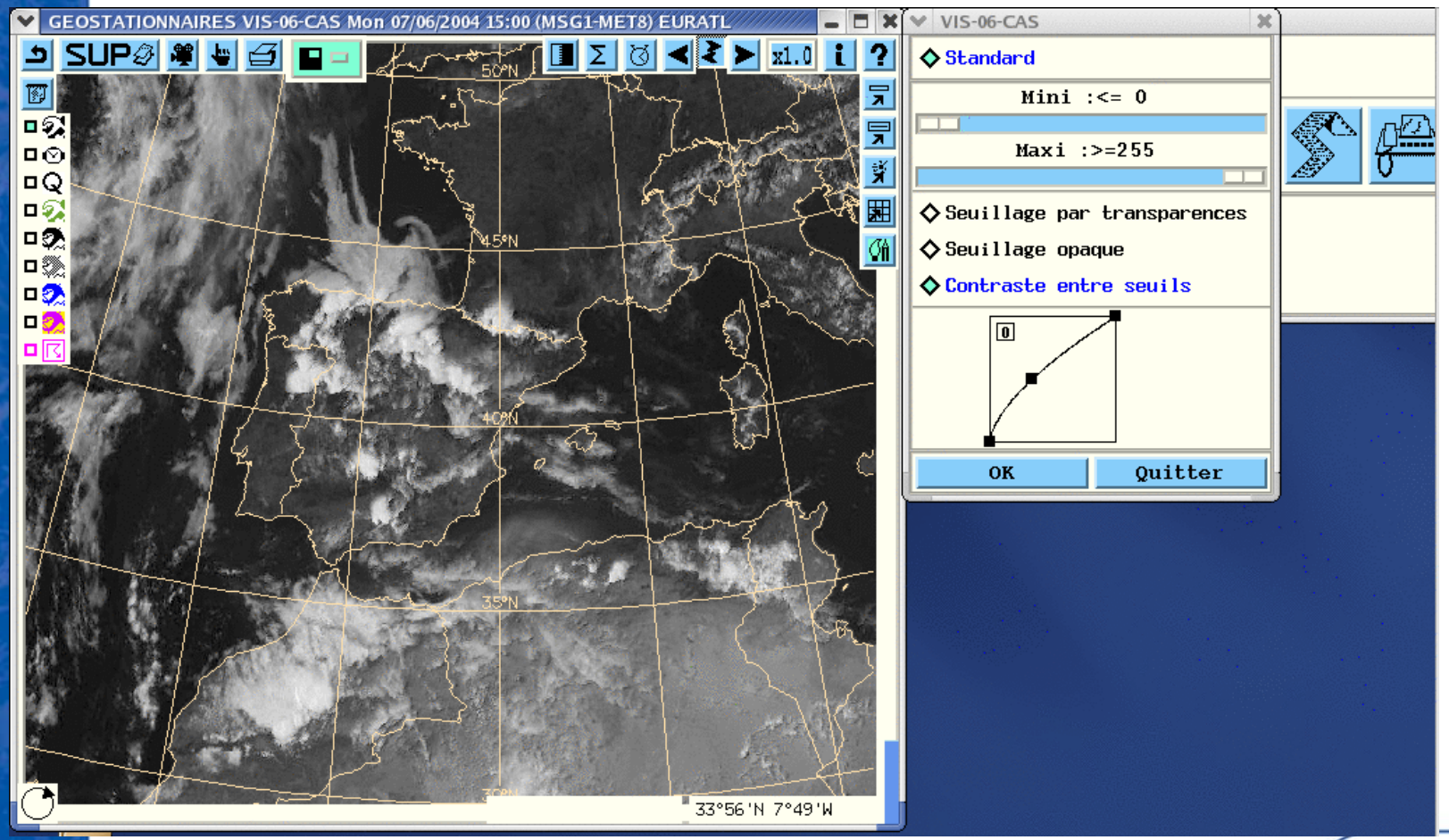
Satellite Colormap modification GUI inherited from tropical cyclone component



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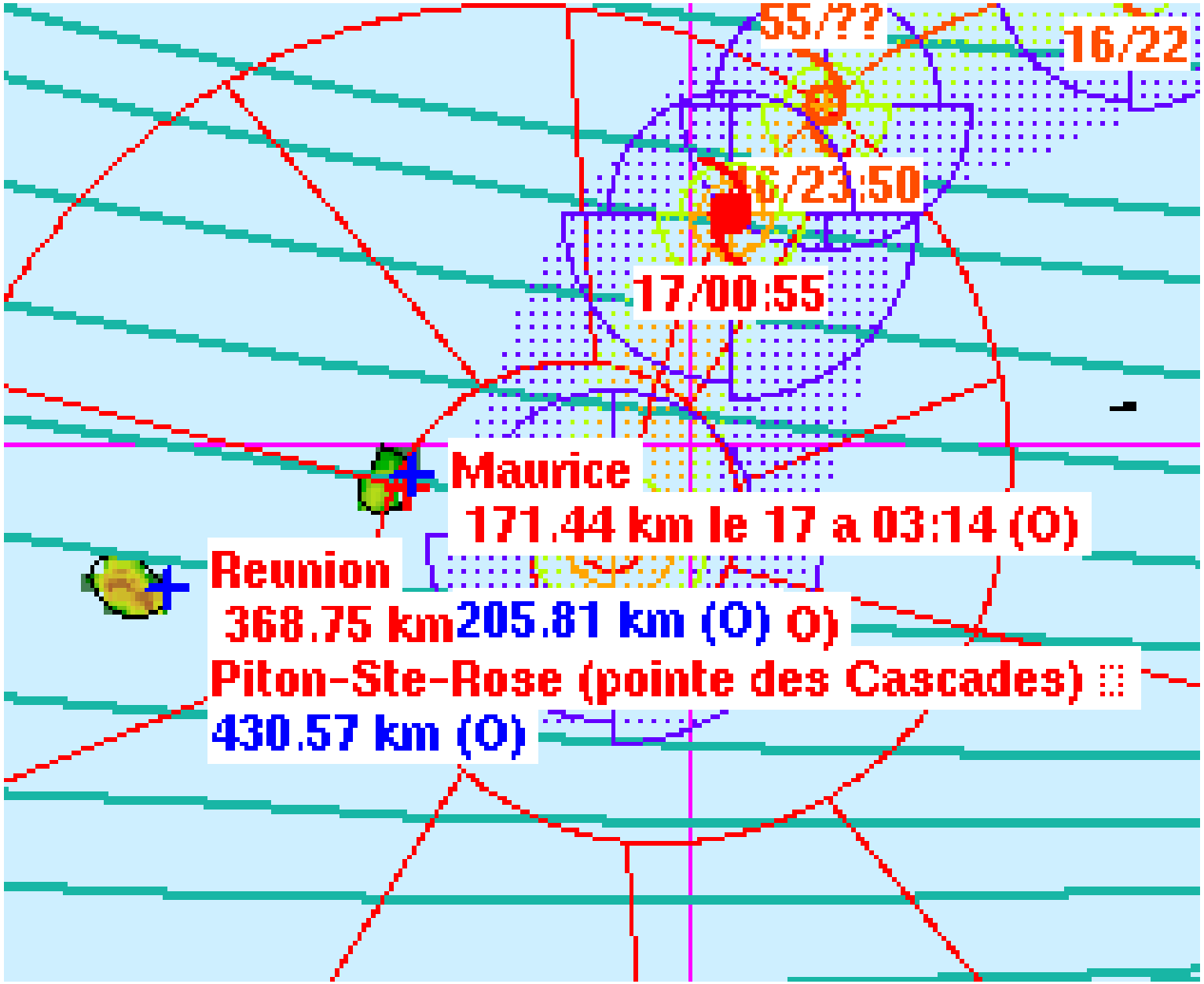
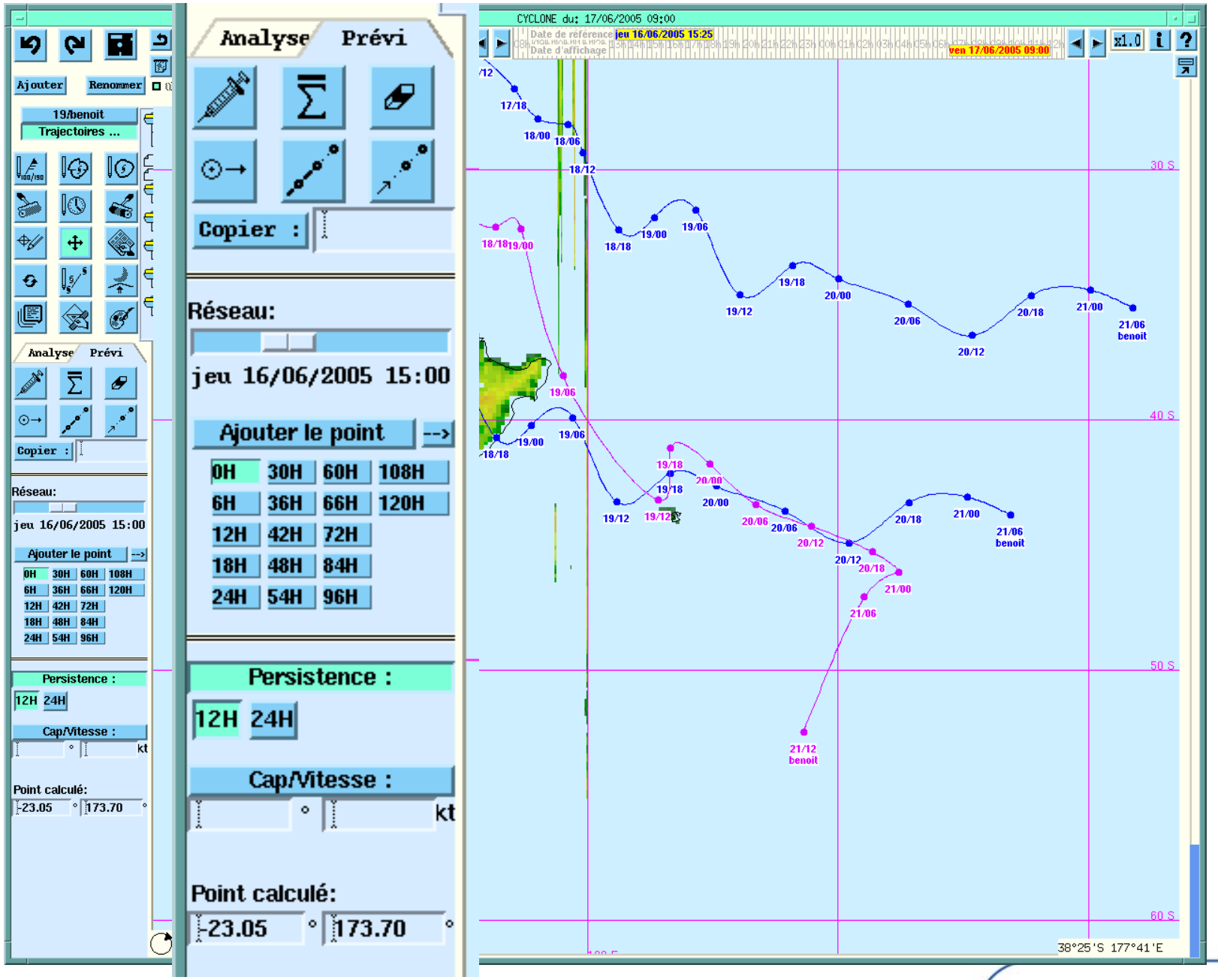
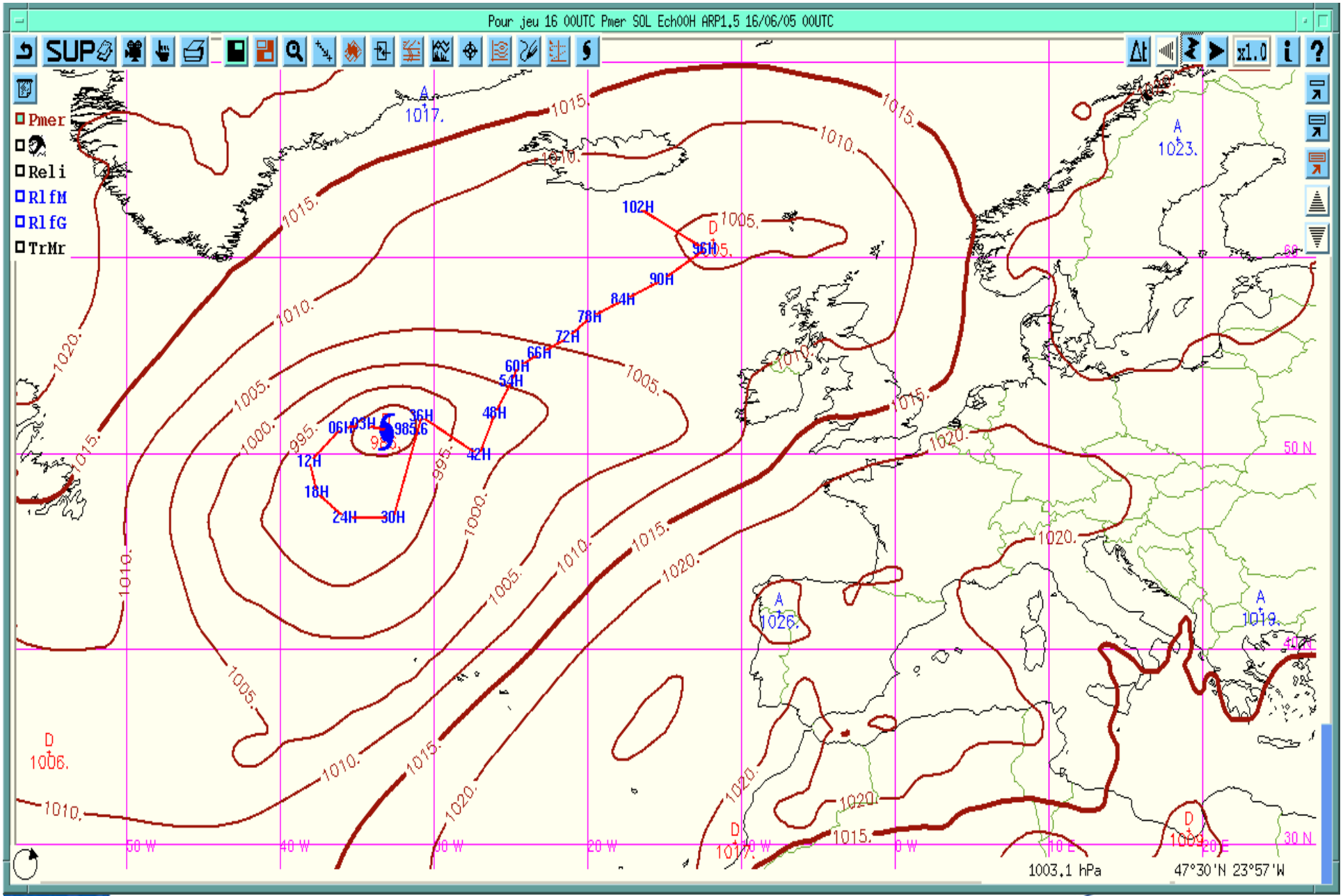


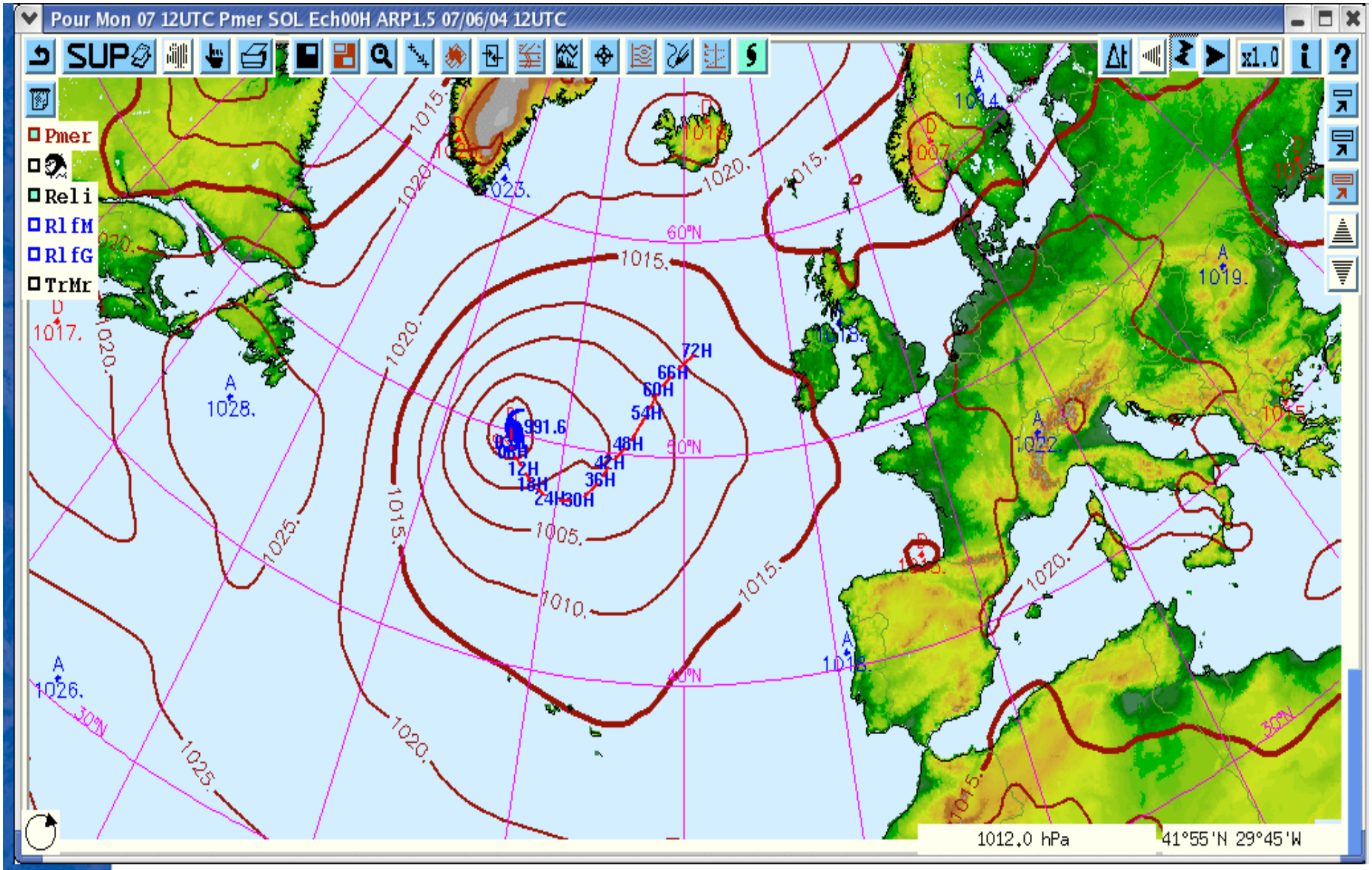
METEO FRANCE

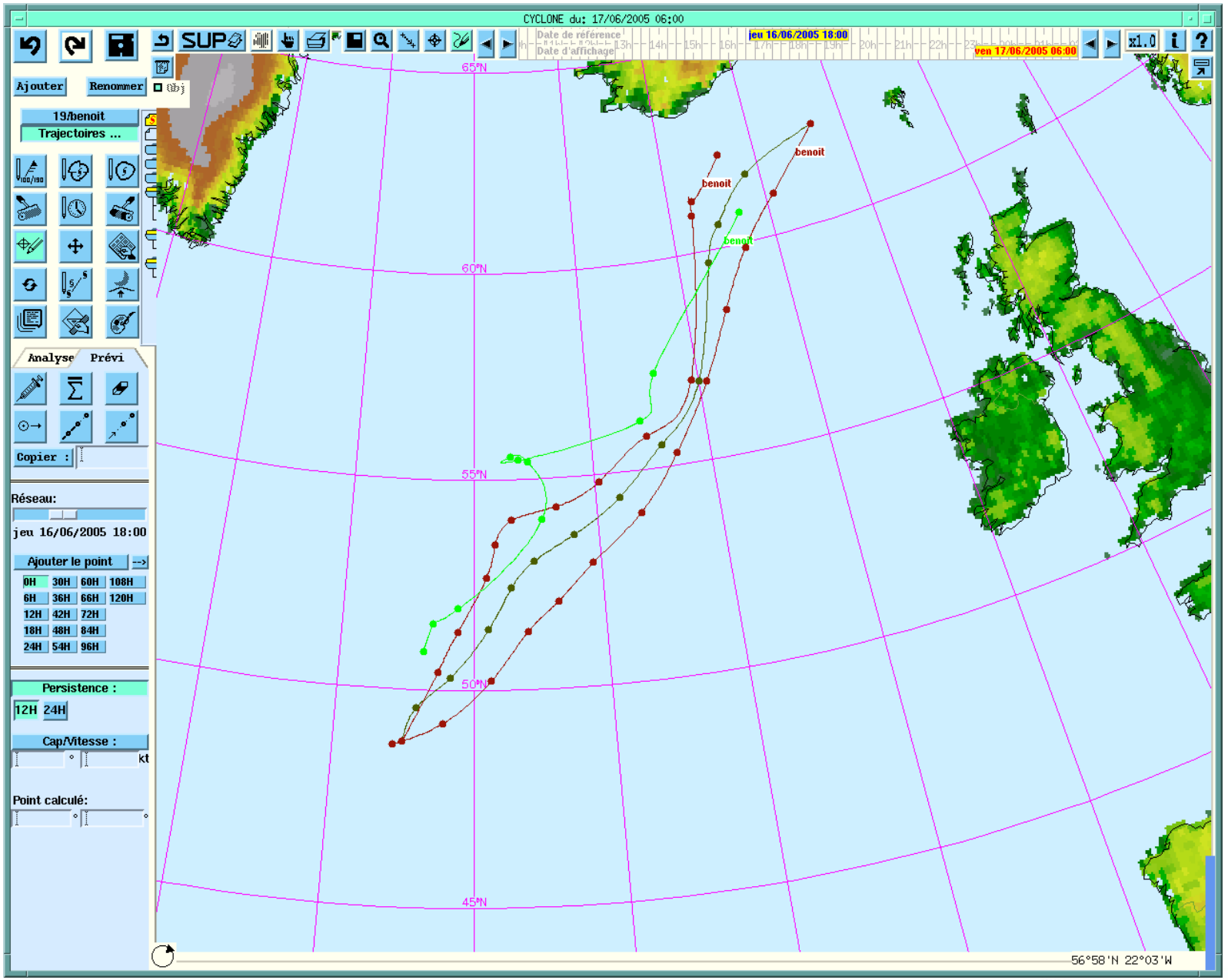

Ajouter
Renommer
19/benoit
Trajectoires ...
Analyse
Prévi
Copier :
Réseau:
jeu 16/06/2005 15:00
Ajouter le point
0H 30H 60H 108H
6H 36H 66H 120H
12H 42H 72H
18H 48H 84H
24H 54H 96H
Persistence :
12H 24H
Cap/Vitesse :
kt
Point calculé:
-23.05
173.70
CYCLONE du: 17/06/2005 09:00
Date de référence jeu 16/06/2005 15:25
Date d'affichage
ven 17/06/2005 09:00
x1.0
30 S
40 S
50 S
60 S
38°25'S 177°41'E

Trajectories of mid latitude cyclone

- Visualisation of numerical model data inherits of calculation of cyclone or anticyclone trajectories from tropical cyclone component.


Pour jeu 16 00UTC Pmer SOL Ech00H ARP1.5 16/06/05 00UTC
SUP
x1.0
Pmer
Reli
RlfM
RlfG
TrMr
1003.1 hPa
47°30'N 23°57'W


Pour Mon 07 12UTC Pmer SOL Ech00H ARP1.5 07/06/04 12UTC
SUP
x1.0
Pmer
Reli
RlfM
RlfG
TrMr
1012.0 hPa
41°55'N 29°45'W



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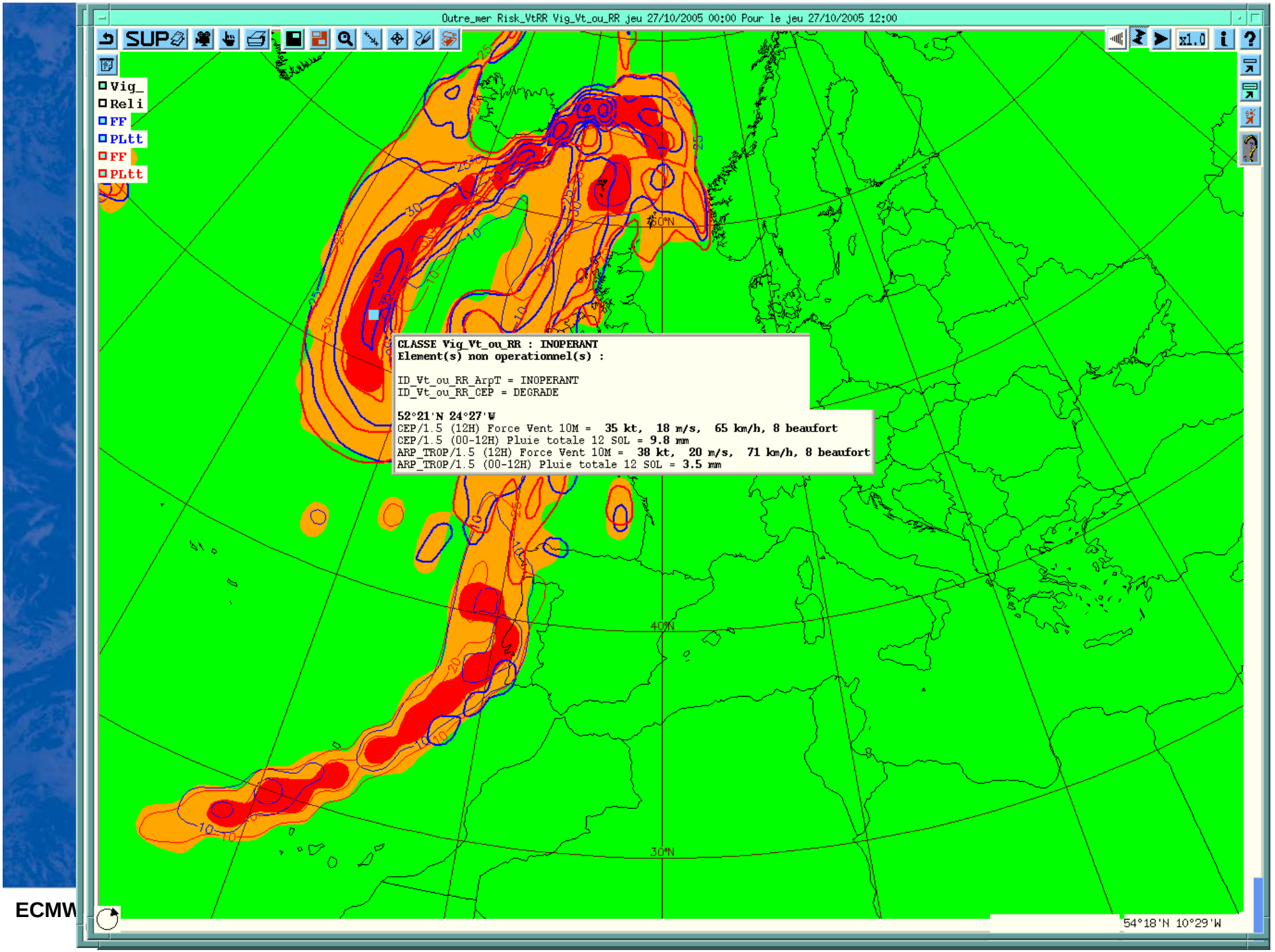
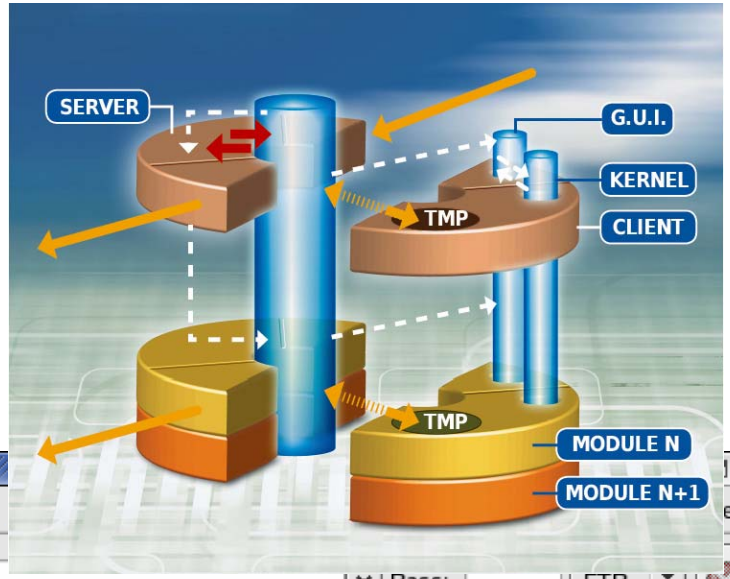

Outre_mer Risk_VtRR Vig_Vt_ou_RR jeu 27/10/2005 00:00 Pour le jeu 27/10/2005 12:00
SUP
x1.0
Vig_
Reli
FF
PLtt
FF
PLtt
CLASSE Vig_Vt_ou_RR : INOPERANT
Element(s) non operationnel(s) :
ID_Vt_ou_RR_ArpT = INOPERANT
ID_Vt_ou_RR_CEP = DEGRADE
52°21'N 24°27'W
CEP/1.5 (12H) Force Vent 10M = 35 kt, 18 m/s, 65 km/h, 8 beaufort
CEP/1.5 (00-12H) Pluie totale 12 SOL = 9.8 mm
ARP_TROP/1.5 (12H) Force Vent 10M = 38 kt, 20 m/s, 71 km/h, 8 beaufort
ARP_TROP/1.5 (00-12H) Pluie totale 12 SOL = 3.5 mm
60°N
40°N
30°N
54°18'N 10°29'W

ECMW

GUI for ftp access



gFTP 2.0.14

FTP Local Remote Bookmarks Transfers Logging Tools

Host: My_ftp_server Port: User: Pass: FTP

/home/syn40/data/grib

[Local] [All Files]

Filename	Size	User	Grou
..	4,096	syn40	dba
PC.GLOB05	4,096	syn40	syn4
PL.FRANCEX	4,096	syn40	syn4
PS.EURAT5	4,096	syn40	syn4
PS.GLOB15	4,096	syn40	syn4
PVAG.FRANCEX	4,096	syn40	syn4
PVAG.GLOB10	4,096	syn40	syn4

Not connected*

Filename	Size	User	G

Filename Progress

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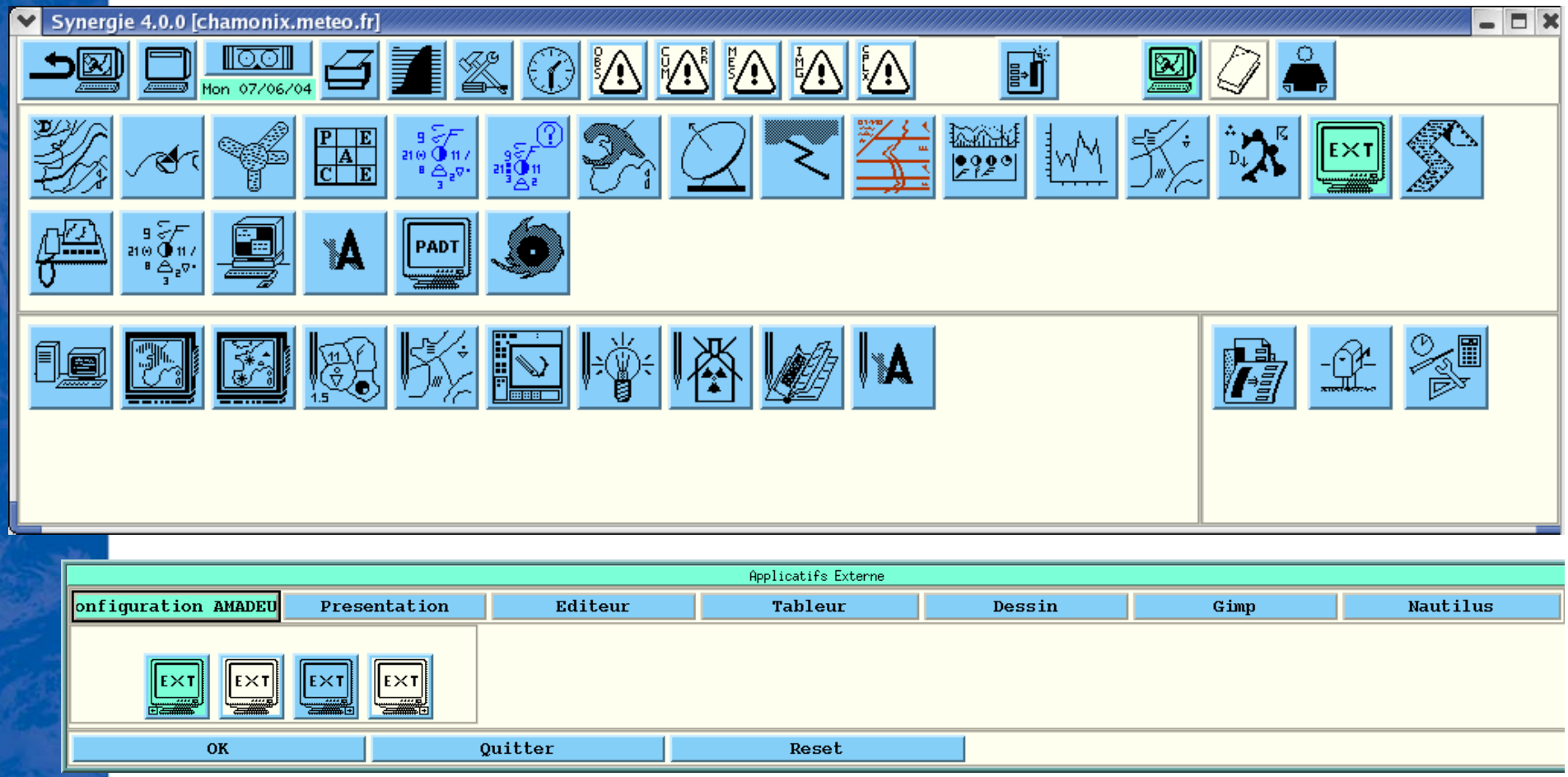
GUI for external applications



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4 Future

New functionalities under development

- New release 4.1 will be completed by March 2006. After validation by users it will be delivered in July 2006.
  - Improvement of tropical cyclone module
  - Data base of Nowcasting Objects (BDEPI)
  - New filtering of observations.
  - New products of radar and rain gauges integration

Thank You for your attention

Any Question ?