GOBIERNO DE ESPAÑA
MINISTERIO DE MEDIO AMBIENTE Y MEDIO RURAL Y MARINO
AEMet Agencia Estatal de Meteorología

NWP Activities at the AEMET (Spain)

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30th EWGLAM & 15th SRNWP Annual Meeting 2008. 6th – 9th October Madrid, Spain,

CrayX1E platform

Deterministic operational runs

Ensemble Prediction System

Mesoscale activities

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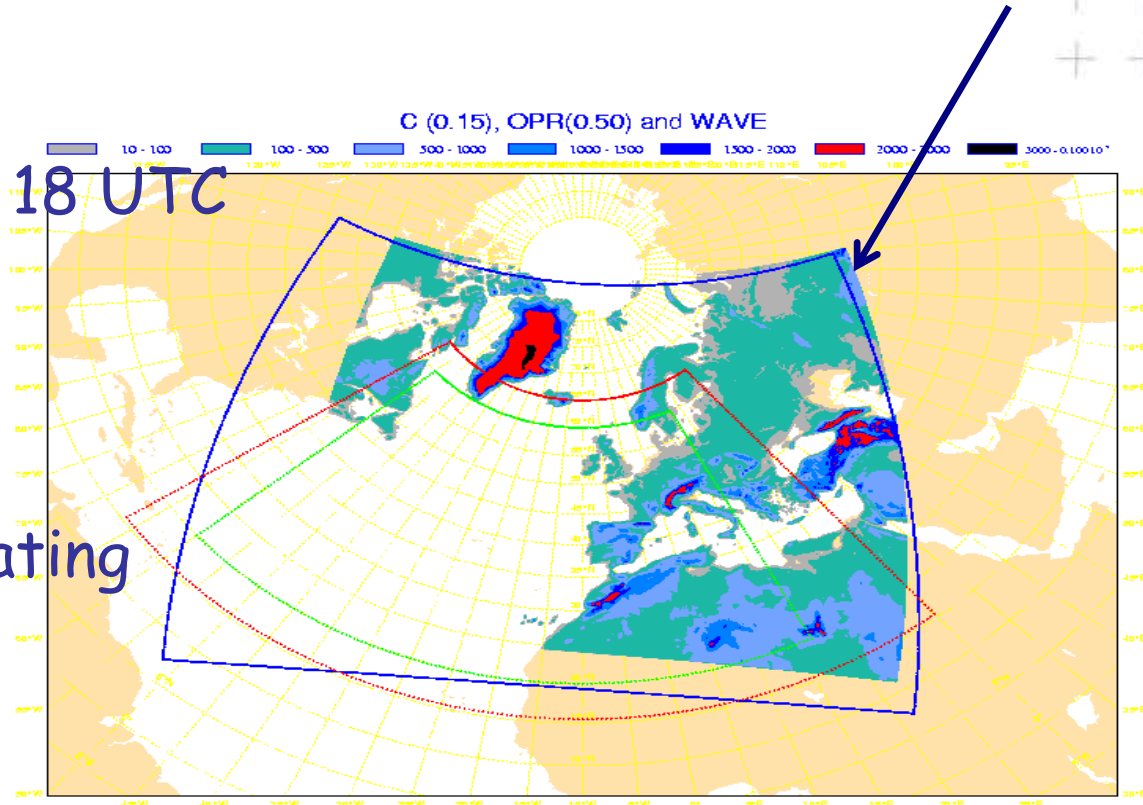
CRAY X1E

- 16 physical nodes X1E
  - 8 MSP each
  - 1,2 GHz, 19,2 Gflops -64 bits- / MSP
- 32 logical nodes ⇒ 31 applications + 1 support
- 128 MSP / 512 SSP
- 512 GB memory (16 nodes by 32 GB each)
- 2,5 Tflops

- Archive Capacity
  - *20 TB SAN*
  - *1 TB direct disk*
    - *24 TB tape library*

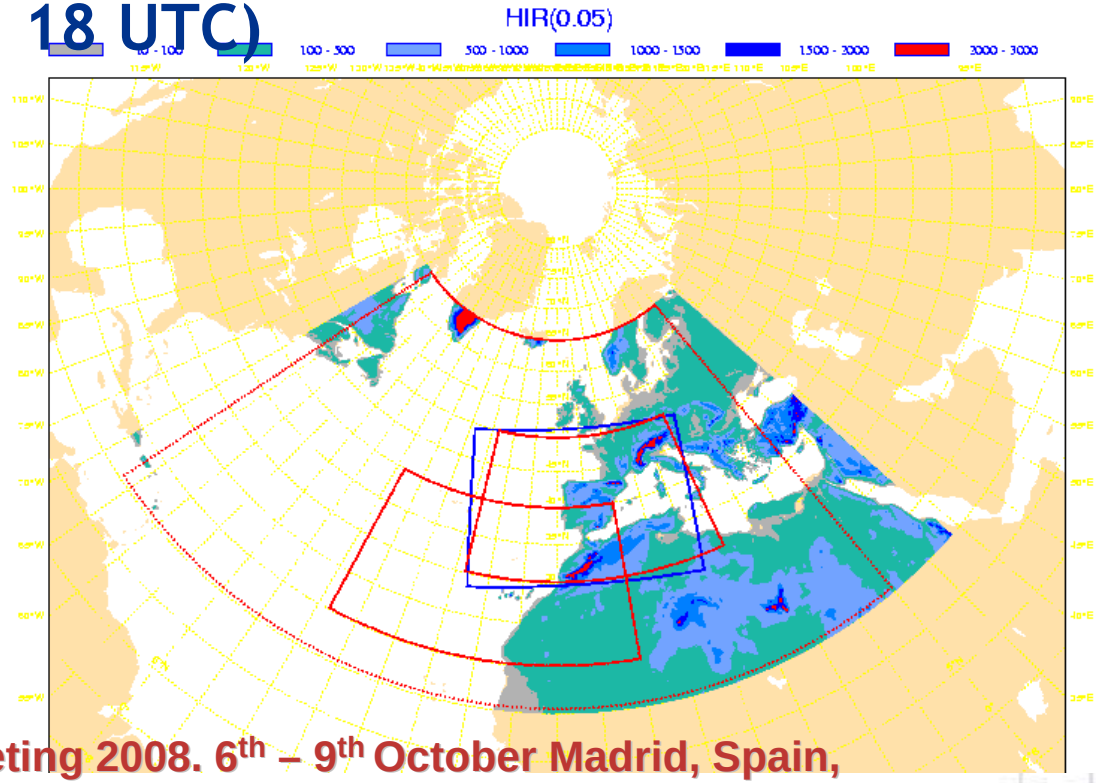
Operational suite HIRLAM/ONR

- Rotated grid
- HIRLAM v6.1.2
- ECMWF BC's
- 0.16° horizontal resolution (582x424 latxlon)
- 40 vertical levels
- 72 hours forecast
- 4 daily runs: 00, 06, 12 & 18 UTC
- SL dynamics
- 240 s time step
- 3DVAR, statistical J_b
- ATOVS AMSU-A assimilating since january 2005



Operational Suite HIRLAM/HNR & HIRLAM/CNN

- Rotated grid
- HIRLAM v6.1.2
- ONR BC's
- Horizontal resolution: 0.05 deg latxlon. (606X430)
- 40 vertical levels
- 36 h forecasts (00, 06, 12 & 18 UTC)
- SL dynamics
- 120 s time step
- 3DVAR statistical Jb



Pre-operational suite
HIRLAM v7.0
Same areas
60 vertical levels

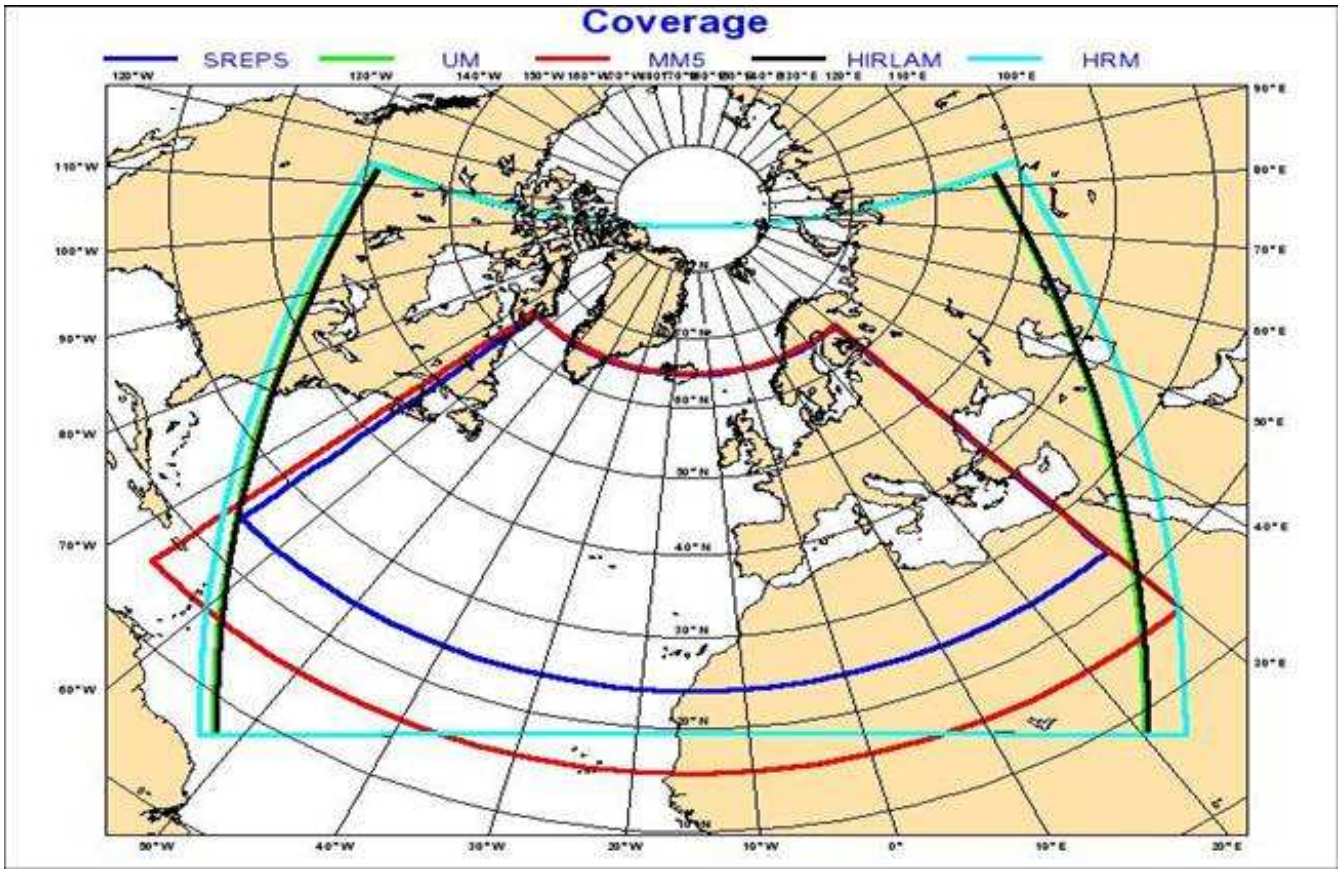
Near future
HIRLAM v7.2

Short Range Ensemble Prediction System SREPS

Multi-Model	Multi–boundaries	Num. EPS Members	Forecast length (daily runs)	Horizont resolution
Hirlam HRM (DWD) MM5 UM (UKMO) Lokal Model	ECMWF GME GFS UKMO MSC (Validation period)	5 models X 5 boundaries = 25	72 (twice)	0,25º

Short Range Ensemble Prediction System SREPS

Integration Areas



SREPS. Future and Plans

New global model MSC (Canadian Met. Service) Operational

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Hirlam Aladin Regional / Meso-scale Operational NWP In Europe (HARMONIE)

HIRLAM/ONR (0.16 deg)

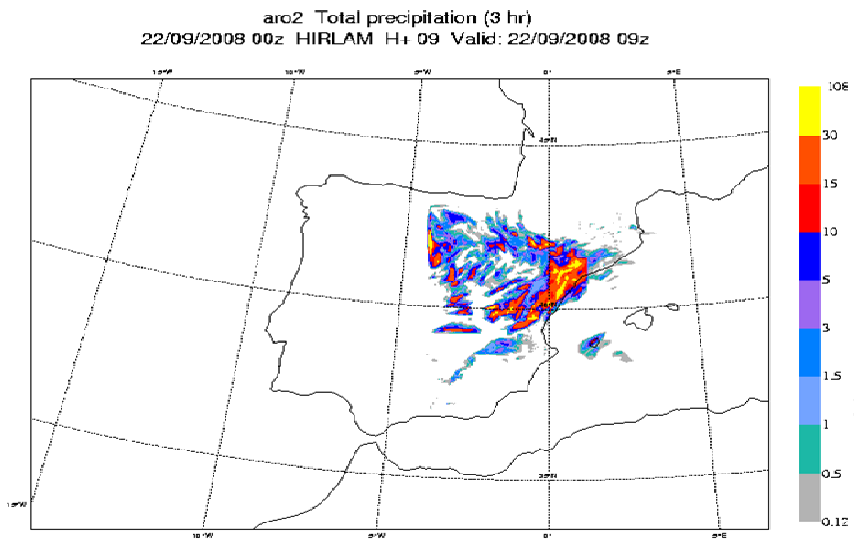
HARMONIE cy32h2

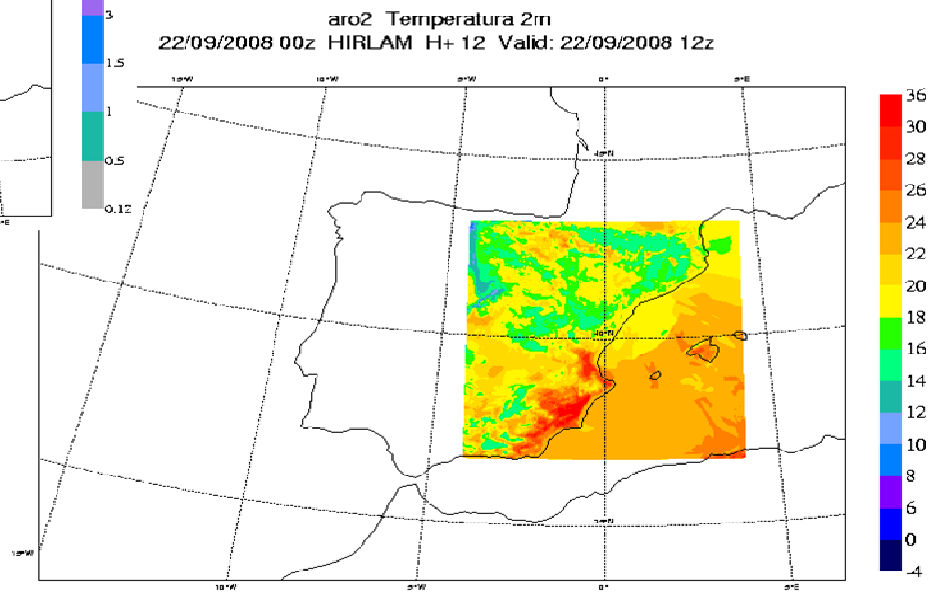
latxlon (384x400)
40 vertical levels
Horizontal resolution 11 km
1 run per day 00 UTC
30 hours forecasts
Dynamics time step 300 sec
Hydrostatic run

HARMONIE cy32h2

latxlon (300x300)
40 vertical levels
Horizontal resolution 2.5 km
1 run per day 00 UTC
30 hours forecasts
Dynamics time step 60 sec
Non-hydrostatic run

Hirlam Aladin Regional / Meso-scale Operational NWP In Europe (HARMONIE)





HARMONIE. Future and Plans

Harmonie cy33h1

Variational assimilation

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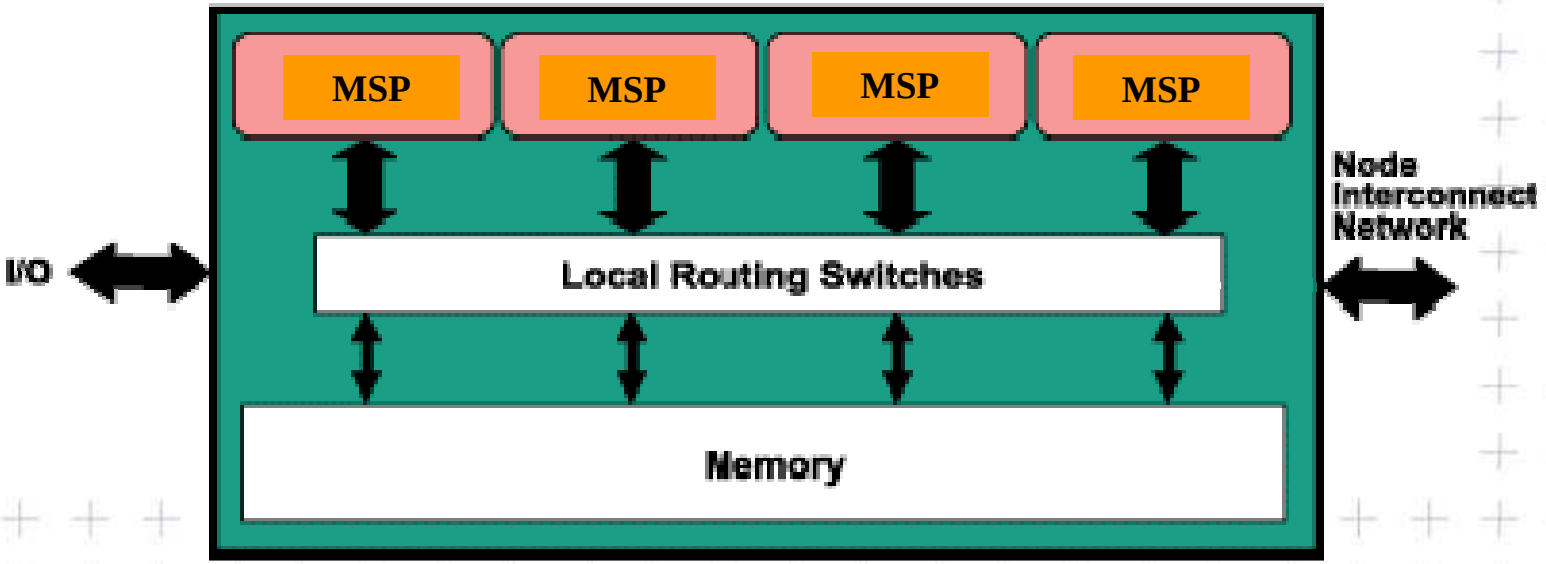
Thank you!

La pasada operativa en la AEMET. CRAY X1E

NODO

- Es la unidad escalable en el sistema.
- Cada nodo está formado por 4 ***multistreaming processors (MSPs)***, con memoria local compartida
- Memoria: 32 GB por nodo



La pasada operativa en la AEMET. CRAY X1E

- ***MSP* (Multistreaming processor):** Procesador vectorial a 1200 MHz
- 4 ***Single-streaming processssors (SSP)***
- 2MB memoria caché compartida
- Cada SSP:
  - 1 procesador escalar 400 MHz: 800 Mflops
  - 2 x 2 vectorial pipelines 800 MHz (3,2 Gflops en 64 bits y 6,4 Gflops en 32 bits)