Actions and plans 2009

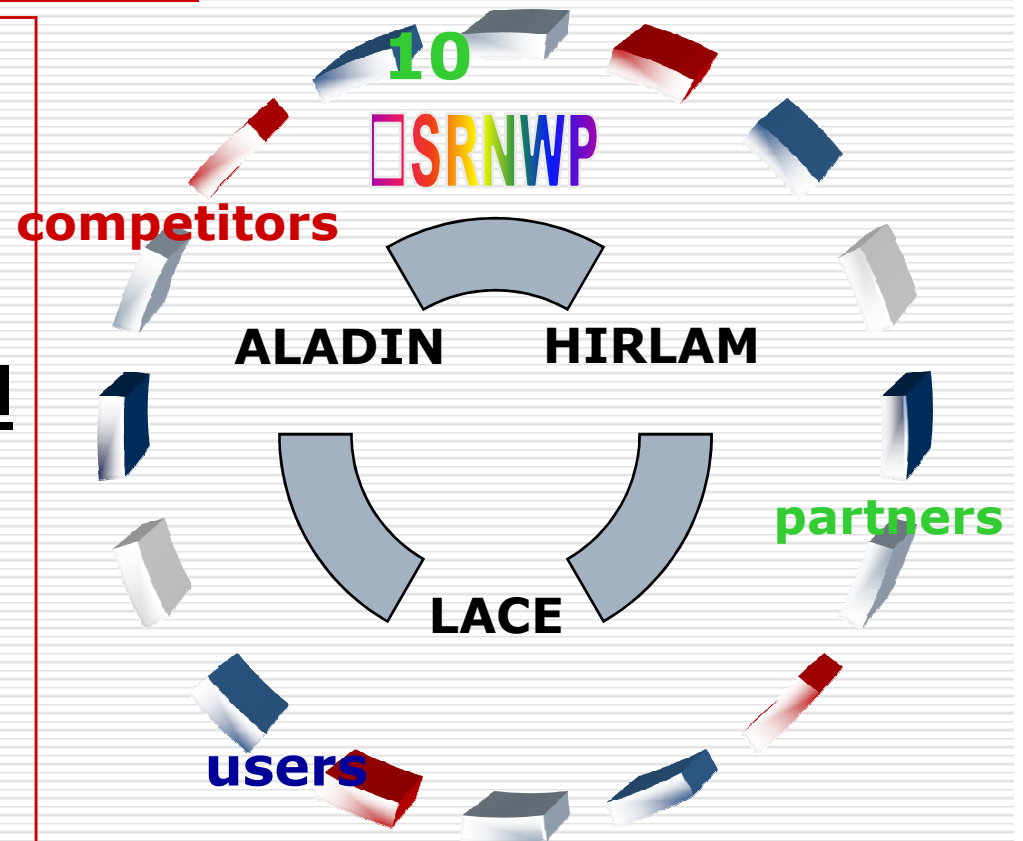## Dijana Klarić   *Met service of Croatia*

RC LACE Project Manager

www.rclace.eu

2009 report

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nwp central europe

- ✓ **LACE 1st year at new structure**

- ✓ **Projects & Technical Actions**

- ➤ **R&D highlights**

- ✓ **SRNWP**

10
SRNWP

competitors

ALADIN   **HIRLAM**

LACE

partners

users

.....defining the rôle

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RC LACE *is international cooperation of National (Hydro-) Met. Services that coach* **regional activities** *at the area of meso-scale NWP in the terms of* **scientific achievements and operative implementations.** *or*

Operative impl.

"how to perform and optimize ALADIN activities at CE"

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Projects are bringing the top R&D achievements toward operative use

4 Areas for R&D ➜ 4 Projects

- ✓ Operational **3D Var system** for LACE (HMS)
  Common observation pre-processing (HMS)

- ✓ Implementation of **ALADIN NH** dynamics (CHMI)

- ✓ Operational **ALARO phy at 5km** mesh size (CHMI)

- ➢ Common **LAM EPS - ALADIN-LAEF** (ZAMG)
  processed at ECMWF,
  products at LACE WEB page, raw data at MARS DB

Operational 3D Var results 2008/2009

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Objectives

❖ Centralized preprocessing of observations

❖ Installation of atmosph. (3DVAR) and surface (CANARI OI) analysis systems in LACE centers

❖ Enhanced use of high frequency observations

❖ Use of high resolution observations

✓ **OPLACE**

Existing at Hu, Cz

New
✓ **Au**
✓ **Cr**
✓ **Si**

A) Delays
➢ **Local experts required**

B) Excellent networking via WEB forum

➢ **Test with National data**

Implementation of ALADIN NH dynamics

Objectives

❖ Validation of the current NH dynamics

❖ Improvements and development

❖ Code optimization of the NH dynamics

❖ Operational implementation

✓ **cy32t1**

➤ **ALADIN "style" VFE**

A) Delays
➤ Due to cy35t1 delays
B) many num. issues
- design of 3D turbulence sh.
- SLHD triggering
- new sL interpolators

➤ **Prolonged for 2010**

Operational ALARO at 5km results 2008/2009

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❖ Development of the schemes

❖ Scientific maintenance of the code

❖ Operational implementation

*at 2010 with NH dynamics

✓ **pTKE =>e-f TKE**
✓ **Radiation scheme for aerosols**

✓ **Validation 4.4km**
ALARO 3MT daily:
✓ **Au**
✓ **Cz**
✓ **Si at LACE WEB**

A) New methods for 2D verification are needed
B) Low Cloudiness problem

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ALADIN-LAEF
results 2008/2009

Objectives

❖ *Uncertainties in analysis*

❖ *Uncertainties in model physics*

❖ *Co-operation with GLAMEPS*

New LAEF:
Operative BBSM
- **daily runs at ECMWF**
- **products at MARS DB**
✓ **Tuning and calibration**
   Studies on combination of multi-EPS
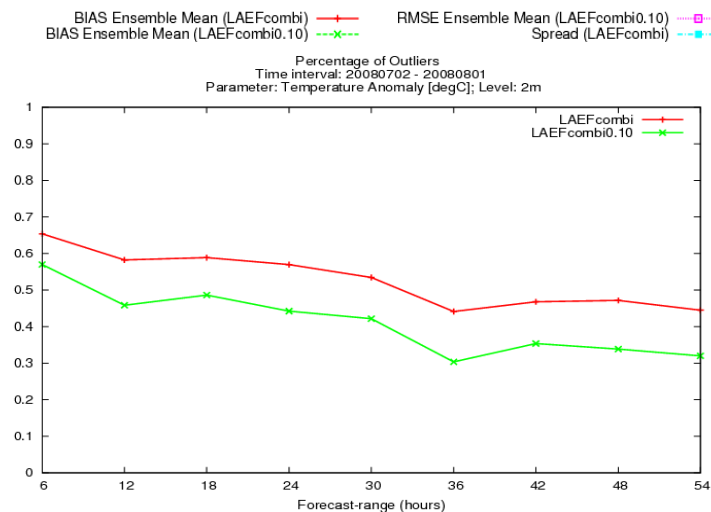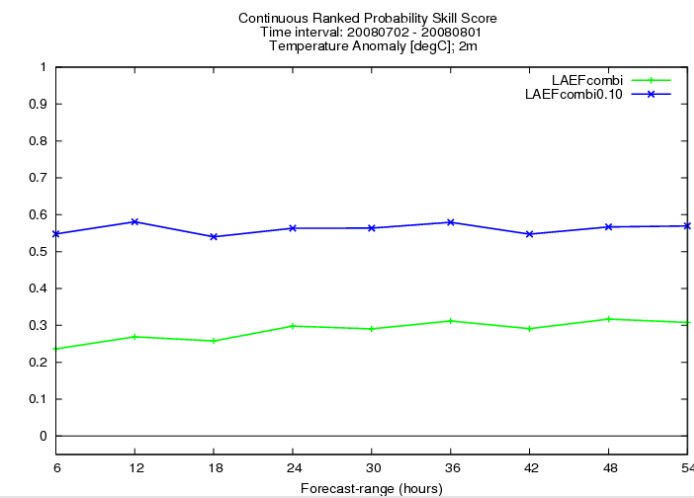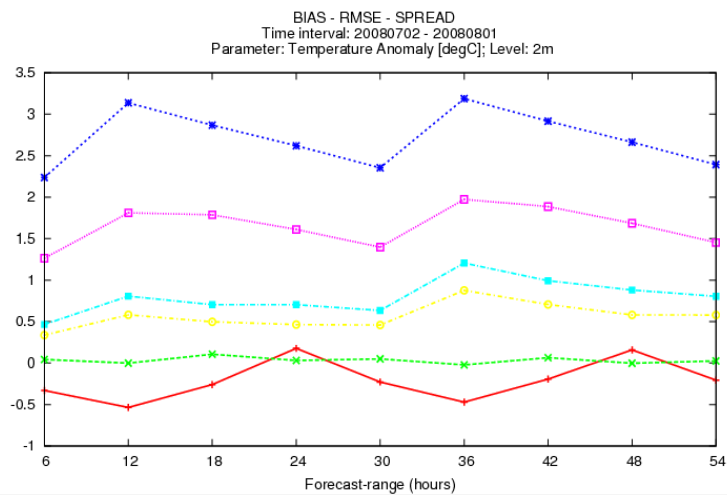✓ **Row products for GLAMEPS**

A) CPU at ECMWF
B) Tuning and calibration
C) International visibility B08RDP

Combination: LAEF/ECMWF + LAEF/PEARP
Bias correction first, then combination

small spread, but better relation between rms error and spread, better outlier, better skill
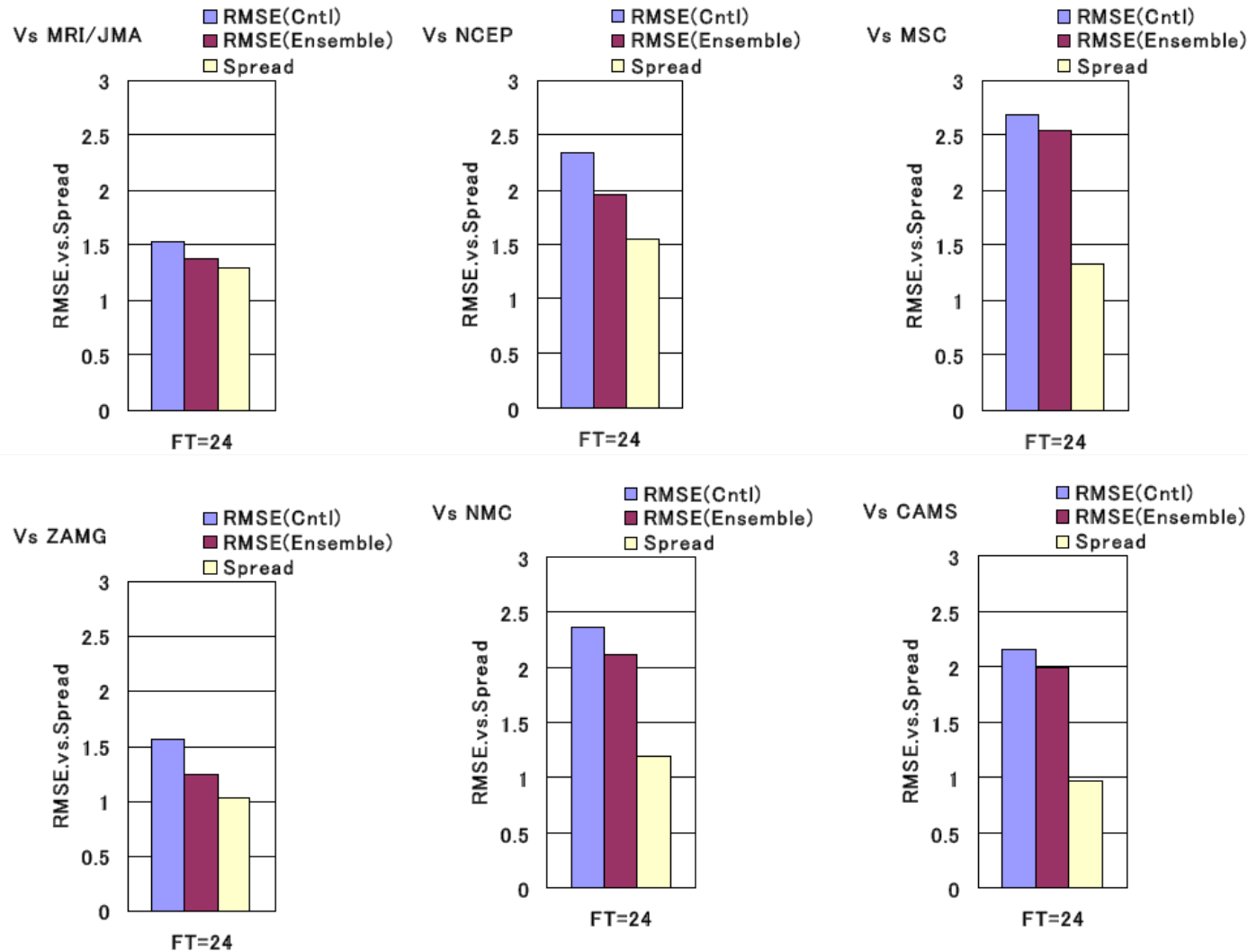
1. Kann, Wittmann, Wang and Ma, 2009: Calibrating 2m Temperature of Limited Area Ensemble Forecasts Using High Resolution Analysis, accepted by *Mon Wea. Rev.*

2. Wang, Kann, Bellus, Pailleux and Wittmann, 2009: A strategy for perturbing surface initial conditions in LAMEPS, submitted to *Atom. Sci. Letter.*

3. Wang, Bellus, Wittamnn, Steinheimer, Ivatek-Sahdan, Kann, Tian, Ma, Tascu and Bazile, 2009: The Central European limited area ensemble forecasting system: ALADIN-LAEF, prepared for *Q. J. R. Meteorol. Soc.*

4. Weidle, Wang, Tian and Wang, 2009: Strategies for using Clustering analysis of ECMWF EPS in LAMEPS. In preparation for *Tellus.*

5. Bellus, Wang, Tian and Ma, 2009: Blending technique for initial perturbation in LAMEPS. In preparation for *Tellus*.

The scientific results archived within the B08RDP project are in preparation for *Bulletin American Meteorol Soc,* and *Wea. and Forecasting.*

B08RDP - verification agains initial conditions
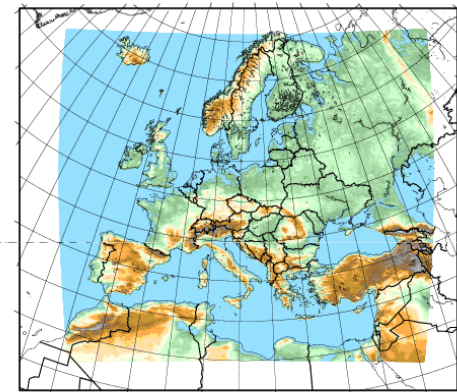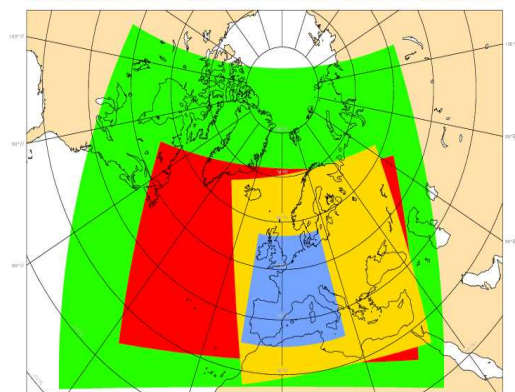## T2m, RH, Press, Vs *intercomparison

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Common LACE technical actions

➢ **LACE WEB pages** (SHMI)

✓ **ALADIN deterministic operative products (7
AR + EC+ LM +ALARO5km)**

✓ **ALADIN pEPS Multigrams for LACE Capital**

✓ **ALADIN-LAEF (Limited Area EnsembleForec
probability charts and multigrams**

✓ **LACE Forums (DA, Physics, ... Dynamics)**

➢ **Contribution to HARMONIE Scripting syster**

➢ Toward **LACE Reference** application (?)

ALADIN/Europe - 6.5km at ECMWF

Domains of 4 consortia reference models

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SRNWP A&Q&I

Actions
- ✓ **ETs at SRNWP WS**
- ✓ *LACE at Interoperability Program (ALADIN coord.)*
- ➢ **LACE at Verification Program (to define representative)**

Questions
- ➢ *to add High-res national observations to OPLACE*
- ➢ *to co-ordinate pre-process of observations*
- ➢ *to co-ordinate links between EUMETNET programs*

Imagine
- *- ....*

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R&D wallpapers,issue 2009

➢ *"There is no such thing as free DA, local teams are necessary "*

➢ *"Shared actions happened after all other IT/human resources were already spent"*

➢ *"No code optimization, no future! (but no candidates either)"*

➢ *" We will take care on your BU at ECMWF"*
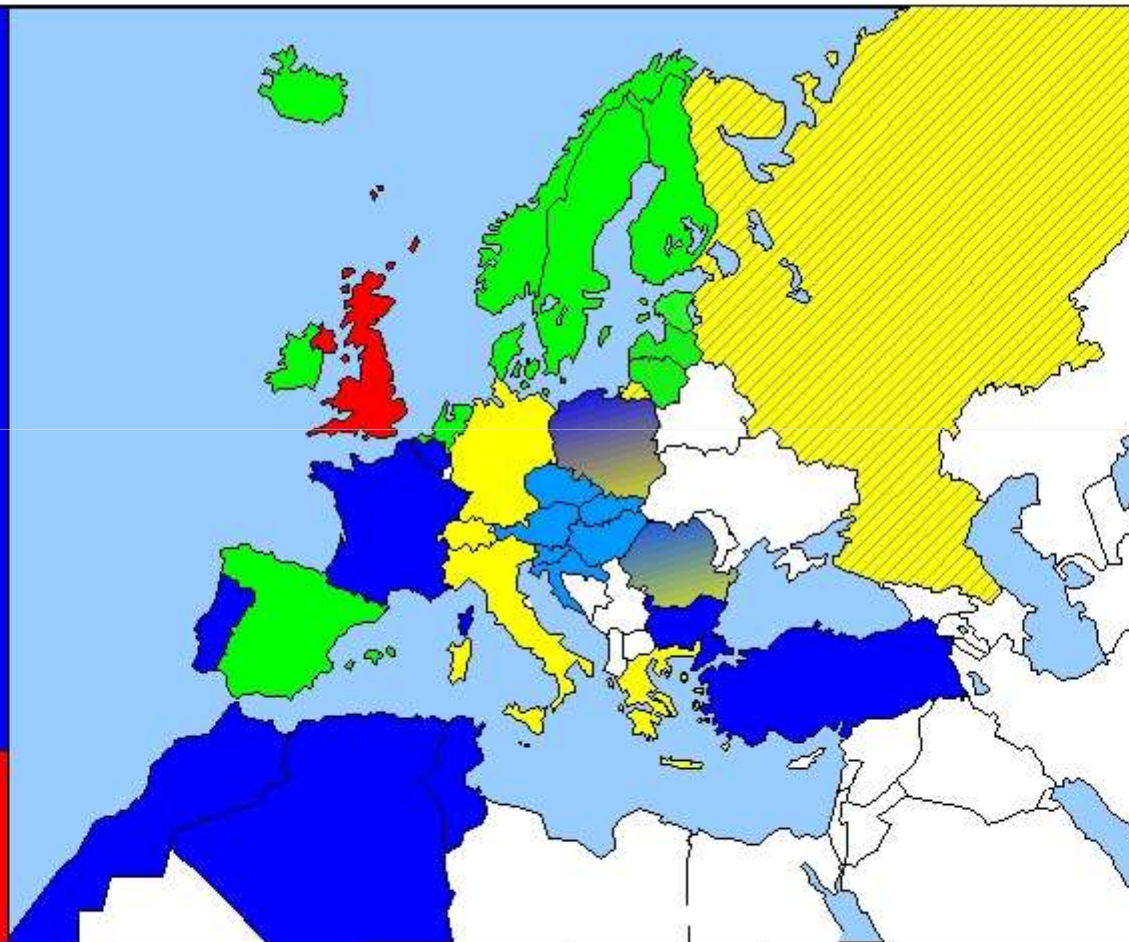
SRNWP Consortia in Europe

ALADIN
Algeria
Belgium
Bulgaria
France
Morocco
Poland
Portugal
Tunisia
Turkey

Austria
Croatia
Czech Rep.
Hungary
Romania
Slovakia
Slovenia
LACE

UKMO
United Kingdom

HIRLAM
Denmark
Estonia
Finland
Iceland
Ireland
Netherlands
Norway
Spain
Sweden
(Latvia)
(Lithuania)

COSMO
Germany
Greece
Italy
Poland
Romania
Switzerland
(Russia)

Met Office

COSMO