# ALADIN

## (Programme Manager report)

## ALADIN work in the GA intersession & outlook for issues at the 14th GA

## CSSI matters

## Istanbul, 12/11/09

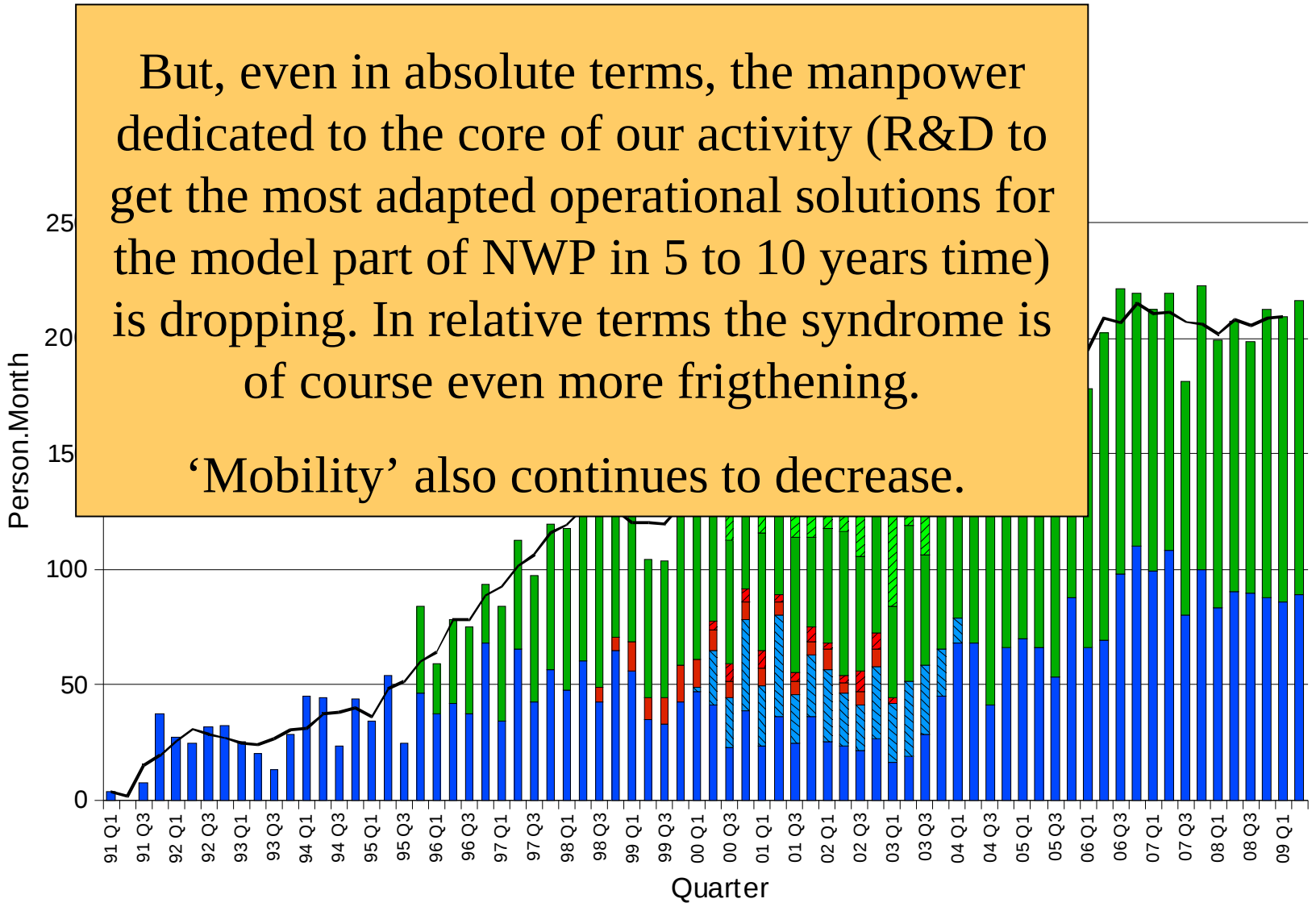
# Scope of the presentation

- Main topics for the Programme in the past 12 months.
- CSSI (and related) matters (GA decision needed, on PAC's recommendation [***no specific Agenda Item***]).
- Outlook for next year.
- Something about Agenda Item 5d.

# Stability of the manpower over the past three years

But, even in absolute terms, the manpower dedicated to the core of our activity (R&D to get the most adapted operational solutions for the model part of NWP in 5 to 10 years time) is dropping. In relative terms the syndrome is of course even more frigthening.

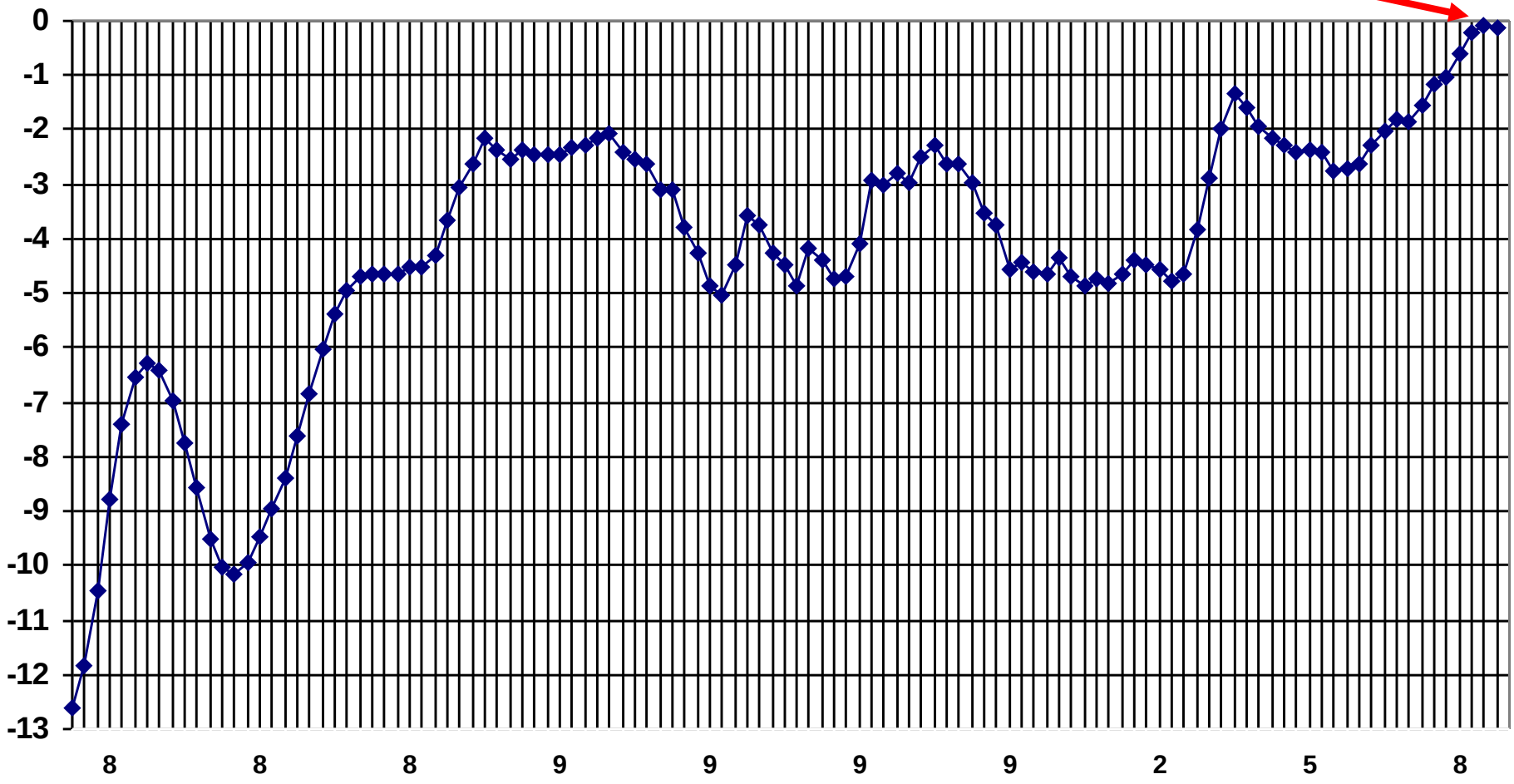
‘Mobility’ also continues to decrease.



# Main topics for the Programme in the past 12 months

- Last year was deemed ‘exceptionally good’; please do not expect anything similar this time!
- ***The first condition for playing HARMONIous music is to tune instruments together (a year dominated by sharing problems and concerns between HIRLAM and ALADIN).***
- This had direct influences (+ and -) on the planning process => proposals at this GA for a more robust basic procedure on the ALADIN side.
- Further diversification of the ‘hot issues’ (modelling at kilometric scales; ‘Convergence’; LAM-EPS, LAM-Climate, maintenance). A challenge to the management even if not for the governance.
- The flat-rate budget alas again in a problematic state …

# ARPEGE coupling files were never so-good (absolute and **relative** statement)



# From Ljubljana to Istanbul , via Casablanca and Toulouse, some synthesis trial about ‘Convergence’

- According to the last two examples, we can rely on something ‘rather good’ in terms of BOTH (i) absolute performance and (ii) cost-effectiveness for all.
- The problem has been how to avoid in the future BOTH (a) uniformity and (b) heavy cost of using both alternatives at a time.
- Identifying the true hurdles was hampered by many false tracks, but ultimately one could boil them down to relatively simple scientific facts:
  - The AROME physics is far too much geared towards the ‘small time step anyhow’ paradigm of Meso-NH;
  - The ‘grey zone’ approach of ALARO-0 is too exclusive in its algorithmic constraints.
- Neither of these has much to do with the question of ‘scale of use’ of the model versions, but they share a heavy legacy of ‘previous research work’ => hence the proposed way out (see Agenda Item 8).

# Two ‘lights’ in the fog

- One example of non copy-paste addition of the fruit from external R&D to the IAAAAH physics panoply
- One example of a complementing way to look at the problem of ‘cultural differences’ in maintenance practices (in HARMONIE, of course)

# Introduction of the HIRLAM so-called 'Rasch-Kristjansson condensation scheme' as option in 3MT

- Done by Lisa Bengtsson with the help of Radmila Brozkova and Doina Banciu
- The code is extracted from its HIRLAM original test-bed, adapted in its data flow to the constraints of the host algorithm, 'optionalised' and internally adapted to the local 'rules' => it completey looses its original identity but gains in modularity-flexibility
- First time this happens in the IAAA world since … ***June 2001*** (with Peter Bechtold's rewriting from KFB for ARPEGE-ALADIN). A long waiting indeed.
- And it works … believe it or not !!! (even if it surely still needs some tuning)

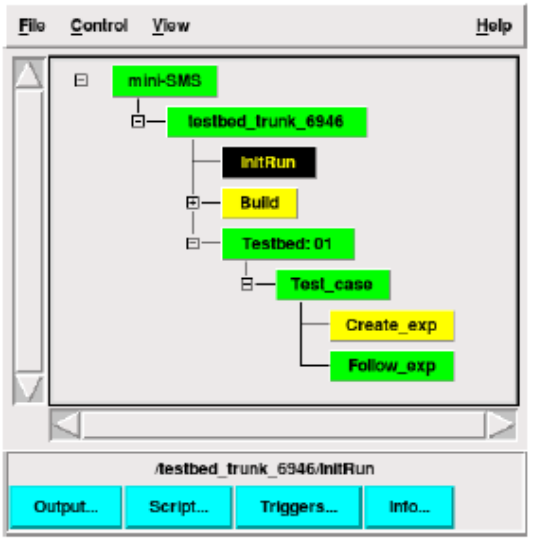
# The problem

- The maintenance of the IAAAA code is mostly based on the preservation of options => this allows ‘clean experimenting’ but disables ‘full safety’
- The maintenance motto in HIRLALM is QA (Quality Assurance) => it requires little versioning but allows a more solid guaranty of known results
- Merge:
  - Either one solution phagocytes the other
  - Or one finds a clever way to sort out ‘true problems’

# The solution, Harmonie testbed.pl

- Test meaningful combinations of changes in the experiment setup (sms/config_exp.h)
- Use only existing tools, i.e. run mSMS through mSMS
- Avoid duplicated work when possible.
  - Compile only once
  - Reuse climate files, observations and boundaries when applicable
  - Make changes at one place only

# :> Harmonie testbed




- Setup the testbed experiment and build the binaries
- Define the tests as deviations to the default setup.

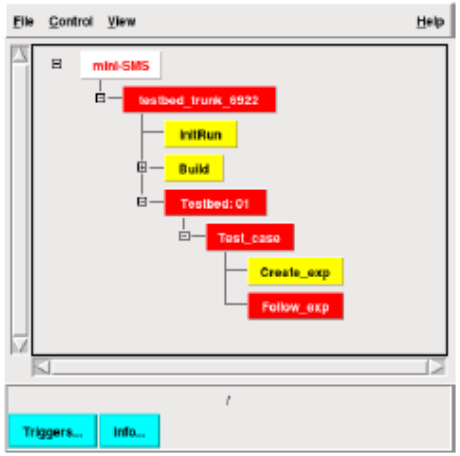
```
# ALADIN_NH from ALADIN
'ALADIN_NH_BD_ALD' => {
  'ANAATMO'     => 'none',
  'ANASURF'     => 'none',
  'DYNAMICS'    => 'nh',
  'CLIMDIR'     => '$HM_DATA/../'.$ENV{EXP}.'/climate/arome_domain',
  'BDCLIM'      => '$HM_DATA/../'.$ENV{EXP}.'/climate/default',
  'DOMAIN'      => 'SWEDEN_SOUTH',
  'HOST_MODEL'  => 'ald',
  'BDDIR'       => '/TESTBED/archive/@YYYY@/@MM@/@DD@/@HH@/ICMSHHARM+0@LLL@',
  'DFI'         => 'no',
  'BDSTRATEGY'  => 'available',
},
```

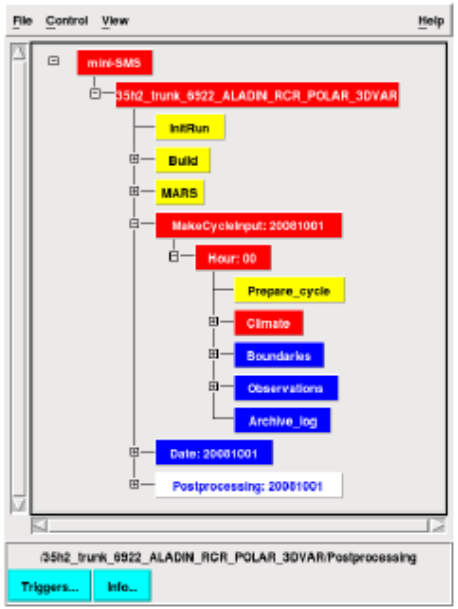
- Create and launch a new experiment like
  35h1_trunk_6946_ALADIN_NH_BD_ALD

- Follow the child experiment. Launch next experiment when the last has finished.
- All changes are done in the testbed experiment.
- Loop over the defined configurations: ( TESTBED_LIST in sms/config_exp.h )

**ALADIN_RCR_POLAR_3DVAR ALADIN_3DVAR AROME ALARO HIRALD ALADIN_NH ALADIN_SURFEX ALARO_NH** ALARO_SURFEX **HIRALD_NH HIRALD_SURFEX ALADIN_RCR AROME_RCR ALADIN_NH_BD_ALD**

The bold ones have been successfully tested at ECMWF and SMHI.for cy35h1.2



# The solution (Ulf Andrae)

- Automatising a scan of (nearly) all possible combinations of options for a quick check-up of minimum realisability, as a first QA step
- Do it (as much as possible) in a way that does not penalises developpers and maintenance specialists
- This complements (and does not supersedes) other measures and tries to capitalise on respective strengths => an example to generalise?

# CSSI (and related) matters

- PAC recommended to approve the nomination of ***Alex Deckmyn*** as CSSI Member for ‘EPS and Predictability’ (this twins it de-facto [hopefully not for ever] with the function of ALADIN representative in GLAMEPS).
- ***Tomas Kral*** just resingned as ACNA, we are looking for a new qualified person for this function.
- The problems linked with the circulation of information and with the documentation are still pending …

# And for next year … already on the cards

- A new GA Chair
- A new MoU at the end
- A new PM with the new MoU
- ? ??? ??????

# Excursion towards Agenda Item 5d

- This touches the SRNWP-Verification Programme
- Soon ALADIN-France will not anymore be the coupling model of AROME-France (early 2010)
- Météo-France wishes that the latter then replaces the former as source of data for SRNWP-V routine score computations
- This has positive aspects (profiling) but also negative ones (domain size)
- Profiting from LACE position as Consortium in SRNWP would be a good solution (via a replacement of ALADIN-France's role through ALADIN-XXX **&** the introduction of AROME-France at the same time => two parallel legacies), if one may agree soon on practical aspects.