

## ARPEGE MEMORANDUM

**From:** GCO **Date:** February 28, 2007  
**To:** GMAP, COMPAS, GMGEC, GMME, DIR/RE/CRC, Mats Hamrud  
**Subject:** New cycle CY32

A new cycle CY32 has been created. This is a common cycle with the ECMWF. The different contributions for this cycle are described in the following pages.

ClearCase label: CY32

Modified libraries: ifs, ifsaux, trans, trans\_ald, odb, mpa, mse, aladin

Contributors:

|                     |             |                                              |
|---------------------|-------------|----------------------------------------------|
| ALIAS Antoinette    | Project:ifs | CCase branch:mrpa589_CY31T2_gco              |
| AUGER Ludovic       | Project:ifs | CCase branch:mrpa645_CY31T2_mrpa645          |
| BOGATCHEV Andrey    | Project:ifs | CCase branch:mrpe702_CY31T1_octo_06          |
| BOLONI Gergely      | Project:ifs | CCase branch:mrpe703_CY31T2_none             |
| DESROZIERES Gerald  | Project:ifs | CCase branch:mrpm611_CY31T2_none             |
| EL-OUARAINI Rachida | Project:ifs | CCase branch:mrpa667_CY31T2_none             |
| Francoise TAILLEFER | Project:ifs | CCase branch:mrpa647_CY31T2_dbana            |
|                     | Project:ifs | CCase branch:mrpa647_CY31T2_none             |
| GCO                 | Project:ifs | CCase branch:marp001_CY31T2_combi            |
|                     | Project:ifs | CCase branch:marp001_CY31T2_none             |
|                     | Project:ifs | CCase branch:marp001_CY31T2_r2odb            |
| JURASEK Marian      | Project:ifs | CCase branch:mrpa682_CY31T2_none             |
| Karim YESSAD        | Project:ifs | CCase branch:mrpm603_CY31T1_merge31t2r2      |
|                     | Project:ifs | CCase branch:mrpm603_CY31T2_alaro0base31t2r2 |
|                     | Project:ifs | CCase branch:mrpm603_CY31T2_none             |
| PUECH Dominique     | Project:ifs | CCase branch:mrpa660_CY31T2_none             |
| Patrick MOLL        | Project:ifs | CCase branch:mrpa646_CY31T2_lastmod          |
| Ryad El KHATIB      | Project:ifs | CCase branch:mrpm602_CY31T2_fix1             |
|                     | Project:ifs | CCase branch:mrpm602_CY31T2_mrgr2            |
|                     | Project:ifs | CCase branch:mrpm602_CY31_r2clean            |
| SEITY Yann          | Project:ifs | CCase branch:mrpm637_CY31T2_compil           |
|                     | Project:ifs | CCase branch:mrpm637_CY31T2_r2               |
| WATTRELOT Eric      | Project:ifs | CCase branch:mrpa652_CY31T1_ewgomradar       |

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### ALIAS Antoinette

**Doc:**

*1/ Modifications due to the new surface fields.*

*2/ Modifications due to the new partitioning.*

**Project:** ifs  
**ClearCase branch:** mrpa589\_CY31T2\_gco

**Modified:**

|              |                         |
|--------------|-------------------------|
| arp/adiab    | cpg_gp.F90              |
| arp/climate  | cormass2.F90 updsst.F90 |
| arp/dia      | cpnudg.F90              |
| arp/phys_dmn | aplpar.F90 mf_phys.F90  |
| arp/setup    | sunud.F90               |

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## **AUGER Ludovic**

### **Doc:**

*Fixes for 3DVAR ALADIN .*

**Project:** ifs,aladin  
**ClearCase branch:** mrpa645\_CY31T2\_mrpa645

### ***Modified:***

|            |                 |                |                |
|------------|-----------------|----------------|----------------|
| ald/var    | eбалvert.F90    | eбалvertad.F90 | eбалverti.F90  |
|            | eбалvertiad.F90 | ecvaru2i.F90   | ecvaru2iad.F90 |
|            | eјgalfa.F90     | escalјgs.F90   | sueјbtest.F90  |
|            | suescal.F90     |                |                |
| arp/module | yomspјb.F90     |                |                |
| arp/var    | cvar3.F90       | cvar3ad.F90    | cvar3in.F90    |
|            | cvar3inad.F90   |                |                |

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## **BOGATCHEV Andrey**

### **Doc:**

*[missing...]*

**Project:** aladin,trans\_ald  
**ClearCase branch:** mrpe702\_CY31T1\_octo\_06

### ***Modified:***

|               |                            |                            |                     |
|---------------|----------------------------|----------------------------|---------------------|
| ald/c9xx      | eincli3.F90                | eincli6.F90                |                     |
| ald/inidata   | elsirf.F90                 |                            |                     |
| ald/parallel  | eslextpol2.F90             |                            |                     |
| ald/setup     | suegeo2.F90                | suemp.F90                  | sueoph.F90          |
|               | suesc2.F90                 | suetrans.F90               |                     |
| tal/external  | edist_spec.F90             | egath_spec.F90             | etrans_end.F90      |
|               | etrans_inq.F90             |                            |                     |
| tal/interface | edist_spec.h               |                            |                     |
| tal/module    | edist_spec_control_mod.F90 | egath_spec_control_mod.F90 | suemp_trans_mod.F90 |
|               | suemp_trans_preleg_mod.F90 | suemplat_mod.F90           | suestaonl_mod.F90   |

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## **BOLONI Gergely**

### **Doc:**

*Fix the problem with ALADIN e501 with semi-lagrangian advection.*

**Project:** ifs  
**ClearCase branch:** mrpe703\_CY31T2\_none

### ***Modified:***

|           |                |                |              |
|-----------|----------------|----------------|--------------|
| arp/adiab | call_sl_ad.F90 | call_sl_tl.F90 | lapinea5.F90 |
|           | lapineaad.F90  | lapineatl.F90  |              |

**DESROZIERS Gerald**

**Doc:**

*Bugfix.*

**Project:** ifs

**ClearCase branch:** mrpm611\_CY31T2\_none

**Modified:**

arp/obs\_preproc fgchk.F90

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**EL-OUARAINI Rachida**

**Doc:**

*Bugfix.*

**Project:** ifs

**ClearCase branch:** mrpa667\_CY31T2\_none

**Modified:**

tfl/module sump\_trans0\_mod.F90

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**Francoise TAILLEFER**

**Doc:**

*Bugfix.*

**Project:** ifs

**ClearCase branch:** mrpa647\_CY31T2\_dbana

**Modified:**

arp/pp\_obs hdepart.F90

**Doc:**

*Bugfix.*

**Project:** ifs

**ClearCase branch:** mrpa647\_CY31T2\_none

**Deleted:**

arp/module qarbur.F90

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**GCO**

**Doc:**

*Add source code for "COMBI" tool, used in PEACE .*

**Project:** ifs,aladin,odb,trans\_ald,ifsaux

**ClearCase branch:** marp001\_CY31T2\_combi

**Added:**

uti/combi combi.f90 combi\_opti.f90 combi\_pert.f90  
masque.f90 proba.f90 stat.f90

**Modified:**

uti/combi combi.f90 combi\_opti.f90 combi\_pert.f90  
masque.f90 proba.f90 stat.f90

**Doc:**

*1/ JPNAMED\_GFL=16 instead of JPNAMED\_GFL=15 .*

*2/ Create a "dummy" subroutine JFH\_BIND .*

*3/ Fix merge of su\_surf\_fds.F90 (from Ryad El-Khatib).*

*4/ Add "USE RANDOM\_NUMBERS, ONLY : UNIFORM\_DISTRIBUTION" in yomstoph.F90 .*

*5/ Remove directory "uti/ctr\_oulan" and useless program "ctr\_oulan" .*

*6/ Miscellaneous fixes.*

**Project:** odb,uti,ifs,trans\_ald,ifsaux

**ClearCase branch:** marp001\_CY31T2\_none

**Renamed:**

odb/ddl MTOCOMP\_static\_init.c to odb/ddl/MTOCOMP\_static\_init.c.obsolete

**Deleted:**

uti ctr\_oulan

**Modified:**

ald/setup suemp.F90  
arp/module yom\_ygfl.F90 yomstoph.F90  
arp/phys\_ec suphec.F90  
arp/setup su\_surf\_fds.F90 sugfl.F90 sugridadm.F90  
sump.F90  
arp/var cvar3in.F90  
odb/bufr2odb satobfreq.F90  
odb/ddl cma.h  
tal/module edist\_spec\_control\_mod.F90 egath\_spec\_control\_mod.F90  
xrd/support jfh\_bind.F90

**Doc:**

*Thanks to this fix, a lot of warnings in ODB compilation have been suppressed!*

**Project:** odb  
**ClearCase branch:** marp001\_CY31T2\_r2odb

**Modified:**

odb/include privpub.h

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**JURASEK Marian**

**Doc:**

*1/ Fixes for ODB and BATOR .*

*2/ Reseting correct unique values for:  
200 | INTEGER(KIND=JPIM) :: MS=24  
201 | INTEGER(KIND=JPIM) :: MR=25  
202 | INTEGER(KIND=JPIM) :: MG=26 (goms.F90)*

*3/ Avoiding incorrect usage of IVAERSM which is not set but used, and adding logical key to an if (key is now always FALSE) .*

**Project:** odb, aladin, uti, ifs  
**ClearCase branch:** mrpa682\_CY31T2\_none

**Added:**

odb/cma2odb copie\_radsta.F90  
odb/ddl.CCMA obsort\_hdr2radar\_body.sql  
odb/ddl.ECMA obsort\_hdr2radar\_body.sql  
odb/ddl.ECMASCR obsort\_hdr2radar\_body.sql  
odb/ddl obsort\_hdr2radar\_body.sql

**Modified:**

|                 |                  |                    |                      |
|-----------------|------------------|--------------------|----------------------|
| ald/module      | eggangles.F90    | eggmrt.F90         | eggpack.F90          |
| arp/module      | goms.F90         |                    |                      |
| arp/obs_preproc | gefger.F90       |                    |                      |
| arp/pp_obs      | hjo.F90          |                    |                      |
| odb/cma2odb     | ctxinitdb.F90    | shuffledb.F90      |                      |
| odb/ddl.CCMA    | CCMA.dep         |                    |                      |
| odb/ddl.ECMA    | ECMA.dep         |                    |                      |
| odb/ddl.ECMASCR | ECMASCR.dep      |                    |                      |
| uti/bator       | bator.F90        | bator_decodbuf.F90 | bator_ecriptions.F90 |
|                 | bator_init.F90   | bator_lectures.F90 | bator_saisies.F90    |
| uti/module      | bator_module.F90 |                    |                      |

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**Karim YESSAD**

**Doc:**

*ald/var/suescal.F90: Dirty non-hydrostatic code parts are now obsolete.*

*arp/module/yomspjb.F90: remove arrays SPSPDJB and SPSVDJB .*

*arp/phys\_dmn/mf\_phys.F90 : some forgotten fixes, and fix of the call of APLPAR .*

*arp/setup/sudim1.F90 et sugridadm.F90 : restore some fixes from Ryad El-Khatib.*

**Project:** aladin,ifs  
**ClearCase branch:** mrpm603\_CY31T1\_merge31t2r2

**Modified:**

ald/var suescal.F90  
arp/module yomspjb.F90  
arp/phys\_dmn mf\_phys.F90  
arp/setup sudim1.F90 sugridadm.F90  
arp/utility read\_surfgrid\_traj\_fromfa.F90

**Doc:**

*ALAROO contribution rephased on CY31T2R2 .*

**Project:** ifs,surf  
**ClearCase branch:** mrpm603\_CY31T2\_alaro0base31t2r2

**Added:**

arp/adiab cptend\_new.F90  
arp/phys\_dmn acpluie\_prog.F90 aplmphys.F90  
arp/setup surhcri.F90

**Modified:**

ald/var suejbcor.F90 suejbcosu.F90  
arp/adiab cpg.F90 cptend\_new.F90 cputqy.F90  
arp/control scan2mdm.F90  
arp/module surface\_fields.F90 yom\_ygfl.F90 yomafn.F90  
yomfa.F90 yomphy.F90 yomphy0.F90  
yomphy3.F90  
arp/namelist namafn.h namfa.h namgfl.h  
namphy.h namphy0.h namphy3.h  
arp/phys\_dmn ac\_cloud\_model.F90 accoefk.F90 acdifus.F90  
acnebn.F90 acpluie\_prog.F90 acraneb.F90  
aplmpphys.F90 aplpar.F90 hl\_aplpar.F90  
initaplpar.F90 mf\_phys.F90 suphy0.F90  
suphy3.F90  
arp/pp\_obs pos.F90 vpos.F90  
arp/setup su0phy.F90 su1yom.F90 su\_surf\_fds.F90  
suafn1.F90 suafn2.F90 suafn3.F90  
suallo.F90 sucfu.F90 sudim1.F90  
sudyn.F90 sufa.F90 sugfl.F90  
supp.F90 surhcri.F90  
arp/var eigenmd.F90 subjcor.F90 subjbcosu.F90  
subjwavgen.F90 sujqcor.F90  
sur/external surfdeallo.F90

**Doc:**

**Project:** ifs  
**ClearCase branch:** mrpm603\_CY31T2\_none

**Modified:**

arp/phys\_ec suphec.F90

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**PUECH Dominique**

**Doc:**

**Project:** odb

**ClearCase branch:** mrpa660\_CY31T2\_none

**Modified:**

odb/lib version.c

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**Patrick MOLL**

**Doc:**

*4D-VAR works with this set of modifications.*

**Project:** ifs

**ClearCase branch:** mrpa646\_CY31T2\_lastmod

**Modified:**

arp/obs\_preproc defrun.F90  
arp/parallel gathergom.F90  
arp/pp\_obs hdepart.F90 hjo.F90  
arp/setup su\_surf\_fds.F90 sucmoctp.F90

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**Ryad El KHATIB**

**Doc:**

*fpiniphy.F90, su\_surf\_fds.F90, sudim1.F90 : setup for surface fields  
suafn1.F90 : phasing fix.*

**Project:** ifs

**ClearCase branch:** mrpm602\_CY31T2\_fix1

**Modified:**

arp/pp\_obs fpiniphy.F90  
arp/setup su\_surf\_fds.F90 suafn1.F90 sudim1.F90

**Doc:**

*1/ Some phasing fixes.*

*2/ Phasing and cleaning of NEC macros.*

**Project:** ifs,aladin,odb,ifsaux

**ClearCase branch:** mrpm602\_CY31T2\_mrgr2

**Added:**

arp/utility pksurfa.F90

**Modified:**

|              |                |               |               |
|--------------|----------------|---------------|---------------|
| ald/adiab    | espchor.F90    | espchorad.F90 | espcsi.F90    |
|              | espcsiad.F90   | espnhsi.F90   | espnhsiad.F90 |
| ald/setup    | suehdf.F90     |               |               |
| arp/dia      | spnormave.F90  |               |               |
| arp/pp_obs   | fpiniphy.F90   | pregpfpos.F90 | prespfpos.F90 |
| arp/setup    | subfpos.F90    |               |               |
| arp/utility  | pksurfa.F90    |               |               |
| odb/aux      | ioprealloc.c   | prealloc.c    | util.c        |
| odb/compiler | odb98.c        |               |               |
| odb/include  | privpub.h      |               |               |
| odb/lib      | twindow.c      |               |               |
| xrd/bufr_io  | oldbufr_open.F |               |               |
| xrd/grib_mf  | gsbyte_mf.F    |               |               |
| xrd/module   | sdl_module.F90 |               |               |
| xrd/support  | cptime.F       | drhook.c      | timef.F       |

**Doc:**

1/ *Some phasing fixes.*

2/ *Remove of the group NVCLIG .*

**Project:** ifs

**ClearCase branch:** mrpm602\_CY31\_r2clean

**Modified:**

|             |                    |
|-------------|--------------------|
| arp/climate | updclidm.F90       |
| arp/module  | surface_fields.F90 |
| arp/setup   | su_surf_flds.F90   |
| arp/utility | updtim.F90         |

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**SEITY Yann****Doc:**

1/ *NEC portability.*

2/ *Fix for chemical in AROME .*

**Project:** ifs, mse, odb, satrad, uti, ifsaux

**ClearCase branch:** mrpm637\_CY31T2\_compil

**Modified:**

|              |                    |              |
|--------------|--------------------|--------------|
| arp/dia      | ppfidh.F90         |              |
| arp/module   | random_streams.F90 | yomstoph.F90 |
| arp/namelist | namstoph.h         |              |



|                 |                                 |                         |               |
|-----------------|---------------------------------|-------------------------|---------------|
| arp/obs_preproc | fgchk.F90                       |                         |               |
| arp/phys_dmn    | mf_phys.F90                     | suecrad15.F90           |               |
| arp/phys_ec     | aer_scavin.F90                  | mcica_cld_generator.F90 | su_mcica.F90  |
| arp/pp_obs      | fpiniphy.F90                    |                         |               |
| arp/setup       | sudim1.F90                      | sudyn.F90               | sugridadm.F90 |
|                 | surand1.F90                     |                         |               |
| mse/internals   | read_surfx2_aro.mnh             |                         |               |
| odb/tools       | xldummy.c                       |                         |               |
| sat/mwave       | mwave_obsop_rttov_ad.F90        |                         |               |
| uti/mandalay    | mandalay.F90                    |                         |               |
| xrd/module      | order_independent_summation.F90 |                         |               |
| xrd/support     | gstats_print.F90                |                         |               |

**Doc:**

1/ Fix for AROME .

2/ Fix a bug on wind rotation in surface .

3/ Fix for surfex .

4/ Bugfix for GFL in Fullpos.

5/ Remove LELAM key in trans.

6/ Miscellaneous other bugfixes.

**Project:** ifs, aladin, mse, trans\_ald, trans

**ClearCase branch:** mrpm637\_CY31T2\_r2

**Modified:**

|               |                             |                         |                            |
|---------------|-----------------------------|-------------------------|----------------------------|
| ald/setup     | suemp.F90                   |                         |                            |
| arp/pp_obs    | hpos.F90                    |                         |                            |
| arp/setup     | su_surf_fds.F90             | sump0.F90               |                            |
| mse/externals | aro_ground_param.mnh        |                         |                            |
| mse/internals | read_default_dst_n.mnh      | read_default_isba_n.mnh | read_default_seaflux_n.mnh |
|               | read_default_surf_atm_n.mnh | read_default_teb_n.mnh  | read_default_watflux_n.mnh |
| tal/module    | suemplat_mod.F90            |                         |                            |
| tfl/module    | sump_trans0_mod.F90         |                         |                            |

**WATTRELOT Eric**

**Doc:**

[Missing...]

**Project:** ifs

**ClearCase branch:** mrpa652\_CY31T1\_ewgomradar

**Modified:**

arp/obs\_preproc sugoms.F90