Regional Cooperation for
Limited Area Modeling in Central Europe

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OPLACE progress report

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Outline

- OPLACE maintenance & development
- OPLACE-national data exchange
- ODB support & COPE
- Problems & opportunities

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OPLACE maintenance:

- bug-fixies for TEMP & upgrade of data volumes
- new parallel suite environment
- processing issues of some WP BUFR templates encountered
  - less data available

TAC2BUFR migration:

- TAC TEMP still used due to availability & quality issues of BUFRs
- operational use of TAC TEMPs is not affected by the migration yet
- inconsistencies of SYNOP metadata were pointed
- adaptation of the OPLACE to the TAC2BUFR migration is progressing slowly and related issues start to appear, e.g. with availability of surface obs (Tmin,Tmax,RR) for verification purposes
- new format require new processing tools (splitting, blacklisting, etc) and many BUFR templates bring difficulties

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OPLACE extensions by new observations:

- AMDAR Q from Lufthansa aircraft (since 31 May 2016)
  - thanks Viktoria Homonnai for carefull checking of obs errors !
- Advanced Technology Mirowave Sounder (ATMS)
  - data can be assimilated since cy38;
  - data requires a pre-processing step to perform a spatial average of the radiances (to reduce the noise that is larger than on similar instruments). Averaging task has been put in BATOR cy40.
  For more details contact me or Louis-Francois Meunier
- Mode-S EHS from KNMI (since August 2016)
  - big amount of data
  - subtype=145 can be used to specify EHS data
  - only ASCII to obsoul conversion is perfomed

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OPLACE access for non-LACE countries:

- agreement with Tunisia was signed & access was provided
- only to essential data (EUMETSAT data policy have to be clarified)
- two stays (GPS DA and testing of COPE prototypes) planned

Priorities for 2017:

- finalize TAC2BUFR migration
  - obsouls from TEMP BUFR
  - SYNOP, TEMP and AMDAR in BUFR
- add Tmin,Tmax,RR for verification purposes
- maintenance
  - improve Mode-S EHS processing performance
  - fix WP BUFR decoding issue
- observation monitoring
  - extension for GPS, Mode-S, ATMS and add the bias correction

Your feedback is important and appreciated!

OPLACE-national data exchange

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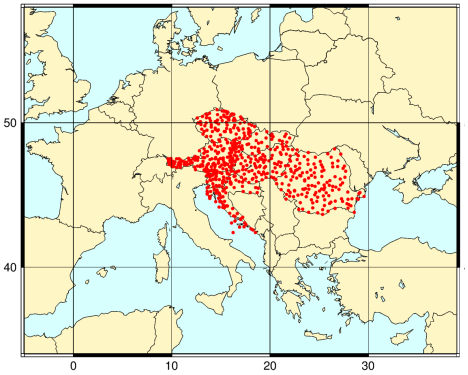
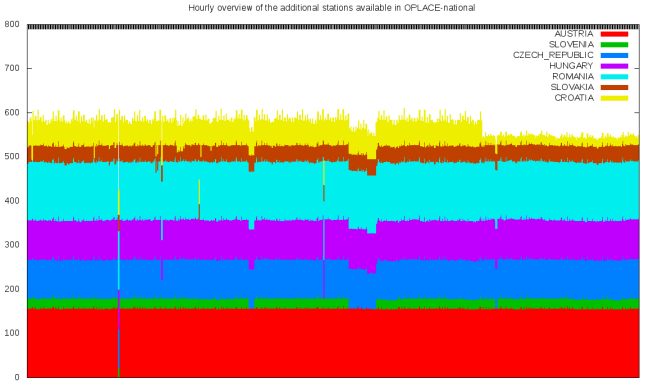
OPLACE-national is internal data exchnage within RC LACE

- high resolution surface data exchange
- synoptic non-GTS data
- status for August 2016
  - only few drop-outs
  - ready for operational use
  - small updates in provided stations
  - SI,SK send national & additional obs



	number	updates
AT	163	-4/+1
CR	93	-3/+20
CZ	90	-0/+0
HU	91	-0/+1
RO	133	-1/+0
SI	38	-1/+1
SK	41	-0/+13



OPLACE national data exchange

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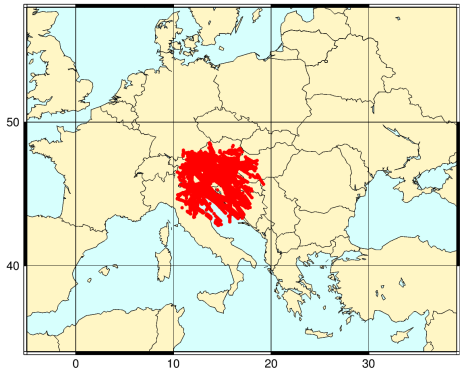
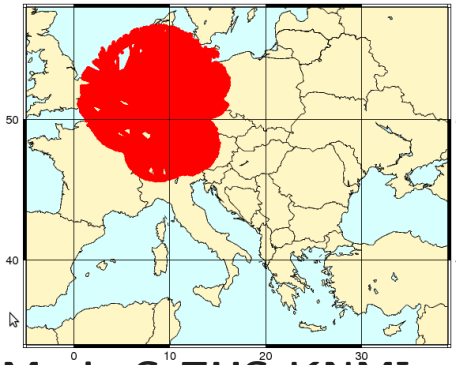
- high resolution aircraft data

  - Mode-S MRAR from Slovenia
  - stable & reliable provision
  - ready for operational use



Mode-S MRAR Slovenia

Mode-S EHS from KNMI
- agreement was signed
- Mode-S EHS added in August 2016
- ready for testing
- keep in mind NDA - conditions for the use of the data



Mode-S EHS KNMI

- All Members are kindly encouraged to explore availability of Mode-S data in their countries.

ODB support & COPE

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ODB support

- ODB related support provided upon request
- update of simple 3DVAR scripts for cy40t1 prepared
  - aimed as a simple example and/or technical tool for validation
  - available on Meteo France HPC

  prolix: /home/gmap/mrpe/trojakova/cy40t1/sample_3dvar

COPE

- COPE is expected to provide a new frame-work for observation processing and conversion to ODB
- very limited progress on COPE in 2016
- testing of COPE propotypes is planned for autumn

Problems and opportunities

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- Adaptation of the OPLACE to the TAC2BUFR migration is progressing slowly and related issues start to appear, e.g. with availability of surface observations (Tmin/Tmax/RR) for verification purposes.
- Maintenance of the OPLACE system is more demanding as number of processed data and a complexity of the system grow. Furthermore, a development of the observation monitoring system, in particular extensions to the new data, is delayed due to lack of time.

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Thank You for Your attention !

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Any question, comment and/or suggestion ?

- Is everybody happy with OPLACE data available, performance, ... ?
- Your feedback is important and appreciated!

Priorities for 2017:

- finalize TAC2BUFR migration
  - obsouls from TEMP BUFR
  - SYNOP, TEMP and AMDAR in BUFR
- add Tmin,Tmax,RR for verification purposes
- maintenance
  - improve Mode-S EHS processing performance
  - fix WP BUFR decoding issue
- observation monitoring
  - extension for GPS, Mode-S, ATMS and add the bias correction
- ?? (new data, ...

Additional slides

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ALADIN/LACE observation handling is closely linked with Meteo France

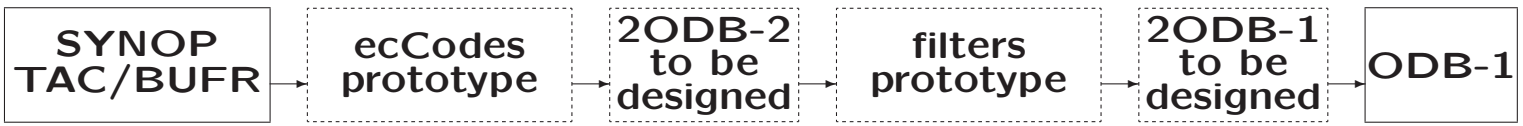
- pre-processing
  - decoding and simple checks
  - conversion to the local database (various data formats)
  - SAF NWC (SEVIRI, AMV)
  - conversion to the suitable input file format for BATOR
- BATOR
  - conversion to ODB-1 format
  - simple QC & filtering
  - obs error, eventually other flags, assignment
  - blacklisting
  - geographical (LAM) selection
  - supported input file formats:
    OBSOUL/ASCII - conventional data (SYNOP, TEMP, ...)
    BUFR - satellite (ATOVS, IASI,...), radar data
    GRIB - SEVIRI radiances

Observation handling

ALADIN/LACE processing chain:

COPE processing chain main components:

- ecCodes: supporting GRIB, BUFR, and try to include ODB,
- Harmonized ODB libraries and interfaces, ideally following ecCodes concepts,
- Simplified filter interfaces, and
- MARS interfaces.



Main features:

- use ODB rather than BUFR format
- conceptually,observation processing can be seen as a sequential application of various transformations on each report in the observation database;
- the idea is to break the complex processing task into smaller, manageable steps that can be chained one after another