Status of OPLACE system

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Outline

- OPLACE
- Status & developments
- National data exchange
- Future plans

OPLACE

▶ **common** observation preprocessing system for RC LACE

  ▶ aimed to support DA implementation, avoid duplication of work
    on observation preprocessing & to share maintenance

  ▶ provides data in appropriate format for DA in NWP system ALADIN

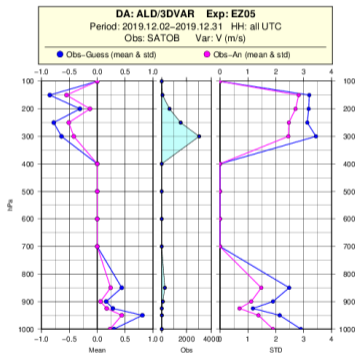| Observations	Type/Sensor	Platform	Output format
Surface synoptic	SYNOP,SHIP,BUOY		OBSOUL
Aircraft	AMDAR,ACARS		OBSOUL
Upper-air sounding	TEMP,TEMP MOBIL		OBSOUL
Wind profiler	E-PROFILE		BUFR
Atm. Motion Vectors	GEOWIND,HRWIND	Meteosat 11	BUFR
Satellite radiances	SEVIRI	Meteosat 11	GRIB
	AMSU-A/B,MHS HIRS, IASI ATMS	NOAA 18/19 Metop A/B/C SNPP	BUFR
Ocean/sea winds	ASCAT OSCAT	Metop A/B/C ScatSat-1	BUFR

OPLACE status & development

▶ **GNSS Radio Occultation (GNSS-RO)** added in Jan 2021

- ▶ data considered as essential (available on default-ftp account)
- ▶ BUFR format & file names: bufr_10_ro_*network* where *network*=cosmic2, metopb, metopc, paz, tandemX, terraX
- ▶ bias free data & to be used as anchor within VarBC scheme

▶ **new microwave sensors (MWHS-2/MWTS-2)** added in Feb

- ▶ Microwave Atmospheric Humidity/Temperature Sounder 2 (MWHS-2/MWTS-2) from Chinese polar satellites (FY3-D)
- ▶ BUFR format & file names: bufr_7_mwhs2_fy3d, bufr_7_mwts2_fy3d

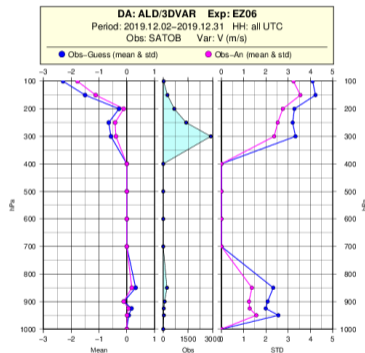You are welcome to download & test new observations!

OPLACE status & development

▶ **Ocean winds from ScatSat-1 discontinued**
  - ▶ irrecoverable instrument failure occurred on 28th February

▶ **Metop-A End-Of-Life**
  - ▶ 16 Sep 2021 - IASI-A tests started & blacklisting is recommended
  - ▶ 15 Oct 2021 - IASI end of all mission services
  - ▶ 15 Nov 2021 - end of local mission for all instruments

▶ **AMSU-A (channel 6) data degradation from Metop-B.**
  - ▶ channel 6 reached its noise specification of 0.25 K with a trend towards further degradation (@EUMETSAT alert)

▶ **new BUFR encoding for EUMETSAT's wind products**
  - ▶ implemented on 3rd March 2021 (postponed from 2020)

OPLACE status & development

▶ GNSS ZTD test network SGO1 corrected in August
  ▶ updated metadata file used in QC during the conversion to BUFR
    to get the same number of data as in OBSOUL processing
  ▶ thanks to V. Homonnai

▶ OPLACE backup
  ▶ OPLACE data outage in April 20th & May 13th 2021
    due to major issues of IT infrastructure at HMS
  ▶ M. Bellus prepared a backup of SYNOP data
    ▶ OBSOUL format & file names: obsoul_1_gtsbck_sk
    ▶ OPLACE users are encouraged to adapt their DA applications
      to download & merge both obsoul_1_xxxxxx_hu & obsoul_1_gtsbck_sk
  ▶ alternative backup for more obs types (SYNOP, TEMP, AMDAR)
    using ECMWF MS/CS backup observations under evaluation

OPLACE status & development

LACE *nwp central europe*

▶ **High res. wind motion vectors (HRW)** upgrade still ongoing

    ▶ new NWC SAF v2018 validated in collaboration with Z. Kocsis

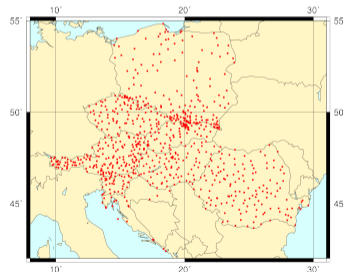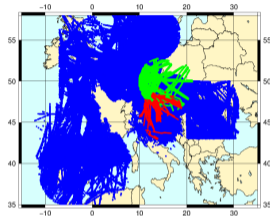NWC SAFv2013   new NWC SAFv2018

OPLACE data exchange

▶ **LACE exchange of high resolution surface synoptic data**

    ▶ stable and reliable for operational use
    ▶ minor changes except more stations in HU (+12) and CR (+5)
    ▶ technical issue with data from SK (-24) should be fixed soon

Number of national stations		Update WRT 2020
Austria	169	-2/+0
Croatia	27	-1/+5
Czech Republic	89	-0/+0
Hungary	104	-1/+12
Romania	134	-0/+0
Slovakia	25	-24/+0
Slovenia	12	-2/+0
Poland	178	-2/+0
Total:	**738**	

OPLACE data exchange

▶ **exchange of high resolution aircraft Mode-S data**

▶ **stable and reliable data provision**

   ▶ Mode-S MRAR from ARSO/Slovenia

   ▶ Mode-S MRAR from CHMI/CZ

   ▶ Mode-S EHS from EMADDC (KNMI)/EU

▶ **EMADDC plans an upgrade in 2021**

   ▶ improved new heading correction method based on the entire area & new $T, V_{trueAir}$ correction method (De Haan et al 2021)

   ▶ more information for each obs added (roll angle, source, receiver or radar id, WL, QC flag)

   ▶ a new distribution using specific accounts and SFTP protocol

   ▶ OPLACE adaptations under preparation

ODB support

- ▶ update of simple OI and 3DVAR scripts for ALARO cy43t2/cy46t1 prepared on Meteo France HPC:
  - ▶ belenos: trojakova/cy43t2/sample_alaro/scr_[3dvar_belenos , surf]
  - ▶ belenos: trojakova/cy46t1/sample_alaro/scr_3dvar
  - ▶ All samples only TECHNICALLY validated!
- ▶ BATOR cy46t1
  - ▶ "strict" OBSOUL format required

    ```
    READ (NULOBI,'(I4,1X,I2,1X,I9,1X,F9.5,1X,F10.5,2X,A10,2X,I8,1X,I6,1X,ES12.5,1X,I5)',advance='no',iostat=iret) &
    & ival1,iotp,ioch,zval1,zval2,cval,ival2,ival3,zval3,inbw
    ```

  - ▶ SEVIRI/GRIB format not supported (only SEVIRI/netCDF)
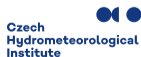 - ▶ a back-phased version of BATOR prepared until OPLACE processing becomes compliant with the new requirements

- ▶ NWCSAF upgrade - transparent for users
- ▶ adaptation for EMADDC upgrade
  - ▶ proposal for EHS EU data separation per source (fr,at,nl,ro,..) ?
    - ▶ pros: flexibility to chose data & download less amount
    - ▶ cons: need to download & merge several files
- ▶ implementation of "strict" OBSOUL format (required from 46t1)
  - ▶ back-phased BATOR version can be used temporarily
  - ▶ M.Bellus prepared new obsoul_merge.pl tool with format change
  - ▶ OPLACE will be adapted in near future
  - ▶ update of local OBSOUL processing scripts/programs needed
    more details will be provided soon

Future plans

- ► TAC2BUFR migration
  - ► finalize preprocessing & progress with use of BUFR data
- ► SEVIRI/netCDF
  - ► SEVIRI preprocessing will be updated to use netCDF format
- ► LACE national data exchange
  - ► more stations from SK, SI - ongoing
  - ► proposal to add 1h-precipitation for verification ? is it feasible ?
- ► any proposal for new observations within OPLACE ?

Thank you for your attention