Regional Cooperation for
Limited Area Modeling in Central Europe

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Status of OPLACE system

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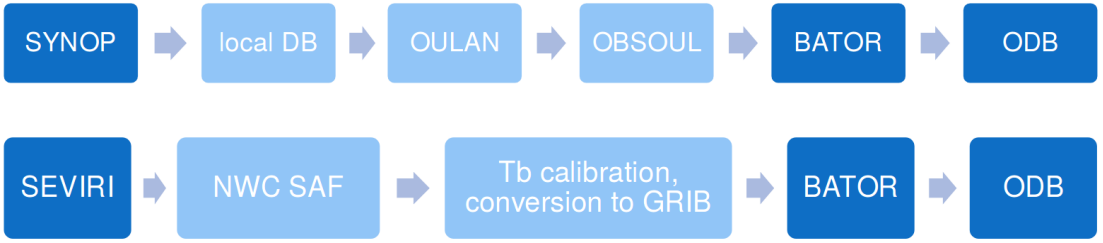
OPLACE system

- The common observation preprocessing system for RC LACE (OPLACE)
  - aimed to support DA implementation, avoid duplication of work on observation preprocessing & to share the maintenance;
  - provides observations in appropriate format for DA in NWP system ALADIN;
  - comprises mainly decoding, conversion to the local databases, simple QC, conversions to suitable format for ODB conversion;
  - based on existing observation processing infrastructure of HMS; & operated by HMS and LACE Data Manager provides support;
- Illustration of observation preprocessing for SYNOP and SEVIRI data



OPLACE system

- **OPLACE observation summary:**

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 SNPP	BUFR
Ocean/sea winds	ASCAT OSCAT	Metop A/B ScatSat-1	BUFR

OPLACE status & development I

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- upgrades on internal netCDF databases
  - to include SHIP&BUOY string station names
  - to handle more data from high resolution BUFR TEMPs
  - to include TEMP SHIP&MOBILE string station names
- more wind observations over the oceans added on 11 March
  - from Indian (OSCAT) and Chinese (HSCAT) scatterometers (resolution 25km)
  - timeliness issue of HSCAT (under investigation by EUMETSAT, NSOAS, FMI)
- E-GVAP (EUMETNET GNSS Water Vapour Programme) - ongoing
  - provides GNSS signal delay & WV measurements for operational meteorology
  - access granted to all EUMETNET members, independently of being E-GVAP mem.
  - for E-GVAP it is important to demonstrate use and usefulness of products and feedback should be provided when new institute start to use the data
  - RC LACE got access & is allowed to share data via OPLACE
  - practical matters - to be further discussed during DAWD
    - - data formats (COST 716 (ASCII) via FTP, BUFR via GTS) & processing

OPLACE status & development II

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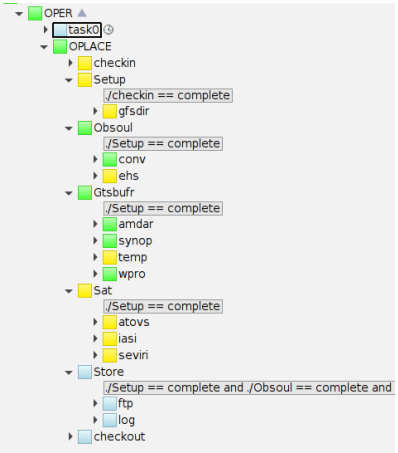
- redesign of the OPLACE scripts - ongoing
  - more and more data is processed
  - complexity of the system is growing
  - aim is to improve the operations
    - - parallelization of tasks
    - - more robust to avoid data issues
    - - easier monitoring & supervision



- new OPLACE_ECF suite development
  - the suite is running in parallel since December 2018
  - all operational tasks implemented in new ecFlow suite
  - processing of BUFR data added (SYNOP, AMDAR, TEMP & wind profiler)
  - prototype of E-GVAP data processing added
  - increased robustness
  - extensive evaluation is ongoing
  - documentation & guidelines for emergency handling still to be prepared

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OPLACE status & development III

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- technical upgrade for SEVIRI - postponed
  - GRIB format to be replaced by netCDF
- TAC2BUFR migration - very slow progress
  - prototype of BUFR SYNOP & AMDAR data processing in OPLACE test suite
  - prototype of BUFR TEMP & wind profiler data processing drafted
  - processing is computationally demanding
  - further testing & the redesign is needed before operational implementation to avoid delays in OPLACE data provision
- SAPP (Scalable Acquisition and PreProcessing System) - postponed
  - SAPP was made available to ECMWF MS/CS as optional program
  - HMS applied to the optional program & local testing is ongoing
  - links of SAPP and OPLACE to be discussed during next OPLACE stay (autumn)
    - - SAPP was designed and programmed more professionally
    - - aim is to use SAPP for processing of conventional obs in all formats

OPLACE-national data exchange I

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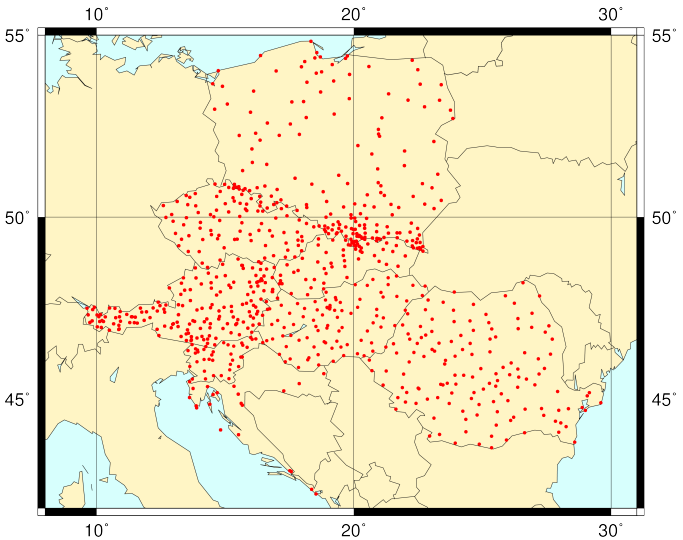
- internal data exchange within RC LACE
- high resolution surface synoptic data exchange
  - stable and reliable for operational use
  - only minor changes in number of available stations (except for CZ due to fix of technical issues with local DB)
  - bugfix of date encoding for Austrian data implemented in June 2019

Number of national stations		Update WRT 2018
Austria	171	-2/+4
Croatia	22	-1/+2
Czech Republic	89	-1/+30
Hungary	90	-4/+1
Romania	134	-0/+0
Slovakia	47	-0/+0
Slovenia	17	-0/+0
Poland	182	-4/+0
Total:	752	



OPLACE-national data exchange II

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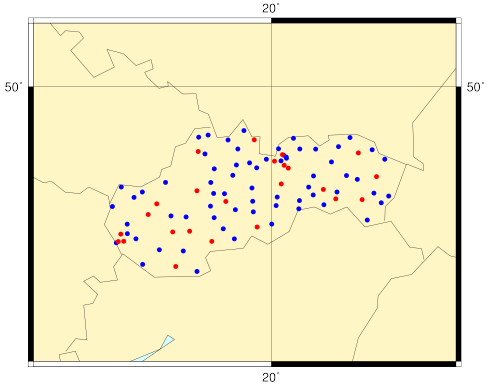
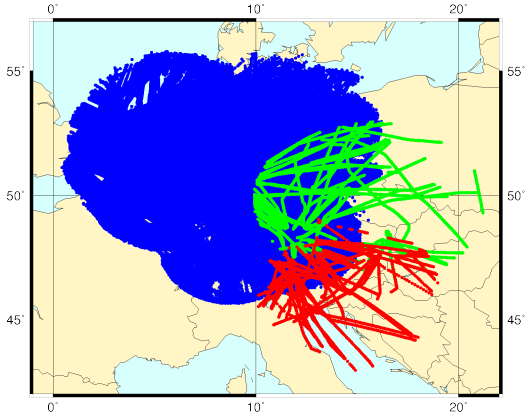
- extension by high resolution synoptic data from Slovakia - ongoing
  - data preparation almost completed
    - 60 new national stations
    - GTS data



- high resolution aircraft data exchange from modern air surveillance systems
  - stable and reliable data provision
    - Mode-S EHS from KNMI/Netherlands
    - Mode-S MRAR from ARSO/Slovenia
    - new MRAR from CHMI/Czech Rep available via OPLACE since July 2019



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

Plan for 2020

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- **Priorities for 2020:**
  - technical upgrade of SEVIRI preprocessing
  - extensions by new observations (E-GVAP, Metop-C, ?)
  - TAC2BUFR migration
    - - finalize BUFR data preprocessing
    - - progress with use of BUFR data (cy43t2)
    - - eventually explore use of SAPP
  - observation monitoring

- **Any question, comment and/or suggestion ?**
- **Is everybody happy with OPLACE data available, performance, ... ?**
- **Your feedback is important and appreciated!**

End

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Thank you for your attention !

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