

SODA or CHAMPAGNES ?

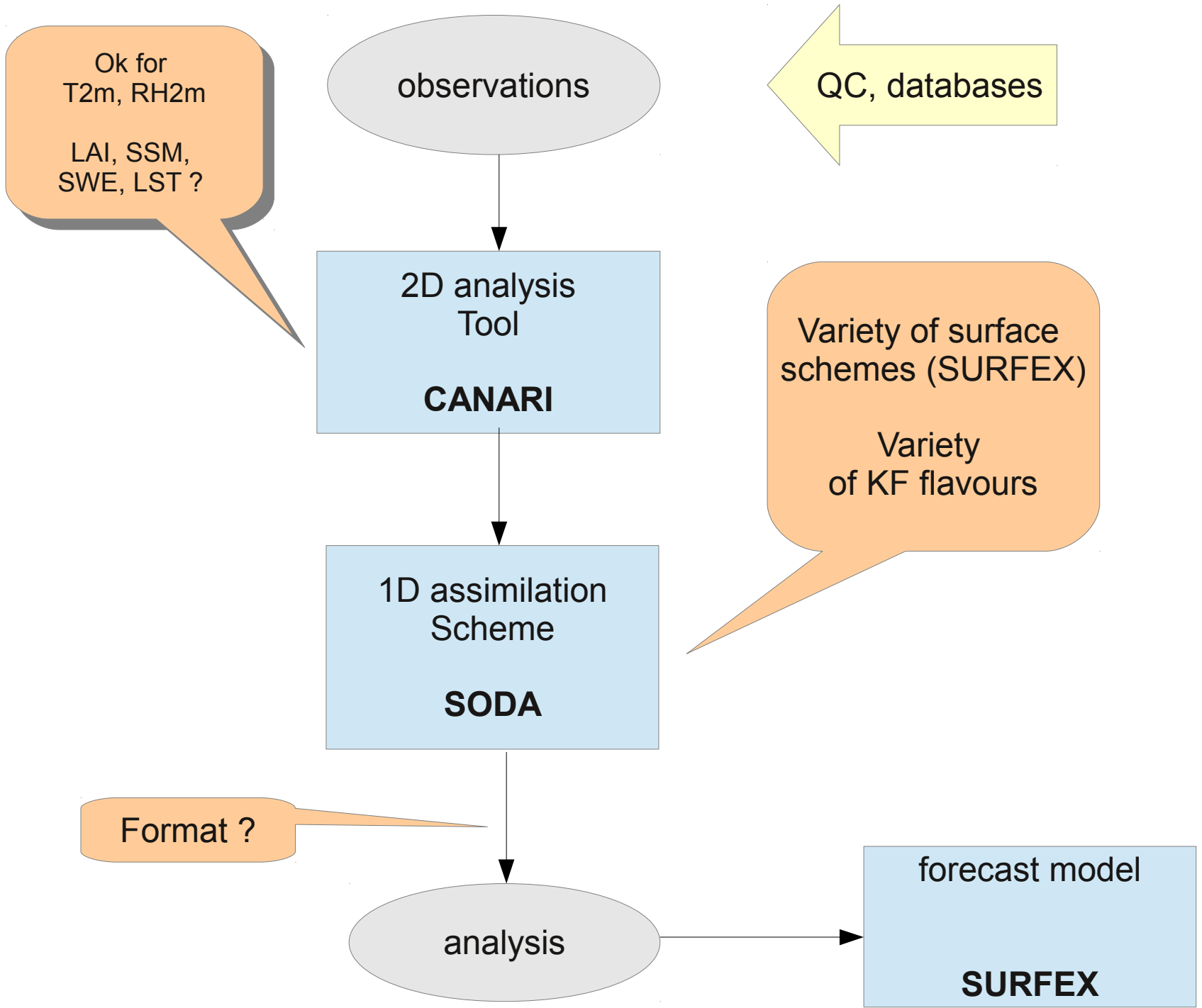
Can HIRLAM and ALADIN
Manage to Plan A General and
New Environment for Surface
analyses ?

Surface data assimilation and SODA developments

- Two main components : 2D analysis tools + 1D assimilation schemes
- Current operational status
- Current research status
- Medium term vision
- Long term vision

Purpose of WG

- Coordinate various short term activities on surface data assimilation using schemes available within SURFEX
- Goal : Insure, as much as possible, the convergence of activities within SODA
- Address efficiency issues for the EKF (parallelisation + I/O) developed with SURFEX
- Discuss about possible strategies for data handling of new observational datasets (pre-processing, quality controls, formats)



HIRLAM vision

- Short term : 2D OI analysis + 1D EKF assimilation => baseline for improved solutions
- Medium term : 2D-En-Var + 1D-EnKF
- Longer term : Coupled surface and atmospheric assimilation within a 4D-En-Var system => to be compatible within OOPS and COPE frameworks ?

- To be developed in a common environment for various applications
- Compatibility with other partner's vision ?
- Major difficulty preventing from rapid progress : lack of dedicated ressources

2D analysis tools

- Short term : OI schemes (CANARI, MESCOAN)
- Purposes : spatialisation of T2m, RH2m, snow depth, accumulated precipitation
- Medium term : improved structure functions
- Longer term : 2DEnVar (?)

SODA : level of generality ?

- **Coupling mode** : online/offline
- **Surface schemes** : ISBA versions, FLake, snow model, ..
- **Assimilation schemes** : OI, EKF, EnKF, STAEKF
- **Applications** : NWP, land surface monitoring
- **Observations** : T2m, RH2m, LAI, SSM, SWE, LST, ...
- **File formats** : ASCII, LFI, FA, GRIB, netcdf,

SODA developments

- OI_MAIN called from CANARI (convergence with MF solution?)
 - To be included SURFEX v8
 - No need anymore for « offline » OI_MAIN and LFI format (current solution at ZAMG in CY36T1)
- Use of SODA for MF GMME activities (LAI and SSM assimilation, ISBA version with patches, ISBA-DIF)
 - Raises issues on the level of generality for observation handling
- Use of SODA at FMI for lake (and snow) data assimilations
 - Raises issues on the suitability to various surface schemes
- Use of SODA for EKF activities at RMI and OMSZ (SURFEX v5)
- Inclusion of new KF flavours (EnKF, STAEKF)
- SODA efficiency for EKF