

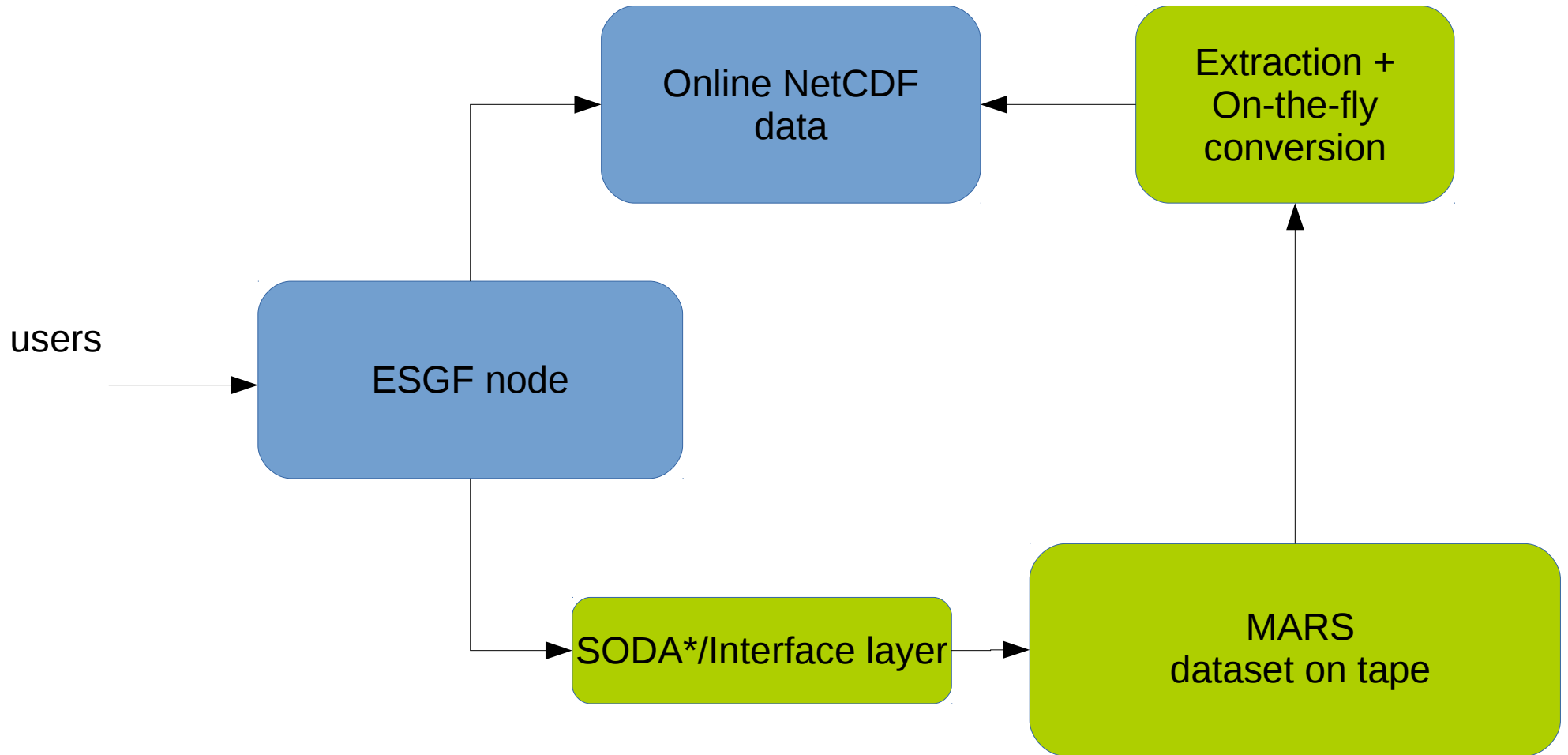
# On-the-fly GRIB to NetCDF/CF conversion within the MARS-ESGF integration

Closing the GRIB-NetCDF gap  
September 24-25th, 2014. ECMWF, Reading, UK.

- SMHI is involved in the EU project CLIPC\*: CLimate Information Platform for Copernicus
- Our task is to make available the EURO4M\*\* dataset through our ESGF node
- Project started in January 2014

\* [www.clipc.eu](http://www.clipc.eu)

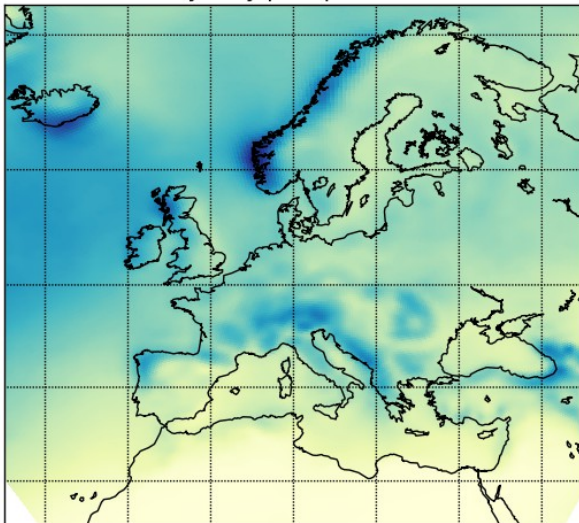
\*\* [www.euro4m.eu](http://www.euro4m.eu)



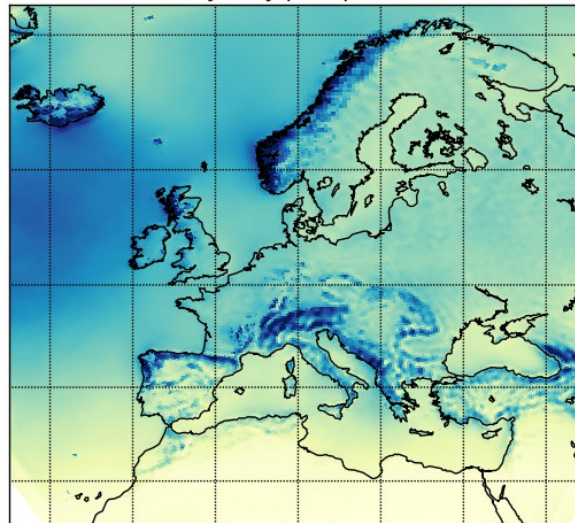
\*System for Offline Data Access

- EURO4M reanalysis dataset (1979-2014 22km HIRLAM + 5.5 km MESAN)
  - ~90TB Tbytes of data
  - Over 500,000,000 GRIB edition 1 records
  - Precursor of the UERRA EU project

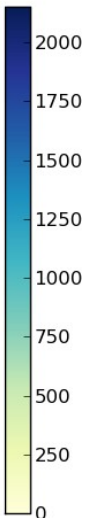
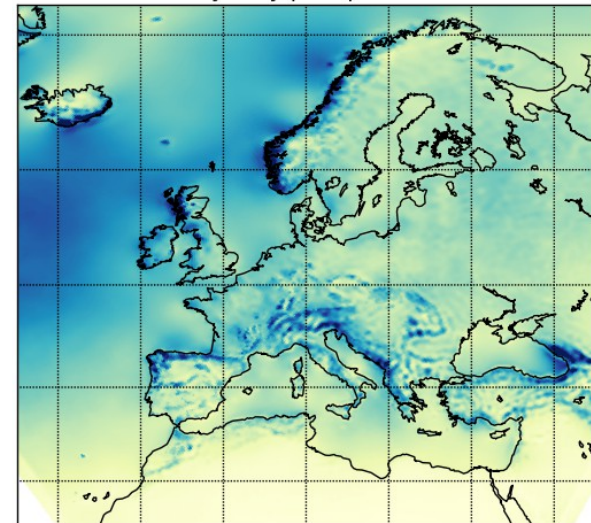
ERA-I: Mean yearly precipitation 1991-2010



HIRLAM: Mean yearly precipitation 1991-2010




MESAN: Mean yearly precipitation 1991-2010



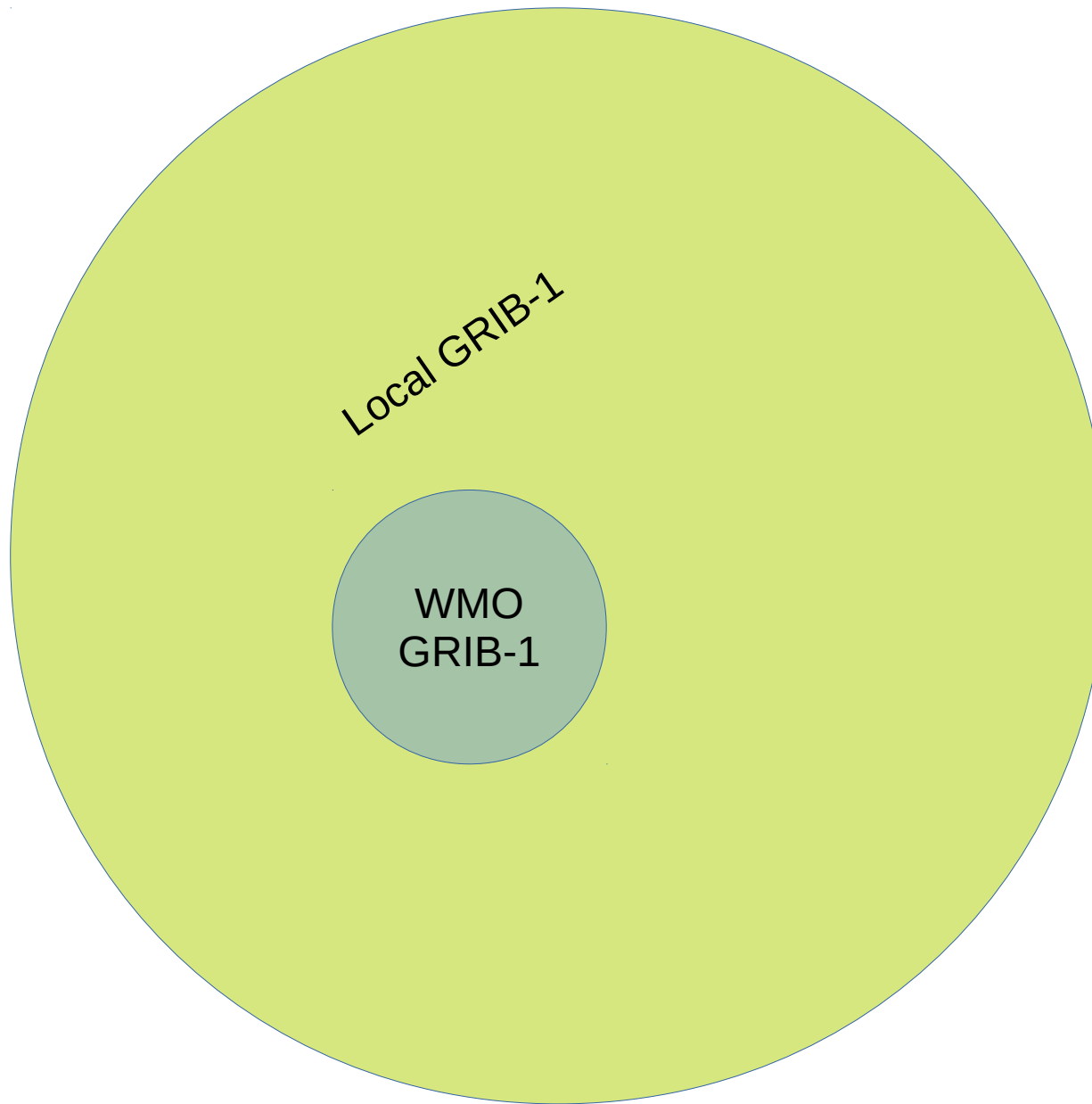
- EURO4M is encoded in **GRIB edition 1** using **local SMHI tables and WMO tables** and is stored in our local MARS servers
- ESGF nodes serve datasets in **NetCDF format**
- Probably nobody will be interested in mapping GRIB-1 to NetCDF/CF
- However, that mapping will be simpler and could potentially serve as prototype before dealing with the GRIB-2 complexity

Where do we start?

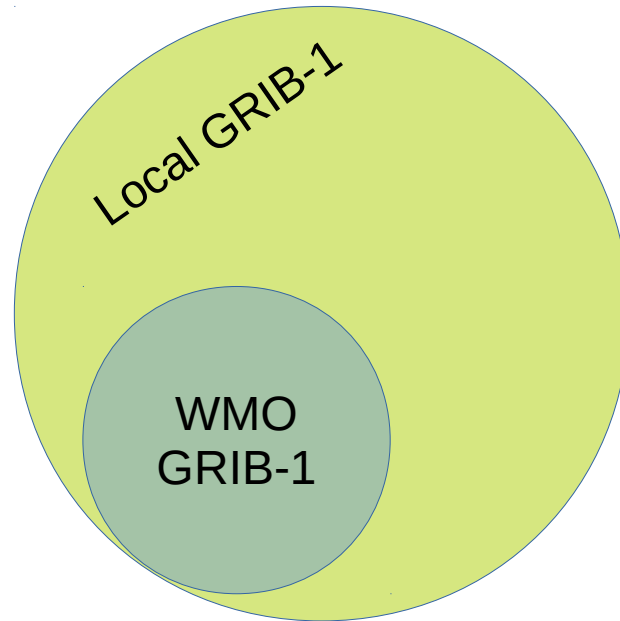
- Parameter overlapping
- Slicing/aggregation
- Representing time
- Statistical processing
- Etc...

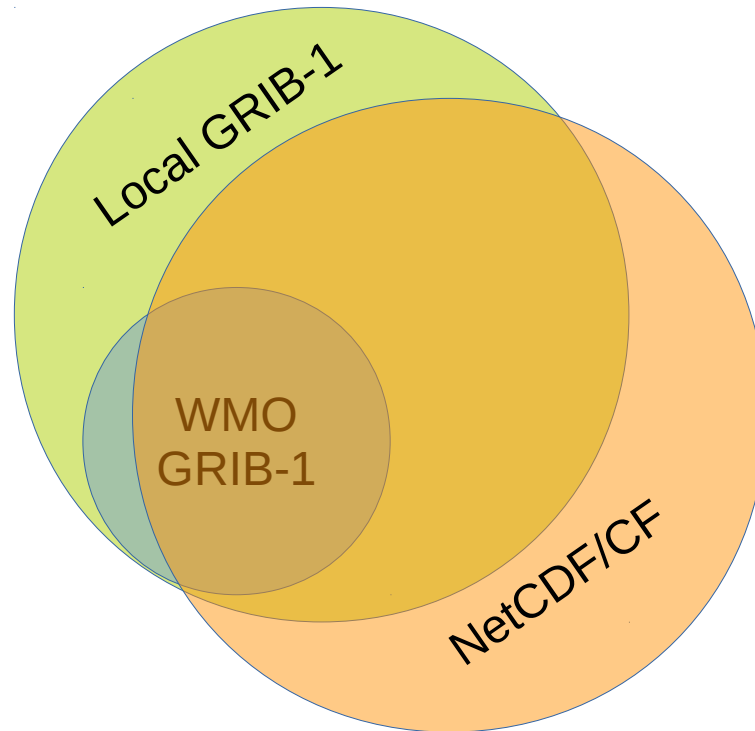


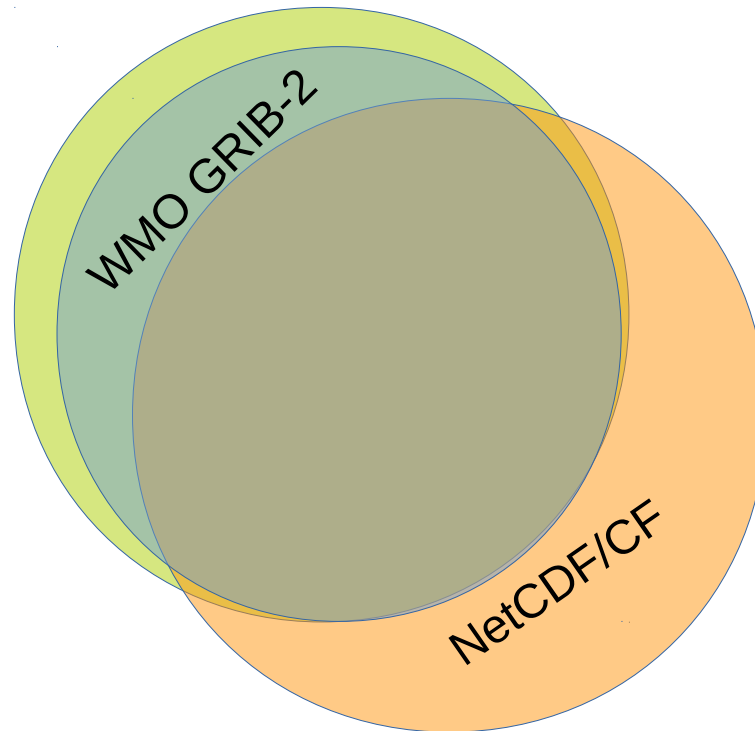
WMO  
GRIB-1  
params

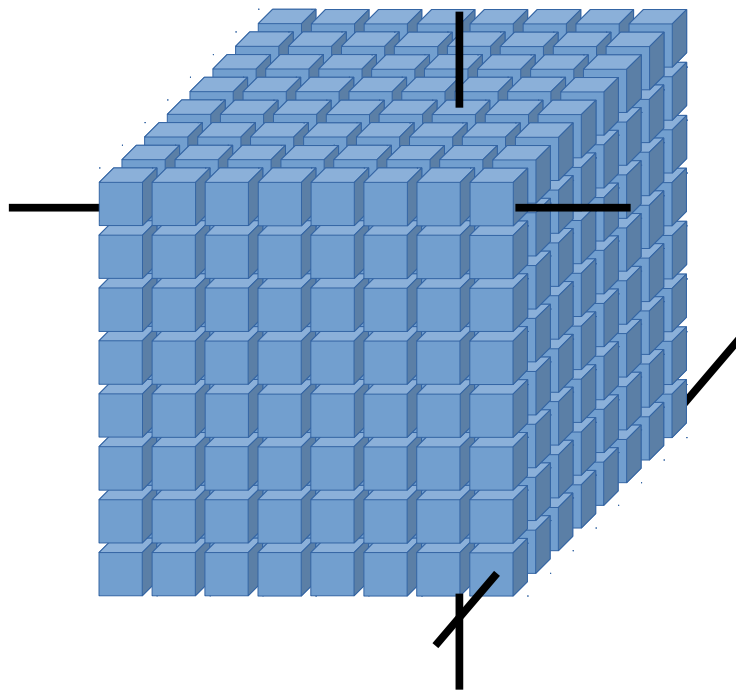




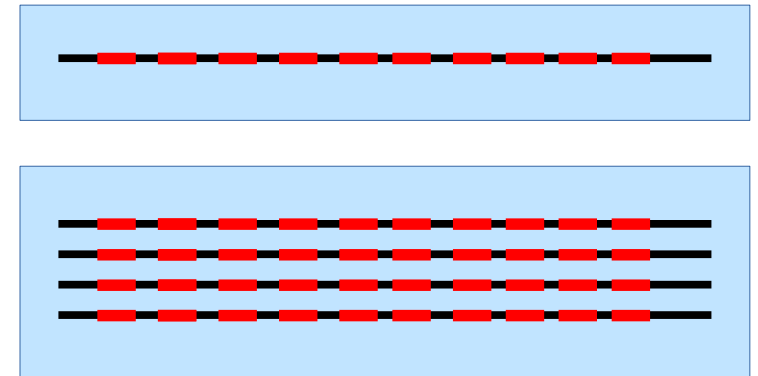




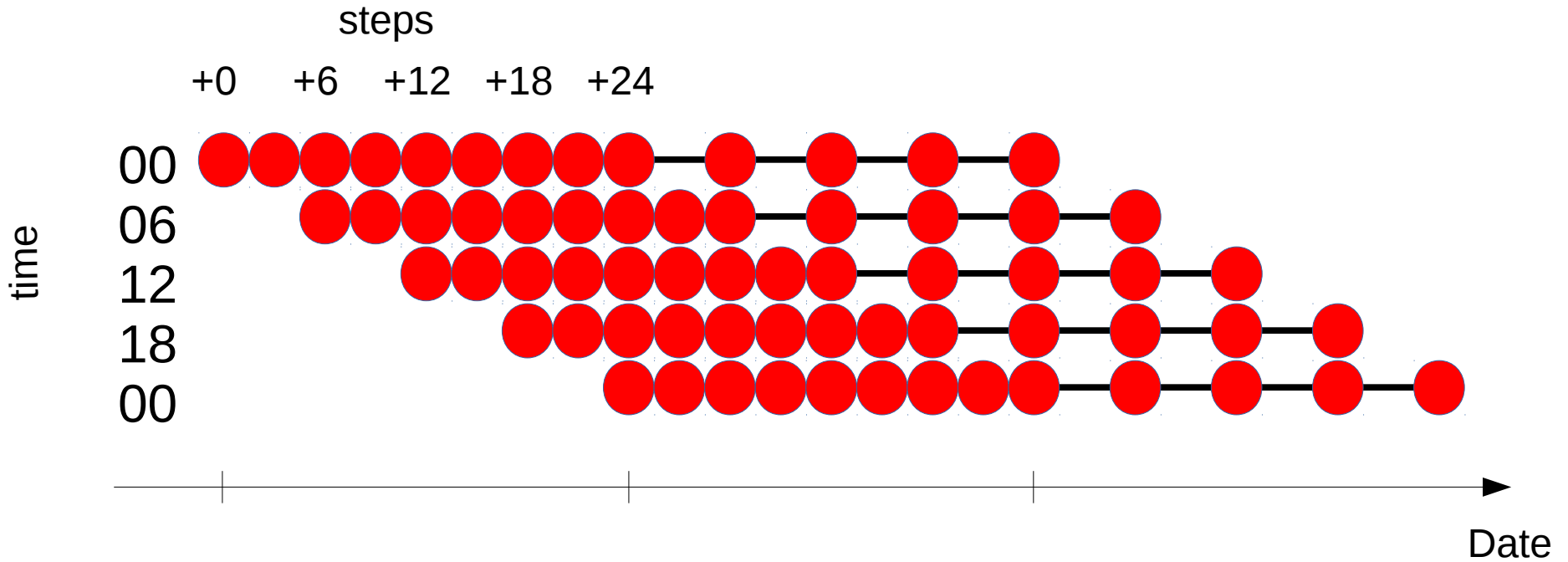




EURO4M



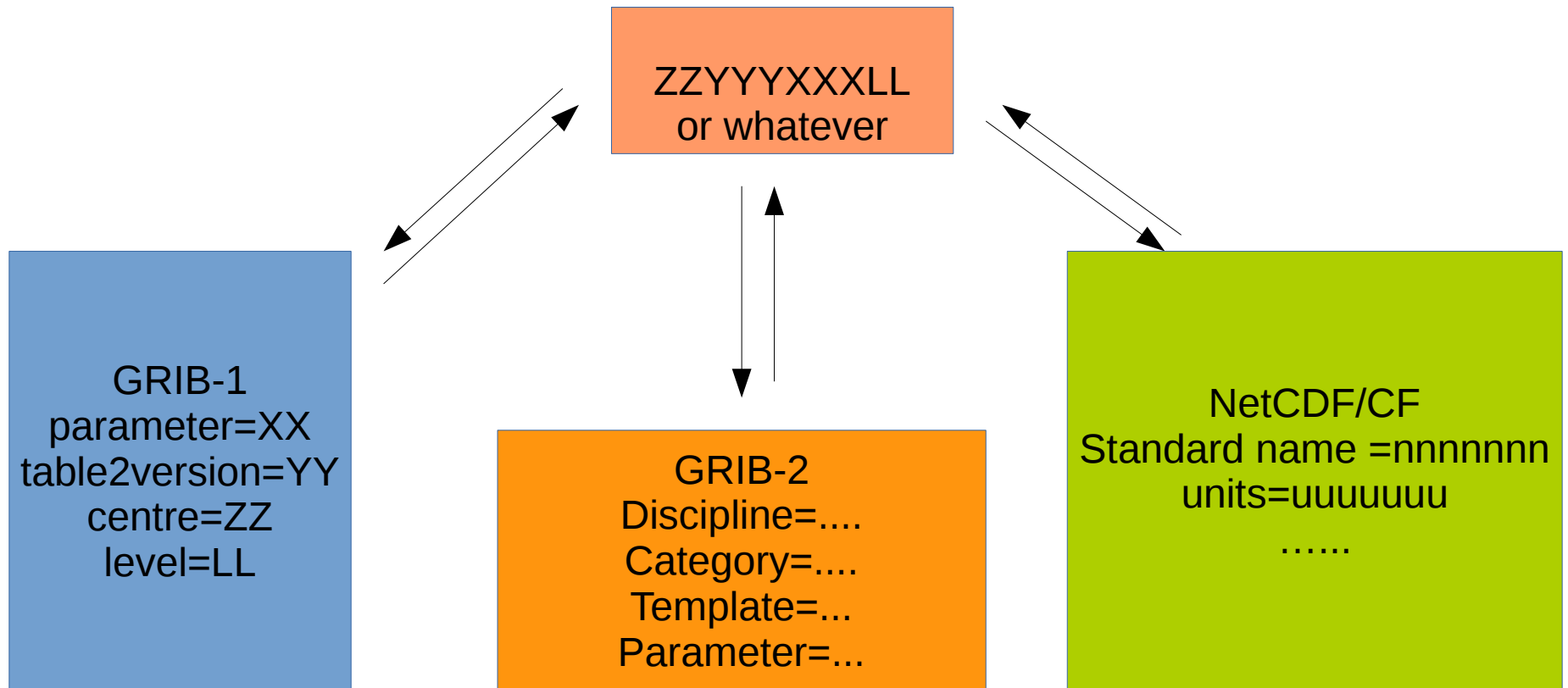
Predefined extracted  
Subsets in NetCDF/CF



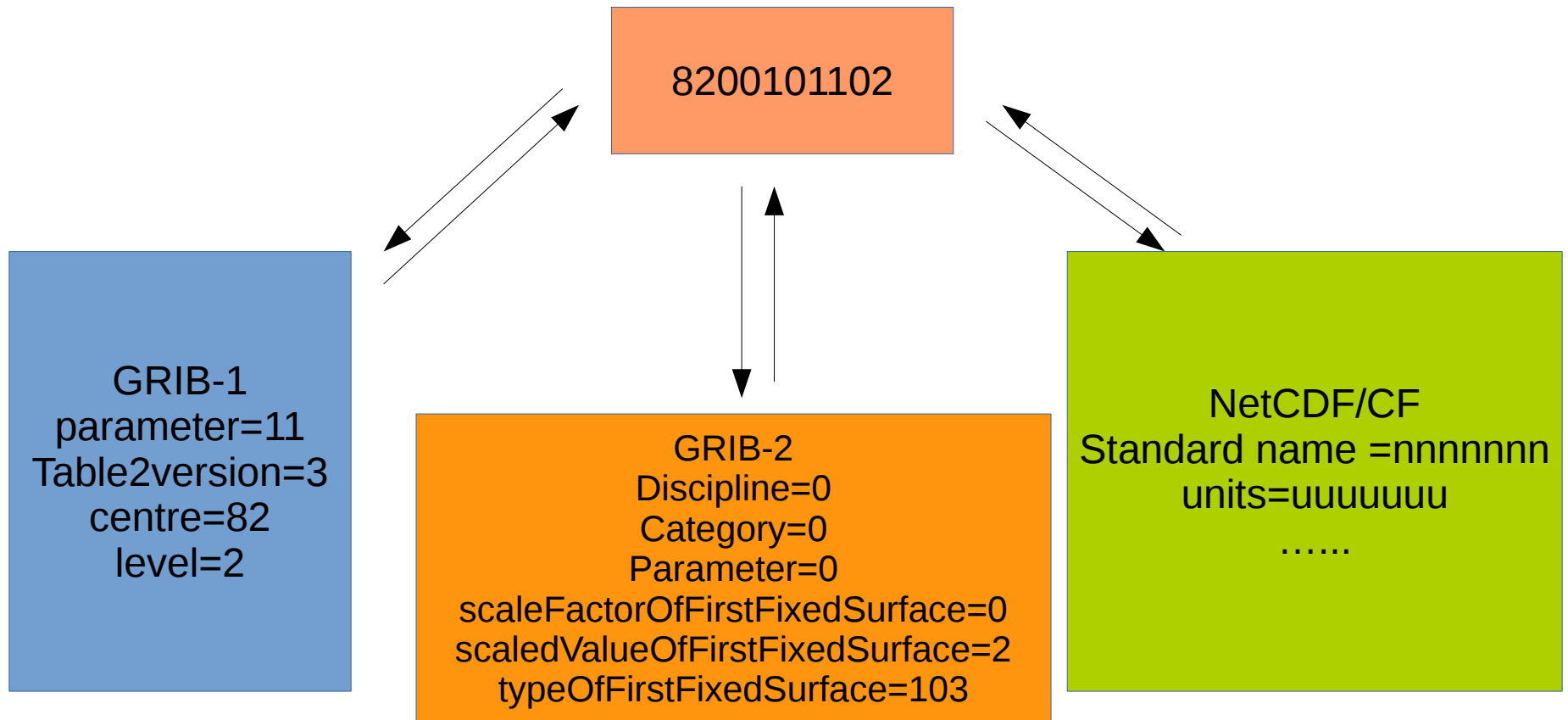
“accumulated precipitation of at least 10mm over the last 24h”

“total Iodine-131 deposition during the last 24h”

Using the same strategy of “concept” currently in use in grib\_api to map GRIB-1 and GRIB-2



Using the same strategy of “concept” currently in use in grib\_api to map GRIB-1 and GRIB-2





That's it!