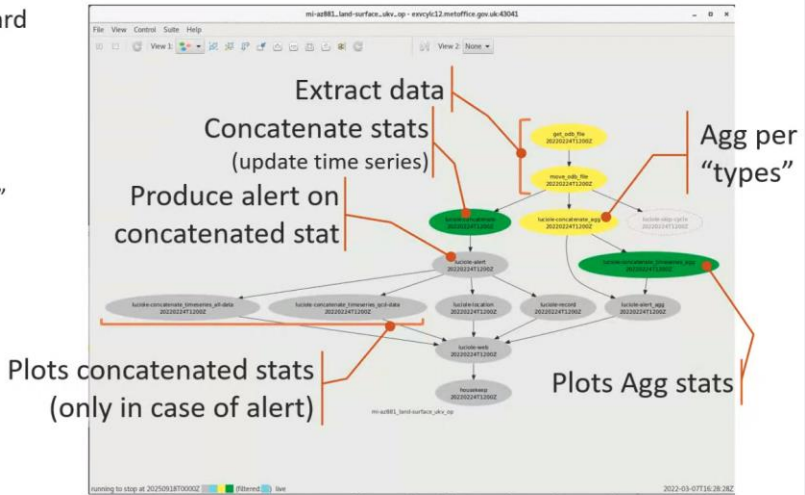


Luciole is fully integrated to a standard rose/Cylc suite

- Logic has been removed from the code.
- The logic is shared between the APPS and Cylc.
 - APPs produce a specific "product"
 - Decide how the data are "sliced"
 - Cylc manage the dependency between APPs
 - Combining various APPs create a monitoring system.
- User has full control without any code changes.



Example of the surface observation monitoring

rose-app

Configuration file

```
[command]
default=luciole.py

[meta-gen]
debug = 1 # verbose mode
obs-type = sonde # set observation type
file = ukv_aircraftsondesurface_odb2

[task-1]
module = luciole
run = load
atomize = statid

[task-2]
module = luciole
run = plot_profile
variable = o-b, o-a
parameter = all
grid = ldim
atomize = individual-station
```

```
code
# II. Loop over the processing task
for iTask in gen.lucioleConf.tasks.keys():
    # II.1 update current task
    gen.lucioleConf.update_current_task(iTask)
    # get the name of the method to import
    module_tmp = gen.lucioleConf.current_task.module
    action_tmp = gen.lucioleConf.current_task.run
    # Now import the correct module and method
    module = import_(module_tmp)
    my_local_def = getattr(module, action_tmp)
    # Use the method
    my_local_def(data)
```

```
[...]
[load-request]
select = fg_depar,an_depar,obsvalue,lat,lon,model,
ops_obsgrp,verno,statid,instrument_type,
andate,antime,date,time

[[sonde]]
select = vertco_reference_1,vertco_reference_2,
wmo_block_number,wmo_region_number,
wmo_station_number,seqno,
ops_datum_flags.b2,ops_subtype
where = ops_obsgrp==5 and (verno=2 or verno=3
or verno=4 or verno=29) and statid is not
null and time is not null and obsvalue is
not null;
atomize = statid
[[radar]]
...
[grid-def]
[[profile_ldim]]
type = ldim_v
grid = 1000, 10, -10 # [start, end, step] in [hPa]
coord = y-axis
y-axis-limit = 1000, 10 # [start, end] in [hPa]
[[pp]]
...
...
```

Dynamic code definition

Defaults setup can be overwrite by user

rose-app

Plot each radiosonde profile

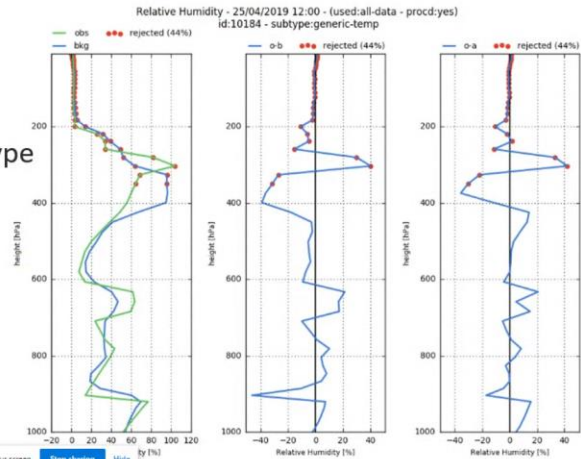
```
[...]
[task-2]
atomize = wmo-station:individual,time:individual
grid = raw
process = processed:no, processed:yes
run = plot_profile
variable = qc, o-b, o-a
verno = all
[...]
```

Define averaging & group

Define plot type

Define variable

Define parameter



rose-app

Plot cycle average of all TMP radiosonde profile

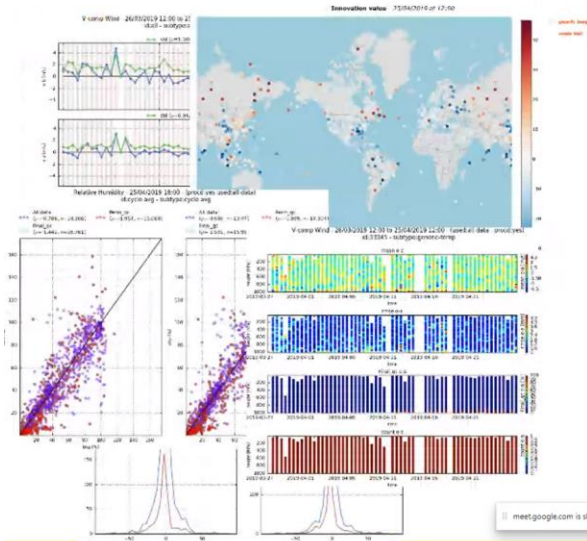
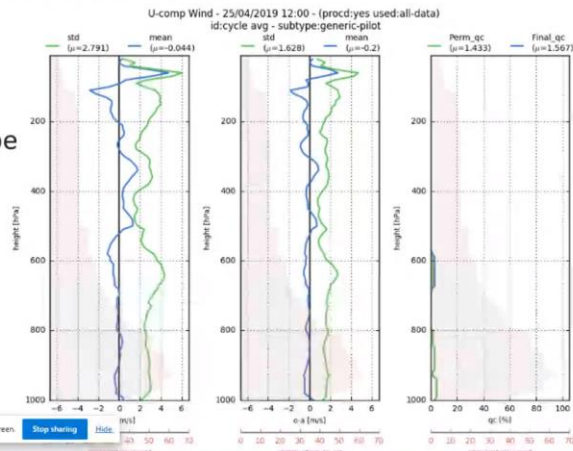
```
[...]
[task-2]
atomize = inst-type:individual,time:cycle
grid = raw
process = processed:no, processed:yes
run = plot_profile
variable = qc, o-b, o-a
varno = all
[...]
```

Define averaging & group

Define plot type

Define variable

Define parameter

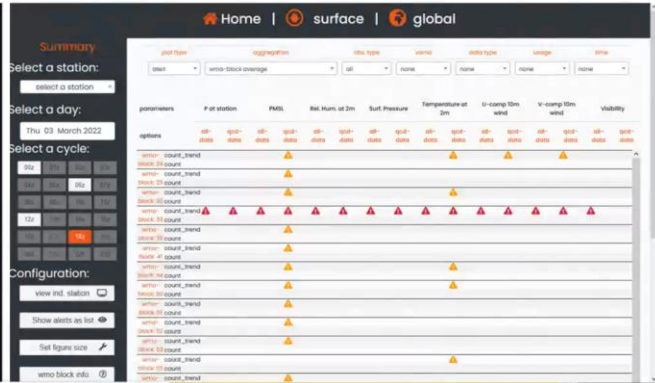


- Observation status
 - Raw data / processed data / qc data
- Aggregation / concatenation
 - ind. obs / time / obs. type / wmo block / etc..
- Grid definition
 - 1D / 2D / polar / user defined
- Statistics
 - mean / std / rmse / count / QC flags
- Variable
 - O / B / A / C / O-B / O-A / C-B / C-A
- Plot type
 - Scatter / DNA / x-y line plot / coverage (static & dynamic) / histogram / ppi / timeseries / profile / etc

- Web-display
 - Automatic web page
 - SQL-based / Plot only what exist
- Alert system (web display and email)
 - O-B / O-A threshold
 - Obs count / Meta-data



Example of the aggregated timeseries plot for ra



Example of the alert display for radio sonde