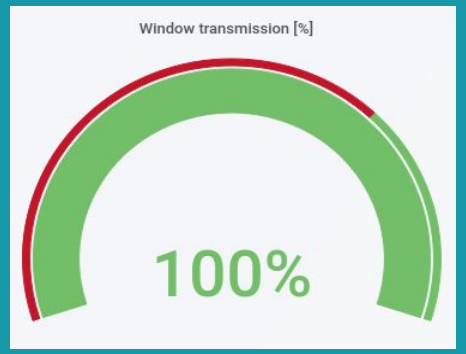

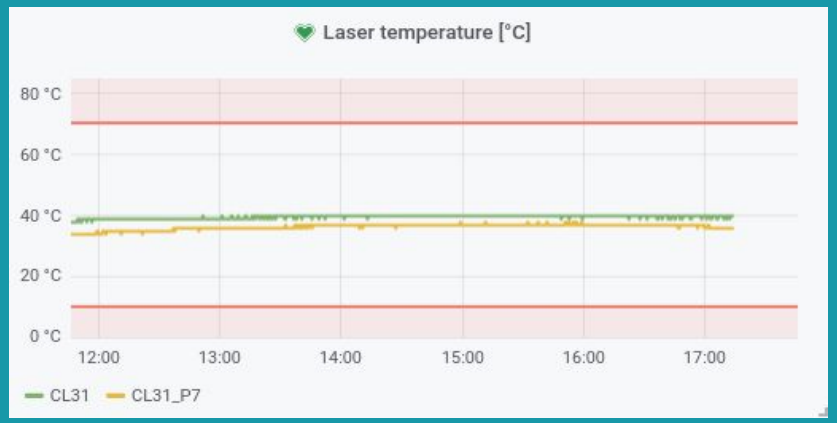

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Technical parameters monitoring for cloud remote sensing NFs

Marc-Antoine Drouin, IPSL

CCRES Workshop, Heraklion – Oct 26th, 2023

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HouseKeeping Data : what and why ?

- Instrumental parameters
  - Provided in data files or in ancillary files

- Examples :
  - ALC : Laser energy, window transmission, status flags …
  - DCR : Internal temperature, intensity, voltage …
  - MWR: Ambient target stability, alarm/quality flags …
  - DWL : internal temperature …
  - DD : Instrument status …

- Goals
  - Allowing more **efficient instrument failures detection**
    - Curative maintenance
  - Ensure **optimal performances** of sensors
  - Ensure **long term high quality** geophysical data

- **Analysis of HKD** data will be done for NF **labelling**

Identification of HouseKeeping data (1/3)

- Initiate monitoring of HKD parameters for instruments in Step-1A stations

Instruments	HKD reference person
DCR	
RPG FMCW 94 (DP)	R. Mackenzie, JC. Dupont
Metek mira 35(-s)	C. Walden, JC. Dupont, F. Toledo
LATMOS Basta	JC. Dupont, F. Toledo
DD	
OTT parsivel 2	JC. Dupont, M. Schleiss
Thies LNM	JC. Dupont

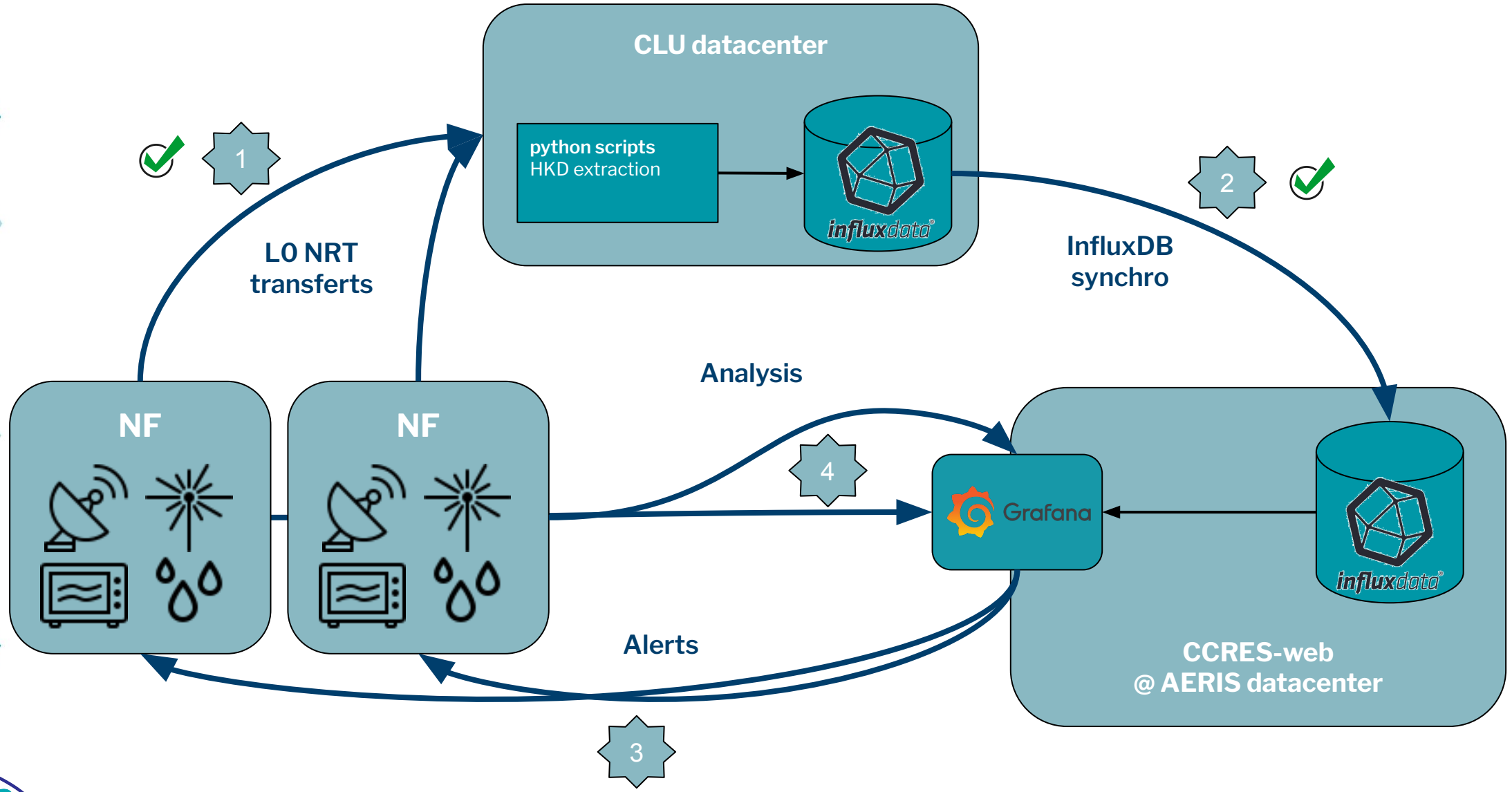
Identification of HouseKeeping data (2/3)

Instruments	HKD reference person
MWR	
hatpro	T. Marke
DL	
Halo streamliner	E. O'Connor, N. Leskinen
Vaisala WLS70	No HKD
ALC	
Lufft chm15K	I. Mattis

Identification of HouseKeeping data (3/3)

- HKD identified for most instruments
  - Creation of tables to list HKD parameters for each instrument
  - Available here
- HKD identified for most instruments of Step-1A stations
  - Weather stations
    - Most instruments don't have HKD
  - MIRA DCR
    - HKD exist but tuned for each instrument
    - Discussions ongoing with Metek for extraction of common HKD
    - Development is required

Data flow



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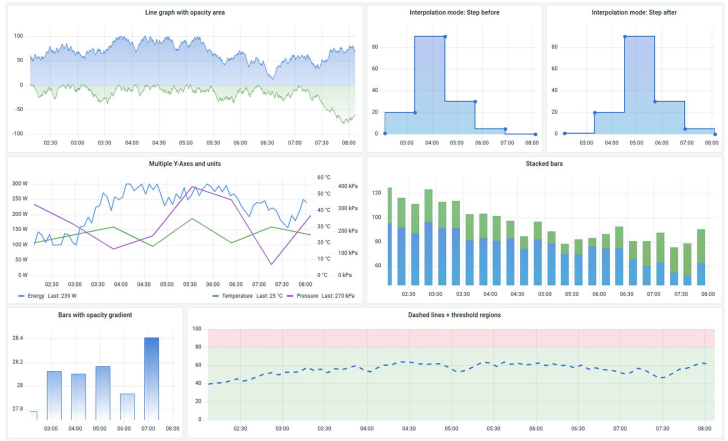
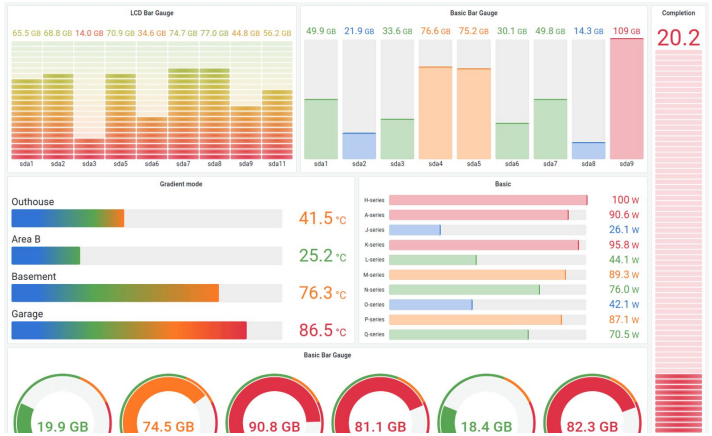
Tools

- influxDB (https://www.influxdata.com/)
  - Timeseries database (1D data exclusively)
    - Optimized for measuring change over time
    - Can aggregate or downsample over time
- Grafana (https://grafana.com/grafana)
  - Web application for timeseries data
    - Querying
    - Visualisation
    - Alerting





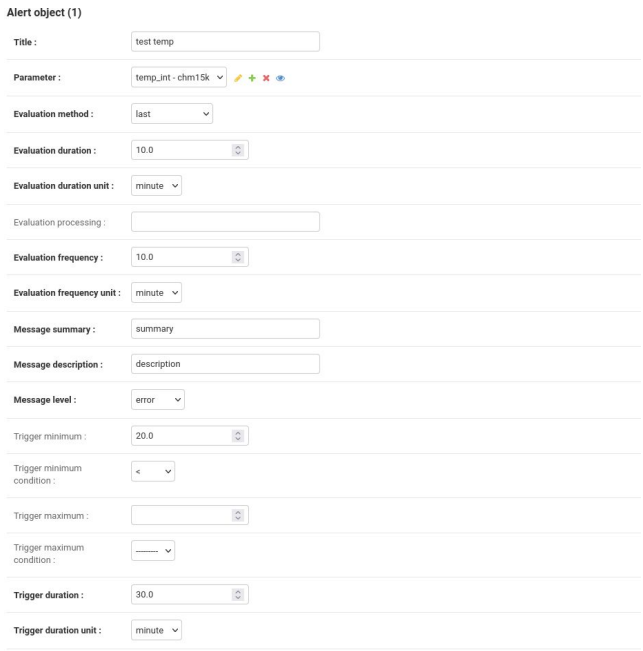
Demo

Expectected features in grafana for NFs

- Directory for each NF with one dashboard per instrument
  - automatically generated
  - read only access
- Possibility to explore HKD data of the stations
- Access to all history of HKD
- Alerts contacts defined for each instrument

Next steps

- Continue identification of HKD
- Extract HKD identified by PIs from L0 data
- Create dashboards for each type/model of instrument
- Carry on developments of the web app to manage dashboards and alerts for PIs
  - Change alert triggers for all instruments
  - Update dashboards
- Open access to grafana



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Thank you