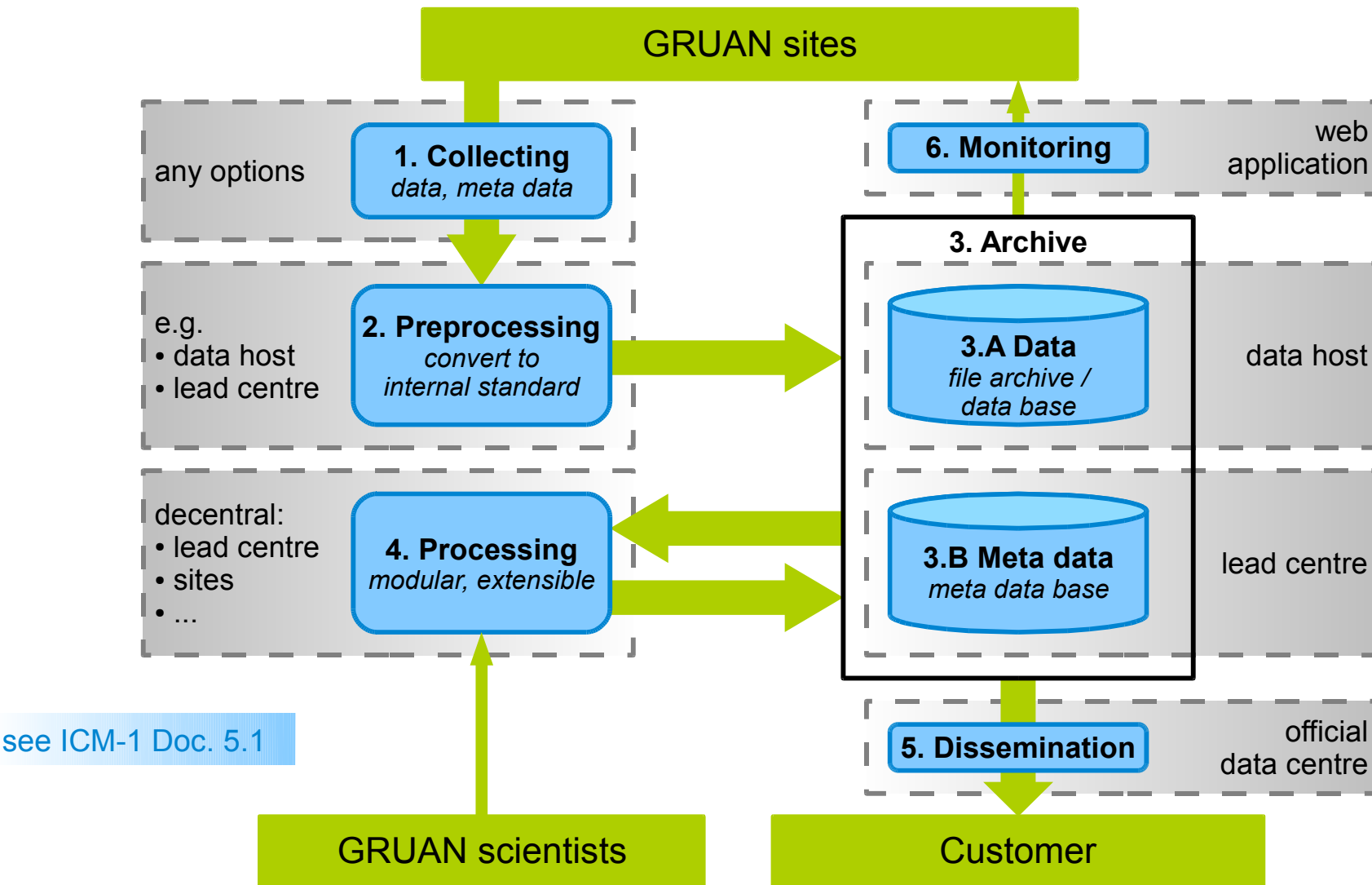# GRUAN data flow:
The next steps

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2nd GRUAN Implementation Meeting-Coordination (ICM-2)
Payerne, Switzerland
3rd March 2010

Outline

→ Strategy of GRUAN data handling

→ Progress since ICM-1

→ Implementing the data collecting

→ Next steps *(to become an operational network)*

→ Conclusion

Progress since ICM-1

➔ Development of the structure of **GRUAN meta data base** (GMDB)

- station, measuring system, instrument, …

- archive (raw), measuring, processing, products

➔ Development of **pre-processing** parts

- RS92 → read (DC3DB), test and convert (to netCDF)

- Automatically scheduled processing steps

- Put and get information to/from GMDB

➔ 1st **GRUAN Data Management Meeting**, September 2009, Asheville, USA

- NCDC, ACRF (ARM), LC

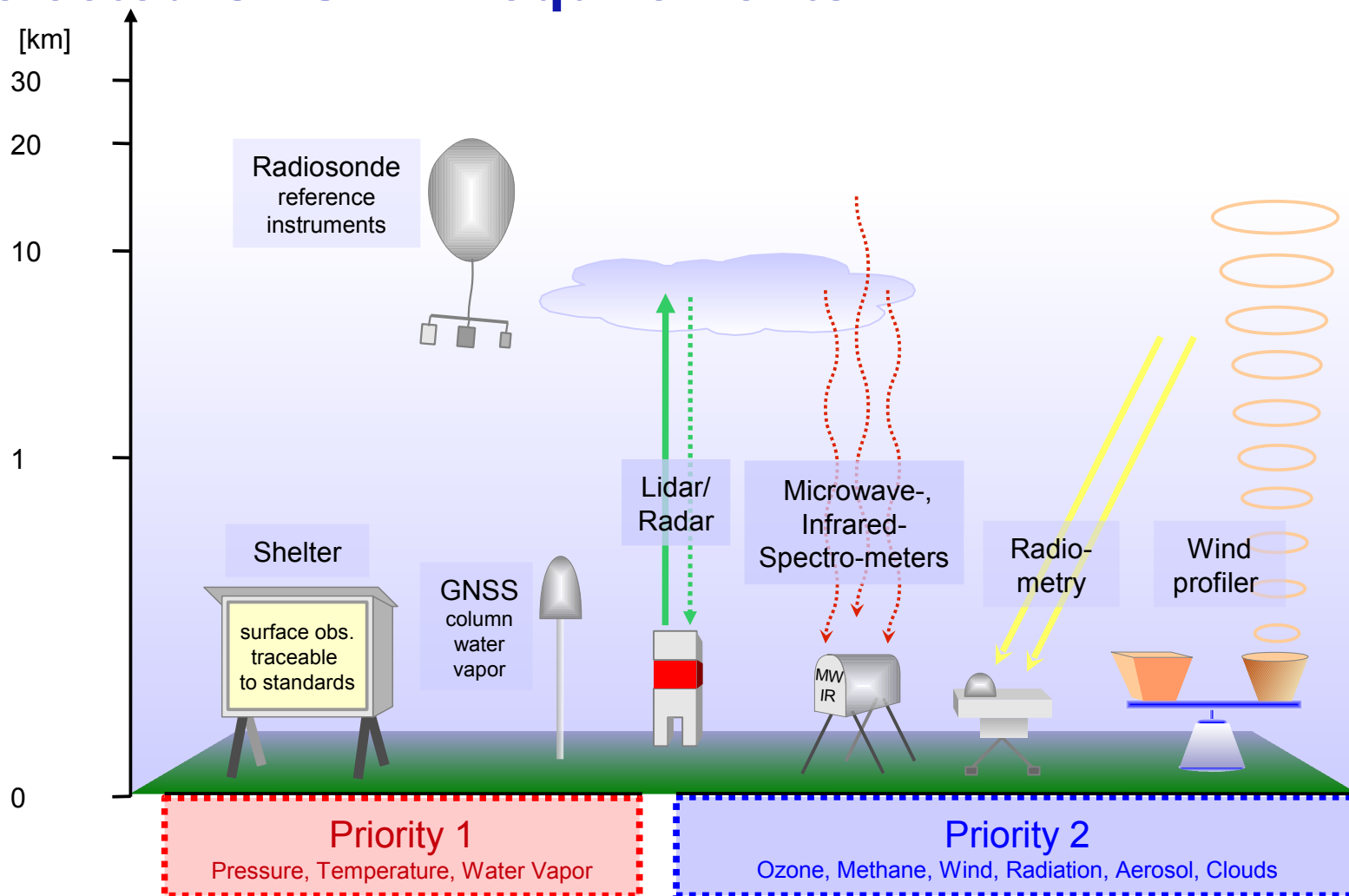➔ Realisation of interface for **GRUAN internal data flow**

Collecting of data (raw + meta)
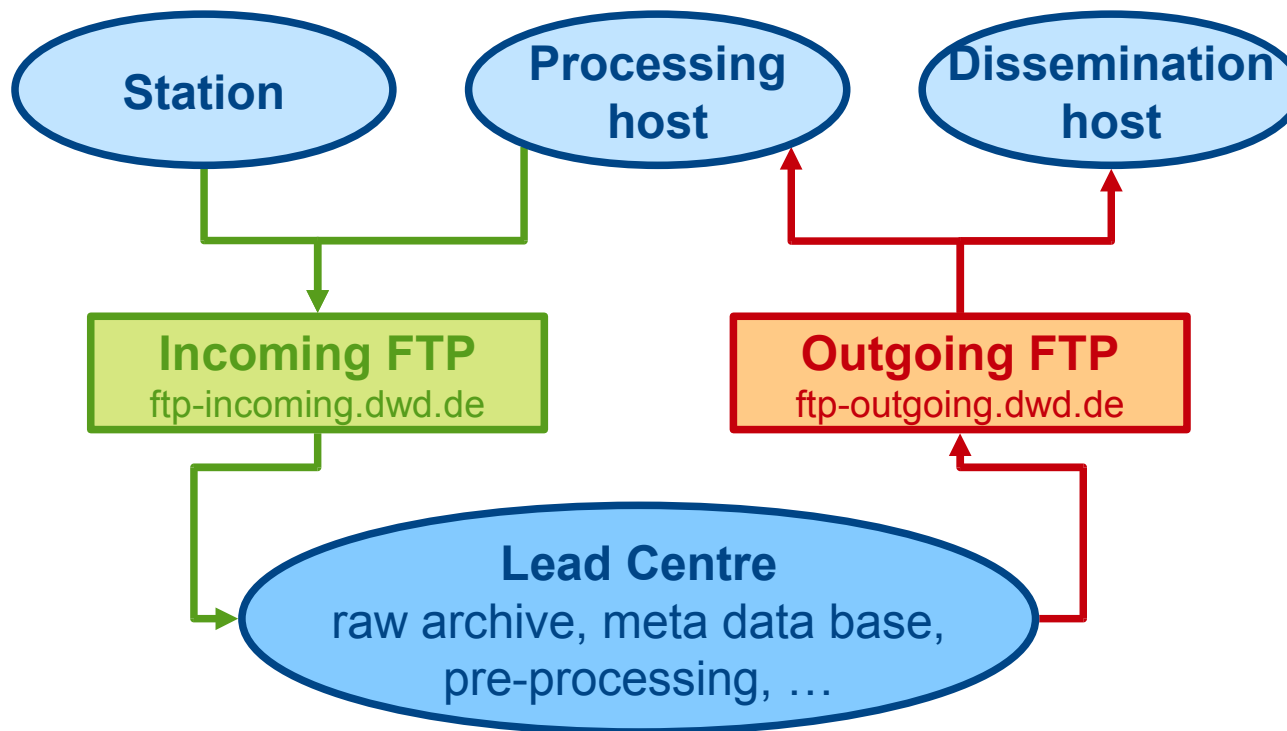
→ Simple interface

→ **One** central collecting interface

→ FTP server at LC (DWD)

→ Only for network internal use

Selected GRUAN Requirements

Collecting data

➔ Start with radiosonde measurements

- **Raw data**
  - RS92 → **DC3DB files**
  - CFH → raw + de1 files (+ flt)
  - SRS-400 (CH), GTS-1 (CN), FLASH, …
    → What is possible and useful? → *clarify at **this** meeting*

- **Meta data of launch** → comparison launches
  - Additional information (mostly not included in normal data files)
  - Exact definition of a data structure (file format) included all relevant info
  - Differentiation in essential and optional information
  - *Currently* in development → first usable version in April 2010
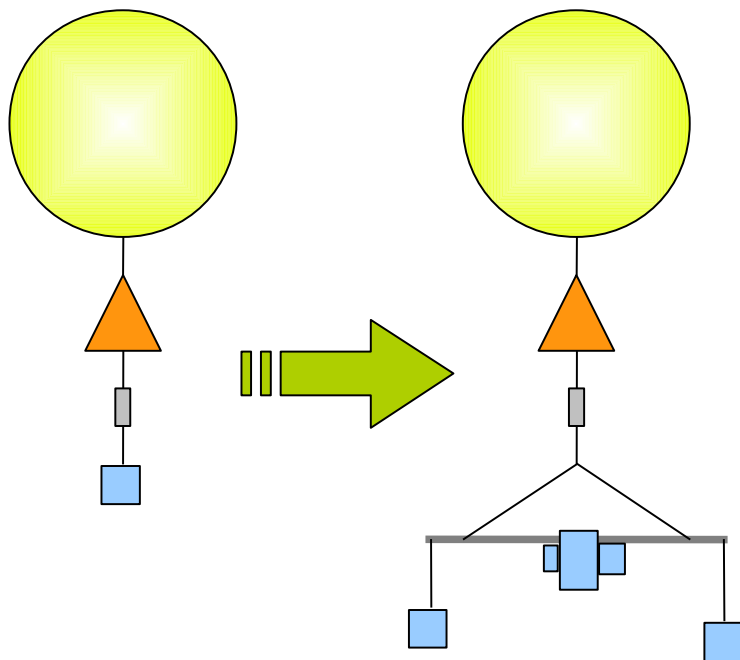
Content
- edited profiles (DC3)
- high-resolution profiles
- raw frequencies
- complex meta-data
  - most properties of DC3
  - much info about ascent

Launch meta-data

➜ From simple to complex

- simple → routine

- complex → dual, campaign

Measuring event
station, start, end, operator, type

RS launch
id, balloon (gas, type), unwinder (length), parachute (size), rig (material, shape, photo), weight, …

Weather condition
p, T_d, T_h, RH, clouds, wind, …

List of specific RS launches

Instrument 1	Instrument 2
instrument, serial number, ground check, calibration,	*linked to, clock, radio, frequency, ascent, descent, software, operator*

Time line of next steps – 1

➔ **April 2010**

- A "**Data Collecting Guide**" send to all stations (*version 0.9*)
  → Radiosonde

- Test of data flow to lead centre

- Test of pre-processing
  (semi-automatic testing, converting, meta-data analysis)

➔ **May / June 2010**

- Start of **operational data collection** (including meta-data)

- Test of data flow to processing hosts (ARM – RS92, …)

- Test of uncertainty quantification for RS92

➔ **July 2010**

- Test of data flow to dissemination host (NCDC)

Clarify the problems within our data flow (station, hosts, lead centre)

Time line of next steps – 2

➔ **August 2010**

- Start of **operational** (automatic) **data flow**
  Collecting + Pre-Processing + Archiving + Processing + Dissemination

  - **full** → RS92

  - **partly** (min. collecting) → CFH, SRS-400, GTS-1, FLASH, …

➔ **October to December 2010**

- Include **additional measurements** → surface reference, GPS-IWV, …

- Test of reporting system → issues, bugs

➔ **January / February 2011**

- Start of advanced test phase (beta) of **reporting system**

- Test of meta-data management (free tool for the sites)

Conclusion → at ICM-3 we have:

➔ Operational **data flow** of **priority 1**

➔ **Reporting system** *(on web site, beta-phase with version <1.0)*

➔ Tool for **meta data management** *(alpha-phase with version <0.5)*

- Editor for launch meta-data
- Maintenance of station meta-data

➔ **Monitoring system** *(on web site, alpha-phase with version 0.1)*

- View of current status of measurements & processing