Grid Example: Lofar LTA

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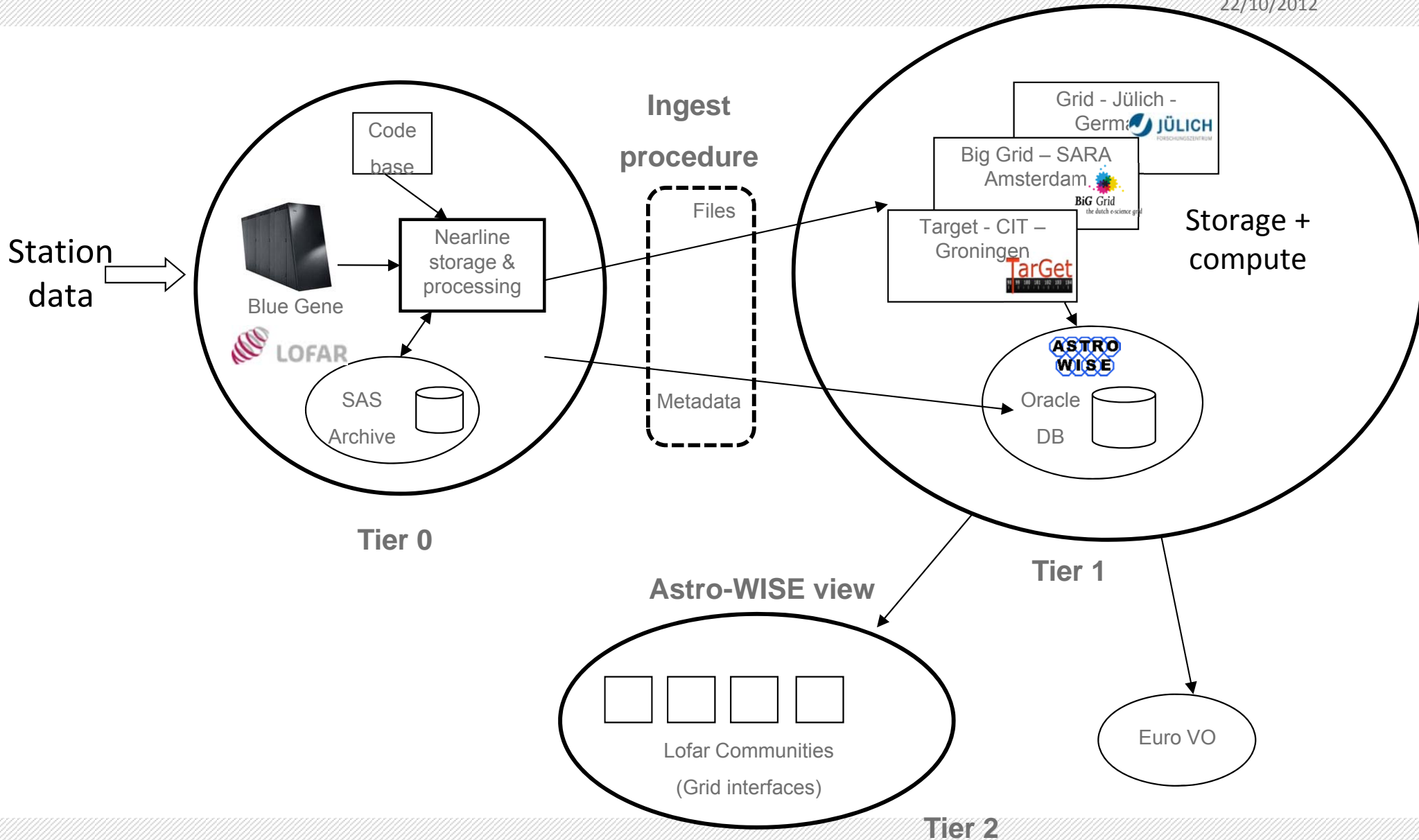
LOFAR

> Radio telescope
> Fields of small antenna's
> Software telescope
> Huge amount of data
  - ~2PB / year

Long Term Archive

> › LOFAR generates about 2 PB of data per year
> › Single site not able to hold this
> › Distributed archive
> › Several sites:
>   - Target@RUG, Groningen
>
>   - BigGrid@SARA, Amsterdam
>
>   - Grid@Jülich, Jülich, Germany
>   - + possible future sites

Slide: EGEE presentation

rijksuniversiteit groningen

Station data

Tier 0

Code base

Blue Gene

LOFAR

Nearline storage & processing

SAS Archive

Ingest procedure

Files

Metadata

Grid - Jülich - Germa JÜLICH

Big Grid – SARA Amsterdam BiG Grid the dutch e-science grid

Target - CIT – Groningen TarGet

Storage + compute

ASTRO WISE

Oracle DB

Tier 1

Astro-WISE view

Lofar Communities

(Grid interfaces)

Euro VO

Tier 2

4

› Central user and project administration

› Metadata stored in Astro-WISE db

› Raw files stored on distributed Grid storage

› Large processing done close to the data at the Tier 1 sites

› Managed access to the data

Role of Astro-WISE

› Astro-WISE integrated with GRID
- Job submission
- Data storage

› Processing pipelines can be controlled by DPU
- Tier 0 (testing)
- Tier 1 (final goal Target processing)

› Hides complexity of Grid middleware for end user