ASTRON
Netherlands Institute for Radio Astronomy

MeerKAT data transport & processing

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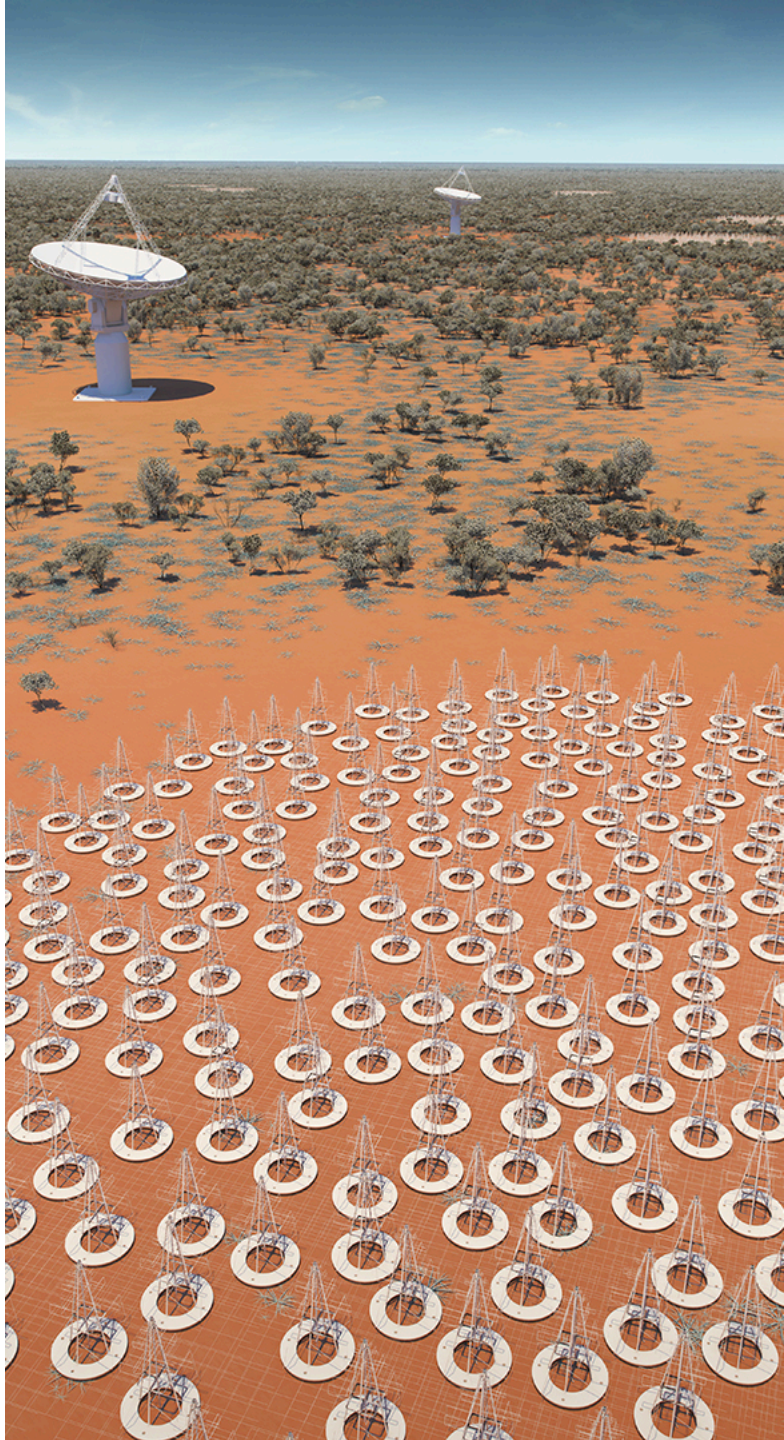
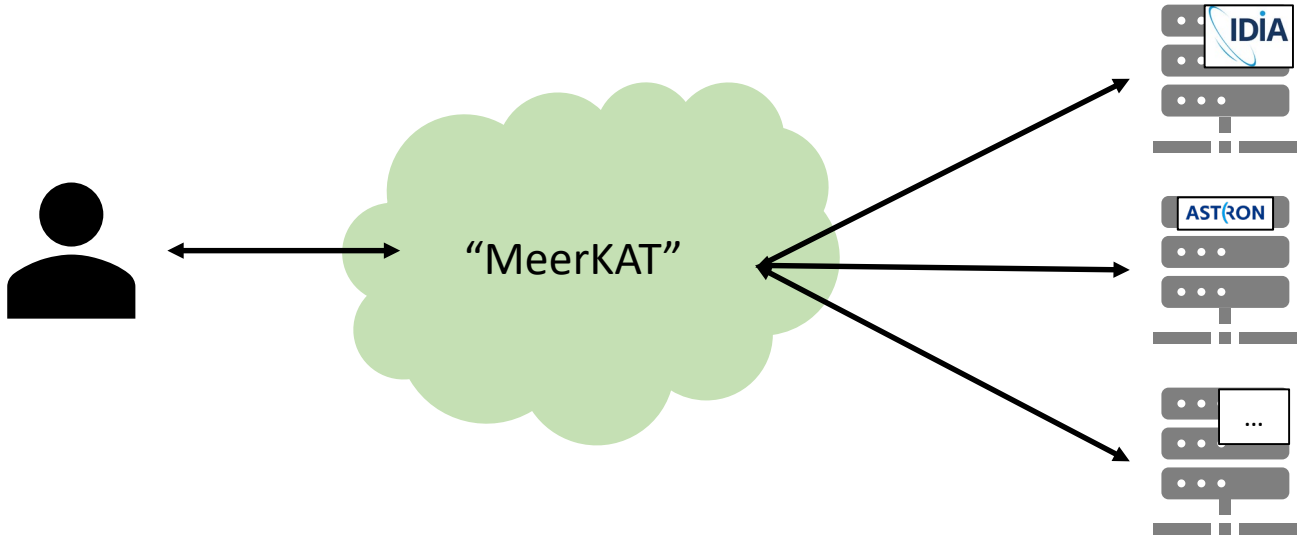


DOME-SA project

- Goals:
  - Testing and data management and transfer methods
  - Running pipelines in multiple locations



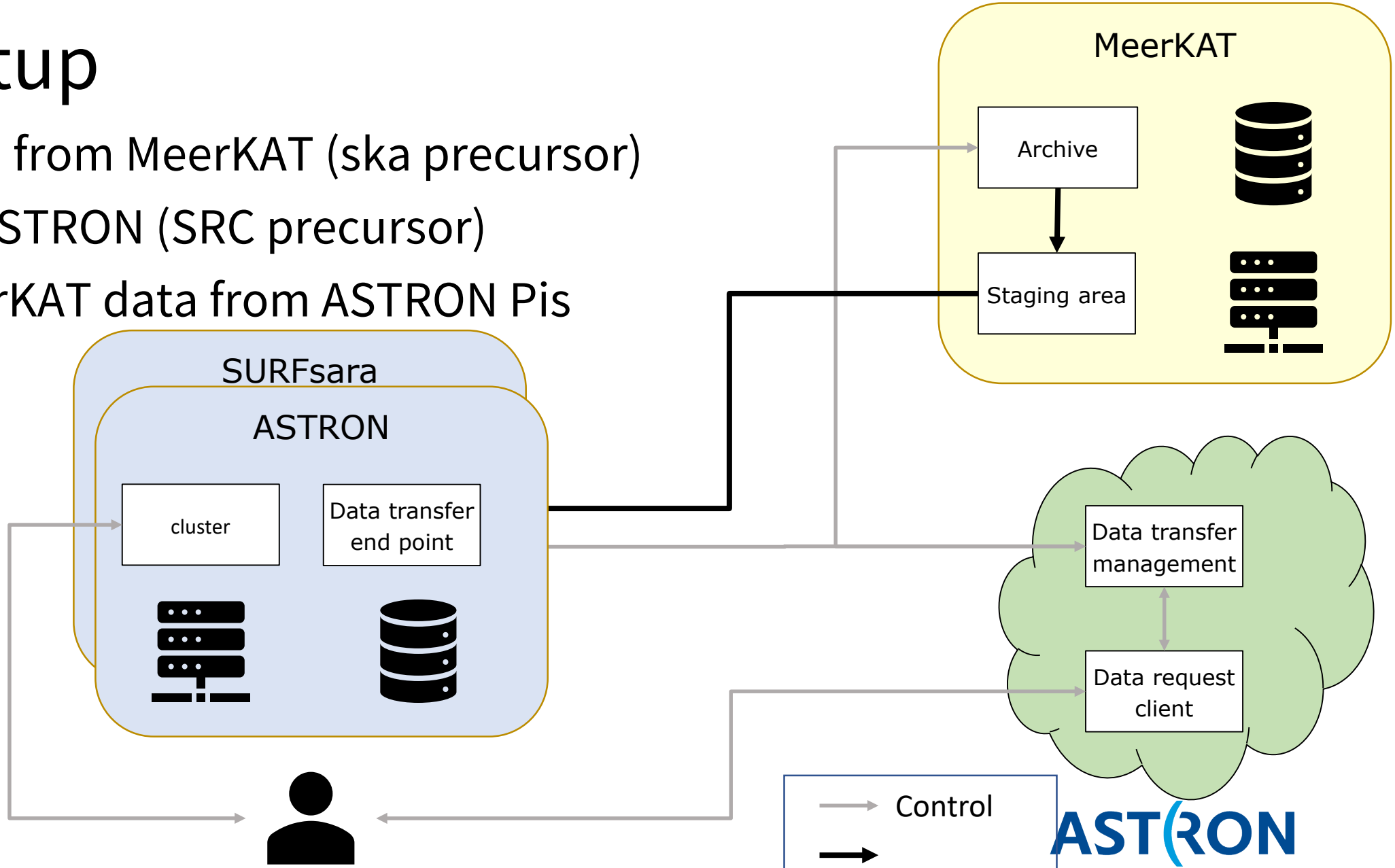
- Will result in a test bed that can be used for development in SDC projects (e.g. ESCAPE).

Setup

Data from MeerKAT (ska precursor)

To ASTRON (SRC precursor)

MeerKAT data from ASTRON Pis



Setup (2)

- MHONGOOSE survey, (PI: de Blok)
  - 30 galaxies
  - 1500 hr of data
  - accretion, cosmic web, dynamics beyond disk
  - Total input data rate: 11.76 PB -> 2.35 PB total survey output
- Astronomy Group cluster (ASTRON local openstack cluster)
  - IDIA pipelines running
- Other MeerKAT projects also joining

Connectivity

- 10 Gbit/s connection end-to-end (most of the time)
- Used perfsonar to measure the segments Dwingeloo – Amsterdam and Amsterdam – Cape Town (iperf).
  - Both perform at 9.5 Gbit/s with iperf
- Data transferred to ASTRON AG openstack cluster
  - Storage setup still needs optimization…
- Commissioning data moved to SURFsara and Astronomy Group cluster
  - Talking about few TB file sizes.

Testbed for SDC development

- Goal of this system is to become part of the testbeds that we can use for testing SDC work
  - Distributed system for data management development, distributed Science platform, etc.
- Links to:
  - ESCAPE: MeerKAT as proto-SKA data provider
  - DAS6: use as a national distributed testbed
- Also in contact with ICRAR to get data from AUS SKA precursors.

Dots on the horizon

- Explore data management tools and data automation
  - And gain experience on the way
- Handle derivative data products?
- ASTRON telescope data to SA?
- …