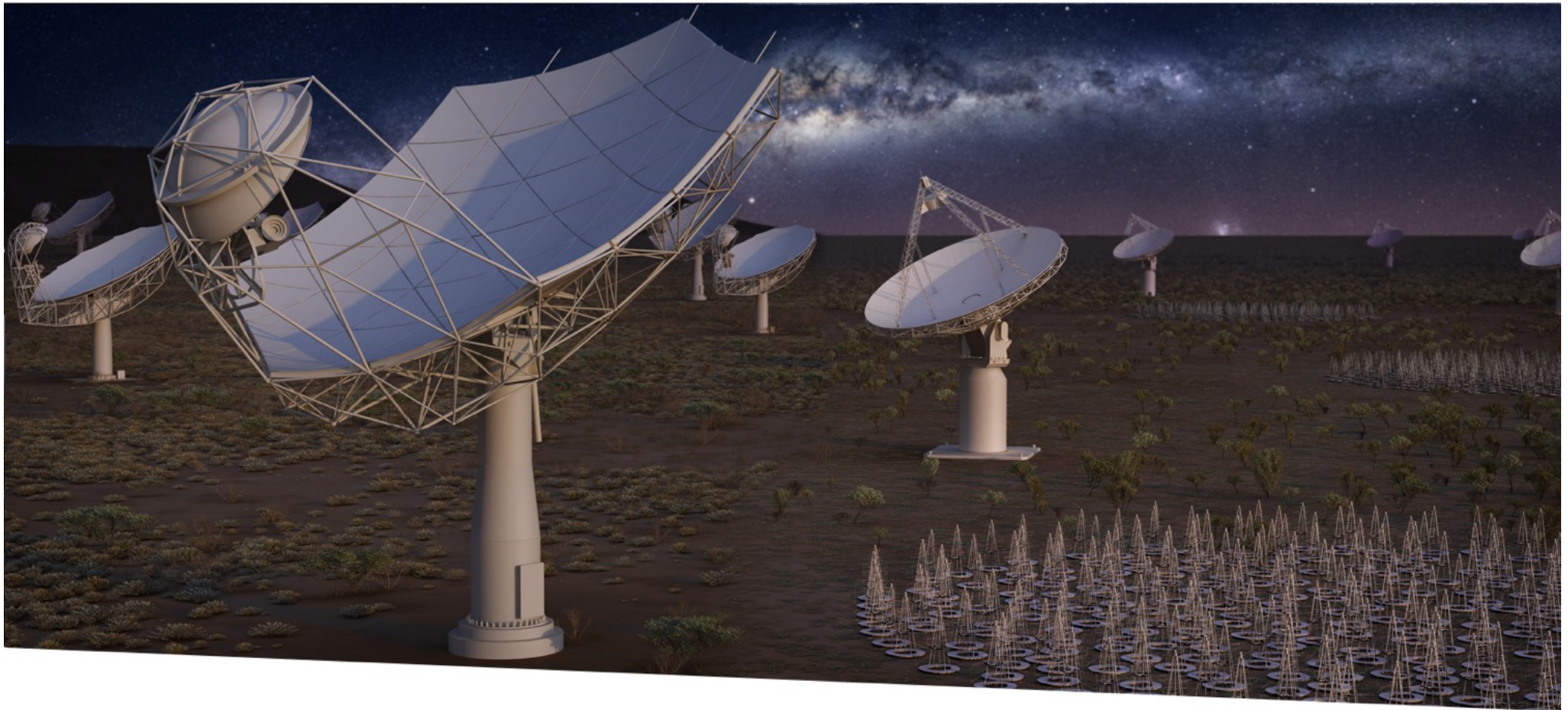


SRC Technical Data Challenges



SQUARE KILOMETRE ARRAY Rosie Bolton, SRC Project Scientist
Exploring the Universe with the world's largest radio telescope AENEAS March 2019

• Data challenge

Noun?



Verb?

SKA1-LOW



~ 2 Pb/s



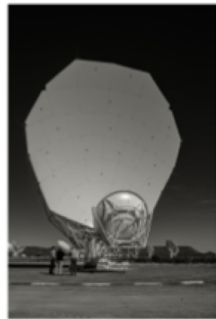
~ 7 Tb/s



300 PB/yr
~ 130 PFlops



SKA
Regional Centres



~ 9 Tb/s



~ 5 Tb/s



~ 130 PFlops
300 PB/yr



SKA1-MID

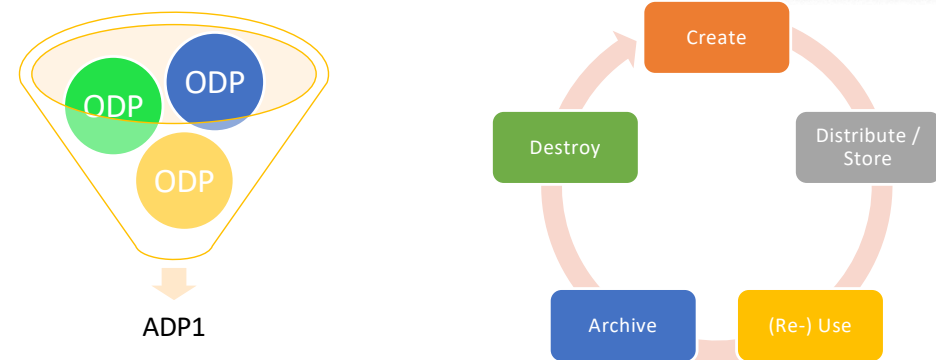
Uploads to
Facebook
180PB

SKA
Phase1 Science Archive
600PB

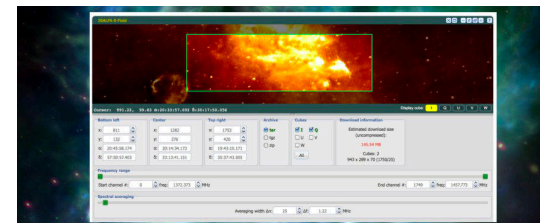
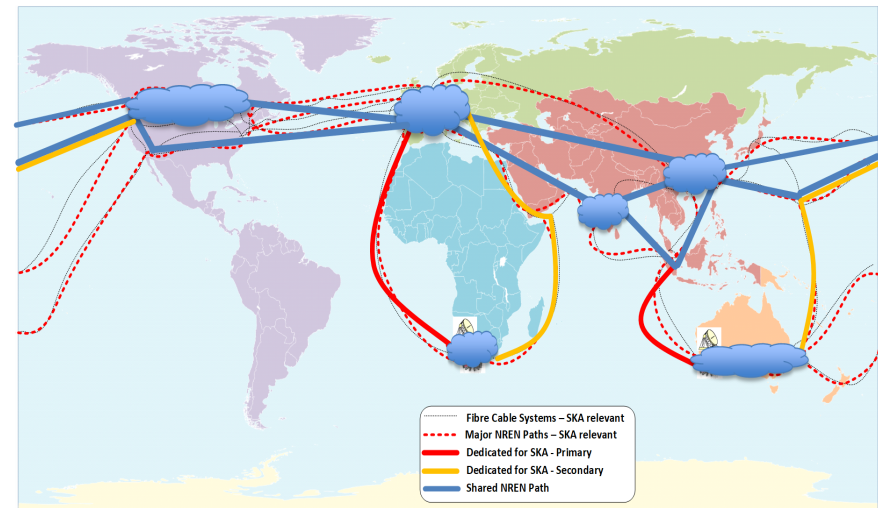


SRC Technical Data Challenges

Of the topics I mentioned yesterday, which enter new territory when we turn the dial up to SKA?

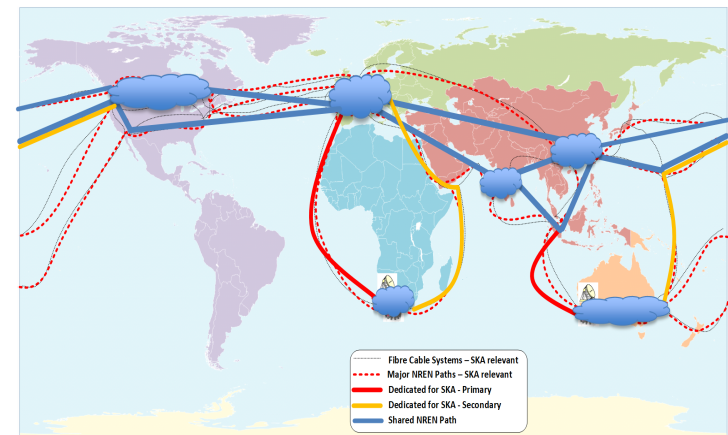
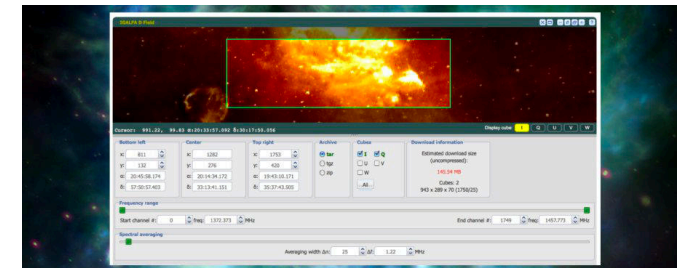
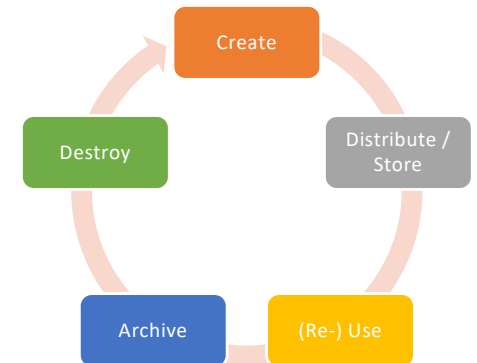
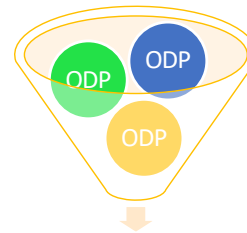


- Workload management - compute and data placement
- Data Lifecycle, Quality of Service requirements
- Data interaction and visualization
- NREN/ International data transfer



SRC Technical Data Challenges

- Data sets – bigger
- Compute – more sites, more complex workflows, richer data
- New proprietary data concepts c.f. HEP Many users, and user types (AAAI)
- Large data rates but large files too
- Large databases and catalogues
- VO integration
- Visualisation of large cubes (do we need to?, or smoothing hierarchy?)



Does that scale to the SKA era?

- The technical data challenges will need to address specific questions
- SRCSC must be involved – we need global communities engaged in posing the questions and resourcing efforts to test solutions
- Direction will benefit from **prototyping work** from regional projects – specifically of course, AENEAS (please identify next steps), ASTERICS and from ESCAPE project.



Opportunities at SKAO

Several job vacancies –
<https://recruitment.skatelescope.org/category/ska-jobs/>