SKA1 MID - the SKA's mid-frequency instrument

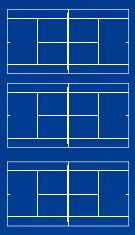
The Square Kilometre Array (SKA) will be the world's largest radio telescope, revolutionising our understanding of the Universe. The SKA will be built in two phases - SKA1 and SKA2 - starting in 2018, with SKA1 representing a fraction of the full SKA. SKA1 will include two instruments - SKA1 MID and SKA1 LOW - observing the Universe at different frequencies.

Location:
South Africa

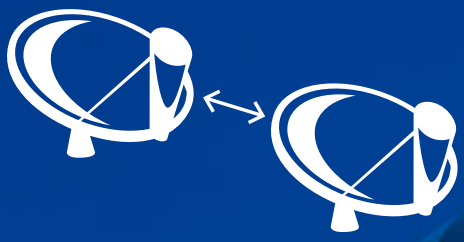
Frequency range:
350 MHz to
14 GHz

~200 dishes
(including 64 MeerKAT dishes)

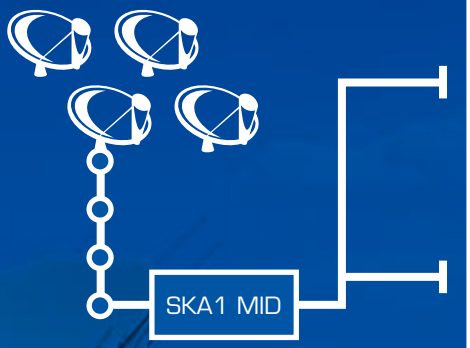
Total collecting surface:
32,600m²



or
123 tennis courts



Maximum distance between dishes:
150km



Total raw data output:

2 terabytes
per second

62 exabytes
per year

Enough to fill
340,000
average laptops with content **every day**

Compared to the JVLA, the current best similar instrument in the world:

4x the resolution

5x more sensitive

60x the survey speed

SKA1 LOW - the SKA's low-frequency instrument

The Square Kilometre Array (SKA) will be the world's largest radio telescope, revolutionising our understanding of the Universe. The SKA will be built in two phases - SKA1 and SKA2 - starting in 2018, with SKA1 representing a fraction of the full SKA. SKA1 will include two instruments - SKA1 MID and SKA1 LOW - observing the Universe at different frequencies.

Location: Australia

Frequency range:

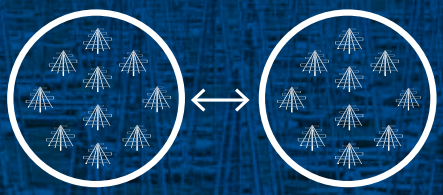
50 MHz to **350 MHz**

~130,000

antennas spread between **500 stations**

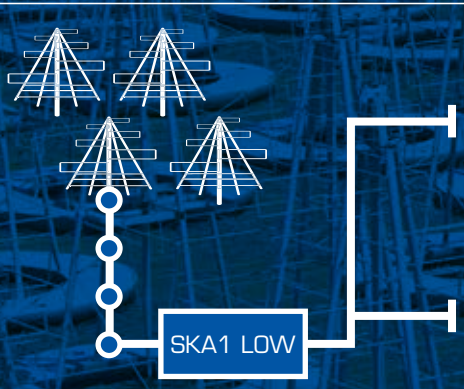
Total collecting surface:

0.4km²



Maximum distance between stations:

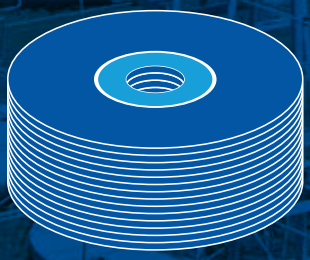
65km



Total raw data output:

157 terabytes per second

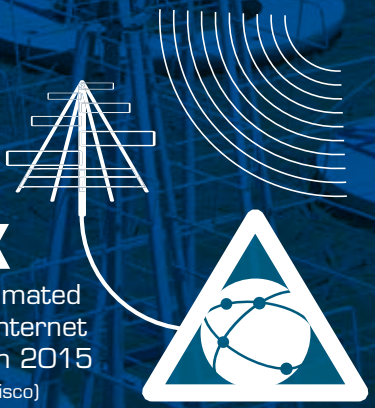
4.9 zettabytes per year



Enough to fill up

35,000 DVDs

every second



5x

the estimated global internet traffic in 2015

(source: Cisco)

Compared to LOFAR Netherlands, the current best similar instrument in the world

25% better resolution

8x more sensitive

135x the survey speed