

Allen Discovery Array, ADT256

- Time for a fresh look at a 256x6m arrays for 0.3 to 50 GHz
- 1/3 contribution from Allen still probable; 1/3 from another contributor is being pursued.
- Needs astronomy community blessing to secure funds
- Science flow down from RMS panel
 - Fast survey instrument, comparable to EVLA and MeerKat
 - Point source sensitivity comparable to GBT
- Could do much of FASR
- Is an SKA precursor,
- Uses transformational technology
 - Low cost hydroformed aluminum telescopes
 - 0.3 to 2.5 GHz uncooled receiver
 - correlator with orders of magnitude less power consumption
- A thrust and talent-builder for US radio technology

The Science Base for ADT - Time Domain Astronomy and Fast cm-Wave Surveys

(Figure below is from RMS Panel Report)

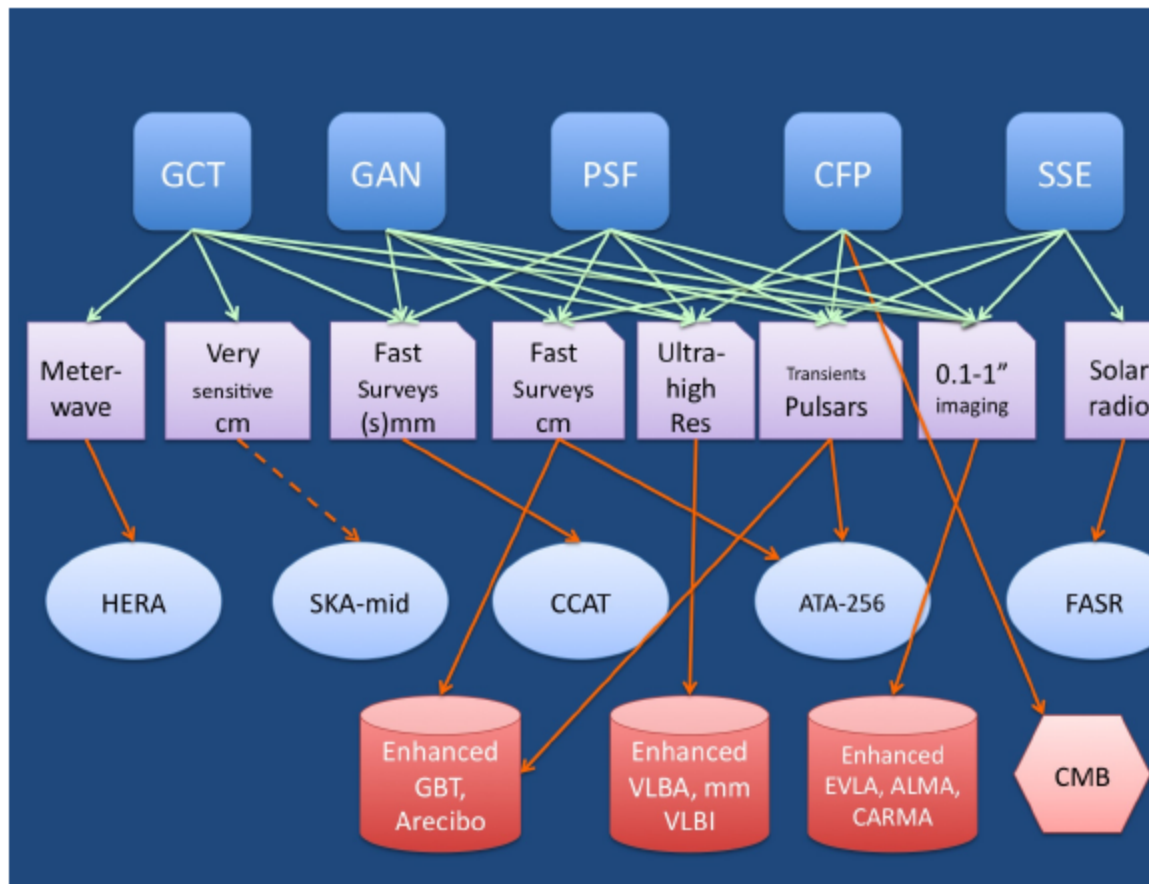


FIGURE 9.18 Mapping of required capabilities to new initiatives, upgrades of existing facilities, and continuation of successful programs. Dashed arrow indicates that need cannot be met this decade.

Roadmap for ADT256

- Start with 2-year design and prototype phase leading to low risk plan
 - Improve 6m ATA42 dish to 50 GHz
 - Revise feed and LNA's to new technology; 3 feeds
 - new correlator topology to achieve wider bandwidth
 - Fund by \$2M Allen, \$2M NRAO in kind or another private contributor, and \$2M NSF
- Cost cap construction at \$75M
 - Go/ No-go decision in 2 years following design review
 - If no construction follows, design work is of much benefit to SKA
- Logical site is EVLA , involve NRAO in low cost new technology and collaboration with universitiesT
- Quote from Astro2010: “The panel recommends that NSF explore partnerships with other agencies and private foundations to advance ATA-256.”

DVA-1

- MeerKat now plans 64 x 13.5m offset composite reflectors. Can this be enhanced by US and Canadian collaboration?
- Why build DVA-1 now? Commitments? Needed if SKA mid phase 1 starts in mid this decade
- Build DVA-1 in S. Africa? Follow by DVA-2,3.....64?

