

# Australian SRC update



International  
Centre for  
Radio  
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Research

## Australian SRCWG – key objectives

- To define the Australian SRC scope, opportunities, requirements and potential funding opportunities;
- To explore opportunities to expand the Australian SRC activities to include collaboration with similar activities in China, New Zealand and the broader Asia-Pacific Region with a particular focus on business case development and precursor enabled technological and scientific programs;
- To initiate a detailed study of the data and processing requirements and costs within an Australian SRC in support of Australian Survey Science with the SKA precursors and SKA-1.

# Developing roadmaps to SRC

EU



**Funded: 15.07.16**

Australia



Exascale Research Infrastructure for Data in  
Asian-Pacific astroNomy Using the SKA

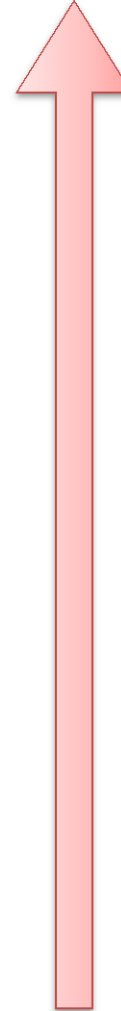
**Launched 10.04.17**  
<http://eridanus.net.au>

# ERIDANUS

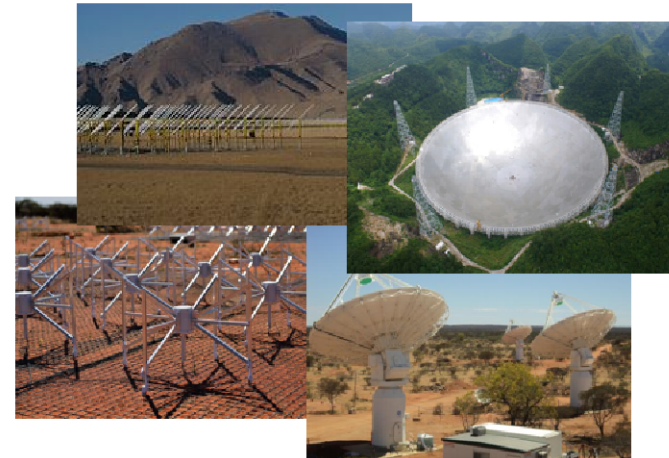
## SKA-1 Scale

The ERIDANUS Project:

- A three year, **bottom-up**, design study aimed at deploying a prototype of data intensive research infrastructure and middleware between & within Australia and China, capable of addressing SKA-class data and processing challenges.
- Will respond to challenges identified by the SRCCG and Australian SRCWG, and will work in a coordinated and collaborative manner with the European Aeneas Project.



### Technology Development Projects



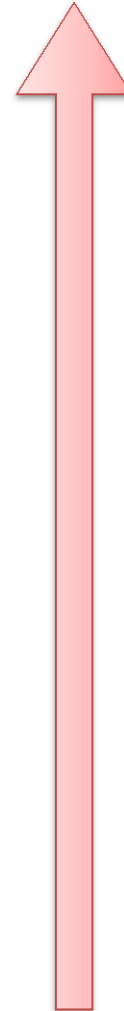
### Precursor Science Projects

# ERIDANUS

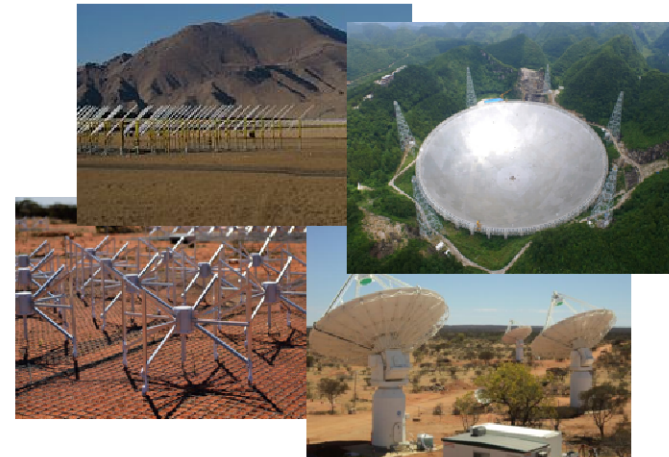
## SKA-1 Scale

The ERIDANUS Project:

- Founded by ICRAR and SHAO in November 2016 - now includes CSIRO, and interest from CADC;
- Focus:
  - Data flow architectures
  - Execution frameworks
  - Strategies and systems to monitor and control cost
  - Networking optimisation
  - Cloud computing options



### Technology Development Projects

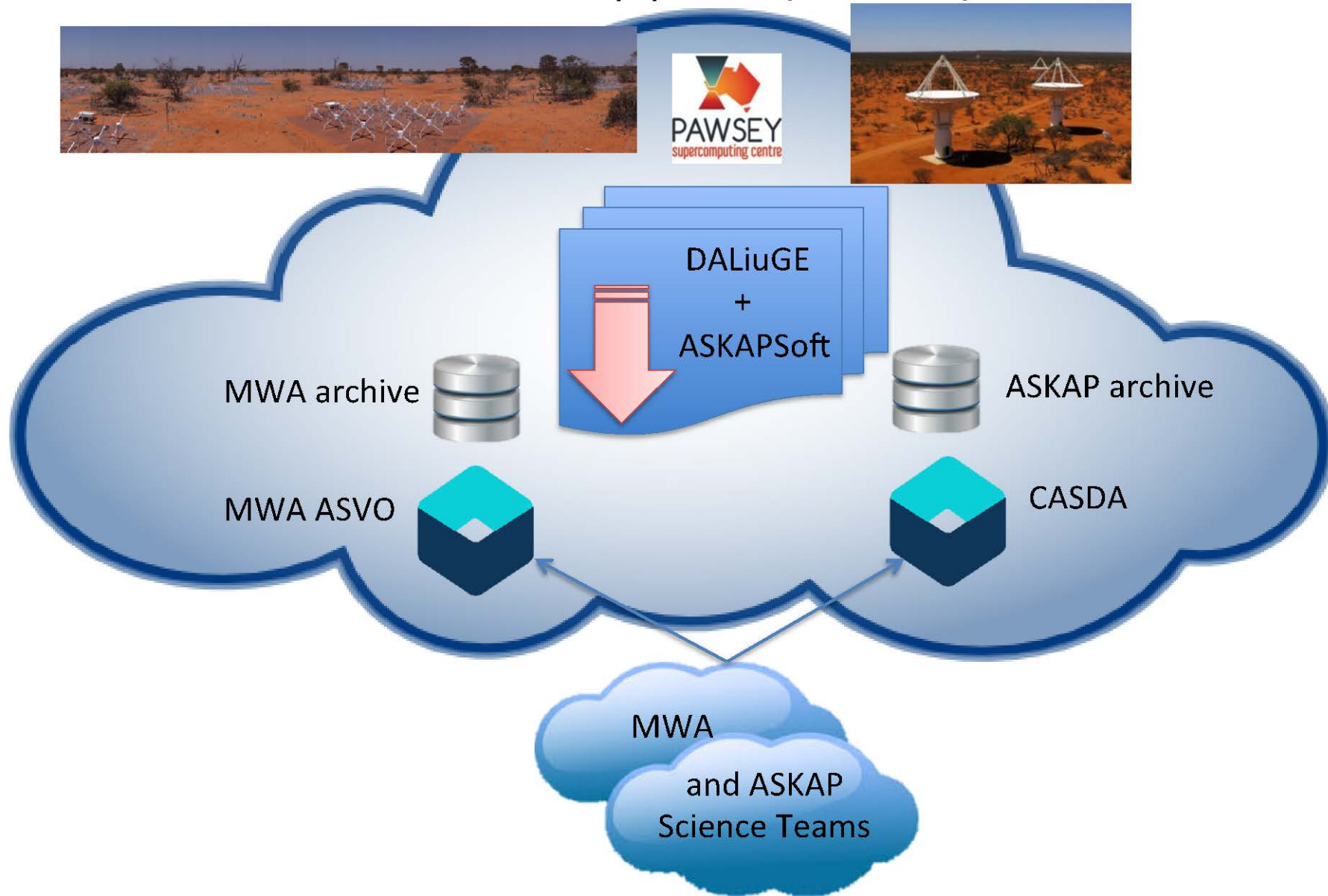


### Precursor Science Projects

# Timeline - 2017/18

- ERIDANUS will deploy processing and storage prototypes and scaling tests to SKA-1 scale using largest facilities available in Australia and China:
  - Focused on precursor needs: ASKAP, MWA and FAST
  - Focused on large-scale surveys: CHILES+, GLASS, IMAGINE, as workflow and CLOUD testbeds.
  - Focused on ASKAPsoft, DALiuGE and co-developed technology with industry: e.g. Nyriad (NZ) on new processing/storage hardware (GPU optimisation).
- ERIDANUS will define Australian SRC requirements.
- ERIDANUS will prepare a complete business case for a funding application to Australian Government.

# DALiuGE + ASKAPSoft = Jacal MWA pipeline (FUNDED)



# Timeline - 2020/21

- Funded Regional Centre initiatives in China and Australia;
- ASKAP, MWA and FAST in full science operations using components from ERIDANUS developments;
- First science results from Australia/China precursor science teams using ERIDANUS infrastructure;
- SKA Regional Centre Alliance formed;
- First ERIDANUS and AENEAS success in SKA data challenges;
- SKA-1 construction started;
- Joint Australian and China (with others) Asia-Pacific Regional Centre network proposal to governments for an SKA-1 class capability by 2025.





# Opportunities: Australian SRC workshop

20-22 November, Perth\*

ited invitations

# Opportunities: 2<sup>st</sup> Australia-China SKA Big Data Workshop (hackathon)

4-6 December 2017, Perth



1<sup>st</sup> Australia-China SKA Big Data Workshop



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# Australia-China Science and Research Fund Joint Research Centres

- Grants of up to \$1m to Australian institutions, up to 3-years
- Astronomy related technology, including big data, is a priority area
- UWA to lead bid, partners including CSIRO + others.
- Focused on astronomy big data and working with SHAO, NAOC.
- Deadline 15 November 2017



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