

Economics Legislation Committee
ANSWERS TO QUESTIONS ON NOTICE
Industry, Innovation and Science Portfolio
2016-17 Supplementary Budget Estimates
20 October 2016

DEPARTMENT: DEPARTMENT OF INDUSTRY, INNOVATION AND SCIENCE

TOPIC: Five-hundred-meter Aperture Spherical Telescope (FAST)

REFERENCE: Written Question – Senator Carr

QUESTION No.: SI-71

1. I note that the Five-hundred-meter Aperture Spherical Telescope (FAST) has achieved first light in September, a project that CSIRO was instrumental in bringing to fruition through the collaboration between the Australian and Chinese Science Academies. What is the anticipated scientific collaboration between the two projects? How will that collaboration be governed?
2. I also note that the FAST's "Next Generation Archive System (NGAS), developed by the International Centre for Radio Astronomy (ICRAR) in Perth, Australia and the European Southern Observatory will store and maintain the large amount of data that it collects." What are the implications for SKA's own storage and processing requirements?

ANSWER

1. CSIRO's specific contribution to FAST is a 19-beam receiver to be installed in early 2017. This collaboration is being governed through CSIRO's standard contract and project management processes. CSIRO also has long-standing collaborations with Chinese astronomers, particularly in the area of pulsar astronomy that will be strengthened and expanded through work on FAST.

In addition to the above bilateral relationships; CSIRO, a number of Australian universities and institutions represented by the Chinese Academy of Sciences (including the National Astronomical Observatory of China (NAOC) – which built FAST) are members of a joint China-Australia research centre, the Australian-China Consortium for Astrophysical Research (ACAMAR). ACAMAR was officially launched in Beijing on Saturday 12th September 2015. It operates as a 'virtual' centre providing an umbrella and coordination point for astronomical collaborations. One area of collaboration involves looking at the potential for an Asia-Pacific approach to supporting the processing and data needs of the SKA.

In February 2013 the Department and the Chinese Academy of Sciences signed an MOU on astronomy collaboration which has provided an overall framework for the ACAMAR and other astronomy collaborations with China.

2. The NGAS system is well suited to the scale of data flow and processing for the SKA precursors such as the Australian SKA Pathfinder (ASKAP), the Murchison Widefield Array (MWA) and FAST. The system is now being used at most of the optical and radio astronomy facilities around the world. ICRAR is currently developing NGAS-like systems for the SKA era in collaboration with international partners. The SKA system will be required to handle a data flow 10-100 times that of current telescopes.