

The SKA Technical Workshop - Jodrell Bank Observatory, 3-5 August 2000

The Site Evaluation and Selection Working Group

The following attended on either one or two of the discussions of the Working Group:

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Chair person:
Dr. Bruce Thomas
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The following is a summary of the main aspects covered at the two discussions meetings:

A. Planning issues at a Working Group level:

- An SKA facility should be defined generally by:
 - Latitude Range:
 - Sky-coverage is an important consideration
 - Avoid geomagnetic equator
 - Some siting requirements:
 - Central Site as a protected radio-quiet zone of the order of 100 km diameter (see Note 1),
 - Remote station requirements: protection against front-end overload
 - Extent of the array: 1000 - 3000 km (see Note 2)
 - Degree to which optimum array-configuration can be achieved.
- Radio-quiet zone - Protection issues:
 - Two general types of interference:
 - Land-based
 - Satellite downlinks, protection across zone (see Note 3)
 - Impact on planning:
 - Government legislation and regulation
 - Provision of alternative acceptable communication services (see Note 4)
 - Planning for cost of ongoing effective protection
 - EM-measurements:
 - Working group to decide minimum criteria and output data format by July 2001
 - Provide measurement information to Interference Mitigation Techniques Working Group.

B. General planning issues for proposals

- Some infrastructure and political issues to be considered by countries preparing cases for hosting:
 - Optic-fibre connections (array and national)
 - Logistics including accessibility, power, water, etc.
 - Geological (stability, and for building)
 - Housing for ongoing maintenance
 - Buildings (control)
 - Minimum likelihood of extreme weather conditions (design life-time ~ 50 yrs).
 - Security issues
 - Environmental issues
 - Government support (cash and in kind)
 - Degree of control of sites by ISSC and length of "tenure".
 - Extent of protection (regulation and legislation).

C. Proposed recommendations to ISSC

The Working Group recommends:

1. that the ISSC establish a Standing Working Group on Site Evaluation and Selection;
2. that the ISSC solicits expressions of interest for hosting the SKA, with responses expected by 1 October 2001.

Notes:

For clarification and/or background to aid future planning, the following is included as notes:

- Note 1: The size of the radio-quiet zone of 30 - 50 km based on land-based interference, was extended to "of the order of 100 km diameter" to indicate the desire to include the minimisation of interference of satellite downlinks, the diameter being dependent on the satellite footprint for the various satellites. See also Note 3.
- Note 2: The extent of the array given is based on the preliminary information discussed within the Array Configuration Working Group.
- Note 3: The impact of satellite downlinks and their minimisation in establishing a radio-quiet zone is currently a matter for the Taskforce established by the OECD Global Science Forum
- Note 4: Restrictions on communications to enable the quality of a radio-quiet zone to be preserved should be a cost on the facility. An example could be replacement of communications by satellite by an alternative system (eg. Optic fibre).

Bruce MacA Thomas
14 August 2000