

PrepSKA WP2 Annual Meeting

Second Announcement

Meeting Date: Oct 29-31, 2009
University of Manchester
Schuster Building

Purpose of Meeting

The aim of this meeting is to provide a snapshot of the world-wide progress toward the design of the SKA and specifically within the PrepSKA Work Package 2 activities; to begin the process of confronting science goals, design choices, and technical risks within a system engineering approach; and to explore the impact of recent scientific and technical results for the SKA design.

Registration for this meeting is compulsory and closes on 12 October 2009 – go to www.skatelescope.org/pages/WP2_29Oct2009/wp2_291009.htm for further details.

The following are particular points of emphasis for the meeting:

- Small number of presentations, generally aimed at description of issues and items for discussion, focused on SKA design.
- Elucidation of risks and costs of various design approaches.
- Descriptions of work derived from system engineering approach to WP2 and the SKA design.
- Industry discussions focused on developing policy with respect to industry relations and handling intellectual property, not on specific industry involvements.

Sessions

More detail on the sessions (speakers and times) will be provided in the next announcement. The meeting will begin at 9:00 am on Thursday (Oct 29), and end at about 5:30 pm on Saturday (Oct 31).

Day 1 – Thurs, Oct 29 Morning

Introduction to the Meeting

1. Short presentations on SKA progress at Contributing Institutions.
A series of short presentations from each Contributing Institution on the work they have done on the WP2 program, and their plans for future work on the SKA.
2. Pathfinder and Precursor contributions to the SKA design.
Reports on how the Pathfinder/Precursor designs map on to the SKA. Lessons learned of relevance to the SKA thus far, and progress reports.

Day 1 – Thurs, Oct 29 Afternoon

3. The SKA system design and costing approach.
The approach to the SKA system design: interfaces, risk, and cost.
 - System engineering for the SKA (system management, system design, interfaces), covering our approach to the system design and some of the issues arising from simultaneous system design proceeding in parallel with rapidly evolving developments in each of the major sub-systems.

- Early example of a cost-contained system design, as presented to the Astro2010 US Decadal Review Panel.
 - Discussion on system design and the Astro2010 version.
 - Technical risks associated with major technology options and their impact on system performance – the current view. How and when might those risks be retired (current view)? What are fall-back positions?
 - Technical risks with dishes equipped with WBSPFs.
 - Technical risks with dishes equipped with PAFs.
 - Technical risks with AAs.
 - Costs associated with major technology options – the current view. Cost containment.
 - Costs of dishes equipped with WBSPFs.
 - Costs of dishes equipped with PAFs.
 - Costs of AAs.
 - Discussion on handling these risks and costs in the system context.
4. Sessions 4A and 4B are parallel.
- A. SKA interactions with industry and intellectual property (IP) management.
Presentations and discussions on approaches to industry from the SKA project, intellectual property and the development of procurement policies. Emphasis on policy development.
- Talk on procurement policy development and assessment of industry capability.
 - Discussion on industry involvement.
 - Introduction to intellectual property issues for PrepSKA/SKA.
 - Discussion on IP, including IP issues with partners.
- B. Latest Scientific Results that may have an impact on the SKA design.
- Results from SKADS.
 - Recent polarization results.
 - Recent pulsar survey results.
 - Discussion on the impact of these results, with a slant towards forecasting the science/technology trade-offs discussions in Session 9.

Day 2 – Friday, Oct 30 Morning

5. Progress and planning in each SKA sub-system.
Review by SPDO Domain Specialists of progress and outline of goals.
- Emphasis on design-group work (summary of progress & future plans) and who will do what from the contributing institutions. How will verification programs be constructed in each instance (i.e. what kind of verification is needed)?
 - Emphasis on issues/impacts in various areas (e.g. power, development time, etc.).
 - Introduction.
 - DVP (dishes + SPFs/PAFs), AAVP.
 - Signal Transport and Networks.
 - Digital systems (correlator, beamformers (various), non-imaging digital systems).
 - Software and computing.
 - Discussion after each presentation.
6. WP2 Time and Resources planning.
Time and resources allocations in the SPDO and Contributing Institutions.
- Revised PrepSKA DoW.

- PrepSKA time plan.
- Discussion on distribution of work.

Day 2 – Friday, Oct 30 Afternoon

7. SKA roll-out and operations.
Science operations derived from the Design Reference Mission, implications for roll-out, maintenance and software development.
- Long-term Phase 1 and Phase 2 schedule.
 - Interaction between roll-out and operations (i.e. constraints on science operations imposed by the roll-out and other support activities).
 - Operations scenarios (science and other aspects) including mix of shorter PI-driven observations and major surveys, system implications of survey dominated operations, and opportunities and potential for concurrent (commensal) observing.
 - Plans for continuous assessment and performance evaluation.
 - Phasing of software development and data distribution scenarios.
 - Discussion after each talk.
8. SKA configurations and site planning.
Progress on the development of SKA antenna configurations, the RFI measurement campaign and the interaction of site characteristics with the SKA engineering design.
- Key and emerging site-related issues (RFI, infrastructure, etc.) and the time-scales for resolving them.
 - Methodology for determining an SKA configuration, summary of current results and future work.
 - Discussion of site planning and configurations.

Day 3 – Saturday, Oct 31 Morning and part of Afternoon

9. Science/Technology trade-off plans.
Presentations on science components of the Design Reference Mission (DRM), deriving SKA specifications from the DRM and the science/technology/design trade-off cycle.
- Presentations:
- Design Reference Mission (DRM).
 - Methodology of science-technology trade-offs.
 - Performance and feasibility of major practical design options (dishes, PAFs, AAs), compared with the requirements indicated by the DRM.
- Discussions:
- Methodology, including the role of cost.
 - Potentially available trade-offs.
 - Specific topics (for example):
 - alternative antennas for long baselines.
 - pulsar/transient detection vs imaging.

Day 3 – Saturday, Oct 31 Late Afternoon

10. Wrap-up and Re-cap.
Summary of meeting.