



**"Exploring the Universe with the  
world's largest radio telescope"**

**2010  
Annual WP2 Meeting**

**WP2.7 Management Overview**

**Kobus Cloete**

**27 October 2010**



# Overview of talk

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- Scope of PrepSKA
- Management process
- Structure
- Roles and responsibilities
- Way forward

Extract from EC FP7 agreement, Annex I - "Description of Work"

- There are several issues that need to be addressed before construction of the SKA can begin:
  - 1. What is the design for the SKA?
  - 2. Where will the SKA be located?
  - 3. What is the legal framework and governance structure under which SKA will operate?
  - 4. What is the most cost-effective mechanism for the procurement of the various components of the SKA?
  - 5. How will the SKA be funded?
- The purpose of this proposal is to address all of these points. We seek funding to integrate the R&D work from around the globe in order to develop the fully-costed design for Phase 1 of the SKA, and a deployment plan for the full instrument.

- Structured in seven work packages:
  - WP1 PrepSKA management
  - WP2 Costed telescope design
  - WP3 Further site characterization in Australasia and Southern Africa
  - WP4 Governance
  - WP5 Procurement and involvement of industry
  - WP6 Options for funding
  - WP7 Implementation plan for the SKA, and analysis of its societal impact



## WP2 Management Process (1)

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- There have been a structure and process defined at the start of PrepSKA.
- During WP2 meeting in November 2008 a document '**Guiding Principles, Activities and Targets for PrepSKA Work Package 2**' set out roles and responsibilities more clearly.
- During October 2009 the Description of Work (DoW) was reviewed and updated to adopt the SEMP approach of reviews and deliverables, management structure remained the unchanged.



# Revised approach (Oct 2009)

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		WP2.X.1	WP2.X.2	WP2.X.3	WP2.X.4	WP2.X.5	WP2.X.6	WP2.X.7	WP2.X.8
WP2.1	SKA System	SKA definition and design	SKA life cycle studies and analysis	SKA Science operations	SKA Support operations	SKA Monitoring and control	SKA Electromagnetic compatibility (EMC)	SKA Cost analysis	SKA Power consumption
		SPDO	SPDO	ASTRON	SPDO	UK (UCAM, UOXF, UMAN)	OPAR and ASTRON	SPDO	SPDO
WP2.2	Dish Verification Program	Antenna Design	Wide Band Single Pixel Feed and RF Design	Phased Array Feed Design					
		SPDO, Cornell (TDP)	2.2.2.1 Cornell (TDP) 2.2.2.2 Cornell (TDP) 2.2.2.3 CSIRO 2.2.2.4 Cornell (TDP)	CSIRO					
WP2.3	Aperture Array Verification Program	Wide Field of View Aperture Array Tiles	AA Signal Processing						
		AAVP Management Team (UK and ASTRON)	AAVP Management Team (UK and ASTRON)						
WP2.4	Signal transport and Networks	Dish cable systems	Central Facilities Fibre Networks	Digital Data Backhaul	LO and Timing				
		SPDO	SPDO	SPDO	UK (UCAM, UOXF, UMAN)				
WP2.5	Digital Signal Processing	Correlator and Central Beamformer	Digital Beamformers	Non-imaging processor					
		NRC-HIA	2.5.2.1 CSIRO 2.5.2.2 UK (UCAM, UOXF, UMAN) 2.5.2.3 UK (UCAM, UOXF, UMAN)	UK (UCAM, UOXF, UMAN)					
WP2.6	Software and Computing	Software Engineering and Architecture Development	Computing Hardware Architecture Development	Calibration and Imaging	Non-Imaging Data Processing	Data Products, Data Storage and Data Distribution	Interfaces for Users and Operators	Exascale Computing and Hardware	
		ASTRON	SPDO	2.6.3.1 Cornell (TDP) 2.6.3.2 CSIRO 2.6.3.3 ASTRON	CSIRO (ASKAP)	UK (UCAM, UOXF, UMAN)	SPDO	Cornell (TDP)	
WP2.7	WP2 design study management	SPDO project management							
		SPDO							

Lead Organisations:

1. SPDO
2. ASTRON
3. CSIRO
4. DRAO
5. OPAR
6. TDP
7. UK

- Strategy to Proceed to the Next Phase (System CoDR) it was indicated that:
  - The structure and process have been in place for more than a year. However, the process is not yet operating efficiently, and this is slowing down progress within WP2 and may compromise the schedule. Contributing factors are:
    - Different and sometimes conflicting priorities,
    - Different approaches being followed at different institutions and projects,
    - Lack of resources dedicated to SKA work and support.



## Establishment of Management Team

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- Project Manager within the SPDO appointed.
- During XC-SSEC meeting in April 2010 the change in management strategy was discussed and agreed.
- Led to the establishment /formation of an WP2 Management Team representing all the WP2 lead organisations.





## WP2 Management Team Members

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- Members of the team represents all the WP2 Lead Organisations:
  - SPDO : K Cloete (Chairman), P Dewdney
  - ASTRON : JG Bij de Vaate
  - CSIRO : C Jackson
  - DRAO : G Hovey
  - OPAR : S Torchinsky
  - TDP : L Baker, A Kemball
  - UK : P Alexander
  - AAVP Representative : A Faulkner

- **Structure**

- Will consist out of representatives from all WP2 task leader organisations
- Will be chaired by the SPDO WP2 Project Manager
- Will report to the SKA Project Director

- **Overall Objectives**

- Build/strengthen the SKA as a project
- Build and maintain the momentum within the SKA project
- Ensure coherency in the effort
- Maintain visibility in the effort
- Develop the plan for presenting the description of the system design to stakeholder groups

- **Responsibilities**

- To plan and manage the execution of all the tasks within WP2
- To ensure that all tasks are sufficiently resourced to be able to maintain the schedule
- To coordinate the effort within the contributing organisations and own organisations to ensure the creation and maintenance of an efficient and coherent team
- Lead the effort during planning and execution of reviews
- Ensure the quality and on-time delivery and execution of reviews
- Report issues and risks as and when they are identified
- Participate in telecons and face to face meetings



## WP2 Management Team

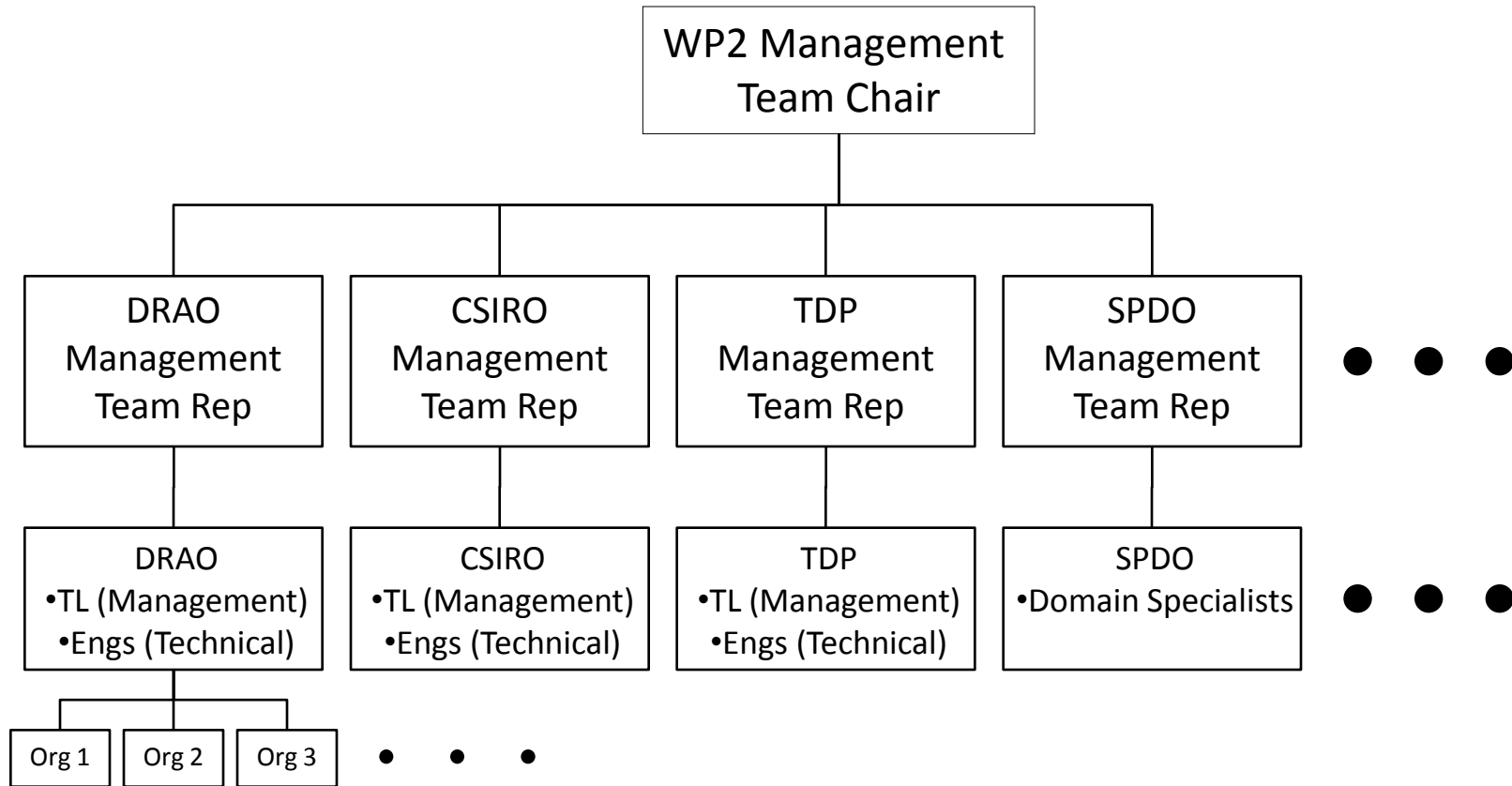
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- First face-to-face meeting conducted 13 June 2010
- Agenda of the meeting included the following aspects:
  - Objectives of the meeting
  - Objectives of the project
  - Strategy to obtain the objectives
  - Structure (management and technical)
  - Scope of the work
  - Management of the effort
  - Schedule
  - Availability of resources
  - Current status of effort
  - Way forward
- Confirmation of commitment from all participants to the goals and objectives of the project



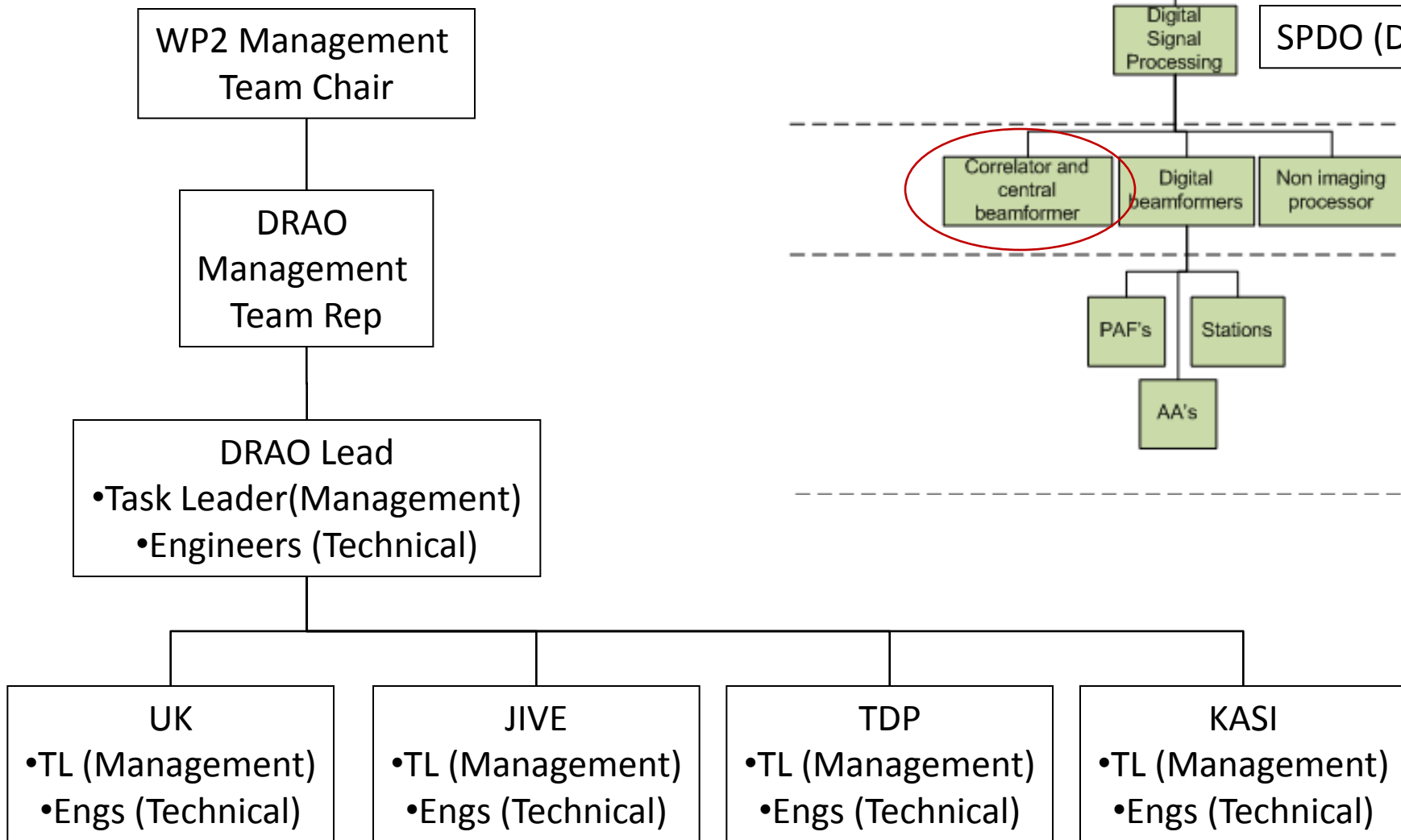
# Management Structure

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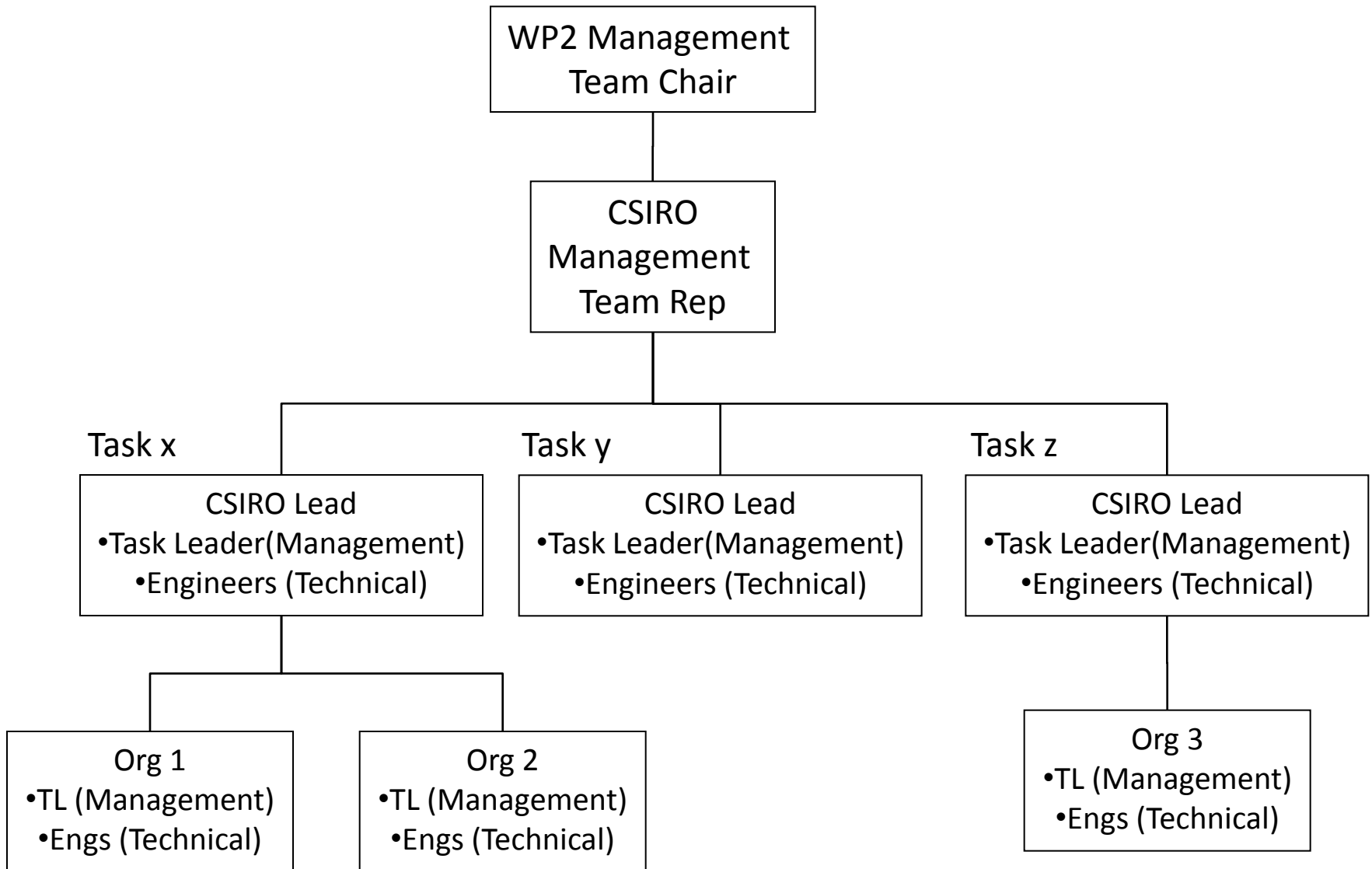


# Example (1)

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# Example (2)



- Originally described in **‘Guiding Principles, Activities and Targets for PrepSKA WP 2’**
- Re-confirmed during system CoDR (Strategy to Proceed to the Next Phase)
- With introduction of Management Team some of the roles and responsibilities will have slightly changed



- Role of SPDO
  - Act as lead institution for a number of tasks
  - Provide overall coordination for all the other tasks.
- Domain specialists
  - Coordinate the technical effort of the tasks by the lead institutions to ensure coherency across the domain,
  - Bring together technology developments from the global network of precursor projects, pathfinder projects and SKA design studies,
  - Organise and lead design groups
  - On an operational level the Domain Specialists liaise directly with local engineering support staff in support of pre-defined work packages.

- Lead Institutions

- In collaboration with the SPDO, Lead Institutions are responsible for:
  - managing and coordinating the execution of tasks assigned to them,
  - delivering reports and results to the SPDO,
  - facilitating information flow to other parts of the PrepSKA project as needed,
  - appointing or hiring staff to carry out this work
- Work for each of the tasks is not all executed by the Lead Institutions themselves



# Lead Institution Management Team Representative

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- Manages, facilitates and monitors the work for each task the institute are leading,
- Acts in the interests of the wide SKA project rather than any particular institution,
- Formulate detailed WBS elements and schedules for the tasks, outcomes, decision points, and specifications (as necessary), progress tracking and performance measures, other project management components as requested (e.g. risk register items),
- Negotiate resources from their institute to ensure that the tasks are adequately resourced for on time completion of the task,
- Interacts with contributing organisation to ensure adequate resources are allocated to the task,
- Attend international meetings as required.



## Task Leader(s)

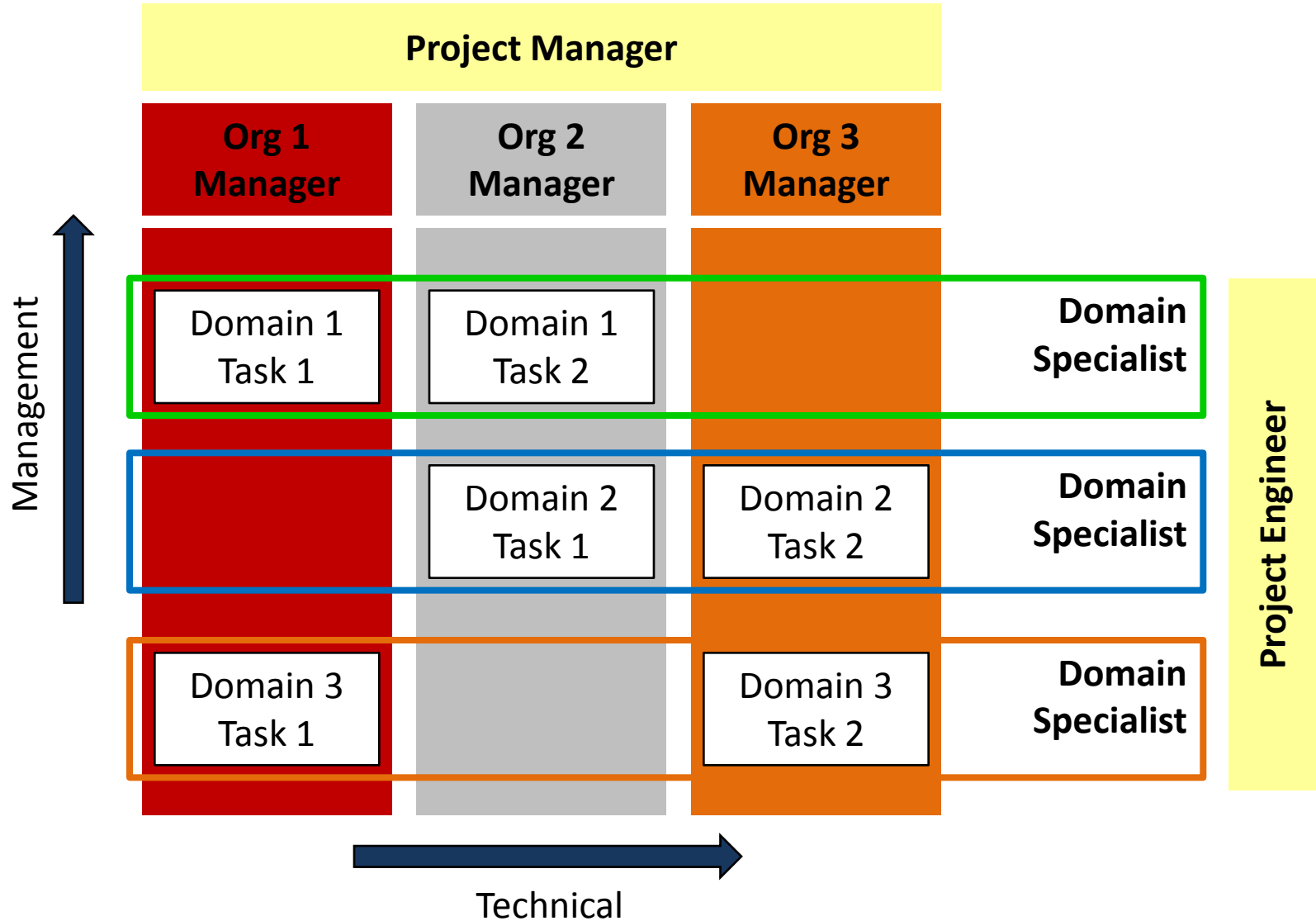
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- Lead Institute Task Leaders will report to the relevant Management Team Representative
- Lead the effort within their institution to execute the task
- Organise staff in own institution and from participating institutions.
- Focussed on on-time completion and delivery of deliverables to the lead institute or SPDO
- Technically interacts with Domain Specialists and engineers from other Contributing Institutions.
- Facilitate and manage information flow between the SPDO and the Lead Institution
- As required, participate in external reviews of the PrepSKA work.
- Attend international meetings as required.
- Participate in problem-specific, SKA-wide working groups or task forces in which the Lead Institute is a participant or for which the Liaison Engineer is particularly well qualified (e.g. dynamic range or power consumption issues).
- Where appropriate, carry out technical work on behalf of the institution.



# Simplified View (?)

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# Way forward

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- Updating of Project Management Plan
  - Including roles and responsibilities of Management Team, Liaison Engineers, Domain Specialists, Task Leaders etc.

