



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

**2011
SKA System delta CoDR
Context**

Kobus Cloete

23 February 2011



Overview

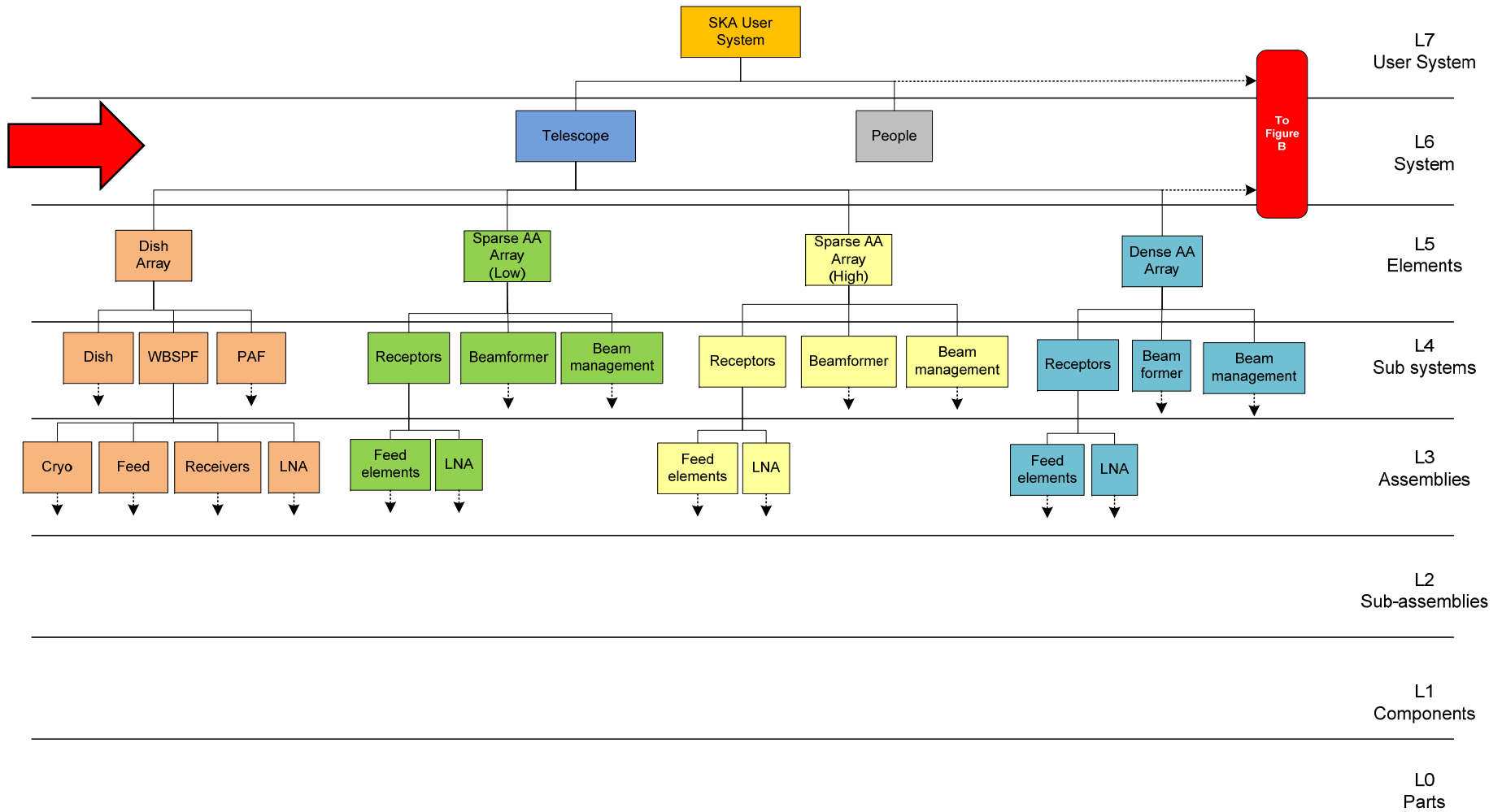
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- SKA System Concept Phase and CoDR
- Purpose and Expected Outcome of dCoDR
- Questions to Panel
- System dCoDR documents
- Presentations
- Flow of Review



Hierarchy

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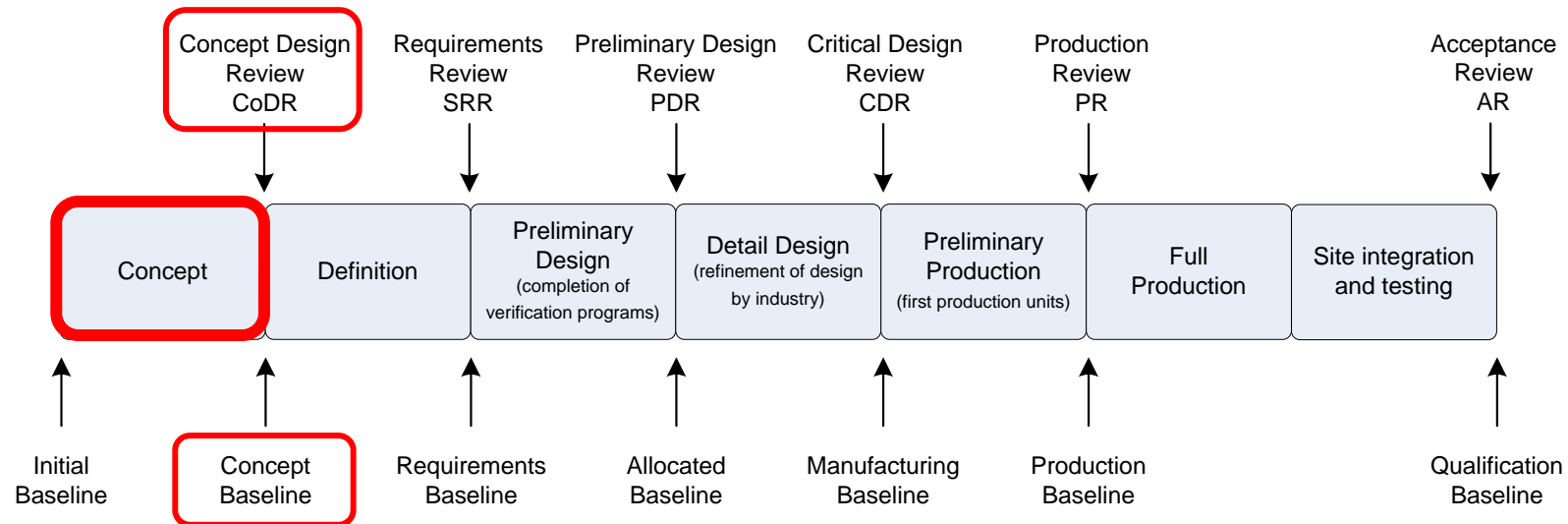




SKA System Concept Phase and CoDR (1)

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- SKA CoDR is performed at the end of the Concept Phase

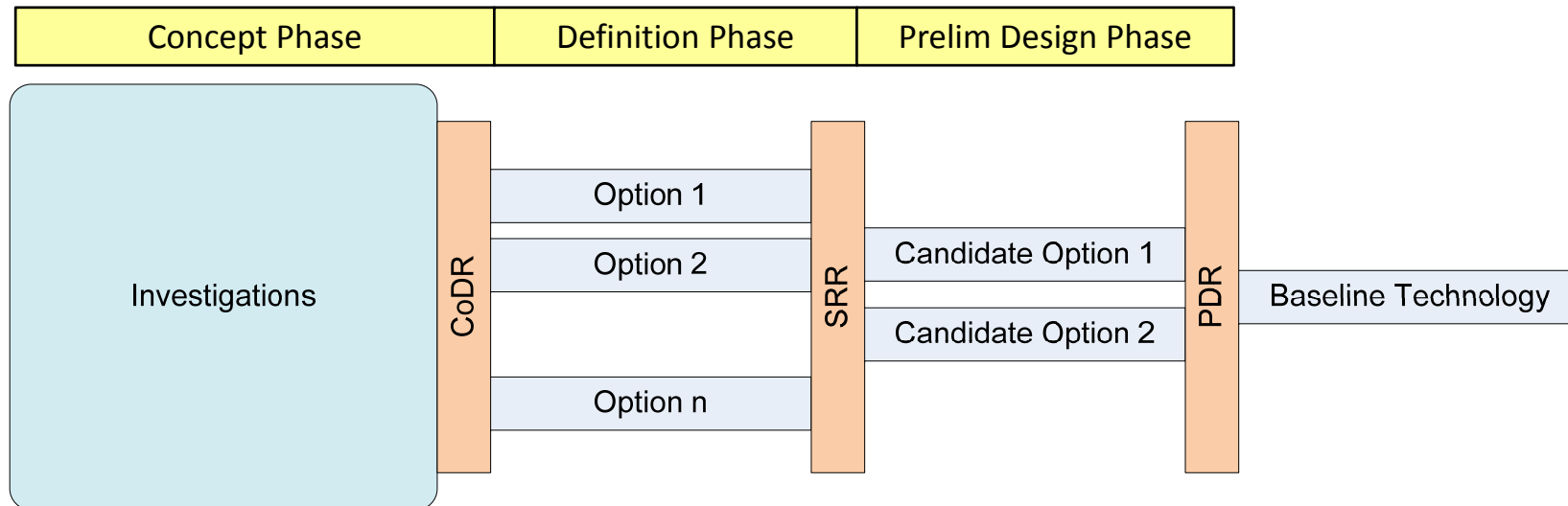


- Compared to the 'usual definition' and scope of a CoDR, the SKA CoDR takes place earlier in the project lifecycle
- Imply concepts have not yet been narrowed down to any single solution and that a range of options may still exist.
- Also applicable to next level reviews



SKA System Concept Phase and CoDR (2)

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- Concept phase will be followed by the definition phase and then the preliminary design phase.
- As phases progress the SKA system design will evolve via a set of trade-off studies to arrive at a single solution by the time of the Preliminary Design Review.



Purpose and Expected Outcome of dCoDR

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- Purpose:
 - Following February 2010 Concept Design Review (CoDR) the project reprioritised and refocused the science and engineering (especially for the SKA1).
 - Due to the changes the baseline, as established during the CoDR, has been updated.
- Expected outcome:
 - Input to the re-establishing the system concept baseline
 - Inclusion of the changes arising from the SKA1 project definition
 - Following the successful review, the next phase, the system definition phase, will be initiated.



Purpose

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- The dCoDR is conducted to evaluate:
 - The overall system level technical progress,
 - Whether the changes made to the project following the CoDR managed to bring more focus and feasibility to the project,
 - Whether the technical adequacy obtained during the concept phase, as defined in the relevant SKA documentation, is at a sufficient level of maturity to allow the system to move into the next phase,
 - Whether all system aspects of the project have been covered and where gaps exist, whether adequate measures have been identified to address the shortcomings.



Questions to Panel (1)

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- The Review Panel is requested to consider the following questions:
 1. Has the strategy adopted by the project following the February 2010 CoDR succeeded in addressing the previous imbalance in focus, scope, cost, risk and schedule?
 2. At the concept level, is the SKA1 system presented capable of meeting the prioritized science requirements for SKA1?
 3. Has sufficient evidence been presented for the SKA1 candidate technologies to justify further resources being spent on further analysis and refinement, based on current knowledge of feasibility, cost and performance (i.e. meeting science requirements)?
 4. Is the strategy adopted to realize SKA1 while maintaining a view on SKA2 credible and feasible?



Questions to Panel (2)

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5. Have all the necessary elements been considered or are there gaps and/or shortcomings?
6. Is there a sufficiently accurate estimate of risk at this stage of the project?
7. Are the planned decision-making processes sufficient and reasonable for carrying out the trade-offs needed to arrive at a final system design?
8. Is the plan for proceeding through the subsequent project phases credible?
9. Is the schedule for proceeding to the subsequent project phases credible?
10. Are resources sufficient to carry out work subsequent to the dCoDR, and commensurate with the planned schedule? (People, Budget).



System dCoDR Documents - Overview

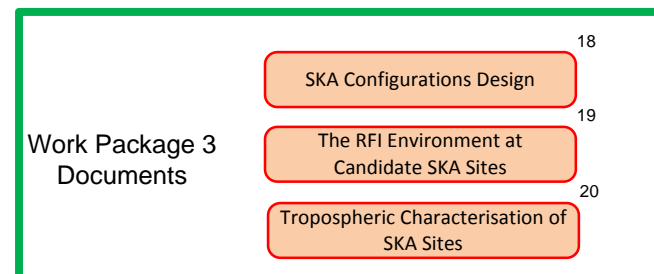
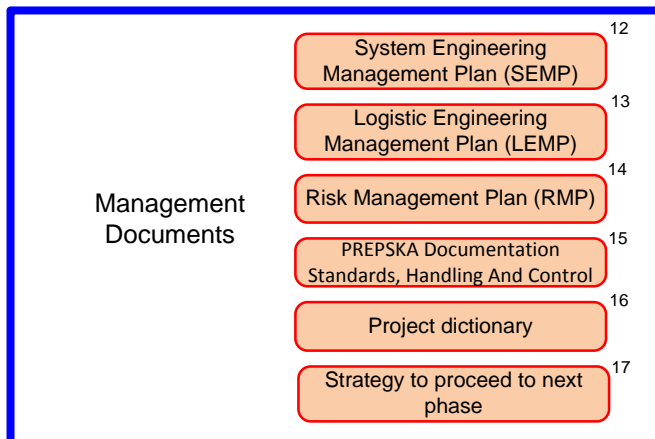
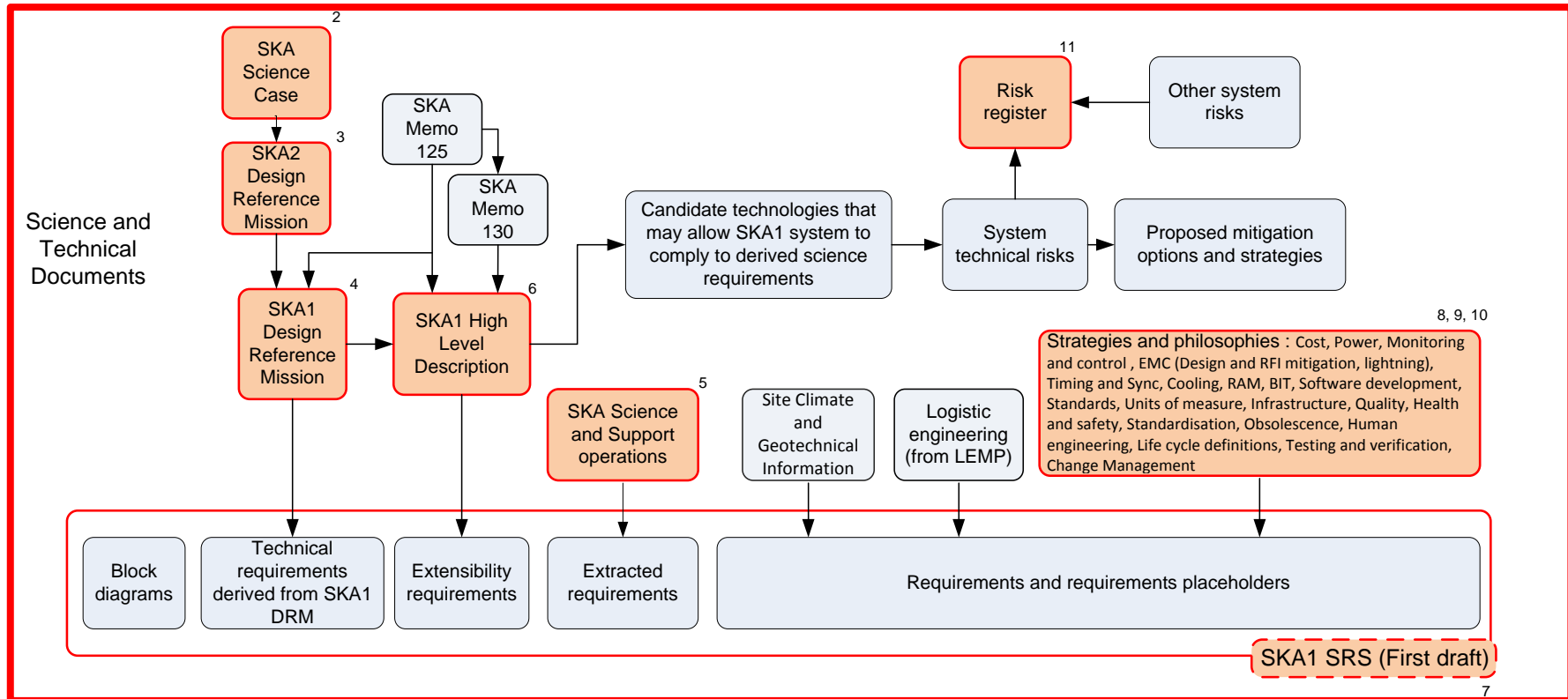
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- Science
 - SKA Science Case, SKA Design Reference Mission, SKA1 Design Reference Mission, SKA Science and Support Operations Concepts
- System technical
 - SKA1 High Level System Description, SKA1 System Requirement Specification (SRS) (first draft), SKA Strategies and Philosophies, SKA Monitoring and Control Philosophy, SKA costing Strategy.
- Management
 - Risk Register, System Engineering Management Plan (SEMP), Logistics Engineering Management Plan (LEMP), Risk Management Plan (RMP), PREPSKA Documentation Standards, Handling And Control, Project Dictionary, Strategy to Proceed to the Next Phase.
- WP3 updates
 - SKA array configurations design, the RFI measurement campaign and the tropospheric characterisation of the two candidate sites.
- Supporting documents



System dCoDR documents

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Presentations

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- Context
- Overview of changes adopted in SKA project since Feb 2010 CoDR
 - Science
 - Engineering
 - Management
- Technical documents
 - Only present changes
- Management documents



Presentations and Flow of Review

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Wednesday	Purpose and context of the system delta CoDR, high level overview of changes to project and review documents
	Science: SKA science case, SKA DRM, Memo 125 and Phase 1 DRM
	Engineering: Overview of adopted strategy in view of the changes
	Management: Strategy to proceed to the next phase(s) with reference to completion of Preparatory Phase and planning for Pre-construction Phase
	SKA Operational Concepts
	High level system description (include presentation of technical risks)
Thursday	Science/Technology Trade-off process
	SKA1 System Requirement Specification
	Risks and risk management
	Strategies and philosophies <ul style="list-style-type: none"> ● Cost ● Power ● Environmental and geotechnical ● Other
	Management plans (SEMP, LEMP, RMP, others)



Thank you

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