

Aperture Array MID frequency Consortium: AAMID

AAMID Management Tools and Rules

Marchel Gerbers
Quality Assurance / Product Assurance

Technology readiness

Convince SKA office that technology is ready (end of 2016) for (mass) production/construction for a mid frequency aperture array telescope.

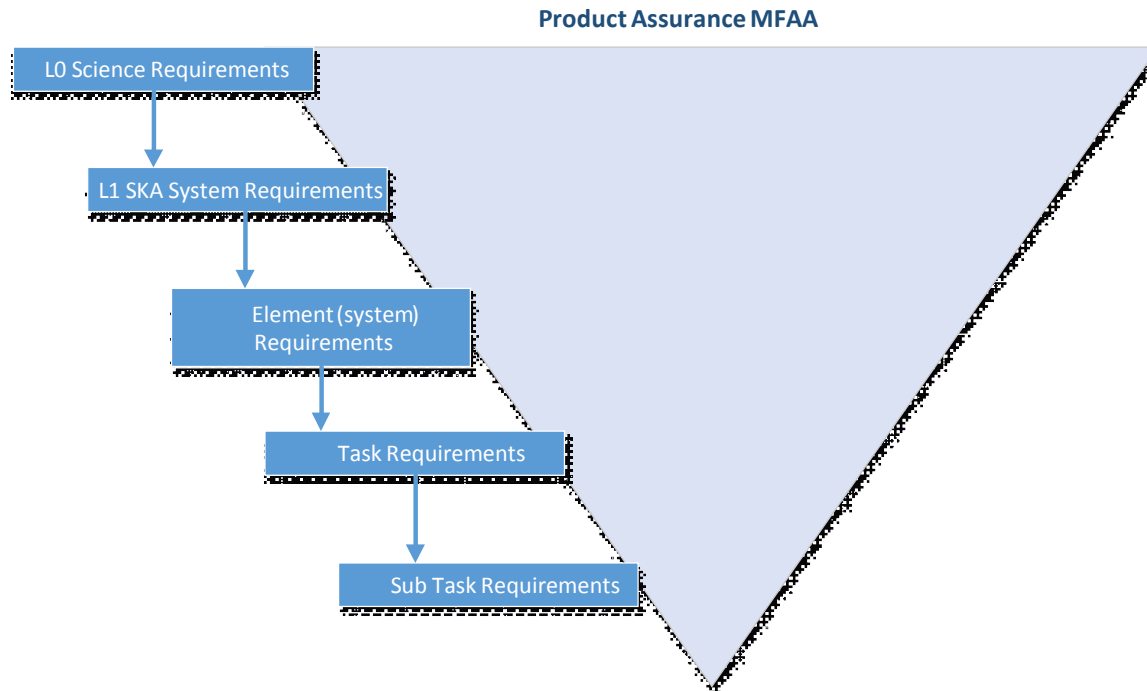
- Technology ready (documents and prototypes)
- Interfaces defined
- (Operational) Costs known (with detailed back ground)
- Risks known and reduced
- Strategy to proceed
- Development plan and prototype plan towards CDR.

Quality Assurance / Product Assurance

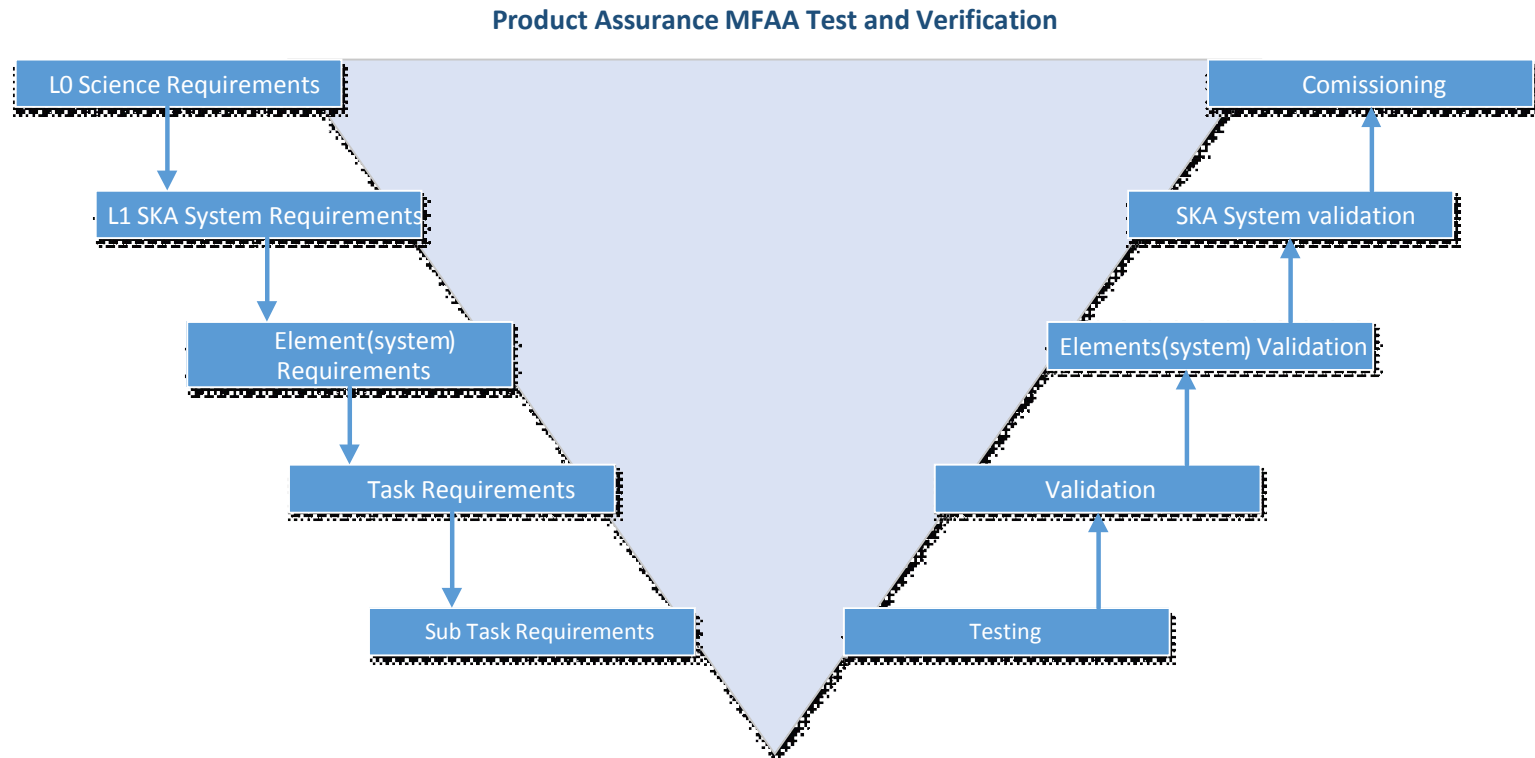
Mission: MFAA technology ready 1st Nov. 2016 (PDR)

- Technology description
 - Technology readiness reports
 - Architectural Design Documents
 - Interface description
 - Risk register
 - System Requirements Review 1st (Nov. 2015)
 - Implementation estimations (Costs, Power, Schedule, operational costs...)
 - Strategy to proceed to CDR phase
 - Array prototyping plan for MFAA towards SKA2
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- Prototype build and verified
 - Test, Measurement, Inspection and Verification documents of prototype

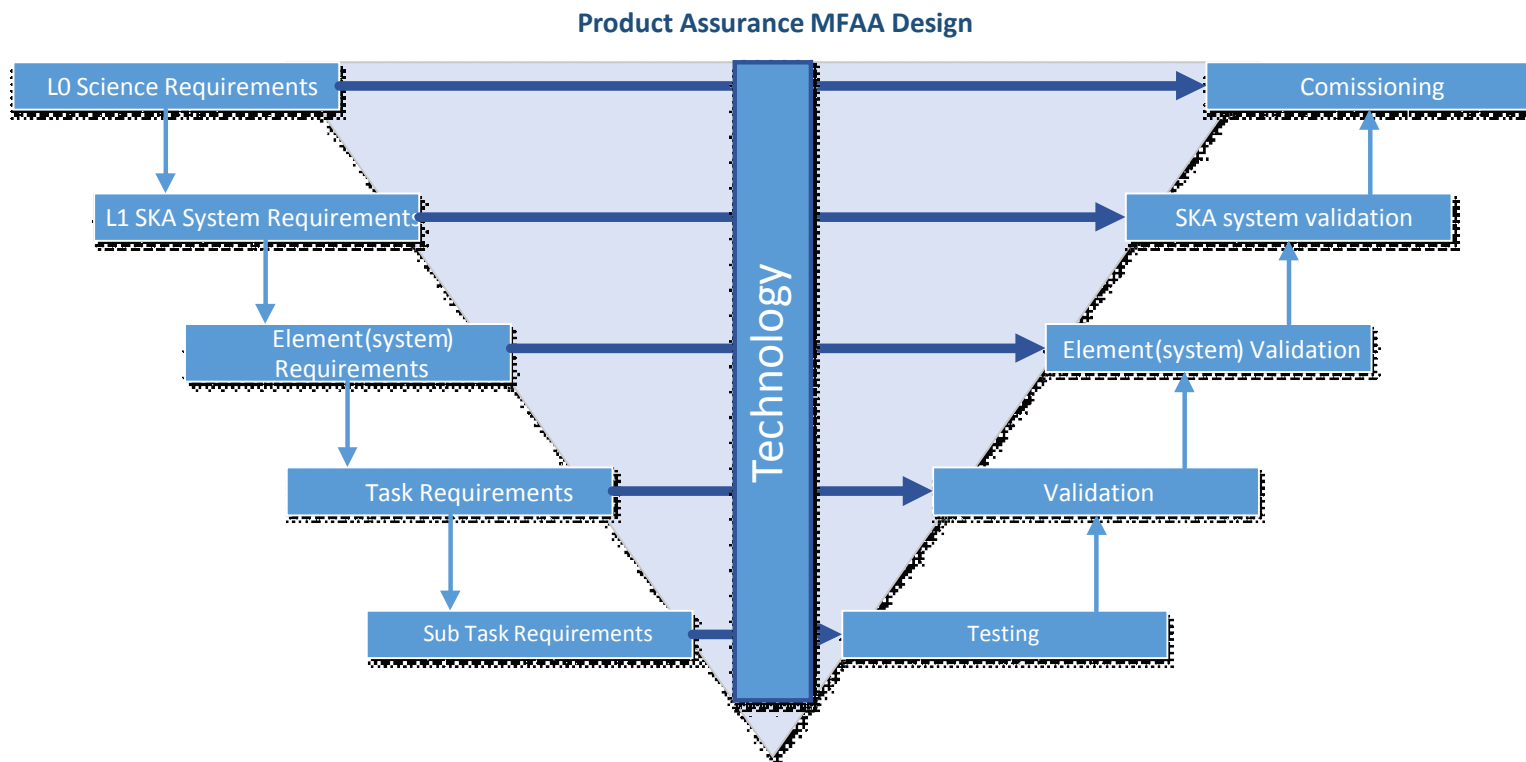
V-Model 1) Requirements



V- Model: 2) Test and verification plans



V- Model: 3) Design



(System) Requirements -> SMART

Requirements shall be (made) smart:

- 1) Specific -> target a specific area
- 2) Measurable -> quantify an indicator for performance
- 3) Assignable -> specify who will do it
- 4) Realistic -> what is realistically achievable (given available resources and money)
- 5) Time related -> when can the results be achieved

The MFAA team shall give input (by documents and papers) towards SKA Office to assist with specifying MFAA/SKA-2 requirements

Tools SKA Office

SKAO Office

- Filehold for documentation
- Cameo systems modeller for SYSML
- Jama contour for requirements management

Tools AAMID

AAMID

- Alfresco for documentation
- JIRA for project management (planning/bug tracking)
- Confluence a professional Wiki environment
- Excel file with delivered documents
- Risk register (excel file)
- Templates for documents / meeting minutes
- Cameo System Modeller for SYML

Working on configuration control of parts and software

Development for MASS production

Configuration control on:

- Documents
- Parts
- (Sub) assemblies
- Software

Which configuration is used when and where.

Prototypes

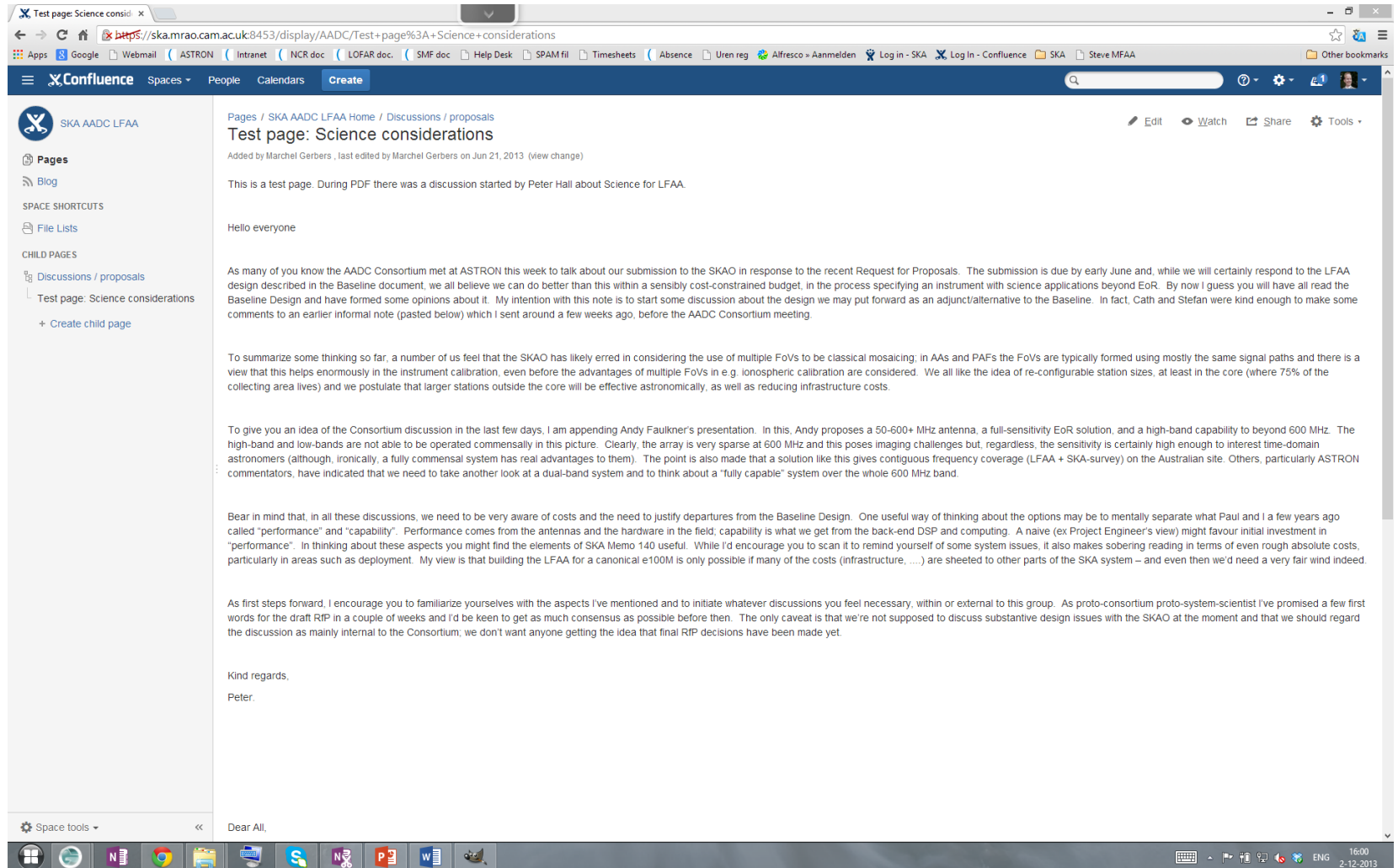
(Marked as prototype, Part name/number, Version, Production date, Production country, Barcodes, Embedded in ICs)

QA/PA Remarks

Communication = Risk Reduction

- All external documents shall be final documents (no drafts)
- One subject in an email (start subject header with AAMID)
- Discussions on Confluence (*)
- Samples and prototypes are important
- Defining pass/fail criteria is important
- Transparency and positive criticism improves quality

Confluence



The screenshot shows a web browser window displaying a Confluence page. The browser's address bar shows the URL: <https://ska.mrao.cam.ac.uk:8453/display/AADC/Test+page%3A+Science+considerations>. The browser's toolbar includes various icons for navigation and search. The Confluence page header shows the 'SKA AADC LFAA' logo and navigation links for 'Pages', 'Blog', 'SPACE SHORTCUTS', 'File Lists', and 'CHILD PAGES'. The main content area is titled 'Test page: Science considerations' and includes a sub-header 'Pages / SKA AADC LFAA Home / Discussions / proposals'. The page content is a test page during a PDF discussion, starting with 'Hello everyone' and followed by several paragraphs of text discussing the SKAO design, the AADC Consortium meeting, and the need for a dual-band system. The page ends with 'Kind regards, Peter.' and 'Dear All,'. The browser's taskbar at the bottom shows various application icons and the system clock indicating 16:00 on 2-12-2013.

Test page: Science considerations

Added by Marchel Gerbers, last edited by Marchel Gerbers on Jun 21, 2013 (view change)

This is a test page. During PDF there was a discussion started by Peter Hall about Science for LFAA.

Hello everyone

As many of you know the AADC Consortium met at ASTRON this week to talk about our submission to the SKAO in response to the recent Request for Proposals. The submission is due by early June and, while we will certainly respond to the LFAA design described in the Baseline document, we all believe we can do better than this within a sensibly cost-constrained budget, in the process specifying an instrument with science applications beyond EoR. By now I guess you will have all read the Baseline Design and have formed some opinions about it. My intention with this note is to start some discussion about the design we may put forward as an adjunct/alternative to the Baseline. In fact, Cath and Stefan were kind enough to make some comments to an earlier informal note (pasted below) which I sent around a few weeks ago, before the AADC Consortium meeting.

To summarize some thinking so far, a number of us feel that the SKAO has likely erred in considering the use of multiple FoVs to be classical mosaicing; in AAs and PAFs the FoVs are typically formed using mostly the same signal paths and there is a view that this helps enormously in the instrument calibration, even before the advantages of multiple FoVs in e.g. ionospheric calibration are considered. We all like the idea of re-configurable station sizes, at least in the core (where 75% of the collecting area lives) and we postulate that larger stations outside the core will be effective astronomically, as well as reducing infrastructure costs.

To give you an idea of the Consortium discussion in the last few days, I am appending Andy Faulkner's presentation. In this, Andy proposes a 50-600+ MHz antenna, a full-sensitivity EoR solution, and a high-band capability to beyond 600 MHz. The high-band and low-bands are not able to be operated commensally in this picture. Clearly, the array is very sparse at 600 MHz and this poses imaging challenges but, regardless, the sensitivity is certainly high enough to interest time-domain astronomers (although, ironically, a fully commensal system has real advantages to them). The point is also made that a solution like this gives contiguous frequency coverage (LFAA + SKA-survey) on the Australian site. Others, particularly ASTRON commentators, have indicated that we need to take another look at a dual-band system and to think about a "fully capable" system over the whole 600 MHz band.

Bear in mind that, in all these discussions, we need to be very aware of costs and the need to justify departures from the Baseline Design. One useful way of thinking about the options may be to mentally separate what Paul and I a few years ago called "performance" and "capability". Performance comes from the antennas and the hardware in the field; capability is what we get from the back-end DSP and computing. A naive (ex Project Engineer's view) might favour initial investment in "performance". In thinking about these aspects you might find the elements of SKA Memo 140 useful. While I'd encourage you to scan it to remind yourself of some system issues, it also makes sobering reading in terms of even rough absolute costs, particularly in areas such as deployment. My view is that building the LFAA for a canonical e100M is only possible if many of the costs (infrastructure, ...) are sheeted to other parts of the SKA system – and even then we'd need a very fair wind indeed.

As first steps forward, I encourage you to familiarize yourselves with the aspects I've mentioned and to initiate whatever discussions you feel necessary, within or external to this group. As proto-consortium proto-system-scientist I've promised a few first words for the draft RIP in a couple of weeks and I'd be keen to get as much consensus as possible before then. The only caveat is that we're not supposed to discuss substantive design issues with the SKAO at the moment and that we should regard the discussion as mainly internal to the Consortium; we don't want anyone getting the idea that final RIP decisions have been made yet.

Kind regards,
Peter.

Dear All,

Progress

- Monthly telecom
- Progress summary by task leaders (use template)
- Each quarter a progress report towards SKA Office
- Progress meeting with SKA Office

Summary

- Technology development (towards mass production)
- Gathering input for (functional) specifications
- Cost reduction
- Risk reduction
- Knowledge in documents/papers