

Possible first steps for the SRCSC – a document for discussion

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The SRCSC has been handed a well-defined mission “to define and create a long-term operational partnership between the SKA Observatory and an ensemble of independently-resourced SKA Regional Centres”. This “operational partnership” is a “form” that follows from a set of “functions”. Right now, there exists a sense of communal confusion on these functions that’s understandable. It’s not clear, even to us just now, how we will achieve the mission but the mission itself is reasonably clear. What is needed is a good “elevator pitch” description that at least defines the needed functionality we are trying to address. These functions can probably be grouped under four headings:

- Data Flow - delivering data from the observatory to those that have been allocated time and resource to acquire them
- Data Processing - the resources necessary to work on data after they’re delivered
- Data Curation - providing a performant and persistent science archive that allows discovery and new science
- User Support - supporting all users with all of the things above

The size of, and need for, the work associated with each function will evolve with time. It needs to be driven by user requirements that we need to determine. Some of these “users” are: SKA Observatory operations; the SRCs themselves; KSP teams; “normal” PIs; and new non-radio and maybe even non-astronomy scientists. Building a good set of requirements is complex but well defined if we:

- (1) agree on the functions (four points above), and
- (2) define which user groups drive which requirements.

There are perhaps two extreme models of how to go from requirements to a built system. One is to define all the requirements up front and then build the “big thing” that delivers on those requirements. The other extreme is to just plant resources in the user communities that the users control and let them get on with it organically, without any external “big thing” really being in place, and then hope that everything comes together! We are not at either of these extremes when considering the mission before us. In our case, some requirements are clearly critical to operational functionality across the globe and must be persistent, common and “configuration controlled”. Other requirements cannot be easily predicted at the outset and will need to evolve, e.g. user support and perhaps processing.

Given we are at the beginning of building the SRC operational partnership, the SRCSC should consider the following:

- Do we agree on the four functions that need to be provided?
- What user groups do we form in order to determine the requirements for each function?
- Which functions are “operational” or persistent/controlled and which, if any, do we allow to evolve following particular community needs?

- Where do the top-down (global/operational) and bottom-up (community specific) approaches meet?
- What and where are the persistent and controlled interfaces that need to be defined between SRCs and the SKAO that create an operational capability?
- What are the processes and structures (forms) that need to be in place to ensure the operational capability meets the evolving needs of the community and observatory?
- What are the processes and structures (forms) that need to be in place to ensure the SKA community can maximize the impact of organic community-specific growth to meet needed functions?
- What is the best model for the operational partnership between the SKA Observatory and the SRCs?

The form of the SRCSC operational partnership will result from our consideration of, and agreement on, these questions. There are certainly examples from other projects (e.g. WLCG/LHC) that we can lean on and learn from, but in the end it is our SKA functions and needs that we have to address. Some of the issues are going to be complex and involve politics as much as logic and experience. In addressing them we need to seek advice from all stakeholders while recognizing the independent paths of nationally funded SRCs and the bond of collaboration embodied in the new SKA IGO.

It is important at this formative time, for the SRCSC to recognize the particular needs of each emerging SRC. We are all going to have to put convincing business cases to our governments to provide significant and new funding for the development of SRC capabilities. We will all look individually stronger, and hopefully be more successful, if we connect to each other and support each other as much as possible. Some governments may be more inclined to make financial and policy decisions for a domestic endeavour if they see clearly its international context, connection and potential benefit.

Finally, and in order to focus our minds on the work we need to do to achieve these goals, we should agree that within the broad mission defined above and in the ToR for the SRCSC, the primary aim of this committee should be to deliver a “proto-SRC global network” that will be capable of receiving data products from the SKA Observatory at some as-yet-to-be-defined point of the construction phase of the SKA telescopes.