

From bsahr Tue Apr 17 17:55:45 2001
To: tcornwel@cv3.cv.nrao.edu
Subject: RE: EVLA architecture & design
Cc: akemball, pnapier, rperley, jbenson, ksowinski, bclark, ghunt, gvanmoor, bwaters
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Tim,

Thank you for you comments on the EVLA snapshot #1. I will try to reply to most of them, with varying degrees of completeness in this email. I also appreciate your offer to sit down at a whiteboard and discuss the document, your comments, and other issues. I am certain that a great deal of valuable experience and lessons learned have been accumulated by the members of what is now the DMG during the development of AIPS++. I would like to see the EVLA effort benefit from that experience. I do plan to take you up on your offer.

Bill

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> From tcornwel@cv3.cv.nrao.edu Mon Apr 16 11:49 MDT 2001
> Reply-To: <tcornwel@cv3.cv.nrao.edu>
> From: "Tim Cornwell" <tcornwel@cv3.cv.nrao.edu>
> To: "Bill Sahr" <bsahr@zia.aoc.NRAO.EDU>, <tcornwell@zia.aoc.NRAO.EDU>,
>     <akemball@zia.aoc.NRAO.EDU>, <pnapier@zia.aoc.NRAO.EDU>,
>     <rperley@zia.aoc.NRAO.EDU>, <jbenson@zia.aoc.NRAO.EDU>,
>     <bclark@zia.aoc.NRAO.EDU>, <mrupen@zia.aoc.NRAO.EDU>,
>     <fowen@zia.aoc.NRAO.EDU>
> Subject: RE: EVLA architecture & design
> Date: Mon, 16 Apr 2001 11:43:48 -0600
>
> Bill,
>
> The document is a good start. For this snapshot, I'd like to restrict
> my comments to a fairly high level and comment on processes.
>
>     - I think you need to say early on what the requirements are.
> There is requirement document for scientific use, but are there requirements
> documents for the engineers, and the operators? If not, there should
> be, and it would be a good idea to get someone working on those
> in conjunction with Jim Jackson and Peggy Perley. The existence of
> these requirements documents would then simplify the text in this
> document.
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You're right, of course. A systems requirement document, created by the computing staff was begun, but never taken too far. Requirements documents for engineers and operators should be started. Manpower limitations have been one problem. Too few of us with too many irons in too many fires. I want to raise the matter of these requirements documents with Gareth & Gustaaf. Even so, getting the documents started will probably have to wait until the EVLA is officially a project, and until we have an EVLA lead designer in the Computing Division who has

shed or has not acquired too many other demands on his/her time.

>
> - There is an agreed split of responsibilities between EVLA, DRAO, and
> DM. This diagram should be a key part of this document. It is
> Figure 3 in the response to the NSF. This document should work from
> that diagram. This raises some problems connected with your Figure
> 3-1 since some parts of that diagram tangle together these different
> areas of responsibility. Some details are incorrect: e.g. the Image
> Pipeline probably has to talk to the Long Term archive server directly.

Boyd & I created that figure in the response to the NSF. The idea of having the EVLA Software Architecture & Design document work from that diagram seems to me to be a good one. I will try working it into the document as a kind of high level organizing framework.

As for figure 3-1 in the document, well, that box with the "X" in it was meant to signify a network switch which would give the image pipeline a direct connection to the archive data server and the operations server. That figure is becoming a bit dated. The archive and the image pipeline are not well represented in it.

>
> - Presumably this document targets box 4 in that diagram.

Yes, it does.

>
> - There are system design requirements that will come from the
> design of the calibration and image pipeline, and the archive that
> will have to be folded back into the overall design. We must distinguish
> this phase clearly. So this raises the point, which is really just a
> consequence of the previous item, that a sequence of decision points
> is needed early on in the document.
>
> * Finalize scientific requirements (done)
> * Finalize operator and engineer requirements (not yet done?)
> * Condense requirements into specifications (partly done I think but
> not in this document).
> * Initial system requirements for the different boxes in the
> above Figure 3.
> * Initial designs for Figure 3 boxes
> * System requirements from DM work
> etc.
>
> This is not a complete list but you get the point. Probably the best
> approach is to adopt a format for Interface Definitions that can
> be negotiated between the various partners.

Yes. I follow. Those of us in the Computing Division who have been thinking about the EVLA have outlined similar scenarios to ourselves and to one another, but until very recently we lacked the assignment of responsibilities and the organizational structure that are outlined in the response to the NSF. It was very helpful that Boyd & I were included in drafting the response to the NSF, however small our role, as it gave us access to the very useful information contained in that document.

I am a bit unclear about what you mean by condensing requirements into specifications and would like to speak with you on that point, and about your view of the role of the software design and architecture document

in the process you outline. Snapshot #1 is very preliminary. I expect it will become much more detailed.

We were also waiting for the flux surrounding the nature, organization, and responsibilities of the DMG to settle a bit. Additionally, there was and still is the issue of the status of the EVLA as a project. It was not seen as appropriate to ask for too much time from Engineering and Operations given the still unofficial nature of the EVLA.

I had been waiting for months for the time to seem right to make a connection between EVLA efforts in the Computing Division and related activities in the DMG. I am relieved that such a connection is now at least beginning to take shape.

Finally, I agree with the approach of adopting a format for Interface Definitions that can be negotiated among the various participants.

>

> - On the question of data rates, I wrote an EVLA memo on the
> question of the scale of computing. There I gave some guesses as to
> average data rate which are about a tenth of the maximum. That
> document should be referenced and borne in mind since the required
> computing load is implicated, and we need to be consistent on that.

I assume you are referring to EVLA Memo #24, "Computing for EVLA Calibration and Imaging". I've dug out my copy and placed in higher in the stack of materials on my desk. I will review it, attempt to merge it with Barry's comments on the same subject, and produce a version that is reconciled with the material in the snapshot.

>

> Finally, I'm glad that you have no "qualms" about using AIPS++, but perhaps
> "reservations" might be a better word :)

My (quirky ?) sense of humor occasionally (frequently ?) influences my choice of words. I try to restrain myself when writing for work purposes.

>

> Cheers,

>

> Tim

>

Bill