



AI Conrad <aconrad@lbto.org>

Fiber (was "Re: iLocator/LBT Monthly Call - Wed 16th November")

7 messages

AI Conrad <aconrad@lbto.org>

Tue, Nov 15, 2022 at 7:42 AM

To: Jonathan Crass <j.crass@nd.edu>

Cc: Matthieu Bec <mbec@lbto.org>, Fernando Pedichini <fernando.pedichini@inaf.it>

Hi Jonathan,

Unfortunately, I won't be able to attend the meeting on Wednesday due to a conflicting meeting.

Since the last meeting I have begun researching the fiber issue. I located two email threads and an IssueTrak and got them onto a [wiki page](#) so we can more easily reference them. I am not seeing any concise statements of:

- The test that confirms things won't work with the existing fiber.
- The proposal to shorten the run by rerouting the fiber via the pier.

Sorry, these may be somewhere in those two emails and/or the IT, but I did not find them. Can you provide a brief note (email is fine) with this information (and/or point me to an existing write-up)?

Thanks,

AI

PS - I exchanged emails with Fernando (in CC) to learn why SHARK-VIS does not have the same problem with the length. It turns out they don't need low latency on the fiber link from their science camera to the computer room because they are just using the link to store the frames and not for closing any kind of real time loop.

On Nov 14, 2022, at 3:22 PM, Jonathan Crass <j.crass@nd.edu> wrote:

Hi All,

We have the iLocator/LBT monthly call scheduled for this week (Wed, 10am AZ, **12pm ET** - note the ET change due to no longer being in daylight saving).

If you have any specific items to discuss, please let me know and I'll get them on the agenda. As a minimum, I have the following items:

1. Actions from last meeting not covered elsewhere
 1. Baby Argos - Mark SW to send details to JC
 2. SHARK-NIR - Photos of the LBTI electronics rack to JC [MSW]
2. LBTI updates/status
 1. Daytime AO testing plans
3. LBTO items:
 1. AO System Status
 2. 3L updates
 1. Engineering/Utilities
 2. 3L UPS Power
 3. Defining networking to 3L
 3. Brighter ARGOS source illumination

4. USB3 fiber testing - IT #7779
 1. Al Conrad to gather info and work on path forward
4. iLocator updates
 1. Spectrograph updates
 2. Cryostat integration/cooldown testing
 3. Ohio State Transition - timing and plans
5. Future planning
 1. Procedures/documentation/pre-ship sign off
6. Other items

Thanks
Jonathan



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Jonathan Crass <j.crass@nd.edu>

Tue, Nov 15, 2022 at 1:00 PM

To: Al Conrad <aconrad@lbto.org>

Cc: Matthieu Bec <mbec@lbto.org>, Fernando Pedichini <fernando.pedichini@inaf.it>

Hi Al,

Most of these things were discussed in calls with IT and INAF which is why there may be limited written documentation. My summary is as follows:

1. My understanding from talking to ANDOR and doing testing is that ANDOR Zyla cameras which run over USB3 do not reliably work over long fiber lengths - this includes slow frame rates, for example 1Hz. 100m of length between the camera and PC is about the maximum which ANDOR says will work. This is consistent with the tests done at INAF and at Notre Dame.
2. The current fiber run through the telescope cable wrap exceeds the 100m length. Additionally, the cable wrap only has SM3 fibers which can (in theory support) USB 3 data speeds - the multi-mode fibers in the wrap are all too low in spec.
3. Note: LMIRCam is running the same extenders iLocator has proposed through the cable wrap single-mode fibers for the USB3 MACIE controller. This has no issues which points to this being an ANDOR specific issue (likely due to their communication protocol over USB3).
4. To shorten the fiber run distance, a direct route for new fibers from the gallery to CRB was proposed down the center of the pier following the PEPSI/iLocator fibers. This would be around 100m depending on the exact connection point on the gallery - I'd proposed keeping this as short as possible by putting a breakout panel below LBTI/LUCI.

If SHARK-VIS has successfully demonstrated the ANDOR running at slow frame rates over the existing run length, I'd be very interested to see that data.

Thanks
Jonathan



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fernando pedichini <fernando.pedichini@inaf.it>
To: Jonathan Crass <j.crass@nd.edu>, Al Conrad <aconrad@lbto.org>
Cc: Matthieu Bec <mbec@lbto.org>

Wed, Nov 16, 2022 at 1:52 AM

We are running at every allowable frame rate for Zyla not only slow but for example 1000fps 200x200 pixel or 25fps 2kx2k pixel. I would like to remember we are using multi mode fibers not single mode at 150m length.

fernando

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Jonathan Crass <j.crass@nd.edu>
To: fernando pedichini <fernando.pedichini@inaf.it>
Cc: Al Conrad <aconrad@lbto.org>, Matthieu Bec <mbec@lbto.org>

Wed, Nov 16, 2022 at 8:15 AM

Hi Fernando,
Two follow-up notes here:

- 1) The existing fiber length from the telescope (ULTH) to CRB is around 200m I think. Matthieu - can you confirm this number with Leroy?
- 2) I believe you need OM3 fiber for your extenders - is that correct? From previous conversation, my understand is that this does not exist in the current cable wrap to the telescope and there is no capacity to add anything further. Matthieu - again, can you confirm this?

Jonathan

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Matthieu Bec <mbec@lbto.org>

Wed, Nov 16, 2022 at 10:33 AM

To: Jonathan Crass <j.crass@nd.edu>

Cc: fernando pedichini <fernando.pedichini@inaf.it>, Al Conrad <aconrad@lbto.org>

Hi Jonathan,

Sorry I seem to have missed the iLocator meeting.

The record I find in my emails from LeRoy says the current run is 187.6m and he says we currently have OM1 and single mode (but not too many).

Thanks,

Matthieu

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Jonathan Crass <j.crass@nd.edu>

Wed, Nov 16, 2022 at 11:30 AM

To: Matthieu Bec <mbec@lbto.org>

Cc: fernando pedichini <fernando.pedichini@inaf.it>, Al Conrad <aconrad@lbto.org>

Hi Matthieu,

Thanks for this. I believe this is the run length from CRA to the ULTH, correct? This means you need to add about 15m to CRB and then another 20-25m on the gallery to reach LBTI for the total length, hence around 220m.

Thanks

J



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Al Conrad <aconrad@lbto.org>

Tue, Jan 17, 2023 at 3:01 PM

To: Jonathan Crass <j.crass@nd.edu>

Cc: Matthieu Bec <mbec@lbto.org>, fernando pedichini <fernando.pedichini@inaf.it>

Hi All -

Any more thoughts on this ahead of tomorrow's meeting?

Thanks,

Al

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