Email From Gilles about the CERN Fibre service 5 Nov 2014

Offer from CERN group

https://edms.cern.ch/document/1300564/2

Date: Wed, 5 Nov 2014 14:07:31 +0100

From: Gilles De Lentdecker <Gilles.de.Lentdecker@cern.ch>

To: Ian Crotty <ian.crotty@cern.ch>

Cc: Andrey Marinov <Andrey.Marinov@cern.ch>

Subject: FW: Fibers and LV cables

Parts/Attachments:

1.1 OK ~14 KB Text

1.2 Shown ~76 KB Text

2 OK 120 KB Image, "Product-Portfolio-Multimode-Fibre-org-694

From: Simao Pedro Costa Machado

Sent: 15 August 2014 10:07

To: Gilles De Lentdecker

Subject: RE: Fibers and LV cables

Hello Gilles,

I was looking to my previous e-mails and I saw that I never get back to you

on this subject.

I hope that we can still be helpful to you.

Please find bellow in red my reply to you point per point.

Thanks.

Regards,

Simao Machado

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From: Gilles De Lentdecker

Sent: 28 March 2014 10:53

To: Simao Pedro Costa Machado

Cc: Elisa Guillermain; Daniel Ricci

Subject: RE: Fibers and LV cables

Dear Simao,

I apologize for the long delay to reply to your email.

Please, find below my inline comments/answers.

Best Regards,

Gilles

From: Simao Pedro Costa Machado

Sent: 29 January 2014 16:46

To: Gilles De Lentdecker

Cc: Elisa Guillermain; Daniel Ricci

Subject: RE: Fibers and LV cables

Hello Giles,

sorry for not getting back to you sooner. It is quite a busy period for us

due to the LS1.

Please find bellow some answers and comments to your points:

1.  Insertion Loss

Regarding the insertion loss, I see at least 4 optical breakpoints, however

from what I see in the document of the Versatile link, I believe that shall

be no problem with that. We can also clarify later with FranÃ§ois Vasey.

Your are right there are 4 optical breakpoints; we also think that it should

not be a problem for the GBT.

2. Fiber Type and availability

this an multimode OM2 fibre and not a multimode OM3.

1.  Insertion Loss

This may have some implications for your link length. We know that for

transmitting at 10Gbps you can reach between 82 to 150 Â metres with OM2

fibres. With an OM3 fibre you can reach up to 300meters when transmitting

10Gbps.

Iâm going to get this point clear with DRAKA and I will inform about.

As we mention last time, we are currently in the process of establishing a

contract for buying a MM Radiation resistant Fibre. Â We estimate that in the

best case scenario we can get the fibres you require around March/April and

to produce the necessary fiber patchcords around April/May 2014.

Excuse my ignorance, but the 2/3 index in 'OM2' or 'OM3', what does it imply

exactly ? EN-EL-CF answer: The OM2 fibre has a smaller modal bandwidth than

OM3, which will limit the link length depending on the bit rate you want to

use (I attached a picture).Â

Is it a different quality of the fiber ?Â EN-EL-CF answer: Not exactly, once

the fibre is produced the manufacture do a selection process by testing the

batches regarding the modal bandwidth and corresponding compliance to which

OMx. Then, from the same fibre preform it can result a OM4, OM3 or OM2

fibre.

Are they both radiation hard ? Is the radiation hardness the same ? EN-EL-CF

only available by Draka as a OM2 type. That would imply that you would reach

maximum 82 meters at 10Gb/s.

Does-it change the cost by a large factor to go from OM2 to OM3 ? EN-EL-CF

answer: A radiation resistant fibre OM3 is simply not commercially available

to our knowledge. For your application, in principle the total link exceed

82 meters, then if you want to transmit data at 10Gb/s then it would be

(which is an MM OM2 fibre) and use a MM-OM3 fibre in the non-radioactive

areas. In principle this shall work for reaching the 10Gb/s, but would be

the fibre is produced the manufacture do a selection process by testing the

batches regarding the modal bandwidth and corresponding compliance to which

3.Topology of the installation

Regarding what you said:

We would use the Rad hard fibers via the YE1 cable chain from the detector

to a 20U patch panel located on UXC balcony. From there, we would use long

telecommunication cables to USC via the trigger tunnel. A second patch panel

would be placed in USC to dispatch the fibers towards the different

crates.

It also seems to us a good approach to the project. The only part that we

may still need to look closer is about the type of pre-terminated cable

(patchcord with a one or two fibres or a patchcable with multiple fibres up

to 24) to use between detector and the UXC balcony.

At this moment during LS1, before performing the complete fibre installation

for the 36 super chamber, I would suggest you just to install duplex

patchcords (with 2 fibres).

We agree with you.

4. Installation test

For the test you want to perform, would you need the âDrakaEliteTM Super

trying to install a group of fibre patchcords?

At this moment during LS1, before performing the complete fibre installation

the difficulty of the installation.

Since, according to the point 3), you suggest to try with duplex patchcords,

here is my thinking about the installation trial and the number of

patchcords we would like to have:

The detectors consist of 2 detectors back-to-back (we call this assembly 'a

superchamber'), sharing the same patch panel located on the detectors.

Each detector will have 4 GBT chipsets, that means 4 x 2 fibers. That is 16

fibers per superchamber.

Therefore we would need 8 duplex patchcords for the test.

We think that a length of 20 m should be enough to test the installation

within CMS.

We would need the fibers a week or so and then we could return it to you.

Would that be possible ? What would be the delay to get the fibers for the

trial installation ?

EN-EL-CF answer: If I understood well, during LS1 you would not require the

free and you can keep them after the trial installation. I would just need

that you let us which type of connector you require.

Before proceeding with the order, I would like to ask you to fill a request

(DFP) for patch cords, which you can find in the following location:

https://edms.cern.ch/document/1300564/2 [edms.cern.ch]

Besides we are in holidays period, I believe we shall be able to get from

our contractor those patch cords in 3 weeks. Send us the DFP and we will

check it immediately.

Should you have any question please donât hesitate.

With Best Regards,

Gilles

Thanks.

Regards,

Simao Machado CERNÂ - European Organization fo

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