Hi Jo,

We have overlapped the GADZ line contours with the geotiff below. It looks like the area that ILF has identified corresponds to the area highlighted below. This region is where the original contours ended. As there is no data in this area, molasse levels outside of this are being falsely extrapolated as being higher than surface.

Note that this not appear to be an issue when using the levels in TOT because if the tunnel is above ground level, it automatically calculates it as so and returns a warning, any output calculations from TOT also automatically takes levels from the DEM in preference, so in this area it wouldn't take the depth below surface as from the molasse layer.

As such, it is only an issue if reconstructing 3D terrain map for visualisation, as demonstrated in the ILF report.

Therefore a solution could be to extend the contours in this region to reach the edge of the original investigation area (purple hexagon). GADZ may need to use some geological inference to determine this.

Kind regards,

Yung
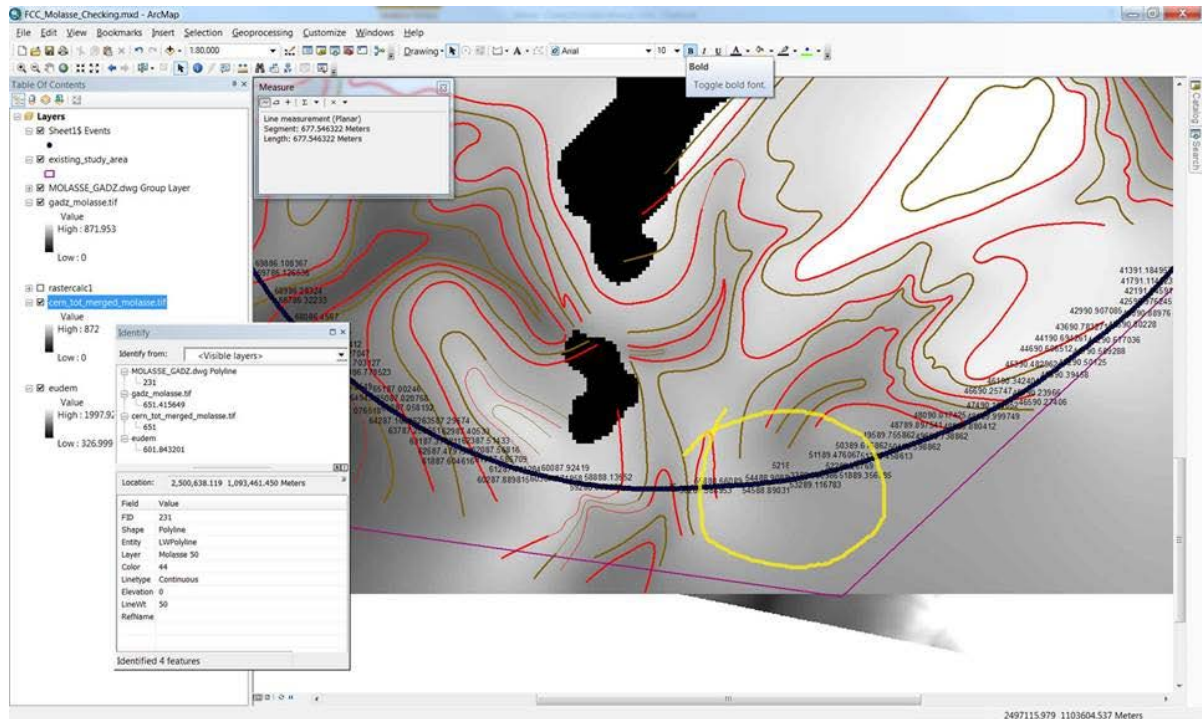
From: Joanna Louise Stanyard [mailto:joanna.louise.stanyard@cern.ch]
Sent: 10 May 2017 07:56
To: Yung Loo
Cc: John Andrew Osborne; Matthew James Stuart; Craig Sturzaker
Subject: RE: Potential TOT upgrades

Hi Yung,

The file is attached, we extracted the individual pixels from TOT and compiled this file.

Regards,

Jo

From: Yung Loo [mailto:Yung.Loo@arup.com]
Sent: 09 May 2017 20:47
To: Joanna Louise Stanyard <joanna.louise.stanyard@cern.ch>
Cc: John Andrew Osborne <John.Andrew.Osborne@cern.ch>; Matthew James Stuart <matthew.james.stuart@cern.ch>; Craig Sturzaker
<craig.sturzaker@arup.com>
Subject: Re: Potential TOT upgrades

Jo,

Can you send us the geotiff file please? just to check it's the same one as we have. We'll check this and get back to you on any issues.

Thanks,

Yung

On 8 May 2017, at 11:52, Joanna Louise Stanyard <joanna.louise.stanyard@cern.ch> wrote:

Hi Yung,

Attached is the technical note produced by ILF explaining the molasse level issues they encountered. An outlook invitation for the meeting on 22nd May will follow.

Regards,

Jo

From: Yung Loo [mailto:Yung.Loo@arup.com]
Sent: 27 April 2017 17:50
To: Joanna Louise Stanyard <joanna.louise.stanyard@cern.ch>
Cc: John Andrew Osborne <John.Andrew.Osborne@cern.ch>; Matthew James Stuart <matthew.james.stuart@cern.ch>; Craig Sturzaker <craig.sturzaker@arup.com>
Subject: RE: Potential TOT upgrades

Hi Jo/John,

Thanks for this. As discussed I'm including these two issues below, as well as the yellow and green issues in the spreadsheet, as part of the CLIC scope.

Please note that the portal locator issue is a more difficult issue to resolve, so it won't be a quick immediate fix – but we'll get onto it.

John – I'll send you the CLIC offer separately, but it will include these FCC issues under Stage 1A. All else unchanged.

For the CLIC meeting date, the proposed 22nd May 9-11am (UK) time is good for me and Craig.

Kind regards,

Yung

From: Joanna Louise Stanyard [mailto:joanna.louise.stanyard@cern.ch]
Sent: 27 April 2017 14:42
To: Yung Loo
Cc: John Andrew Osborne; Matthew James Stuart; Craig Sturzaker
Subject: RE: Potential TOT upgrades

Hi Yung,

Following our brief chat on the phone, I have attached the FCC updates spreadsheets with the two additional items included:

11. Is the issue discussed in the below thread with Craig, named – Portal Locator Issue
12. Is the issue discussed on the phone regarding the top of molasse level. In some locations the top of molasse level seems to be substantially above ground level, this is a particular issue around point H. I have attached an image produced by ILF showing the top of the molasse superimposed on the terrain. As mentioned, ILF are writing a brief technical note on this, which we will distribute as soon as it is available.

Regards,

Jo

From: Craig Sturzaker [mailto:Craig.Sturzaker@arup.com]
Sent: 06 April 2017 18:28
To: Joanna Louise Stanyard <joanna.louise.stanyard@cern.ch>
Cc: John Andrew Osborne <John.Andrew.Osborne@cern.ch>; Matthew James Stuart <matthew.james.stuart@cern.ch>; yung.loo@arup.com
Subject: RE: Potential TOT upgrades

Hi Jo,

Thanks. Please see attached spreadsheet.

It's fixable, but not easily.

Regards,
Craig

From: Joanna Louise Stanyard [mailto:joanna.louise.stanyard@cern.ch]
Sent: 05 April 2017 10:21
To: Craig Sturzaker
Cc: John Andrew Osborne; Matthew James Stuart; Yung Loo
Subject: RE: Potential TOT upgrades

Hi Craig,

I have written my responses in blue.

Ok, thanks for the explanation, is it something you think is easily fixable?

Regards,

Jo

Hi Jo,

Thanks for sending this through. Most of the requirements are clear, but have a couple of questions which I've put inline below.

Regarding the alignment depth issue I've been able to replicate this on our version of TOT and believe I know what is causing it.

When the portal locator was added to TOT, there was a requirement to be able to create a point anywhere on the alignment. As you know, the alignment is made up of 1000 points which TOT uses as vertices to join together to make a line.
When the portal tool was created, there was no functionality in the mapping code library TOT uses to create a point exactly on a line (standard functionality in desktop GIS). In order to find where the user has created their connection point on the alignment, TOT compares the coordinates of the connection point against the 1000 points that make up the alignment vertices and tries to find the closest matching point.
When it finds the closest matching point, the depth value is what is assigned to the hex popup and is one of the input variables to calculate tunnel length.
The problem is occurring where TOT tries to match the connection point coordinates to one of the 1000 alignment points, something isn't quite working correctly in the calculation.

Hope that makes sense.

Regards,
Craig

Hi Craig,

We have a list of desired upgrades to TOT in terms of usability that I have included below. Could you give us an idea of feasibility for each? Where applicable we would also like these upgrades to be incorporated into the TOT tool for CLIC.

• Delete straight section indicators or, if possible, make them adjustable.

• Have shaft chainage as an input when uploading lattice files.

• Be able to re-save alignment configuration after naming. I'm a little unclear about what this means. Could you provide a use case/example?
This is not a very important requirement, but would be nice to be able to override a saved position and use the same name if it needs to be slightly adjusted, for example, I have had a few cases where I have saved an alignment configuration and then noticed a small problem like a shaft location clashing with buildings and wanted to make a small adjustment and re-save it under the same name. This could also be worked around by deleting the original and then using the name again, however I don't have admin rights at the moment to do that – as an aside, is it possible for you to make me an admin?

• Change wild flysch colour to another grey/ brown colour, the blue often gets mistaken for water when presented.

• Be able to make alignment location full screen. Do you mean the map on the main TOT page?
Yes.

• Editable names – this may be possible already just an issue of admin rights. Editable names of what?
Sorry that wasn't very clear… be able to edit the names of the alignment configurations after saving, again this could be worked around with deleting and re-saving with a new name.

• Have an undo option when moving the alignment. How many steps would you want to undo?
Up to 3? But even being able to undo one movement would be useful.

• Change "alignment depth" label to alignment elevation Masl on inclined access page (as explained in my email 23/03/17).

• Include chainage on pop-out windows on portal locator tool.

We are also keen to hear any news on the alignment depth issue when using the portal locator tool. I have been able to replicate the issue on our version of TOT.

Thanks,

Jo

<TN CERN FCC CSS 002.pdf>