Dear Anonymous Reviewer,

Thank you for your interest and taking the time to review our submission. The constructive suggestions and feedback have improved the original manuscript.

Please see the comments below as to how we have implemented and addressed your recommendations and comments. Please also note that the ESSD LaTeX template has moved most figures to the end of the manuscript, even though they are placed near their corresponding texts in the raw text.

Specified line numbers refer to the original document.

Best regards,

Peter Betlem on behalf of all authors.

The manuscript describes an original regional data set consisting of digital elevation and image data derived from drone flight images using Structure-from-motion photogrammetry. The authors discuss their workflow in great detail and integrate independent geologic data to validate and complement the digital database. The field area is well suited for such a demonstration as it has a rich inventory of rocks, structures and geomorphic features. I enjoyed reading it.

The described method is widely used and of general interest. The careful implementation into a customized workflow resulting in precise terrain models seems a highly valuable contribution. Given that (input) drone image quality increases steadily this suggests a great perspective for this young branch of geological mapping.

The independent data were chosen to validate (geological maps) and ground truth (outcrops, GPS) the newly acquired data are very adequate. One may wish to have the link between field observations and digital data as described in the integration chapter 4 a bit clearer. For example: How well visible are the structures shown in field images (Fig. 8) in the digital model? Down to which scale fault data (orientation, thickness, length, dip) can be mapped from the digital model (you say sub-centimetre scale) and how do fault data from the field vs. digital model compare more quantitatively (e.g. using analysis and visualization tools in FracPaQ as anticipated by the authors)? However, I am unsure to which extent this is already beyond the scope of such a data paper and/or if this is already a work in progress for a more interpretation-focused paper.

Agreed. We have revised various paragraphs for clarity and added additional descriptions as to how well the structures shown in Fig 8 are of use to better

understand the digital data assets. We also clarified down to which scale (and how) structural data can be mapped from the presented digital data assets. As you also mention, we think the comparison of the field data with analysis and visualization tools in e.g. FracPaQ is beyond the scope of this data paper and fits better with the follow-up work. We have included a brief statement on follow-up work that has since been published and/or is currently in review in the relevant sections.

The **text** is generally very well written and structured. Only the abstract appears a bit lengthy and could potentially be shortened. Some comments on the text:

The abstract has been shortened.

Line 14: “stata” -> “strata”

Fixed

Line 34: “…developments >by/of< the petroleum industry…”

Fixed

Line 38: I am not sure what you mean with “discontinuous structures” and if this is the adequate term here (for folds, faults, fractures) or if should be simply “structures”?

Removed discontinuous.

Line 47: FYI: …and even in analogue (laboratory scale) models (e.g. https://doi.org/10.1016/S0377-0273(03)00034-9

Implemented additional references and rewritten paragraph the corresponding paragraph.

Line 51-52: “….data must be … “: maybe add “standardized, inter-operable” if applicable.

Revised paragraph, added in additional references to FAIR and recent developments in DOM publishing portals.

Line 96: Maybe repeat what WSFTB stands for.

Repeated the WSFTB acronym in full.

Line 99-101: This paragraph seems to better fit in the flow if replaced one up (before “Considerable lateral variation…”)

Replaced one up.

Line 106 (and other instances eg. Lines 199-200): 35.2 m: I suggest indicating standard deviations along with such numbers.

Value has been updated and script has been added to the suppl. repository on Zenodo. Standard deviations were also added where provided/available (e.g., mean confidence of dense cloud, table 1, C1), but not for values taken from the processing report (e.g., multiplicity) or provided as-is by PDAL/Agisoft Metashape (e.g., point spacing/point-to-point distance).

Line 116: “+” -> “+/-“

The GNSS reference manual specifies + as the error increases with distance, so this should remain + as far as we are aware.

Line 212: “vertical features condensed…” – this seems to be sensitive to the slope, could you specify the latter for your study area?

The paragraph was revised to clarify the observed point density variations and specified where in the study area these irregularities were observed.

Tables especially those in the main body of text (Figs. 1 and 2) are barely readable in the current layout. Increase font size, and decrease empty column space.

Agreed. When submitting we followed the manuscript guidelines for authors and implemented the latex template, which specifies table font sizes. We share your concern that the tables shown as in the preprint are not optimal for printing, and hope/trust that the final proofs will use correct font sizes/layouts.

Figures are generally well done and suited to illustrate the content, some suggestions:

The background orthophoto in figures 2-6 might work well when viewed on a computer screen but appear blurry and not very attractive when printed. Maybe choosing a simpler map, e.g. with contour lines could be considered?

Background for figure 3-6 has been replaced with elevation contour lines (10 m spacing) extracted from the reference DEM data set from NPI. We decided, given the scale of Figure 2, to keep the orthophoto background in place, though re-generated the figure with 600 dpi resolution to improve quality.

Figure 7: The background is difficult to interpret. Is it an image or a point cloud? Full page display might help.

The figure has been enlarged, and additional subfigures have been inserted following suggestions from RC1. The image is a high-resolution orthophoto/mosaic. Individual pixels are ~ 1 cm in resolution, with gaps of no-data giving the resemblance of a point cloud. Detailed features are best appreciated in the 3D viewers linked to in Table 2.

In Figure 8 a bit of fine line drawing may guide the reader better. And maybe a side-by-side comparison to the digital “twin”? Scale missing in A. Orientation missing.

We have revised part of the text to clarify that the Figure 8 images are taken along excavated transects, which are not observed in the model itself. Thus, a side-by-side comparison to the digital twin is difficult. These images were included to aid geomodelling exercises with further details on the core architecture.

Figure 8 has been revised to include scales and orientations, where missing.

In Figure 9 the borehole data display is too small, maybe the whole figure could be rotated 90 degrees and displayed full page?

Figure has been rotated and displayed full page.

Thanks