ROCK Robotic Pro Services Data Quality Assessment

Project Name: ROCK Ultra 1-pass

To ensure the highest quality of LiDAR data, we use a comprehensive quality assessment to evaluate the data you've provided before processing. This guide outlines the criteria we use to assess the quality of your LiDAR data.

Overall Assessment	Date	Quality Specialist
✅ Passed	5.22.25	Jamie Lackner

Data Quality Specialist Notes:

Data quality is adequate to continue with processing. High quality, proper execution.

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1. Processing Report Review

☑ **A: All Processing Report graphs indicate a good trajectory**
Sufficient calibration took place. Satellite count was excellent. No drops. Total combined position all within acceptable range.

☐ **B: Some minor problems with the Processing Report**

☐ **C: Major problems indicated by the Processing Report**

☑ **D: No Processing Report provided**

2. LiDAR Boresight Alignment

☑ **A: Good Alignment**

Data from overlapping flight lines aligns seamlessly with no noticeable issues.

☐ **B: Minor Alignment Issues**

There are small misalignments, but the overall alignment is acceptable.

☐ **C: Major Alignment Problems**

Significant deviations are visible, causing noticeable distortions.

☐ **D: Completely Misaligned**

The overlapping flight lines are jumbled and unaligned, making the data unusable.

3. Camera Colorization Alignment

☑ **A: Excellent Colorization and Alignment**

The colorization is accurate and all objects are properly aligned with continuous straight lines.

☐ **B: Good Colorization with Minor Misalignments**

The colorization is generally accurate with only minor shifts in some areas.

☐ **C: Fuzzy Colorization with Significant Misalignments**

The colorization is unclear and objects may appear misaligned or distorted.

☐ **D: No Colorization**

The point cloud appears completely black, indicating that colorization has not been applied.

4. Point Cloud Thickness on Flat Ground

☑ **A: Ideal Thickness (0-3 cm / 0-.1 ft)**

Features are sharply defined with the ideal point cloud thickness.

☐ **B: Good Thickness (3-6 cm / .1-.2 ft)**

The point cloud thickness is well-formed with recognizable details.

☐ **C: Excessive Thickness (6-9 cm / .2-.3 ft)**

The thickness is more than desired but the general shape is visible.

☐ **D: Very Fuzzy (>9 cm Thickness)**

The point cloud is too scattered for clear identification of features.

5. Point Cloud Density Under Vegetation

☑ **A: High Density**

There is a high density of points (20+ per m² and evenly spaced) under vegetation.

☐ **B: Adequate Density**

There is a medium density of points (5+ per m² with spots of lower density) under vegetation, but the density could be improved.

☐ **C: Low Density**

Few or no points are captured under vegetation.

☐ **D: No Vegetation Data**

There is no vegetation present in the dataset.

6. Flight Plan

☐ **A: Optimal Flight Plan**

The flight path follows a consistent pattern with no issues in data coverage.

☑ **B: Good Flight Plan with Minor Improvements Needed**

The flight path is generally good but could be optimized for better results.Flight path is same swath several times over- does not seem to have affected density or alignment between scans

☐ **C: Problematic Flight Path**

The flight path had inefficiencies that affected data quality.

☐ **D: Flight Plan Not Provided**

The flight trajectory was not uploaded or is missing.

7. Flight Height

☐ **A: Appropriate Flight Height**

The flight was conducted at an optimal height (around 40-50 meters).

☑ **B: Acceptable Height with Room for Improvement**

The flight height is acceptable but could be adjusted for better quality.150m AGL flight- easy for theROCK ULTRA

☐ **C: Inappropriate Flight Height**

The flight was at a height that negatively impacts data quality.

☐ **D: Flight Height Not Applicable**

Data not collected by aerial flight.

8. Processing Parameter Assessment

☑ **A: Appropriate processing parameters**

Flight line selection (removing take-off and landing), angle gate, and range gate appear to be set appropriately

☐ **B: Minor problems with processing parameters**

The flight line selection is acceptable but could be adjusted for better quality.

☐ **C: Inappropriate processing parameters**

One or more parameters make continuing to process deliverables not acceptable.

☐ **D: Unable to determine processing parameters**

9. Horizontal Ground Control Point (GCP) Assessment

☑ **A: Well-Aligned GCP (Within 3 cm / .1 ft)**

Well spaced GCPs all meeting quality metric.

GCPs are aligned with deviations less than 6 cm.

☐ **B: Good Alignment (3 cm to 6 cm / .1 ft to .2 ft)**

GCPs are close to the correct location but with minor deviations.

☐ **C: Significant Misalignment (> 6 cm / .2 ft)**

GCPs are misaligned by more than 6 cm.

☐ **D: No GCP Provided or Identifiable**

No ground control points were provided or identifiable in the dataset.

10. Vertical Ground Control Point Assessment

☑ **A: Excellent Vertical Alignment (Within 3 cm / .1 ft)**

Vertical alignment of GCPs is within 3 cm of the surface.

☐ **B: Good Vertical Alignment (3 cm to 6 cm / .1 ft to .2 ft)**

GCPs are close to the correct vertical position but with some deviation.

☐ **C: Poor Vertical Alignment (> 6 cm / .2 ft)**

Vertical alignment deviates by more than 6 cm.

☐ **D: No Vertical GCP Provided or Identifiable**

No vertical ground control points were provided or identifiable.

11. Orthomosaic Quality

☑ **A: High-Quality Orthomosaic (Within 3 cm / .1 ft)**

The orthomosaic is perfectly aligned with clear, continuous features.

☐ **B: Minor Alignment Issues (3 cm to 6 cm / .1 ft to .2 ft)**

There are slight misalignments, but the overall quality is good.

☐ **C: Poor Alignment (> 6 cm / .2 ft)**

The orthomosaic has noticeable misalignments or distortions.

☐ **D: Orthomosaic Not Provided**

The orthomosaic was not uploaded.

12. Projection Information

☑ **A: Correct Projection Information**

The projection information matches the project requirements and is accurate.

☐ **B: Incorrect Projection Information**

The projection information is inaccurate or inconsistent with project requirements.

This assessment will help you understand how your LiDAR data is evaluated and ensure that it meets our quality standards before processing. If you have any questions or need assistance, please feel free to reach out to us!