

Table of Contents

Chapter 1.	Remote Sensing Technologies	1
1.1	What are the acceptable remote sensing technologies for use in airport surveys?	1
Chapter 2.	Remote Sensing Project Planning.....	3
2.1	What are the remote sensing plan requirements?.....	3
2.2	How do I document the location of a proposed runway extension in aerial imagery?	17
2.3	What are the requirements for horizontal and vertical ties to the NSRS?	18
2.4	Can I use LIDAR to perform an obstruction analysis?.....	18
2.5	Can I use LIDAR to collection airport features that are non-airport related?.....	18
2.6	What are the data delivery requirements for remote sensing projects?	18
Chapter 3.	Aerial Imagery Specific Standards and Recommended Practices	19
3.1	What is the timeframe for imagery acquisition?.....	19
3.2	Do we capture the imagery in a leaf-on or leaf-off condition?	19
3.3	What are the equipment and supplies requirements when using aerial imagery technologies?	19
3.4	What information do I include in the Aerial Photogrammetric Report?.....	20
Chapter 4.	Digital Orthoimagery Standards and Recommended Practices.....	27
4.1	Data Content Standard.....	27
4.2	Coverage.....	27
4.3	Ground Sample Distance.....	27
4.4	Horizontal Positional Accuracy Testing and Reporting.....	27
4.5	Deliverable Requirements.....	27
4.6	Orthoimagery Delivery.	27
Chapter 5.	Light Imaging Detection and Ranging (LIDAR) Specific Standards.....	29
5.1	What are the differences in LIDAR technologies in the collection of airport data?	29
5.2	What are the basic considerations in using LIDAR to collect airport data?	31
5.3	Why must I calibrate LIDAR systems?	31
5.4	What are the system calibration requirements for using LIDAR to collect airport data?.32	32
5.5	What are the specific requirements for Airborne Terrestrial LIDAR Mapping (ATLM) sensors?.....	33
5.6	What are the specific requirements for MCLM sensors?	35
5.7	What are the specific requirements for TLM sensors?	36
5.8	What are the data processing standards and recommended practices for using LIDAR in airport obstruction data collection projects?	37
Chapter 6.	Satellite Imagery Standards and Recommended Practices.....	39
6.1	Reserved.....	39
Chapter 7.	Required Project Deliverables.....	41
7.1	What deliverables are required for all remote sensing projects?	41
7.2	What deliverables are required for projects incorporating aerial imagery technologies?.41	41
7.3	What deliverables are required for projects incorporating LIDAR ATLM technologies?41	41
7.4	What deliverables are required for projects incorporating LIDAR MCLM technologies?	42
7.5	What are the deliverables for projects incorporating LIDAR TLM technologies?	44
Chapter 8.	Data Review and Acceptance.....	47

8.1	Data Review and Acceptance Requirement.....	47
Chapter 9.	Points of Contact.....	49
9.1	Advisory Circular Questions/Comments	49
Appendix 1.	LIDAR Usability Table	51
Appendix 2.	Glossary	61

List of Figures

Figure 2-1 Sample KML Code for a Placemark	4
Figure 2-2 Combined Flight Line and Supporting Ground Control Network.....	5
Figure 2-3 Combined Flight Line and Network with Obstacle Identification Surfaces	6
Figure 2-4 Scanner and Target Locations for Passenger Loading Bridge Feature	7
Figure 2-5 Sample Digital Photograph of Imagery Control Point with Antenna.....	10
Figure 2-6 Typical Shape Target in LIDAR Surveys for MCLM or TLM.....	11
Figure 2-7 LIDAR Response of Sheet Target Mounted to a Light Post.....	12
Figure 2-8 Potential Data Shadowing If Survey Prime is a LIDAR Target.....	13
Figure 2-9 Field/Test Apparatus Deployed in Survey Area and Stabilized.....	15
Figure 2-10 Typical MCLM Type A Scan Control Points Layout	16
Figure 2-11 Scanner Setup Locations	17
Figure 3-1 Sample Directory Structure for an AP Acquisition Project	21
Figure 3-2 Photographic Flight Report Form	23
Figure 5-1 Proposed Flight Plan Fails to Capture Tower A.....	34
Figure 5-2 Sample Steps for Analyzing Airport Objects as Obstructions	38
Figure 7-1 Sample Point Cloud Dataset and Same Data Converted to CADD.....	42

List of Tables

Table 2-1 ASCII Control Point File	14
Table 3-1 Map Accuracies as a Function of Photo/Map Scale	20
Table 3-2 Sample ASCII Imagery Control Points File	22
Table 3-3 Sample ASCII Image File.....	25
Table 5-1 LIDAR Data Acquisition Point Spacing Parameters	33