

ICSM Level 0.

ICSM Level 0 refers to unclassified data. This data is accurate but has limited uses without additional classification and processing. ICSM Level 0 is a low cost, low effort point cloud dataset which is suitable for basic 3 dimensional measurements. ICSM Level 0 might be a good option if the timing of capture is important, but your budget does not stretch to full point cloud classification. Further point cloud classification can be applied at some stage in the future.

ICSM Level 1.

ICSM Level 1 refers to classified data which has been mostly automatic processes. Very little manual effort is expended to improve point cloud classification and resolve conflicts between feature classes. ICSM Level 1 is a medium cost, medium effort point cloud dataset which is suitable for low resolution, broad scale analysis. ICSM Level 1 is an efficient option in cases where answers are needed across large areas in a short timeframe.

ICSM Level 2.

ICSM Level 2 refers to classified data which has been processed using automatic and semi-automatic methods. Manual effort is applied to improve the classification of specific feature class such as ground, vegetation, or buildings. ICSM Level 2 is a moderate cost, high quality point cloud dataset which is suitable for a wide variety of applications such as flood analysis, urban modelling, contouring, line of sight analysis, volumetric measurements, among many more applications. ICSM Level 2 is widely used industry standard for most typical lidar applications, offering detailed classification and valuable analysis for acceptable processing costs.

ICSM Level 3.

ICSM Level 3 refers to classified data which has been processed using automatic and manual methods. Significant manual effort is applied to improve the classification of specific feature class such as ground, vegetation, buildings, powerlines, culverts & bridges. ICSM Level 3 is a high cost, very high quality point cloud dataset which is suitable for a wide variety of applications such as; flood analysis, urban modelling, contouring, line of sight analysis, volumetric measurements, powerline/vegetation monitoring, change detection, construction design, among many more applications. ICSM Level 3 is a high level industry standard suitable for specialist lidar applications, offering very detailed classification for critical analysis. Relatively high processing costs may make this option unattractive for most standard use cases.

Aerometrex Type 0

Aerometrex Type 0 classification standard refers to a LiDAR point cloud that has been subjected to Aerometrex’s specialised automatic classification macro without additional manual classification checks. Type 0 data meets the ICSM Level 1 standards for ground, low vegetation, medium vegetation, high vegetation, and building feature classes. Data is presented as a tiled dataset. Point cloud classification is prepared ready for further manual classifications to be applied.

		ICSM Level 0	ICSM Level 1	ICSM Level 2	ICSM Level 3
0	Unclassified				
1	Default Infrastructure				
2	Ground		Y		
3	Low vegetation (less than 0.3m)		Y		
4	Medium vegetation (0.3m to 2.0m)		Y		
5	High vegetation (greater than 2.0m)		Y		
6	Buildings		Y		
7	High/Low noise points		Y		
8	Model Key Points (thinned ground)				
9	Water				
10	Bridges				
11	Reserved (not used)				
12	Overlap (not used)				
13	Culverts				

Aerometrex Type 1

Aerometrex Type 1 classification standard refers to a LiDAR point cloud that has been subjected to Aerometrex’s specialised automatic classification macro and has had additional manual classification improvements applied to ground level points only. Effort has been applied to ensure high and low points are correctly classified and manually checked. Water points and bridges are removed from ground class to appropriate classification codes. Type 1 data meets the ICSM Level 2 standards for ground points and ICSM Level 1 standards for above ground feature classes such as low vegetation, medium vegetation, high vegetation, and buildings. Data is presented as a tiled dataset. Point cloud classification is prepared ready for further manual classifications to be applied or for ground level terrain modelling.

		ICSM Level 0	ICSM Level 1	ICSM Level 2	ICSM Level 3
0	Unclassified				
1	Default Infrastructure				
2	Ground			Y	
3	Low vegetation (less than 0.3m)		Y		
4	Medium vegetation (0.3m to 2.0m)		Y		
5	High vegetation (greater than 2.0m)		Y		
6	Buildings		Y		
7	High/Low noise points			Y	
8	Model Key Points (thinned ground)				
9	Water			Y	
10	Bridges			Y	
11	Reserved (not used)				
12	Overlap (not used)				
13	Culverts			Y	

Aerometrex Type 2

Aerometrex Type 2 classification standard refers to a LiDAR point cloud that has been subjected to Aerometrex's specialised automatic classification macro and has had additional manual classification improvements applied to ground level and above ground points. Effort has been applied to ensure high and low points are correctly classified and manually checked. Water points and bridges are removed from ground class to appropriate classification codes. Additional manual effort is applied to points greater than 2m above ground ensuring correct classification of buildings, high vegetation, and above ground infrastructure. Type 2 data meets the ICSM Level 3 standards for ground points and ICSM Level 2 standards for above ground feature classes such as unclassified infrastructure, high vegetation, and buildings. Data is presented as a tiled dataset. Point cloud classification is prepared ready for ground level terrain modelling, vegetation analysis, extraction of building footprints and surfaces.

		ICSM Level 0	ICSM Level 1	ICSM Level 2	ICSM Level 3
0	Unclassified				
1	Default Infrastructure			Y	
2	Ground			Y	
3	Low vegetation (less than 0.3m)		Y		
4	Medium vegetation (0.3m to 2.0m)		Y		
5	High vegetation (greater than 2.0m)			Y	
6	Buildings			Y	
7	High/Low noise points			Y	
8	Model Key Points (thinned ground)				
9	Water			Y	
10	Bridges			Y	
11	Reserved (not used)				
12	Overlap (not used)				
13	Culverts			Y	

Aerometrex Type 3

Aerometrex Type 3 classification standard refers to a LiDAR point cloud that has been subjected to Aerometrex's specialised automatic classification macro and has had additional manual classification improvements applied to ground level and above ground points. Effort has been applied to ensure high and low points are correctly classified and manually checked. Water points and bridges are removed from ground class to appropriate classification codes. Extensive manual effort is applied to points greater than 0.3m above ground ensuring correct classification of buildings, fences, cars, medium vegetation, high vegetation, and above ground infrastructure. Type 3 data meets the ICSM Level 3 standards for ground points and above ground feature classes such as unclassified infrastructure, medium vegetation, high vegetation, and buildings. Data is presented as a tiled dataset. Point cloud classification is prepared ready for ground level terrain modelling, vegetation analysis, extraction of building footprints and surfaces.

		ICSM Level 0	ICSM Level 1	ICSM Level 2	ICSM Level 3
0	Unclassified				
1	Default Infrastructure				Y
2	Ground				Y
3	Low vegetation (less than 0.3m)		Y		
4	Medium vegetation (0.3m to 2.0m)				Y
5	High vegetation (greater than 2.0m)				Y
6	Buildings				Y
7	High/Low noise points				Y
8	Model Key Points (thinned ground)				
9	Water			Y	
10	Bridges			Y	
11	Reserved (not used)				
12	Overlap (not used)				
13	Culverts			Y	