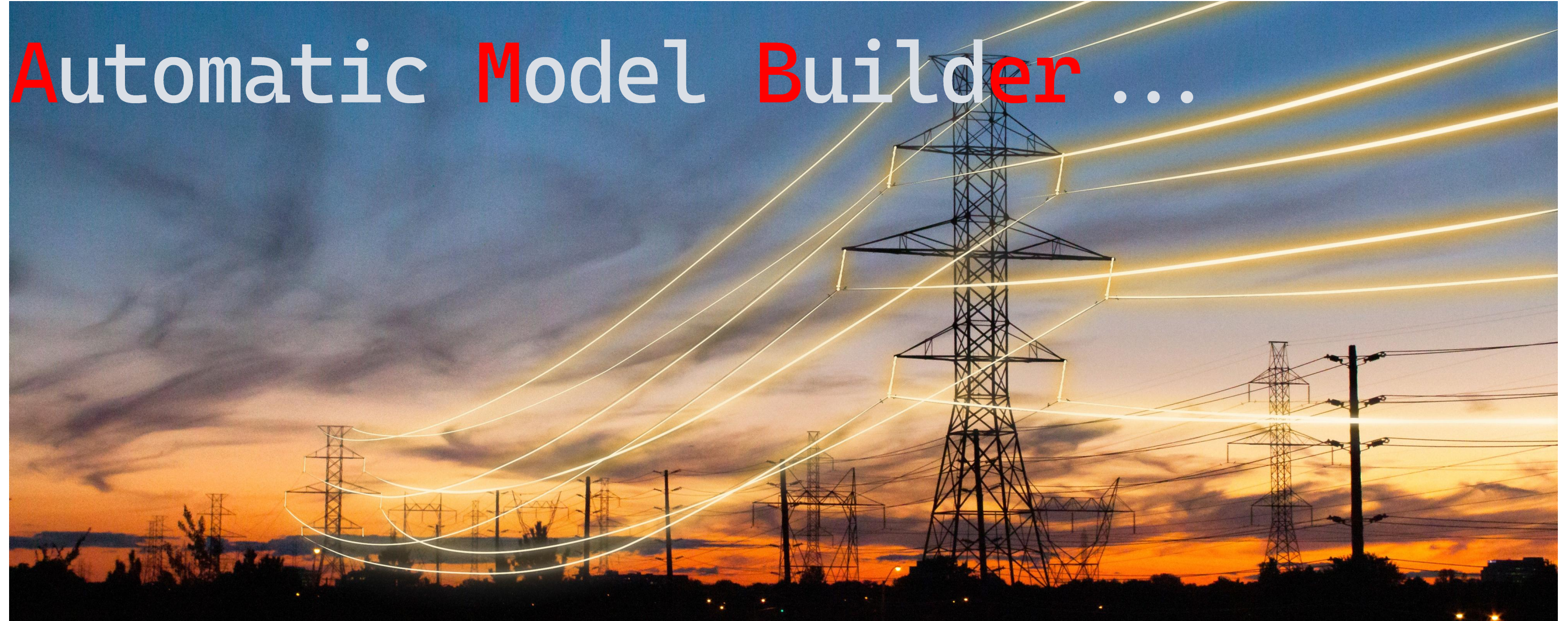


AMBER Updates

Automatic Model Builder ...



Graeme Louw P.E. & Dan McCormick P.E.
June, 2026

POWER LINE[®]
S Y S T E M S
Part of Bentley Systems

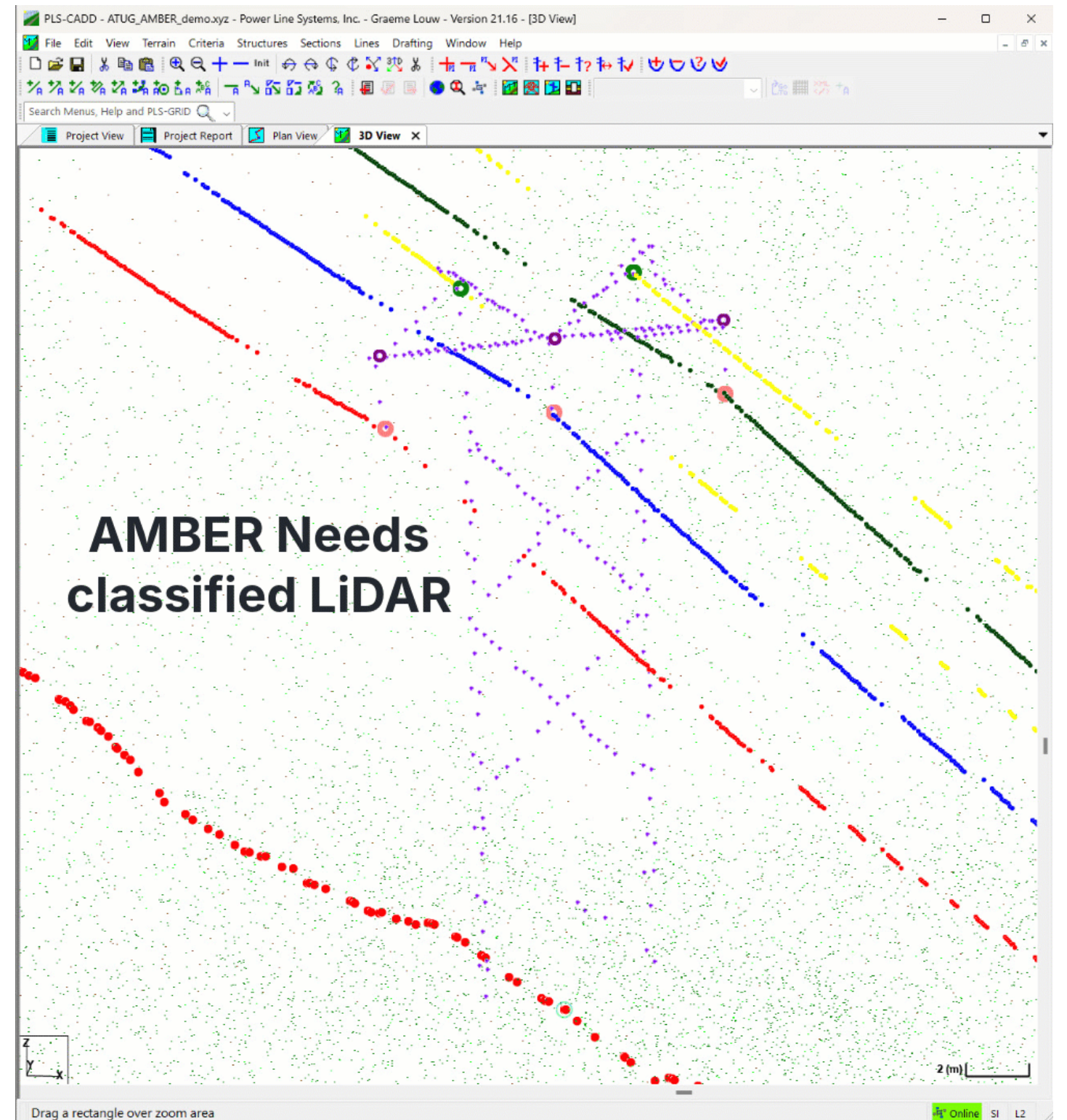
AMBER

- Automatically builds PLS-CADD models
- Classified LiDAR required
- Requires the Optimum Spotting license for PLS-CADD
- Automatically Creates:
 - Alignment(s)
 - Method 1 Structures
 - Strings + Sags Sections

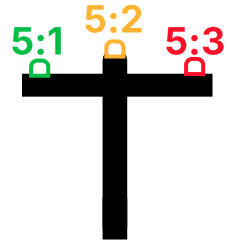


Classified LiDAR

- Required feature codes:
 - Structure point
 - Wire point
 - Wire attachment point
- Optional Points:
 - Structure top
 - Structure bottom
 - Insulator attachment point



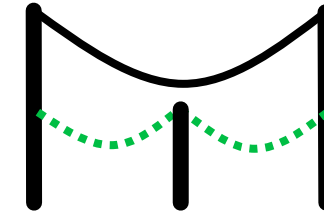
Progress since last ATUG



Multi-phase sets with unique wire file, set numbers, and attachment classifications



Multiple FEA Codes for the wire attachments within a given set



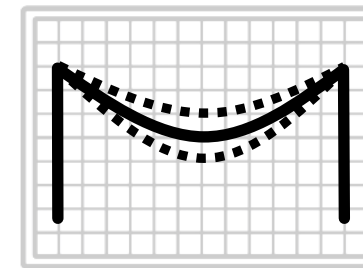
Enable/disable looking for skip-span connections



Works on projects with existing alignments, structures, or sections



Now detects strain and suspension insulators



Can perform graphical sagging (RS)

AMBER process

- **Terrain/Automatic Model Builder (AMBER)...**
 - “Wire Model Options” tab
 - How to cluster wire survey points.
 - Detect and string wires into appropriate sets.

Automatic Model Builder

Wire Model Options | Structure Model Options

Look for skip-span connections Model all attachments as clamps

	Start Set	End Set	Phase	Cable File	Sag Condition	Sag Temp. (deg C)	Survey Weathercase	Survey Condition	Wire Point Feature Code	Wire Attachment Feature Codes	Insulator Attachment Feature Codes (Optional)
1	1	11	1	3_8-7_strand_ehs_steel.wir	Initial RS	15.0	30 Deg F	Creep RS	736 Main Line Shield Wire	723	
2	1	11	2	NA	NA	NA	NA	NA	736 Main Line Shield Wire	723	
3	5	15	1	CARDINAL_ACSR_GA2_GCC.wir	Initial RS	15.0	30 Deg F	Creep RS	733 Main Line Conductor Wire	720	710
4	5	15	2	NA	NA	NA	NA	NA	734 Main Line Conductor Wire	721	710
5	5	15	3	NA	NA	NA	NA	NA	735 Main Line Conductor Wire	722	710
6				NA	NA	NA	NA	NA			
7				NA	NA	NA	NA	NA			

1 Multiphase Sets

OK Cancel

AMBER process

Automatic Model Builder

Wire Model Options | Structure Model Options

Look for skip-span connections Model all attachments as clamps

2 Multiple FEA codes for Wire/Ins Att.

	Start Set	End Set	Phase	Cable File	Sag Condition	Sag Temp. (deg C)	Survey Weathercase	Survey Condition	Wire Point Feature Code	Wire Attachment Feature Codes	Insulator Attachment Feature Codes (Optional)
1	1	11	1	3_8-7_strand_ehs_steel.wir	Initial RS	15.0	30 Deg F	Creep RS	736 Main Line Shield Wire	723	
2	1	11	2	NA	NA	NA	NA	NA	736 Main Line Shield Wire	723	
3	5	15	1	CARDINAL_ACSR_GA2_GCC.wir	Initial RS	15.0	30 Deg F	Creep RS	733 Main Line Conductor Wire	720	710
4	5	15	2	NA	NA	NA	NA	NA	734 Main Line Conductor Wire	721	710
5	5	15	3	NA	NA	NA	NA	NA	735 Main Line Conductor Wire	722	710
6				NA	NA	NA	NA	NA			
7				NA	NA	NA	NA	NA			

OK Cancel

AMBER process

3

Skip-span connections

Automatic Model Builder

Wire Model Options | Structure Model Options

Look for skip-span connections Model all attachments as clamps

	Start Set	End Set	Phase	Cable File	Sag Condition	Sag Temp. (deg C)	Survey Weathercase	Survey Condition	Wire Point Feature Code	Wire Attachment Feature Codes	Insulator Attachment Feature Codes (Optional)
1	1	11	1	3_8-7_strand_ehs_steel.wir	Initial RS	15.0	30 Deg F	Creep RS	736 Main Line Shield Wire	723	
2	1	11	2	NA	NA	NA	NA	NA	736 Main Line Shield Wire	723	
3	5	15	1	CARDINAL_ACSR_GA2_GCC.wir	Initial RS	15.0	30 Deg F	Creep RS	733 Main Line Conductor Wire	720	710
4	5	15	2	NA	NA	NA	NA	NA	734 Main Line Conductor Wire	721	710
5	5	15	3	NA	NA	NA	NA	NA	735 Main Line Conductor Wire	722	710
6				NA	NA	NA	NA	NA			
7				NA	NA	NA	NA	NA			

OK Cancel

AMBER process

Automatic Model Builder

Wire Model Options | Structure Model Options

Look for skip-span connections Model all attachments as clamps

5

Detect Suspension /Strain Insulators

	Start Set	End Set	Phase	Cable File	Sag Condition	Sag Temp. (deg C)	Survey Weathercase	Survey Condition	Wire Point Feature Code	Wire Attachment Feature Codes	Insulator Attachment Feature Codes (Optional)
1	1	11	1	3_8-7_strand_ehs_steel.wir	Initial RS	15.0	30 Deg F	Creep RS	736 Main Line Shield Wire	723	
2	1	11	2	NA	NA	NA	NA	NA	736 Main Line Shield Wire	723	
3	5	15	1	CARDINAL_ACSR_GA2_GCC.wir	Initial RS	15.0	30 Deg F	Creep RS	733 Main Line Conductor Wire	720	710
4	5	15	2	NA	NA	NA	NA	NA	734 Main Line Conductor Wire	721	710
5	5	15	3	NA	NA	NA	NA	NA	735 Main Line Conductor Wire	722	710
6				NA	NA	NA	NA	NA			
7				NA	NA	NA	NA	NA			

OK Cancel

AMBER process

Automatic Model Builder

Wire Model Options | Structure Model Options

Look for skip-span connections Model all attachments as clamps

6 Graphical sagging (RS)

	Start Set	End Set	Phase	Cable File	Sag Condition	Sag Temp. (deg C)	Survey Weathercase	Survey Condition	Wire Point Feature Code	Wire Attachment Feature Codes	Insulator Attachment Feature Codes (Optional)
1	1	11	1	3_8-7_strand_ehs_steel.wir	Initial RS	15.0	30 Deg F	Creep RS	736 Main Line Shield Wire	723	
2	1	11	2	NA	NA	NA	NA	NA	736 Main Line Shield Wire	723	
3	5	15	1	CARDINAL_ACSR_GA2_GCC.wir	Initial RS	15.0	30 Deg F	Creep RS	733 Main Line Conductor Wire	720	710
4	5	15	2	NA	NA	NA	NA	NA	734 Main Line Conductor Wire	721	710
5	5	15	3	NA	NA	NA	NA	NA	735 Main Line Conductor Wire	722	710
6				NA	NA	NA	NA	NA			
7				NA	NA	NA	NA	NA			

OK Cancel

AMBER process

- **Terrain/Automatic Model Builder (AMBER)...**
 - **"Structure Model Options" tab**
 - How to cluster structure points
 - Other filtering and speed-up options
 - Alignment Centerline offset – *useful when you have an existing alignment*
 - Insulator lengths (upper limits)

Automatic Model Builder

Wire Model Options **Structure Model Options**

Feature Codes for Structure Points (Required)
List of feature codes for Structure Points: 725...

Feature Codes for Structure Base Points (Optional)
List of feature codes for Structure Base Points: 758...

Feature Codes for Structure Top Points (Optional)
List of feature codes for Structure Top Points: None selected...

Edit Feature Code Table Edit Feature Code for Ground or Ground TIN

Max 3D spacing between structure survey points on a given structure.	(m)	9.14
Min number of structure points for valid structure		10
Max horizontal spacing between legs of multi-pole structure (center to center)	(m)	9.14
Alignment Centerline Offset For Survey Point Filter	(m)	30.48
Max Expected Strain Insulator Length	(m)	4.57
Max Expected Suspension Insulator Length	(m)	4.57

4 Works when an Alignment already exists

5 Detect Suspension /Strain Insulators

Live Demo

