

MapSight - SPIDACalc Integration Tool

User's Guide

November 2015

MapSight Desktop v3.4.0
MapSight Tool v6.4.0



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Software Requirements

The MapSight – SPIDACalc integration requires the following software:

- MapSight Desktop v3.4.0
- MapSight Tools 6.4.0
- SPIDACalc 6.0.1

Prepare Data Collection Form

A standard data collection form will be used to collect data in order to integrate with SPIDACalc. During the form generation process, the SPIDACalc client file data will be populated to the MapSight data collection form.

Follow these steps to create such a standard data collection form from your SPIDACalc client file.

1 Start SPIDACalc

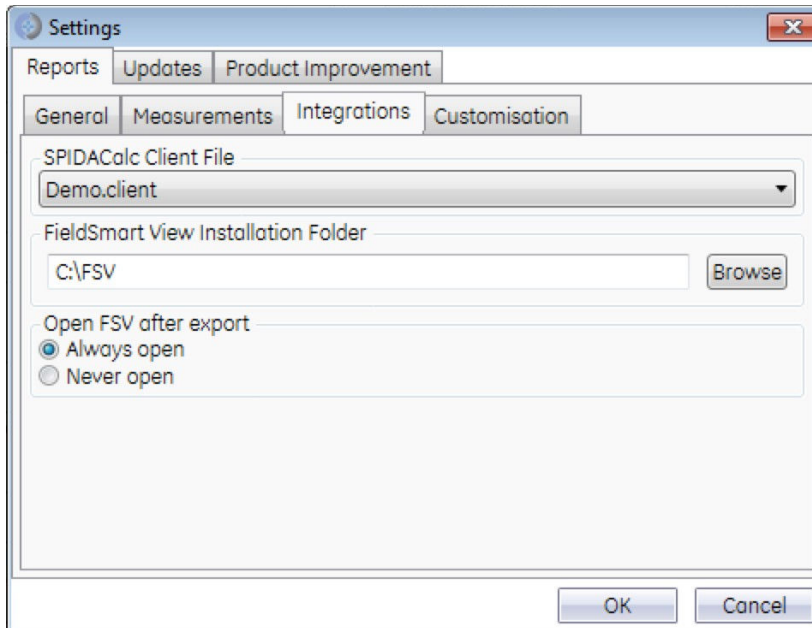
Start SPIDACalc, and leave it running on the desktop.

2 Set the Client File in MapSight Desktop Settings

Start MapSight Desktop software. Go to Tools, then Settings.

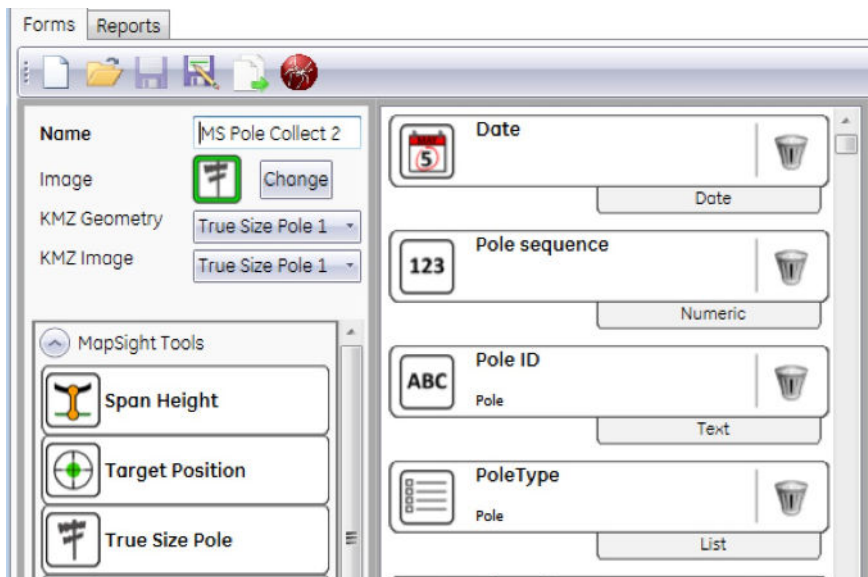
Under the SPIDACalc Client File pull-down menu, select the client file to be used in SPIDACalc for analysis.

Note that your client file is normally located on your local machine under `c:\Users\<username>\AppData\Local\SPIDA\clients\` folder.



3 Create the standard data collection form

Click on the Load SPIDACalc modelling form button. A form named “MS Pole Collect 2” will be generated automatically. This form incorporate the values from the SPIDACalc Client file.



Save the form to a different name. Then deploy it to a MapSight device.

Note: the size of the generated form should be less than 1.8MB. Reduce the client file if necessary.

See **Appendix A** on data mapping rules between MapSight and SPIDACalc.

Field Data Collection

Use the standard form generated from the above steps to collect poles in the field.

See **Appendix B** on how to use the form in the field.

Attachment Height Annotation

Bring the field collected data back into MapSight desktop. Use the measurement tools to annotate attachment heights by following the annotation rules described below.

Attachment Height Annotation Convention:

Span Bay

For a wire in Span Bay 2, Span 5: **B2 Span 5**

Service Bay

For any occurrences of the electrical wire in Service Bay 3: **SB3 Elec**

For any occurrences of the CATV wire in Service Bay 2: **SB2 CATV**

For any occurrences of the telecom wire in Service Bay 1: **SB1 Tele**

Span Guy

For Span Guy 1: **Span Guy 1**

Equipment

For any occurrences of equipment 3: **Equip 3**

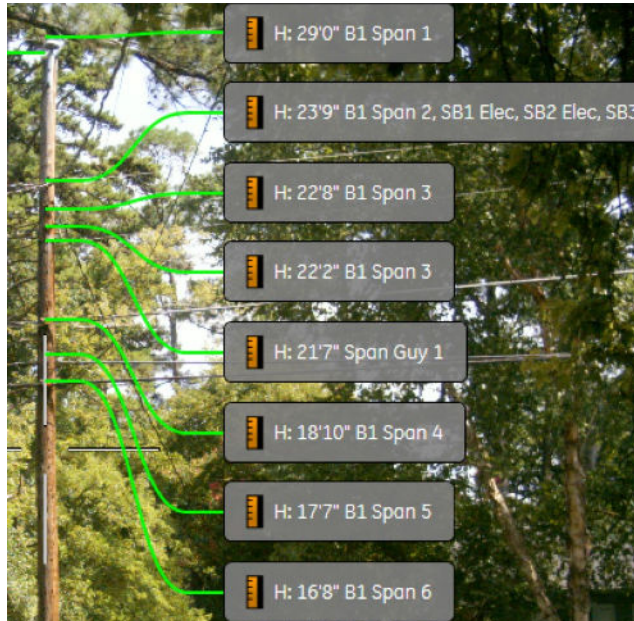
Anchors and Guys

For Anchor1 Guy: **Anch1 Guy 2**

Tips

Tip 1: You can save the list of annotation in a Joint.txt file and use it as a dropdown list

Tip 2: You can place multiple annotations on the same attachment height



Note that you must use the + button to get another text entry box, NOT just enter a comma separated list of annotations, as shown below:



It's recommend you don't annotate multiple wires from the same span bay (or wires sharing the same azimuth) using this method, otherwise they are drawn on top of each other in SPIDACalc, making it hard to select in the 3D view.

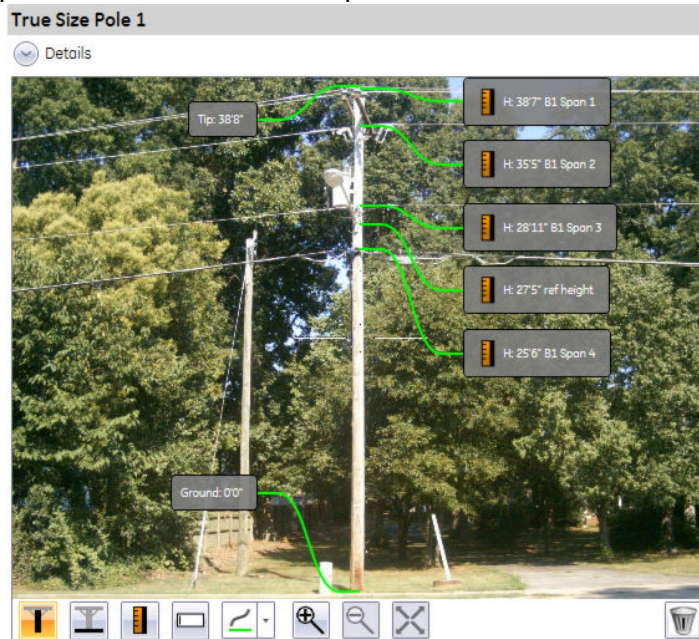
Wires from perpendicular Span Bays, equipment mounted at the same height but around the pole, or multiple anchors' guys mounted on the pole at the same height, are good example

candidates to use this feature.

Tip 3: You can annotate attachment heights on multiple True Size photos.

It is important you don't annotate the same thing twice, or you will get multiple wires. You must annotate the ground on each image you use for additional measurements, but the tip should only be annotated once.

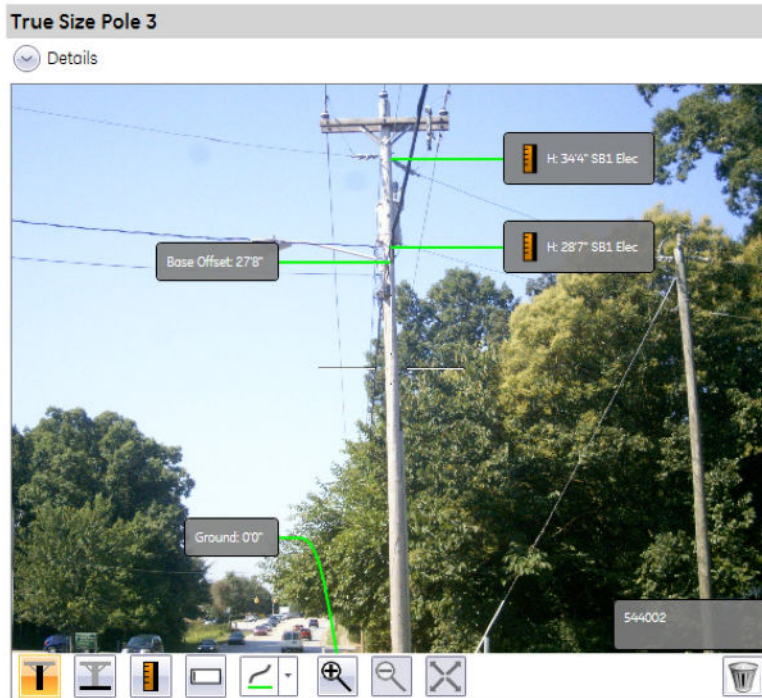
Example: Use the first True Size photo to annotate the main Span Bay.



Example: Use the second True Size photo to annotate the first Service Bay.



Example: Use the third True Size photo to annotate the second Service Bay.



Tip4: When there are multiple span bays, how do I know which one is bay 1, which is bay 2, etc.?

The Fore Span and Back Span missing line photos might give you a clue of which span bay the field engineer measured in the field. You can combine with some standard procedure about how to collect the elements - maybe spiralling clockwise, starting with the closest Span Bay pointing North etc.

Another tip is that with each missing line you get an azimuth reading (click the details arrow), and with the True Size photos you get a bearing that the photo was taken from. With a bit of thought you could estimate from the True Size what angle the wire comes off, and match it up with the appropriate azimuth and hence Span Bay.

In addition, attention to what Spans a Span Bay has, and how many wires have been recorded in that Span could also help. For example, one bay has a neutral and the other doesn't. By matching what you see on the photo and what have been collected from the field, you may be able to tell which bay is which.

Tip5: You can use the wire IDs in SPIDACalc to validate correct data input into MapSight

ID	Size
Span Bay 1/1 Wire #3	1/0 Al. Triplex
Span Bay 1/1 Wire #2	1/0 Al. Triplex
Span Bay 1/1 Wire #1	1/0 Al. Triplex
Service Bay 1/CATV Wire #7	.625" CATV Service
Service Bay 1/Elec Wire #6	2 Al. Triplex Service
Service Bay 1/Tele Wire #5	.25" TELCO Service
Span Bay 1/2 Wire #4	2/0 Copper

Generate Pole Models in SPIDACalc

With SPIDACalc running in the background on the desktop, select a job form and click on the "SPIDACalc Project" button.

Spida_pole2

Generate Reports

KMZ

PDF

Summary PDF

CSV

XML

GeoMark

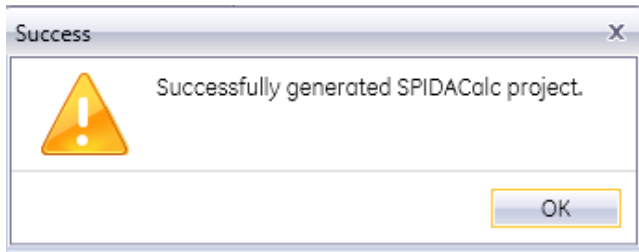
Shapefile

FieldSmart View Collect Project

SPIDACalc project

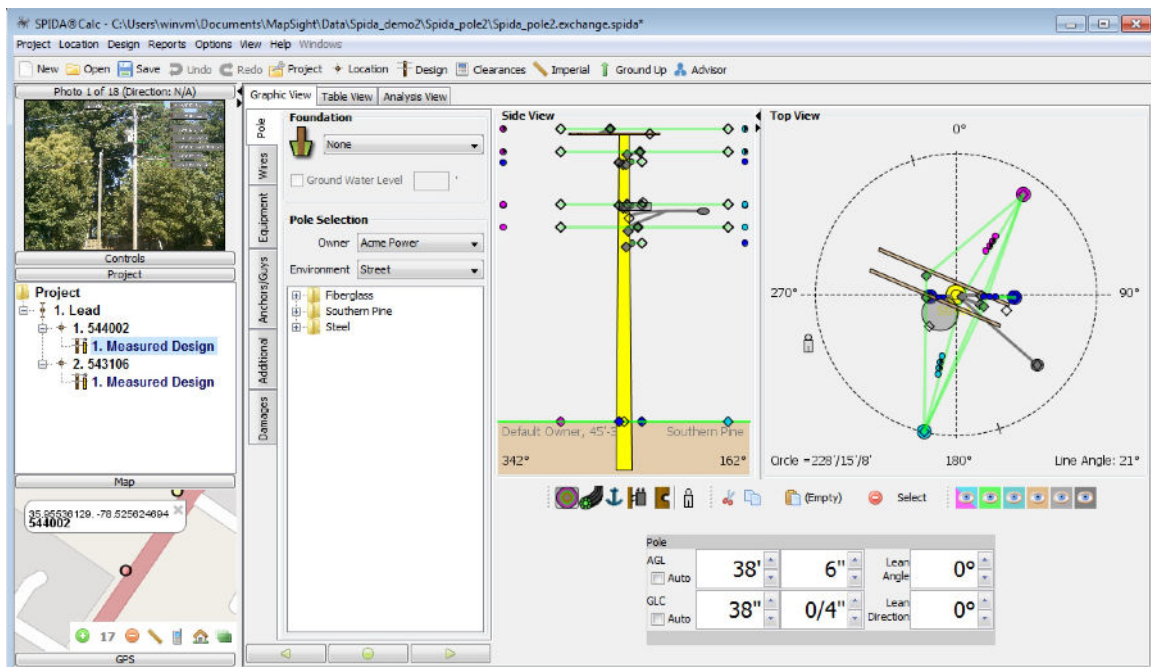
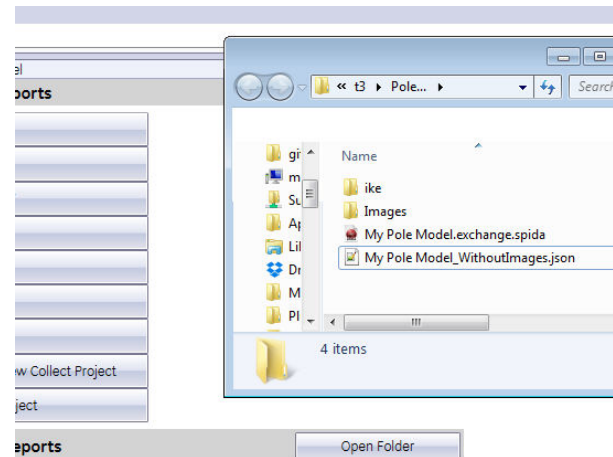
Generated Reports

You should see the following message if the pole models are generated successfully:



All the poles in the current MapSight job form will be imported into a new project in SPIDACalc. All the MapSight photos are also imported.

In addition, an email friendly JSON file is produced without photos. This can be accessed by pressing the "open folder" and attaching using your normal email client.



Note: The export will open a completely new project in SPIDACalc. Therefore if you already have active project, save it before doing an export.

Appendix A. MapSight - SPIDACalc Data Mapping

Pole

PoleType on MapSight form is a nested list. It is populated from the Pole data in SPIDACalc client file

The first screenshot shows the 'Pole' form with fields for Pole ID, PoleType, Circumference, Additional Photo1, and Additional Photo2. The second screenshot shows the 'PoleType' form with a list of options: Fiberglass, Southern Pine, and Steel. The third screenshot shows the 'PoleType' form with a list of options: 40'. The fourth screenshot shows the 'Graphic View' of the 'Pole' form, displaying a tree view of the 'PoleType' nested list. The tree view shows 'Fiberglass' with a sub-item '40' (10" Series II), 'Southern Pine' with sub-items '35'', '40'', '45'', '50'', and '60'', and 'Steel'.

Pole

ABC Pole ID

PoleType

123 Circumference

Additional Photo1
Photo Only task

Additional Photo2
Photo Only task

Back Menu Flag

PoleType

Fiberglass

Southern Pine

Steel

Cancel Menu OK

PoleType

40'

Cancel Menu OK

Graphic View Table View Analysis View

Pole

Foundation

None

Ground Water Level

Pole Selection

Owner Acme Power

Environment Street

Fiberglass

40' 10" Series II

Southern Pine

35'

40'

45'

50'

60'

Steel

Wires

Power Conductors

Span Type is a nested list in MapSight form. It is populated from the Wires catalog in SPIDACalc client file.

Span Bay 1	B1 Span1 Type	B1 Span1 Type	B1 Span1 Type
B1 Fore Span Current pole to next	PRIMARY	1/0 AAAC (7/0)	Full
B1 Back Span Current pole to previous	NEUTRAL	1/0 ACSR (6/1)	Slack
B1 Span1 Type	SECONDARY	2 AAC (7/0)	
B1 Span1 Quantit 123	OPEN_WIRE	2 ACSR (6/1)	
B1 Span1 Constr	COMMUNICATION	2/0 ACSR (6/1)	
Back Menu Flag	Cancel Menu OK	Cancel Menu OK	Cancel Menu OK

Graphic View | Table View | Analysis View

Pole: From Previous, From Project, To Next

Wires: Wire End Point Selection

Environment: None

Previous & Next, Previous, Next, Building, Other

Wire Selection

Owner: Acme Power, Group: Primary

Apply TAF: 1, Quantity: 1, Vertical Spacing: 0"

1/0 AAC (7/0), Full, Slack, 1/0 ACSR (6/1), 2 AAC (7/0), 2 ACSR (6/1), 2/0 ACSR (6/1)

Service Conductors

Srv Size is a nested list in MapSight form. It is populated from the Wires catalog in SPIDACalc client file under the "Utility Service" group.

Service Bay 1

ABC SB1 Note

SB1 Length
From pole to end point

SB1 Elec Srv Size

SB1 Elec Ins

SB1 Tele Srv Size

Back Menu Flag

SB1 Elec Srv Size

1/0 AAC Triplex (9/

4 AAC Triplex (7/0)

4/0 AAC Quadruple

6 HDC - Solid (1/0)

Cancel Menu OK

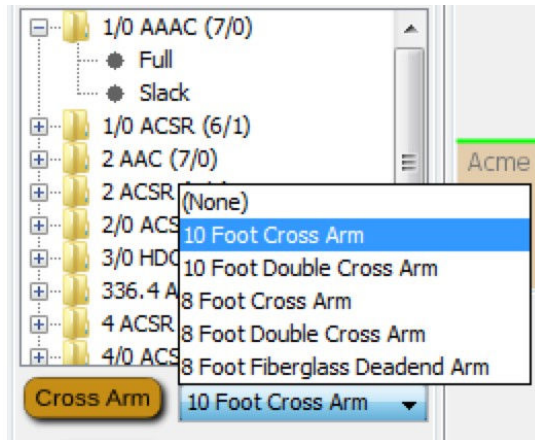
Ancho	Wire Selection	
Additional	Owner	Acme Power
Damages	Group	Utility Service
	<input type="checkbox"/> Apply TAF	1
	Quantity	1
	Vertical Spacing	0"
	<ul style="list-style-type: none"> 1/0 AAC Triplex (9/0) <ul style="list-style-type: none"> Full Slack 4 AAC Triplex (7/0) 4/0 AAC Quadruplex (18/0) 6 HDC - Solid (1/0) 	

Cross Arms

Span Constr is a nested list in MapSight form. It is populated from the cross arms list in SPIDACalc client file.

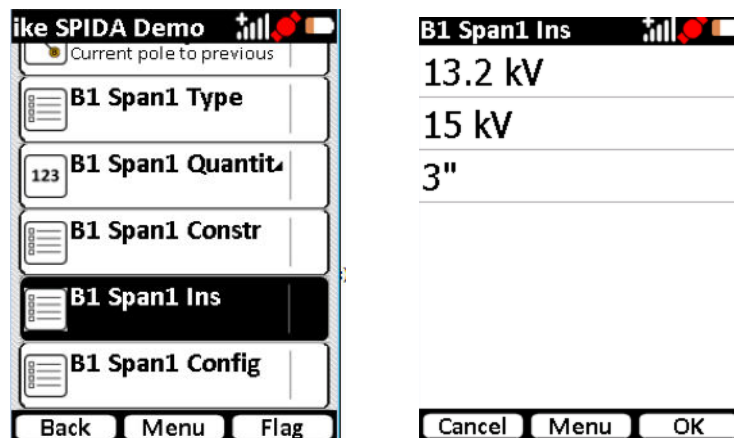
ike SPIDA Demo	
Current pole to previous	
B1 Span1 Type	
123 B1 Span1 Quantit	
B1 Span1 Constr	
B1 Span1 Ins	
B1 Span1 Config	
Back	Menu
Flag	

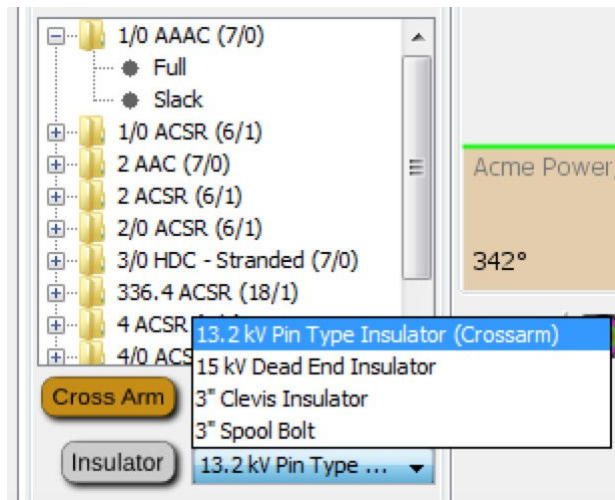
B1 Span1 Constr	
On Pole	
10 Foot Cross Arm	
10 Foot Double Cro	
8 Foot Cross Arm	
8 Foot Double Cros	
8 Foot Fiberglass D	
Cancel	Menu
OK	



Insulators

Span Ins is a nested list in MapSight form. It is populated from the insulators list in SPIDACalc client file.





Equipment

Equip Type is a nested list in MapSight form. It is populated from the equipment types list in SPIDACalc client file.

Equipment1

Equip1 Type

Equip1 Orient
Photo of this equipment

123 Equip1 Quantity

ABC Equip1 Notes

Back Menu Flag

Equip1 Type

CUTOUT_ARRESTO

DRIP_LOOP

JOINT_USE_BOX

POWER_SUPPLY

RECLOSER

STREET_LIGHT

TRANSFORMER

Cancel Menu OK

Equip1 Type

100 kVA Single Pha

25 kVA Single Phas

50 kVA Single Phas

75 kVA Single Phas

Cancel Menu OK

Graphic View Table View Analysis View

Pole

Wires

Equipment

Equipment Selection

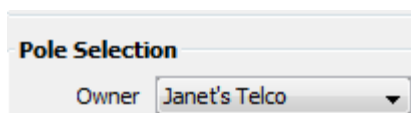
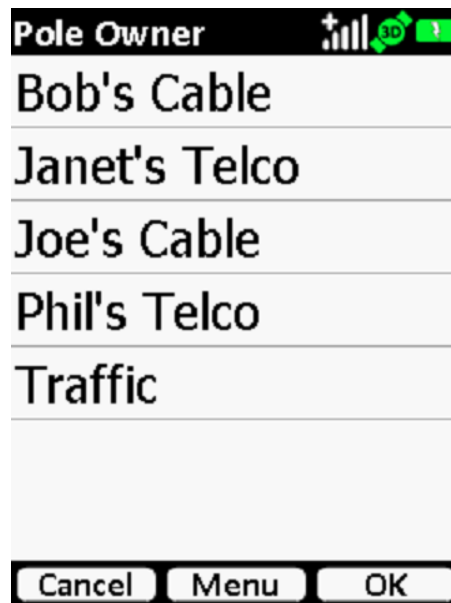
Owner Acme Power

Type Transformer

- 100 kVA Single Phase
- 25 kVA Single Phase
- 50 kVA Single Phase
- 75 kVA Single Phase

Owner

Owner is a nested list in MapSight form. It is populated from the owners listed in SPIDACalc client file.



Anchors/Guys

Anchor Type is a list in MapSight form. It is populated from the Anchors list in SPIDACalc client file.

Guy Size is a list in MapSight form. It is populated from the Guy/Span Guy Selection list in SPIDACalc client file.

Anchor 1

Anch1 Type

Anch1 Lead Length
From pole to anchor

Anch1 Guy1 Size

Anch1 Guy2 Size

Anch1 Guy3 Size

Back Menu Flag

Anch1 Type

10" - 10" Double H

10" - 12" - 14" Triple

14" Single Helix (Cl

Cancel Menu OK

Anch1 Guy1 Size

1/4" EHS (7/0)

3/8" EHS (7/0)

5/16" EHS (7/0)

Cancel Menu OK

Graphic View Table View Analysis View

Anchor Selection

Owner Acme Power

- 10" - 10" Double Helix (Class 4) 1 1/4
- 10" - 12" - 14" Triple Helix (Class 4) 1
- 14" Single Helix (Class 4) 5/8" Rod

Guy/Span Guy Selection

Owner Acme Power

- 1/4" EHS (7/0)
- 3/8" EHS (7/0)
- 5/16" EHS (7/0)

Others: Assumptions in SPIDACalc integration

- The end points on electrical cables are at the same height. Where they are not, the horizontal component from the Missing Line tool is used.

- Where an insulator is connected to two cables, or a cross arm to multiple spans, the insulator/cross arm will be mounted on the pole at the average of the cable azimuths. Practically, this means it will be mounted, and face the mid-point of the acute angle (<180°) between two azimuths. An insulator/cross arm with one cable attached is mounted facing the azimuth of that cable plus ninety degrees. Both angles may be adjusted manually in SPIDACalc.
- In case of cross arms on Span Bay 1 this angle will automatically adjust when you adjust the respective wire end points. Cross arms in other Span Bays use a static calculation and need to be manually adjusted to suit adjustments in associated Wire End Points.
- Cross arm offset and wire separation is based on a pre-defined model. End user should adjust these manually to fit their particular cross arm type and mounting standards.
- When not specified, tensions are automatically assigned "Full Tension"
- MapSight embeds data from your selected SPIDACalc Client File into the generated form, and features generated with that form. You must ensure the correct Client File is generated before generating the form. After that point, any features collected will use the original Client File selected.
- Dialogue boxes in the SPIDACalc application prevent API integration. If you don't see SPIDACalc options, clear any dialogue boxes in SPIDACalc and restart MapSight.
- The first Span Bay is recorded as "Previous" and "Next" poles. Subsequent Span Bays are marked as "Other" pole, and service bays spans are marked as attached to "house".
 - Feature id uses the Pole ID if entered, otherwise defaults to ike timestamp based feature name
 - Changes to item names should be performed in SPIDA prior to creating iwf. It cannot be altered in the form.
 - If an insulator is not entered, "Default Insulator" is used, which can be mapped to a specific insulator for the whole pole line in SPIDA on export.

Appendix B. SPIDACalc Data Collection Form

Pole

Form	Sub Form	TYPE	LIST VALUES
Date		date	
Auto Number		auto number	
Pole	Pole ID	text	
	PoleType	Nested list	(Populated from Client File)
	Pole Owner	Nested list	(Populated from Client File)
	Circumference	number	
	Additional Photo1		
	Additional Photo2		
	Additional Photo3		

Note: Circumference can be collected either from the field or measured on the photos on MapSight Desktop software. The value collected from the field supersedes the measurement on the photo.

Anchors and Guys, True Size Photos

Form	Sub Form	TYPE	LIST VALUES
Anchor1	Anch1 Type	list	(Populated from Client File)
	Anch1 Owner	Nested list	(Populated from Client File)
	Anch1 Lead Length	missing line	
	Anch1 Guy 1 Size	list	(Populated from Client File)
	Anch1 Guy 2 Size	list	(Populated from Client File)
	Anch1 Guy3 Size	list	(Populated from Client File)
<Repeat Anchor 2 - 4 ...>			
TrueSize Pole 1		true size pole	
TrueSize Pole 2		true size pole	
TrueSize Pole 3		true size pole	
3 Shot Height		three shot height	(Optional, not used in SPIDACalc)
Target Location		target location	(Optional, not used in SPIDACalc)

Anchor 1

Anchor 2

Anchor 3

Anchor 4

True Size Pole 1
True Size Pole task

True Size Pole 2

Back Menu Flag

DemoPole

Anchor 1

Anch1 Type

Anch1 Owner

Anch1 Lead Length
From pole to anchor

Anch1 Guy1 Size

Anch1 Guy2 Size

Back Menu Flag

Note: Shared anchor is supported in this model.

Primary/Secondary/Communication Conductors

Form	Sub Form	TYPE	LIST VALUES
Span Bay 1	B1 Fore Span	missing line	
	B1 Back Span	missing line	
	B1 Span1 Type	nested list	(Populated from Client File)
	B1 Span1 Quantity	number	
	B1 Span1 Constr	list	(Populated from Client File)
	B1 Span1 Owner	Nested list	(Populated from Client File)
	B1 Span1 Config	List	Fore, Back, Both
<Repeat Spab 2 - 8 ...>			
<Repeat Span Bay 2 - 6 ...>			

Span Bay 1

Span Bay 2

Span Bay 3

Span Bay 4

Span Bay 5

Span Bay 6

Back Menu Flag

Span Bay 1

B1 Fore Span
Current pole to next

B1 Back Span
Current pole to previous

B1 Span1 Type

123 B1 Span1 Quantit

B1 Span1 Constr

Back Menu Flag

DemoPole

B1 Span1 Owner

B1 Span1 Ins

B1 Span1 Config

B1 Span2 Type

123 B1 Span2 Quantit

Back Menu Flag

Span Bay

- A Span Bay represents a wire direction
- A Span Bay can have multiple spans
- **For each Span Bay, collect Foreword Span and Backword Span only once**





Head or Span Guy

Form	Sub Form	TYPE	LIST VALUES
Head or Span Guy	Span Guy1 Size	list	(Populated from Client File)
	Span Guy1 Length	missing line	
	Span Guy1 Owner	Nested list	(Populated from Client File)
	<Repeat Span Guy 2 - 4 ...>		

	Span Bay 4	
	Span Bay 5	
	Span Bay 6	
	Head or Span Guy	
	Service Bay 1	
	Service Bay 2	
Back	Menu	Flag

DemoPole		
Head or Span Guy		
	Span Guy1 Size	
	Span Guy1 Length	Missing Line task
	Span Guy1 Owner	
	Span Guy2 Size	
	Span Guy2 Length	
Back	Menu	Flag



Service Drops

Form	Sub Form	TYPE	LIST VALUES
Service Bay 1	SB1 Note	text	
	SB1 Length	missing line	
	SB1 Elec Srv Size	list	(Populated from Client File)
	SB1 Elec Srv Owner	Nested list	(Populated from Client File)
	SB1 Elec Srv Ins	Nested list	(Populated from Client File)
	SB1 Tele Srv Size	list	(Populated from Client File)
	SB1 Tele Srv Owner	Nested list	(Populated from Client File)
	SB1 Tele Srv Ins	Nested list	(Populated from Client File)
	SB1 CATV Srv Size	list	(Populated from Client File)
	SB1 CATV Srv Owner	Nested list	(Populated from Client File)
	SB1 CATV Srv Ins	Nested list	(Populated from Client File)
<Repeat Service Bay 2 - 8 ...>			

	Service Bay 1	
	Service Bay 2	
	Service Bay 3	
	Service Bay 4	
	Service Bay 5	
	Service Bay 6	
Back	Menu	Flag

DemoPole		DemoPole	
Service Bay 3		SB3 Elec Ins	
ABC	SB3 Note		SB3 Tele Srv Size
	SB3 Length From pole to end point		SB3 Tele Owner
	SB3 Elec Srv Size		SB3 Tele Ins
	SB3 Elec Owner		SB3 CATV Srv Size
	SB3 Elec Ins		SB3 CATV Owner
Back	Menu	Flag	Back
			Menu
			Flag



Equipment

Form	Sub Form	TYPE	LIST VALUES
Equipment1	Equip1	list	(Loaded from Client File)
	Equip1 Orient	Target Position photo	
	Equip1 Quantity	number	
	Equip1 Owner	Nested list	(Populated from Client File)
	Equip1 Notes	text	
<Repeat Equipment2 - 4 ...>			

Equipment1

Equipment2

Equipment3

Equipment4

Additional Notes

SpidaCalcApiFile

Back Menu Flag

DemoPole

Equipment1

Equip1 Type

Equip1 Orient
Photo of this equipment

123 Equip1 Quantity

Equip1 Owner

Equip1 Notes

Back Menu Flag

Note: Equipment Orient is a Target Position photo. You need to be directly facing the equipment when taking the photo in order to get the correct bearing of the equipment.

