Procedure Correlator Use and Operation

Software Version 1.0.51 November 6, 2019

Contents

Unlocking the Tablet	2
Verify Wi-Fi access	3
Main page - available surveys	
Download surveys	7
Connecting Devices - GPS	
Connecting Devices - Multimeter	10
Set Map Areas	15
Data Collection	17
Download Updates to surveys	27
Sync and Upload Surveys	28

Unlocking the Tablet

All tablets require a pin on power up or waking.



All tablets use the same pin: 123698745

The pin forms a spiral pattern in the order shown below:



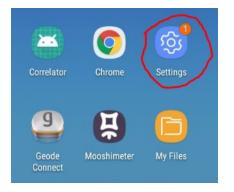
Verify Wi-Fi access

Place your finger on the Samsung logo at the top of the tablet screen and swipe down. You will see an icon indicating Wi-Fi is on or off.

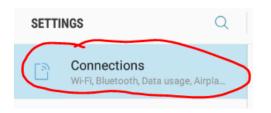


If Wi-Fi is off, touch the gray line icon. It will turn blue when on.

If Wi-Fi is not working, go to settings.



Select "Connections" in the left panel.



Select "Wi-Fi" in the right panel.



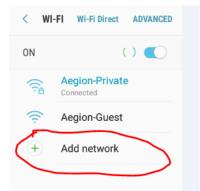
Connection notes when in an Aegion office:

Do not use Aegion-Guest if you are in an Aegion office. It will not work properly.

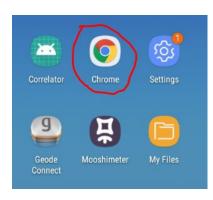
When connecting to Aegion-Private, use these settings:

- EAP method \rightarrow PEAP
- Phase 2 authentication \rightarrow None
- CA certificate → Select 'don't validate'
- Identity → This will be your Aegion email without the '@aegion.com'. For example, <u>idoe@aegion.com</u>, the identity would be 'jdoe'.
- Anonymous identity should be left blank
- Password is your current Aegion email password

If you are not in an Aegion office, select Add network and follow the instructions for your location.



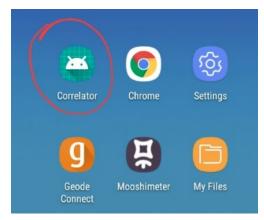
Once Wi-Fi is on, open Google Chrome and verify you have internet access by searching for "Corrpro".



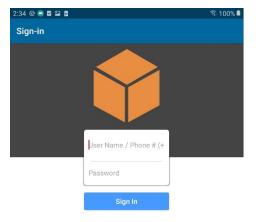
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Gcog	e	Corrp	ro			
ALL	MAPS	NEWS	SHOPPING	IMAGES	VIDEOS	BOOKS

Main page - available surveys

Launch the Correlator app.



Login using your Correlator credentials created during your user setup.



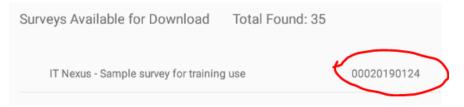
Correlator will open to the main page showing surveys. The *bottom* of the page shows *surveys available for download* from the server. You will only see the surveys that are assigned to you.

The *top* of the page shows *surveys* that you have *already downloaded* to the tablet (local surveys). This section is also user dependent. If one user downloads a survey and logs out, and another user logs into the Correlator app on the same tablet, the second user will *NOT* see the surveys from the first user.

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G	Correlator	GPS • 🌣 DMM •
Local Surveys	Total Downloaded: 0	MAP AREAS
\sim		
Surveys Availabl	e for Download Total Found: 35	
IT Nexus - San	nple survey for training use	00020190124

Download surveys

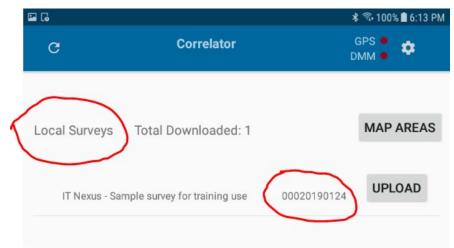
Select a survey from the bottom of the page.



You will see a spinning wheel while the survey downloads.

🖾 🔓		🗚 🖘 100% 🗎 6:13 PM
G	Correlator	GPS • DMM •
Local Surveys	Total Downloaded: 0	MAP AREAS

Once downloaded, you will see the survey in the upper section (local surveys).



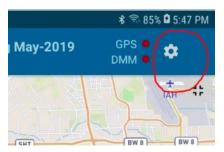
Connecting Devices - GPS

Verify Bluetooth is on. Place your finger on the Samsung logo at the top of the tablet screen and swipe down. You will see an icon indicating Bluetooth is on (blue like below) or off (gray).



Tap anywhere below the menu shown above to close the drop-down window.

Click the "gear" icon on the top right of the screen to connect your devices.



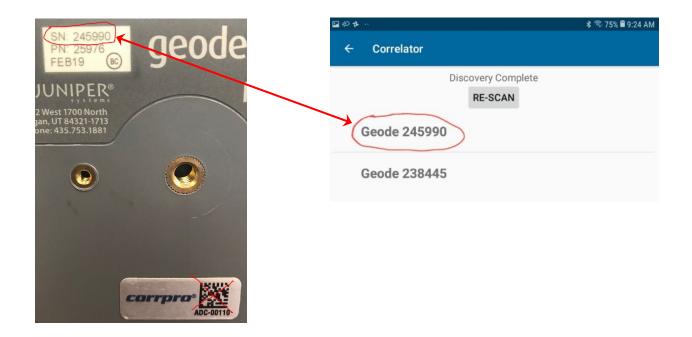
Press the power button on the Geode. Verify the green LED lights up.



FID Reader		
Device >	K CONNECT	
	RE-CONNECT LAST GPS AND DMM	
_		
PS Device inte	\bigcirc	ERNAL GPS
PS Device inte Location	ernal gps × CONNECT USE INTE	
PS Device inte Location Latitude	ernal gps × CONNECT USE INTE	8629988
PS Device inte Location	ernal gps × CONNECT USE INTE 294 -95.	

Tap on the connect button under the GPS box.

A list of available devices will show up. Make sure to connect to the correct Geode. If you are out by yourself and only have 1 GPS unit, it will be the only one to show up under this screen. But if you are at the office with multiple kits around, the Geode is named by its serial number. Check the bottom of the Geode to confirm the serial number.



Once connected, verify the Bluetooth LED on the GPS lights up.



We also have the option of using the internal tablet GPS. This is useful for training and indoor use, but it has very poor accuracy compared to the sub-meter accurate Geode. Do *not* use 'internal' GPS for survey work unless the asset location is completely shrouded (under a dock, inside a building, etc.). If you have to use the internal GPS for a few points, make sure to type comments about the conditions in the comments field for that point. Correlator records the GPS device used to locate each test point.

Connecting Devices - Multimeter

There are currently two supported multimeters. One is the Mooshimeter (small device with no screen), and other is the Fluke 3000 FC. Both meters connect via Bluetooth.

Connecting to a Mooshimeter:

This process is similar to connecting a GPS. Open the connect page using the gear icon and select the 'Connect Mooshimeter' button in the multimeter box.

RFID Reade		CONNEC	ст		
	RE-	CONNEC	T LA	ST GPS AND I	омм
GPS Device	Geode	245990	×	CONNECT	USE INTERNAL GPS
Locatio Latitud Longitu Satellit Accura	e ide e Coun	t			NaN NaN 0 NaN
Aultimeter					
Device	×			CONNE	CT MOOSHIMETER

A list of meters will show up. If you are out in the field, it should only show the meter that you have for your kit. If you are in the office, it will pick up all the meters that are close. Make sure to verify the name on the voltmeter. It will be on the QR code on the front of the meter.

2017 ···	8 ≈ 74% 🖬 10:49 AM
← Correlator	IS NO.
Timeout reached, scan complete.	ADC-00040
ADC-00040	

Once connected, the display will show the meter name.

Device ADC-00040 V DIS	CONNECT
Voltage	
	0.003 V D0

Connecting to a Fluke 3000 FC:

Navigate to the connect page using the gear icon, but <u>do not select anything yet</u>.

Correla	ator			
ID Reader				
Device	×	CONNECT		
	RE-	CONNECT L	AST GPS AND DMM	
PS				
Device	×	CONNECT	USE INTERNAL GPS	
Location	0			
Latitude Longitud				
Satellite Accurac		it		
ultimeter				
Device	×		CONNECT MOD	SHIMETER
	~		CONN	ECT FLUKE
<u></u>				
Voltage				

Rotate the Fluke knob from off to any position to turn the meter on. Press the Bluetooth button (on the right side with an 'F' and wave icon)



The Fluke screen will show 'Pair with', and the box next to 'App' will be solid. Press the Fluke 'select' button (second row on meter face)



Now go to the tablet and select the 'Connect Fluke' button in the multimeter box.

Device	CONNECT MOOSHIMETE
×	CONNECT FLUK
Voltage	

Select the meter from the list (ADC-00xxx) that matches the label on the back of the meter

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÷	Correlator			
	Timeout reached, scan complete.		18WA	
	RE-SCAN		5326	
G	ADC-00227		ADC-00227	
C			- and -	0

Observe the Multimeter display box on the tablet and verify the units match the selected position on the Fluke (V AC, etc.)

Device ADC-00227 🗸	DISCONNECT
Voltage	
	0.000 V A

Rotate the Fluke knob to another setting and verify the units change to the new setting.

Device ADC-00227 🗸	DISCONNECT
Voltage	0.000 V DC
	0.000 V DC

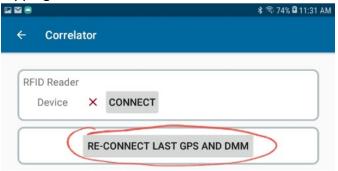
If the above fails for any reason, turn the Fluke off again and restart the connect process.

RFID readers also connect via Bluetooth, but the process is specific to the RFID reader. Email <u>correlatoradmin@aegion.com</u> for additional instructions on RFID readers.

GPS and multimeter Bluetooth connection status is shown on every page with lights in the top right corner. Green is connected. Red is disconnected.



After the first-time devices were connected to the tablet, they can be quickly reconnected by tapping the 'Re-Connect Last GPS and DMM' button at the top of the connect page.



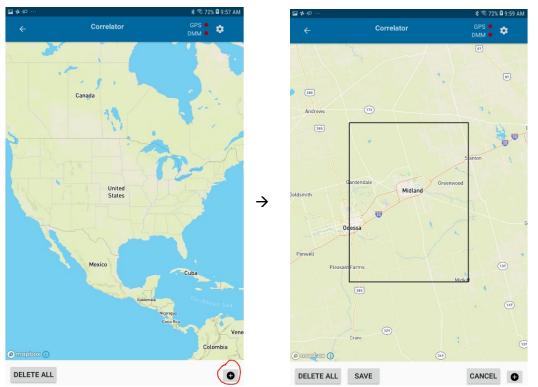
Set Map Areas

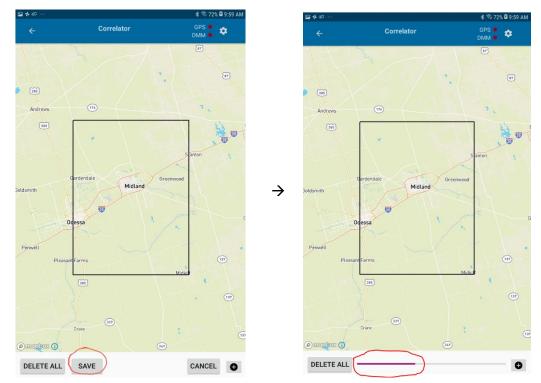
A limited map area is included in Correlator for offline use. While connected to Wi-Fi, additional map detail can be downloaded for offline use while surveying.

First verify Wi-Fi access. Then on the survey list page, select 'map areas' in the upper right corner.



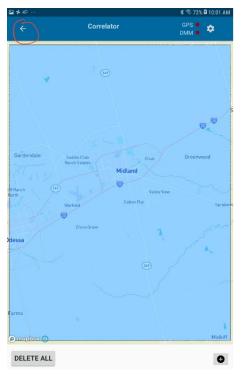
North America will be centered by default. Zoom to the area you will be working in and click the '+' in the bottom right corner. A box will be drawn around the area to be downloaded. Selecting a very large area will take much longer to download.





Select 'save'. The download progress bar will show how far along the process is.

After download, the saved map area will be highlighted blue. Select the 'back' arrow in the top left corner to return to the survey list page.

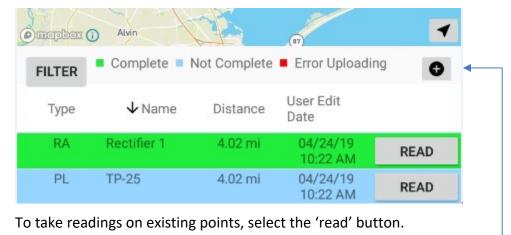


Data Collection

Once you connect the devices and have a survey downloaded, you are now ready to start collecting data. If data was preloaded into the survey, then all the points will be in the survey already. You would tap on the point that you need to read, and all the fields will be prepopulated with the required information, and you will just need to get the readings.

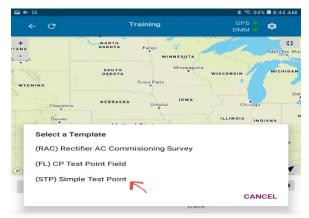
For data with captured or preloaded GPS points you can select anywhere in the row except 'Read', and the map will zoom to that location.

You can also click any of the column names, and that column will sort in one direction. Click again, and it will sort opposite. Click a third time, and the column will revert to unsorted. The name column below has an arrow indicating it was sorted.



To add a new data point to your survey, tap the "plus" sign.

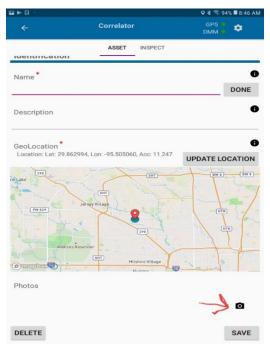
Then select the type of template that you would need. For this we used (STP) Simple Test Point.



Then type in the required fields and tap the update location to capture a GPS location. Required fields have a red asterisk next to them as shown below for Name and Geolocation.

⊑ ≫ a ·		오 🕸 🗟 94% 🛢 8:45 AM
÷	Correlator	GPS 🗧 🎄 DMM 🖕
	ASSET INSPECT	
Identification		
Name *		0
		DONE
Description		0
GeoLocation*		0
No Location		UPDATE LOCATION
ne Lake	SHT	BW 8 BW 8
EN 529	SHT Jersey Village	HTR
	4 200	ITTR
Addicks	Reservoir SHT Hitshire Village	
	Hustor	
Photos		
		٥
DELETE		SAVE

To add a photo, you would tap on the camera icon. This will open the camera to take and save a photo.



Once all 'Asset' information is entered, either tap the 'Inspect' tab at the top or just swipe the screen to the left to get to the 'Inspect' Tab.

Then tap on Today's Date to update the time and date for the reading.

			♥∦ ∜	🗟 94% 🛢 8:47 AM
÷	Correl	ator	GP: DMM	
	ASSE			
Overview				
Inspection Da	te *			0
No Date Set		-		DAY'S DATE
Comments				0
				DONE
Structure T	o Soil Reading	s		
Structure Pote	ential [mV] [*]			
On Value DELETE		null mV		SAVE
				SAVE
(т)		GIF	Ļ	\$\$ \
1 2	3 4 5	6 7	8 9	0 Del
q ⁺ w [×]	e^{+} r^{-} t'	y u	i o	p 🙁
9 "		,		P C
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		g [®] h [®] j		P -

To get to capture a wave form in this template tap the Details button.

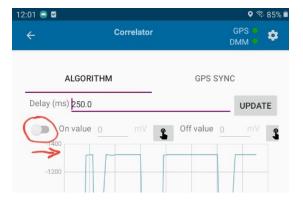
🖬 🕨 दि -			🗣 🕸 🧐 94% 🛢 8:47 AM
	Correlator		GPS 🔷 😎 DMM 🎍 🍄
	ASSET	INSPECT	
Overview			
Inspection Date	e		•
05/13/2019 08:4	7 AM		TODAY'S DATE
Comments			0
			DONE
Structure To S	oil Readings		
Structure Potenti	al [m)/]*		
On Value	ci [iiiv]	null mV	
Off Value		null mV	
			DETAILS
			7
		1	-
DELETE			SAVE

Select 'Algorithm'. GPS sync has not completed development as of this procedure release date.

Select 'Record 15 seconds' or 'Record 45 seconds' at the bottom of the page.



After the waveform capture is complete, we will select on and off values.

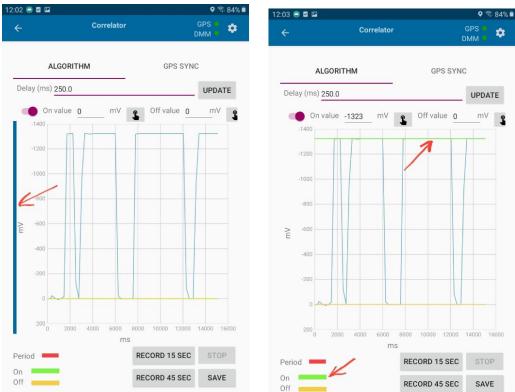


Move the slider bar to the right to enable selecting a reading.

Press the finger icon for the On value.



You will see a thick blue bar on the left side of the screen. Place your finger on the bar and drag to the On location.



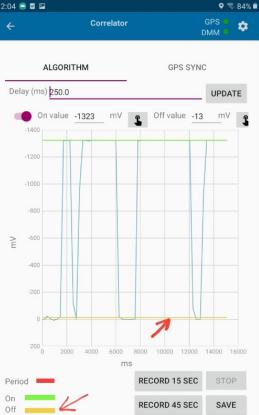
When you release your finger, you will be given the option of saving the value or repeating the process to make a better selection. Select 'save' if you are satisfied with the results.

Do you want to edit your work or save it?





Repeat this process for the OFF reading.



Note that the horizontal lines representing On and Off will auto-populate the On and Off fields.



Select 'save' in the lower right corner, and the On / Off values will be carried over to the previous screen.



For Static or just ON readings you can select the Immediate button.

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← ℃	orrelator			GPS DMM	٠
	ASSET	INSPECT			
0				_	DONE
Comments					
Structure To Soil Read	lings				
Static Potential [mV] *					•
Enable DMM For Reading	•				
Stored Value		null m	V		
Reading Now		-1 m\	/		
DELAY READING (5 SEC)		IMMEDIA	ATE REA	DING
			1		
Structure Potential [mV]					
On Value		null mV	1		
Off Value		null mV			
				D	ETAILS
Foreign Potential [mV]					
On Value		null mV			
Off Value		null mV			
DELETE				D	SAVE

Or if you need to wait a few seconds to hook up your meter you can select the Delay Reading. This will count down from 5 to give you 5 seconds to connect the meter and get the reading.

🖬 🖻 🖪 -								♥ \$ *	🗟 93% 🗖	8:55 AM
÷				orrela	tor			GP: DMM		2
				ASSET	IN	SPECT				
Static	Potent	tial [m\	/]*							0
Enable	DMM	For Re	eading	-						
Store	ed Valu	ie				null m\	V			
Read	ling No	w				1 mV				
DEL	AY RE	ADING	(5 SE	C)		- 1	IMME	DIATE	READI	NG
	1	-								
Struct		ential	[mV]							
On Va						ull mV				
Off Va	lue				nı	ull mV				
									DETA	AILS
DELET	ΓE								S	AVE
(5)	r	ю		nov	N		not		\sim
1	2	3	4	5	6	7	8	9	0	Del
q	w	e	r	\mathbf{t}^{\prime}	y ⁻	u	i	0	\mathbf{p}^{I}	\propto
а	s	ď	l″	° g		n [®]	j	k ⁽	P	Ş
Ŷ	z	x	c	v	b	n	m	, !	• ?	Ŷ
Ctrl	!#1			En	glish (L	IS)			٥	⊳

After all the fields are entered and the readings are taken tap "save" to save the data point.

🖬 🕨 🖪 ·		오 💲 🤋 93% 🛢 8:53 AM
÷	Correlator	GPS 🔹 🌣 DMM 🍐 🌣
	ASSET INSPECT	
Overview		
Inspection Date *		0
05/13/2019 08:47	' AM	TODAY'S DATE
Comments		0
		DONE
Structure To S	oil Readings	
Structure Potentia	al [mV] *	
On Value	1800 m	/
Off Value	2 mV	
		DETAILS
		~
DELETE		SAVE

If all required fields have not been completed, you will get a warning indicating which fields are missing. You can still save what you collected, but the point will not show complete (green).

Download Updates to surveys

If any changes have been made to the survey or any other points added a "Download" will show up next to the survey on the main screen. Tap that to download and update the survey. You must have an internet connection for this to show up and work.

Correlator	GPS 📍 🏟
Total Downloaded: 4	MAP AREAS
on Job Id	
ır_2019 340304326	SYNC
	SYNC
00000012233	SYNC
0000500005	DOWNLOAD
	Total Downloaded: 4onJob Idur_2019340304326CP sioning340331832000000012233

Sync and Upload Surveys

At the end of every day the technician will upload the survey. This will be done by tapping "sync" next to the survey on the main screen. You must have an internet connection to upload and sync data. If there are any errors the app will prompt you that it couldn't upload. If you go into the survey the points that didn't upload will be RED.

G	Correl	ator	GI D№	im 🍦 🌣
_ocal Surveys	Total Downloa	aded: 10		MAP AREAS
Project Descript	tion	Job Id		
Protection Surve	еу			
Delaware Heade Commissioning	۶r	340303643-1		SYNC
Delaware Heade Commissioning		340303643-2		OOWNLOAD
AC Interference Targa Galaxy an		340601787		SYNC
KN Correlator Te	esting May-201	9 111222333444		SYNC
Training		20180425-1	\rightarrow	SYNC
Surveys Available	e for Download	Total Found: 4	0	
Client	Descri	iption	Job Id	
Client Equistar Chemic LP	cals, CVO-1	iption N Part of OP2 Cathodic	Job Id 340304	129-18
Equistar Chemic	cals, CVO-t FLEX cals, CVO-t	N Part of OP2		
LP Equistar Chemic	cals, CVO-h FLEX cals, CVO-h Catho cals, CVO-h	N Part of OP2 Cathodic N Mid IPOH	340304	129-12
Equistar Chemic LP Equistar Chemic LP Equistar Chemic	cals, CVO-I FLEX cals, CVO-I Catho cals, CVO-I Catho	N Part of OP2 Cathodic Mid IPOH dic Protection Mid BT Unit dic Protection ant Annual CP	340304 340304	129-12 129-14

When the survey is complete and synced with the database, notify the PM or a Manager. They will verify the data and set the survey to 'closed', which will cause it to be removed from your tablet on the next refresh.

END