

This document is now obsolete for future planning.

It contains an accurate record of work completed and our plans as of 2019-03-15. All remaining uncompleted items in this document have now been moved to ODK Forum topics; all further planning and discussion will take place there:

- [Geo: Setting an accuracy threshold and collection interval in the form definition](#)
- [Geo: Optimize zoom levels for walking surveyors](#)
- [Geo: Filter points by location provider \(GPS, wifi, etc.\)](#)
- [Geo: Collect averaged points](#)

This document is being discussed on the ODK Forum in [a post about GeoTrace/GeoShape](#) and [a post about GeoPoint](#).

Proposed release plan as of 2019-03-01

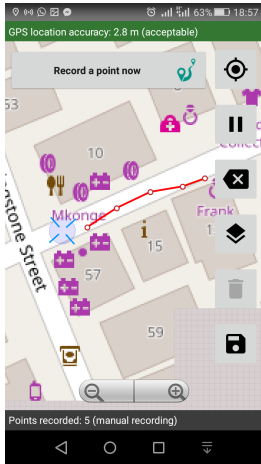
- Release 1.21:
 - Merge GeoTrace and GeoShape into one activity that allows both walking and drawing.
 - GeoTrace retains the option to save as a polyline or polygon, so no functionality is lost in 1.21. (The functionality is strictly greater in 1.21: GeoTrace gains the ability to draw points on the screen; GeoShape gains the ability to walk the outline of the polygon.)
 - Start a new ODK Forum topic announcing that GeoTrace will no longer be able to save as a polygon, and form designers should use GeoShape from now on instead. (Link back to the [existing topic](#).)
 - The "polyline or polygon" dialog includes a deprecation warning that links to the forum topic, e.g. the "Save as Polygon" button says "Deprecated; see <http://bit.ly/xyz> for details".
 - In the process, address #2868, #2646, #1084, #1085, #1028.
 - Improve marker graphics.
 - Fix zoom limits.
- Release 1.22:
 - The "polyline or polygon" dialog in GeoTrace goes away, so GeoTrace only saves traces and GeoShape only saves polygons.
 - (maybe low priority? consider offline vector tiles instead) GeoPoint gains ability to take an averaged point from multiple point samples.

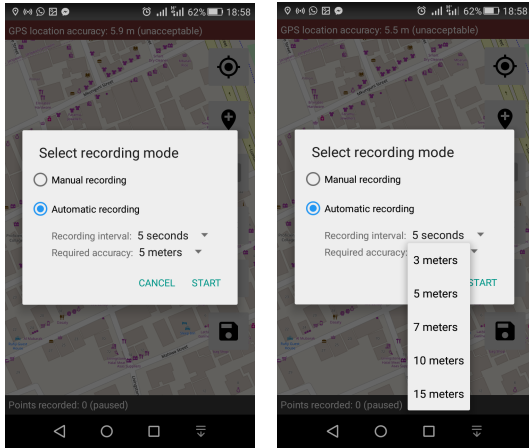
Phase 1: code consolidation, bug fixing and feedback improvements (target Sep 1)

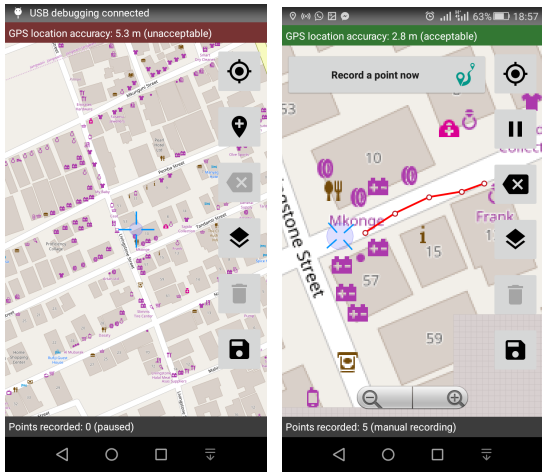
Item	Current behavior	Suggested change	Controversial?	Status
1a	There's a lot of code duplication between point/trace/shape and Google Maps vs. Open Street Maps	Share as much code as possible. Introduce mapping interface with gmaps and osm implementations, etc	No.	Work days: 5–7 Released in 1.19
1b	GeoTrace collection is reset when orientation changes or screen is turned off or you minimize the app using the Home button	GeoTrace collection continues even if orientation changes or screen is turned off or you minimize the app using the Home button.	No. This is a limitation that shouldn't be there.	Work days: 1–2 Released in 1.19

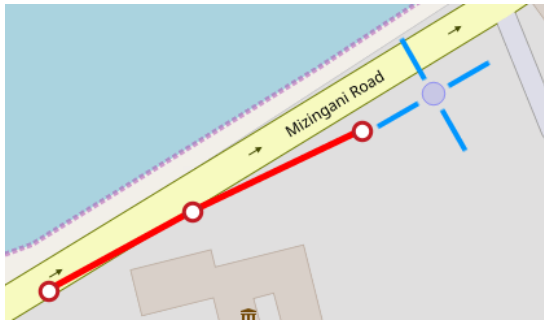
1c	We can close the map view using device back button.	I think we should add a dialog in that case because someone might touch this button by accident and then they lost all collected points.	No. Can use same dialog as form exit or drawing widget exit.	Work days: <1 Released in 1.19
1d	"Wait for lock, then tap add marker button to start" message is always shown at top of screen for GeoTrace widget.	Indicate that lock is pending in some other way. Hide the message when lock is acquired. Update current accuracy.	The problem isn't controversial. The precise wording or location of the indication could be but not deeply so.	Work days: 1 Released in 1.20
1e	GeoTrace automatic point collection starts after the first interval has gone by.	Collect the first point immediately when the trace starts.	No. Most people probably expect that behavior.	Work days: <1 Released in 1.19
1f	Some amount of time after the GeoTrace activity starts, when the first fix on the current location is acquired, a dialog spontaneously pops up asking to "Zoom to my location" or "Zoom to saved feature". Tapping the "go to my location" button pops up the same dialog.	It seems to confuse users that tapping the "go to my location" button doesn't simply go to their location, and they don't understand what "Zoom to saved feature" means (especially when first starting GeoTrace and no points have been collected). Remove this dialog. When the first fix is acquired, automatically zoom to the enumerator's current location, and when the "go to my location" button is tapped, simply zoom to the current location. When GeoTrace starts up and some existing points have already been collected, automatically zoom to the bounding box of the collected points. (This means removing the button to manually zoom to the bounds of the collected trace.)	No.	Work days: 1 Released in 1.19

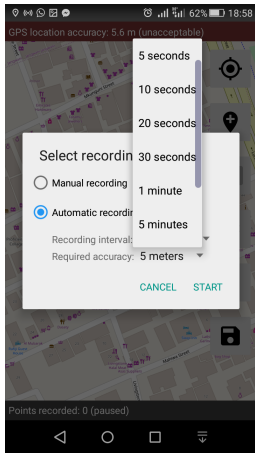
Phase 2: non-controversial improvements (to be released together)

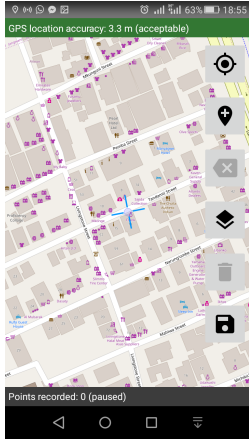
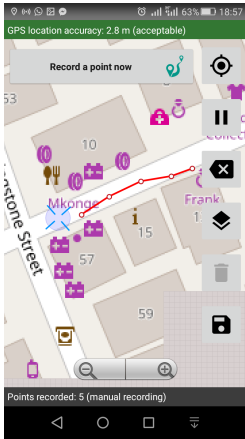
Item	Current behavior	Suggested change	Controversial?	Status
2a	There is no way to delete just the last point or last few points; if a point is collected incorrectly, the enumerator must trash the entire trace and start over.	Add a "backspace" button that deletes the last collected point. The enumerator can tap the button repeatedly to delete a few points if desired. Enumerators can also use the button to turn a jagged line into a straight line when they are trying to collect a trace that should be straight. In the screenshot below, this button is the third from the top (left-pointing arrow with an X inside). 	No. I can imagine someone wanting to disable this, though.	Ivan priority: High Ping estimate: <1 day Released in 1.20
2b	Enumerator cannot set an acceptable accuracy threshold for GeoTrace	When starting automatic recording mode for a trace or shape, allow the enumerator to select the required accuracy. Of the points collected automatically at fixed intervals, only points with sufficient accuracy are added to the trace and other points are ignored. The user can force adding a point, regardless of accuracy, by tapping manual recording button ("Record	I don't think the concept of requiring a certain accuracy for GeoTrace is controversial. The natural ask is to do it at the form level;	Ivan priority: High ** Ping estimate: 1–2 days Released in 1.20

		a point now"). Screenshot of the "Start recording" dialog: 	see 2e below.	
2c	Insufficient feedback on GPS fix status and current accuracy level	Status bar on top shows the fix status, accuracy level, and whether the accuracy level meets the required accuracy level selected in the "Start recording" dialog. Examples of possible status bar text: Searching for GPS location, please wait... GPS location accuracy: 6.7 m (unacceptable) GPS location accuracy: 3.4 m (acceptable) Status bar turns red when the accuracy level is unacceptable (i.e. automatic collection suspended) and green when the accuracy level is acceptable; see screenshots below:	No.	Ivan priority: High Ping estimate: 1 day Released in 1.20

				
2d	Current position is shown by a large arrowhead icon; collected points are shown by large markers	Change the current position icon so that it doesn't obscure the current position itself (e.g. use crosshairs around the current position with a small empty space at the center). Large markers can hide important map features and obscure the collected points. Add a setting to use smaller markers so that survey designers can choose an appropriate marker based on enumerator map literacy and whether they need to look at the map or not. Alternately, just use smaller markers without a setting.	Potentially because of visibility issues. A setting would be the safe way to go.	Ivan priority: High Ping estimate: 1–2 days Released

				
2e	Form designer cannot set an acceptable accuracy threshold for GeoTrace	Let's add an attribute to the GeoTrace definition that allows a form designer to set an accuracy threshold for the automatic point collection mode. Perhaps we can use accuracyThreshold as with geopoint (https://gis.stackexchange.com/a/138473). Ivan -- it needs to be overridable because it might not be possible to get that accuracy.	Possible options are: A. Hard setting (enumerator cannot change) B. Soft setting (enumerator can change) C. Form designer can select hard or soft	Priority: ? Moved to issue #2947
2f	Point collection interval is set by the enumerator, by selecting the number (1, 5, 20) and unit (minute or second) from separate dropdown menus	Set the point collection interval with a selection from a single dropdown menu (1 second, 5 seconds, etc.) Screenshot of the "Start recording" dialog:	No.	Ivan priority: Low Ping estimate: 1 day Released in 1.20

				
2g	Point collection interval cannot be set by form designer	Configure collection interval in the form (and accuracy if it is added) From @zestyping - Configure the default collection interval in the form; this comes up as the default in the dialog but the user can still change it to a different interval	No.	Ivan priority: Medium Ping estimate: ? M design decision + 1 day Moved to issue #2947
2h	Enumerator cannot zoom in past level 19 (as determined by the maximum zoom level of OSM tiles)	Allow the enumerator to zoom in further. Zoom level 19 isn't enough detail to see whether a collected path is sufficiently accurate (e.g. straight where it should be straight); in our testing we've found that zoom level 22 seems to be a reasonable limit. From @Remy_CLEMENT - Allow to set up the zoom limit in the form design or at least in the device settings.	No.	Ivan priority: High Ping estimate: ? Ping: Notify Yaw when there's a plan. Note: OSMDroid limits zoom to tile zoom plus 1. But at tile zoom plus 1, new tiles do not load.
2i	When the map centers on the	When the map centers on the enumerator's	No.	Ivan priority: Medium

	enumerator's location, the view zooms to level 15 only if the current zoom level is 3; when the enumerator starts recording a path, the zoom level doesn't change	location, automatically zoom to level 19 unless already at 19 or higher. When the enumerator starts recording a path, automatically zoom to level 21 unless already at 21 or higher. These zoom levels work fairly well for enumerators collecting a trace at walking speeds. Below on the left is zoom level 19; at less than 19 it would be hard to identify the surrounding buildings and neighbourhood. Below on the right is zoom level 21; at less than 21 it would be hard to tell whether a point is on the correct side of the street, for example. At level 21, it is easy to distinguish the collected points, shown as small red circles, which are ten paces apart.   Zoom level 19 Zoom level 21		Ping estimate: <1 day Moved to issue #2948
2j	Insufficient feedback on how many points have been collected or what the current	Status bar on bottom shows the number of points recorded so far, as well as the current recording mode (e.g. paused, manual	No.	Ivan priority: Low Ping estimate: <1 day Released in 1.20

recording mode is

recording, auto recording, 5s, 5m). Examples of possible status bar text:

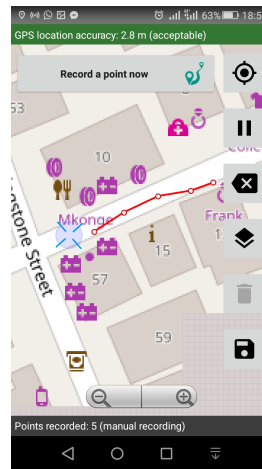
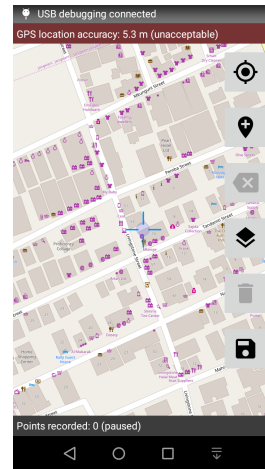
Points collected: 0 (paused)

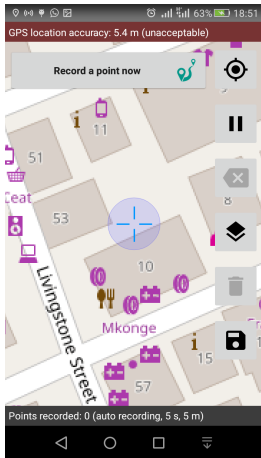
Points collected: 6 (paused)

Points collected: 3 (manual recording)

Points collected: 12 (auto recording, 5 s, 5 m)

Points collected: 7 (auto recording, 20 s, 3 m)



				
2k	If I want to edit saved answer in GeoTrace/Geoshape widget I need to remove that answer and then add a new one.	It should be able to edit saved answer and save it again.	No but the UI will be interesting for polygons (first and last point the same)	Ivan priority: Low Ping estimate: 1 day Released in 1.20
2l	All location fixes are collected, regardless of whether they come from the GPS device or from mobile/wi-fi based location estimates	Accept only GPS fixes (i.e. <code>getProvider() == GPS_PROVIDER</code>). Ignore other types of fixes, because they are much less accurate (and generally too inaccurate to be usable for traces collected at a walking pace).	Possibly. Does this have battery usage implications? Does it mean worse performance in an urban context? Can it be configured? Don't want to do it at the Android level because Android will change the provider when you use Maps or another gps-aware app.	Ivan priority: Medium Ping estimate: M design decision + 1 day Moved to issue #2949

2m	Google Maps gets current location if only network location is enabled. OSM requires GPS to be turned on. In Android 5.1.1, Privacy > Location > Locating method > Wi-Fi and mobile networks sets that up.	Use the location provider that is available.	e.g. Ramani Huria find it positive that GPS is required because other providers aren't useful in their context. For other organizations, this may be flipped (e.g. Florian's indoor case) Ideas: show the current provider, make provider configurable in the widget and/or the form level	Ivan priority: Medium Ping estimate: S design decision + 1 day Moved to issue #2949
----	---	--	--	--

Phase 3: Changes that require re-training

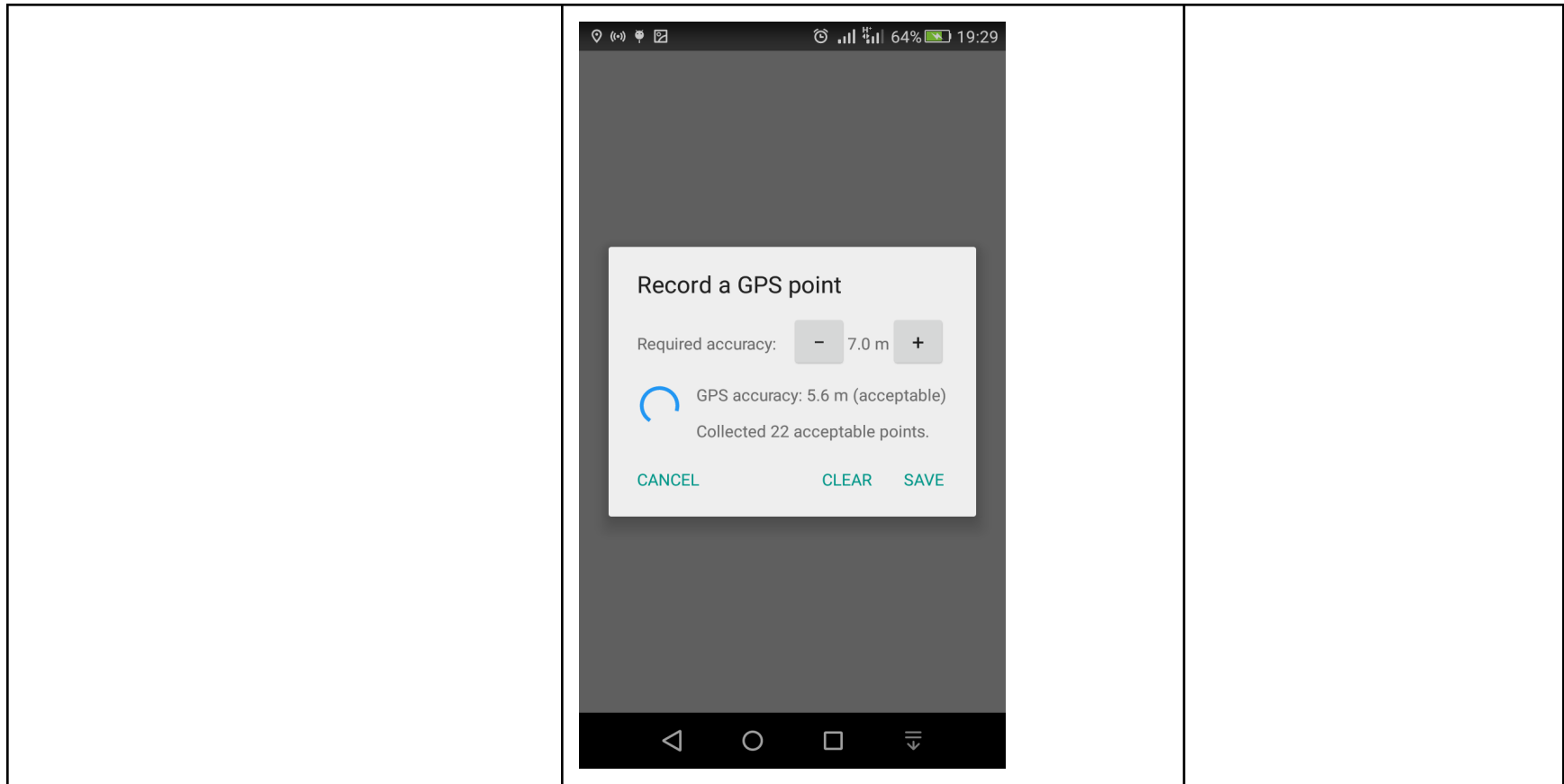
3a	GeoTrace collects points based on location at manual or set interval. Points can be saved as a line (open) or polygon (closed).	GeoTrace collects points based on location at manual or set interval. Points can also be entered in manually by long pressing on the map. Points are always saved as a line (open). This could include the introduction of appearances to request that manual mode be hidden. From @geomapdev at https://github.com/opendatakit/collect/issues/1028	Yes. I think everyone wants this in principle but it will require retraining.	Ivan priority: High (specifically the availability of manual mode) PR published; awaiting review
3b	GeoShape collects points entered in manually by long pressing on the map. Points are always saved as a polygon (closed).	GeoShape collects points based on location at manual or set interval. Points can also be entered in manually by long pressing on the map. Points are always saved as a polygon (closed). This could include the introduction of	Yes. Same as above.	PR published; awaiting review

		appearances to request that manual mode be hidden.		
--	--	--	--	--

Geopoint

This one doesn't need as deep of a refactor and could be improved in parallel or before.

GeoPoint activity collects only the first fix that meets the accuracy threshold.	Allow the enumerator to collect several points and use their average as the result. By waiting for several points to be collected, the enumerator can improve the accuracy of the final result. See a screenshot of the new GeoPoint activity below. Points are continuously collected, and the user sees continuous feedback on the accuracy level. During collection, the user can adjust the desired accuracy threshold (which defaults to 5 m) to include more points or fewer points. The dialog gives feedback on the number of collected points so far that meet the threshold. When the user is happy with the number of points and the accuracy setting, they can tap "Save", which computes the average of all the points that meet the threshold.	Moved to issue #2950 I think allowing the collection of multiple points and showing that status is not controversial. However, I think it is useful that the first point below the accuracyThreshold is currently accepted. I wasn't sure about averaging but https://gis.stackexchange.com/questions/25798/how-much-sense-does-it-make-to-average-lat-lon-samples-in-order-to-increase-2d suggests it could improve precision. I don't think it would improve accuracy, though. Allowing enumerators to change the accuracy threshold does seem controversial.
--	--	---



Needs discussion

Potentially allow offline basemap to be set by the form.

Online basemaps can only be set in settings.	We should be able to set online basemaps in widgets too and it's reported here https://github.com/opedatakit/collect/issues/1042	Would be good to get more feedback. My sense is that organizations generally want to control as much of the experience as they can through the form or settings.
--	--	--

Completed work

Fixed in 1.11

Altitude and accuracy are not collected by GeoTrace widget.	Collect altitude and accuracy with GeoTrace widget.
---	---

Added in 1.15

The only feedback the user gets about the GPS fix is the current accuracy	Show the number of satellites available and how many are seen. Show the time to fix. Both will provide useful information for troubleshooting situations in which enumerators are struggling to get lock.	No.
---	---	-----

Added in 1.16

Offline basemaps can only be set in the widgets themselves whereas OSM or Google basemaps are set in settings.	Set offline basemaps from settings so that enumerators are ready to go with the most appropriate basemap.	No. In fact this doesn't depend on any other work and can be done immediately.
--	---	--