Mobile Data Collection Platforms

This appendix contains an overview of mobile data collection platforms examined. Formhub was omitted because it is no longer operational. Tangerine was omitted because it is specific to early education assessment.

Recommendations:

Best for Basic Mobile Data Collection: KoBoToolbox, Magpi, Fulcrum

Best for Mapping: ArcGIS Collector, Smap

Best for Broadcast Messaging: engageSPARK, Magpi

Best for Recurring Collection: TaroWorks, Akvo Flow

> **Immediate Top Pick:** KoBoToolbox is a free and easy to use comprehensive mobile data collection platform including limited GIS analysis, making it ideal for immediate adoption.
>
> **Long-term Top Pick:** TaroWorks is an optimal platform for LWR to pursue in the long term because it is powerful, allows for recurring collection, and is built on Salesforce, which LWR uses for program management.

Akvo Flow: http://akvo.org/products/akvoflow/

Top Pick: Recurring Collection

Overview: An open source multi-language tool for collecting, evaluating and displaying any quantity of geographically referenced data using Android smartphones and an online dashboard. It lets you map situations on the ground and monitor changes over time. Akvo Flow is useful for recurring collection when each new data collection builds on previous information.

Pros:	Cons:
• Open source	• Can be expensive
• Android app	• No webforms or iOS app
• Effective form builder	• Lowest tier plan only offers email support
• Online/Offline functionality	
• Image, Audio, Video, Scanner, and GPS data types	
• Multilingual forms, software, and non-Latin scripts	
• Data quality safeguards (random audio recordings and form 'speed bumps')	
• Monitor and analyze change in data points over time	
• Online dashboards and maps	
• Links project staff of multiple roles across geographic distance	
• Pricing is scalable—switch between plans based on use	
• Every tier plan gets the fully functional product	

Pricing:
http://akvo.org/products/pricing/
Full functionality at every price tier (250, 500, and 1000 device plans also available)

Flow x 20:
• €3960/year
• 20 devices
• 4,000 submissions
• Email support

Flow x 50:
• €6000/year
• 50 devices
• 10,000 submissions
• Email and chat support

Flow x 100:
• €8400/year
• 100 devices
• 20,000 submissions
• Email, chat, and phone support

ArcGIS Collector:
http://www.esri.com/software/arcgis/collector-for-arcgis

Top Pick: Mapping

Overview: Mobile app for collecting mapping data in the field. Leverage the power of ArcGIS with easy map-driven forms. Collect multiple GIS points and media for analysis and improve decision making capabilities.

<div>

Pros:
- Android and iOS apps
- Included with ArcGIS subscription
- Powerful mapping and map-themed forms
- Multilingual forms, software, and non-Latin scripts
- Form builder
- Online/Offline functionality
- Image, Video, Scanner, and GPS data types
- Powerful mapping analysis
- Strong support community

Cons:
- No webforms
- No Audio data type
- Functionality mostly limited to map-driven collection

</div>

Pricing:

Special NGO pricing is $100/user/year

Lutheran World Relief
SUSTAINABLE DEVELOPMENT. LASTING PROMISE.

CommCare: https://www.commcarehq.org/home/

Overview: Mobile data collection tool for frontline workers. Use easily customizable forms and menus to collect data. Custom implementation is offered for a fee. 50 mobile users can use the platform for free with additional users $1 each. Use of SMS, management features, and support does require a subscription.

Pros:
- Android app
- Open source
- Free for up to 50 users
- Form builder
- High degree of customization
- Online/Offline functionality
- Multilingual forms, software, and non-Latin scripts
- SMS functionality including two-way (with Pro or higher)
- Case management—track data over time by 'case'
- Image, Audio, and GPS data types
- De-identified data

Cons:
- No webforms or iOS app
- Requires basic programming familiarity
- No Video or Scanner data types
- SMS, project management, and most data analysis requires paid version
- No support included in free version

Pricing:
https://www.commcarehq.org/pricing/

Free:
- Up to 50 users
- Additional user $1/month
- Email support

Standard ($100/month):
- 100 users
- Lookup tables
- Location-based sharing restrictions
- Collector management
- 1 way SMS
- Live SMS chat
- API access
- General troubleshooting

Pro ($500/month):
- 500 users
- 2 way SMS
- Report builder
- Location-based permissions
- Project-specific troubleshooting

engageSPARK: https://www.engagespark.com/

Top Pick: Broadcast Messaging

Overview: Online platform to create and manage interactive text and voice campaigns. There is no enumerator in this methodology, and respondents receive information and respond to surveys on their personal phones. This platform reaches illiterate users through voice campaigns and surveys which is unique. Any phone capable of receiving SMS messages and voice calls can be used. Schedule and time calls, blast SMS or voice messages and reminders, collect data based on voice responses, and analyze the data in dashboards.

<table>
<tr><th>Pros:</th><th>Cons:</th></tr>
<tr><td>

- Works on any phone
- Multilingual SMS messages in non-Latin scripts
- Chat support
- Send interactive text and voice campaigns for surveys, reminders, and education
- Voice surveys reach illiterate users
- Dashboards for analysis
- Schedule message campaigns
- Flash a number for missed call
- Very simple to set up

</td><td>

- No enumerator intermediary to help explain form
- Beneficiaries must have phones and mobile coverage
- Can get expensive based on scale of project, size of surveys, and telecom prices in the country
- No way to gather media data types

</td></tr>
</table>

Pricing:

https://www.engagespark.com/pricing/country/us/sms-text-voice-call-ivr/united-states-of-america-usa

This link calculates the cost of sending and receiving texts, voice calls, and missed calls via the engageSPARK global network or a local sim card for the selected country

First Mile Geo: https://www.firstmilegeo.com/

Overview: Mobile data collection through Fulcrum app. This platform builds paper surveys and requires pushing them to Fulcrum or creating a form from scratch in Fulcrum to collect data. The platform has powerful analysis, especially for mapping. Users can aggregate analysis up or down, filter by variables, layer data sets, run time-series analysis, and do multimedia exports. Data is analyzed through maps, interactive dashboards, and weighted indices. Software is currently available in English, Arabic, Spanish, and portions are available in other languages.

<table>
<tr><td align="center">Pros:</td><td align="center">Cons:</td></tr>
<tr><td valign="top">

- Powerful mapping analysis
- SSL certificates
- Multilingual forms, software, and non-Latin scripts

</td><td valign="top">

- No mobile app
- Requires additional subscription to Fulcrum for mobile collection
- Form builder creates PDF forms for paper collection
- First Mile Geo forms do not fully integrate with Fulcrum app
- Fulcrum functionality does not fully integrate with First Mile Geo
- Value added of mapping analysis does not justify paying for two mobile data collection platforms

</td></tr>
</table>

Pricing:
https://www.firstmilegeo.com/plans
Consult for pricing. Must also purchase Fulcrum subscription.

Standard Plan:
- Up to 15 users
- No data restrictions
- Fully managed service
- In-app messaging support
- SSL

Tailored Plan:
- Up to 30 users
- Custom URL
- Branded experience

Enterprise Plan:
- Up to 150 users
- Dedicated Account Manager
- Service level agreement

Fulcrum: http://fulcrumapp.com/

Top Pick: Basic Mobile Data Collection

Overview: This platform is used to collect extensive mobile data in the field. Fulcrum refers to "apps" not forms. A simple drag and drop interface helps to create the "apps" which can be written in any language and any script supported by the UTF-8 character set. Mobile devices are completely supported in English, French and Spanish. Fulcrum allows backend users to manage the data collection process. The main use is to collect data and export or push with API to another tool for analysis. Fulcrum also offers extensive support packages and custom reports. The custom reports can allow for very powerful analysis but are quite expensive.

Pros:	Cons:
• Android and iOS apps and webforms	• "Apps" not "forms" which can confuse users unfamiliar with platform
• Effective for designing and collecting surveys	• Slight learning curve to unique terms and methodologies
• Great drag and drop builder	• Limited analysis aside from mapping
• Online/Offline functionality	• Powerful analysis requires pushing to an additional tool or purchasing costly custom reports
• Multilingual forms, software, and non-Latin scripts	
• Image, Audio, Video, Scanner, Signature, and GPS data types	
• Repeatable fields	
• Automated conflict prevention (merges multi-user changes)	
• Classification fields	
• Powerful mapping analysis	
• Use API to push data to another analysis tool	
• Custom reports available	

Pricing:
http://fulcrumapp.com/plans/
Full functionality for every price plan (Small does not allow for Full Data History export)

Small ($99/month):
- 5 users
- 10GB media storage
- 3 Data publishing shares

Medium ($399/month):
- 25 users
- 75GB media storage
- 7 Data publishing shares

Large ($749/month):
- 50 users
- 250GB media storage
- 10 Data publishing shares

iFormBuilder: https://www.iformbuilder.com/

Overview: A powerful platform for data collection and analysis. Build extensive forms and create libraries of recurring questions, options, and forms for use across projects. The platform offers a high level of customization for form creation. The platform also has the ability to display reference materials during a survey. 36 difference languages are currently supported based on the settings of the device. There is a high learning curve because of terms and methodologies unique to iFormBuilder. Creating forms also requires JavaScript knowledge. This is a potentially powerful platform, but much more difficult to learn—unless the powerful features are necessary, select a simpler platform.

<div style="display:flex">

Pros:
- Android and iOS apps
- Extensive form builder
- Very powerful for custom forms and analysis
- Subforms available
- Multilingual forms, software, and non-Latin scripts
- Online/Offline functionality
- Image, Audio, Scanner, Signature, and GPS data types
- Question library
- Display reference materials
- Email response copy to beneficiary
- Weekly webinars
- Extensive online support database and community

Cons:
- No webforms
- Need programming knowledge for full functionality
- Highly complex with a large learning curve
- Unique terms and methodologies differ greatly from other mobile data collection platforms
- Additional support and start-up training a necessity
- Subforms can complicate exporting data and analysis

</div>

Pricing:
https://www.iformbuilder.com/pricing/
Consult for custom plans

Free:
- Up to 50 users
- 10 Forms
- 100 records per form
- 100 API calls/month

Small Enterprise Starter ($1,000/year):
- Up to 10 users
- 100 Forms
- Unlimited records per form
- 100 API calls/month
- Additional users $100/user/year

Small Enterprise Growing ($500/month or $5,000/year):
- 50 users
- Unlimited forms
- Unlimited uploads
- Dedicated database
- 10,000 API calls/month
- 4 hour kickstarter

KoBoToolbox: http://www.kobotoolbox.org/

Overall Top Pick: Basic Mobile Data Collection

Overview: This is a free platform funded through grants and donations. Most users work in humanitarian crises, or are aid workers or researchers. KoBoToolbox is based on Open Data Kit and is collected using its own version of ODK Collect and Enketo Webforms. ODK Collect can be used to collect information instead of the KoBo Collect application. The platform is very intuitive and offers comprehensive collection alongside basic mapping and analysis capabilities. Users can export data into more powerful analysis tools. Currently 30 languages are supported in the application and 7 in the webform, with more translations being submitted and validated by volunteers and users. This is a very friendly and effective mobile data collection option.

Pros:	Cons:
• Grant funded and free	• No iOS app
• Based on Open Data Kit	• Limited data analysis
• Android app and webforms	• Had trouble downloading KoBo Collect on newer phone
• Simple form builder	• Limited to 1500 submissions per month on non-OCHA version
• Straightforward conditional logic, skip functionality, and validation criteria	
• Online/Offline functionality	
• Push with API	
• Can use KoBo Collect or ODK Collect	
• Multilingual forms, software, and non-Latin scripts	
• More languages added regularly	
• Image, Audio, Video, Scanner, and GPS data types	
• Question library	
• SSL certificates	
• OCHA humanitarian version offers professional support	

Pricing:
All version of KoBoToolbox are free.

Small Survey Deployment:
• Up to 1,500 submissions/month
• Contact if require more

OCHA Humanitarian Organization Version:
• Unlimited submissions
• Professional support

Magpi: http://home.magpi.com/

Top Pick: Basic Mobile Data Collection, Broadcast Messaging

Overview: This platform for mobile data collection and analysis offers limited free functionality for individual users. The platform is unique because it combines form collection with the ability to broadcasts SMS and audio messaging to beneficiaries. For this, beneficiaries use their own phone. The platform allows for dynamic timing of messaging and messaging schedules to update beneficiaries and enumerators in the field. The system also automatically searches for the lowest price connection among available carriers. Another useful feature is text to speech available in 17 languages which allow surveys to be sent to illiterate users. Administrators can set customizable roles and permissions for collection and the entire platform is protected by Norton security.

<table>
<tr><th colspan="2">Pros:</th><th colspan="2">Cons:</th></tr>
<tr><td colspan="2">

Android, iOS, and Symbian apps and webforms
Free individual user
Simple form builder
Multilingual forms and non-Latin scripts
Text to speech in 17 languages
Text to speech reaches illiterate beneficiaries
Cascading collects and subforms
Online/Offline functionality
SMS and audio broadcasting
Messaging schedules
Automatically connects through the cheapest carries
Image and GPS data types
Norton Security
Good for collection, mapping analysis, and broadcasting information

</td><td colspan="2">

No Audio, Video, Scanner, or Signature data types
Full functionality requires some degree of paid subscription (SMS collection, text to speech, audio messaging, API, user permissions, support)
Free version only stores 500 submissions and allows 500 submissions a month or 6,000 a year
Must purchase additional submissions when pass the subscription limit—really expensive ($0.20-$0.25 each)

</td></tr>
</table>

Pricing:
http://home.magpi.com/pricing/
Purchase of additional upload and messaging credits might be necessary.

Free User:
- 20 forms
- 100 questions per form
- 6,000 uploads/year (500/month)
- Unlimited data collectors
- Online storage for 500 records
- 10 message credits (SMS)
- Additional message credits $0.01 each in blocks of 5k or more

Pro ($500/month or $5,000/year):
- Unlimited forms
- Unlimited questions per form
- 500 upload credit/month or 10,000/year
- Additional upload credits $0.25 each (discounts for 20k+)
- Unlimited record storage
- SMS collection
- 50 message credits/month or 500/year (SMS)
- Text to speech

Enterprise ($10,000/year):
- 20,000 upload credits
- Additional upload credits $0.20 each (discounts for 20k+)
- Open API access
- Custom user roles
- Use own server
- Recorded audio messaging
- 1000 message credits (SMS or audio)

Lutheran World Relief
SUSTAINABLE DEVELOPMENT. LASTING PROMISE.

Mobenzi Researcher:
https://www.mobenzi.com/researcher/Features/Overview

Overview: This is another mobile data collection platform that can run on non-smart phones, making it more accessible and affordable in many locations. The platform is provided by a South African company that offers "pay as you go" or subscription pricing structures. The "pay as you go" option can be affordable for small deployments, but gets quite costly as a project scales up. The platform allows mobile users to pick the language they are most comfortable in which is a useful feature. Mobenzi Researcher allows for the creation of folders for different levels of collection (e.g. baseline, mid-term, etc.) which helps organize data. The platform also allows for real-time data analysis and filtering and offers the ability to communicate with field staff through the application. SMS is available at an additional cost and serves as a way to further expand the reach of the platform. Additionally, the platform can display training materials and videos as part of the survey. This feature can help train and educate beneficiaries.

<table>
<tr><th>Pros:</th><th>Cons:</th></tr>
<tr><td>

- Runs on Android, Java, Symbian, and webforms
- Simple and works on non-smart phones
- Form builder with skip logic and validation criteria
- Online/Offline functionality
- Powerful features and filters
- Multilingual forms, software, and non-Latin scripts
- Changes to forms apply across all translations
- Respondent selects language
- Create data level folders (baseline, mid-term, etc.)
- Image, Scanner, and GPS data types
- Display resources (videos, etc.)
- Manage field staff through app
- SMS offered

</td><td>

- No iOS version
- Visually unappealing interface
- No Audio or Video data types
- "Pay as you go" option can be expensive for larger projects
- SMS is additional cost

</td></tr>
</table>

Pricing:
https://www.mobenzi.com/researcher/Pricing/Usage
Must also purchase network coverage for the devices.

Transactional ('pay as you go') model: Purchase credits, discounted in bulk. The amount of support included depends on the volume purchase.

Subscription plans differ in number of devices (Prices in South African Rand)

Licenses	Paid Monthly	Paid Annually	Bundled Support
10+	R240/device	R2400/device	12 hours/year
30+	R230/device	R2300/device	36 hours/year
50+	R220/device	R2200/device	60 hours/year
100+	R200/device	R2000/device	120 hours/year
200+	R190/device	R1900/device	240 hours/year
300+	R180/device	R1800/device	360 hours/year
400+	R170/device	R1700/device	480 hours/year
500+	R160/device	R1600/device	600 hours/year

Ona: https://ona.io/

Overview: Ona is the next evolution of Formhub. It collects mobile data using ODK Collect or Enketo Webforms. Users must be familiar with creating XLSForms—forms are created in Excel, then imported to Ona. This can make specific forms difficult as users must manually encode skip logic, validation criteria, translations, and more. A significant amount of troubleshooting will be necessary. Data can be exported in a variety of file types or pushed using REST API. Currently Ona is testing a Beta version which offers filtered data views, embeddable customized charts, restrictions for collectors, and a cleaner interface. This option is not suggested because of the significant lack of a form builder.

<table>
<tr><th>Pros:</th><th>Cons:</th></tr>
<tr><td>

- Multilingual forms and non-Latin scripts
- Online/Offline functionality
- Image, Audio, Video, Scanner, and GPS data types
- Attach notes to each submission in the data view
- Android app and webforms
- REST API
- SMS support in beta testing

</td><td>

- No form builder
- Must manually create XLSForm making skip logic and data validation difficult
- Must manually encode translations
- Capturing media requires external device applications
- Many features in beta testing have bugs

</td></tr>
</table>

Pricing:
http://company.ona.io/work.html
Ona is currently free but offers technical consulting, design and software-related services.

Open Data Kit: https://opendatakit.org/use/

Overview: Open Data Kit is a set of free open source tools which help author, implement, and manage mobile data collection solutions. The tools are highly customizable, and there is an active support community. The form builder has a higher learning curve, and familiarity with programming could be necessary. Translations must be supplied to use the multilingual capability. Organizations host the data on their own servers. ODK is free and offers useful features, but the lack of support and relative difficulty might not make it the best option for organizations with lower capacity or more specific collection needs.

<table>
<tr><th>Pros:</th><th>Cons:</th></tr>
<tr><td>

- Open source
- Image, Audio, Video, Scanner, and GPS data types
- Active support community
- Form builder
- Online/Offline functionality
- Multilingual forms and support for non-Latin scripts
- Android app and webforms
- Skip logic and data validation

</td><td>

- High learning curve to form builder
- Requires familiarity with programming
- Must supply translation
- Self-hosted and managed server
- No dedicated support

</td></tr>
</table>

Pricing:
Open Data Kit is free. Many organizations offer paid services to help utilize ODK

Smap: http://www.smap.com.au/

Top Pick: Mapping

Overview: Smap is an open source data collection tool for M&E, rapid assessments, project management, and field management. The software is open source and free, but many supporting services are offered at a cost. Smap offers server hosting in the cloud on multi-tenant servers. The platform offers useful features which it analyzes through dashboards, custom maps, and charts. Smap offers geospatial analysis and task management functionality. Data can be exported in a variety of formats to other analysis platforms as well. The software allows for calculations on the device during a survey to help inform the direction of the survey. Facebook Group integration is also supported on this platform. Smap offers trainings, form consultations, and IT consultations at a cost. Because it has not been tested here, the level of difficulty associated with Smap cannot be indicated at this time.

<table>
<tr><td align="center">Pros:</td><td align="center">Cons:</td></tr>
<tr><td>

- Open source
- Free with value added services at cost
- Android app and webforms
- Form builder
- Online/Offline functionality
- Multilingual forms, software, and non-Latin scripts
- Image, Audio, Video, and GPS data types
- Powerful GIS functionality
- Reports and dashboards for analysis
- Field management features
- Integrated with Facebook for publishing
- Device side calculations

</td><td>

- No iOS app
- No Scanner data type
- Survey hosting on multi-tenant servers which could have data privacy implications

</td></tr>
</table>

Pricing:
http://www.smap.com.au/services.shtml
Smap software is free.
Smap offers consulting, training, custom development and IT support services to assist customers in using this software.

SurveyCTO: http://www.surveycto.com/index.html

Overview: SurveyCTO is a mobile data collection platform that allows users to create and manage forms and the data collection process themselves, or offers a range of services to do so. The DIY subscription plan provides users with a form builder and basic analysis features. DIY+ offers the same functionality but with consultation on the form creation. Turnkey options are for organizations just getting into mobile data collection—SurveyCTO builds the entire solution and then trains staff on how to use it. Most organizations without experience creating XLSForms will need these services because there is no simple form builder— they offer guidance and XLSForm templates, but you must manually create the form, validations, translations, restrictions, etc. in Excel. Form building and publishing datasets are directly linked to Google Sheets from SurveyCTO. The other service the platform offers is creating custom collection applications unique to the organization. This platform is a good option for organizations who need some degree of support along the spectrum offered or those looking for quality control safeguards. SurveyCTO employs nightly data quality checks, random audio samples, and more safeguards by default.

Pros:	Cons:
• Multilingual functionality with support for non-Latin scripts	• Cost is per project per server price
• Image, Audio, Video, Scanner, and GPS data types	• Requires desktop client
• Online/Offline functionality	• Offline sync requires Professional plan
• Continuous backup on Amazon servers	• To set custom user permissions you must purchase another server—one profile type per server
• Quality control safeguards	• No form builder
• Value added services to consult on forms, build forms, train users, and build a custom solution	• Must create survey in XLSForm (template provided and validation and skip logic occurs in separate portal)
• Android app and webforms	• Difficult to encode translations in XLSForm
• Custom applications available	• Online support default
• Integration with Google Sheets	• Effective use requires value added services which can get costly
	• To set user permissions on data and form access must purchase an additional server (subscriptions are on per project per server pricing structure)

Pricing:
http://www.surveycto.com/pricing.html
Consult for DIY+ and Turnkey solution pricing.

Standard ($99/month):	Professional ($199/month):
• 10 users	• Unlimited users
• 15 forms	• Unlimited forms
• Unlimited submissions	• Automated quality control checks
• Unlimited devices	• Offline sync
• Online support for 1 person	• Server choice: US or EU
	• Online support for 3 people

TaroWorks: https://taroworks.org/

Overall Top Pick: Recurring Collection

Overview: TaroWorks is a mobile data collection platform built on top of Salesforce. It brings together data collection and analysis with project management and offers an opportunity to streamline, consolidate, and standardize data across an organization. This creates an opportunity to increase data quality and efficiency. The collection application pulls relevant information from Salesforce so that enumerators can build on past data and understanding at each new collection. There is a simple drag and drop survey builder that makes form creation easy. Currently audio and video data types are not supported, but will be soon. A useful feature of TaroWorks is displaying training materials during the survey process (e.g. videos, PDFs, etc.). The platform also allows administrators to create jobs and tasks for distinct enumerators and monitor their progress towards completion. Through user permissions only approved users can access all of the data in Salesforce which increases data security and privacy. Forms can be written in any language and the software is currently supported in English, French, Spanish and a few other languages. The platform translates collected data into the system language of the user doing analysis. TaroWorks also unlocks to the full functionality of reports and dashboards in Salesforce for analyzing data. This solution requires a lot of initial investment and effort but offers the potential to be a power collection, project management, and analysis tool across a broad range of projects within an organization.

Pros:
- Android app
- Built on Salesforce
- Integrates data collection and analysis with program management
- Drag and drop form builder
- Online/Offline functionality
- Multilingual forms, software, and non-Latin scripts
- Automatically collect in device language and analyze in system language
- Image, Scanner, Signature, and GPS data types
- Create jobs with custom permissions and monitor progress
- Use Salesforce reports and dashboards
- Question library
- Cascading collects
- Display training materials (videos and documents)
- Ideal for recurring collection where past data points influence current collection
- Web view offers Salesforce information and analysis to unlicensed users
- Analyze data on device without submitting form

Cons:
- No iOS app or webforms
- No trial version
- No Audio or Video data types yet
- Providing software translations for languages not offered in Salesforce require use of a proxy language
- Setup and adoption of system will have high initial cost and level of effort

Pricing:
https://goo.gl/43B4eq
Training, consulting and set up packages available ($1,500/day to $5,000)

Number of Users	Annual Fee
1 to 40	$4,999
41 to 70	$7,499
71 to 100	$9,999
101 to 150	$12,999
151 to 200	$14,999
201+	$50/additional user

All licenses include:
- 1 hour intro (remote)
- 1 hour technical support/month
- Guaranteed response time within 2 business days
- Additional support $175/hour

Additional Support Plan ($2,500/year):
- 5 hours technical support/month
- Response within 1 day