



# **Digital Data Software Review**

## **Top 3 Digital Data Collection and Management Software Compared**

## Software Comparison Summary – Top 3 Snapshot

### Software requirements

1. **Centralised/all-in-one:** customisable and portable data capture functionality; downloading and storage; analysis; and reporting. Avoiding multiple sources and data double-up
2. **Efficient and simple reporting** for external and internal stakeholders
  - Fee-for-service work
  - Operational, inventory, monitoring data
  - Remote or real time access to databases by internal or external stakeholders is NOT required
3. **Customisable applications** (with medium-low levels of technical specialisation)
  - **Ability to incorporate icons and images in forms** to ensure that Rangers with low levels of literacy can record observations against visual markers
  - **Ability to add/remove ir/relevant categories** according to local monitoring priorities
  - **Ability to add aliases in forms**, and change the language of field names to facilitate Ranger use and facilitate education between Rangers and community
4. **Being able to utilise and integrate data from existing online databases, including basemaps**
  - *For example, the ability to Download NAFI fire data - from the NAFI website - and build a map in CyberTracker utilising layers from that NAFI fire data, for planning, patrolling and reporting purposes.*
  - *QGIS is also used by some Groups to build more complex maps - again, these can be loaded into CyberTracker.*
5. **Access to (reliable) technical and developer support, as well as community forums**
  - Updates/versioning
  - The ability to commission new features (bonus)

### Online/offline capabilities:

CyberTracker and similar alternative software work without an internet connection. They 'work offline' - enabling users to capture field data, which will include GPS information.

While most remote Indigenous communities have internet now, and it's not unlikely that Rangers would be able to access internet connections at least partially during patrols, it's important that software used does offer full functionality 'offline'. This is the most reliable solution. Also - real time data synchronisation to a central database (as could be facilitated using some 'online' software), isn't necessary or particularly valuable in most Ranger use-cases. Collected field data can be transferred to storage/analysis devices (e.g desktop, usually by hardwire connection) once back in the office.

<b>Software, characteristic</b>	<b>CyberTracker</b>	<b>Open Data Kit (ODK)</b>	<b>Fulcrum Map</b>
<b>Cost</b>	Free to use and download	Free to use and download	\$US 44-60/month (minimum)
<b>Year launched</b>	1997	2008	2011
<b>Creator(s)</b>	<a href="#">CyberTracker</a>	Google & University of Washington	Unknown
<b>Key features</b>	Application developer; reports; elements (database). See <a href="#">full list</a> .	Suite of open source tools that includes data collection, storage, analysis and reporting.	Paid form/app-builder, capture, storage, analysis and reporting workflow
<b>Key functionality</b>	Plan, navigate, record & map patrols (incl. effort & index of abundance). Fieldwork specific.	Diverse.	Diverse.
<b>Data capturable<sup>1</sup></b>	Operational, inventory, monitoring	Programmable	Programmable
<b>All-in-one<sup>2</sup></b>	Yes	Yes. But limited: analysis & reports	Yes. But limited: reports
<b>Mobile client</b>	Yes	Yes ('Collect')	Yes
<b>Create &amp; customise applications</b>	Yes	Yes (forms). 'Build' (basic) or 'XLSForm' (complex)	Yes – incl. modifiable template library
<b>Ability to create/edit forms</b>	Yes	Yes	Yes
<b>Ability to incorporate icons and/or images</b>	Yes	Yes – XLSForm builder only.	No
<b>Use aliases in forms</b>	Yes	Likely	No
<b>Specialist skills and training required</b>	Limited to Moderate: building and editing custom apps & forms. Limited to Moderate: data management (incl. storage, analysis and reporting)	Moderate: building and editing forms - web-based graphical designer uses drag-and-drop VS. XLSForm builder using Excel – more complex. Limited to Moderate: data management (incl. storage, analysis and reporting)	Limited: building forms Moderate: data management (incl. storage, analysis and reporting)
<b>Data capture works offline</b>	Yes	Yes	Yes
<b>Efficient reporting</b>	Yes	Limited	Yes

See data on map	Yes	Yes	Yes
	<b>CyberTracker Continued...</b>	<b>Open Data Kit (ODK) Continued...</b>	<b>Fulcrum Map Continued...</b>
Add other layers to map	Yes	Yes	Yes
Support: community, technical & developer	<a href="#">Community &amp; developer forum</a> . Dev support: high <a href="#">Wiki</a> & <a href="#">software documentation</a> . NAILSMA I-Tracker program support.	<a href="#">Community &amp; developer forum</a> . Dev support: low to medium <a href="#">Documentation</a> . <a href="#">Private support</a> (level unknown).	Fee for service support and training services <a href="#">Advice &amp; answers from the Fulcrum team (FAQ)</a>
GIS dependent	No	No	No
GIS compatible	Yes	Yes	Yes
Data export formats	CSV, JSON, KML (Google Earth), ESRI shape files, Excel , XML, HTML	CSV, JSON, KML (Google Earth), ESRI shape files, Google Fusion Tables, Google Maps	CSV, Excel, KML (Google Earth), Esri Shapefile, GeoJSON, Esri File Geodatabase, SQLite, SpatiaLite, PostGIS, GeoPackage, PostgreSQL
Offline local storage	Yes – CT app	Yes	No
Local server	Yes	Yes – ODK Aggregate app	No
Database servers	<a href="#">Yes</a> - ArcGIS Online, MySQL, Microsoft SQL Server, PostgreSQL	Yes – ODK Aggregate app	Yes – Fulcrum Online
In-the-cloud servers	Yes - Google Drive, Dropbox	Yes – Google Drive,	Yes – Fulcrum Online
Ability to commission new features	Yes	Some	Fee for service support
Android compatible	Yes	Yes	Yes
Windows (mobile) compatible	Yes	No	No

<sup>1</sup> Operational data refers to information on who was involved, what activities were undertaken, activity location, time and method. Inventory data refers to records of cultural and environmental (ecosystems, communities, populations and species) assets. Monitoring data refers to the ability to create entries in the field against different inventory assets.

<sup>2</sup> Centralised/all-in-one means: customisable and portable data capture functionality; downloading and storage; analysis; and reporting. Avoiding multiple sources and data double-up

<b>Apple compatible</b>	No (WIP)	No	Yes
<b>Known users</b>	200,000+ downloads worldwide. Over 30 Indigenous Ranger groups across north Australia. Over 300 countries.	<a href="#">CloudTech</a> uses ODK in their <a href="#">Smop-Suite</a> data collection system for <a href="#">RMIT</a> and <a href="#">World Vision Australia</a> . Extensive international user base.	100+ countries. According to the website a number of Australian customers.

### Disclaimer

This review does not necessarily reflect the views of the North Australian Indigenous Land and Sea Management Alliance Ltd.

This information is provided as a guide to what is available and does not aim to provide any recommended software or hardware. Although NAILSMA has identified that CyberTracker continues to be the best data collection method for our requirements, we acknowledge that each individual user has their own unique set of circumstances that will impact on their choice as to what software or hardware will be most suitable. The costs of hardware are estimates, and all other specifications have been identified from information available at the time of this review.