

# QField

## Exploration Geology's new 'Must-Have' tool.



November 20, 2020





# Spatial Data is in **the field**.





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# What is QField?

- Released in 2019. QField is an open source mobile (Android) application that allows you to edit QGIS projects on the go.
  - Downloaded over 200,000 times
- It is built with the QGIS rendering engine so your QGIS project (including symbology) will look exactly the same in QField.
  - Same power with fewer buttons
- QField functionality includes feature digitizing, geometry and attributes editing, attribute search, forms customizable through QGIS, GPS support, and camera integration.
- QField supports creating and editing points, lines and polygons.
  - Now including stylus digitizing!
- A plugin for QGIS called QFieldSync makes packaging QGIS projects for QField a synch.



# Why QField?

- Free and Open Source!
- A Streamlined Data Collection App
  - Well presented cartography
  - Powerful tools
  - Efficient interaction
- Rapid advancements in the past year
  - Upcoming Qfield cloud will be ready for anticipated world-coverage internet
- Opportunity for high-level developer support
  - If you want a function, just ask how much it will cost to develop.
  - The more industry funds development, the more we all benefit





# QField & Geology

## How we get along:

- Field navigation
- Drill program tracking, reporting & registrar
- Rehabilitation tracking , reporting & registrar
- Road/track mapping & registry
- Field geological mapping
- Spatial/database management of field photography

## Senior Exploration Geologist - Mr Ed Keys

- Ed is a geologist with 13 years experience in exploration
- Australian and Canadian field experience with GIS focus





# Where we work: Offline





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Perth Database



Desktop

- Package for QField
- Synchronize from QField

**QGIS**

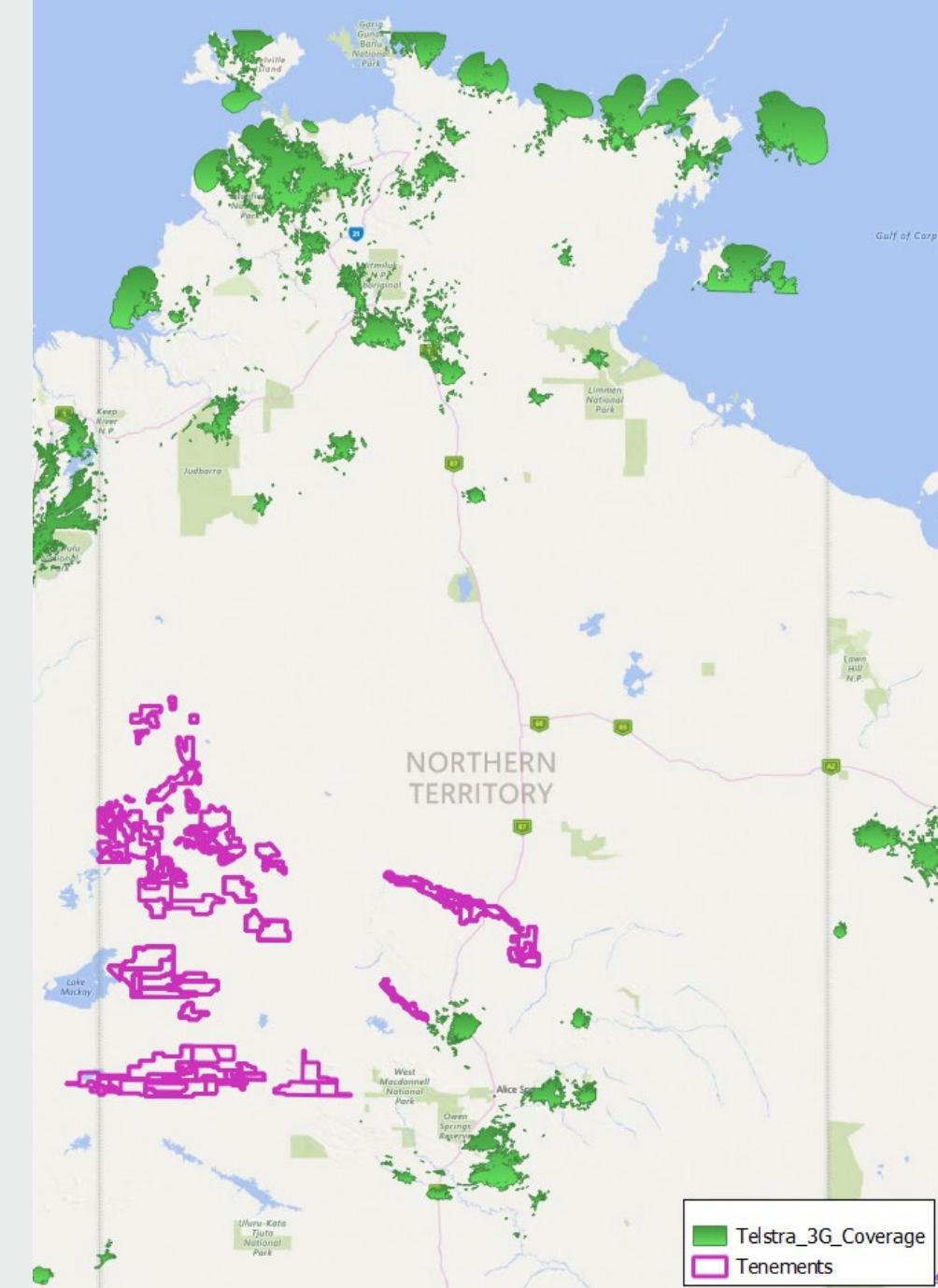
Tablet

Data

**QFIELD**

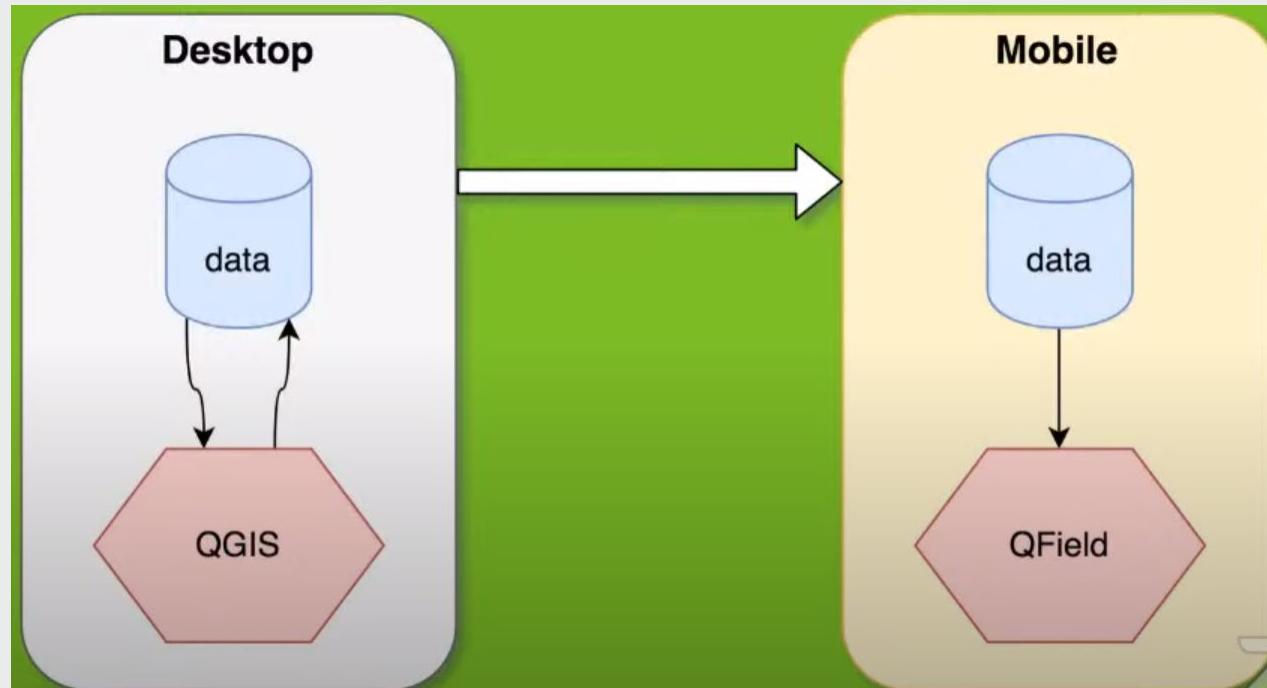


Just one of many possible workflows with QField





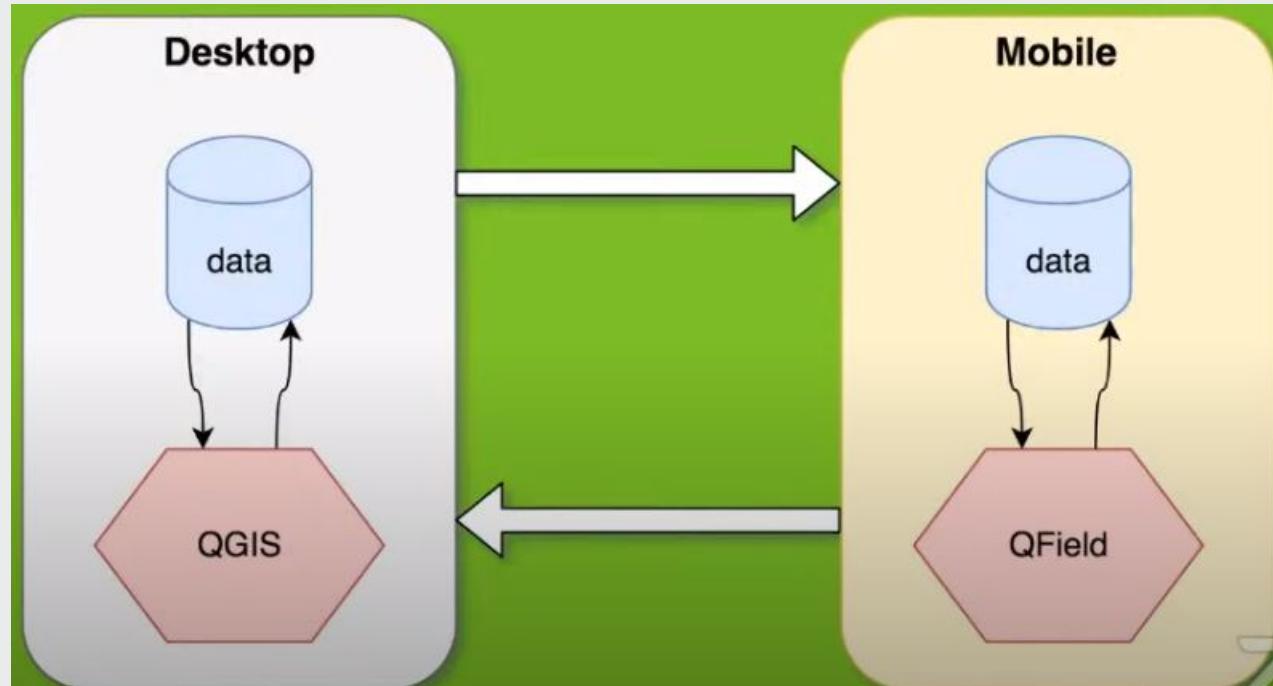
# The Explorer



Marco Bernasocchi, opengis.ch :  
<https://www.youtube.com/watch?v=91v1p5AEJTQ>  
[1] <http://www.qfield.org> [2] <https://qfield.cloud/>



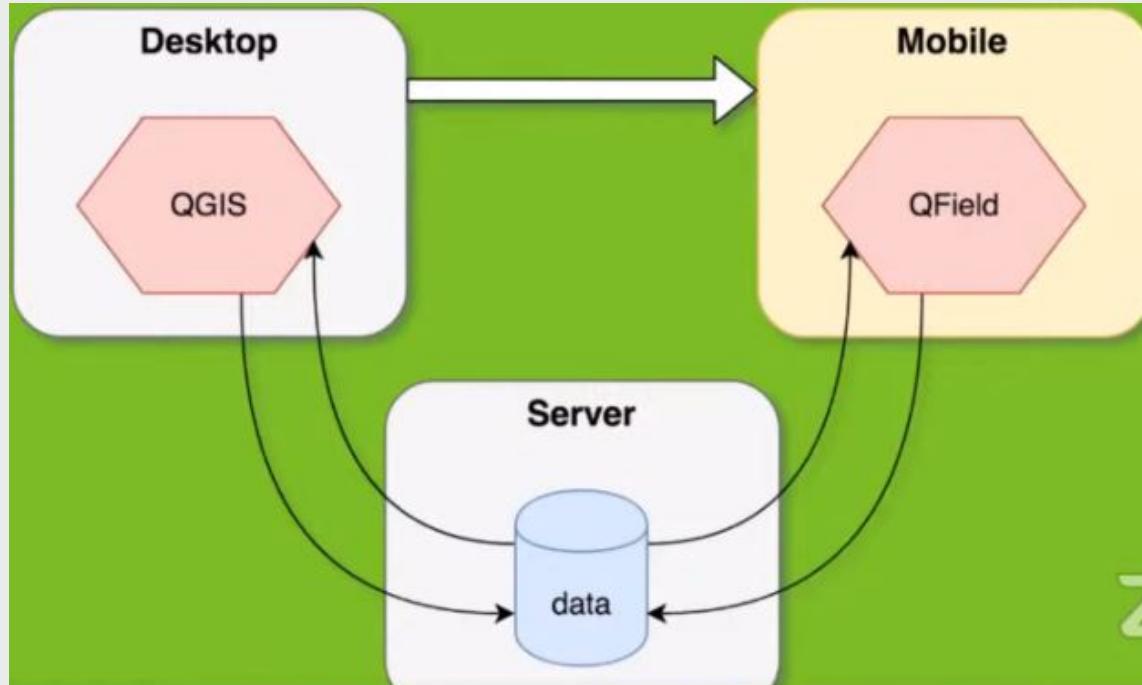
# The Lone Ranger



Marco Bernasocchi, opengis.ch :  
<https://www.youtube.com/watch?v=91v1p5AEJTQ>  
[1] <http://www.qfield.org> [2] <https://qfield.cloud/>



# Online (live) editing



Marco Bernasocchi, opengis.ch :  
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# GPS tracking and field navigation

- Track where you are going with a background map/GIS
  - No more fumbling between multiple devices and software
  - Update existing Tracks layer on one device every time you go somewhere new.
- Compatible with internal or external sensors
  - Tablet GPS not accurate enough? Hook up a DGPS!
  - Antenna height correction is supported
- Walk around an outcrop while tracking, and poof... Its 'mapped' and integrated in your GIS!





# Drill program tracking

- Create new holes (points) on the fly
  - Mandatory fields must be filled in
- Update a planned hole to a new status hole as it evolves
  - Record comments and photos for each stage
- Record important information relating to the drill hole
  - Ensure accurate data is collected that aligns with the database
    - Drop-down menus (etc) limit errors





# Rehabilitation tracking

- Have another ‘View’ for your field assistants
  - Turns off superfluous layers
  - Keeps only layers required for the task
- Mandatory reporting requirements as checkboxes
  - Keeps a detailed list of what’s been done, who did it, when it happened and where it was done.
  - Without paper.
  - Without the need for additional maps
- No need for GPS/paper maps/data entry
  - Saving everyone time
  - Reduced errors





# Collect Geological measurements

- Default values
  - Previous values remembered if desired
- Automatic Increments of sample ID (last sample +1)
  - Reduced errors with reduced human input
- Automatic generation of metadata
  - Coordinates automatically stored
  - Date and time automatically stored.
  - Person taking measurement stored ect.
- Attribute stored as values in the table, and displayed as familiar descriptions
- Constraints and relations
  - Dips can't go above 90
  - Azi range 0-360
- Conditional visibility
  - Data stored in attribute table isn't necessarily shown.

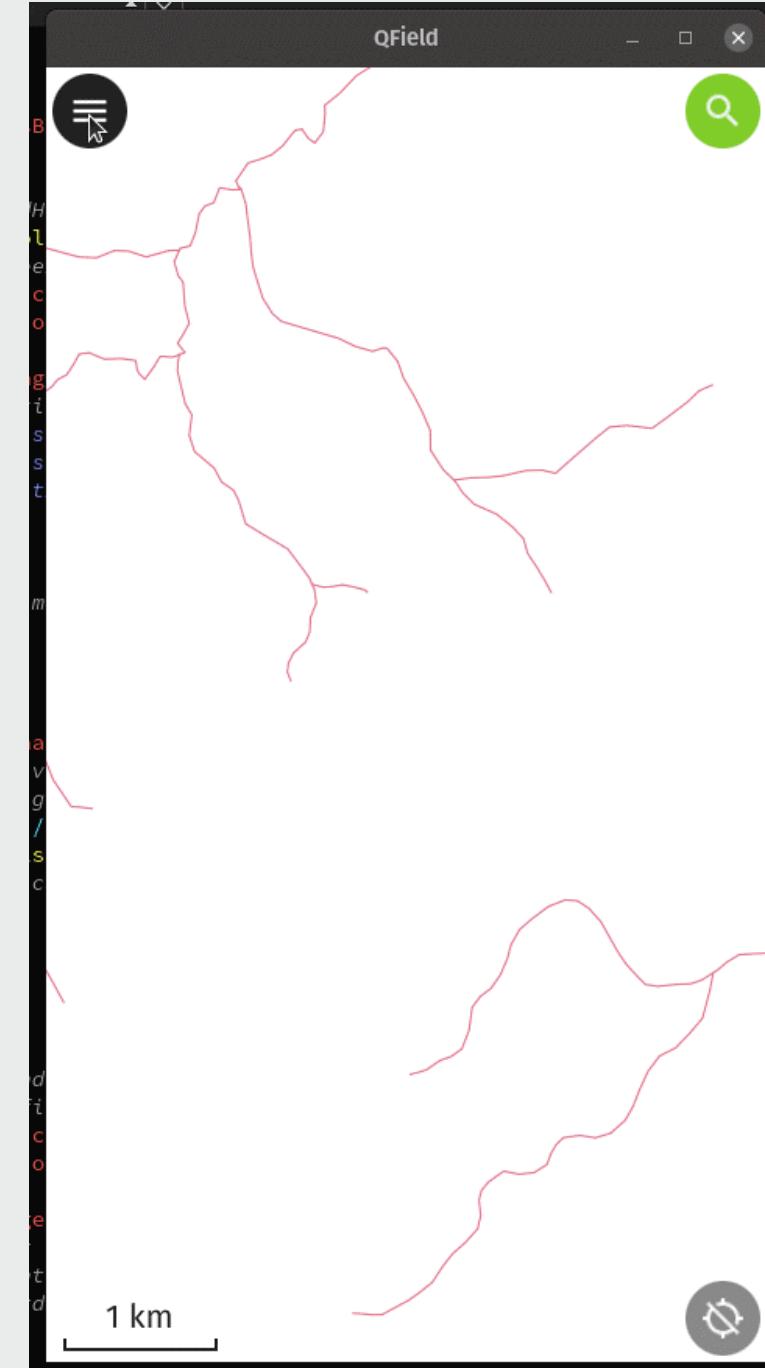




# Geology mapping and stylus sketching

The most recent update (pre-release) adds a new freehand digitizing mode to QField, allowing users to 'draw' lines and polygons using their stylus/pen or mouse. The mode is available for line/polygon feature additions as well as the geometry editor's rings tool.

The freehand digitizing mode is activated through a new toolbar button which appears when QField is set to editing mode and a line or polygon vector is selected:





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# Open Camera

- Functionality with free and open source ‘Open Camera’
- Option to take photo remotely by making a noise, or by voice command “cheese”
- Optional GPS location tagging (geotagging) of photos and videos; for photos this includes compass direction and dip
- Apply timestamp and custom text to photos/videos; Stamp with company logo.
- Extract this information as a table from the metadata





# Reporting

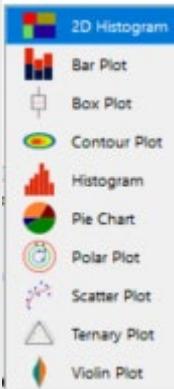
- One click reporting
- Multiple reports can be pre-loaded as templates
- Attribute tables can be manipulated with pre-defined expressions to constrain reporting to a certain time frame





# Reporting

- One click reporting
- Multiple reports can be pre-loaded as templates
- Attribute tables can be manipulated with pre-defined expressions to constrain reporting to a certain time frame
- Automatically generated graphs and charts can similarly be pre-defined and generated using constrained input.





# Accuracy Concurrent Editing and Sync

- When using offline editing, a user in the office can make changes to the data in the QGIS project that persist when you upload new data from a user in the field.
- Multiple people can be gathering data points in the field and then syncing with QFieldSync as well. However, there is no conflict resolution so if two field users update the same feature, the updates from the most recently uploaded user data will overwrite the previous one.
- There is a plan for future releases of QField to have a hybrid mode that can cache the data when offline and then automatically sync when connectivity is restored.
- Cloud synchronization functionality is now ready so that you will be able to seamlessly manage your project online and have it automatically deployed to your devices.
- There is also the option to store your data in a centralized database (such as PostgreSQL/PostGIS) on a server that is accessible through an internet connection (the QField package file still needs to physically be stored on the Android device). This allows multiple people to be editing data and seeing others' edits in real time, as long as they have connectivity
- Data collected through QField will be as accurate as the GPS information that the Android operating system is delivering to it. This can be as simple as using a cellphone or QField can be used on a tablet with Bluetooth connected to a high-resolution differential GPS, resulting in much more accurate data locations. QField natively listens to the Android location services so it can take advantage of the best location provided by external devices.



# Conclusions

Streamline the exploration geology process with free and open source software.

Field navigation

***No more need for GPS and paper maps***

Drill program tracking, reporting & registrar

***No more need for data entry at the end of each day***

Rehabilitation tracking , reporting & registrar

***No more data entry. Less errors due to constraints***

Road/track mapping & registry

***No more need to work between a GPS, maps and a GIS***

Field geological mapping

***No more paper mapping, data entry or typos***

Spatial/database management of field photography

***No more re-naming photos. Spatially referenced and easy to find***



# Support

- [Free and Open Source needs your support!](#)
- [Qfield support](#)
  - You probably have plenty of ideas for nice features that are not implemented yet.  
Please [contact us](#) to discuss the best approach to integrate this idea into QField or to create your own custom app
  - <https://qfield.org/docs/support/index.html>
- [Qfield Cloud; be among the first to use it](#)
  - <https://qfield.cloud/#mc-email>
- [Open Camera support](#)
  - <https://opencamera.org.uk/info.html#supportme>



Your syncing solution for QField - Coming 2020

**Be among the first to try QFieldCloud**

[Join the waiting list](#)

# Any questions or suggestions?



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