Towards better traceability of field sampling data
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http://www.iuem.univ-brest.fr/pops/projects/za

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Summary

Ensuring traceability of field experimental data or laboratory sampling data to conduct reproducible research is a challenge at the present time. Between the time when geolocalized specimens (biotic or abiotic) are taken, and the time the resulting data ends up in analysis published within a study, many manual operations take place and may generate errors. The French LTSER have joined forces at the national level to propose a solution as generic as possible to this problem of monitoring of the samples and their traceability.

The French LTSER have joined forces at the national level to propose a solution as generic as possible to this problem of monitoring the samples and their traceability. We designed and realized a prototype tested from end to end, using an open-source project called COLLEC-SCIENCE.

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COLLEC-SCIENCE is an open-source project

https://github.com/Irstea/collec

The researcher can create its own metadata templates describing the data to be associated with the sample.

Printing device linked by bluetooth with the raspberry.

The device can be used anywhere without Internet connection: the raspberry Pi3 is used as a wifi hotspot, and all the database and web server is embedded inside a Docker engine. The operator simply uses a tablet, a smartphone or a PC to fill the Web form describing its samples.

The QR code contains all the required data to find the sample inside the database, (UID, name of the database) as well essential data for ensuring the data traceability (where and when the sample was collected, using the time Script Object Notation.

This is an open-source project (licence AGPL v3). We have made it as generic as possible, and we can interconnect with different systems of labelling, by importing or exporting metadata schemas and identifiers of external databases.

The total cost for one good thermal transfert printer (like Zebra GX430T for instance) with a professional scanner of labels is of 1000 €.