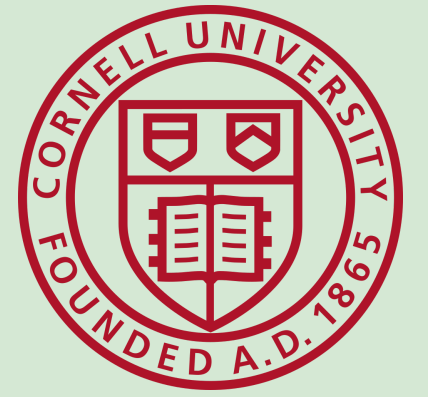# BrAPI
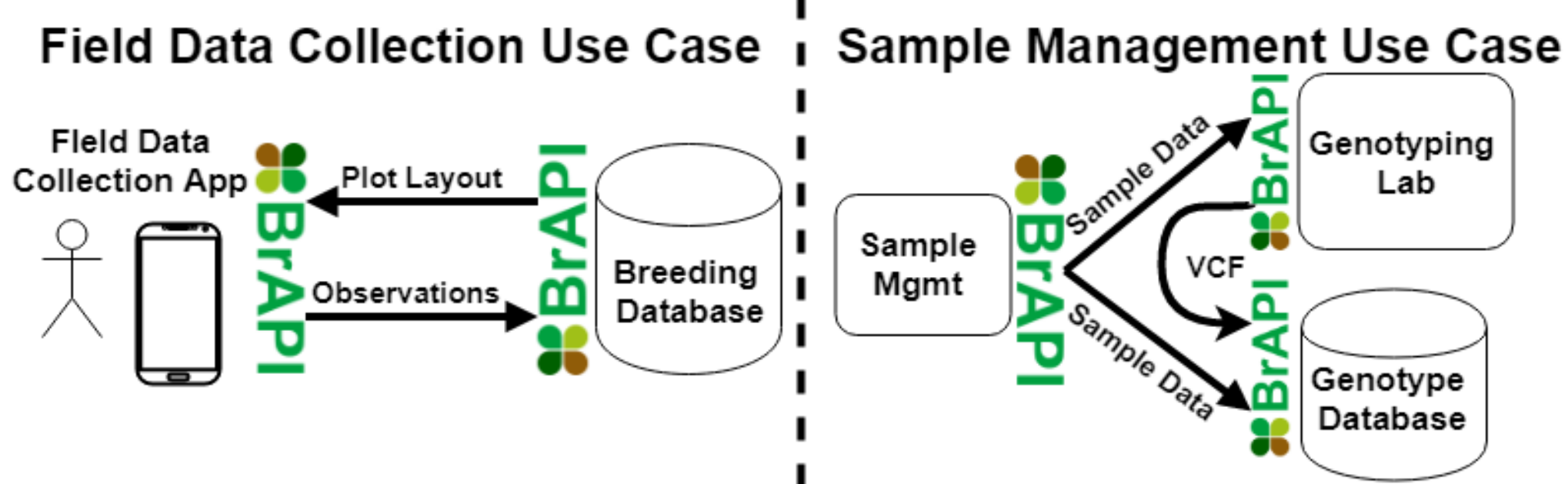# A standard API specification for plant breeding data

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2023 Advisory Board: Jan-Erik Backlund, Cyril Pommier, Iain Milne, Tim Parsons, Shawn Yarns, Sebastian Beier

Primary Objectives

- Develop and maintain a specification for a collection of **standardized data models and API calls** designed to communicate plant breeding data between tools and databases.
- Establish **a collaborative community** around the standard. Expand the community low barriers to entry and exciting outreach events
- Encourage and enable collaborative projects, shared resources, and **interoperability between teams**, organizations, and countries.

Use Cases

The BrAPI specification is designed to be flexible and solve many types of data sharing use cases, across the full life cycle of breeding data. BrAPI can be used to support **project management, sample management** (above)**, field data collection** (above)**, genotypic analysis, decision support,** and many other use cases.

An example of this flexibility can be seen in the BRAPPs initiative. A **BRAPP (BRapi APPlication)** is a small, self-contained tool that can run exclusively from BrAPI compatible data. The BrAPI Community have come together to build useful BRAPPs, for a wide range of use cases, that can be easily shared and integrated with anyone group who has a BrAPI compatible data source.
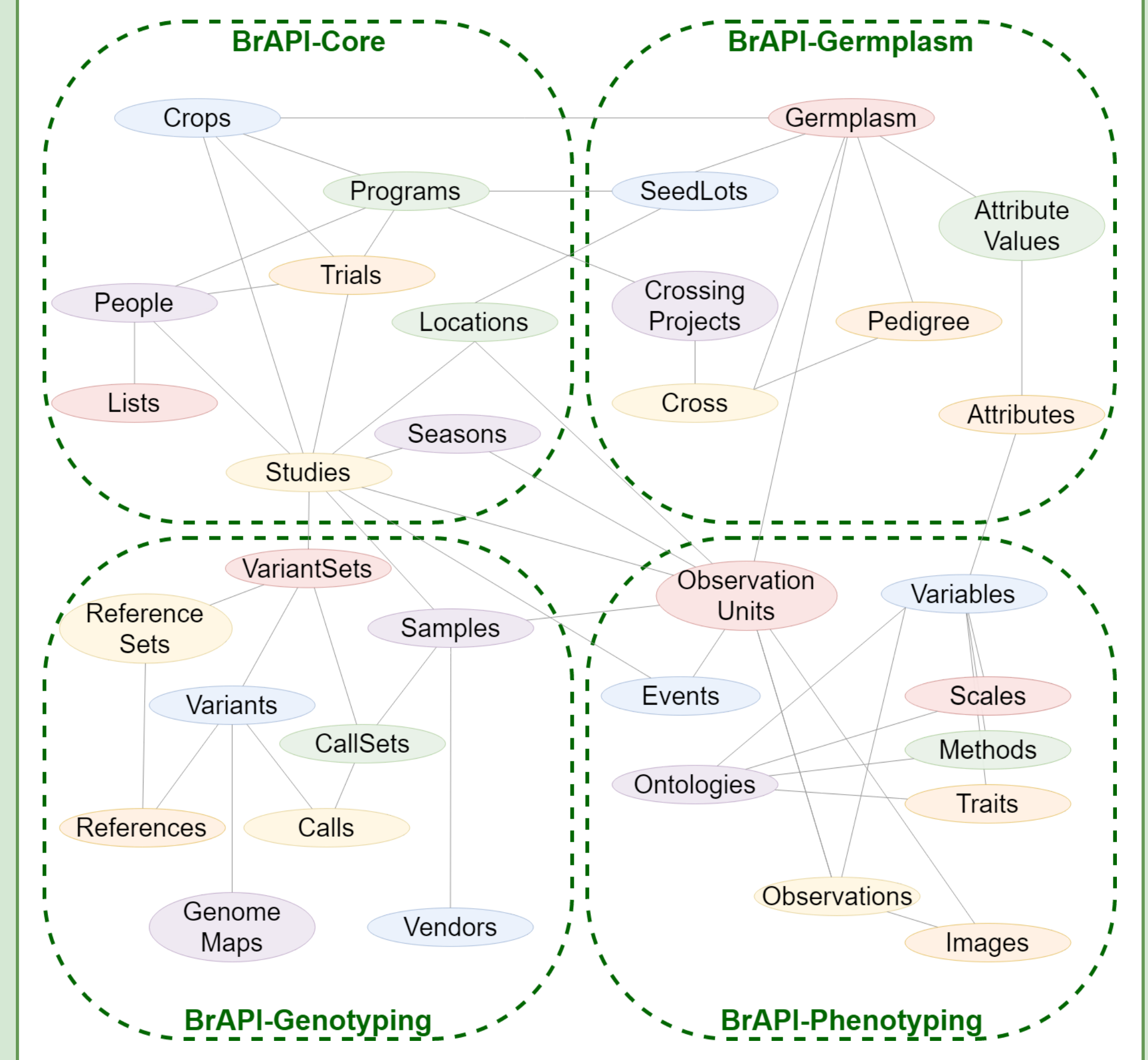

BrAPI Specification

The BrAPI Specification v2.1 defines **197 endpoints** and **33 primary data models**, separated into four organizational groups. The standard data models were built by general consensus of the community and updates to the specification are strictly driven by the needs of the community. When possible, the specification is made compatible with existing data standards such as **MCPD, MIAPPE, ICASA, VCF, GeoJSON**, and more. The modular nature of the specification makes it extremely flexible, able to solve many types of data sharing use cases.

BrAPI Community

The BrAPI Community is a group of **250+ plant breeders, software developers, data managers, and other expert scientists**, representing **37+ organizations** from around the world. All of the people and organizations within the community use BrAPI to communicate standardized data between tools or databases. Everyone working in this domain is welcome and encouraged to join the community.

An easy way to join the community is to participate in a **BrAPI Hackathon**, where the community gathers regularly each year to build BrAPI compatible software together. BrAPI Hackathons are setup to encourage collaboration across borders, and to welcome new members and projects to the community.