Semantics and Plant Phenotyping Data Structuration for Data Analytics

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Abstract

Phenomic datasets need to be accessible to the scientific community. Their re-analysis requires tracing relevant information on thousands of plants, sensors and events.

PHIS is an open-source information system designed for plant phenotyping experiments in various installations that non-ambiguously identifies all objects and traits in an experiment and establishes their relations via ontologies and semantics that apply to both field and controlled conditions, thus allowing parsimonious description of the system itself. PHIS ontology-driven architecture is a powerful tool for integrating and managing data from multiple experiments and platforms, for formalizing relationships between objects and for enriching datasets with knowledge and metadata. It interoperates with external resources via Web services, thereby allowing data integration into other systems, e.g. modelling platforms or external databases.