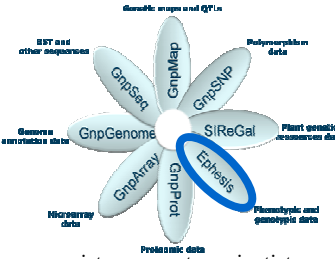


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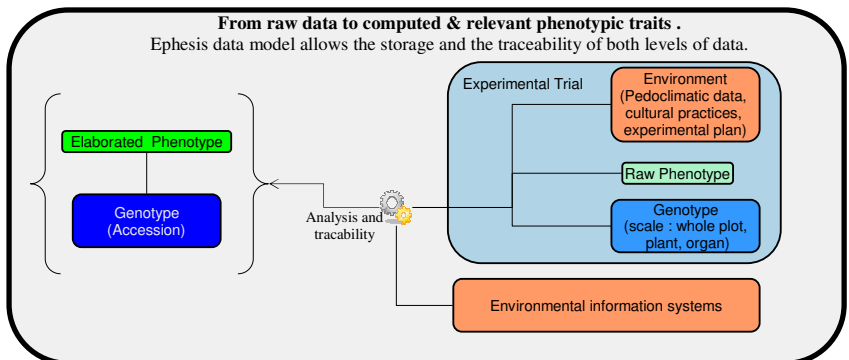
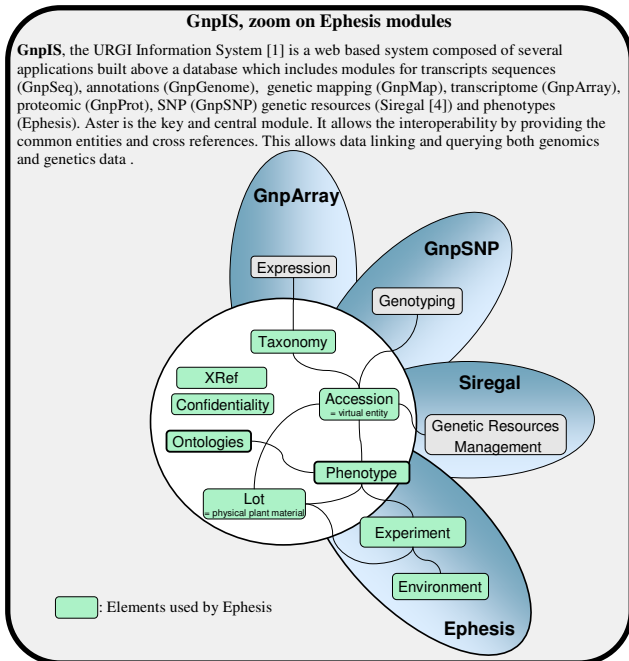
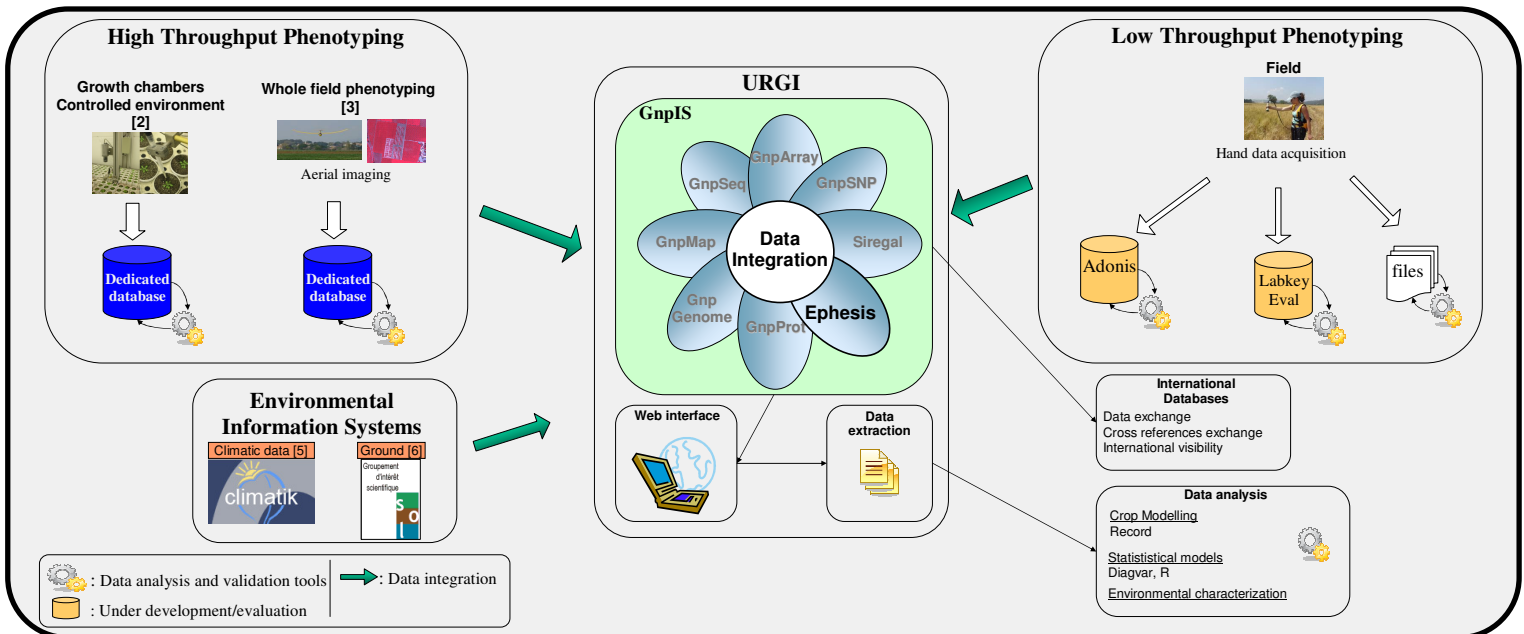


Abstract

To investigate relationships between genotypes, environment, and cultural practices (G*E interactions), a scientific network of agronomists, computer scientists, statisticians, geneticists from INRA (IGEC Group) has set up three axes of development: (i) new tools and technologies for high throughput phenotyping, (ii) analysis tools (e.g., statistical, mathematical) to extract knowledge from the data, and (iii) information systems to store and prepare data for analysis. To fulfill this last need, the Ephesis project has been initiated and included in the URGI information system.

The URGI (Unité de Recherche Génomique-Info) is an INRA bioinformatics unit dedicated to plants and pest genomics. One of its missions is to develop and maintain a genomic and genetic information system called GnpIS, for INRA plants of agronomical interest and their bioaggressors.

The Ephesis project will produce a public information system focused on phenotypic data. Its main objectives are to provide a data repository for meta analysis related to G*E interactions and genotype / phenotype relationships. It will increase the visibility of experiments conducted at INRA, thus facilitating collaborations between groups from different Institutes / Universities to interpret biologically G*E interactions and to identify genes /QTLs involved in response to environmental constraints. Ephesis will allow data storage, data structuring & sorting, scale changing (from organs to canopy), development of meta-analyses mixing species and data sets to compute new and relevant phenotypic evaluations. Thanks to the confidentiality built in the system, it will be possible to use Ephesis for specific joined programs.



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Schedule

The information system is **currently under beta testing** and a first **private release**, reserved for the project partners, is planned for **January 2010**.
 Year 2010 will be devoted to **environmental and trait ontologies** integration and development. [7]

References

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- [3] Field hyperspectral imagery: a new tool for crop monitoring at plant scale. N. Vigenau, G. Rabatel, P. Roumet In Proc. of Joint International Agricultural Conf. Wageningen. 6 – 8 July
- [4] Siregal the INRA Plant Genetic Resources Information System., <http://urgi.versailles.inra.fr/siregal>, see Poster
- [5] Agroclim : <https://intranet.inra.fr/climatik/do/welcome>
- [6] Infosol / GIS Sol : <http://www.gissol.fr/outils/outils.php>
- [7] www.plantontology.org and <http://environmentontology.org>

Acknowledgements

Ephesis user scientific committee is made up of researchers and experimenters of INRA : E. Duchêne, A. Gaudreteau, P. Bertin, C. Lecomte, A. Klein, A. Dimouro, B. Quihot, P. Burger, E. Costes, N. Moutier, E. Balsemin, A. Raffin, P. Roumet.
 Ephesis steering committee is made up of experts of the field : A. Charcosset, C. Christophe, A. Gaudreteau, J.Y. Lorendeau, H. Quesneville, J.M. Prosper, P. Roumet.
 Ephesis is developed and maintained by experienced engineers at URGI : S. Durand, E. Kimmel, C. Pommier, L. Luyten, S. Reboux.
 Its development is funded by INRA. It is an open source project and the code is available by request.