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INTEGRATING MODELLING AND EXPERIMENTAL PLATFORMS IN RESEARCH INFRASTRUCTURE: DESIGN AND APPROACH IN AnaEE-FRANCE.

25th of September - 12:30 Plenary session 4. Data access and modelling.

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Bridging experiments with models is a key issue for research infrastructure. Models can contribute to the experimental process for protocol design or data quality control. Moreover, they offer an efficient way of promoting data reuse, thus giving a strong added value to data bases. Therefore, building interoperability between models and experimental platform data bases is an important task to improve the quality of experimental infrastructures and provide users with seamless and integrated information systems. The research infrastructure AnaEE-France is taken as an example illustrating the required steps to achieve such an objective. In AnaEE-France, models are gathered in four thematic modelling platforms (RECORD, VSOIL, CAPSIS and the Centre for Biodiversity Theory and Modelling). They offer services as a repository for modules and models, tools for simulation pre-processing and post-processing and coupling technology to develop new models by taking advantage of existing modules. The coupling capacities will be extended in AnaEE-France to the experimental data bases. As the infrastructure is distributed among 21 experimental services, data base frameworks are proposed i) to facilitate the integration of core measurements provided by the experimental platforms and measurements made by users, ii) to standardize data annotation with metadata, and iii) to manage data access rights. To control semantic usage, a common referential for both modelling platforms and data bases is under development based on the existing thesauri and the specific AnaEE-France vocabularies. It will provide a thesaurus and simple ontologies to describe the data (traits or parameter, sites, units, spatial and temporal characteristics, methods). Web-services are being developed to access the data bases from the modelling platforms. In a first step, the web-services will be parameterized on a case-by-case basis. However, in a second step, the development of automatic filters is foreseen, and they will take advantage of data annotation to match model inputs and outputs with experimental data.