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LHDL: The Living Human Digital Library

Sharing biomedical data in an easy, controlled, safe and financially viable way is no longer impossible thanks to the LHDL project. PhysiomeSpace service provides you with the possibility to import, store and organize your biomedical data in a digital format.

The Living Human Project (LHP)

The goal of this initiative is to develop an in silico model of the human neuromusculoskeletal system which can predict how mechanical forces are exchanged internally and externally, from the whole body down to the protein level, consistently with the scope of the European Virtual Physiological Human Initiative. In order to obtain this objective, it is important for large research communities to share highly heterogeneous collections of data and models through a fully integrated repository, and be directly accessible by any researcher in the world. This will result in a significantly and positive effect on the European research, clinical and industrial practices.

The projects, realised until now by LHDL, are the following:

Ó PhysiomeSpace

This is the first professional data management and sharing service of biomedical data

Ó PSLoader

It allows you to import virtually any biomedical dataset, organise your collection of data in space and time and upload it to the data management service

Ó LhpBuilder

An application for processing and modeling neuromusculoskeletal system data

Ó LhpSimul

A powerful architecture of execution web services for the

distributed execution of data-intensive algorithms

Ó LhpSWS

A semantic web service with full semantic brokering capable of combining storage and execution services in complex data processing flows

Ó LHDL ontologies

A collection of specialized ontologies to annotate the data and service resources available through PhysiomeSpace

Ó LHP Data Collection

A compilation of experimental and modeling data on the descriptive and functional anatomy and the multiscale biomechanics of the musculoskeletal system.

Physiome Space Architecture

The Client Application: PS Loader

With the desktop application PSLoader, after authentication you can import biomedical data stored in different digital formats (DICOM3, STL, JPG, TIFF, ANSYS,etc.) and organise them in space using a hierarchical tree. The system allows you to have long list of interactive views and visualise whatever combination of data you can have.

The Service: Physiome Space

The PSLoader allows you to upload on your private space the entire collection of PhysiomeSpace servers with only one click from a single web interface. You can add, remove, annotate data resources and assign to each resource a different set of access permissions. You have the possibility to talk directly to anyone who would like to download the data, before granting access.

By PhysiomeSpace data resources can be browsed and searched in various ways relying on the fact that each data resource is annotated by a set of metadata defined according to the LHDL Master Ontology. Depending on the type of data you can choose additional sub-ontologies to add to the data special concepts that are specific to a certain data generation modality.

PSLoader automatically annotates a good part of the master ontology but the user is still requested to do some manual curation.

PhysiomeSpace has a quality index which shows how extensive the annotation of each data resource is. The dataset you place in your private space will be available for download next time you connect to it. The database can be exported in whatever format, and used with other specialized applications.

Usage Terms and Conditions, Data Re-Use and Privacy Policy

PhysiomeSpace is expected to be launched as a commercial service at the end of 2009. Until then its services will be free of charge. The data will be uploaded under complete responsibility of the users and there will be no guarantee provided for the continuity of the service, the storage, the integrity and the preservation of the data stored. The confidentiality of the data will be protected only through the access limitation of the service, and in principle system administrations are in the condition to access all uploaded data.

For more information please visit : **www.ec.europa.eu/information_society/activities/health/**

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