



FP7-600716

Whole-Body Compliant Dynamical Contacts in Cognitive Humanoids

D1.3

Software for dealing with compliant contacts

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| Abstract | This deliverable references the open-source software repositories, and corresponding documentation, developed under the CoDyCo project for dealing with compliant contacts. |
| Keyword List: | CoDyCo, software, whole-body, compliant contacts, postural control, balancing, learning, contact parameter estimation |

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1 Software Modules

All software developed for the CoDyCo project, including modules for the control of balancing and reaching with multiple contacts, and also dealing with compliant contacts are available as open-source within the following repositories:

- `codyco-superbuild`: Main software repository (available from <https://github.com/robotology/codyco-superbuild>).
- `idyntree`: Dynamics library designed for free floating robots (available from <https://github.com/robotology/idyntree>).
- `wholebodyinterface`: C++ Interfaces to sensor measurements, state estimations, kinematic/dynamic model and actuators for a floating base robot (available from <https://github.com/robotology/wholebodyinterface>).
- `yarp-wholebodyinterface`: Implementation of the `wholeBodyInterface` for YARP robots (available from <https://github.com/robotology/yarp-wholebodyinterface>).
- `WB-Toolbox`: Simulink Toolbox for rapid prototyping of Whole Body Robot Controllers (available from <https://github.com/robotology/WB-Toolbox>).
- `codyco-modules`: Whole-body Compliant Dynamical Contacts in Cognitive Humanoids (available from <https://github.com/robotology/codyco-modules>).
- `mex-wholebodymodel`: Matlab MEX interface to the `iWholeBodyModel` interface (available from <https://github.com/robotology/mex-wholebodymodel>).
- `codyco-commons`: Miscellaneous libraries developed in the CoDyCo project (available from <https://github.com/robotology-playground/codyco-commons>).
- `WBI-Toolbox-controllers`: Controllers developed using the `WB-Toolbox` (available from <https://github.com/robotology-playground/WBI-Toolbox-controllers>).
- `wholeBodyEstimator`: Algorithm developed for floating base estimation (available from <https://github.com/robotology/codyco-modules/tree/master/src/modules/wholeBodyEstimator>).
- `LWR-ContactParams`: Locally Weighted Regression (LWR) algorithm for learning contact parameters of compliant contacts (this is available from https://github.com/azadm/LWR_for_ContactParams.git).

Further details and freely available software downloads are available via github:
<https://github.com/robotology>

Additional documentation is available via the icub wiki:
<http://wiki.icub.org/codyco/dox/html/index.html>