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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

Document Revision History

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Table of Contents

Index of Figures

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.
- `idyntree`: Dynamics library designed for free floating robots.
- `wholebodyinterface`: C++ Interfaces to sensor measurements, state estimations, kinematic/dynamic model and actuators for a floating base robot.
- `yarp-wholebodyinterface`: Implementation of the wholeBodyInterface for YARP robots.
- `WB-Toolbox`: Simulink Toolbox for rapid prototyping of Whole Body Robot Controllers.
- `codyco-modules`: Whole-body Compliant Dynamical Contacts in Cognitive Humanoids.
- `mex-wholebodymodel`: Matlab MEX interface to the iWholeBodyModel interface.
- `codyco-commons`: Miscellanous libraries developed in the CoDyCo project.
- `WBI-Toolbox-controllers`: Controllers developed using the WB-Toolbox.
- `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`