

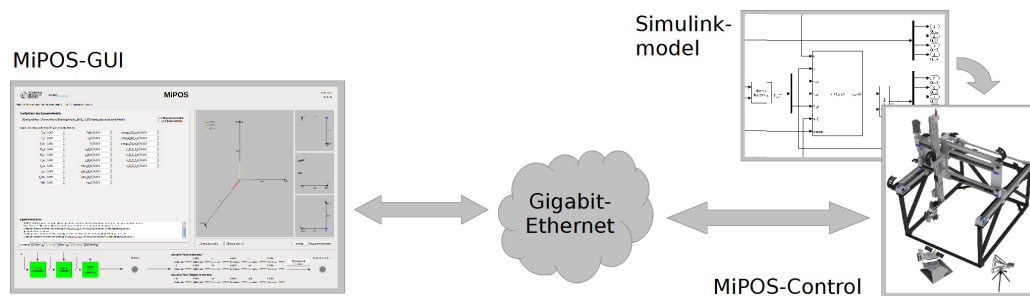
Development and implementation of spacecraft dynamic models for different mission scenarios and of an inverse robot dynamic model to simulate these models with a laboratory demonstrator

This thesis handles the creation and integration of dynamic models into simulations with IfA's Mini-Proximity-Operations-Simulator.

At first the existing configuration of MiPOS is analyzed. Afterwards, important real mission scenarios of space- and aircraft like spacecraft-rendezvous-manoevres are examined towards the realization with MiPOS and demonstration scenarios are worked out.

In addition, one possibility to automatically generate a dynamic model as a plug-in for MiPOS from a MATLAB/Simulink-model. To achieve that, the Simulink-model can be transformed into C++-program-code by MATLAB's Real-Time-Workshop. This code must be adapted to MiPOS-specifics, before it can be compiled into a dynamic library and then be used by MiPOS.

A dynamic model for satellite-rendezvous-manoevres was designed, implemented and verified for testing the created dynamic-simulation-environment.



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