MANUAL
FRANKA EMIKA PANDA
RESEARCH

WIREDWORKERS

ROBOTISATION

To make the Franka Emika Panda available for different applications a lot of research is done. The Panda Research has been developed especially for researchers and companies that are active in the field of research and development. This robot is ideal for testing control and movement algorithms because it has a Franka Control Interface (FCI).

THE COBOT

FRANKA EMIKA PANDA RESEARCH

ARM
The arm is inspired by the maneuverability of the human arm. It is a sensitive and extremely versatile power tool. The torque sensors in all seven axes enable Panda to handle objects professionally and delicately.

CONTROL
The compact 19" control unit can be installed in server racks or elsewhere. It connects Panda to the cloud or to your local network on the shop floor.

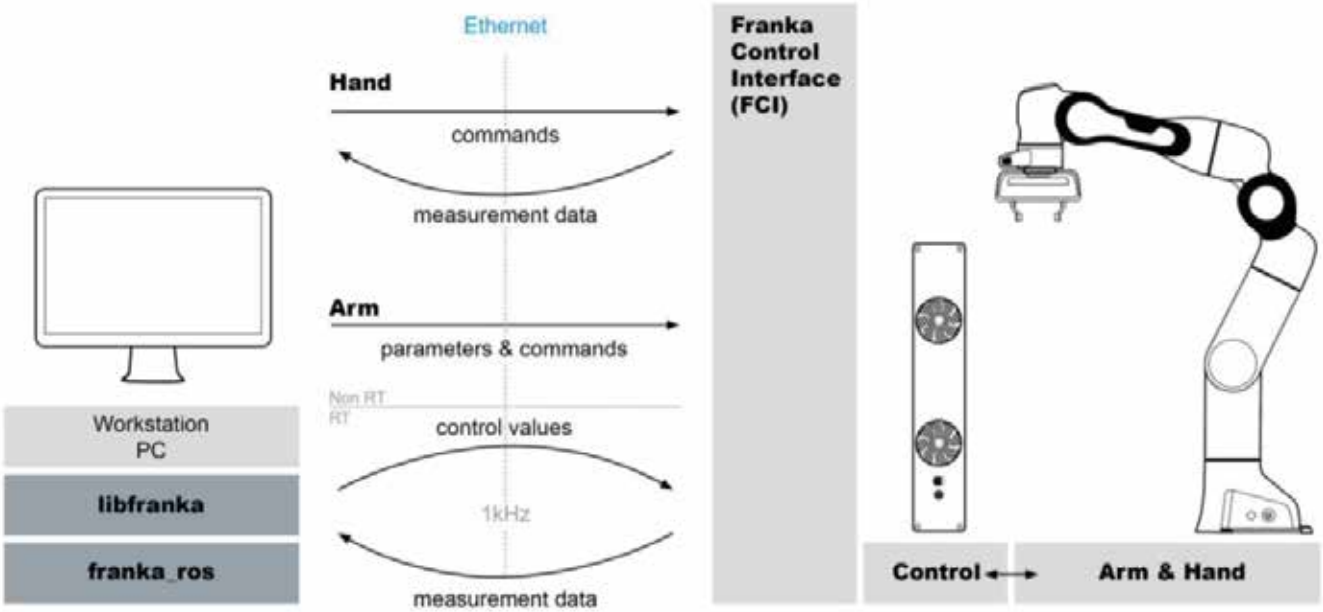
PILOT
Pilot is the direct user interface on the arm. It offers shortcuts to customize the Apps and to perform their functions in Desk.

HAND
The Hand can grip firmly and quickly for high performance and flexible pick & place. The fingers can be swapped to optimally grip a wide variety of objects.

APPS
Apps are modular robot programs and always represent a partial step of a task. Each App contains a context menu in which the user is interactively guided through the process parameters.

PANDA RESEARCH

Panda Research provides a fast and direct bi-directional connection to the Arm. Designed specifically for the needs of researchers and scientists, this interface offers a number of features that allow you to remotely control the robot from your own application. This can be done by closing control loops or by feeding desired movements. The C+++ library is performed remotely on a workstation PC. The connection with Control is established via a standard Ethernet connection. The interface provides fast measurements, internal data from the robot and accepts parameters and control values at update rates up to 1 kHz.



Franka Control Interface

This interface is the central part of Panda Research, which provides data and allows you to control the robot.

Control
The ability to send real-time control values makes it possible to carry out custom-made robot behaviour:

- gravity & friction compensated commands for joint level torque.
- desired joint position or speed command
- desired cartesian position or speed command

Feedback data

This interface provides access to the following data:

- measured joint data (position, speed, signals from the coupling joint sensor on the side of the coupling)
- low desired common goals
- estimation of externally applied torques and wrenches
- various collisions and contact details

TEACH ME
ANYTHING

FRANKA WORLD

Franka World is an online platform where developers can exchange ideas and new applications. In this way, researchers and R&D departments can help each other or ask for help so that new solutions and applications can be implemented worldwide.

world.franka.de

Robot

Modelbibliotheek

The library offers you the following quantities:

- forward kinematics of all joints
- Jacobian matrix of all joints
- Dynamics (inertia matrix, Coriolis and centrifugal vector and gravity vector)

In addition, the C+++ library can be used to set important parameters such as control mode, joint stiffness or additional loads. In addition, you can control the hand.

The ***ROS support*** makes it possible to interface the arm via your own ROS nodes and to use the entire ROS ecosystem. It also comes with a URDF model of the arm that allows visualization and kinematic simulations.

MORE INFORMATION?

Would you like more information about working with cobots and the Franka Emika Panda Research?

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