

# DATASHEET Software

Our software department practices agile development of medical device grade software according to IEC 62304. The development ranges from windows 10-based application software (C++, Python, Java) to embedded systems programming (C) for processors used in CorTec's implants and body-external transmitters.

## Exemplary description of the software features with the CorTec Brain Interchange One System

The Application Software runs on a Microsoft Windows-based Computer and represents the interface between the user and the system comprising External Unit and Multi-Part Implant.

The Application Software provides users with a graphical user interface.

The functionality of the Application Software includes visualizing the measured data directly or after the application of a frequency filter (e.g. notch) or storing the data onto a local hard disk.

Additionally, it is able to visualize implant status data such as impedance, humidity and temperature inside the Hermetic Encapsulation. It is also able to define stimulation signals within the implant's technical capability and safety limits as well as to execute stimulation commands.

Exemplary  
description for  
Brain  
Interchange  
One

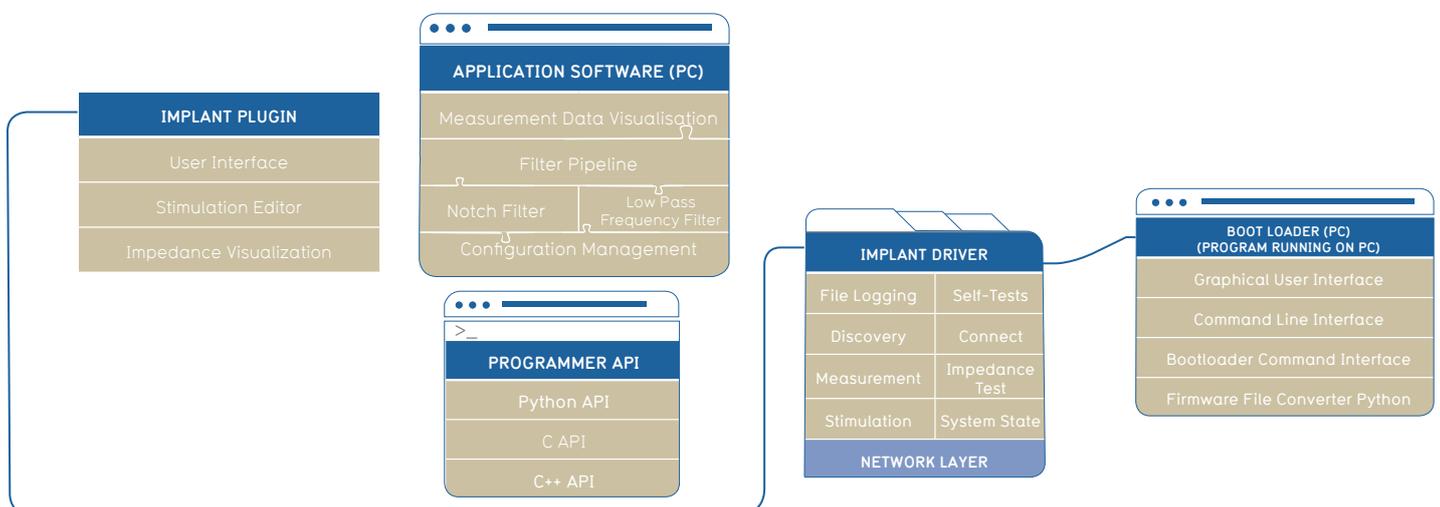
The development ranges from Windows-based application software (C++, Python) to embedded systems programming (C) for processors used in CorTec's implants and body-external transmitters. There are two kinds of software user interfaces (C++ and C). The purpose of the Application Software is to assist the surgeon during the implantation. The device itself has no additional user interface.

The PC software is designed for interoperative tests. Its main features are:

- Live measurement data visualization
- Establish connection to implants
- Error display of implants
- Status display (temperature, humidity, supply voltage)
- Stimulation function editor (graphical editor for complex stimulation patterns)
- Definition of reference electrodes for measurement
- Counter electrode can be selected of any channel incl. ground electrode
- The system is based on an easily extensible signal processing pipeline so that almost any pattern recognition algorithm or closed-loop stimulation paradigm can be implemented
- The system can easily be extended with new components
- Developed according to IEC 62304

Interfaces for implant control on Windows 10 systems

- C++ API (Attention: Compiler must be compatible)
- C API (suitable for integration in Matlab, Labview, etc.)
- Python API (planned)
- What can the interfaces do?
  - Complete range of implant functions (measurement, stimulation, impedance testing, etc.)
  - Safety check of the input parameters
- Developed according to IEC 62304



FUNCTIONS  
FEATURES & DESIGN OPTIONS