

2 Motivation

The European project Paper⁺⁺ (Disappearing Computer Programme, IST-2000-26130) develops various technologies to enhance physical paper by digital augmentation [23]. As a part of the project, we are evaluating different kind of reading devices for position detection on paper. Due to the lack of an existing USB driver for Java programming environment, at the moment we are restricted to using only readers transmitting information over the serial port (RS232).

The goal of this diploma thesis is to develop a USB driver for the J2SE 1.4 programming environment [9] supporting any kind of USB device (different device classes). Based on experience from an earlier project Java HID-USB API for Windows), a Windows USB binding conforming to the already existing jUSB interface definition [18] should be implemented.

The idea is to provide some kind of a Java wrapper classes based on the Java native Interface (JNI) [17] mapping the corresponding Java USB calls to the underlying Windows driver system. The existing jUSB API will be used as a guideline and the final Java USB driver should support reading from the USB port as well as transmitting information to USB devices.