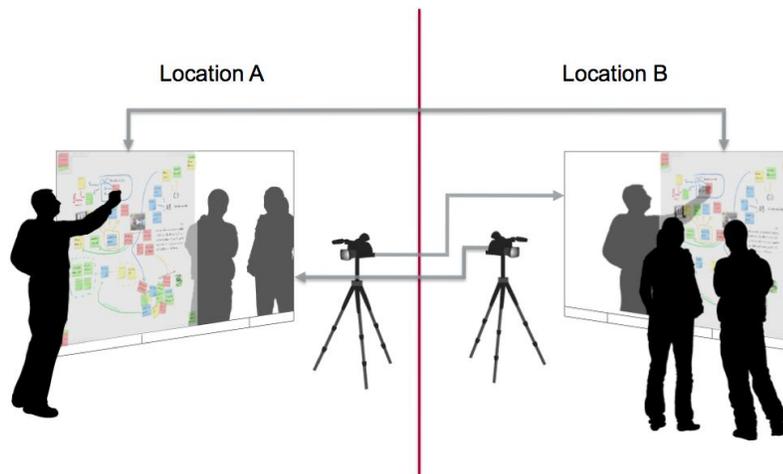


Tele-Board Setup

Tele-Board is an easy-to-use groupware system for working creatively in co-located and remote setups, developed at the *Hasso Plattner Institute (HPI)* in Potsdam. We created an electronic whiteboard software suite which allows users to write digital sticky notes on tablet PCs, smartphones or directly on a whiteboard. You can move the created sticky notes, cluster them and write or draw on the whiteboard. This digital implementation also includes additional features previously unrealizable by physical tools, such as resizing sticky notes or changing their color. All of the mentioned actions are synchronized automatically with every connected whiteboard client.

To facilitate remote interactive sessions, we include a video conference for distributed team members. The translucent whiteboard software can be displayed as an overlay on top of the full screen video of the other team members. This setup allows the opportunities to see what the others are doing, where they are pointing and what gestures and facial expressions they are making.



This document explains what equipment is needed to setup the Tele-Board system for an optimal working experience.

Hardware

The most important hardware for the Tele-Board system is a computer connected to an interactive whiteboard, one pair for each location. The whiteboard should be about the same size as a standard, non-digital whiteboard. Additionally, personal devices should be connected wirelessly for writing post-its, e.g. a chat client, a tablet PC or a Smartphone. Which devices you choose depends on your team's preferences. For a remote setup you will need a webcam and speakers for each location; you may also use additional microphones.

Whiteboard

To set up the Tele-Board whiteboard you need a computer and an interactive whiteboard as the output display.

Computer

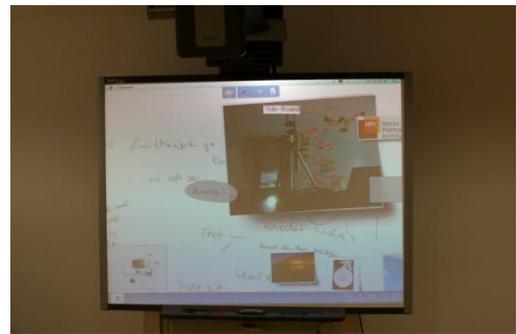
The Tele-Board system is a Java application and therefore runs on every computer with the [Java Runtime Environment \(JRE\)](#). On a computer with Windows or Linux operating system you may need to install it. On Mac OS Java is already available by default.

We recommend 2 GB of main memory (RAM) and a 2 GHz processor.

Display

There are several possibilities to acquire an interactive whiteboard compatible with the Tele-Board system. The easiest is to buy a complete whiteboard system, for example one of the following:

- “SMART Board Interactive Whiteboard” (not “Interactive Display”). We are currently using this model: [SMART Board 680i2](#), but the latest version on the SMART website ([SMART Board 685ix](#)) will probably work even better due to the short-range projector.
 - Pro: “Real” touch input (with fingers)
 - Con: no multi-touch
- [Promethean ActivBoard](#)
 - Pro: writing is very precise
 - Con: only pen, no (finger)touch input



You can also use one of the following light-weight solutions. They require a projector along with small, portable equipment to enable interactivity. A main disadvantage is that you will be standing in the light of the projector and thus blocking whiteboard content. Also, the touch accuracy is reduced compared to the complete interactive whiteboard systems.

- Projector +Luidia [eBeam Edge Projection](#)
- Johnny Chung Lee’s [Low Cost Interactive Whiteboard](#):
Projector + Wii Remote + InfraRed Pen



Devices for writing Post-its

Depending on your preferences you may use different devices for writing post-its. In the following list you will find the requirements of each device, along with the advantages we have recognized.

Chat Client

- You can directly send text sticky notes from the Tele-Board webportal
- If you want you can also use an instant messaging client which supports [XMPP](#) (a particular communication protocol). Every operating system has clients available for free. We recommend these clients: [iChat](#) for Mac OS and [Psi](#) or [Pidgin](#) for all platforms.
- Every chat message you send to the whiteboard will appear as text on a post-it on the whiteboard.

- Chat clients work well for quickly creating post-its that may include a lot of text
- You can also add pictures to the whiteboards by uploading a file from your computer or sending the url of the picture as a chat message

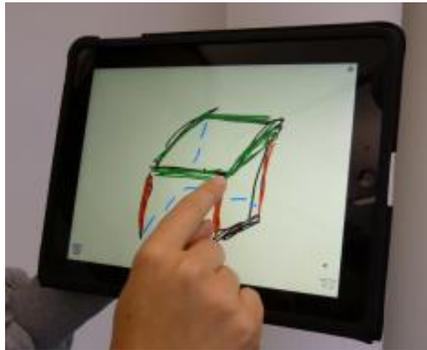
Tablet PC

- We developed a special *Post-it Pad* application that supports writing or drawing post-its with a tablet PC. You can start the application directly from our web-portal without installing anything. The application is also written in Java, therefore you need the JRE on the tablet PC.
- The *Post-it Pad* application is very similar to the familiar way of writing post-its, as you use a pen and not a keyboard. It is especially useful if you want to sketch or draw something on a post-it.



Smartphone

- We developed a Post-it App for the iPad/ iPhone / iPod Touch. You can draw or write post-its of different colors with your fingers and send them to the board. A similar Post-it App for the Google Android Platform is currently under development.
- Writing post-its with a Smartphone greatly supports mobility for the team. It is not as heavy as a tablet PC and resembles the size of a traditional post-it.



Digital Pen

- It is also possible to write Post-its with a digital pen on paper post-its. We are using the [Pegasus Mobile NoteTaker](#). You don't need special paper, just a fixation system for the post-its. Everything you draw on a post-it and send to the whiteboard will appear there on a digital post-it.
- The main advantage of using a digital pen is the feeling of writing post-its the way people are used to.



Remote Setup

If you are starting a whiteboard panel simultaneously from different locations, you automatically start working together. As all actions are synchronized, you can work on the same artifacts. For a remote setup with the experience of really working together (as you can see in the photo on the first page), you should add video conferencing capabilities. You can use any video conferencing system which supports a full screen video mode (we are using [Skype](#) at the moment). Our whiteboard software can be started as a full screen or split screen transparent overlay on top of the video.

Contact

If you are interested in using the Tele-Board system and would like access to the Tele-Board project portal and history browser (see screenshot), please contact us for login data.

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The screenshot displays the Tele-Board web interface. At the top left, the logo reads "Tele-Board connecting ideas". At the top right, there is a "Feedback" button and the HPI Hasso Plattner Institut logo. Below the header, the user "Raja Gurnienny" is logged out. The main area is divided into a "Projects" sidebar on the left and a main workspace on the right. The sidebar lists various projects, with "Peters Stickers" selected. The main workspace shows a whiteboard titled "Raja Research / Peters Stickers" with a "History" tab. The whiteboard contains several sticky notes and diagrams. At the bottom, there is a timeline showing meeting minutes for the date 2010-10-19, with a current time of 17:30 - 18:00.