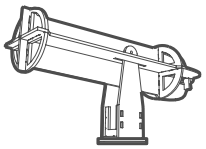
SMSLINGSHOT

February 2010

CONCEPT

VR/URBAN is a media art corrective founded in 2008.
www.vrurban.org



The spread.gun is a cannon like gun made of milled laminated plywood that shoots messages, typed on a touch-screen, onto media facades.

Arduino boards are small and easyily programmable microprocessors for interaction designers
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Moustashising is simply drawing a moustache on posterface

The main aim behind the concept of VR/URBAN is to give back urban media screens to the public. People shall not only remain as a passive audience, they must obtain the privilege and beside that the right tools to create their own multimedia content in the streets. The more and more mushrooming media facades, LED supplied walls and huge projections are interesting and worthy technical innovations for the people. But in opposite to the old fashioned posters in the streets, it is nearly impossible to create own content for these facades or even hang up your digital video. They are expensive, technologically challenging, mounted in high places and secured by surveillance systems. It is not possible to „moustache-ise" these kind of technology unlike social practices do with politicians. Also crossing stupid slogans or just adding your own, will let end you up in jail because of a massive property violation. The image is elusive, not steady and always changing. You need to have the right tool to get on those screens.

As a follow up to the spreadgun performance in 2008, SMSlingshot is an extension of VR/URBAN´s digital intervention activism. The installation features a handheld digital slingshot device for spreading information on public screens.
The white night festival at **Kim?** (Riga) was the premiere and first official live test of the first prototypes of this mobile textgun with and on a public audience.
As well as the 2008 installation for the media facade festival Berlin, the SMSlingshot is a truely tangible interaction device for linking digital data with real urban space. Because of the more and more increasing digitalisation of urban environment the need of an accessible intervention device is obvious and necessary. The wish and habit to comment the surrounding world is an ancient still vivant phenomena we

try to preserve. The SMSlingshot is an autonomic working device, equipped with an ultra high frequency radio, hacked arduino board, laser and batteries. Textmessages can be typed on a phone-sized wooden keypad which is also integrated in an also wooden slingshot. After the message is finished, the user can aim on a media facade and „send" the message straight to the laser-targeted point. It will then appear as a coloured pixeled splash with the message written within. The text message will be real time twittered as well.

CONCEPT

Originaly, Tagging is a method of street gangs to proclaim certain urban areas as their property by painting a sign or name on the walls. Nowadys the expression is also used for anotation systems in the internet

Twitter is a webservice for spreading shortmessages to people who had suscribed to your message service.

With the SMSlingshot we created a handheld device for tagging the urban screens with a personal message and reclaim the public space as yours. It mashes up behavioral patterns of mediated communication with ancient embodied interaction. Writing SMS or using microblogging via twitter is a common way of communicating today. But just sending texts to a billboard like any advertising company already has done before, this was to easy for us. Already when we set up the spread.gun in 2008, we focused on interaction of the whole audience.

We insist on embodiment, whole body interactions and try to avoid complicated menu structures and regulated interaction flows. In contrast to the spread.gun´s fixed position and translated shooting directions the SMSlingshot is truly independent of any wires, sensors and external power supply. By mashing up the way of writing SMS and shooting stones with a slingshot we approach a complete „new" way of spreading information in urban areas. The SMSlingshot is connected to a computer via an ultrahigh frequency radio and works as an embedded system. It only needs a projector or a digital signage hack to project the splats onto the façade.

The urban screen at „piazzo duomo" in Milan is an example of not thinking about the impact of these technologies. The content is mostly repetitve advertising.

RESEARCH

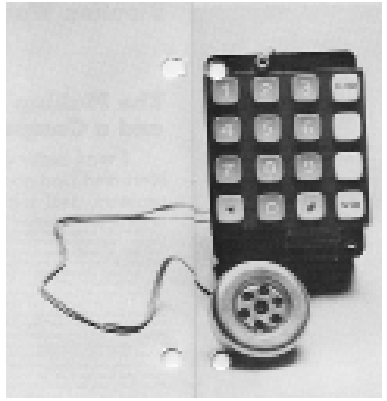
Young David defeated the huge warriour goliath only by using his slingshot. From safe distance he could aim at his head and stay out of his reach.

VR/URBAN believes in the power and possibility of research. We try to find lost and forgotten ways of behaviour, poetic and strong images that are understandable in a broad and also detailed cultural context.
For the SMSlingshot project we searched for something powerful and direct, some kind of graspable or low tec tool that enables people to rise up against authorities.
What we found was a variety of spraycans, scratch tools and DIY bombing kits. But the most impressive and poetic image to us is the slingshot. The biblical story about the victory of the young David against the huge Goliath is one of the oldest and most known stories about the use of a slingshot. The sling is a simple, cheap and low complex instrument, consisting of everyday materials that are accessibel to nearly everyone. It displays its power in its use, not in its size, which makes it a good metaphor to the contrast of media facade and uprising recipient.
From the perspective of an interaction designer we have been strolling through the geek and gadget websites to find inspiring and extraordinary tech-mash-ups using that contrast of high and low tec. Mostly the diversities of cell-phone devices were interesting to us: How do they look like? What are the interactions like? How strong is the performative character? Is it easy to unterstand and intuitively to use?

RESEARCH

Marks in society, on the left very autonomous and taking, on the right side in an art context,

Various Tech-mash-ups combining the mobile phone and the shooting gesture. For us the gun association doesn´t fit so much to what we want to express. The slingshot collages are more aquivalent to our ideas.



RESEARCH

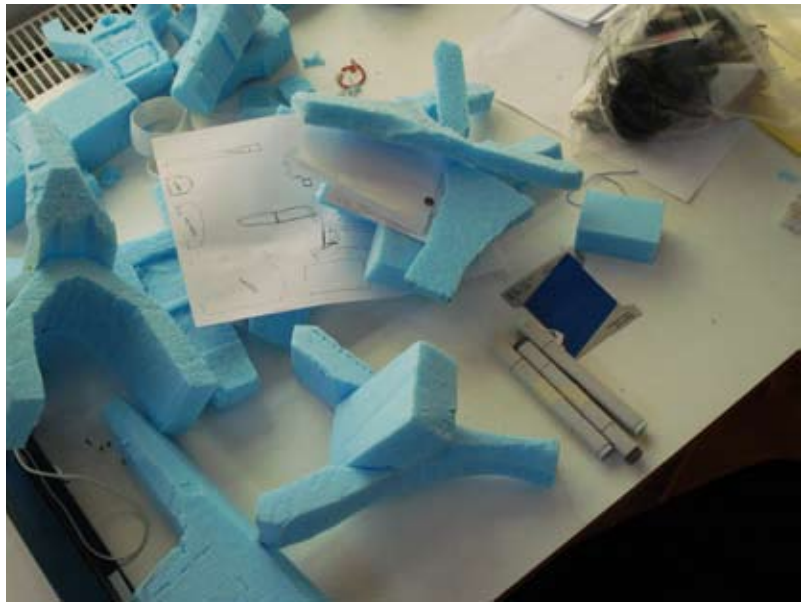
The slingshot as an expressive instrument in uprisings and riots

A selection of images displaying the use and appearances of slingshots in cultural and technical contextes.

PROCESS

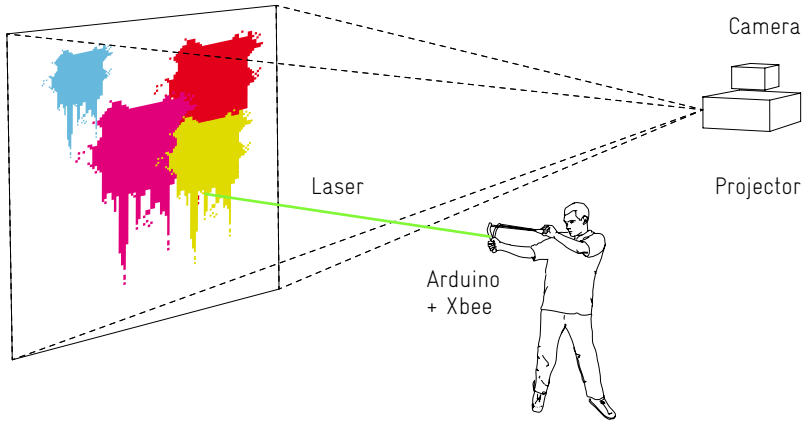
For the hardware and case design we made several mockups to find ergonomic shapes, sufficent space to fit in the electronic parts and architypical form of a slingshot.
Because of the high amount of technical equipment stuffed in the slingshot we had to try different model sizes and various arrangements of the parts. Next to the modelling process a lot of sketches had been made to foster certain elements in the mockups that were unable to modulate in a physical manner. The layout of the kaypad had to be downsized to a minimum of space, and the processors had to be hacked to become as small as possible.

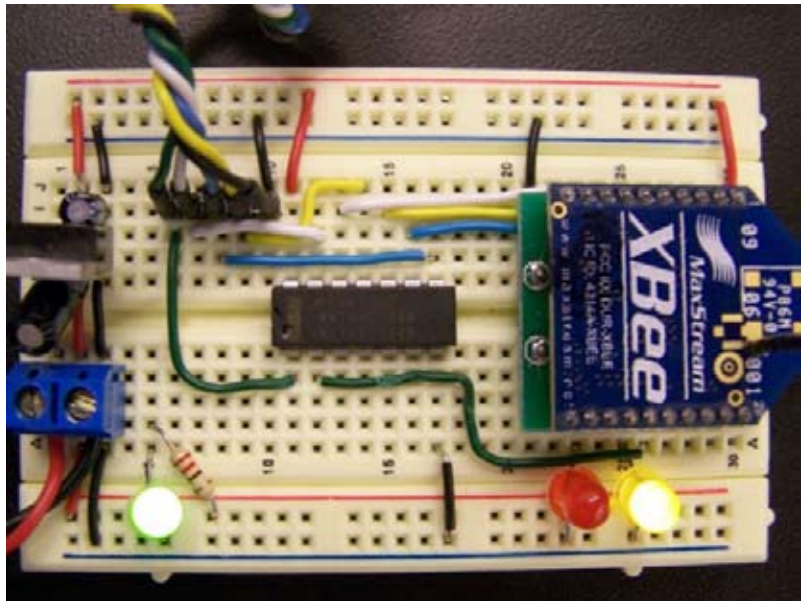
Models made out of foam to find proper shapes and handlings.



PROCESS coding and software

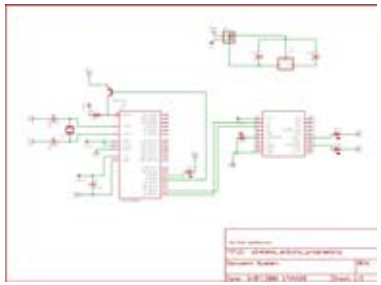
The SMSlingshot intervention system is not only in terms of interaction but also in terms of technology a novelty. The primary design goal, in contrast to the spread.gun we made in 2008, was to create a highly lightweight and mobile intervention device. Meaning, no wires for communication between the rendering PC and the SMSlingshot hardware can be used. Since we had already some experience in using the 8-bit ATmega168 Microcontroller we decided to stick to that one to power our SMSlingshot. To that we hooked up a XBee high frequency radio which transfers the typed in messages and chosen color to a custom built USB-Receiver Modem, which is connected to the PC where the VR/Urban JAVA application is rendering the visuals. Beneath the modem a custom 12-key matrix keyboard and a Siemens S65 LCD was integrated in the System. All three devices were connected to the ATmega and pushed it to its limit. Only one digital port was left free, which was used to attach a switch which is used to recognize the release of the slingshot rubber band. The former idea was, also to attach the laser to the microcontroller to be able to switch it on and off when the release switch is pushed or not, but none of the output ports was left. Since we really had to integrate the laser for the positioning of the colored splats a second simple circuit with an separate power supply was used. So now the laser has its own switch, which is integrates in one of the upper ends of the slingshot, where the rubber band is fixed.

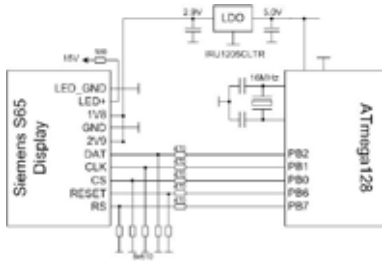


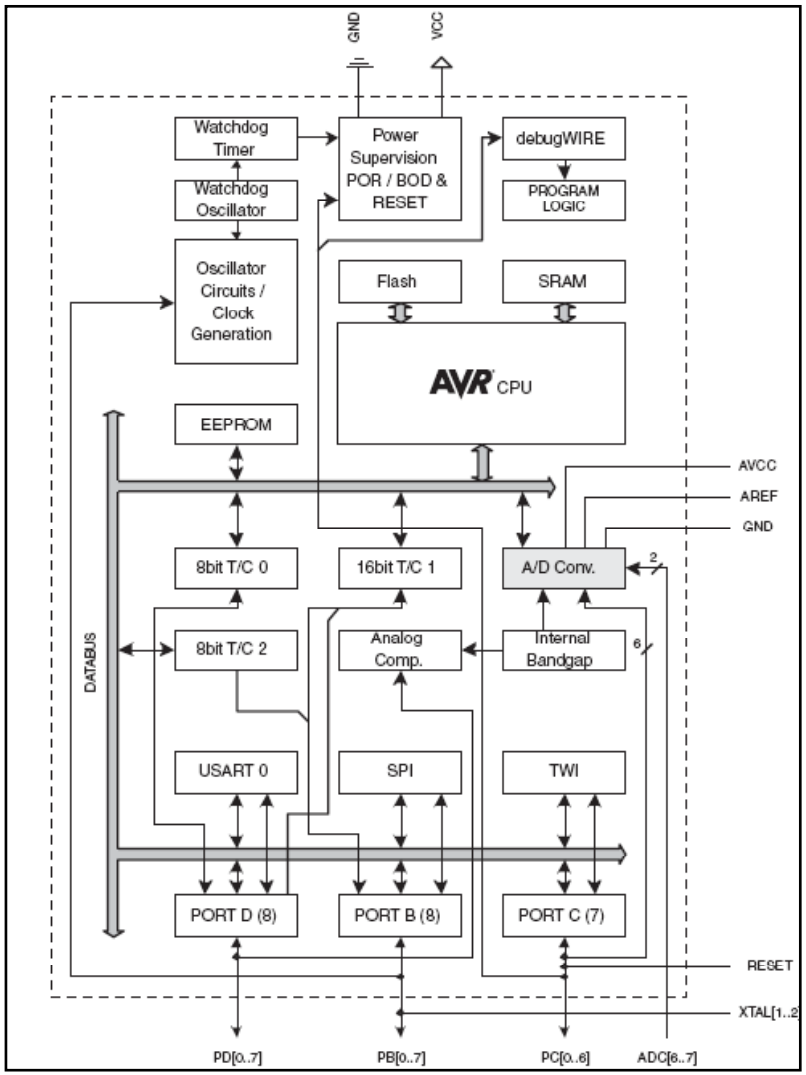


PROCESS coding and software

The position recognition itself is done by using GRL's Laser Tag System. The program uses a modified Playstation 2 camera to recognize the position of the laser beam. The integrated UDP interface allows our VR/Urban application to get the coordinates from the Laser Tag Application and use them for our positioning. Unlike the spread.gun intervention, this system is much easier to setup, since only one PC or Laptop is needed.
Future developments will aim at creating multiple SMSlingshots. Also a redesign of the slingshot casing is needed, because currently batteries can only be changed if one disassembles the SMSlingshot. It would also be nice to create a custom PCB to make the replication process even easier.





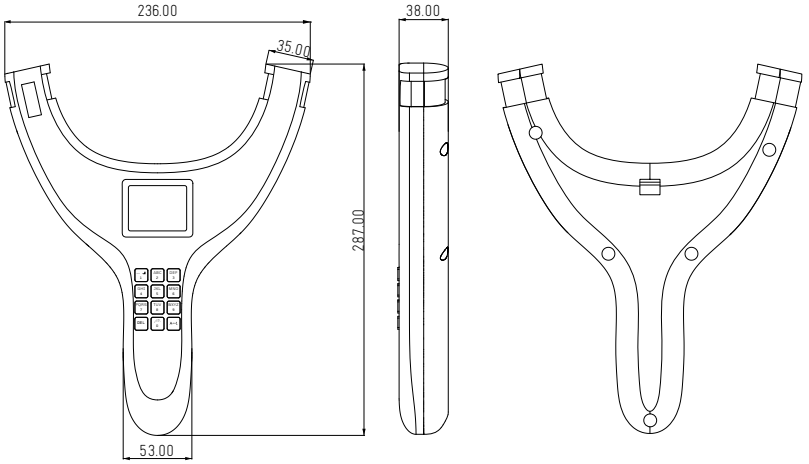


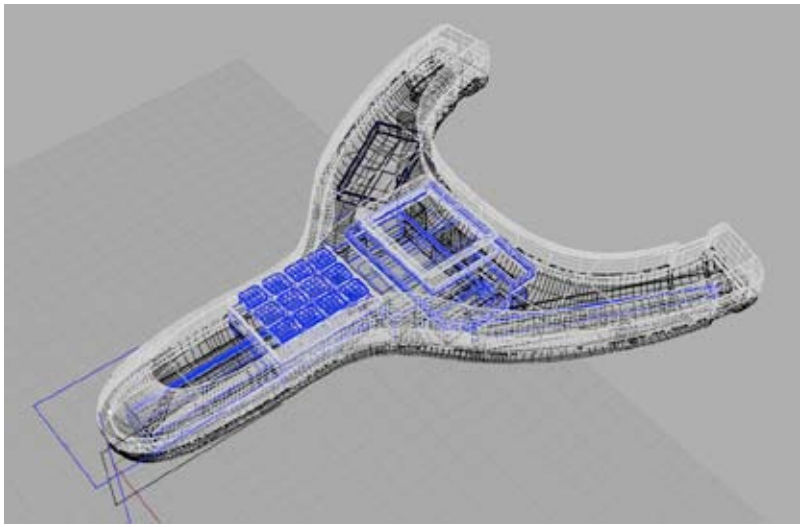
CONSTRUCTION

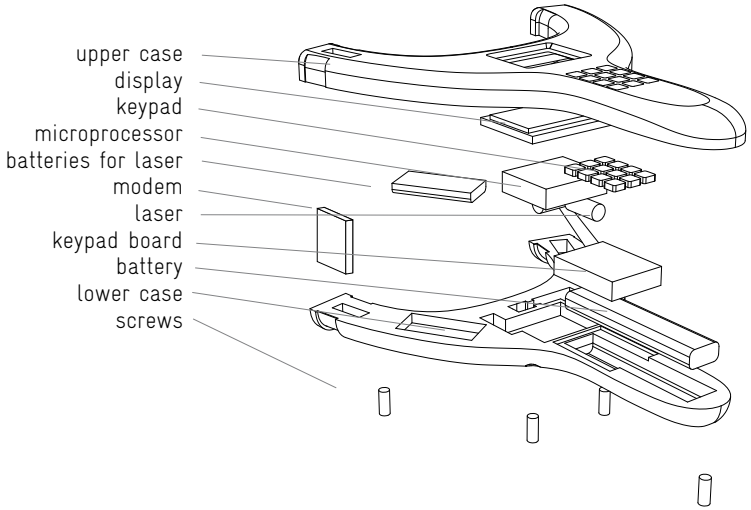
Rhino 4 is CAD software to create threedimensional surfaces and curves. It is used by professionals and amateurs as well.

Because of the multiple technological aspects of senders, sensors, micro processors, it is necessary to find a solution by which all parts fit easily in the two slingshot shells. For that we created several CAD mock ups to simulate the electronic parts and wires. With these virtual models it was now possible to find the best arrangements of the single parts and by this a new and more stable construction of the case itself.

For the construction we used Rhino4 with the Grasshopper PlugIn and Rhino for OSX in the Beta version.

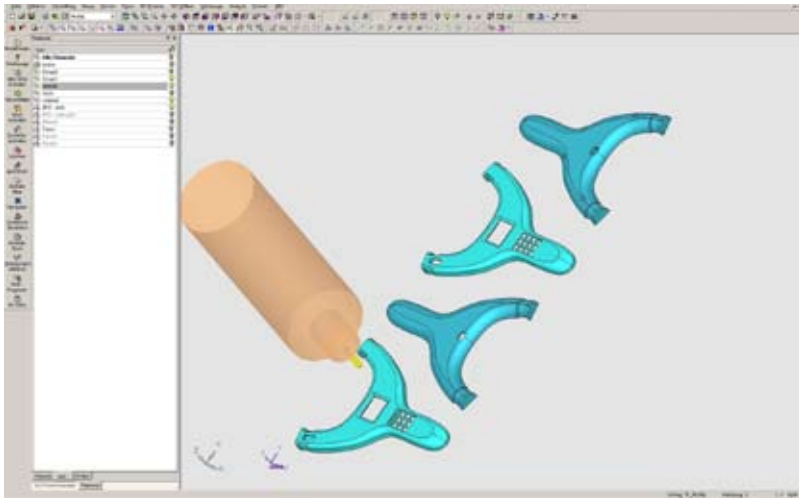






CONSTRUCTION

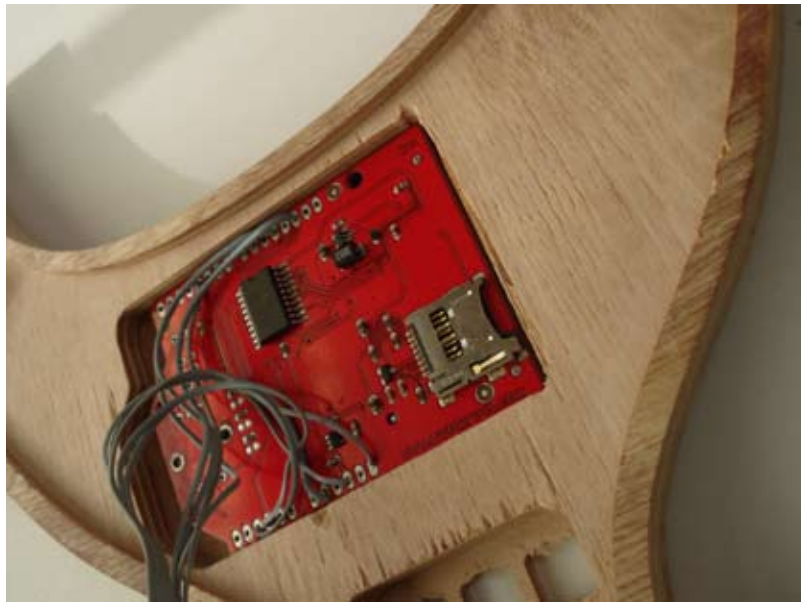
To get the geometries of the slingshot case from the computer screen in to the real world we used a milling machine to cut the shape out of a plywood block. For us it is important to use real materials and real shapes. Wood has so many tactile and haptic qualities and is the typical material to built slingshots. For prototyping purposes we made two models, one with very free opportunities two place the components and one with less free assembly options.
For creating the milling opereations we used Cimatron8 software.



Cimatron is a german producer of CAM Software. It is mainly used in engeneering processes and production cycles.

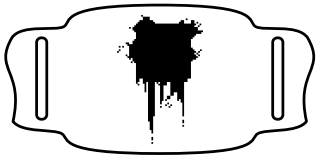
ASSEMBLY

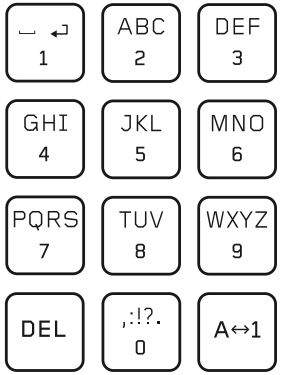
In order to the projects complexity, the assembly of the single components is a major task. Getting everything on it´s right position, fixing it elegantly without screws, glue and tape to keep it easily dismountable for cases of bugs, low batteries and software crashes.
Next to this the refinement of the milled case pieces had to be done. The milling machine only can reach a certain point of acuracy, that is still felt as rough. Sanding is also necessary to make the wooden pieces fit together and the electronic parts fit inside. The radius, due to the milling tools was too big to, so the corners had to be sharpened again.

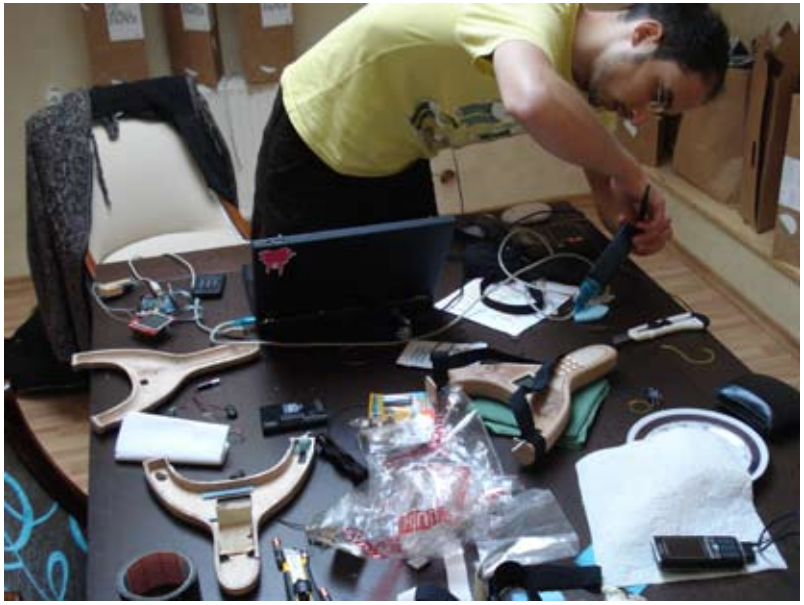


ASSEMBLY

To keep our open source approach steady, we decided to laser cut the additional elements such as keys and the leather grip on the ribbon. The leather is etched on both sides with logo and slogan and the keys have been made in several optional depths. It is a simple and reproductive way of manufacturing and easily to adjust if necessary.
Finally the analogue parts and the digital parts have to be put together. We use only three screws in the back piece to fit together the single shells that cointain the electronic elements.

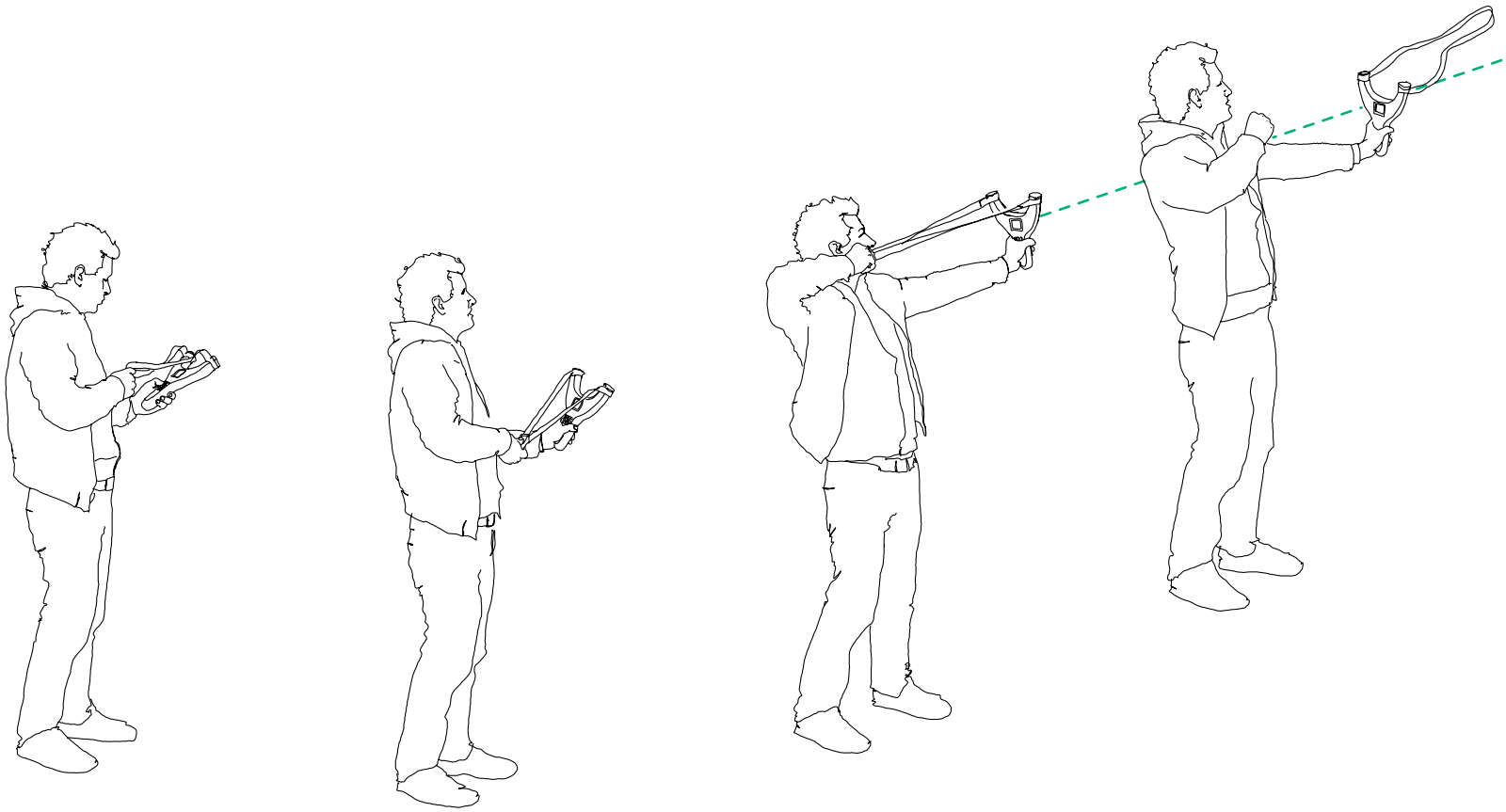






HOW IT WORKS

RECLAIM THE SCREENS



You type in your message on the keypad. The message can be seen on the built in screen while writing.
You have 140 signs and 16 colours for use.

Looking for a right place on the wall for your message.

Pull strongly on the flexible ribbon. A laser point appears on the wall, showing you the point you´r aiming at.

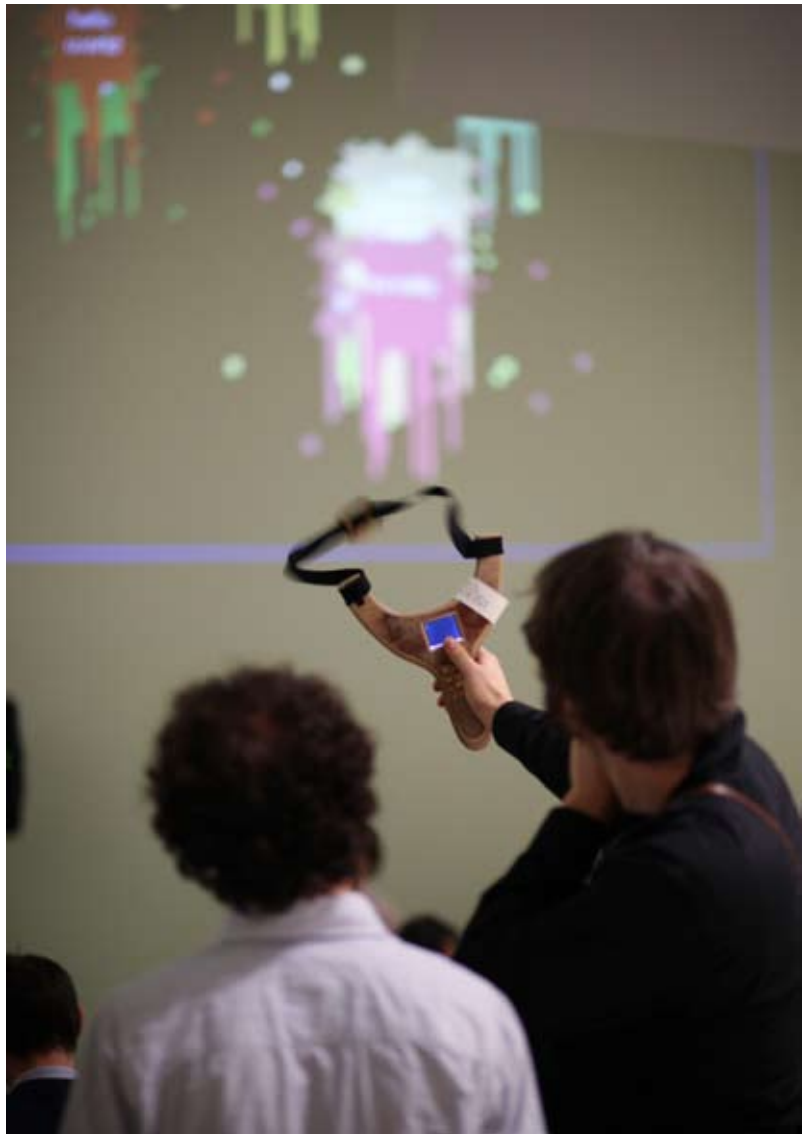
By letting loose the ribbon, the message will be shot on the facade. The message is deleted on the slingshot screen and ready for the next one.

LIVE IN RIGA

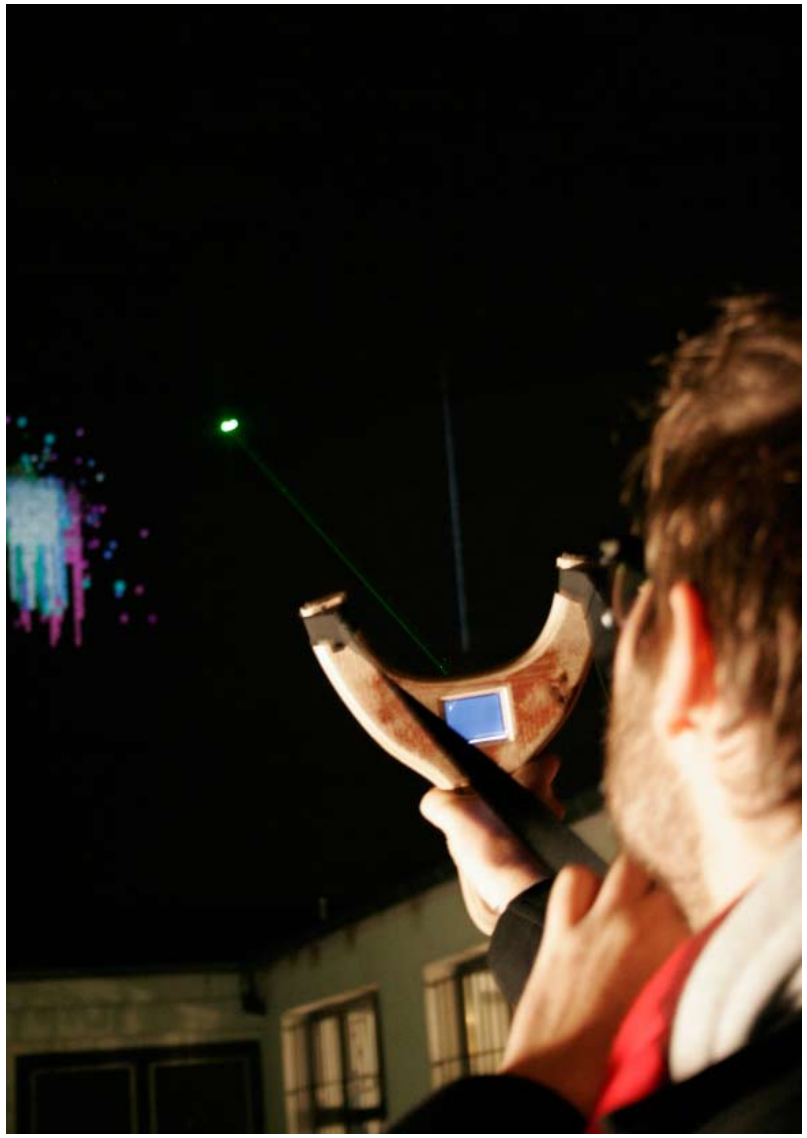
First Performance while the white nights festival in Riga Latvia.

LIVE IN BOSTON

We had been inivited to present and show the SMSlinghsot project at the conference for tangible and embedded interaction at the MIT MediaLab



LIVE IN BERLIN



Impressions of the Video shoot event at the open workspace night in berlin Kreuzberg

WWW.VRURBAN.ORG
2008-2010