Havis Amanda Interactive Installation
Project Documentation

Design Research Seminar, Spring 2008
Media Lab, Helsinki University of Art and Design

Havis Amanda, Mon Amour 100 Years exhibition at Jugendsali
30 April - 31 August 2008

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1. Background

To celebrate the 100th year anniversary of Havis Amanda, perhaps the most beloved statue in Helsinki, the Helsinki City Art Museum produced the exhibition “Havis Amanda, Mon Amour” during the spring of 2008. The exhibition covered the history of the statue and its maker, Ville Wahlgren, and the impact the statue had on the citizens of Helsinki during the 20th century and beyond. As a part of the exhibition, the curators asked the students of Media Lab at the University of Art and Design Helsinki to design and implement an interactive artwork.

During the concept phase, the students came up with many varied scenarios from which one idea was chosen for further development. This idea was to study the phenomena of “crowning” the statue and to transfer the ritual to a virtual setting. Every year during May Day, the students from one of the universities in Helsinki crown the statue with a student cap to celebrate the end of a study year. This event has grown from a 1920’s student prank into a big celebration witnessed by thousands of people gathered around the statue. Regardless of the intended inclusive nature of this event, only one person can place the hat on the statue. This artwork intended to extend this ritual to anyone interested in experiencing this part of the student celebration.

The concept and implementation of the work was done during spring 2008 in the Design Research Seminar taught by professor Lily Díaz with assistance from Kirsi Lehtimäki, Pipsa Asiala and Rasmus Vuori.

Figure 1. Entrance to the exhibition

Figure 2. Inside the exhibition space

2. Description and goals

The project brief was to design and implement an interactive art piece for the Havis Amanda exhibition. The museum staff were very open about new ideas and allocated the students with a limited and fixed space within the exhibition, a small budget for implementation, and free access to textual, picture and audiovisual material they had gathered for the exhibition. The deadline for the project was the opening night of the exhibition, the 29th of April (the day before May Day).

3. Project team

3.1. Student team:

Aleksi Hyvönen, Anna Keune, Suvi Kitunen, Sonja Krogius, Juha Kronqvist, Mikko Pykäri, Abhigyan Singh and Kristine Visanen.

3.2. Tutors:

Dr. Lily Diaz
Professor of design research and information design.
Responsibilities: Professor of Design for Systems of Representation, Doctoral students' tutoring, Systems of Representation research group leader.
Professional interests: Design research methods, information design.

Kirsti Lehtimäki
Responsibilities: Interaction, GUI and industrial designer. The Doctor of Art research focuses on digital interfaces, cultural heritage, craft, tangible interfaces and sustainable design.
Background: Studied MA in Interaction Design at Royal College of London. Background in product design and textile electronics, having worked for several years at UK based textile innovation company Eleksen Ltd.

Asiala Pipsa
Responsibilities: Study productions and tutoring in the field of interactive audiovisual narrative.
Background: MA in Art History, University of Jyväskylä 1989. Working at Taik since year 1990.

3.3. Museum team:

Amanuensis Kati Nenonen
Amanuensis Teija Mononen

4. Initial concept

4.1. Narration

Museum visitors watch and interact with a video about Vappu that is triggered by their actions by means of a tangible interface. The focus of the interaction is on the crowning and Carnival aspect of Vappu.

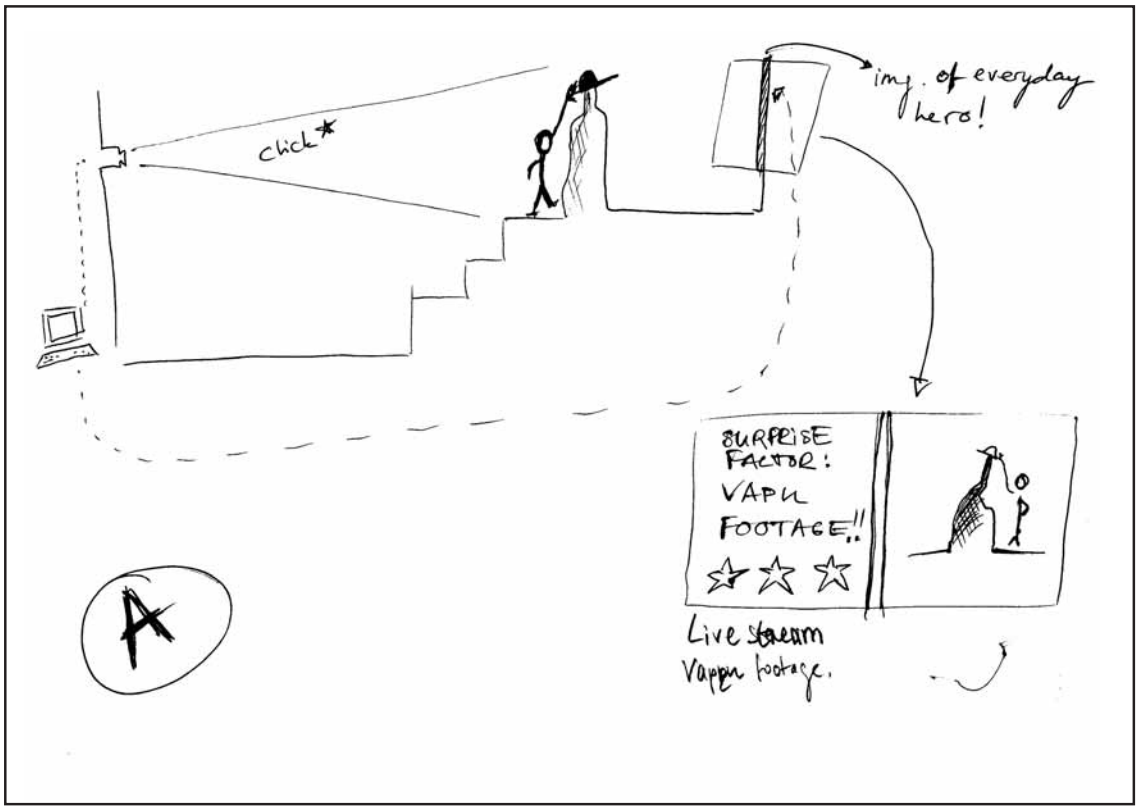

Figure 3. First draft illustrating the physical setup of user interaction

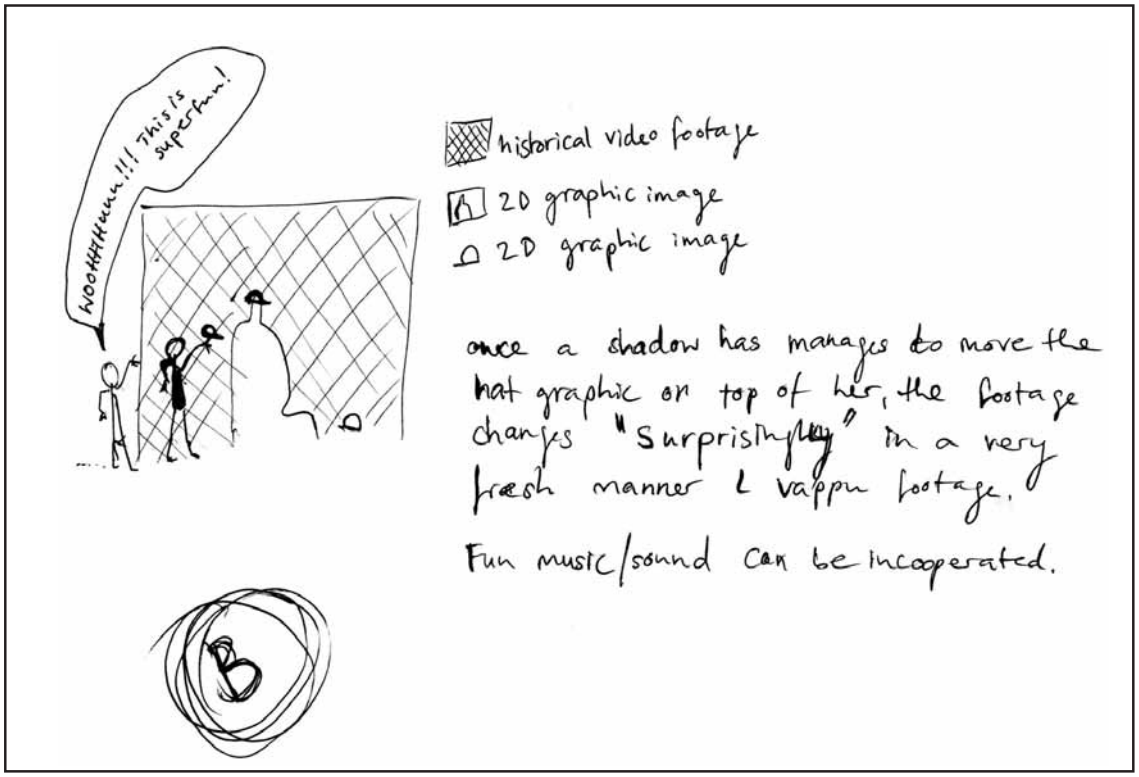

Figure 4. First draft illustrating how the system reacts to the user's actions

4.2. Trigger, postcard

The initial concept included a cap that was the object to trigger the interaction. We decided to use a printed postcard that had a picture of the cap in it. The idea was to give the installation an extra dimension by giving all the visitors a souvenir they could take home with them or mail to a friend.

4.3. Video

The inspiration for the video narrative grew out from the contradictory life of the statue: the still, lonely and quiet life of Havis Amanda during the winter contrasted with the festive spirit of Vappu. During the carnival it is people who make the statue and her surroundings alive, busy and loud.

Along with the development of user interaction, this contradiction led to the decision of having the videos presented in three stages: a long shot of Havis Amanda alone, medium shots and close ups of people celebrating, and close ups of people crowning the statue. The middle section was supposed to have three alternative, randomly selected sequences to engage and surprise users. To further emphasize and build up the climax towards the crowning, the style of editing was also to reflect this sprit: as the story progressed the sequences became faster.

4.4. Coding

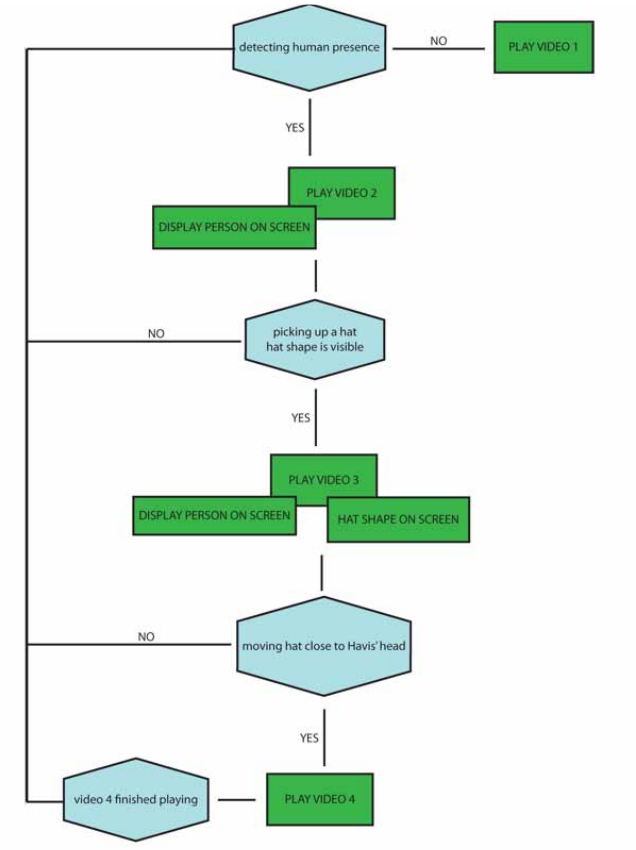

Figure 5. Flow chart describing the stages of interaction according the initial plan

4.5. Physical setup

The initial concept did not include detailed plans of the physical set up as these were to be fixed after user testing. In spite of this, we knew that we would use a projection screen and marks on the floor to guide the user.

5. Process

5.1. Narration

The following figures 6-12 illustrate the development phase of user interaction at the paper prototyping phase.

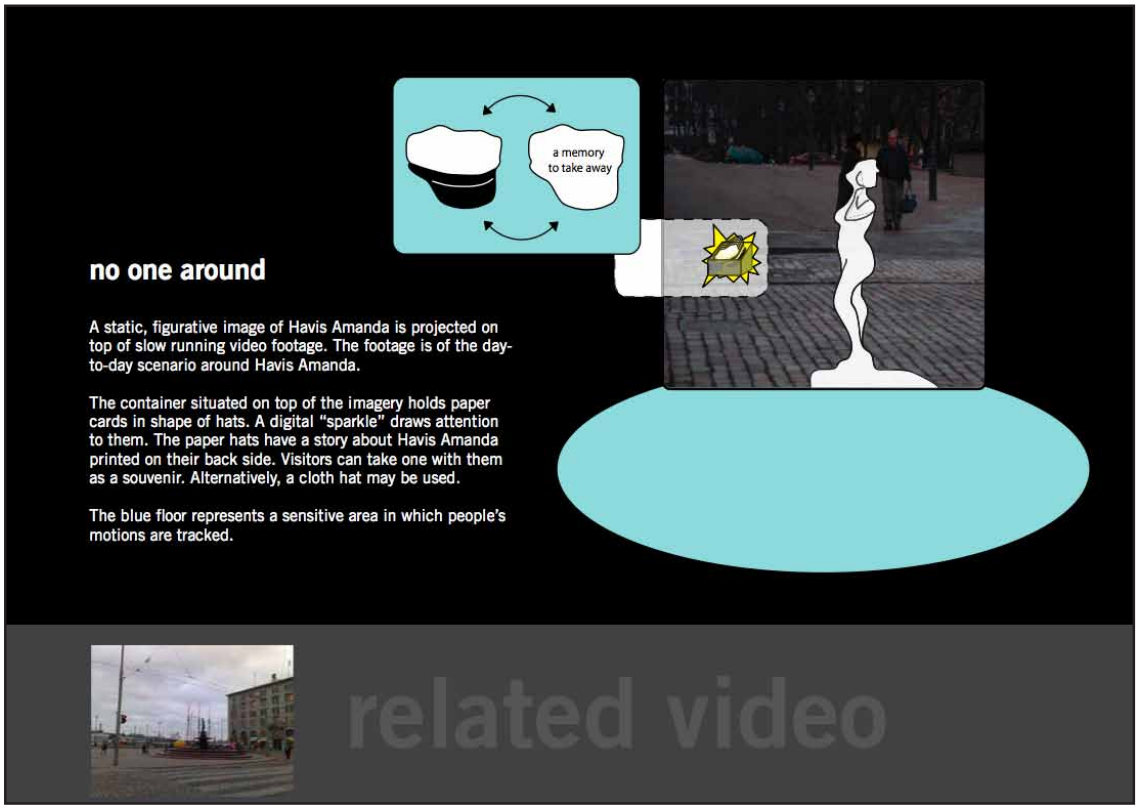

Figure 6. No one around

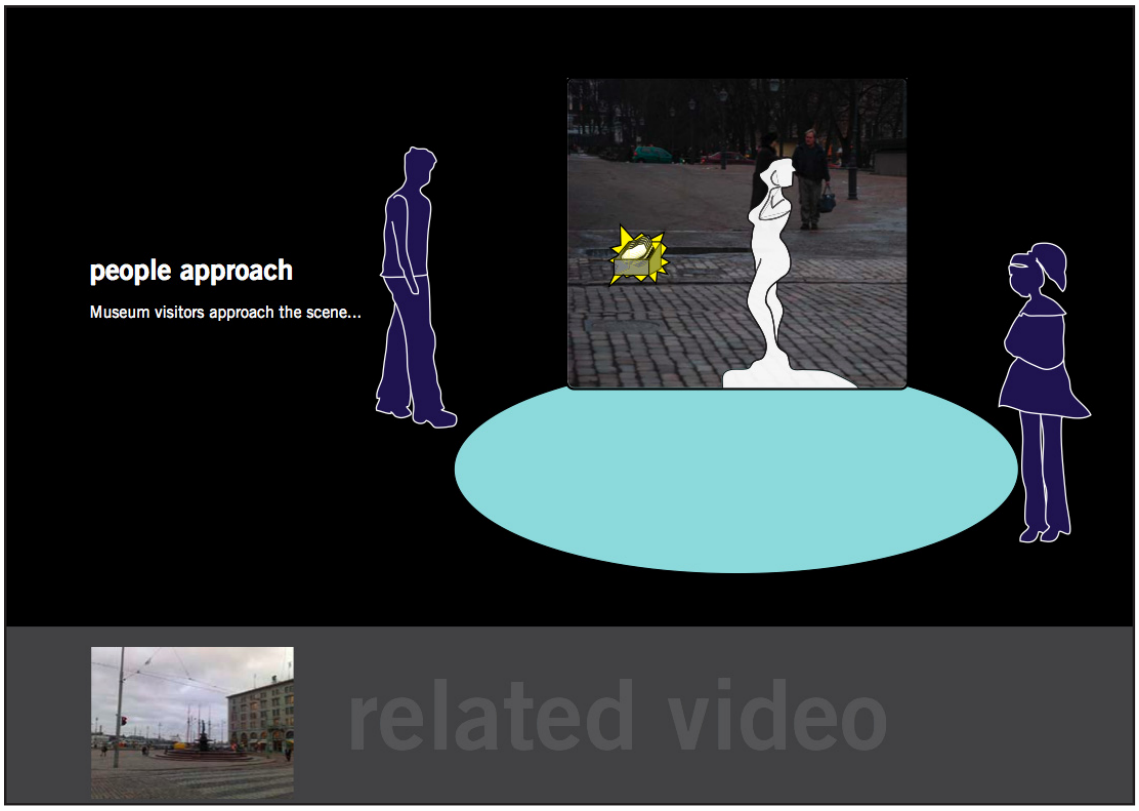

Figure 7. People approach

Figure 8. People enter sensitive area

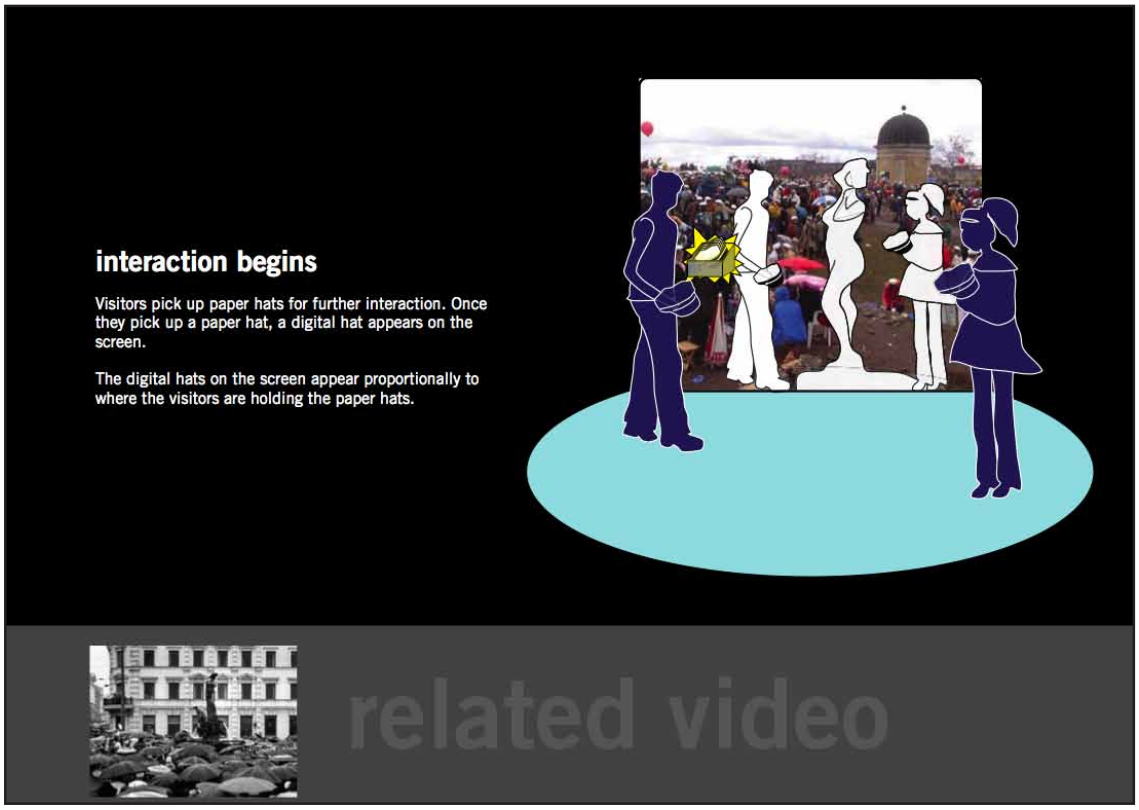

Figure 9. Interaction begins

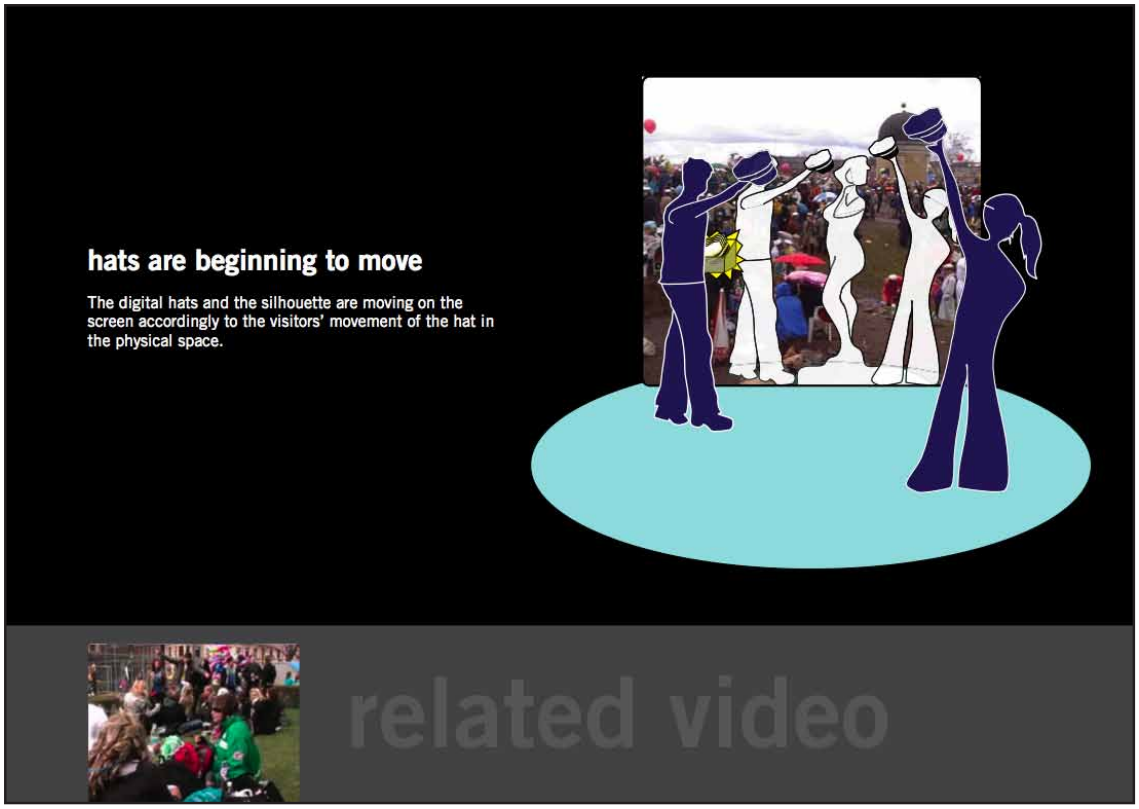

Figure 10. Hats are beginning to move

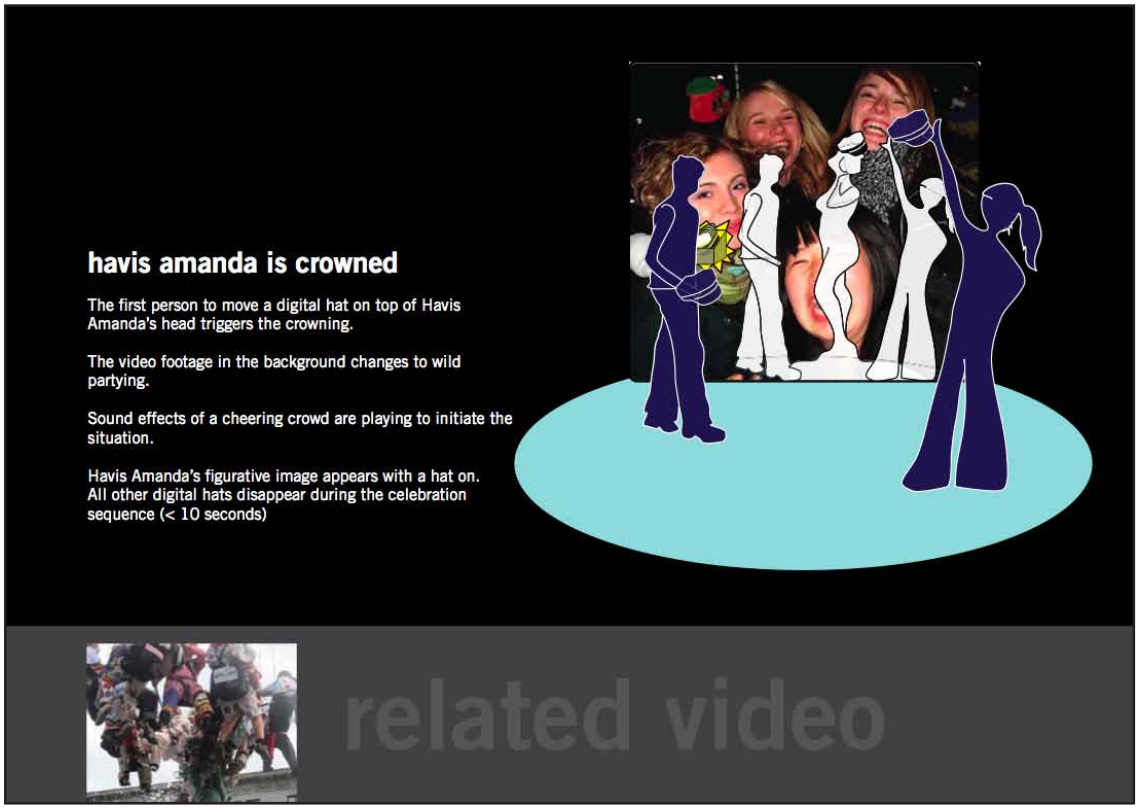

Figure 11. Havis Amanda is crowned

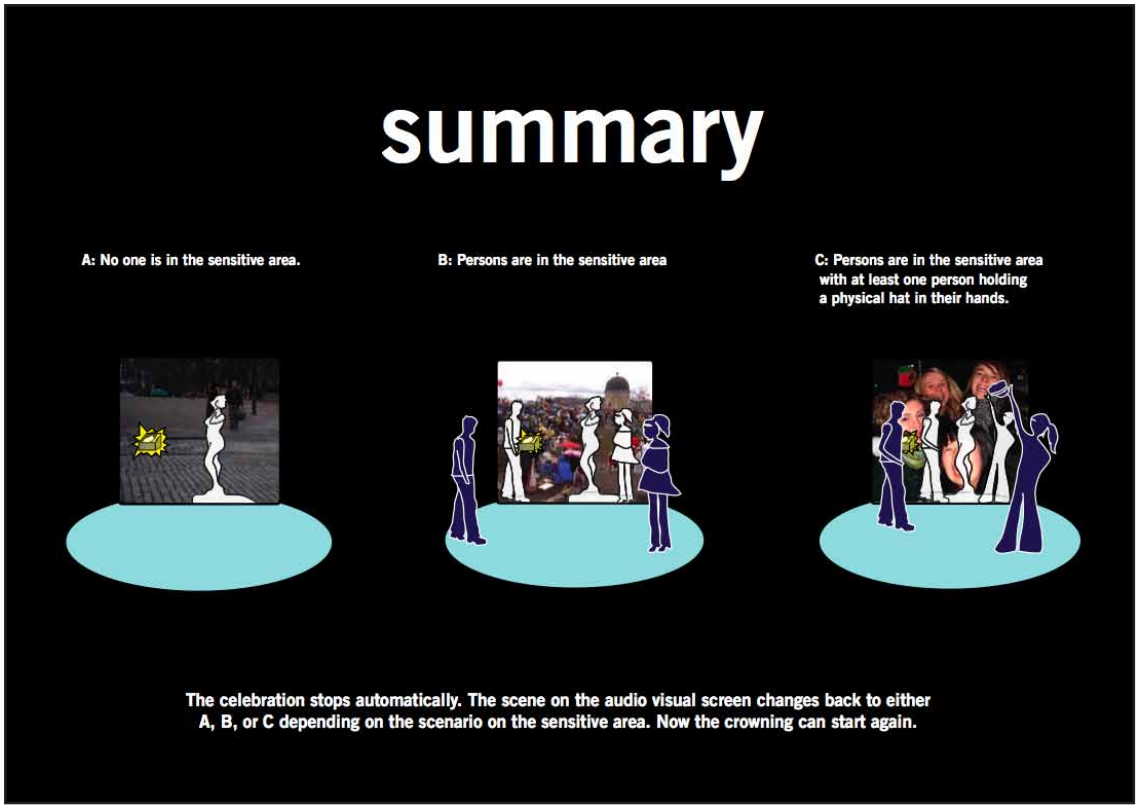

Figure 12. Summary of the interaction

Changes during production due to user tests and coding:

One User:
During the production process User tests were made and concluded in changes in the design. The space suggested that only one person at a time is willing to crown her. The content of the installation by being based on the cultural happening does not suggest competitive game like behavior.

Hat placement:
The way the installation was arranged in the pace suggested that the hats would be placed next to the installation instead of on the screen.

Area in front of the screen:
It was initially thought of being large, but because the human interaction process turned out to be a single user experience the visual clues of where to position one self shrunk drastically.

3 modes turn into 2:
Initially we designed the videos to change twice upon the reaction of the visitors. Once when a person is approaching, or entering the marked area in front of the screen and another time when the visitor virtually managed to crown Havis Amanda.
User tests concluded that it was best to only change the video when Havis was crowned, because the first initial switch in imagery confused most of the mid-aged users.

Animation of the hat:
It was initially planned to let a graphic of a virtual hat follow the motion of the person's hand in which she is holding the paper hat.
The action of crowing is very fast, and thus the hat's motion on the screen is not visible. This feature took more energy out of the computer than it was beneficial for the user experience. We decided to use an animation instead.

Audiovisual Communication of the crowning:
The design proposal changed in this point as well. During the first user tests we found out that the crowning had to be very well communicated, so that the visitors of the museum would feel satisfied with their action.

5.2. Trigger, postcard

The cap didn't go through big changes during the project. The trigger mechinism stayed unsolved for a long time and there were two options to consider: pattern or color. The coding team came up with using a pattern as the trigger and it was implemented on the back of the postcard. The size of the pattern was quite large which in turn affected the size of the postcard. In the end, the pattern worked well with the camera and the visitors were surprisingly happy about the postcard.

5.3. Video

The footage for the film was collected from different sources: our films of Havis Amanda, collected Vappu footage, and still images from audio visual archives as well as from the Helsinki City Art museum.

As we examined this material, we found the same tradition and motifs, such as smiling faces, balloons and whistles, staying the same through the decades. Therefore, we decided build the middle sequences around these themes. However, as the random sequences were not technically feasible we edited the different themes together to form only one sequence.

After some tests at the installation space, we realized that the system was not intuitive enough to use: people were confused as there was too much happening on the screen. Therefore, the video sequence needed to be simplified in several ways. Firstly, we improved the second clip by focusing on showing only the hat with few lines of text to guide the user. Secondly, we animated the cap and lengthened the sequence so that the user has time to realize the cap appearing on the screen. Thirdly, we took out the whole beginning section that was confusing users when it kept switching back and forwards between the first two sequences as people passed by.

5.4. Physical setup

The decision to use back projection affected the physical set dramatically. The whole screen had to be moved three meters forward. Therefore, we had more space behind the screen for the equipment (computer, loudspeakers, web camera and projector). In addition, we needed to come up with a solution to hide this equipment from the audience. Therefore, we decided to place curtains on both sides of the screen.

Screen:
As the price of a proper back projection screen would have been over our budget, we had to find an alternative fabric that would diffusely transmit the light through it and minimize the glare from the projector. Moreover, the fact that we had to cut a hole (radius about 1 cm) for the web camera made finding a suitable and affordable fabric challenging.

We were able to get good back projection with old shower curtains but were not able to find non-patterned once for our installation. We also tried taffeta which in the beginning looked like a perfect solution, but once taken to the installation space, left a huge glare. Therefore, we contacted several professional video projection companies in Helsinki and a theater academy

for advice. We were told that disposable linens and polyester film used for architectural drawings would be suitable for our purpose. To find these fabrics we called a company called Kallemedia who advised us to use fabric used for printing large advertisements that came in a 160 cm wide roll. By sewing two pieces of it together, we had a big enough and perfectly working screen that could be attached to a wooden frame holding the screen.

Floor:
At first, we had a round, black rug (radius around 75 cm) to mark the active area, that is, where the movement of a user would trigger movie number two. This rug was placed partly below the screen so that only 2/3 of it was visible to the users. After testing this with random users, we discovered that the users approached too close to the screen which in turn made it hard for the camera to track the pattern on the postcard. Thus, we replaced the rug with grey and red stickers that instruct the user to stand on the right position in relation to the camera. These stickers also guide the user not to get too close to the screen or the camera.

Curtains:
In choosing the curtain material, we had to take into consideration the following: material with fire retardant and diffusive qualities, color and material that would be suitable for the Jugend style of the exhibition space, and fabric that we were able to sew with a normal sewing machine. The curtains were hung on ceiling rails that were easy to install with a few screws.

6. Design outcome

6.1. Narration

See section 6.3. for detailed description.

6.2. Trigger, postcard

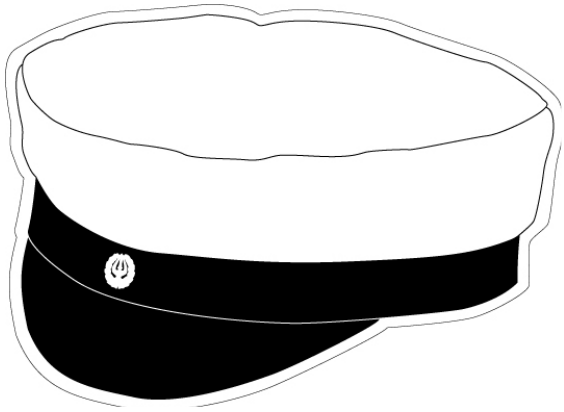

Figure 13. Front of postcard

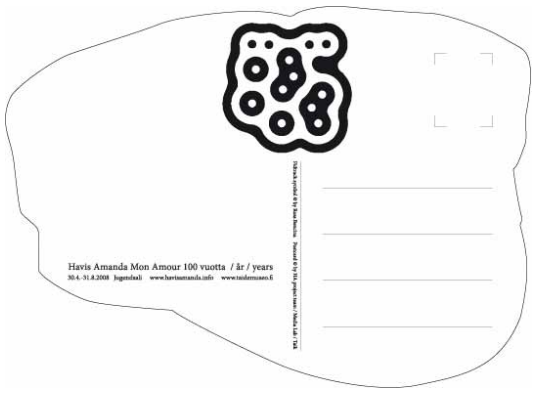

Figure 14. Back of postcard with tracking pattern

6.3. Video

The final video consists two phases: an information screen and a crowning sequence. Once the user's cap is detected, it appears on the screen and animates on the top of the statue. This sequence then cuts to the crowning sequence showing still images and footage from 1930's up to today. Once this sequence is finished, the video returns to the initial information screen guiding the next user.

Figure 15. Two stages: information screen and crowning sequence

Figure 16. Storyboard of the crowning sequence

6.4. Coding

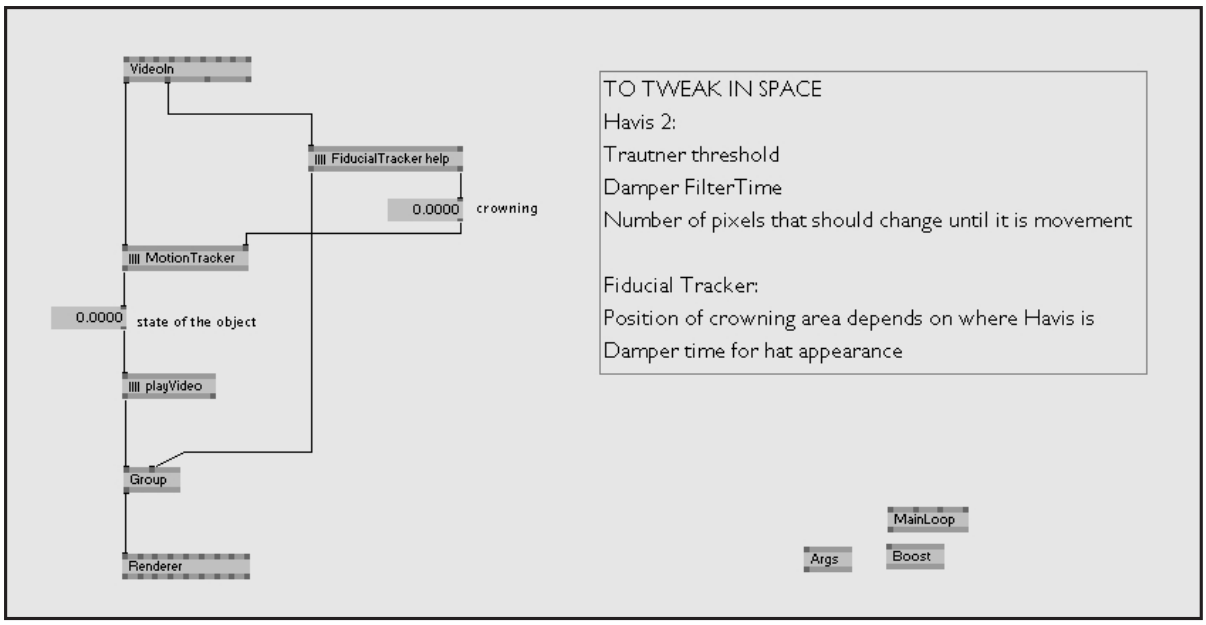

Figure 17. Frame structure

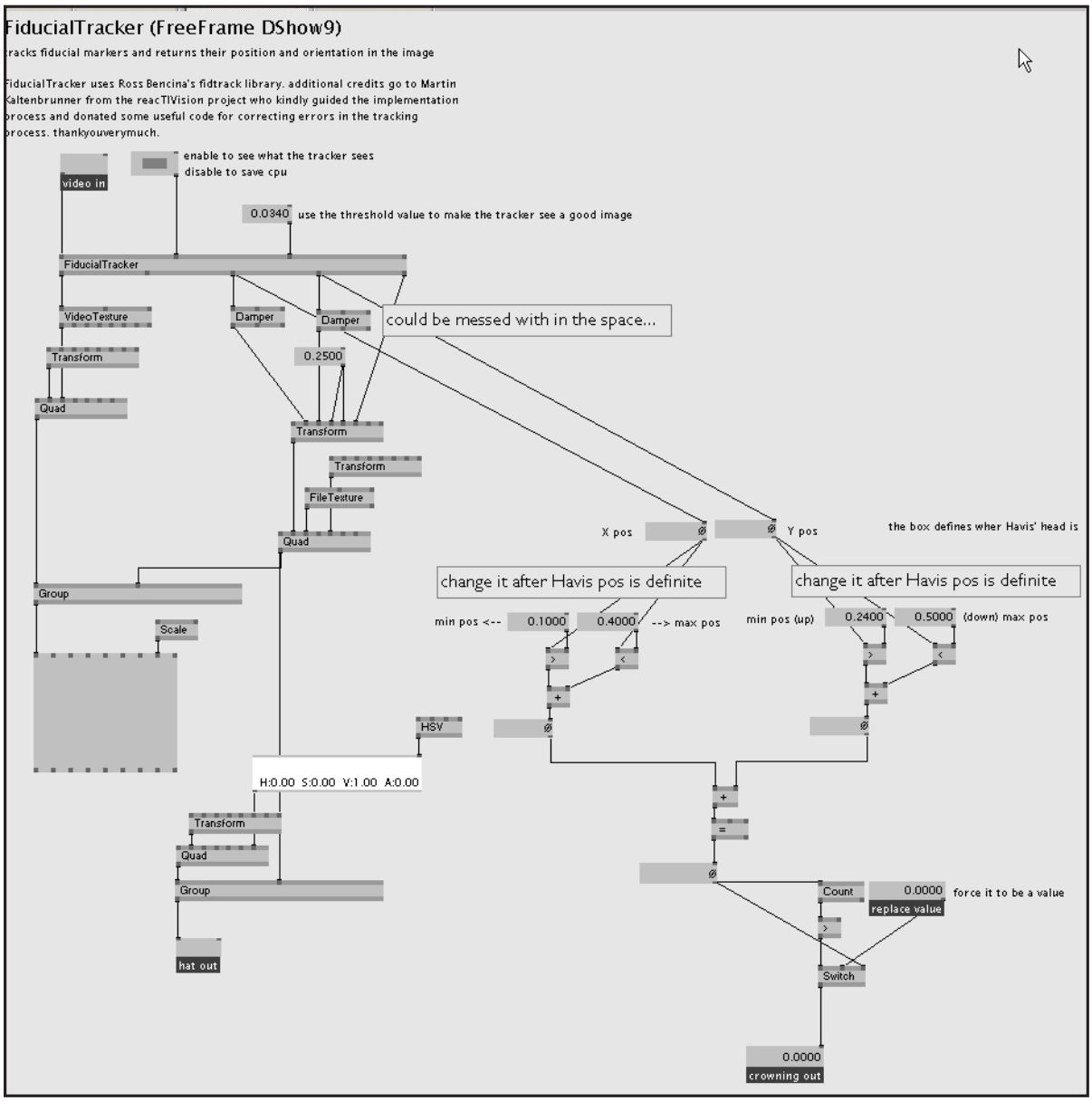

Figure 18. Code for fiducial (pattern) tracking

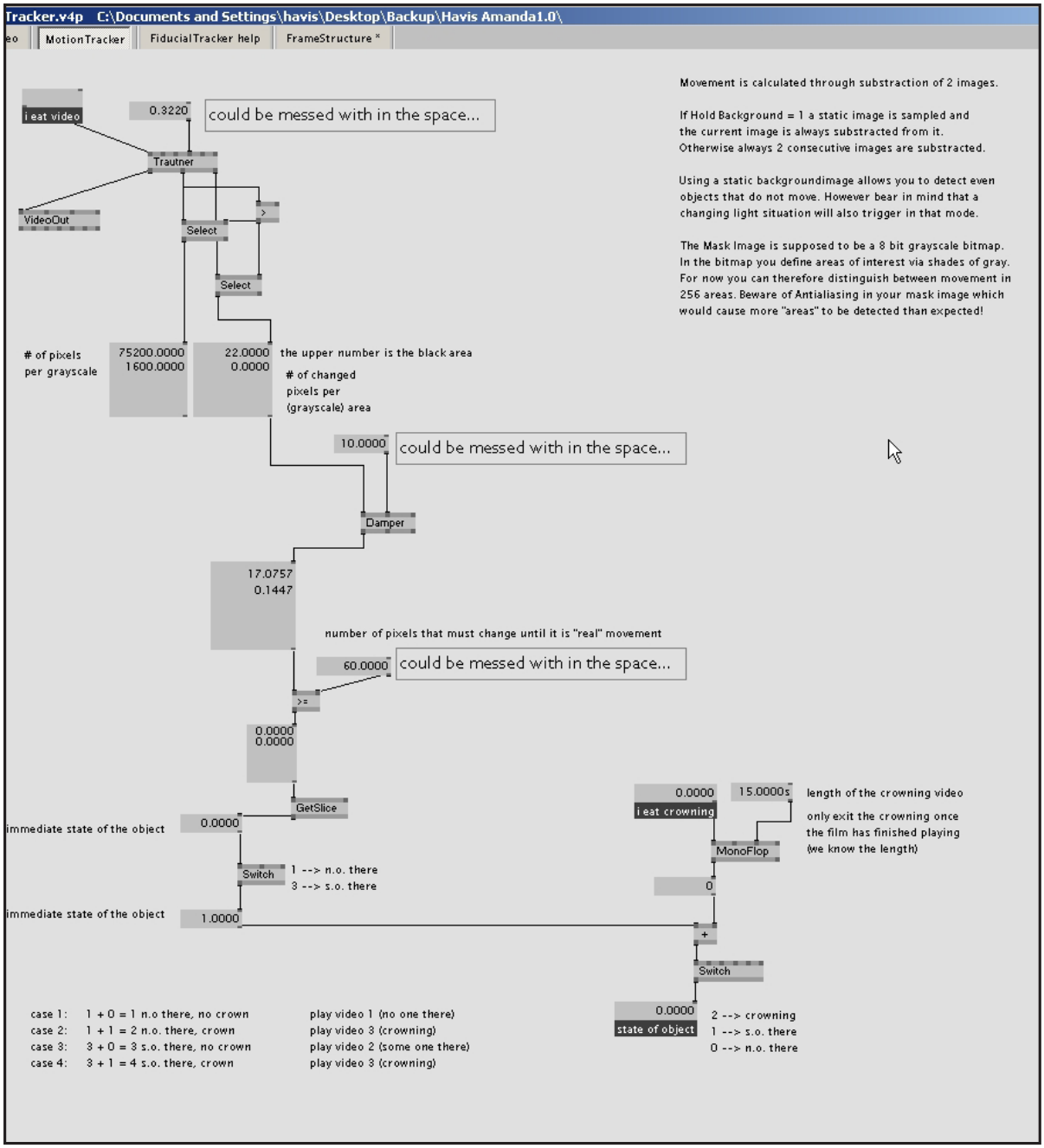

Figure 19. Code for motion tracking

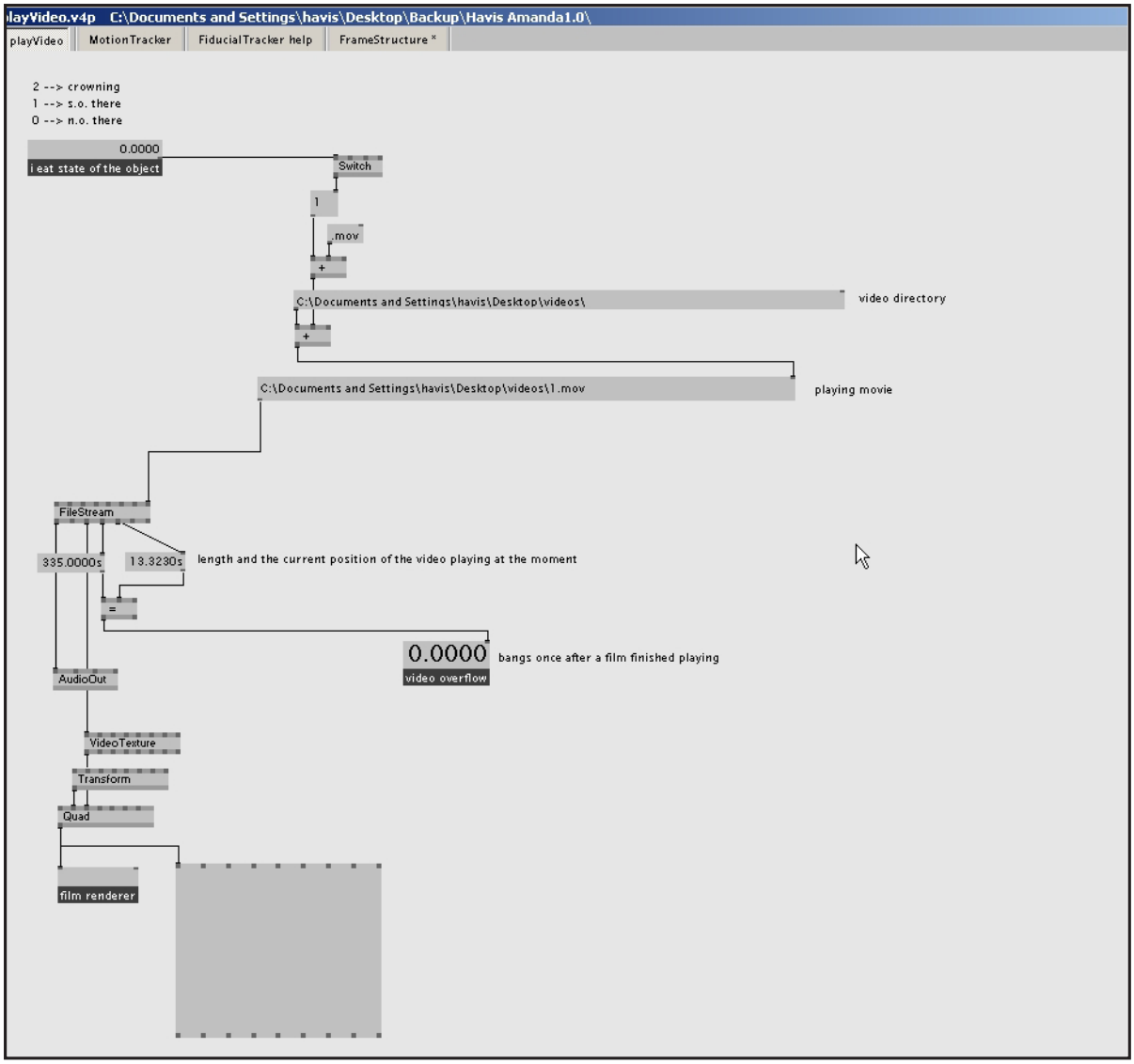

Figure 20. Code for playing the video

6.5. Physical setup

The projection screen, 1.2 meters wide and 1.6m meters height, consisted of blank surface

Figure 21. Floor marking

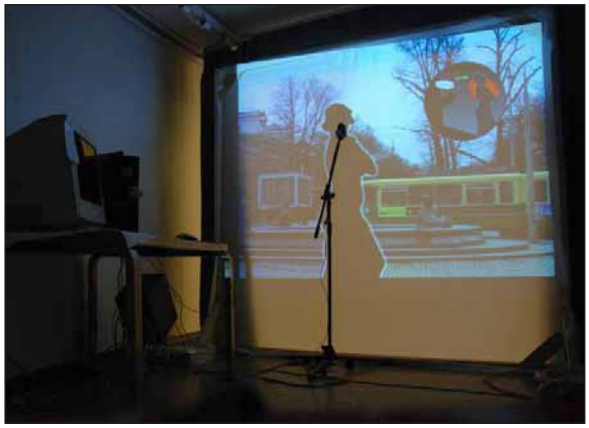

Figure 22. Microphone, computer, loudspeakers and projector behind the screen

Figure 23. Exhibition space

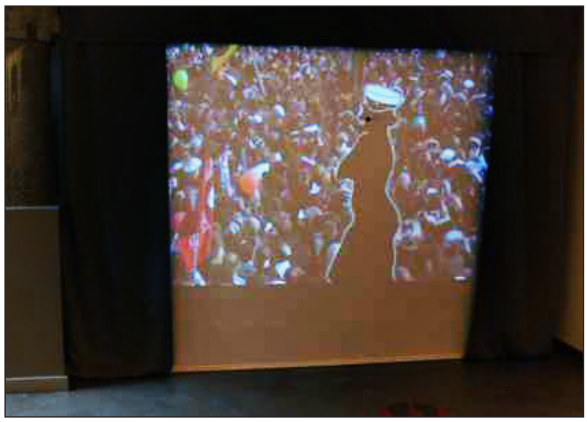

Figure 24 Screen and curtains

and a support structure for displaying the projected image for the audience. The screen is surrounded by non-flammable, diffuse, grey fabric that hides the technical equipment behind the screen, that is, a computer, web camera, loudspeakers and projector. The web camera that detects the movement of a visitor is attached to a microphone and stand which are hidden behind the screen. The floor is marked with red and grey stickers that guide the user to stand at the right distance from the screen.

7. Learning outcomes

7.1. Make the interface as simple as possible.

User tests we performed showed clearly that users could not concentrate on two simultaneous narrations at the same time. Showing a video in the background while capping a virtual statue was simply too much.

7.2. User needs a clear feedback of her action.

Users were confused when they were not sure if the capping was done successfully or not.

7.3. Testing - iteration - testing - iteration is required to make an interaction smooth.

Our design outcome would have improved greatly if we could have been able to test the actual physical set up much earlier. Additionally, great ideas can arise when you see how the installation actually works, so to have one or two extra days at the end of the set building time would have made all the difference in the user experience.