

# Diffract me

proposal for artistic development project by Christoffel Kuenen - 19750419-1292

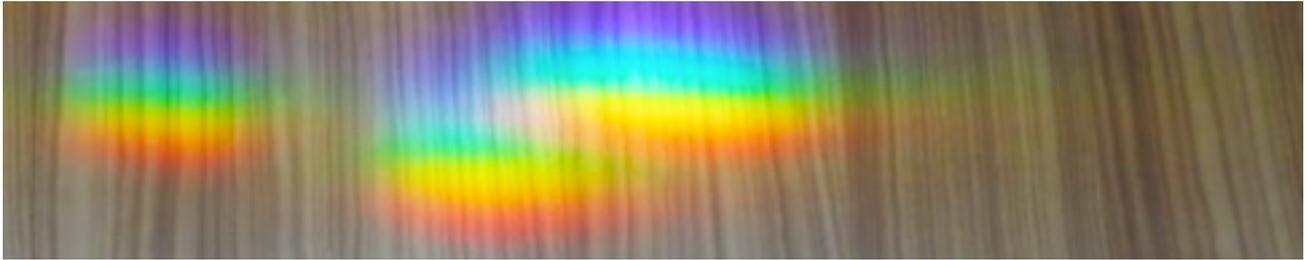


Image 1: example of diffracted sunlight through 3 prisms on a wooden surface.

## Introduction

Interaction design is moving beyond users operating a machine. The aesthetic experiences that interactions of people with systems and each other elicit are becoming the focus of attention. The interactive installation I propose to develop is the platform through which we can explore the meaning of such aesthetic experiences and develop approaches to the design and development thereof.

## Theme

'Diffract Me' is an interactive light installation building on subtle, yet profound engaging qualities of dynamic light. In summer, the eternal nordic summer-sun shines through a facade of transparent prisms, projecting a pattern or rainbow-light into the environment. In winter the effect is transposed to an array of powerful multicolored lights shining through the prisms. The prisms are arranged in a matrix that allows them to gently rock. People can subtly agitate the surface of prisms by manipulating a dynamic surface, in concert with other people interacting with the installation. Their interactions result in a resonant, rippling effect through the facade that echoes through the surrounding environment.

The installation brings the interaction of people with each other together with their interaction with an installation, resulting in them together shaping the space around them.

An impression of the installation and related explorations can be found in video form here:

<https://vimeo.com/65642738>

Attached to this application is a general description of the physical part of the installation.

## Expected outcomes

Two networked interactive installation sections realized on the premises of UID and Umeå Arts Campus. One installation section consists of a matrix of prisms (5x9) of approx. 2m high, 1m wide and 20 cm deep, and an interaction column (approx. 1,5m high and a footprint of 1x1m). (see attached document)

The nature of the installation sections is such that they can be easily extended with installation-sections in other locations. Applicant has been in contact with TU/e in the Netherlands, and is seeking contact with Museum of Modern art in Stockholm and with TATE modern in London. All these locations could be connected through this installation.

Further outcomes are visibility in media, e.g. publication of the interactive art-piece on the UID website and in local and university press e.g. as an expression of collaboration on the UAC. Furthermore this project is well suited to be pitched to national and international media, both as interactive art as well as innovation in interaction design.

## Benefits for department

- development of approach to aesthetic and quality of interaction design (applicable in education)

For the development of the system, an approach is used and developed that is explicitly rooted in the skills and personality of the designer to bring rich, meaningful interaction and aesthetics to

expression. Such an artistic development approach will complement the other diverse approaches taught at UID.

- *interactive artwork in public space of UID, connected with other places*

The exploration results in a hands-on, experienceable installation, which both inspires and conveys the knowledge and experience gained with this project.

- *visibility of IxD research at UID Design Talks 2013*

The installation introduces visitors of the 2013 UID Design Talks to the type of exploration and development in Interaction Design that we at UID develop.

- *UAC collaboration initiator*

This project currently is a collaboration between the applicant and people from Swedish ICT Interactive (formerly known as Interactive Institute). We are contacting the Bildmuseet and other partner institutions at the UAC to collaborate on this, ranging from providing space to help in development of software and construction.

Therefore further benefit for UID is to be the initiator in this collaborative, high-visibility project.

### **Benefits for applicant**

- exploration and development of aesthetic and artistic qualities and skills for interaction design research;
- development of approach to designing quality in interaction of groups of people;
- development of sensitivity for expansion of interaction design to spatial design;
- building experience with construction and production of medium-large scale installations;
- building experience with (social) networking and media-involvement in the overlapping world of arts and design;
- building experience in operating in the hybrid context of UAC, understanding players and roles, bringing parties together in collaboration project.

### **Relation to applicant's research project**

The applicants research interest lies with mediation of *large* group interactions. This artistic installation allows for exploration of the aesthetics of interactions between a *small* group of people and their environment. As such the interactive art installation has close affinity with the research, but clearly has more value as an artistic exploration of ways to approach interactive meeting spaces, then that it has immediate academic results (theoretical publication) as an objective.

## Planning and Budget

This application has the objective to result in 2 interactive installation sections to be operational at the UID Design Talks 2013 on May 30 /31st.

The Installation will be extended after that moment to result in a larger scale, distributed installation spanning at least two locations in Umeå over the course of summer 2013. Further concrete plans are made for an installment in Stockholm, in Eindhoven, the Netherlands and in Sienna, Italy, before the end of the year. Intentions are to keep and extend this installation operational for Umeå Cultural Capital 2014.

The budget described below covers the first two installation sections that can be placed at UID and UAC.

<i>Structural materials</i>			
birch plywood 21mm, 11 sheets	SEK		12,000
acrylic lasercut sheets (3-5mm), approx 12 kg	SEK		1,320
stainless steel rod ø8mm, 36 meters	SEK		6,600
stainless steel tube ø10mm, t=1mm, 24 meters	SEK		600
100 PMMA prisms (payed by partner SEK 20.000,-)			
various hardware, screws and fixings	SEK		4,000
5 hrs CNC milling (needs further discussion with UID workshop management)			
		<i>Sub-total structural materials</i>	<i>SEK 24,520</i>

<i>Electronic and Control materials</i>			
2 pico-projectors (covered by partner funding SEK 3.000,-)			
2 miniPC-s (covered by partner funding SEK 6.000,-)			
2 firefly mini-camera (covered by partner funding SEK 600,-)			
various cables and fixings (covered by partner funding SEK 1.000,-)			
20 hours software development (covered by partner funding)			
4 Arduino's	SEK		1,320
4 H-bridge Shields and various electronics	SEK		4,000
8 reworked HDD voice coil motors (from salvaged HDD's)			
4 12Vdc/5Vdc, 60-100W power supplies	SEK		2,400
		<i>Sub-total electronic and Control materials</i>	<i>SEK 7,720</i>
		<b>Total applied budget</b>	<b>SEK 32,240</b>

As is visible in these tables, some funding and investment has already been granted for the initial stages of the project by one of the developing partners (Swedish ICT Interactive). Furthermore, part of the budget listed here will be covered by them as well (as indicated).

The electronics materials in this budget will be made available to the IxD workshop and thus to students after use in the installation. The installation as a whole can be used as teaching material in Experience Prototyping courses.