

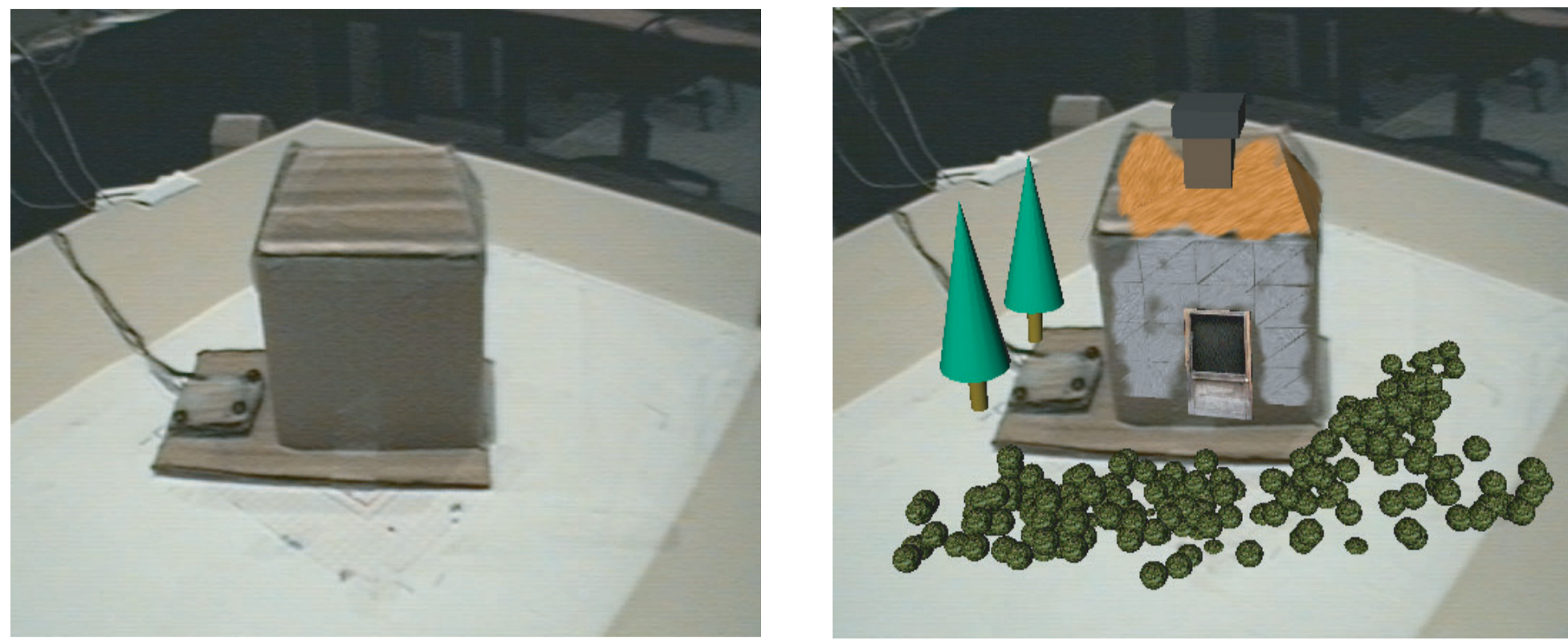


Interactive Mediated Reality



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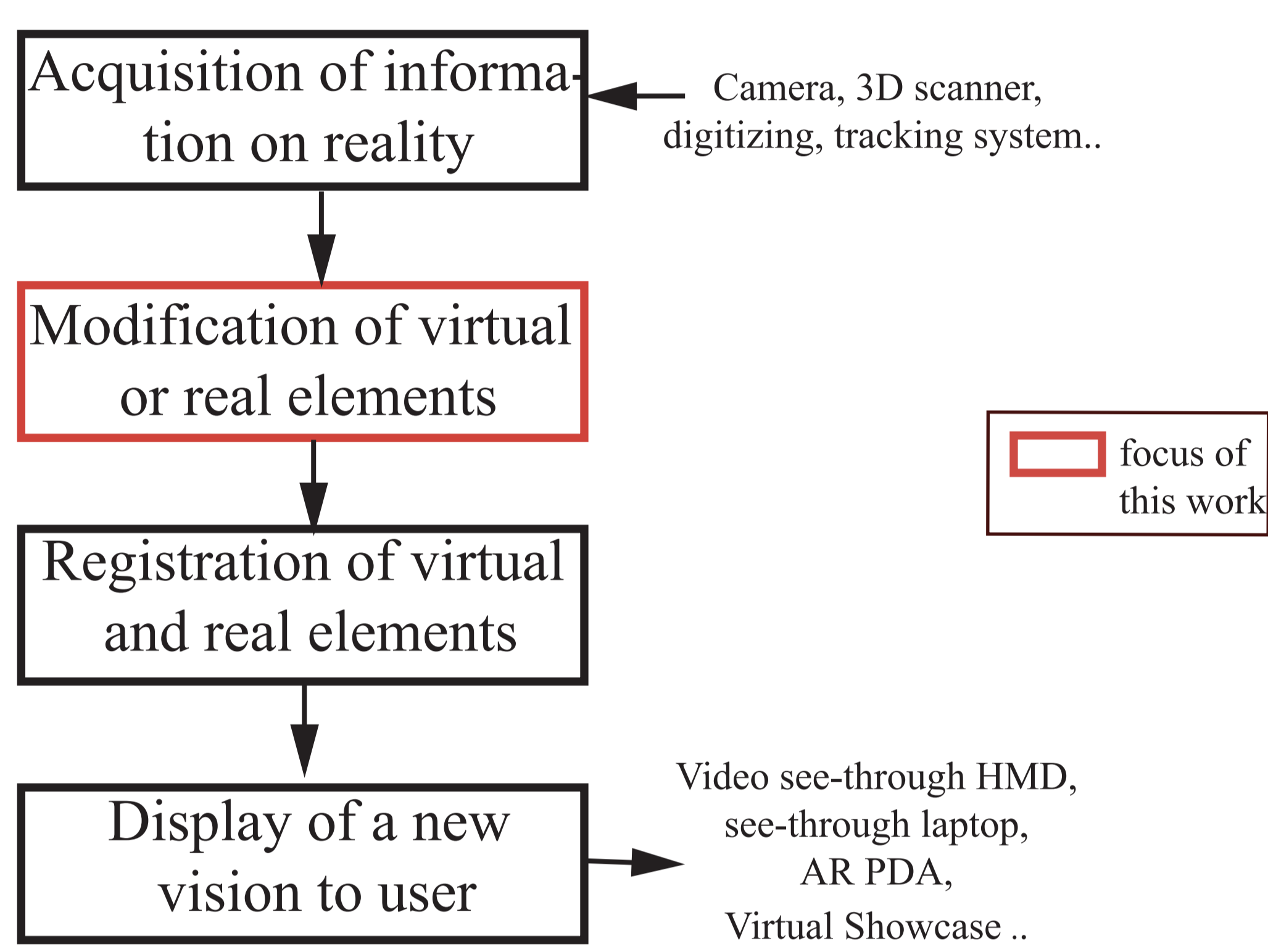


Introduction

Mediated reality tries to modify our vision of reality with a visual filter implemented as a hardware or software system. Virtual objects can be added, real objects can be altered or removed.

We demonstrate a new prototype based on a video see-through HMD for dynamically changing our vision of reality.

A Mediated Reality Pipeline

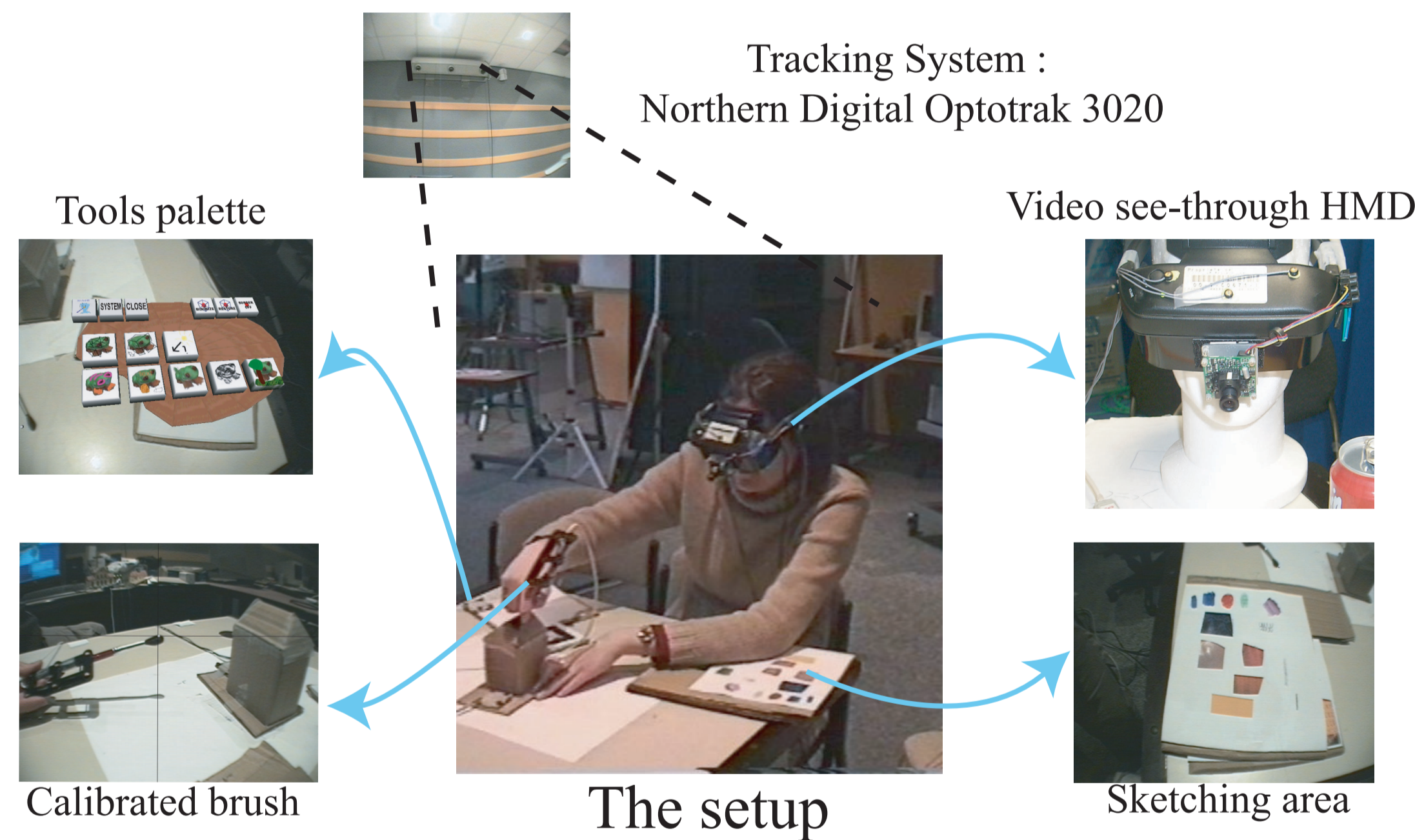


Virtual Studio Prototype

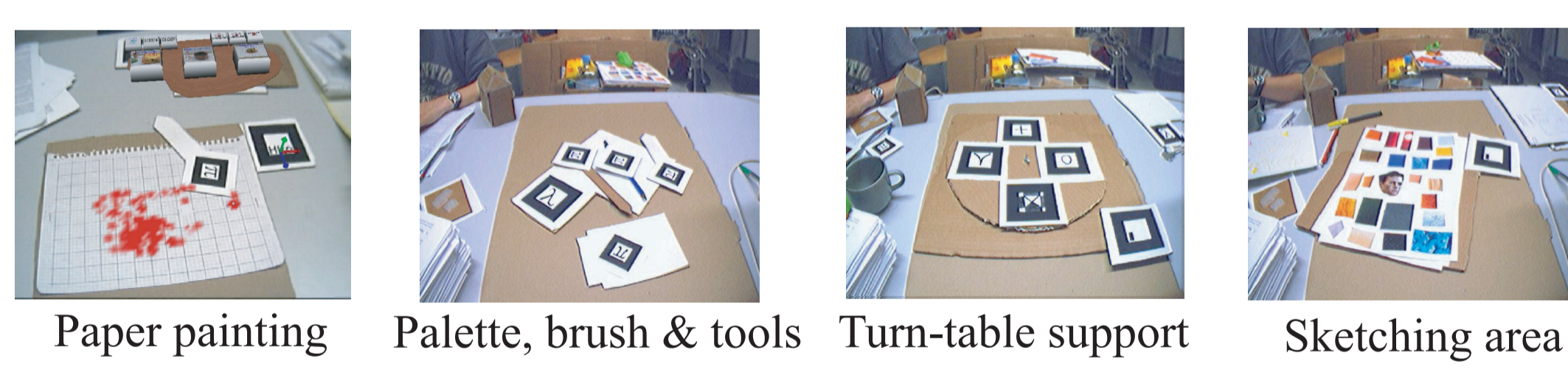
We introduce the concept of a **Virtual Studio**, based on an artistic concept : support, matter, medium, and tools.

Functionalities : Paint, Grab, Glue

A High Quality Setup



A Low Cost Home Setup



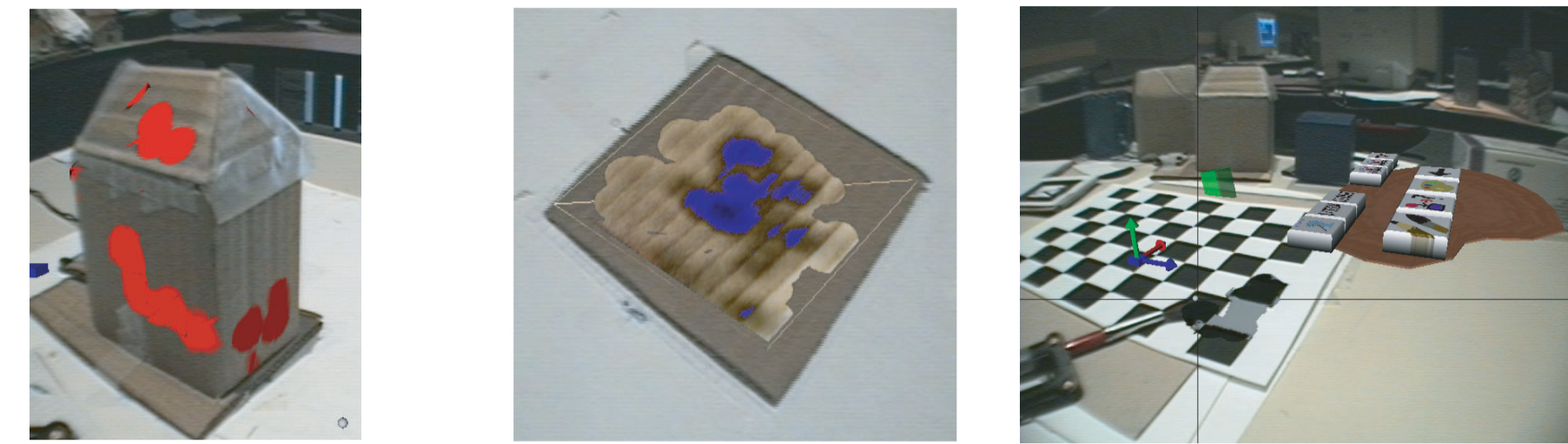
The studio

Three Types of Painting

We decompose object modification on different levels of application :

Pixel Level

Modify color of surface depending on pre-acquired knowledge :



unknown reflectance

known reflectance

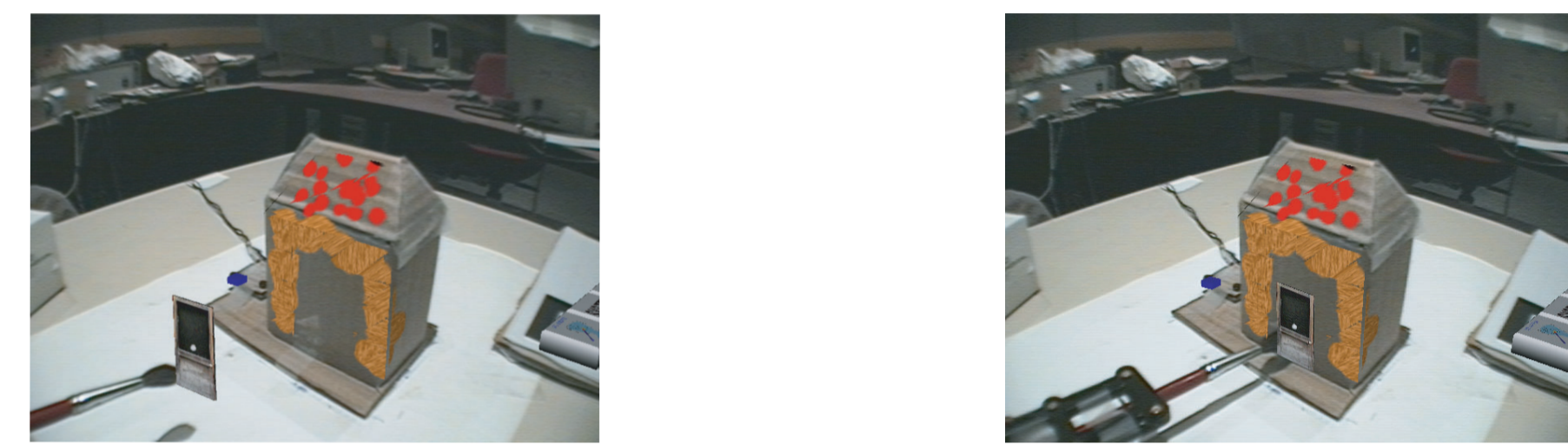
unknown reflectance acquired on the fly



On the fly brush color acquisition from texture.

Patch Level

Modify color of semantic element, adding label on it, grab real label.



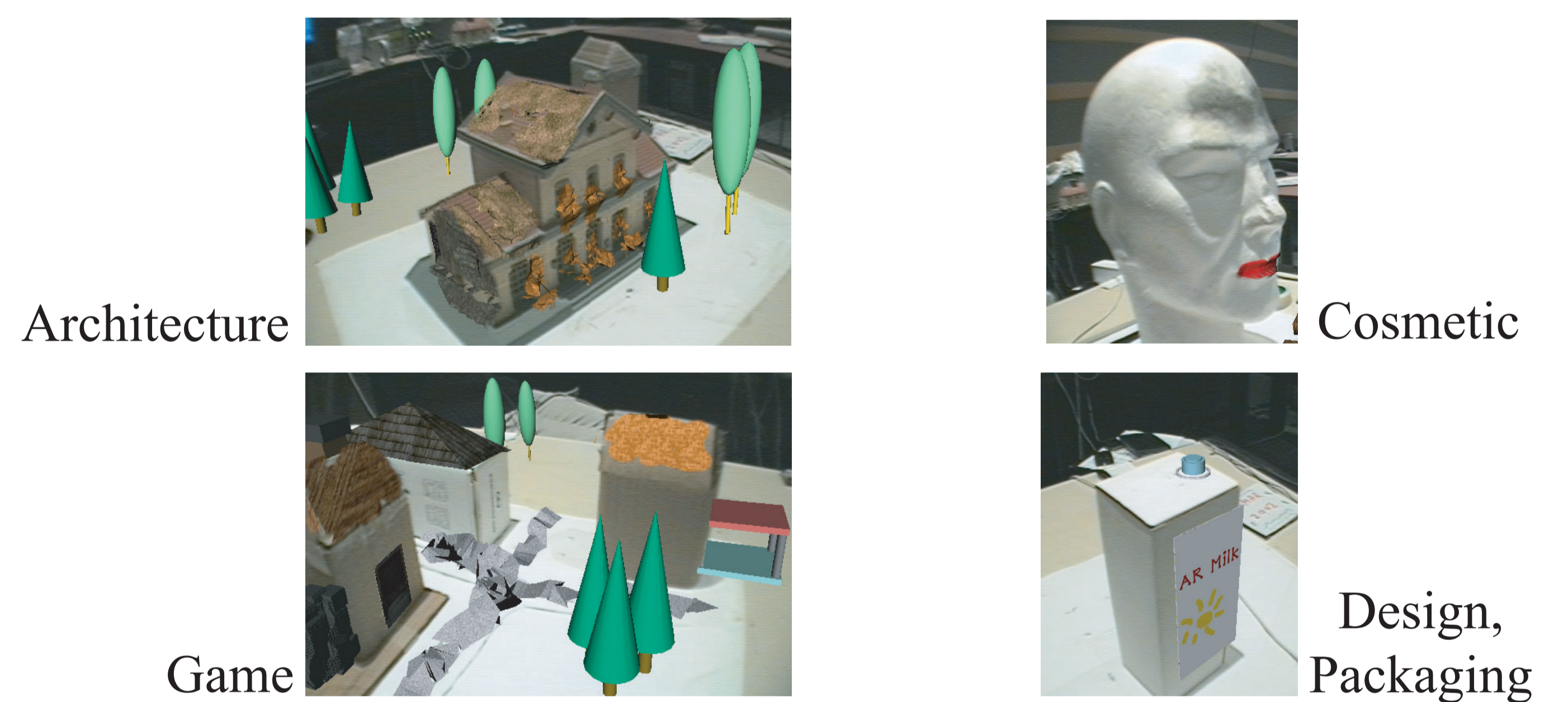
Matter Level

Adding predefined virtual elements, or create them interactively with 3D creation matter tools



Results

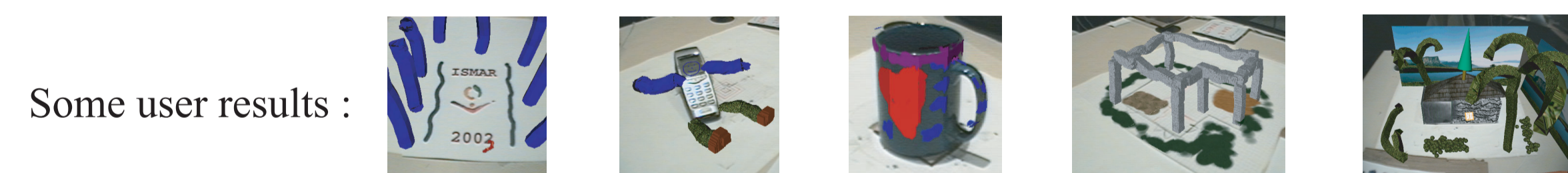
Applications



First Users Evaluation

Pros
 The new concept
 Handheld palette
 Grab real color, texture
 Familiar environment

Cons
 Stylus too heavy
 Unstable tracking
 Difficult depth perception
 Sometimes misregistration



More informations at : <http://www-artis.imag.fr/Members/Raphael.Grasset/RECHERCHE/ARPM/ARPM.html> (or with google : keywords 'interactive mediated reality')