Microsoft®
Surface®

Natural User Interfaces and Microsoft Surface 2

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ITS2011 – Kobe, Japan

YESTERDAY

HOW DID WE GET TO NUI?

NUI

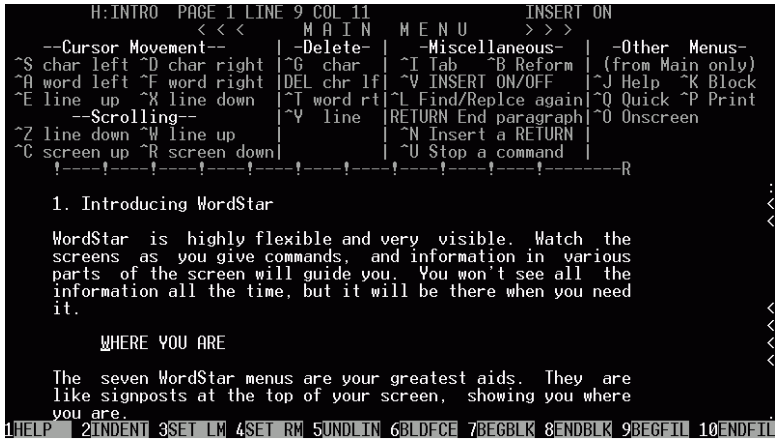
What is it?

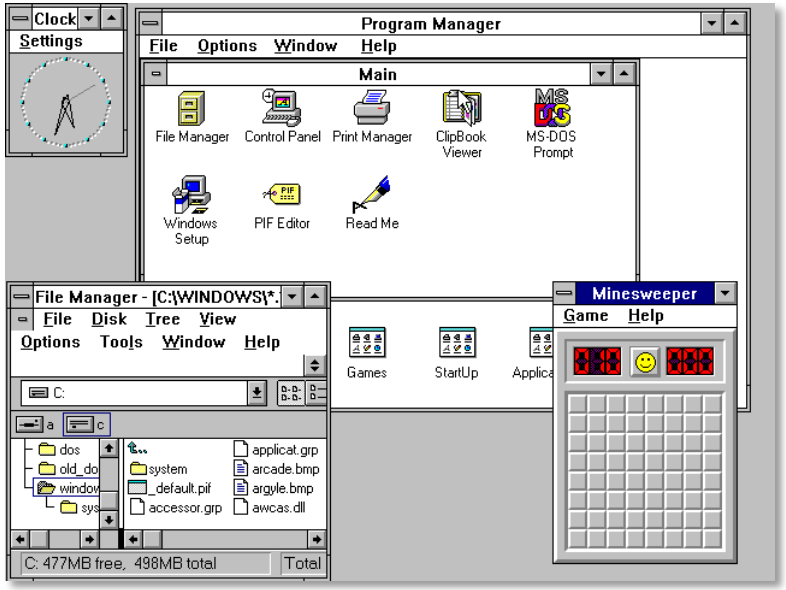
Innate abilities?

An attitude!

NUI

An opportunity!



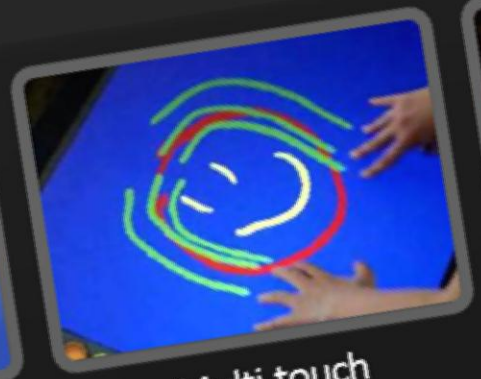


2008

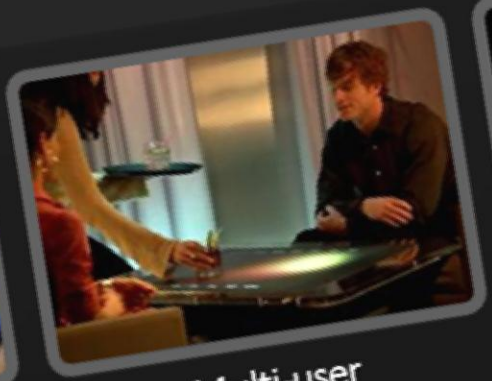
Microsoft Surface And NUI

Microsoft Surface computing uses sensing and display technology to infuse everyday surfaces with digital content and is comprised of the following unique attributes:

Direct interaction



Multi-touch



Multi-user

Object recognition

PDC2008
PROFESSIONAL DEVELOPERS CONFERENCE

2008

$15,000

198 lbs.

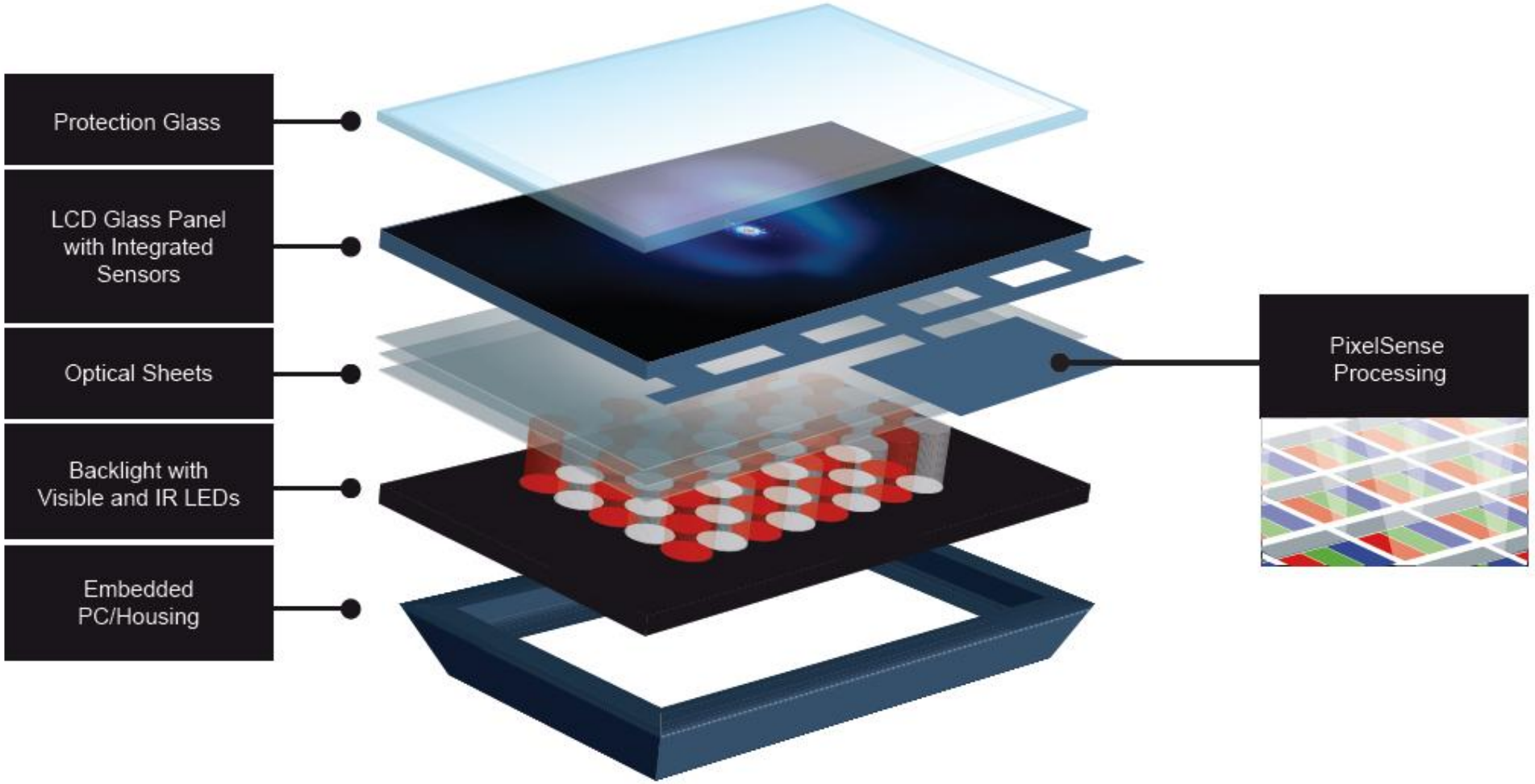
TRUE TO OUR VISION

“Bring people together
by making surfaces come to life
through natural experiences”

TODAY

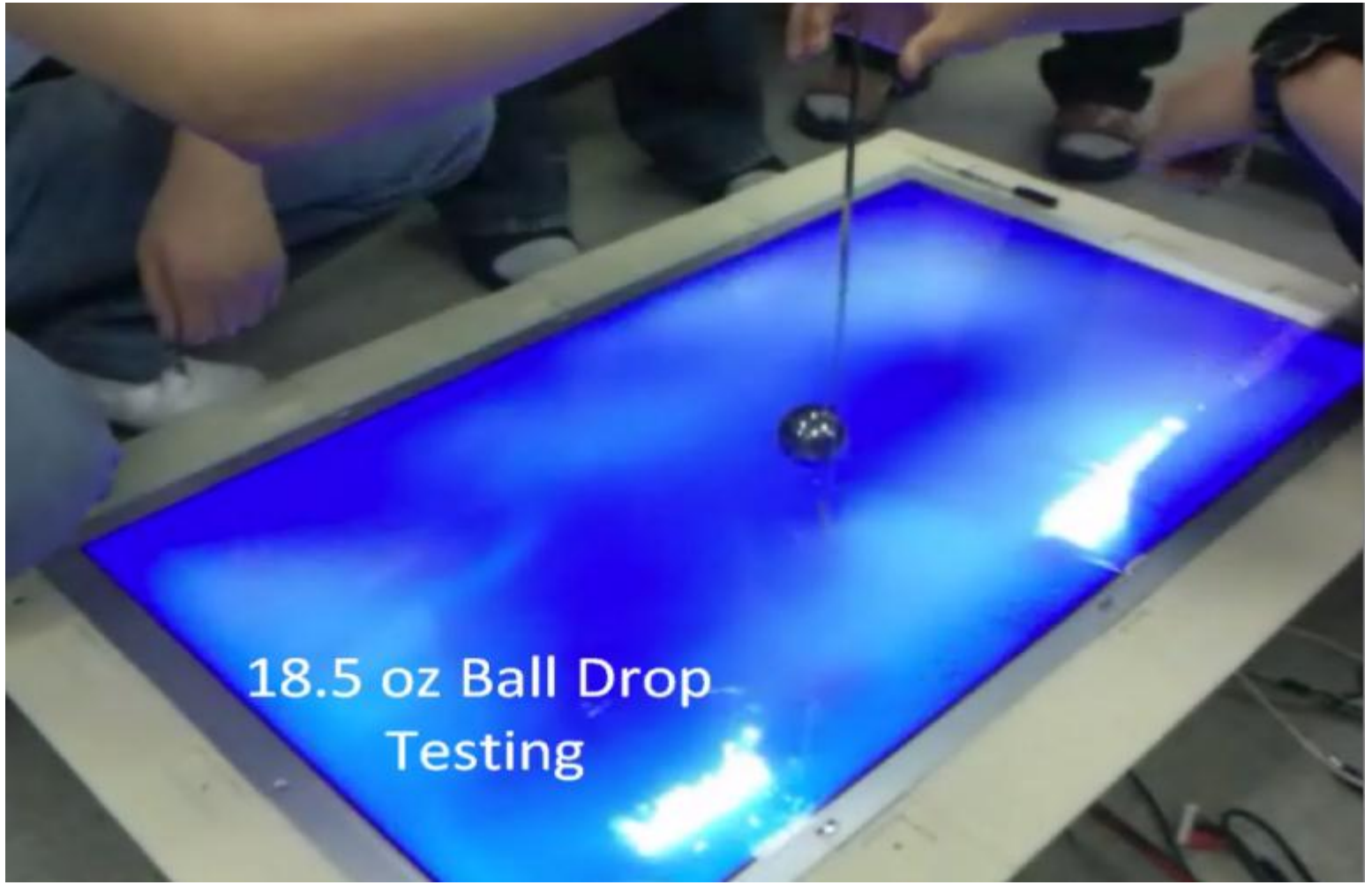
STAYING TRUE TO OUR VISION

PixelSense™


Protection Glass
LCD Glass Panel with Integrated Sensors
Optical Sheets
Backlight with Visible and IR LEDs
Embedded PC/Housing
PixelSense Processing

SAMSUNG SUR40 FOR MICROSOFT SURFACE

READY FOR COMMERCIAL ENVIRONMENT

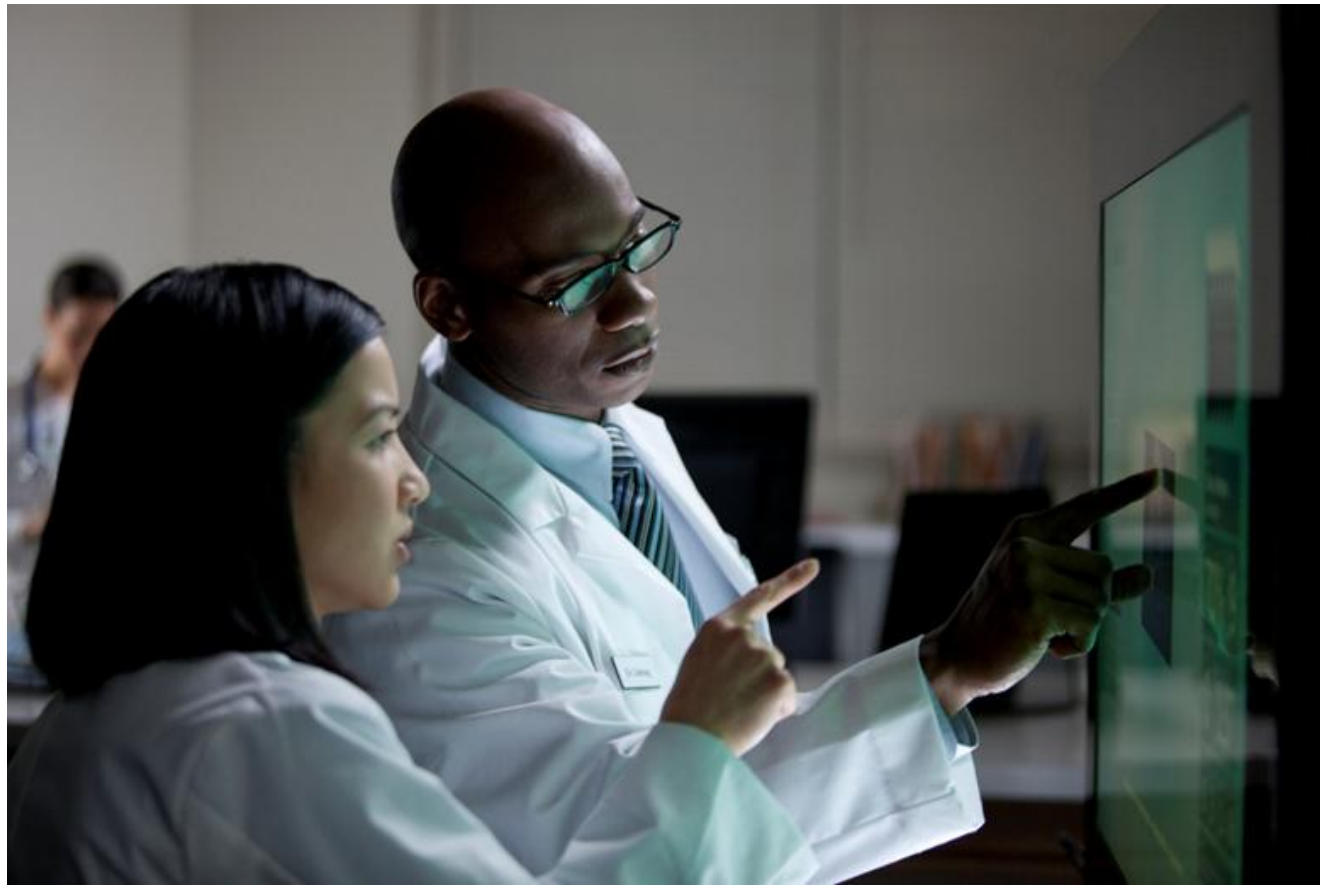


SAMSUNG SUR40 FOR MICROSOFT SURFACE

Horizontal

SAMSUNG SUR40 FOR MICROSOFT SURFACE

Vertical



SOFTWARE

SOFTWARE

FLEXIBLE
Target Win7 and Surface Hardware

Works with HID devices!

APIs

Surface Applications

WPF APIs | Core APIs | Shell UI & APIs

Vision System | Windows Integration

Windows 7

Microsoft Surface Hardware

Core APIs

Raw Image

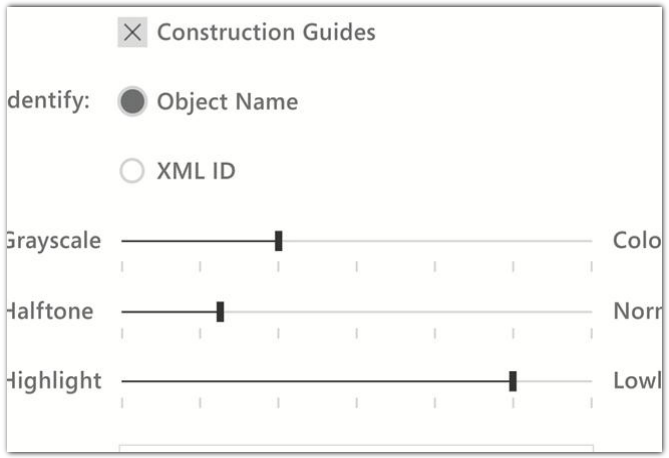
Touch Events

Not tied to a framework

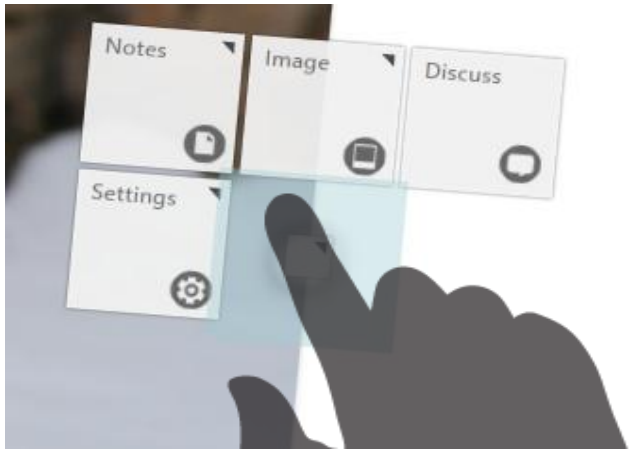
Mostly used for XNA

WPF APIs

Framework



Common Controls



Specialized Controls

Framework functionality

Drag & Drop

Touch visualizations

Hardware Capabilities

Hardware Capabilities Example

```
if (InteractiveSurface.PrimarySurfaceDevice.Tilt == Tilt.Horizontal)
{
    // Enable 360 degree UI.
}
else
{
    // Use more traditional layout
}
```

Common controls

Window

Button

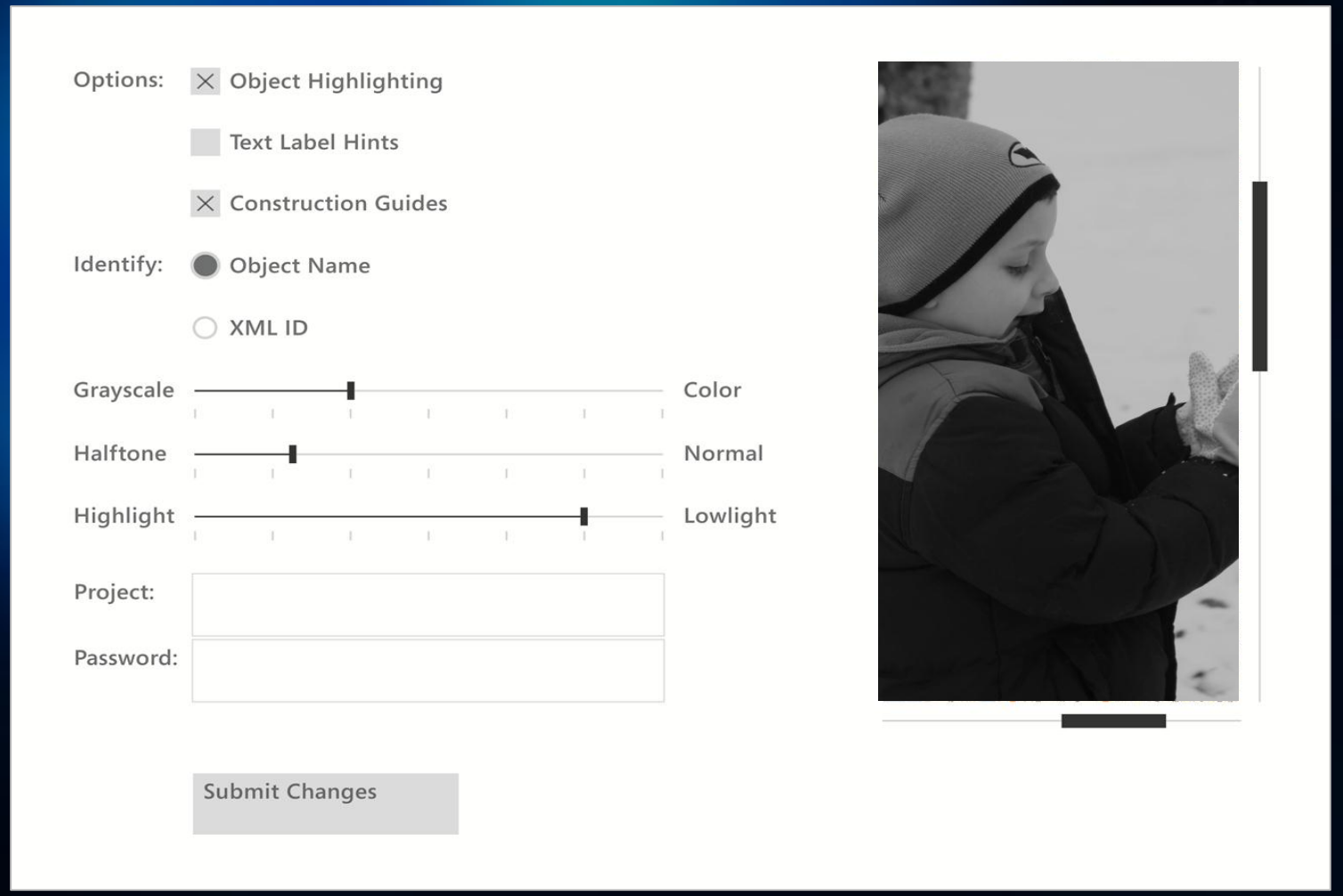
InkCanvas

Slider

…

SOFTWARE

ELEGANT
New Visual Style
Content is King



ScatterView

Enable 360° **multiuser** applications

Let people **share** control of applications

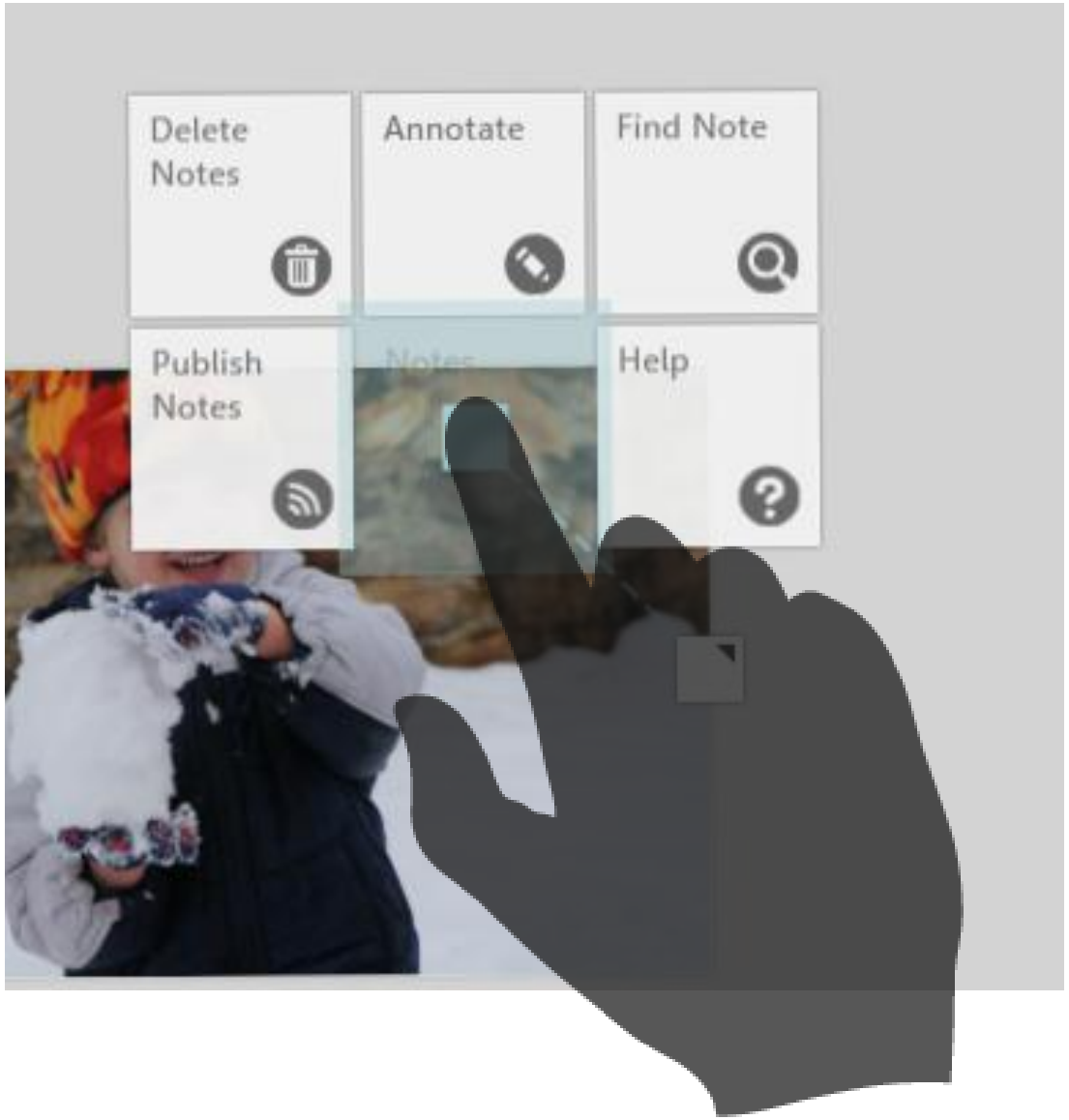
Create a **consistent** way for people to touch

ElementMenu

Touch friendly

Icon

Label

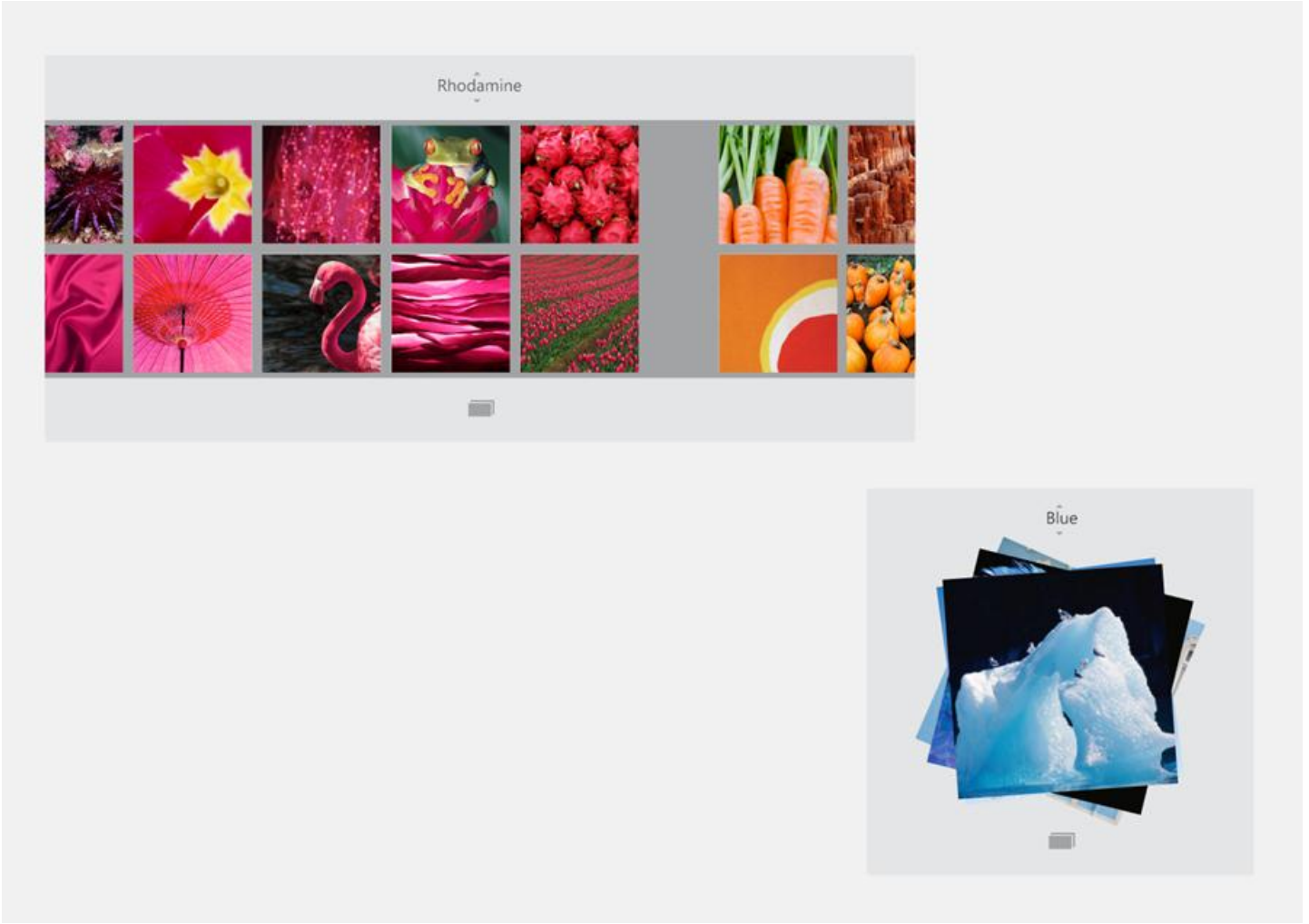


Library Family of Controls

Enables content navigation

Used inside a ScatterView

Plays well with Surface drag & drop

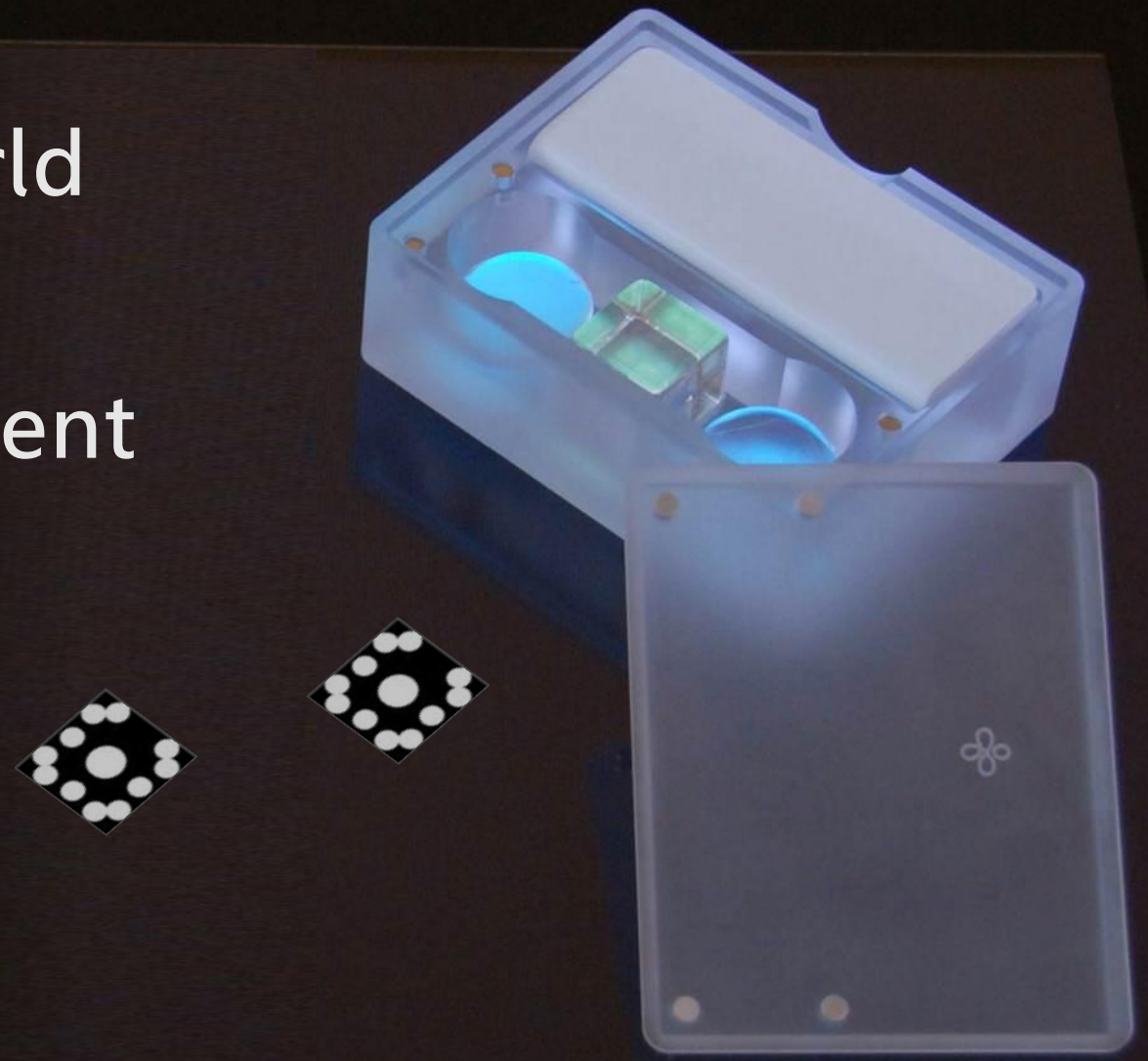


Tag Visualizer

Connect to the physical world

Interactive UI

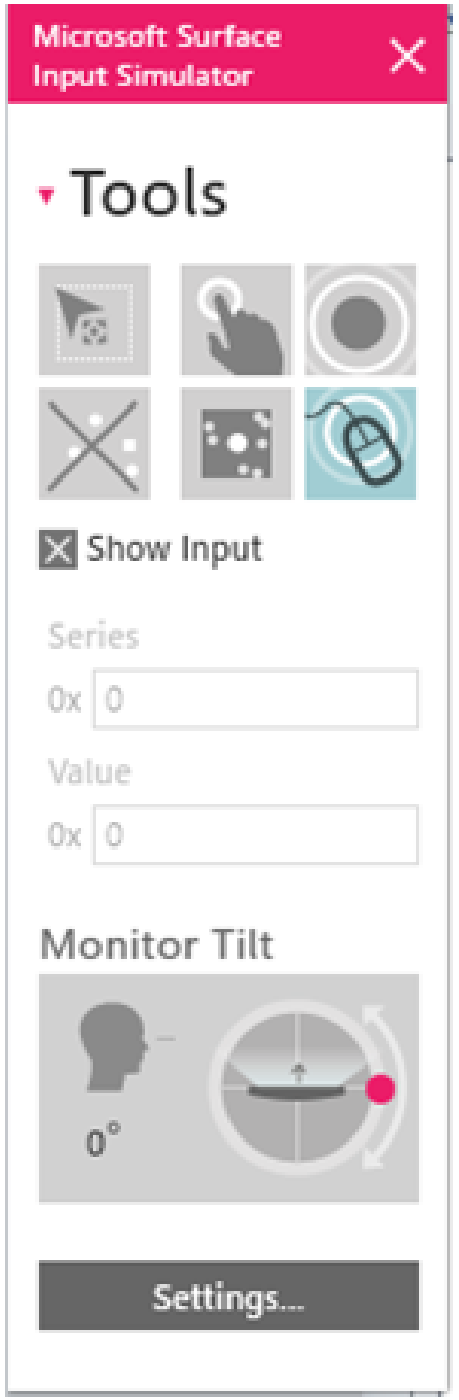
Synchronize UI with movement



New Input Simulator

Simulate

- Different Input Types
- Hardware Capabilities



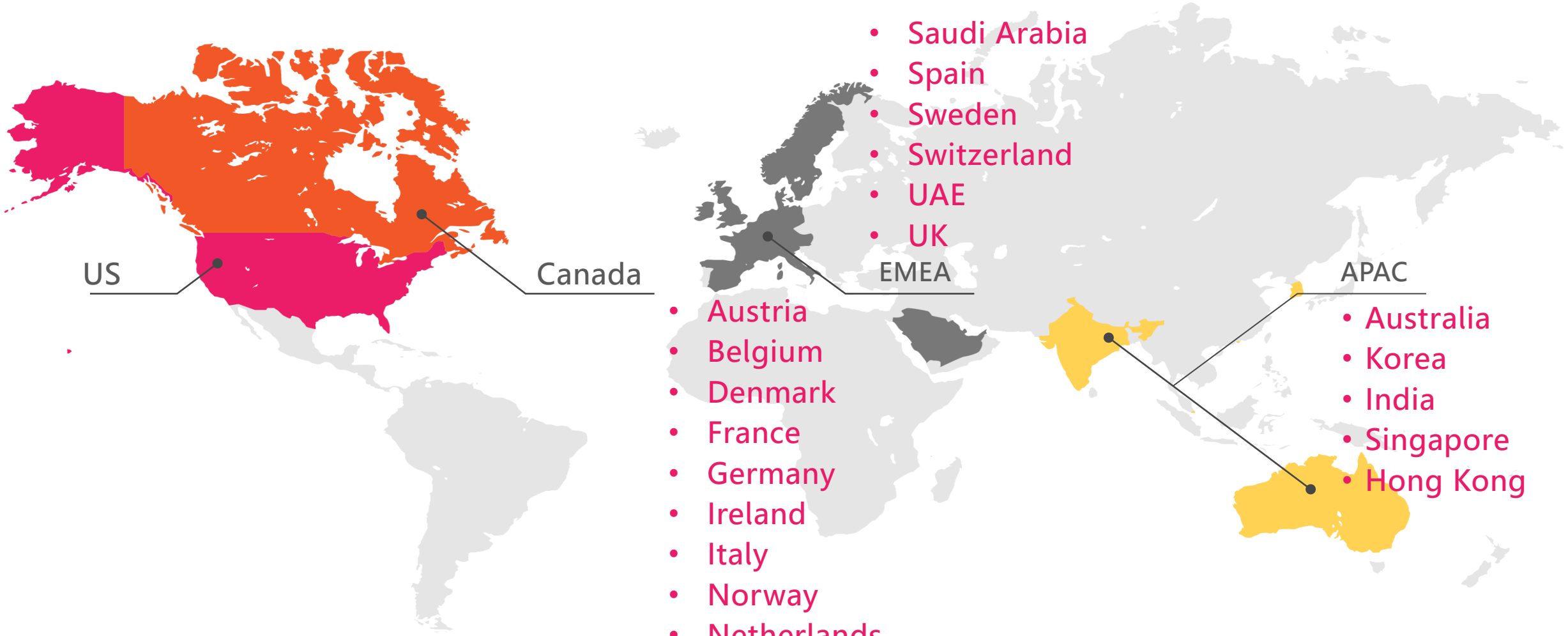
“Hello World”

DEMO

SDK is available today!

Technical Resources
at www.surface.com

Starting in 23 countries…



- Saudi Arabia
- Spain
- Sweden
- Switzerland
- UAE
- UK

- Austria
- Belgium
- Denmark
- France
- Germany
- Ireland
- Italy
- Norway
- Netherlands
- Qatar

- Australia
- Korea
- India
- Singapore
- Hong Kong

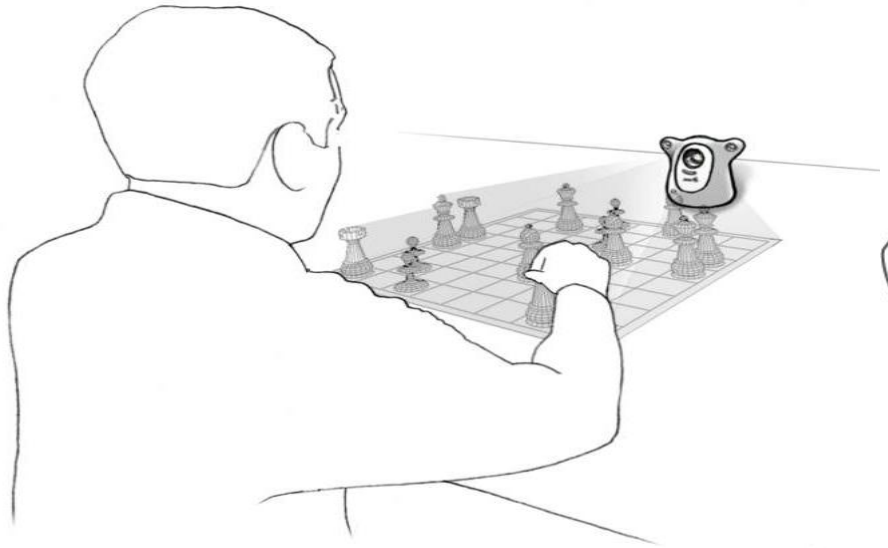
One thing to remember

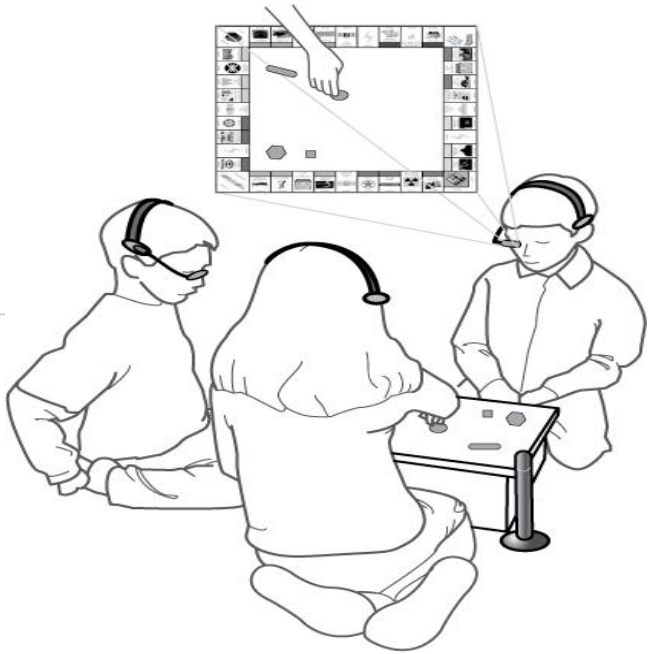
TOMORROW

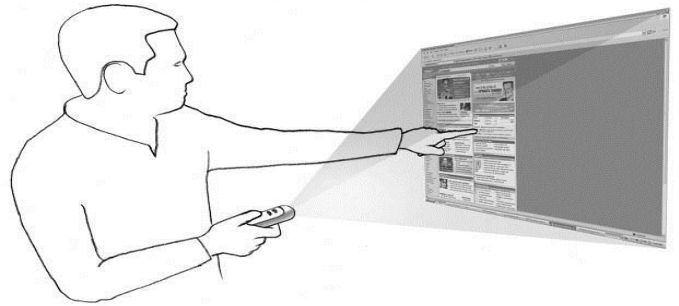
OUR VISION OF THE FUTURE

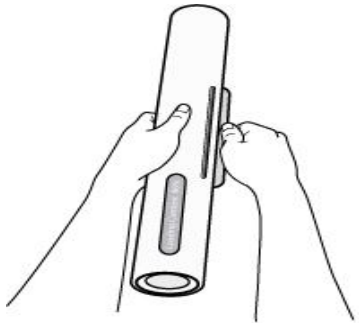
Vision Video

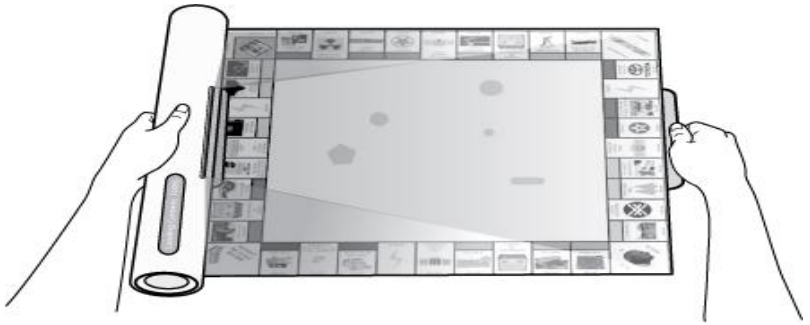
Crazy Ideas?









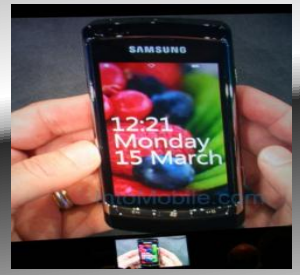


1946

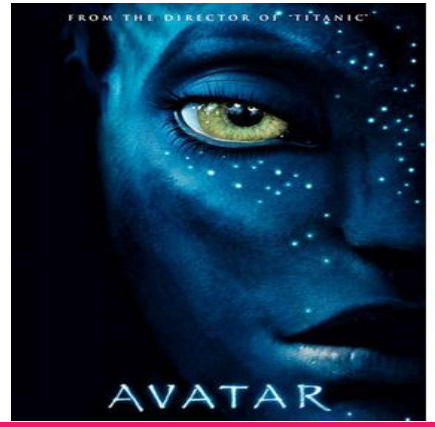
1981

2001

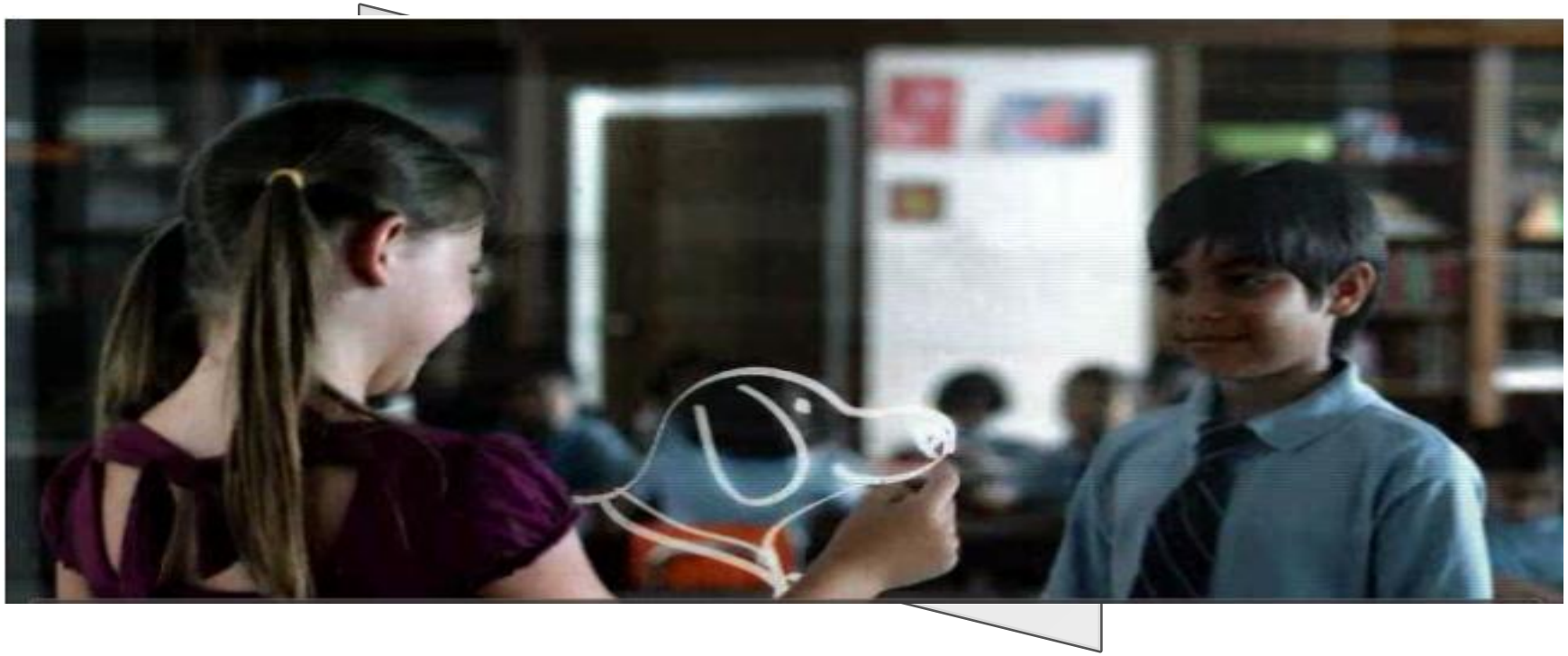
2007

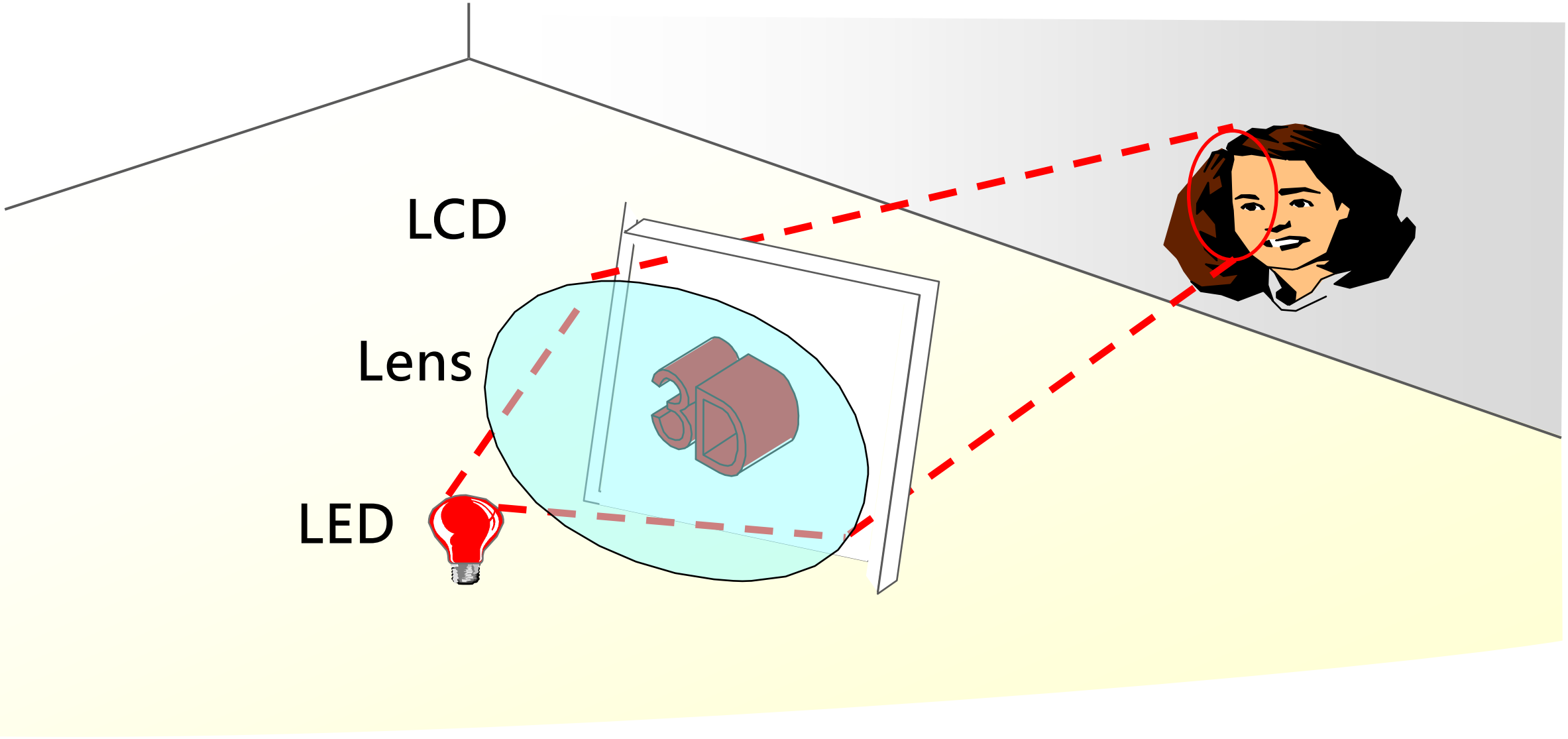


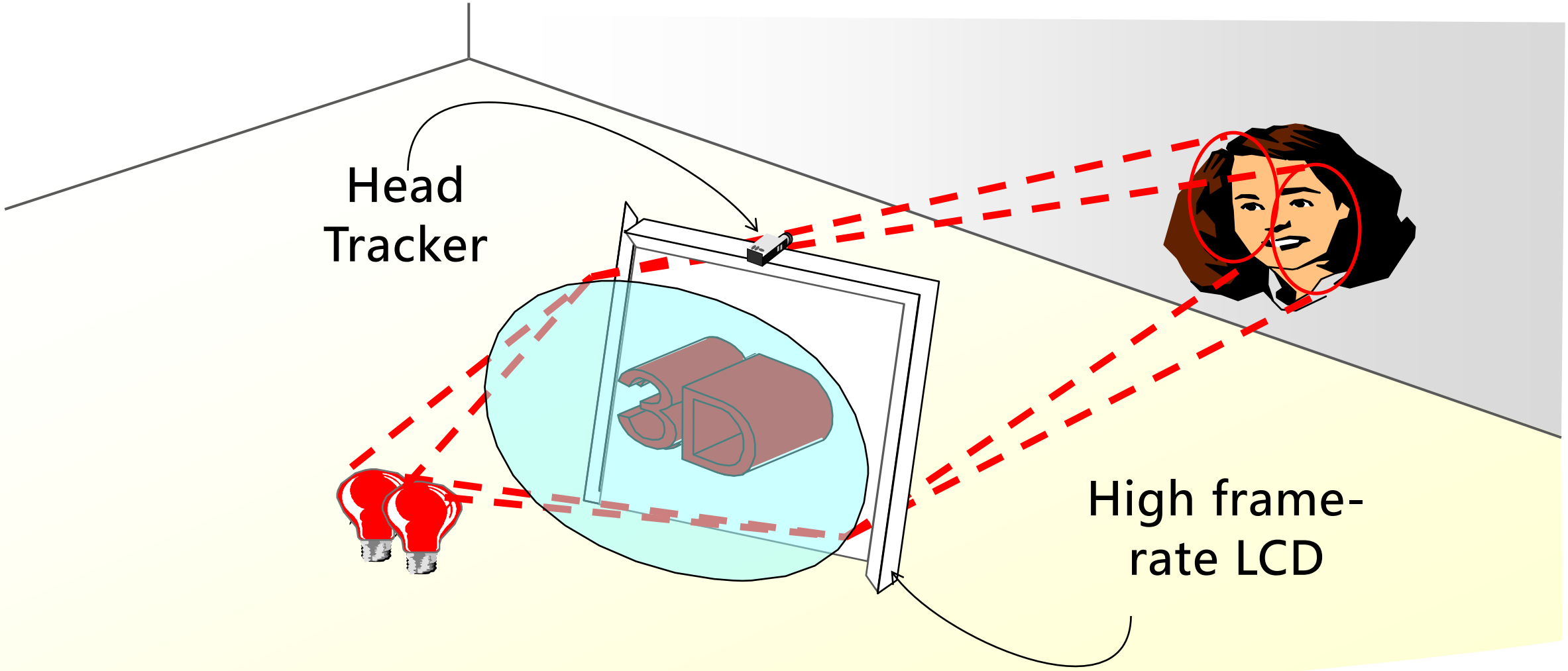
2007 -

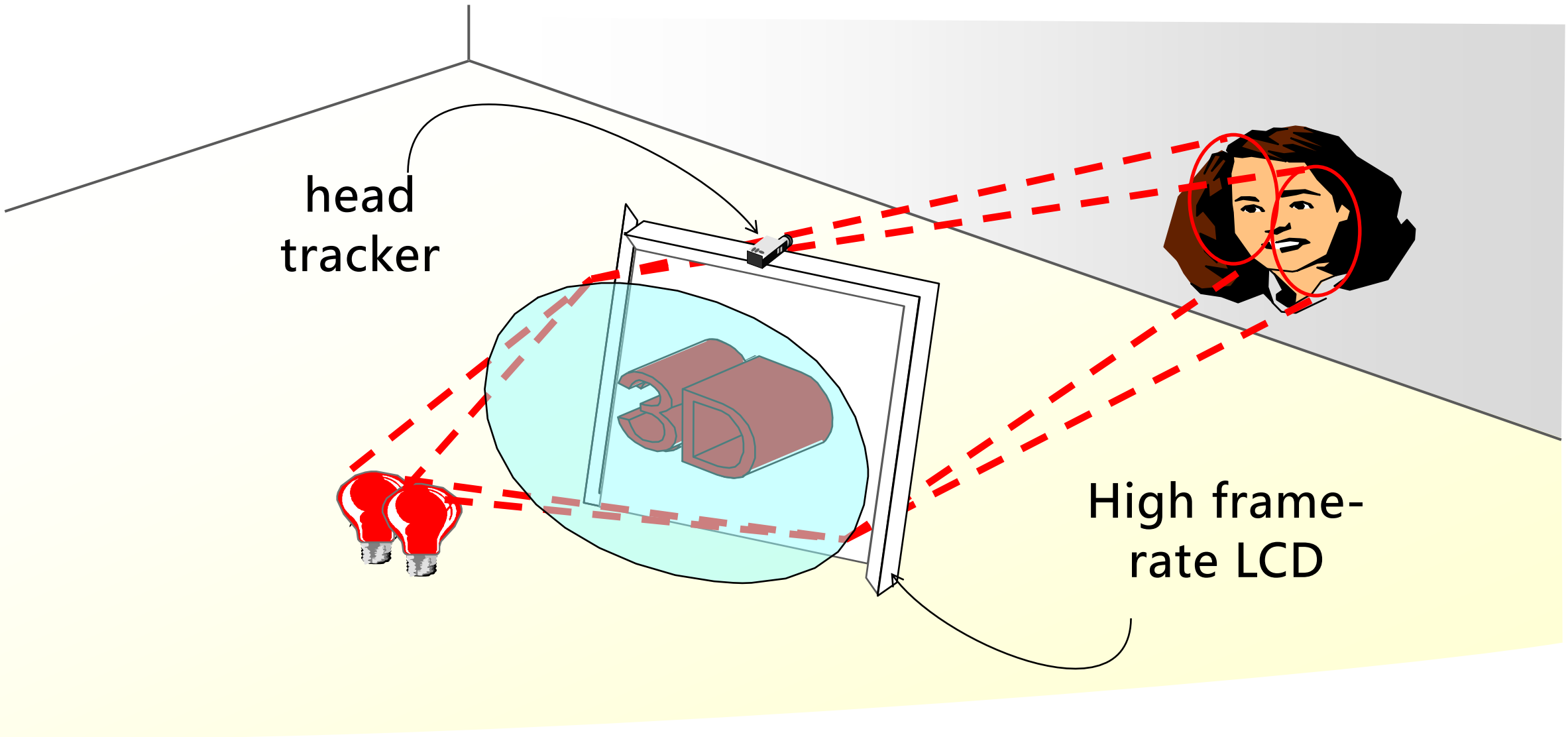


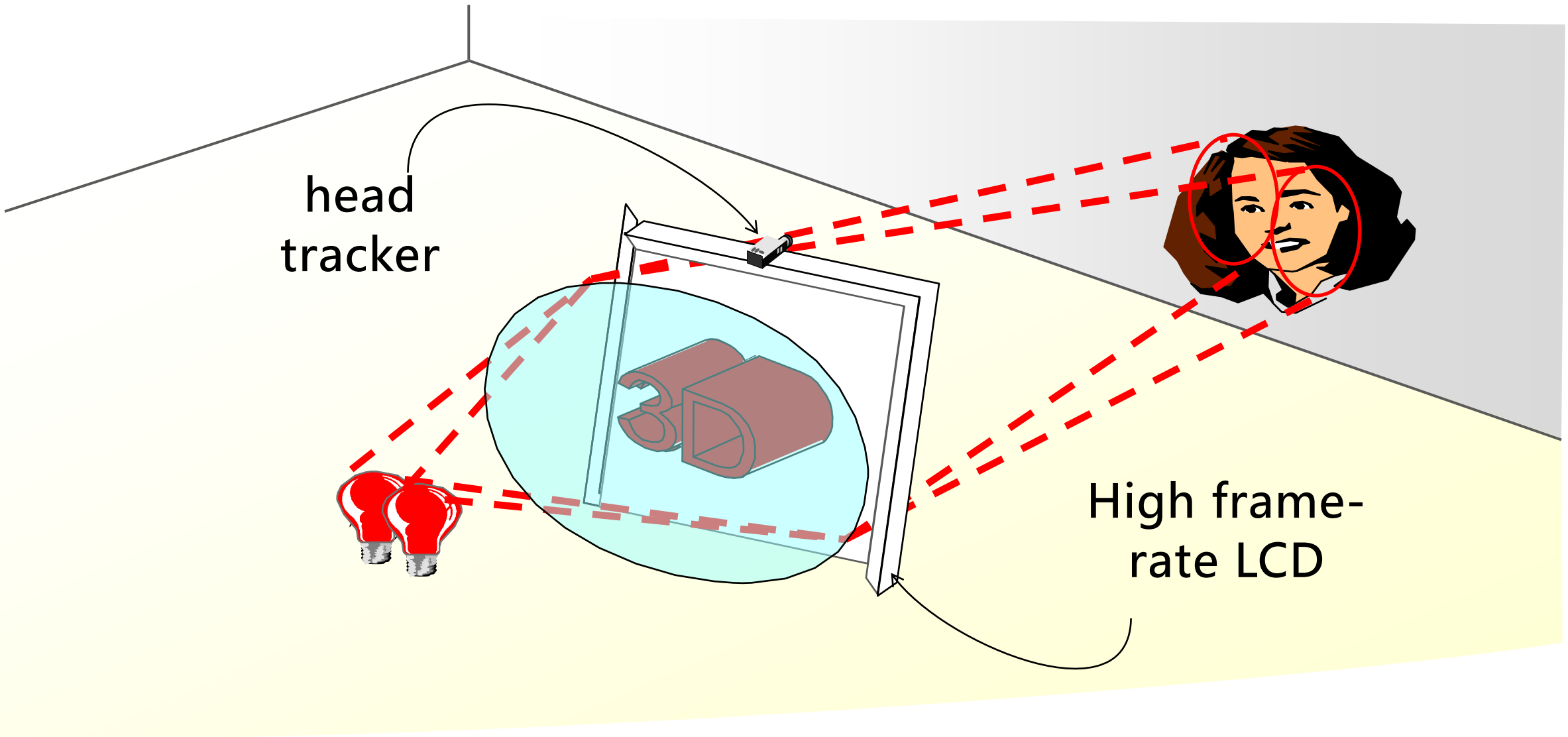
The Magic Window



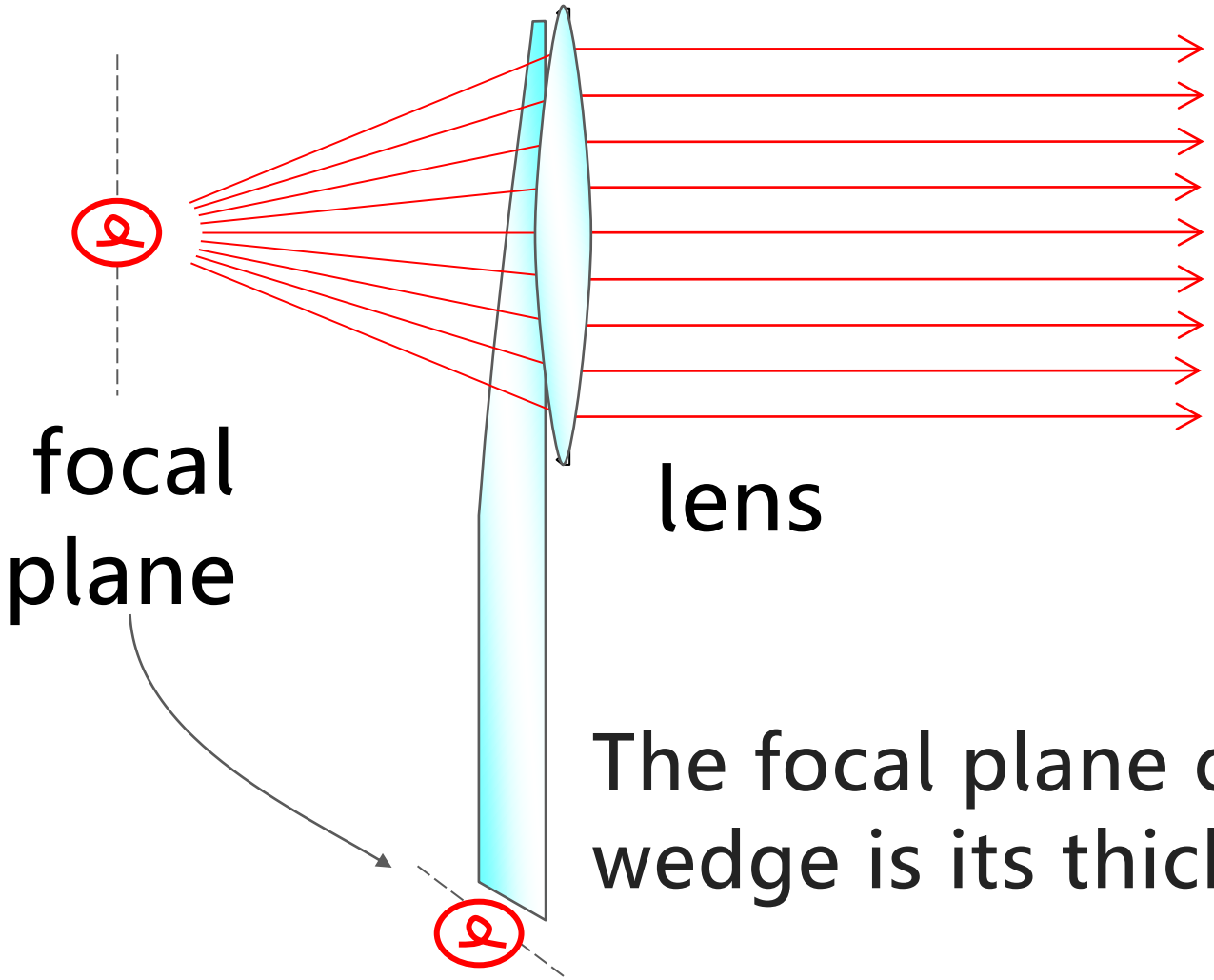

LCD
Lens
LED

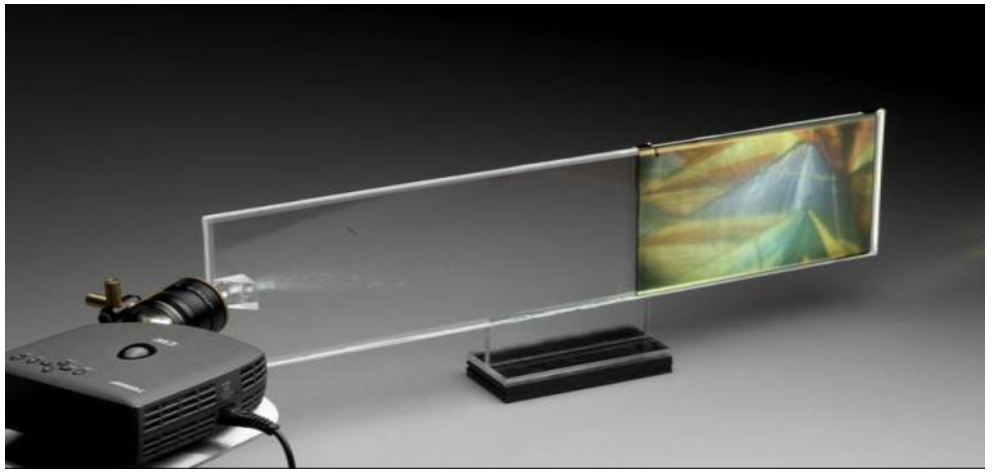

Head
Tracker
High frame-
rate LCD


head
tracker
High frame-
rate LCD

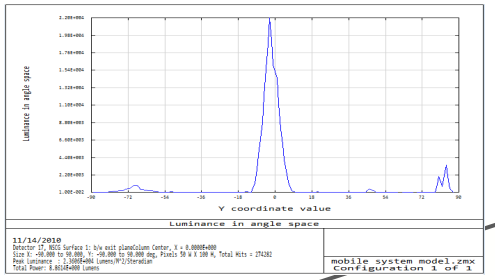

head
tracker
High frame-
rate LCD

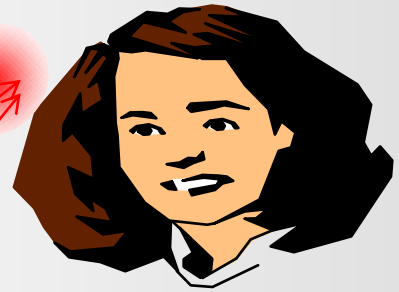
Directing Light

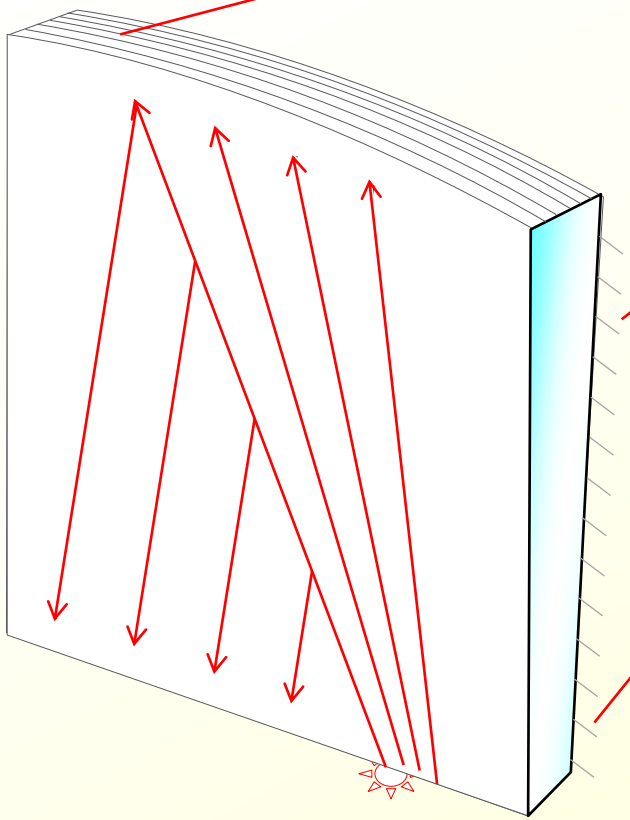




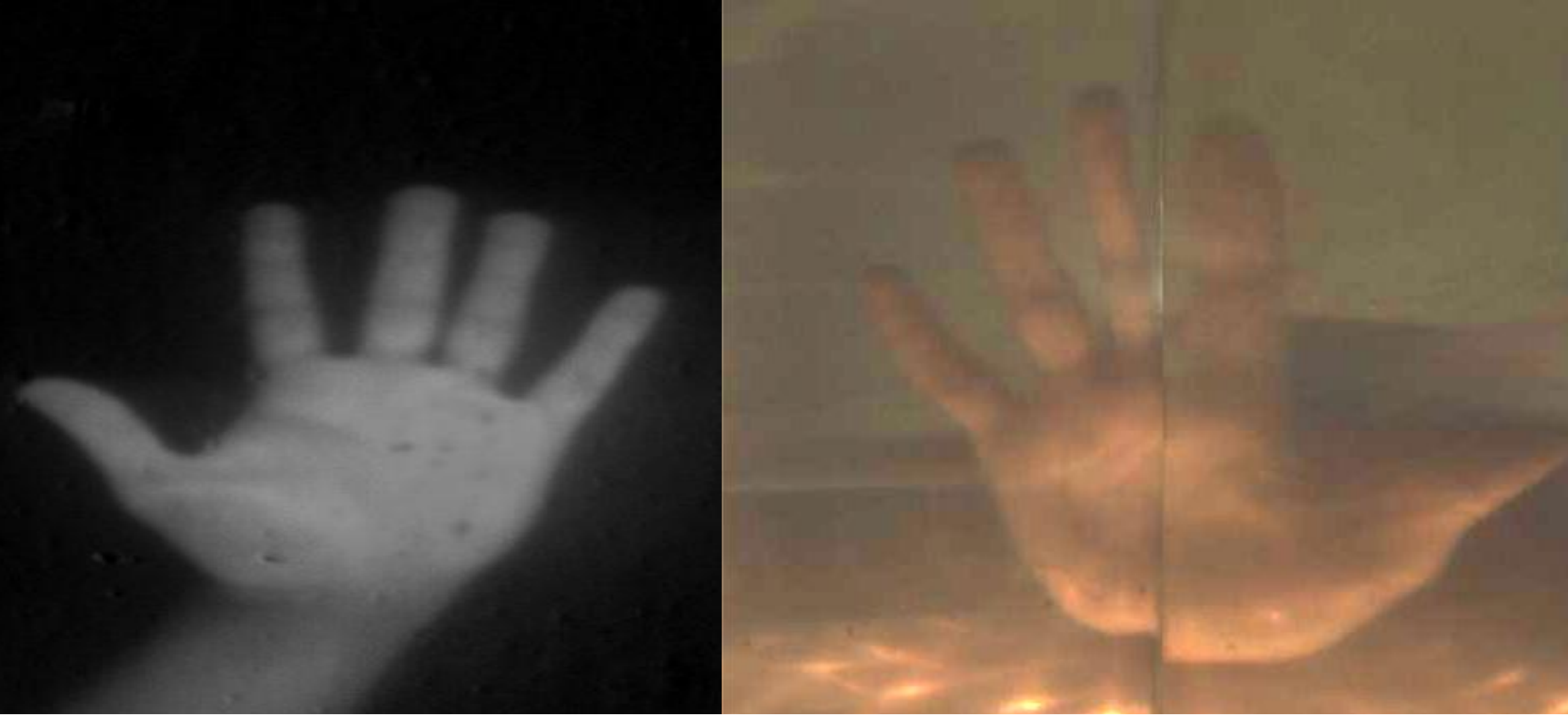
The focal plane of a wedge is its thick end.







Direct the light by moving the lamp along the end of a wedge



Seeing Displays

Let’s Build the Future Together

Resources

Microsoft Surface 2 and SDK

www.surface.com

Microsoft Vision

www.officelabs.com/projects/futurevisionmontage/Pages/default.aspx
www.microsoft.com/office/vision/

Applied Sciences Group at Microsoft

http://www.microsoft.com/appliedsciences/content/projects/wedge.aspx

Q&A

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