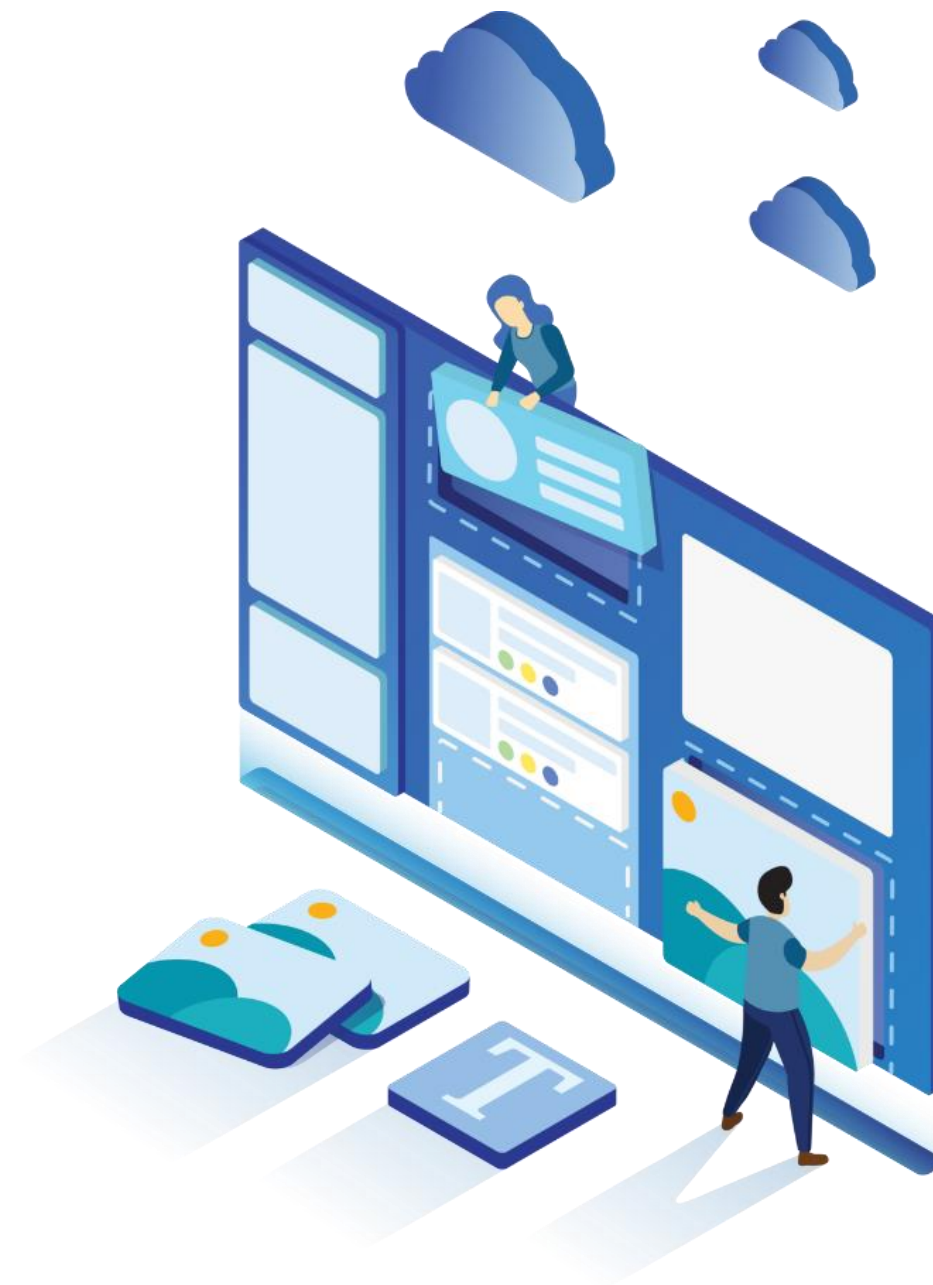# Co-spacing in serious applications

David Brebner, Umajin

A platform for Digital Creativity

NATIVE TOOLS

React Native

Visual Studio

Android Studio

unity

XCode

umajin

- Multi-platform
- Multi-user
- Low code
- Custom UX
- Extensible plug-ins

- Native capability
- Online/Offline
- Custom UX
- Pixel perfect
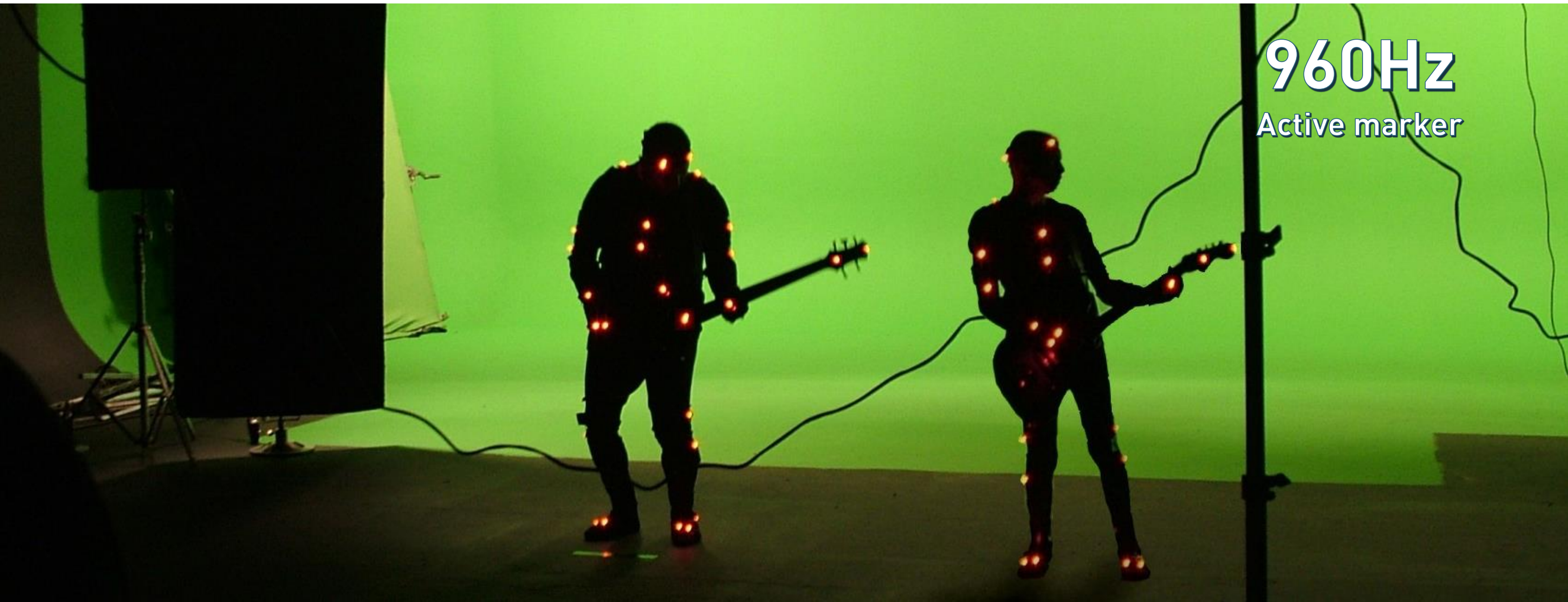- 3D/CAD/AR/VR

BPM/HTML TOOLS

Appian

outsystems

zudy

PhoneGap

CONTROL → CONTROL + SPEED ← SPEED

Rapid development but with game engine performance

960Hz
Active marker
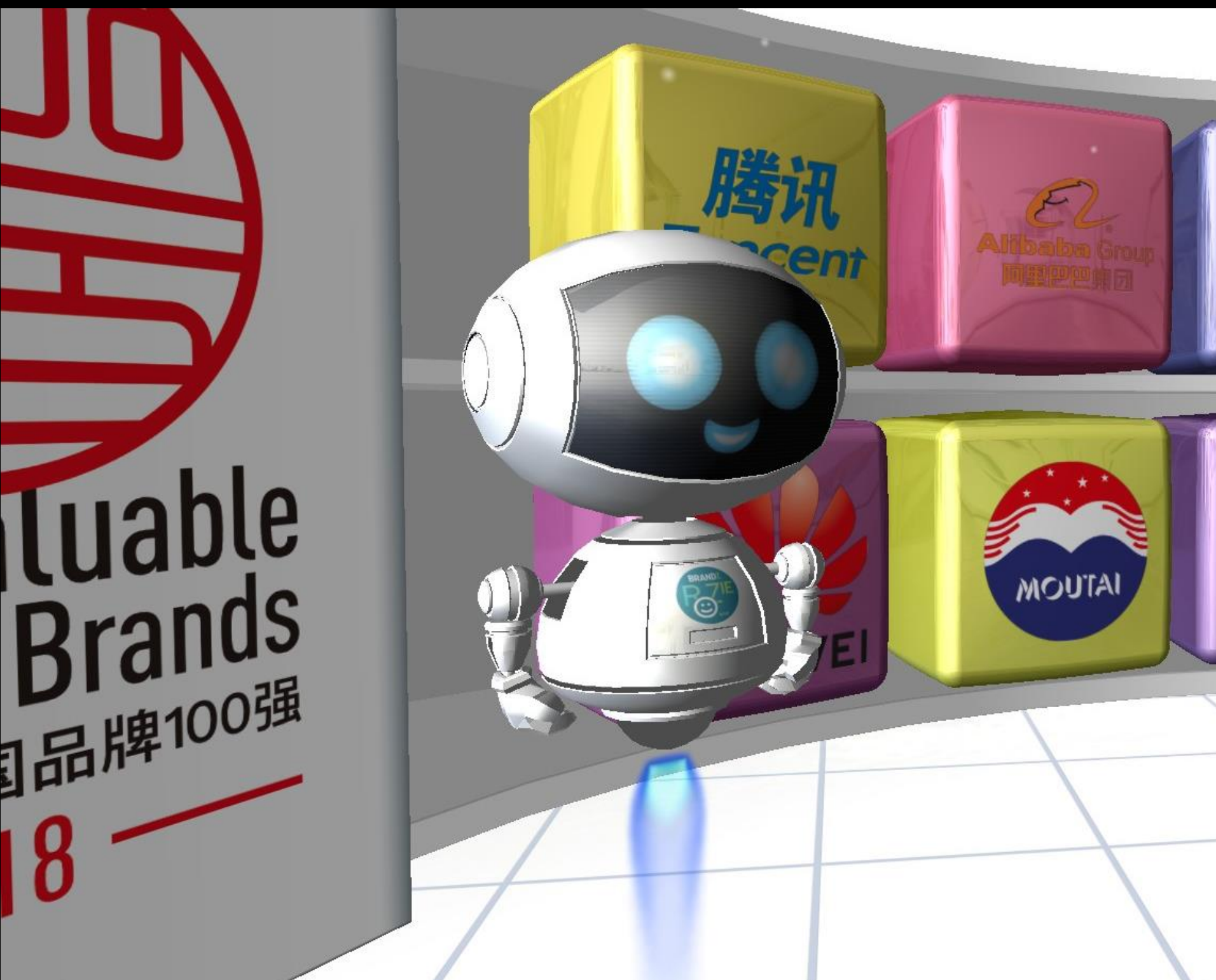
Tracking Props

960Hz
Active marker

Tracking Multiple Users

Co-Spacing

All users, props and physical sets in the same
physical and virtual space

Use Cases

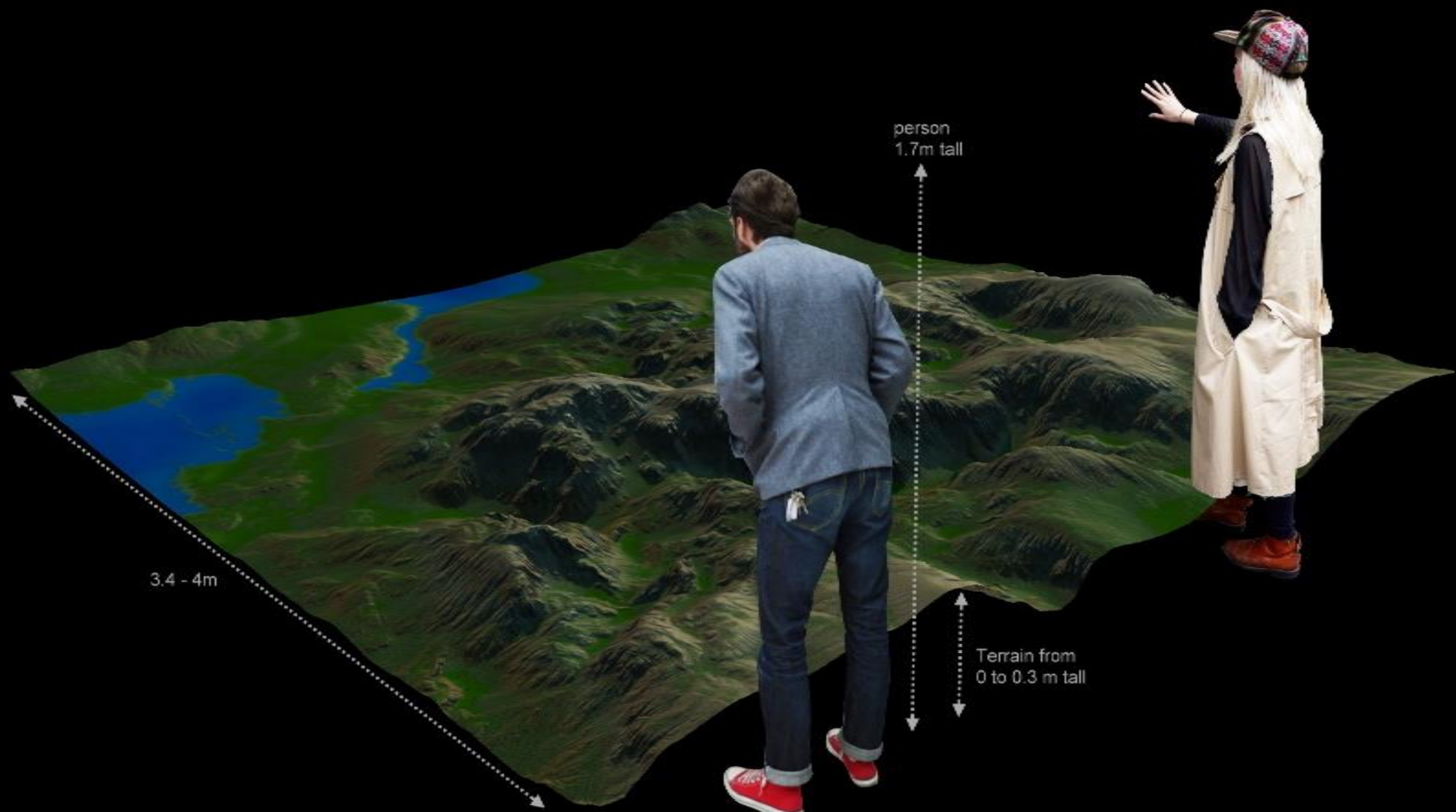**Visualising Data + Narrative**

Roleplaying and scenario evaluation

Hub Load Troubleshooting

1) Identify instumented Hub
2) Open control panel
3) ..

Troubleshooting, Repair and Training

Discoveries

person
1.7m tall

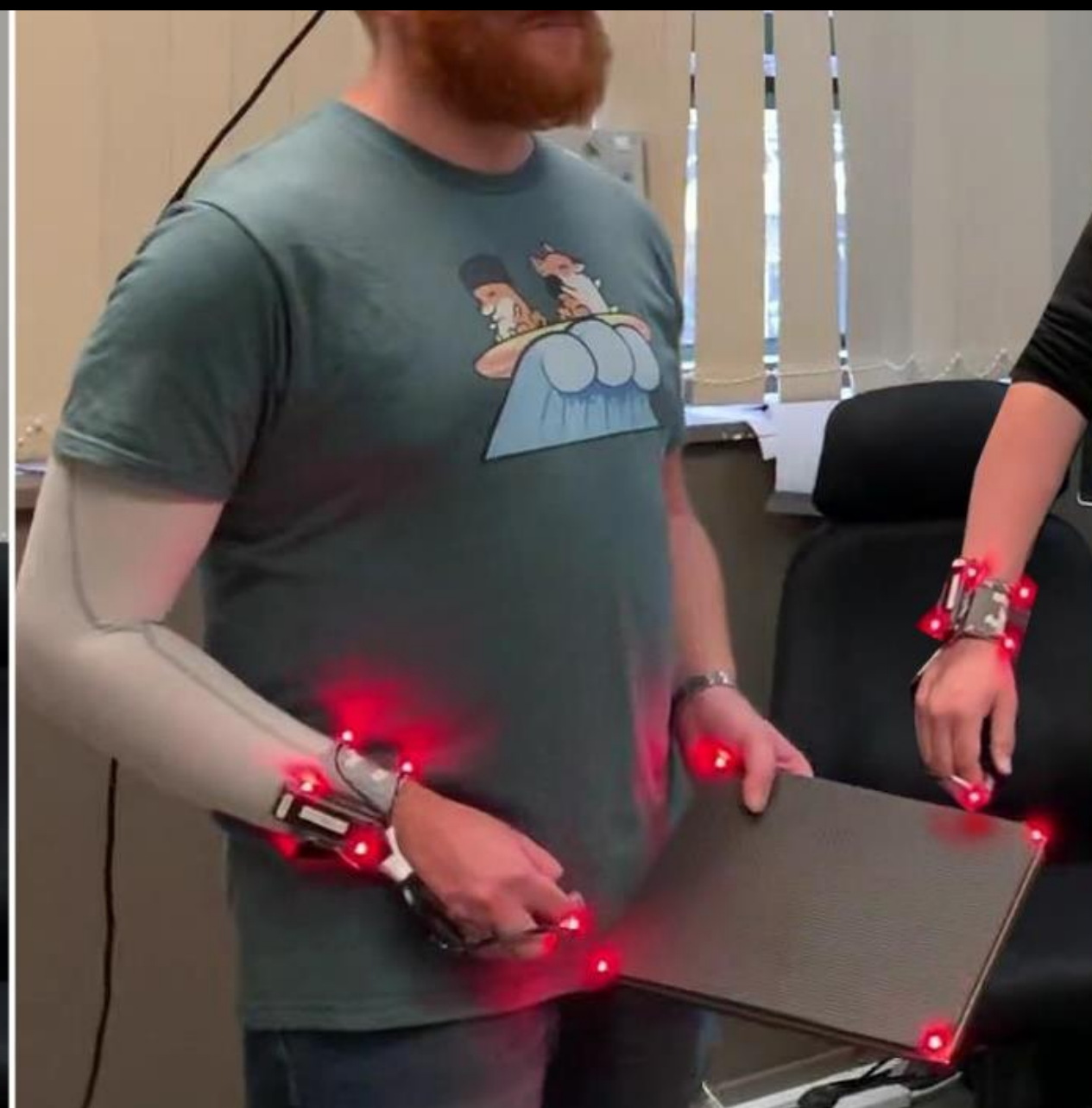3.4 - 4m

Terrain from
0 to 0.3 m tall

Different scales in a shared world

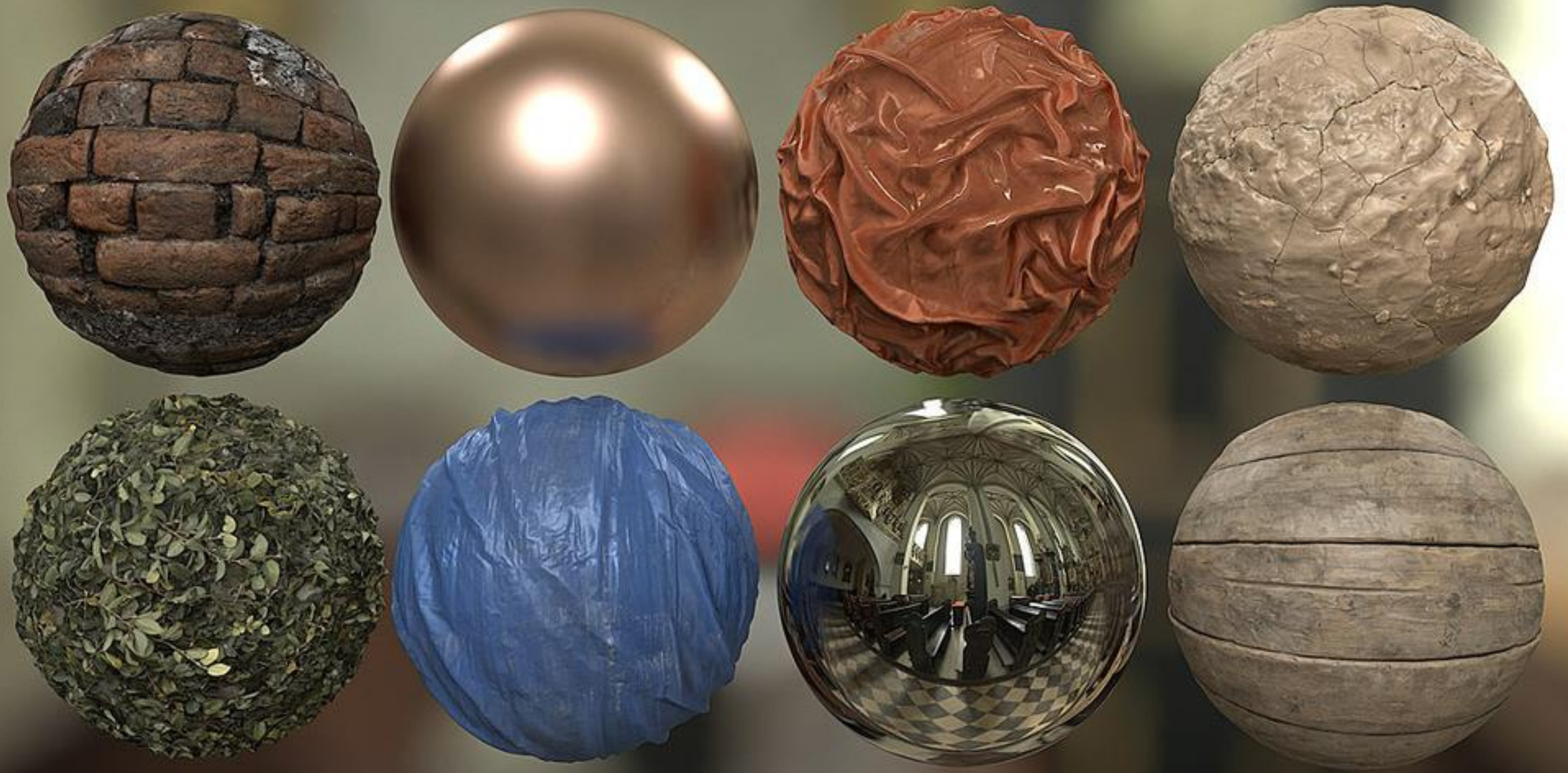**User Interfaces via Tablets in shared world**

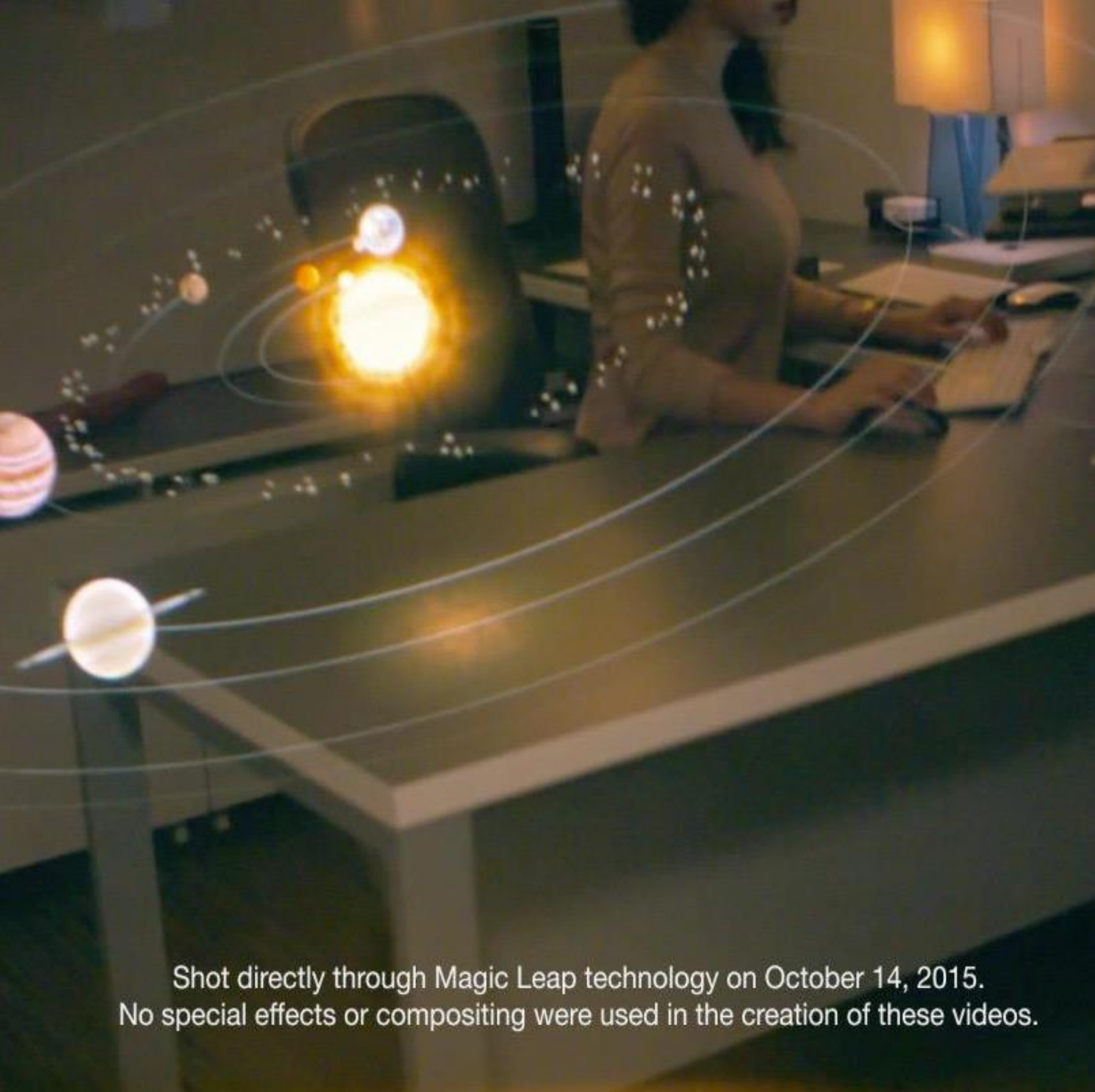Body language in a shared world

Coincident experiences in a shared world

User Voice commands vs Dialog triggers
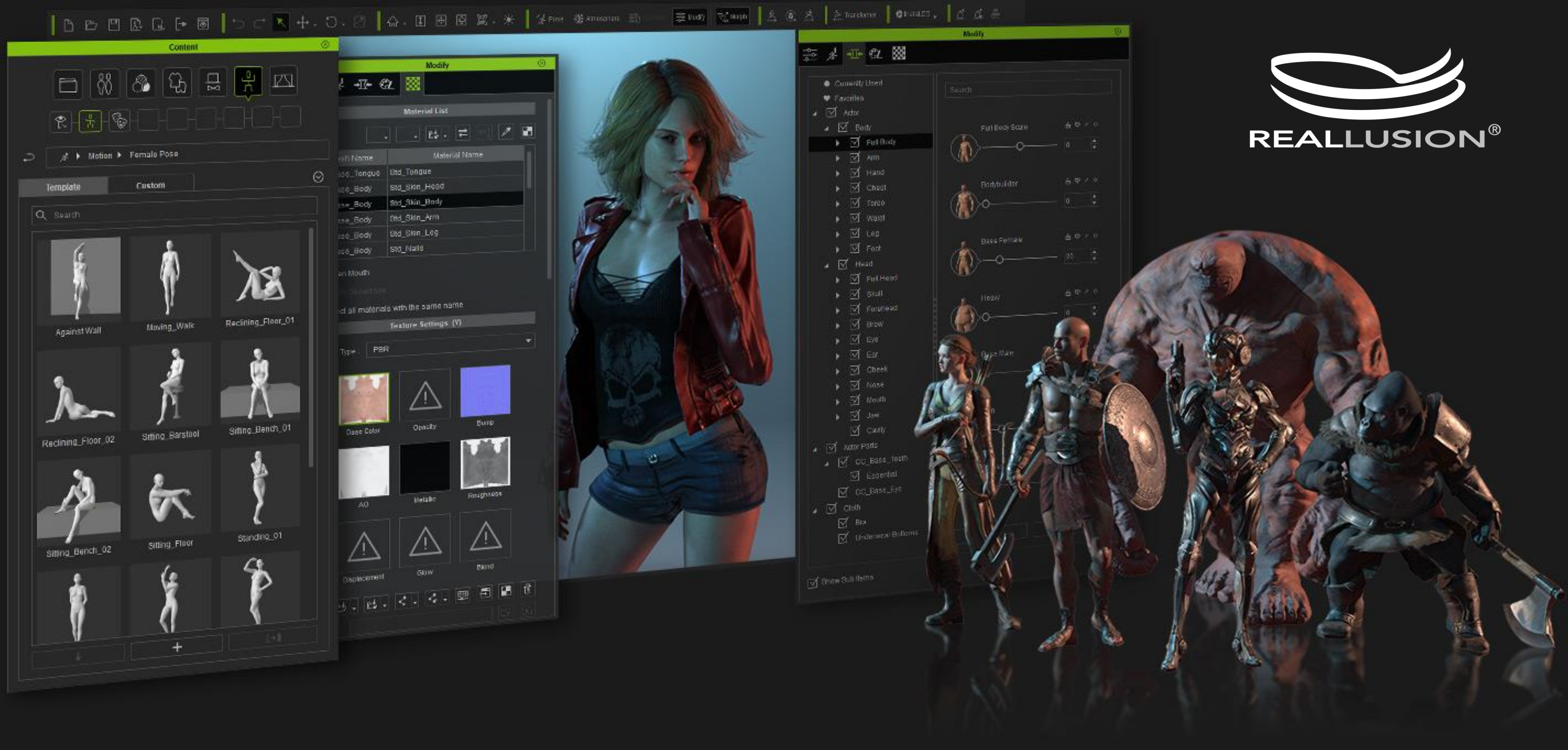
Lighting & PBR for material realism

Shot directly through Magic Leap technology on October 14, 2015.
No special effects or compositing were used in the creation of these videos.

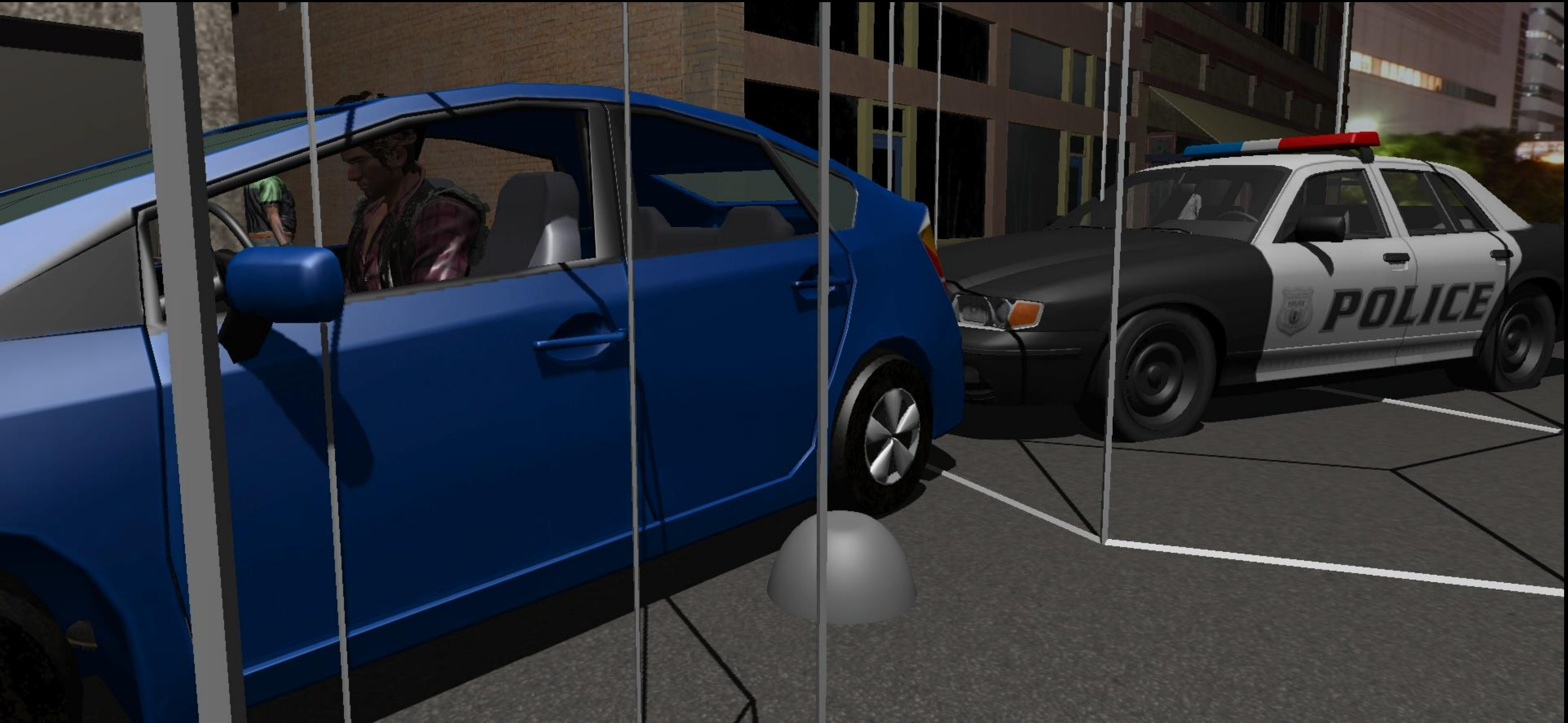**AR occlusion, compositing and lighting**

Proprioception

Production

Parameterised characters

Motion capture & IK

NPCs, Props & Scene editing

Body and Hand Interaction Cages

scene[8]

id	trigger_hit_by_moving_car
type	trigger_volume_head
radius	0.8

on_enter[0]

type	deactivate_all_triggers

type	attach
ref	trigger_hit_by_moving_car
target	driving_car

scene[9]

id	trigger_walk_too_far
type	trigger_volume_head
radius	1

on_enter[0]

type	deactivate_all_triggers

type	attach
ref	pistol
target	perp
joint	right_hand

type	play_animation
ref	perp
animation	03_sit_gun
blend	200
looping	false

scene[10]

active	false
id	trigger_ask_hands_on_wheel
type	trigger_speech
phrases	Put your hands on the steering w...

on_speech[0]

type	deactivate
ref	trigger_ask_hands_on_wheel

type	play_animation
ref	perp
animation	04_idle_to_wheel
blend	400
looping	false

on_complete[0]

type	play_animation
ref	perp
animation	05_wheel_idle
blend	0
looping	true

Scenario Interaction Tree Editing
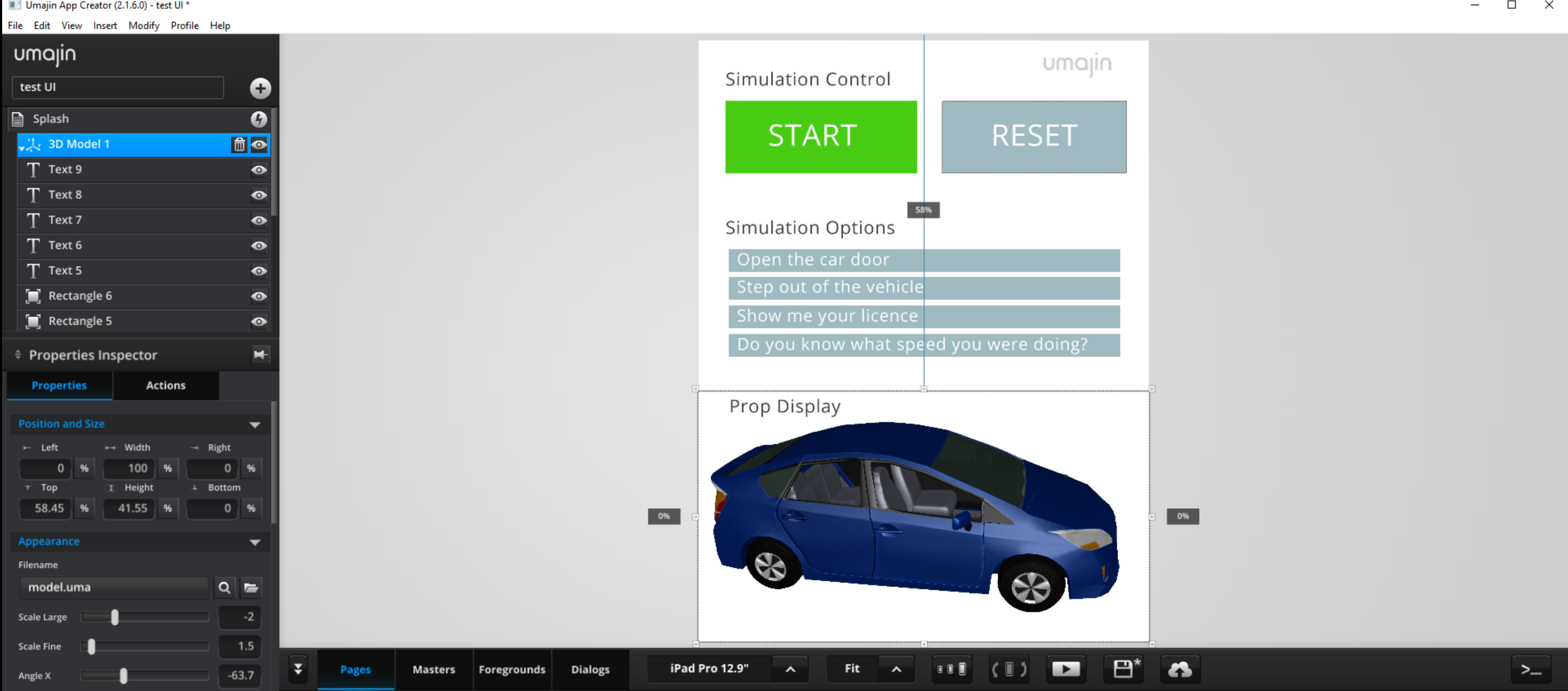
Data views & Panel User Interfaces

Live

Co-Spacing volume at CIC Boston

Questions