

# SCAENA

## Simulated Courtroom and Agents for Education, Navigation and Assistance

### DESCRIPTION

SCAENA is the Lab's **courtroom digital twin project** within VIRAJ. Its primary goal is to **develop the 3D counterpart** of the Cyberjustice Laboratory's physical courtroom so that it can serve as a shared infrastructure for multiple immersive justice experiments.

### CURRENT PROGRESS

The project is defined as a modular and versatile concept, outlining its potential applications across experimentation, training, and judicial contexts.



### OBJECTIVES

1. **Develop** a modular immersive laboratory that enables flexible configurations (VR, desktop, C.A.V.E.) and adjustable AI integration to support varied experimentation settings.
2. **Support** legal education and public engagement by simulating courtroom environments, including training for trial procedures and testimony.
3. **Facilitate** real-world judicial applications, such as remote hearings and spatial evidence evaluation through immersive scene exploration.

### NEXT STEPS

#### Short term (Summer 2026)

- Update the interoperable and cross-compatible technical infrastructure, including optimized rendering, improved avatars, and hand gesture accessibility.
- Model one external scene in order to expand the range of experiments to spatial evidence evaluation across use cases.
- Test the hybrid mock trial with spatial evidence evaluation through VR and cross-compatible desktop access during the summer school.
- Present the poster and extended abstract on the possible applications of SCAENA at the Hybrid Human AI Intelligence (HAI) conference.

#### Long term

- Use SCAENA as the Lab's main digital twin infrastructure for immersive justice experimentation.
- Expand the platform to support additional experiments, display configurations, and external scenes.
- Make the 3D courtroom and its underlying infrastructure available to other research teams for interdisciplinary experimentation.
- Use the accumulated experiments to support future publications and the broader VIRAJ guidelines framework.

