

Update on Mixed Reality applications

CHAIRE
KABIL Alexandre

CYBERCNI
Cyber CNI PhD Days 24/06/2021

Sécurité des infrastructures critiques



chairecyber-cni.org/



L'Europe s'engage en Bretagne / Avec le Fonds européen de développement régional

Table of Contents

- Cyber Physical-Virtual Systems
- Topology Navigation Experiment
- Digital Twin

CHAIRE
CYBERCNI
Sécurité des infrastructures critiques



chairecyber-cni.org/



Table of Contents

- **Cyber Physical-Virtual Systems**
- Topology Navigation Experiment
- Digital Twin

CHAIRE
CYBERCNI
Sécurité des infrastructures critiques



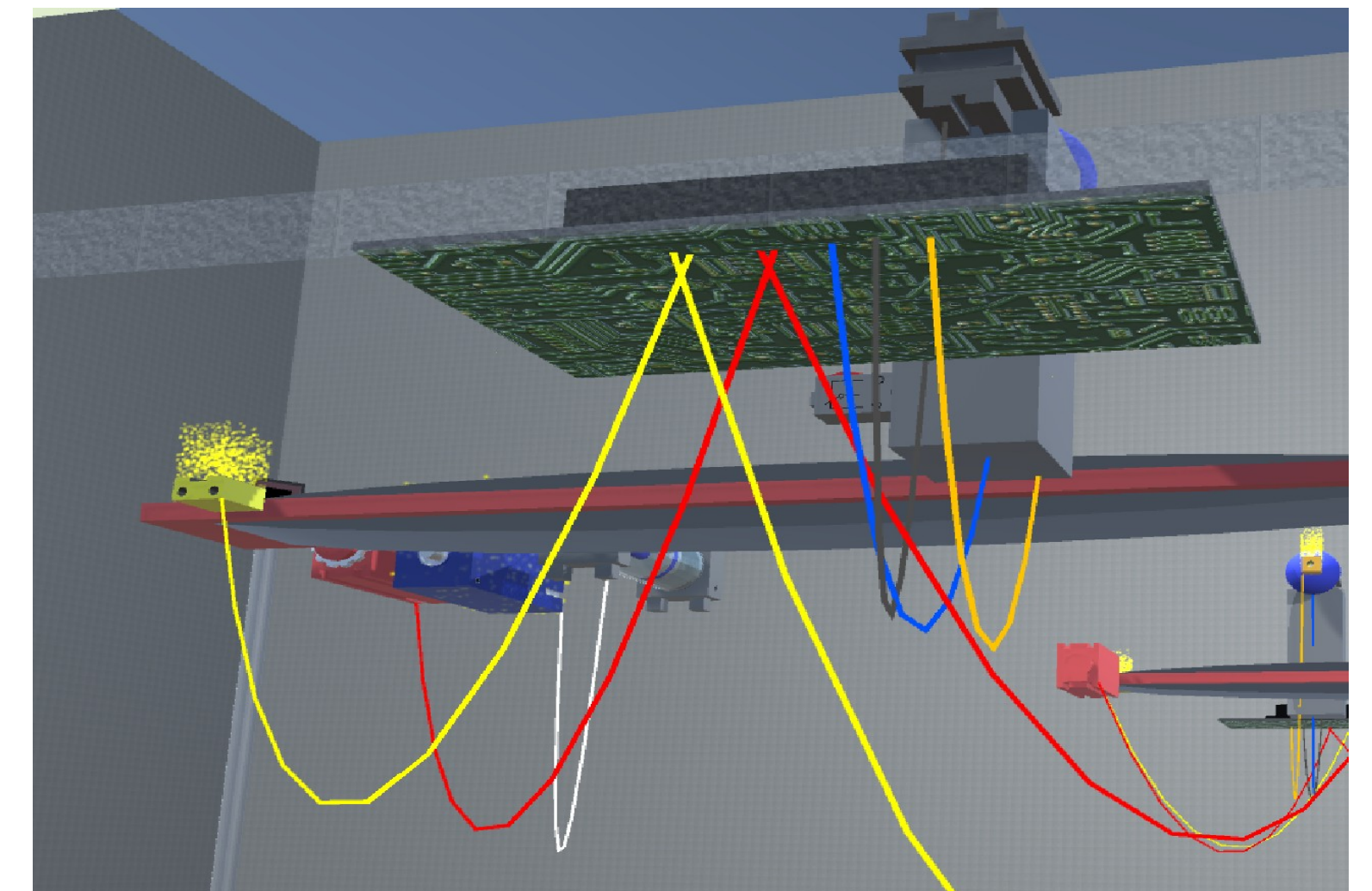
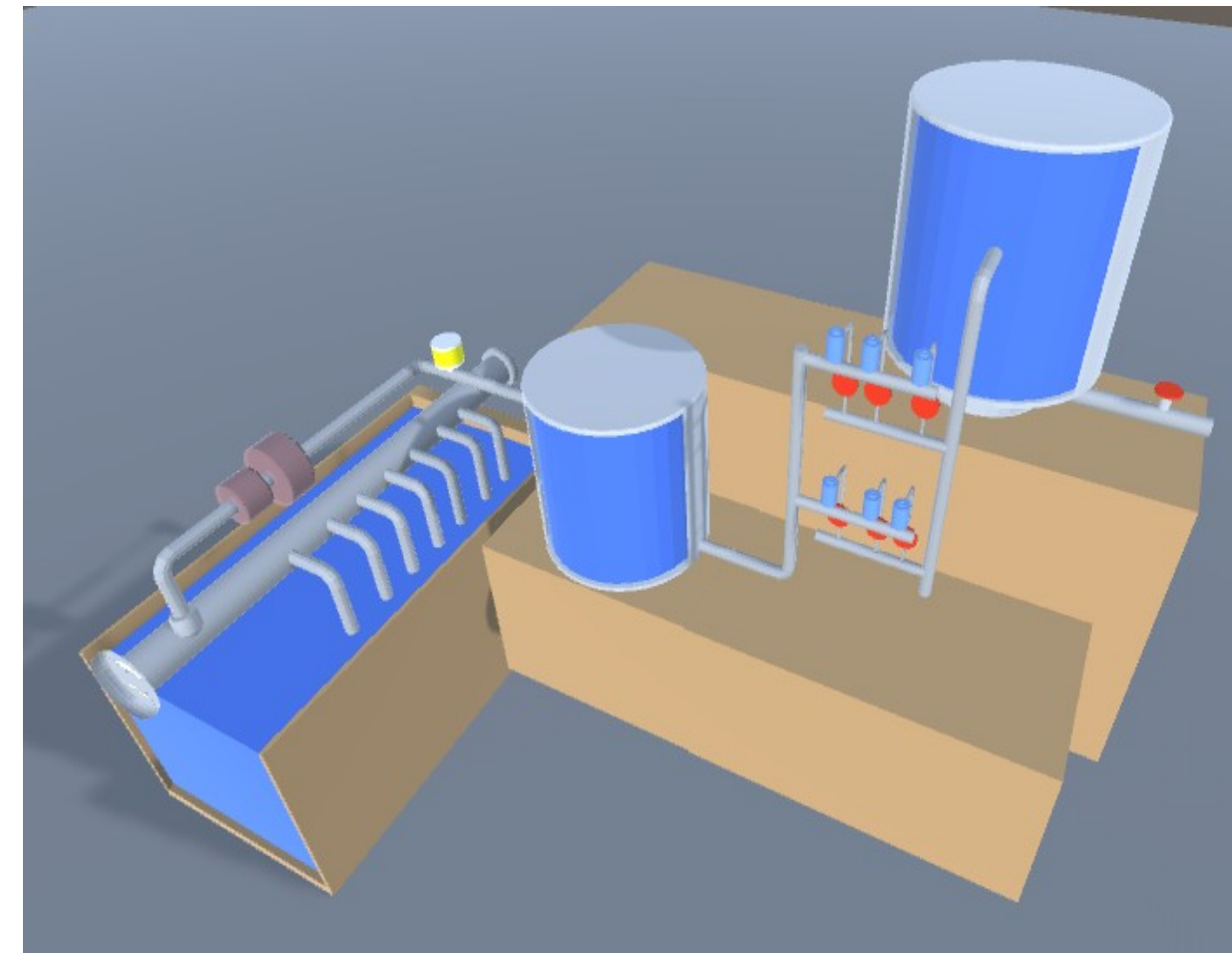
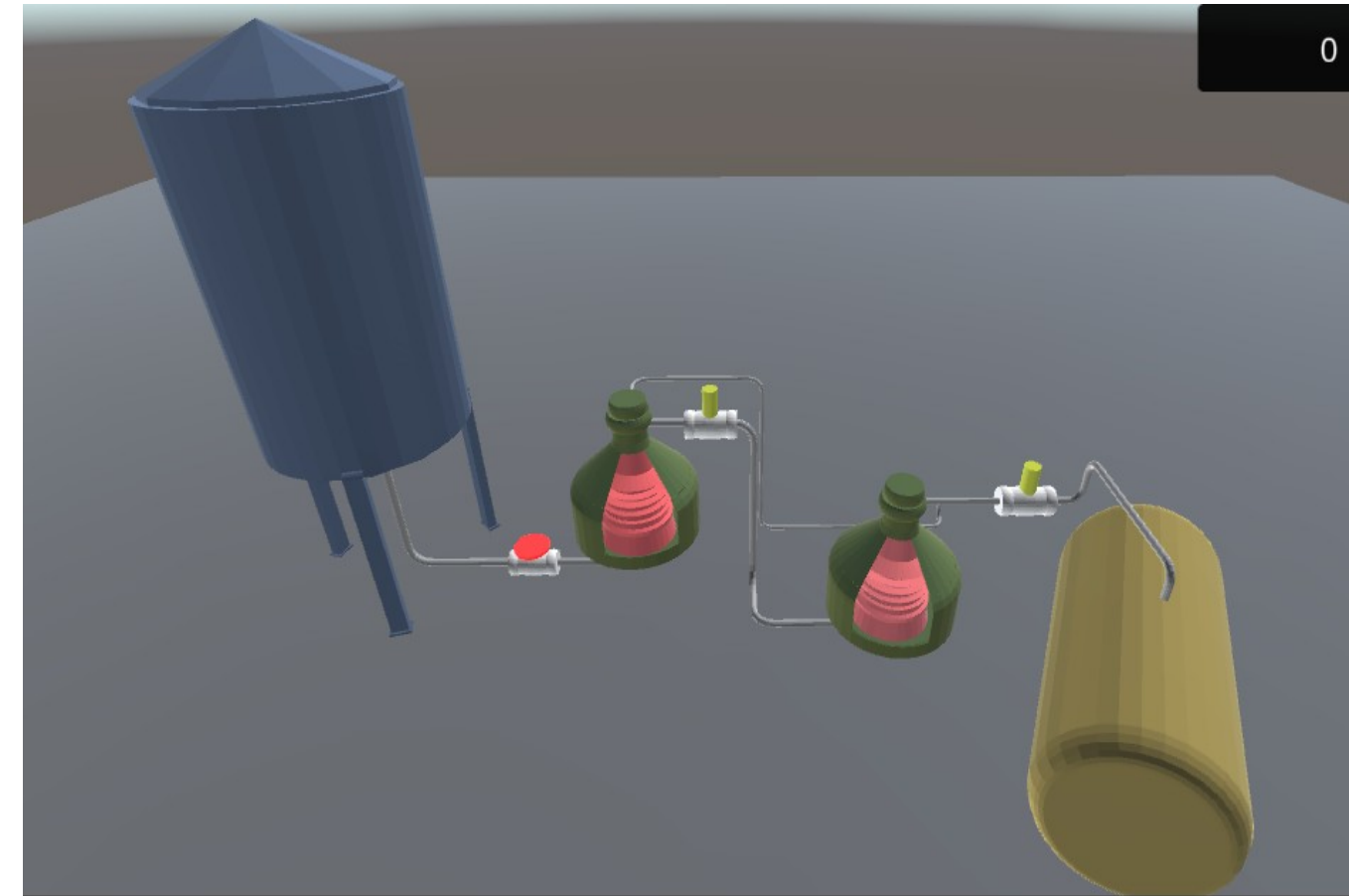
chairecyber-cni.org/



L'Europe s'engage en Bretagne / Avec le Fonds européen de développement régional

Cyber Physical-Virtual Systems

- **Low polygon modeling of CPS**
- Connection through REST API
- VR or Desktop 3D, collaborative applications



Cyber Physical-Virtual Systems

- Low polygon modeling of CPS
- **Connection through REST API**
- VR or Desktop 3D, collaborative applications



Script	CEP_SCADA
CEP_SW_SCADA_C_omega	14999
CEP_SW_SCADA_C_theta	29000
CEP_SW_SCADA_C_CC	800
CEP_S_SCADA_C_Run	1
CEP_S_SCADA_C_theta_disable	0
CEP_S_SCADA_C_omega_default	1
CEP_S_SCADA_C_theta_default	1

Cyber Physical-Virtual Systems

- Low polygon modeling of CPS
- Connection through REST API
- **VR or Desktop 3D, collaborative applications**

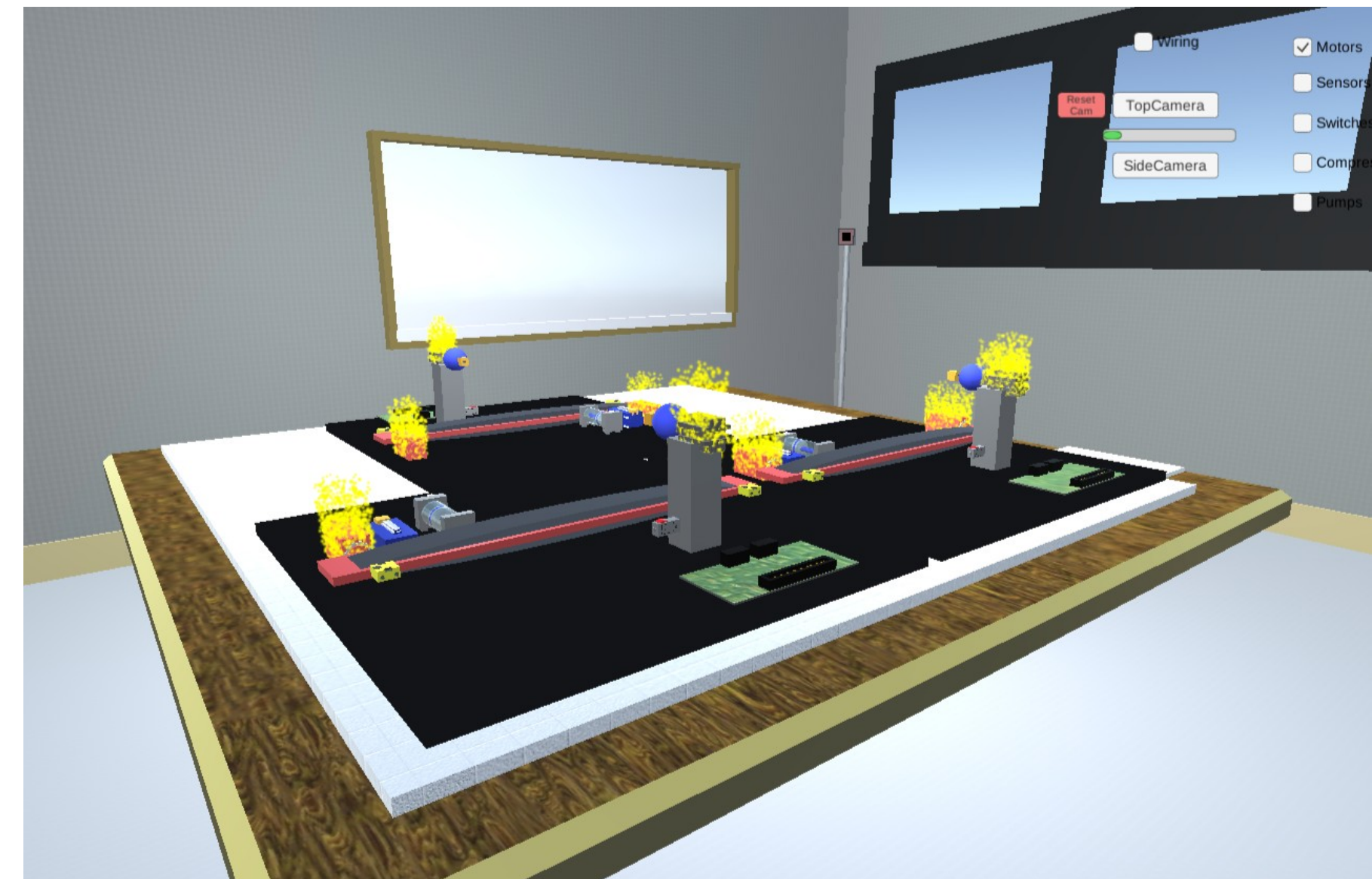
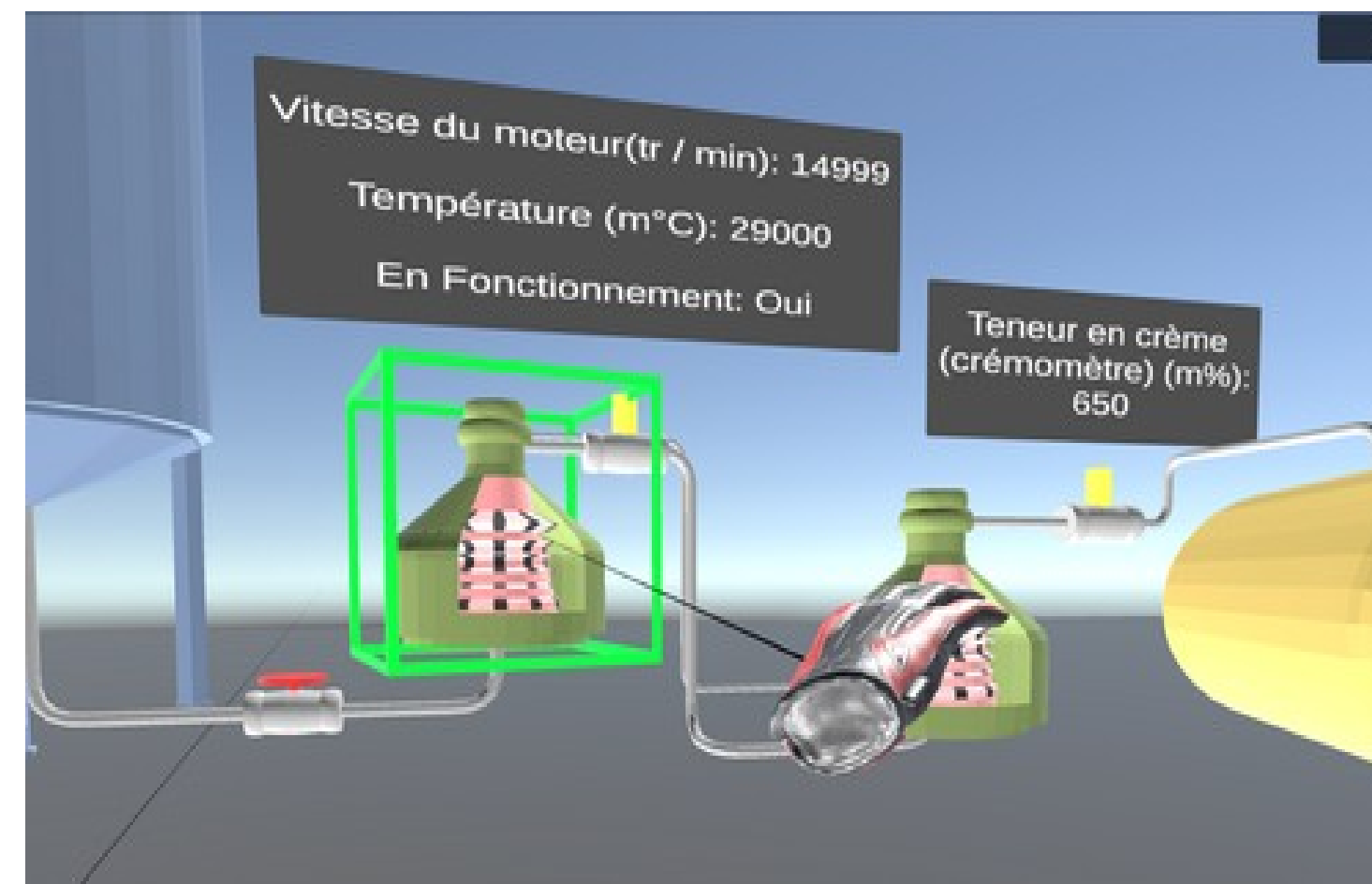
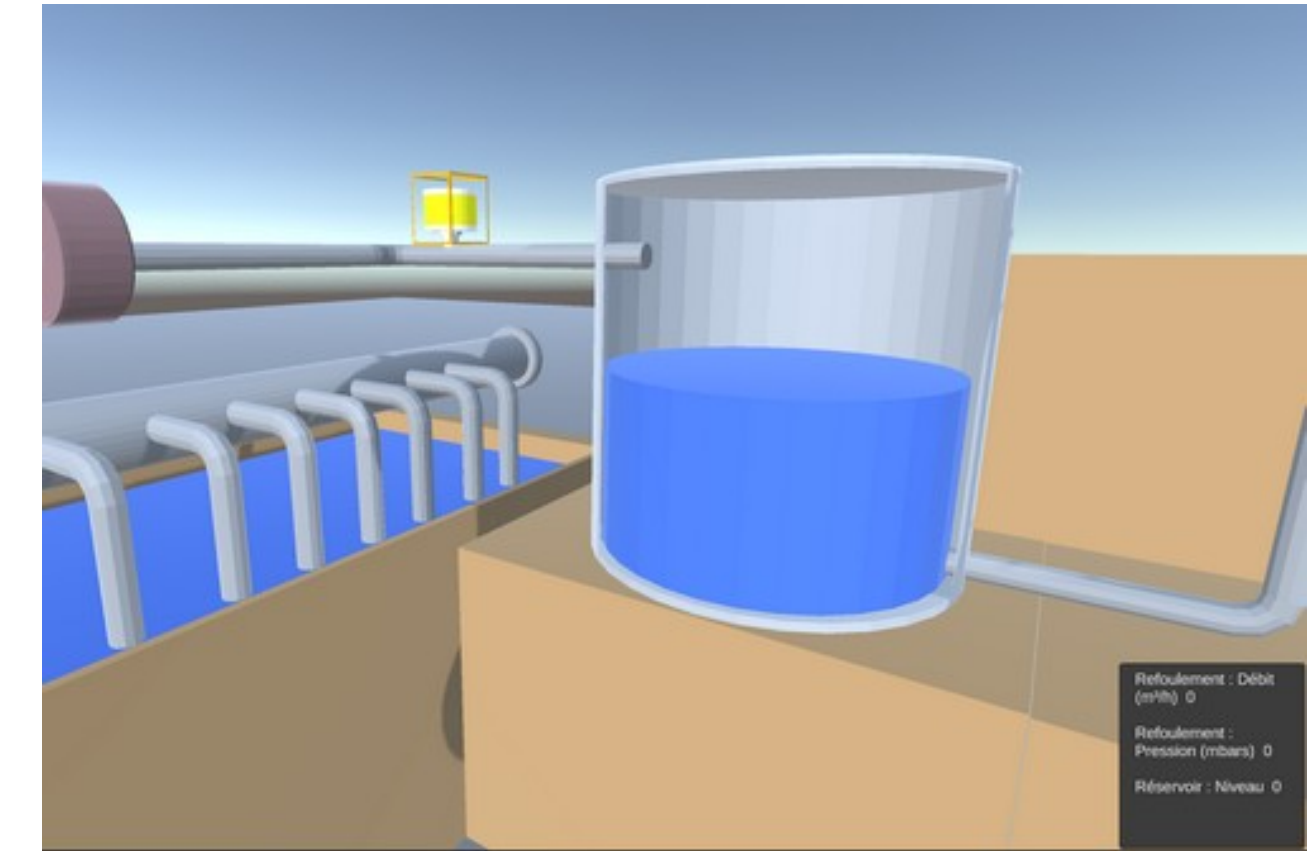


Table of Contents

- Cyber Physical-Virtual Systems
- **Topology Navigation Experiment**
- Digital Twin

CHAIRE
CYBER CNI
Sécurité des infrastructures critiques

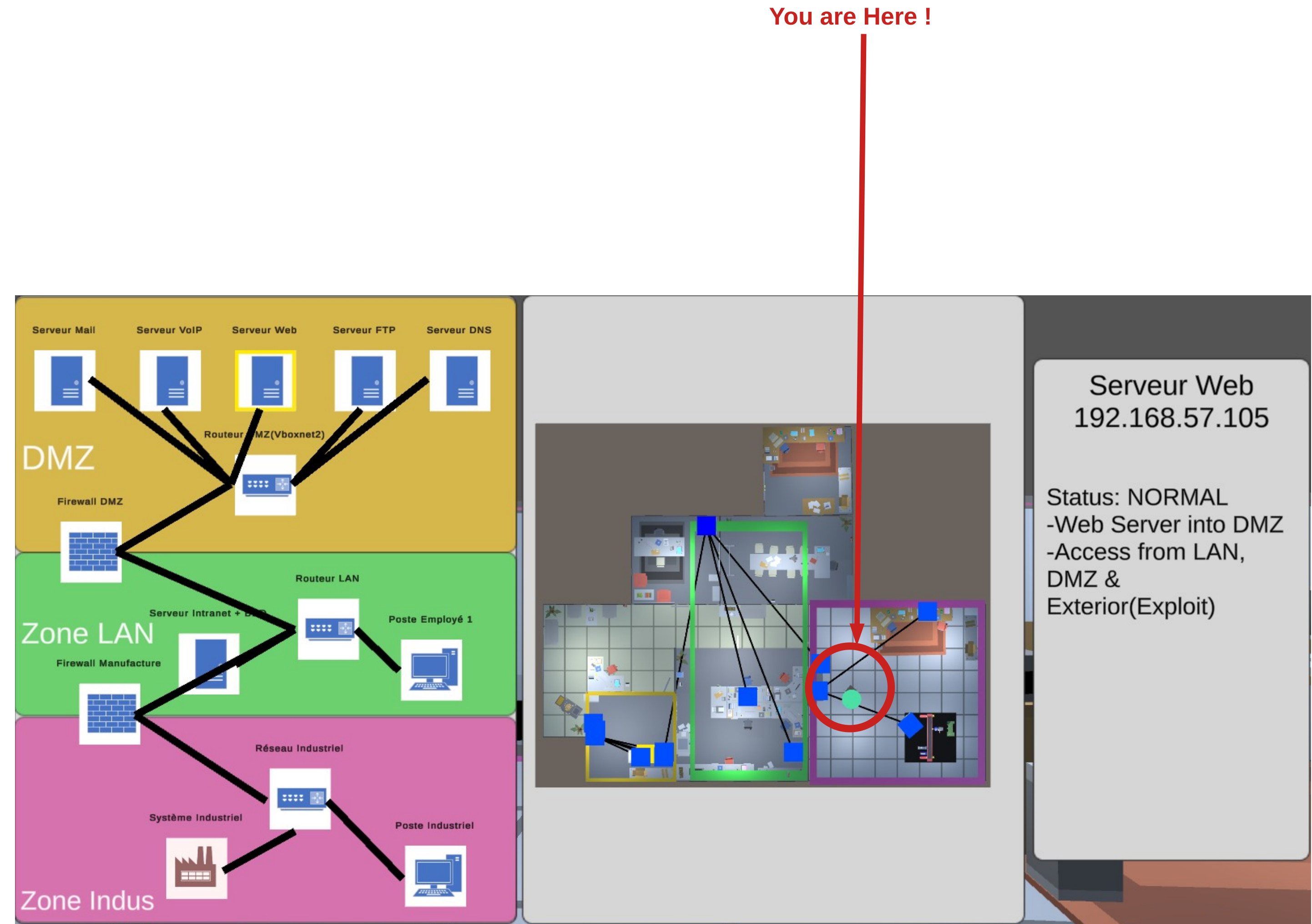


chairecyber-cni.org/



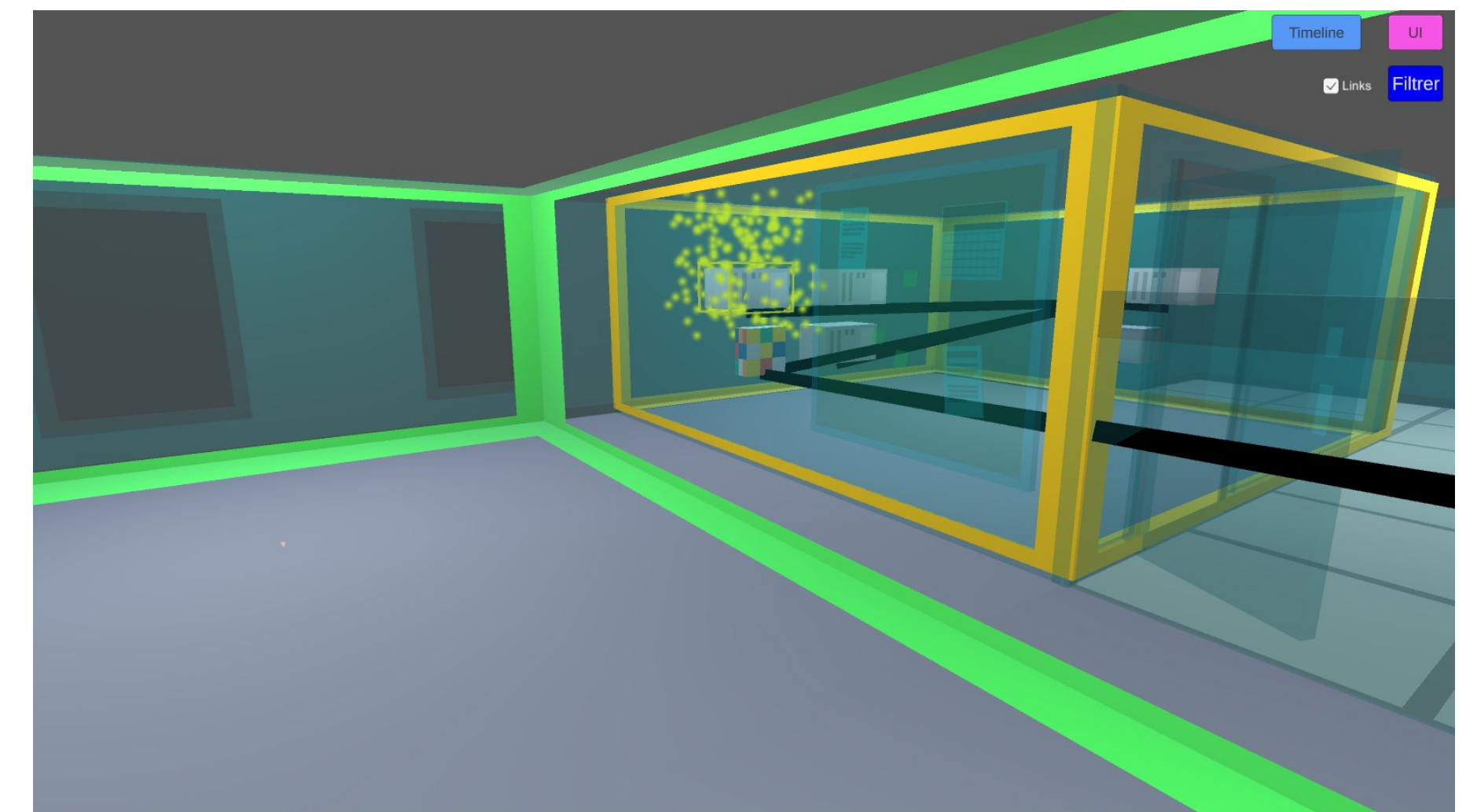
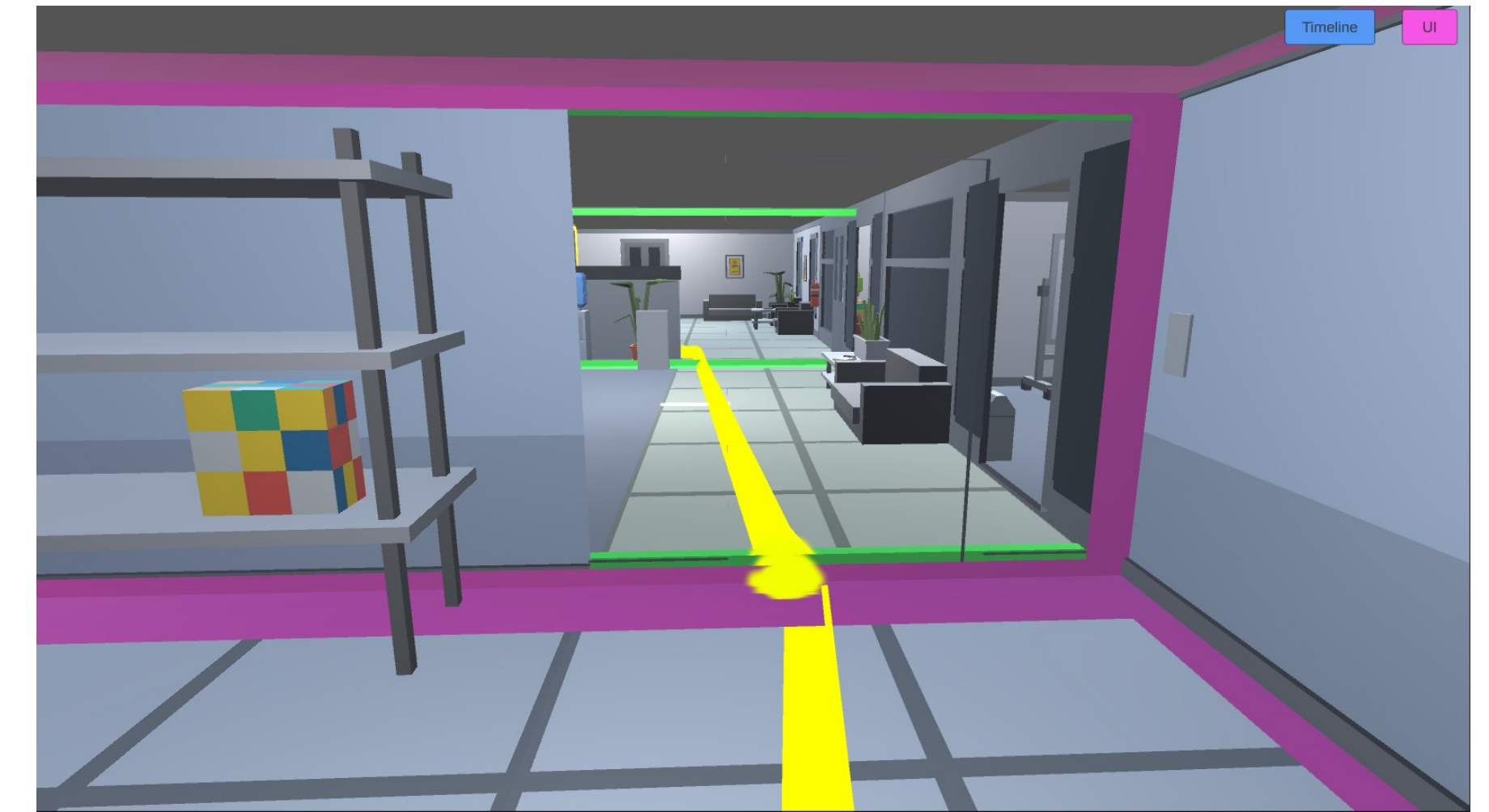
Topology Navigation Experiment

- **Semi-automated topology generation & assets positioning**
- 3 navigation metaphors and 3 different scenarios
- Experimentation protocol:
 - WebGL, Remote experimenter
 - SUS & UX Questionnaires



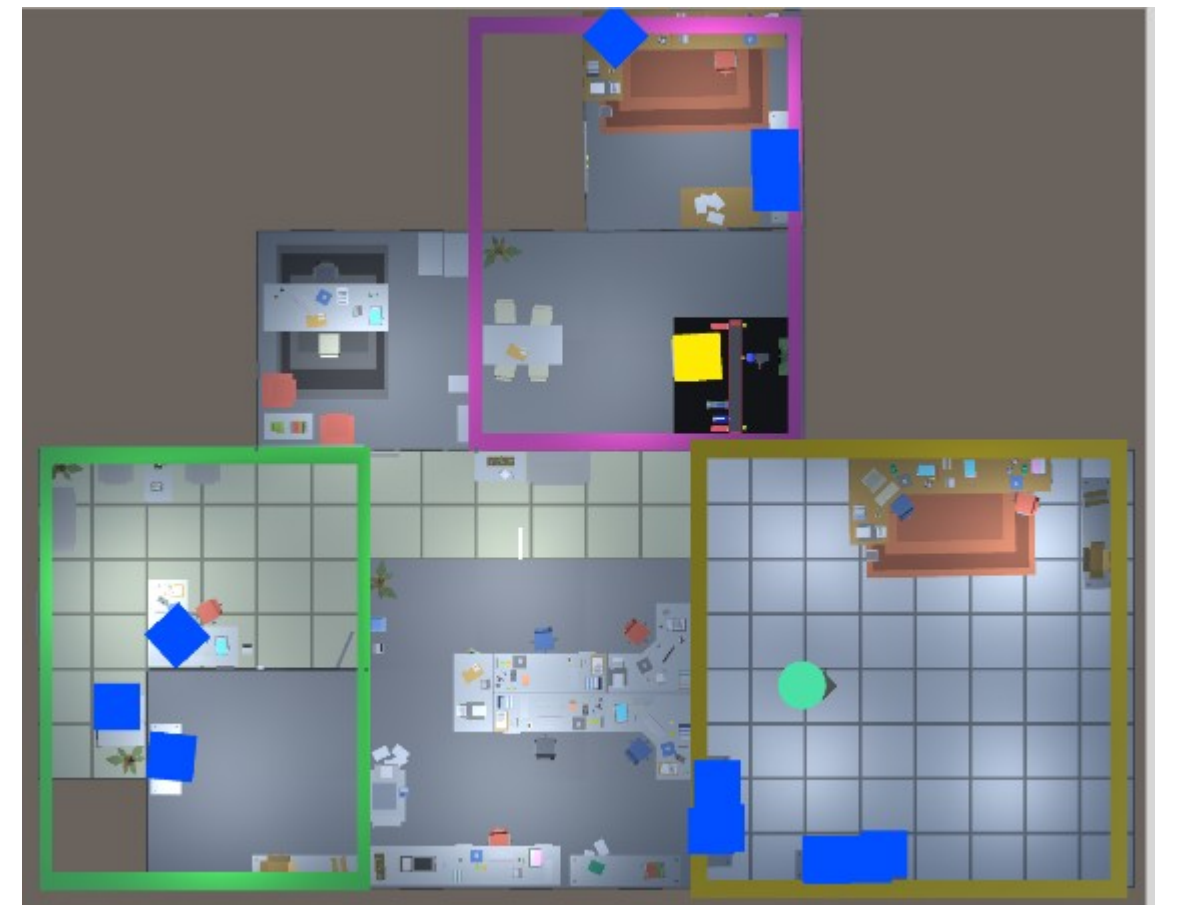
Topology Navigation Experiment

- Semi-automated topology generation & assets positioning
- **3 navigation metaphors and 3 different scenarios**
- Experimentation protocol:
 - WebGL, Remote experimenter
 - SUS & UX Questionnaires



Topology Navigation Experiment

- Semi-automated topology generation & assets positioning
- **3 navigation metaphors and 3 different scenarios**
- Experimentation protocol:
 - WebGL, Remote experimenter
 - SUS & UX Questionnaires



Topology Navigation Experiment

- Semi-automated topology generation & assets positioning
- 3 navigation metaphors and 3 different scenarios
- **Experimentation protocol:**
 - **WebGL, Remote experimenter**
 - **Screen recording & logs**
 - **SUS & UX Questionnaires**

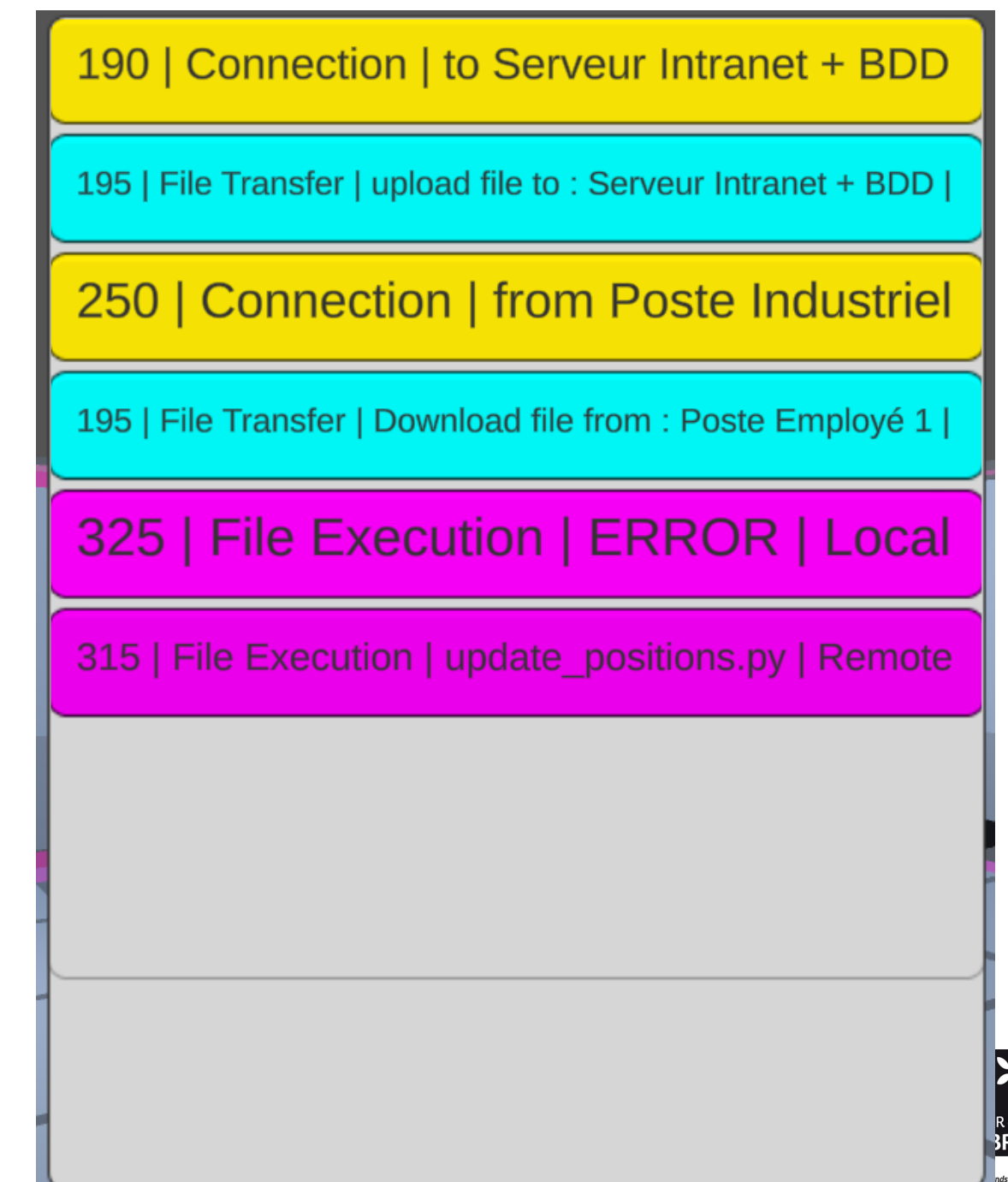
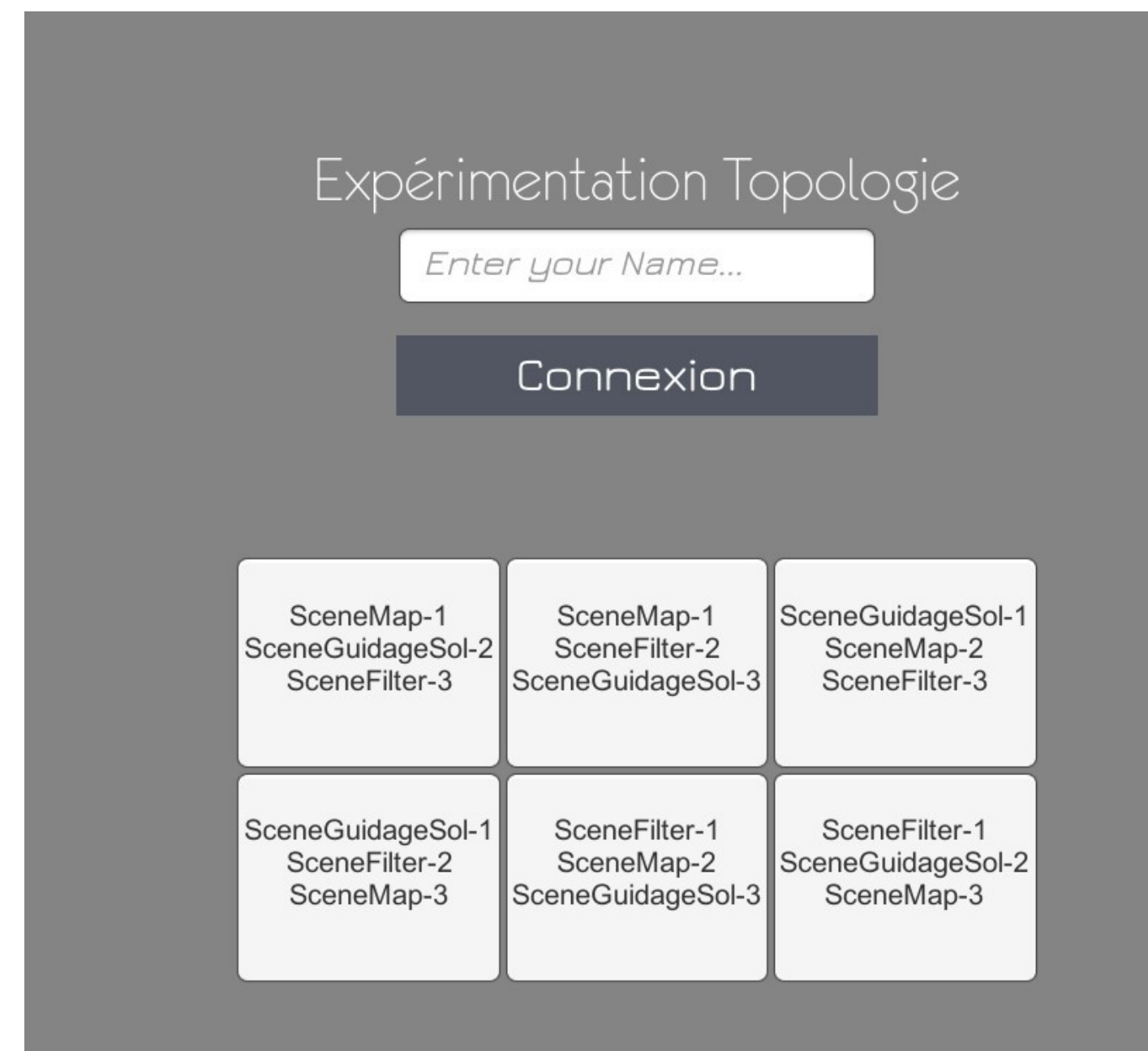


Table of Contents

- Cyber Physical-Virtual Systems
- Topology Navigation Experiment
- **Digital Twin**

CHAIRE
CYBER CNI
Sécurité des infrastructures critiques



chairecyber-cni.org/



NOKIA Bell Labs



PÔLE D'EXCELLENCE
CYBER

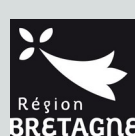


AIRBUS

AMOSSYS



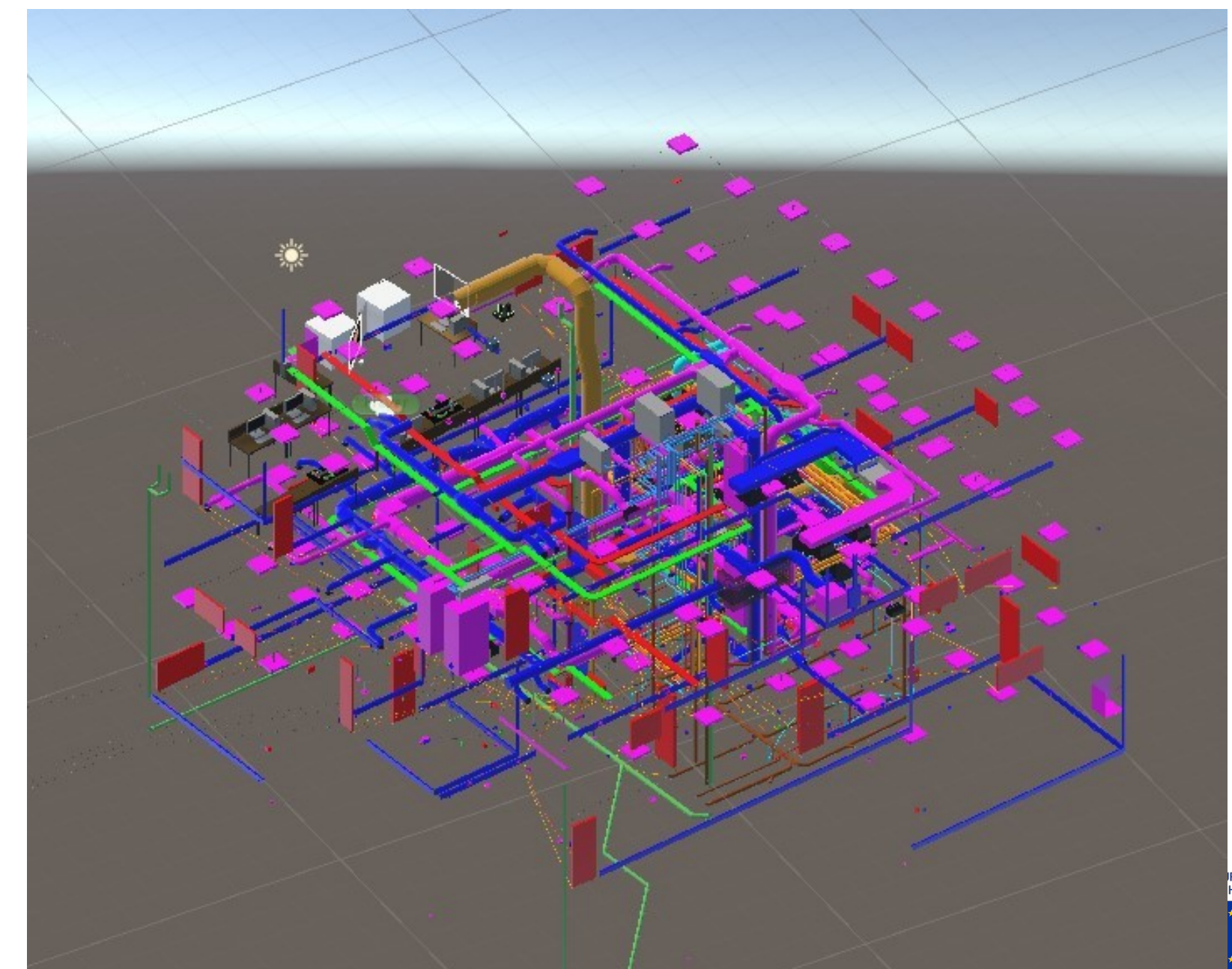
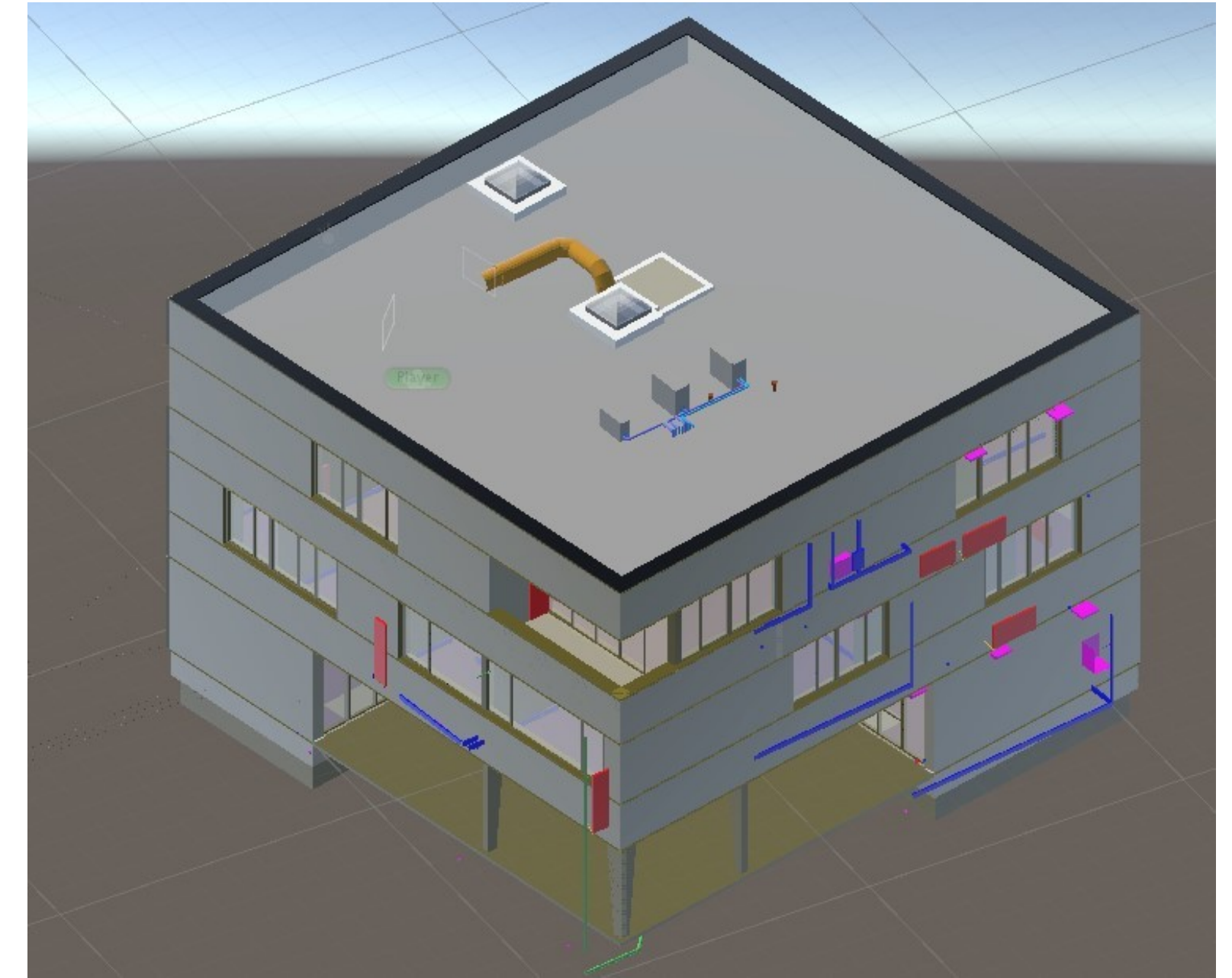
BNP PARIBAS
La banque d'un monde qui change



L'Europe s'engage
en Bretagne

Censyble Digital Twin

- **3D Architect plans implementation**
- Co-location & scaling
- Data filtering & localization
- MR interaction



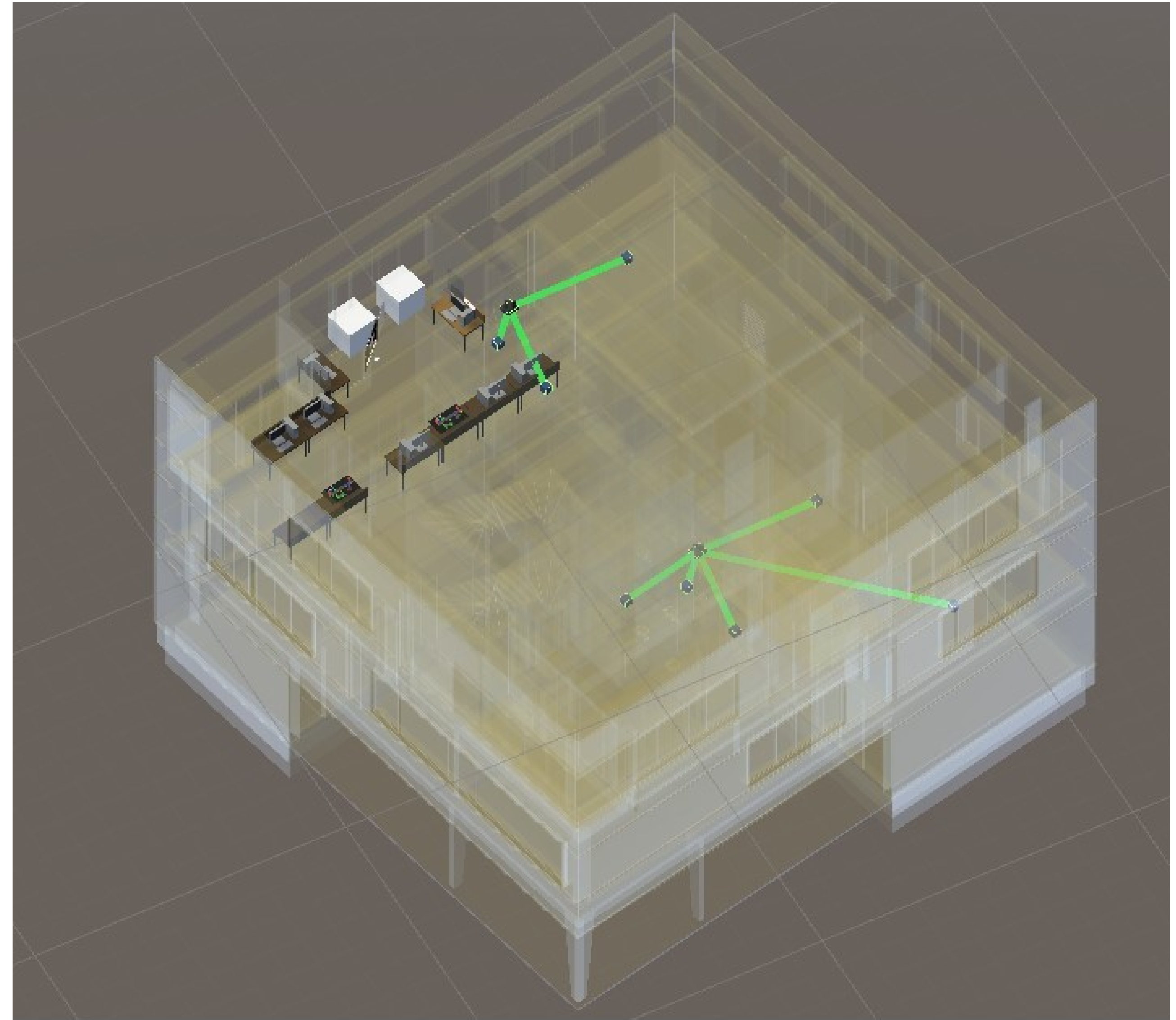
Censyble Digital Twin

- 3D Architect plans implementation
- **Co-location & scaling**
- Data filtering & localization
- MR interaction



Censyble Digital Twin

- 3D Architect plans implementation
- Co-location & scaling
- **Data filtering & localization**
- MR interaction



Censyble Digital Twin

- 3D Architect plans implementation
- Co-location & scaling
- Data filtering & localization
- **MR interaction**

