IMMERSIVE BUILDING REVIEW

LUMINOUS Pilot 3
Design models, captured spaces and natural interaction

Florendia Fourli · Hypercliq
EuroXR 2026

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement N° 101135724

BIM & ARCHITECTURAL DESIGN REVIEW

01

3D MUTLI USER SPACE

Architects , interior designers and engineers can explore projects though immersive technology.

02

BIM INFORMATION AT HAND

Users can seek information and contextualised BIM metadata relating to the surrounding objects.

03

LIVE CHANGES

Users can make changes to the project within a system capable of understanding the surrounding space.

04

MOVE FROM DESIGN TO REALITY

Luminous capabilities extended to as-built captured spaces and the real world.

LUMINOUS
LANGUAGE AUGMENTATION FOR HUMANVERSE

hypercliq

European Union
Horizon Europe

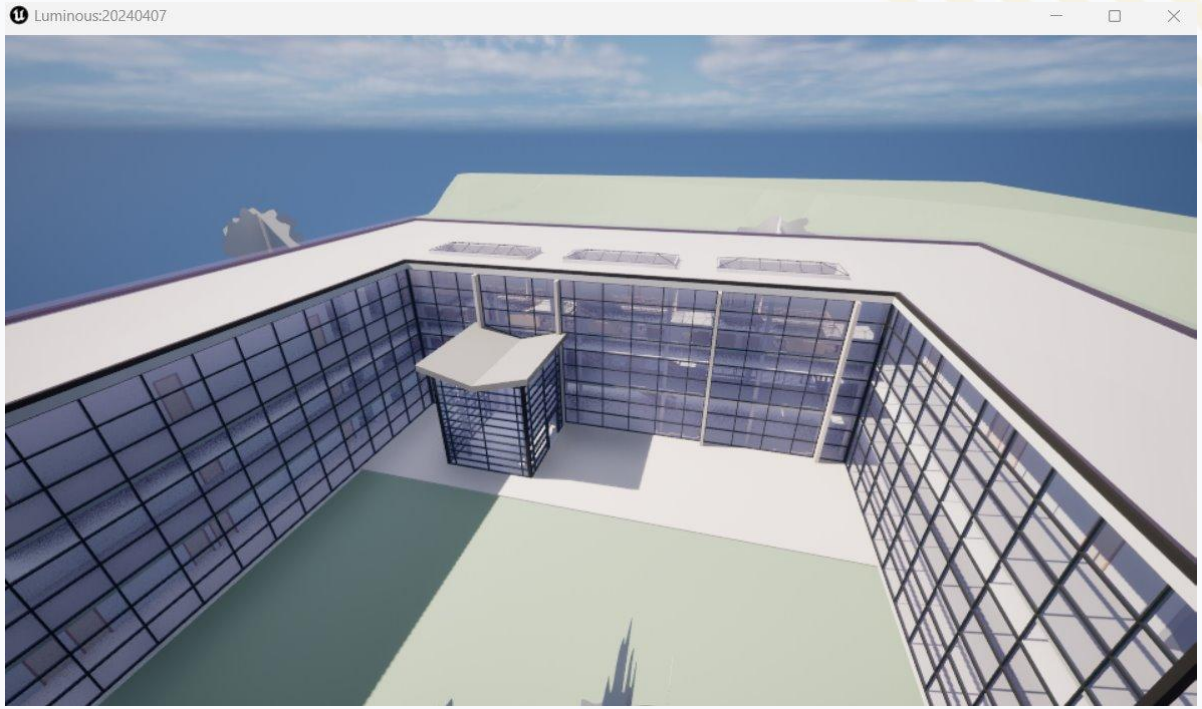
BIM navigation in the sandbox

Unreal Engine sandbox

Review the building model in VR

Ask about the element in view

Try a change during review



Immersive design review for architects, engineers and remote experts

European Union
Horizon Europe

Natural language in the 3D scene

Interfaces with EHU's LLM-based VR-ARCH assistant

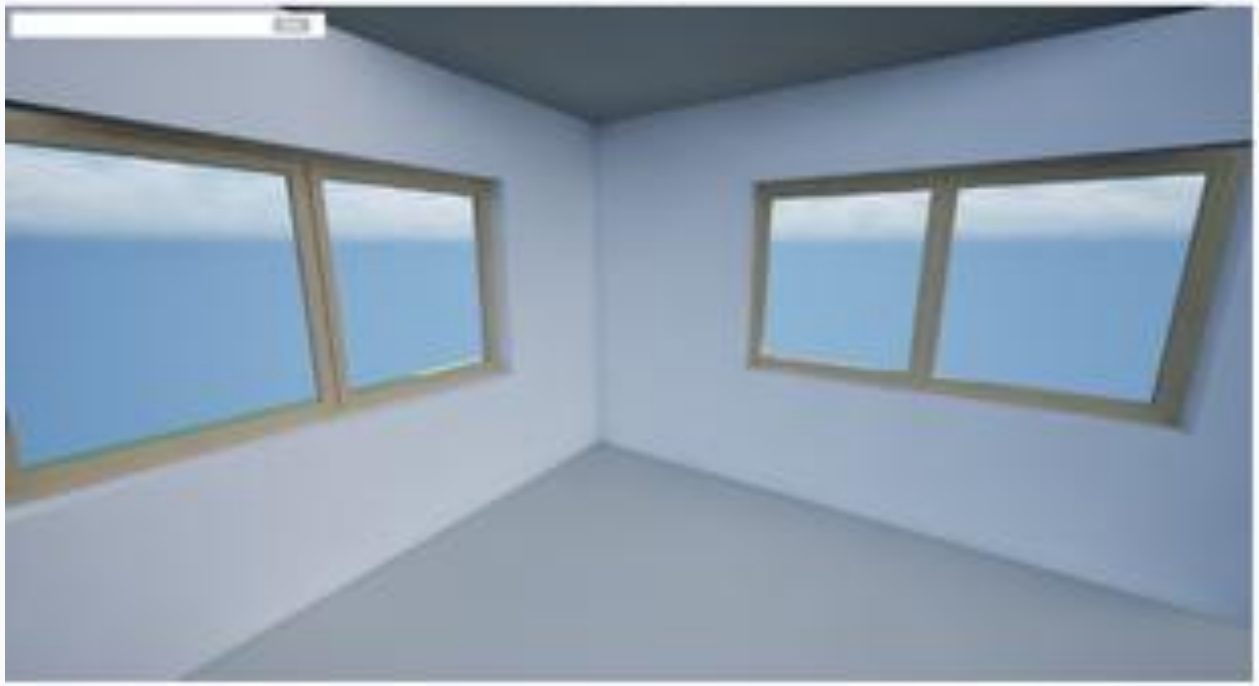
BIM QUERY

"What is the material of the right wall?"

Lightweight concrete

SCENE CHANGE

"Place a rug next to the window"



Language interface with EHU's VR-ARCH assistant

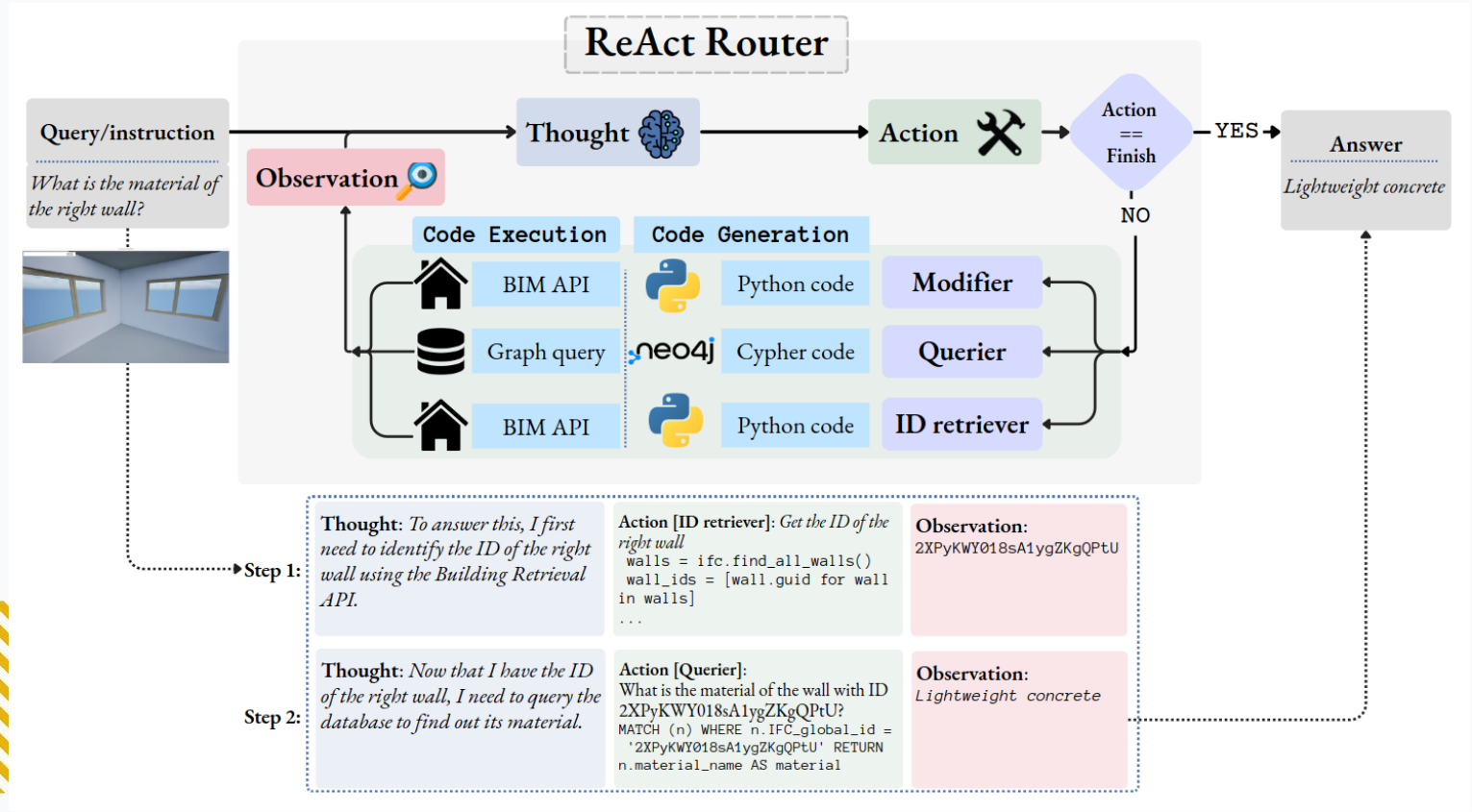
EHU
INFORMATIKA FAKULTATEA
FACULTAD DE INFORMÁTICA

LUMINOUS
LANGUAGE AUGMENTATION FOR HUMANVERSE

European Union
Horizon Europe

VR-ARCH implementation

EHU LLM with the **Vection Technologies** sandbox using **Hypercliq**'s voice layer

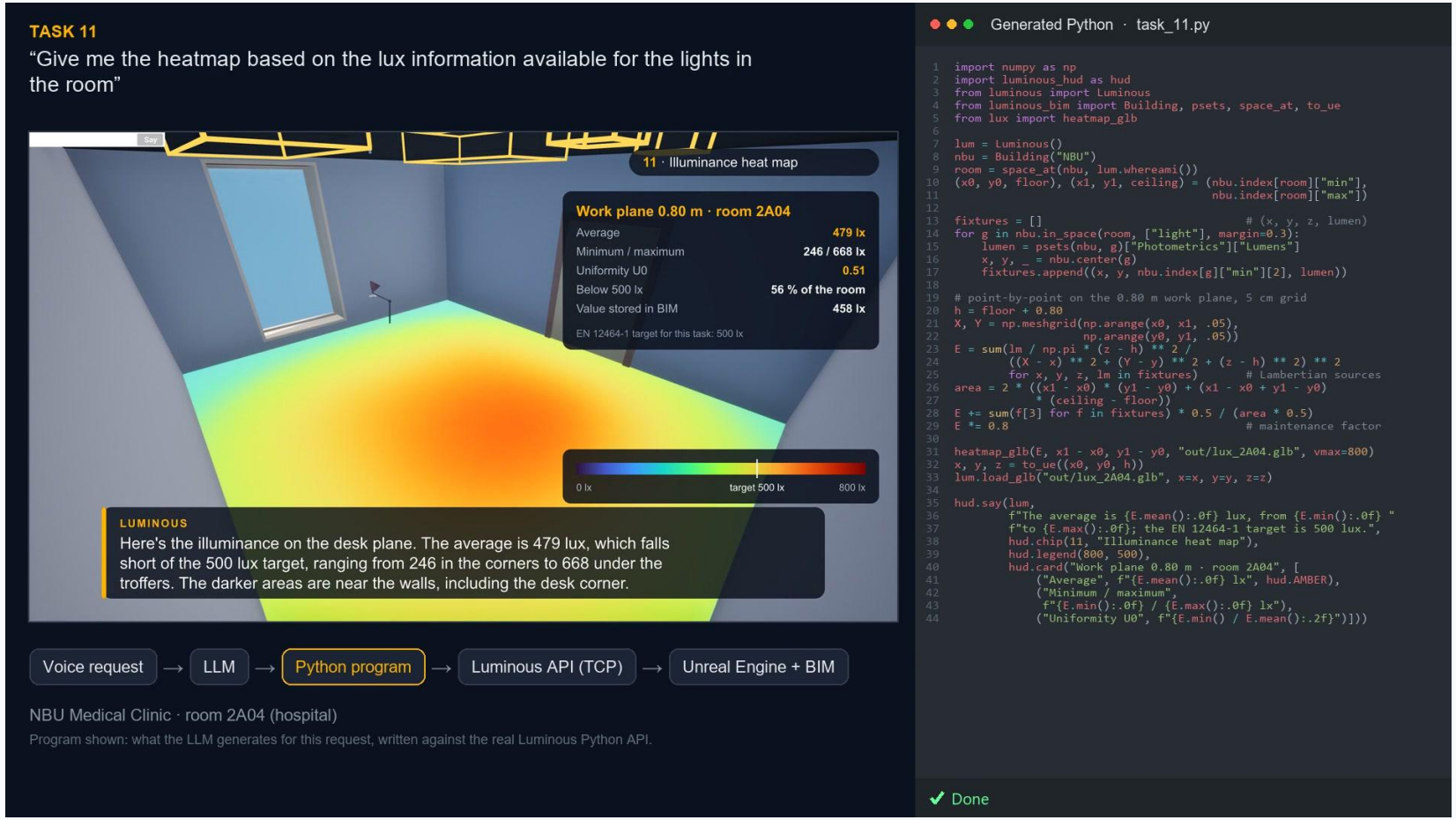


- Unreal sandbox
- ReAct router and Python tools
- Neo4j BIM metadata
- Voice input and spoken feedback

European Union
Horizon Europe

LUMINOUS showcase · extended

Backup · full recorded showcase · 3 min



Extended showcase: Vection sandbox with EHU LLM interaction

LUMINOUS
LANGUAGE AUGMENTATION FOR HUMANVERSE

hypercliq

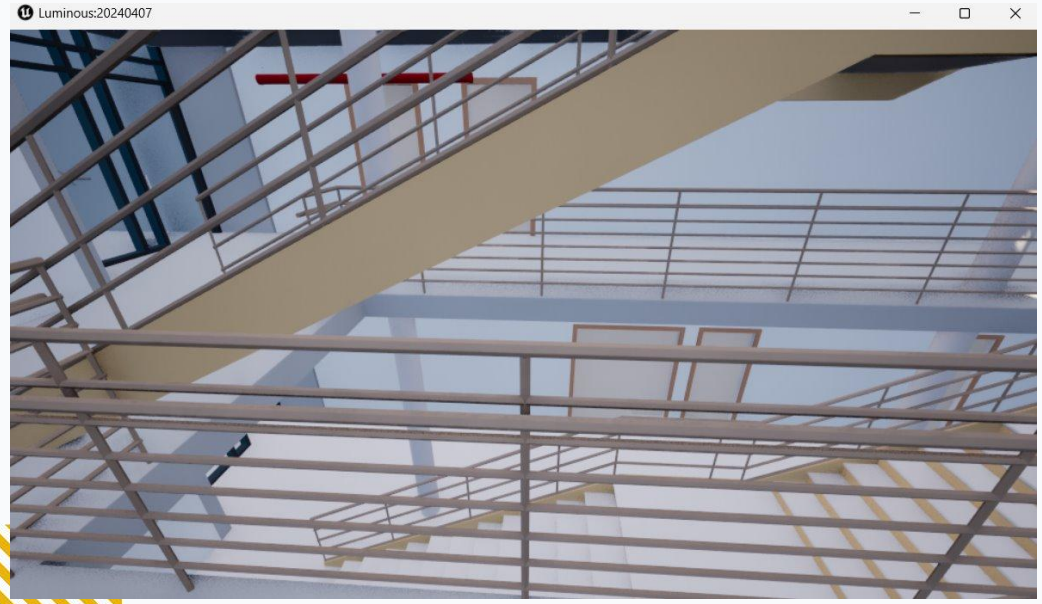
European Union
Horizon Europe

EHU
INFORMATIKA FAKULTATEA
FACULTAD DE INFORMÁTICA

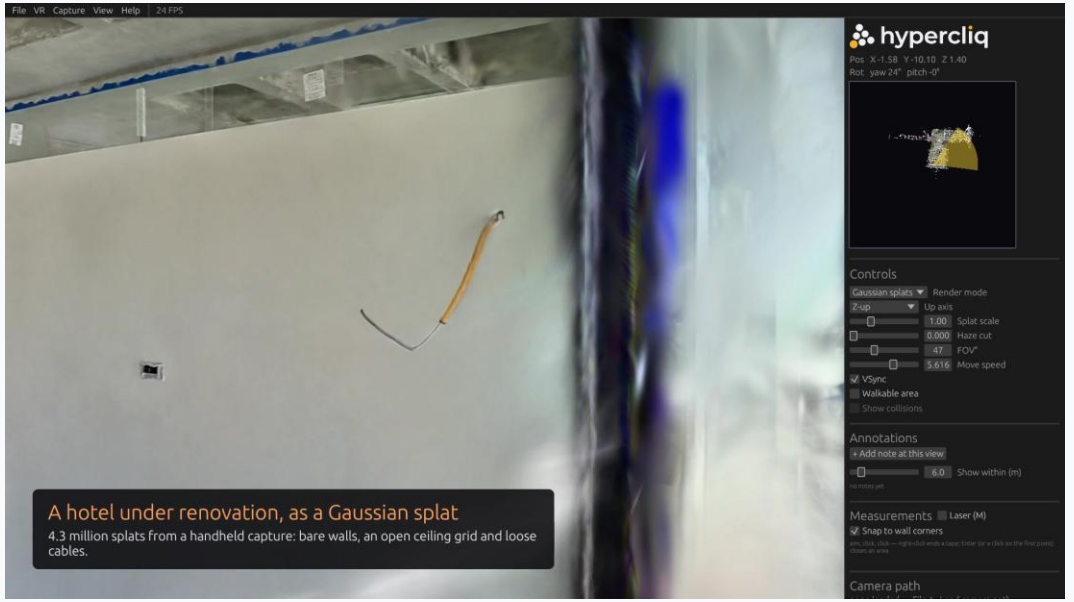
VECTION TECHNOLOGIES

Design intent and captured reality

BIM DESIGN MODEL



CAPTURED SITE



BIM provides structure and properties. A scan preserves visible site conditions.

Different example scenes shown, not a registered before-and-after pair

LUMINOUS
LANGUAGE AUGMENTATION FOR HUMANVERSE

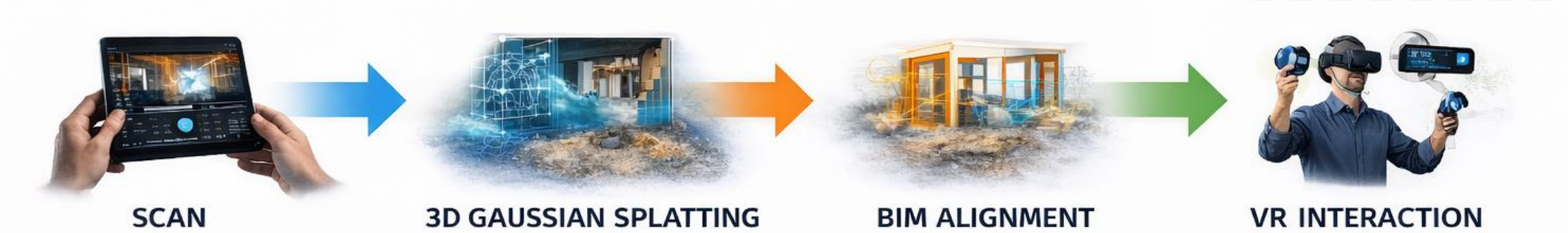
hypercliq

European Union
Horizon Europe

The design-to-as-built workflow

hypercliq

Extended Pilot 3 review scenario



CAPTURE

Record the site

RECONSTRUCT

Create the 3D scene

ALIGN

Bring scan and BIM together

REVIEW

Inspect, compare and ask

The wider goal is to compare the current site with its design model

LUMINOUS
LANGUAGE AUGMENTATION FOR HUMANVERSE

European Union
Horizon Europe

Extended 3DGS Use Case modules

01 NAVIGATION IN CAPTURED SCENE

Development of an Unreal Engine splat viewer.

02 OBJECT RECOGNITION

Identification of visible elements using YOLO26n.

03 BIM GENERATION

Creation of BIM metadata from recognized objects.

04 REVIEW CONTEXT

Measure, explore and record issues and annotations within the 3D view.

These are requirements for the extended workflow, not reported validation results

LUMINOUS
LANGUAGE AUGMENTATION FOR HUMANVERSE

hypercliq

European Union
Horizon Europe

Hotel showcase · full sequence

Backup · full recorded showcase · 2 min 39 sec



Hypercliq viewer followed by the LUMINOUS-labelled interaction sequence

LUMINOUS
LANGUAGE AUGMENTATION FOR HUMANVERSE

hypercliq

European Union
Horizon Europe

LUMINOUS
LANGUAGE AUGMENTATION
FOR HUMANVERSE

hypercliq

THANK YOU

Questions and discussion

Florendia Fourli · Hypercliq
Pilot 3 contributions: Hypercliq, EHU, Vection Technologies

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement N° 101135724