

IPEM (LW17), IDLAB (EA06), MICT (PS01)

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# XRHIL: EXTENDED REALITIES AND HUMAN INTERACTION LABS

Interdisciplinary XR Core Facility (under review)



XRHIL is a set of **multimodal labs** that provide specialized services and expertise for performing **(group) experiments**, mainly focused on the humanities. The labs are equipped with XR technologies (**Virtual Reality, Augmented Reality, immersive audio**). Synchronous methods for **tracking human behaviour and experience** are focused on body movement and (neuro)physiology.

XRHIL offers comprehensive **support** throughout the entire experiment process, including **technical and methodological assistance, development and data collection**. The facility also provides advanced expertise in VR/AR applications, sensor integration, real-time feedback loops, sonification and physiological measurements.

## Three different labs

### Art & Science Interaction Lab

- **Large:** 10 x 10 x 7m space
- Tailored for **group experiments**
- Flexible trussing & infrastructure

### Maker Space Lab

- **Medium:** 15 x 4 x 4m space
- Tailored for **individual experiments**
- Studio

### Experience Room

- **Small:** 4 x 3 x 3m space
- Ideal for **relaxation experiments**
- Cozy atmosphere



## Infrastructure & equipment

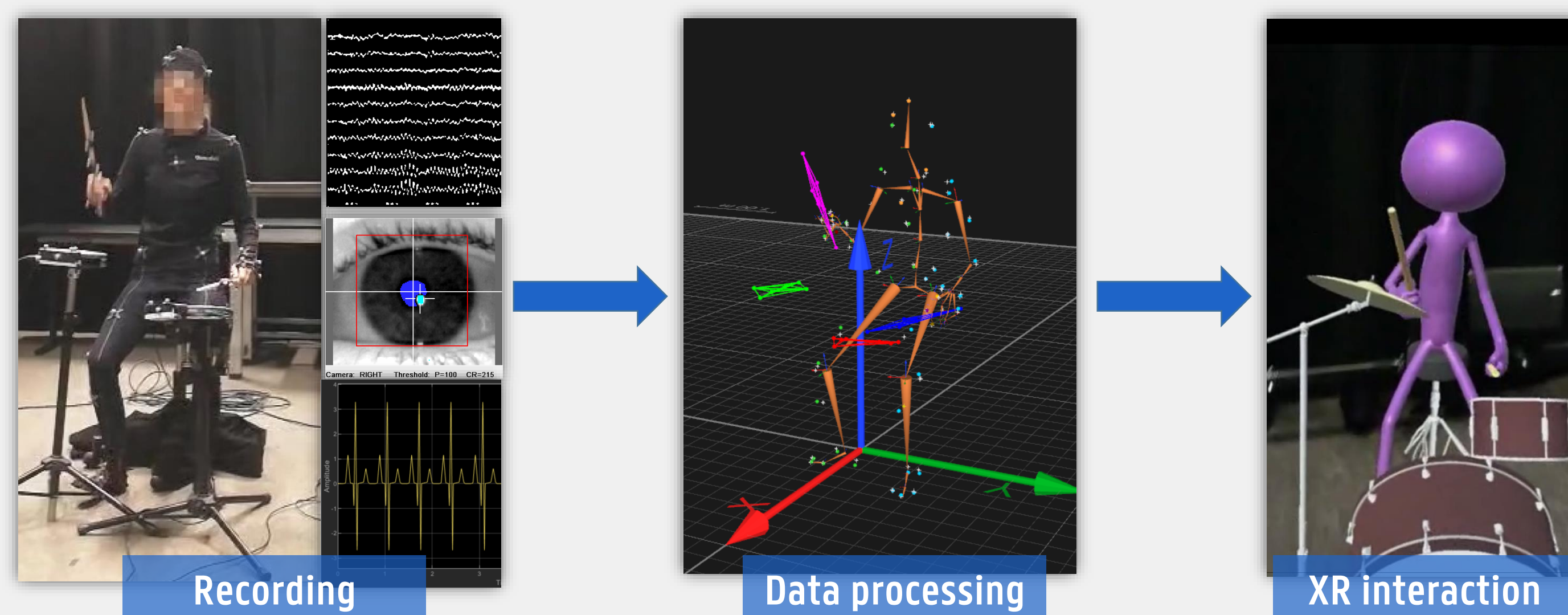
### Multisensory displays & audio

- 80 speaker immersive installation
- Barco 4K projection system
- Virtual Reality (Oculus, Quest)
- Augmented Reality (Hololens, Vision Pro)
- Unique state-of-the-art infrastructure
- Synchronisation across all modalities
- Acoustically controlled / dampened

### Sensors & (neuro)physiology

- 6-person full-body motion capture
- EEG: 2-person 64 channel EEG
- EKG (heartrate)
- Breathing
- GSR (sweat, emotional state)
- Balance & force plates
- 3D Matterport & object scanner

## Example: from reality to data to XR



## Services – what can we do for your research

### XR services

- Facilitate VR/AR/XR experiments
- Human interaction in virtual environments
- Physical object/space 3D modelling
- Multilocation experiences
- Quantitative recordings of behaviour
- Real-time feedback loops

### Research assistance

- Joint interdisciplinary project partner(s)
  - **IPEM:** humanities & art, musicology
  - **IDLab:** engineering, computer science
  - **mict:** social sciences, user experience
- Methodological design & execution
- Technological training or assistance

### Various services

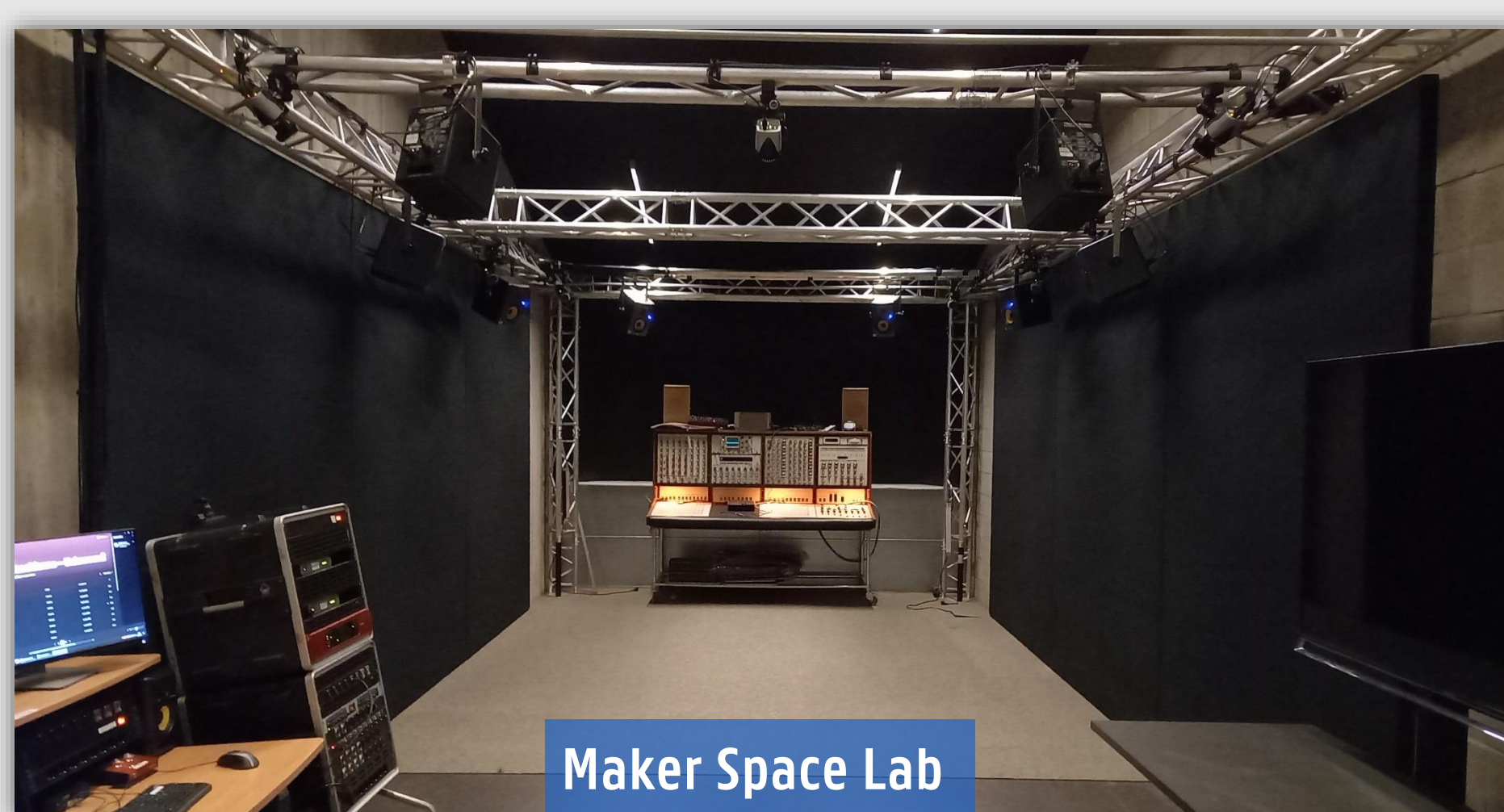
- Recordings (audio, video, sensors)
- Stage for performances / showcases
- Audio heritage studio (Synthi 100, DX7, ...)
- Dolby Atmos room
- Product Validation
- Artistic residencies

### Application domains

- Psychology
- (Living) heritage
- Behavioural sciences
- Social sciences
- Health & wellbeing
- Arts



ASIL: Art & Science Interaction Lab



Maker Space Lab

### Contact

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