

Information and consent form

XR for Timber Assemblies

Place and time:	ITA, RFL, 4 th – 5 th of September
Contact person if you have any questions:	Alexandra Moisi, amoisei@ethz.ch
Data Protection Officer ETH Zurich:	Tomislav Mitar (tomislav.mitar@sl.ethz.ch)

We would like to ask you if you are willing to participate in our research project. Your participation is voluntary. Please read the text below carefully and ask the conducting person about anything you do not understand or would like to know.

What is investigated and how?

This doctoral research aims to advance digital twins in architecture, engineering, and construction. We focus on digital design and *human-in-the-loop fabrication* workflows for timber assemblies. We investigate how different kinds of feedback (visual, audio, haptic) can help people position and orient timber beams during assembly.

You will be asked to place one or several beams into a partially assembled timber structure. The beams will have small motion-capture sensors attached. The system will give you different kinds of feedback.

We measure how fast and how accurately the placement works, and whether feedback methods reduce mistakes. The study helps us design better XR interfaces and digital twin systems for construction.

Who can participate?

- Anyone over 18 years old.
- AEC professional background or interest is desirable.
- No previous experience with XR or timber craft specifically is required.

What am I supposed to do as a participant?

- Listen to an introduction explaining the setup.
- Attach a sensor to one or more beams.
- Place the beam(s) into the assembly following the feedback.
- If possible, express thoughts regarding the system on the spot, think aloud.
- Answer a written questionnaire and a few oral questions afterwards.
- The session will take about 15–30 minutes.

What are my rights during participation?

Your participation in this study is voluntary. You can withdraw your participation at any time without giving reasons and without any disadvantage.

What risks and benefits can I expect?

Risks are minimal. The beams are relatively small and light. You will receive gloves to avoid splinters and a helmet for safety. The benefit is to gain hands-on experience with new XR fabrication technologies and potentially have an influence on future developments.

Will I be compensated for my participation?

There is no direct payment. Snacks will be offered after participation.

What data is collected from me and how is it used?

The following data is collected from you:

- Demographics: age, field of study/profession, XR/craft experience.
- Quantitative research data: non-identifiable motion-capture recordings (positions, rotations, timings), anonymous questionnaires, and observations.
- Optional media: photos/videos may be taken for documentation and publications, but faces will be blurred (you can opt out).

Consent forms with your name are stored separately in a locked cabinet at ETH.

All other data will be anonymized to begin with, participants will be labeled as "Participant 1, 2, 3...etc", as forms are handed out. The data, both qualitative (surveys, interviews, observations) and quantitative (through app recorded timestamps, trajectories, element movement speed) is meant to test and improve the system, as well as prove or disprove hypotheses in publications or presentations of the research. No conclusions about individuals can be drawn from any publication. Anonymised data may be published for further use (e.g. in a scientific data repository, publications, presentations).

Who is funding the study?

The research is an ITA Fellowship Grant.

Is any damage to health insured?

Damage related to the study is covered by ETH Zurich's public liability insurance (Basler Versicherungen, policy no. 30/4.078.362).

Who reviewed the study?

This study was reviewed and approved by the ETH Zurich Ethics Committee under application number XX ETHICS-YYY.

Complaints office

The secretariat of the ETH Zurich Ethics Committee is available to help you with complaints in connection with your participation in the study. Contact: ethics@sl.ethz.ch or 0041 44 632 85 72.

Consent Form

I, the participant, confirm by my signature that:

- I have read and understood the study information.
- I had enough time to decide about my participation and am taking part in the study voluntarily.
- I fulfil the stated conditions for participation.
- I consent that the data described above may be collected from me and used as described.
- I know that the data collected from me may be published in anonymised form.
- I know that I can cancel my participation any time.

I would like to be informed about the results of this study

- ☐ Yes, name, phone number or e-mail:
- ☐ No

Name of participant

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Place, date

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Signature participant

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Place, date

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Signature conducting person

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