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Fokusgruppe XR

Networking for Immersive COmmunications

Maria Hrabošová, Torsten Braun, [cds.unibe.ch](https://www.cds.unibe.ch)

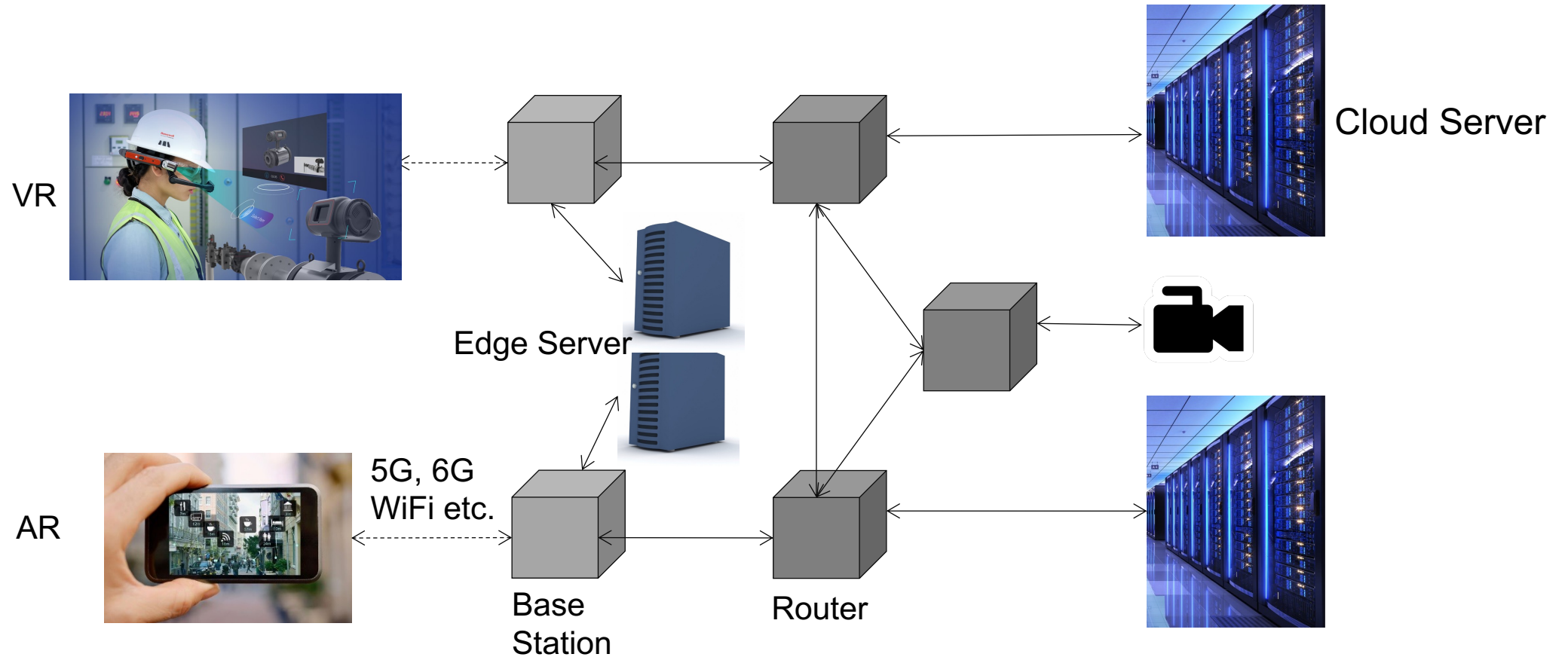
1. Workshop am 20.03.2023

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Networking for Immersive COmmunications

- SNSF Project (April 1, 2022 – March 31, 2026)
- Challenges of Networked XR
 - High throughput (360° videos)
 - Low delay (motion to photon latency)
 - Reliable sensor communication
 - Mobility
- Ph.D. Topics
 1. 6DOF Viewport Prediction (Xing Hexu)
 2. Low-Latency Communication Support (Chuyang Gao)
 3. Service Mobility (Maria Hrabošová)

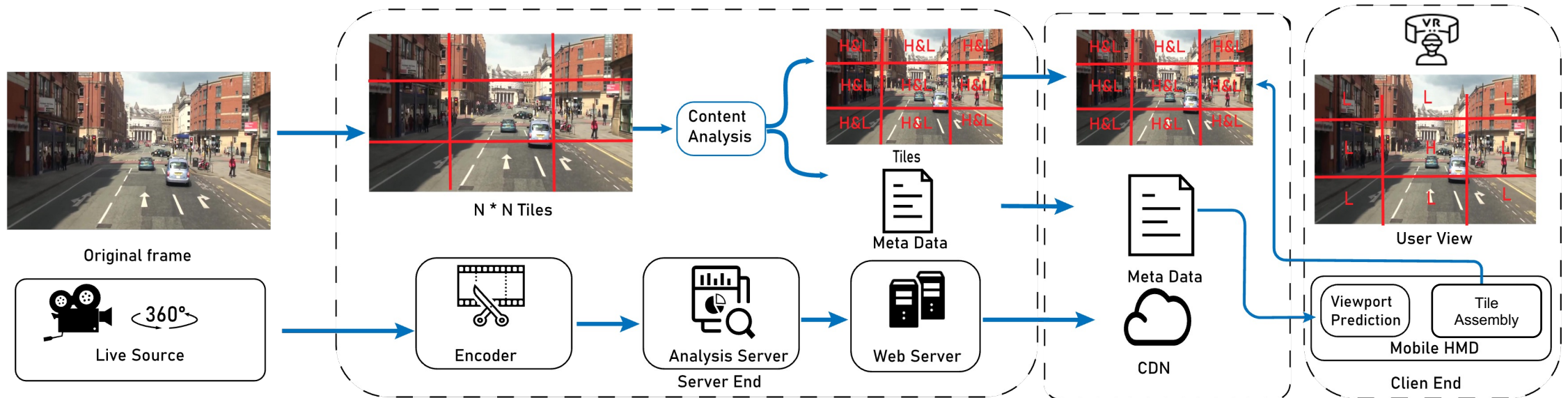
Networked XR



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Viewport Prediction

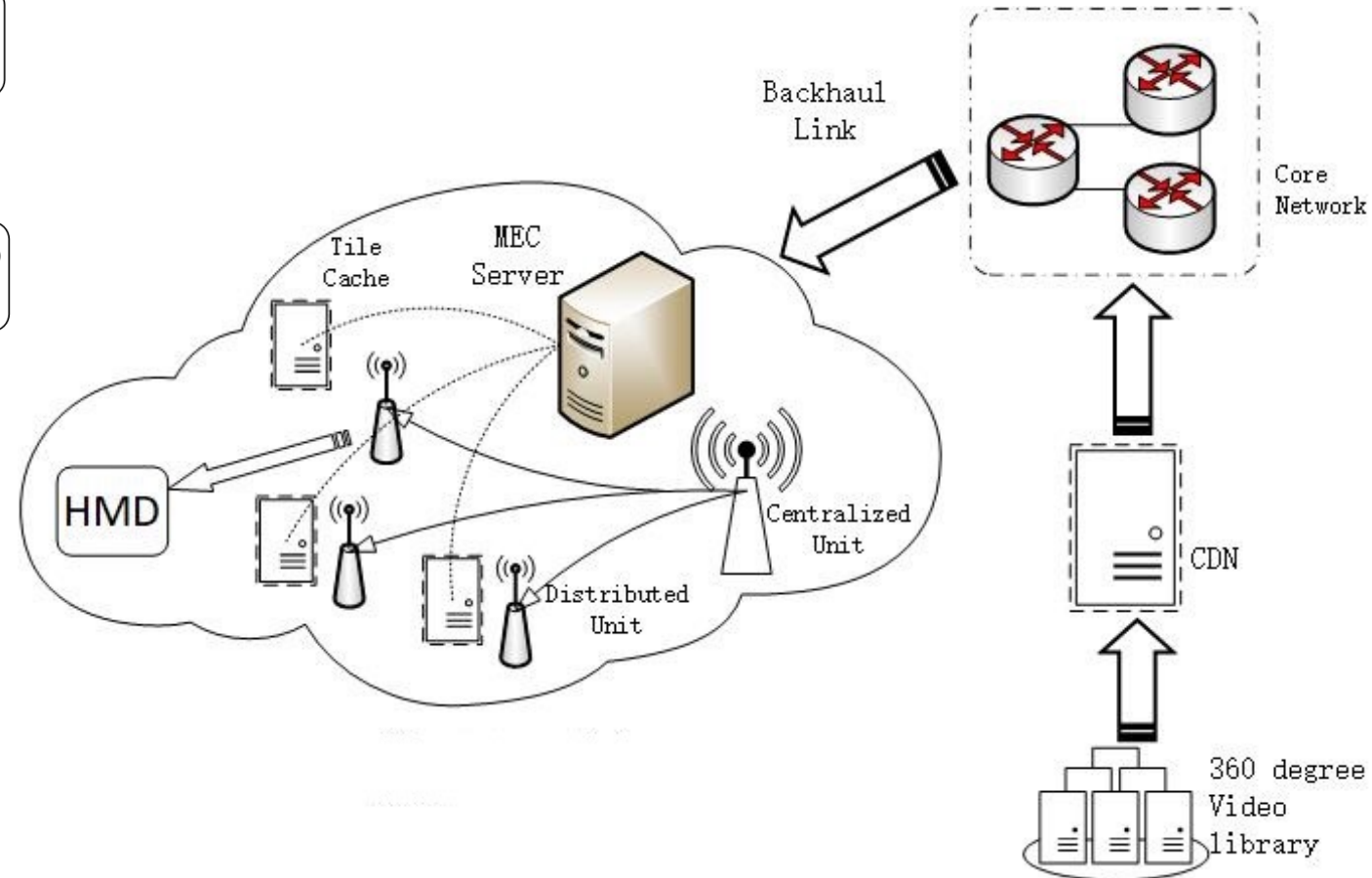
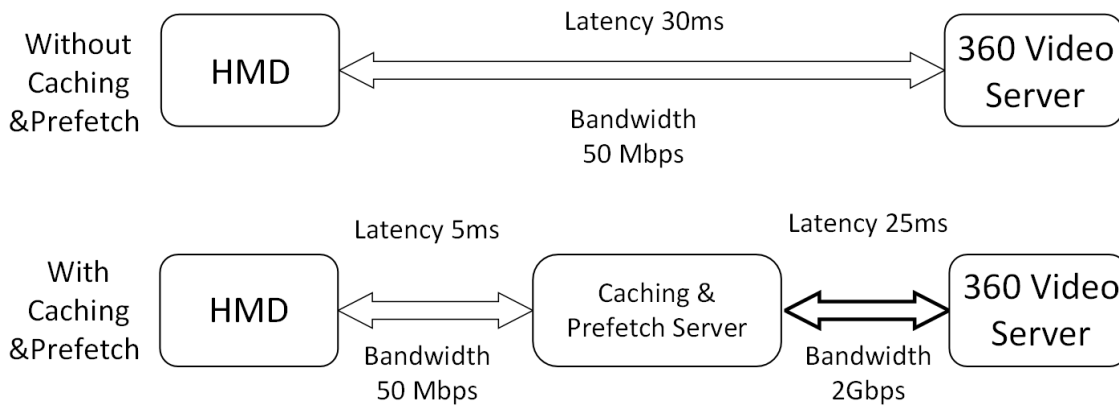
Multi-Object Tracking



- Detection of Objects
- Better quality encoding of tiles with higher probability to view

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Low-Latency Communication Support Extended Edge Caching

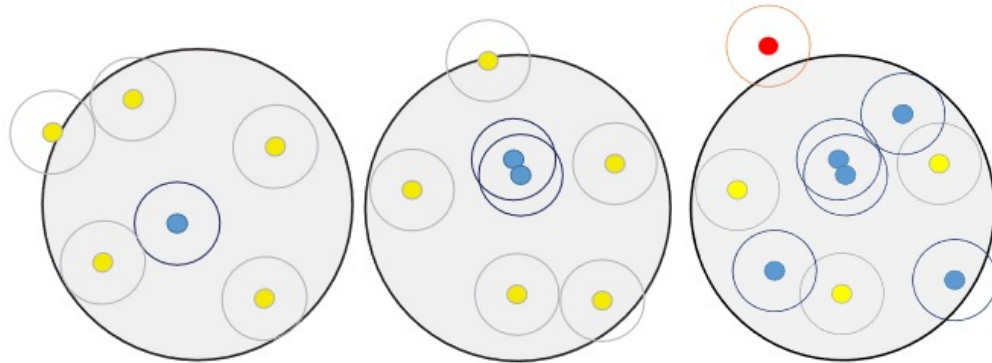


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Service Mobility

Floating Services

- XR users might move and must connect to close services.
- Service migration needed
- Approach based on Floating Content → Floating Services



Floating Services

- Services (e.g., video rendering) in areas with no or congested network infrastructure
- Nodes with sufficient system resources (CPU, memory, storage) deploy services and other nodes can request them.

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