

Consumer virtual reality: from entertainment to motion analytics

Olivier Nocent (olivier.nocent@univ-reims.fr)
 Université de Reims Champagne Ardenne, France

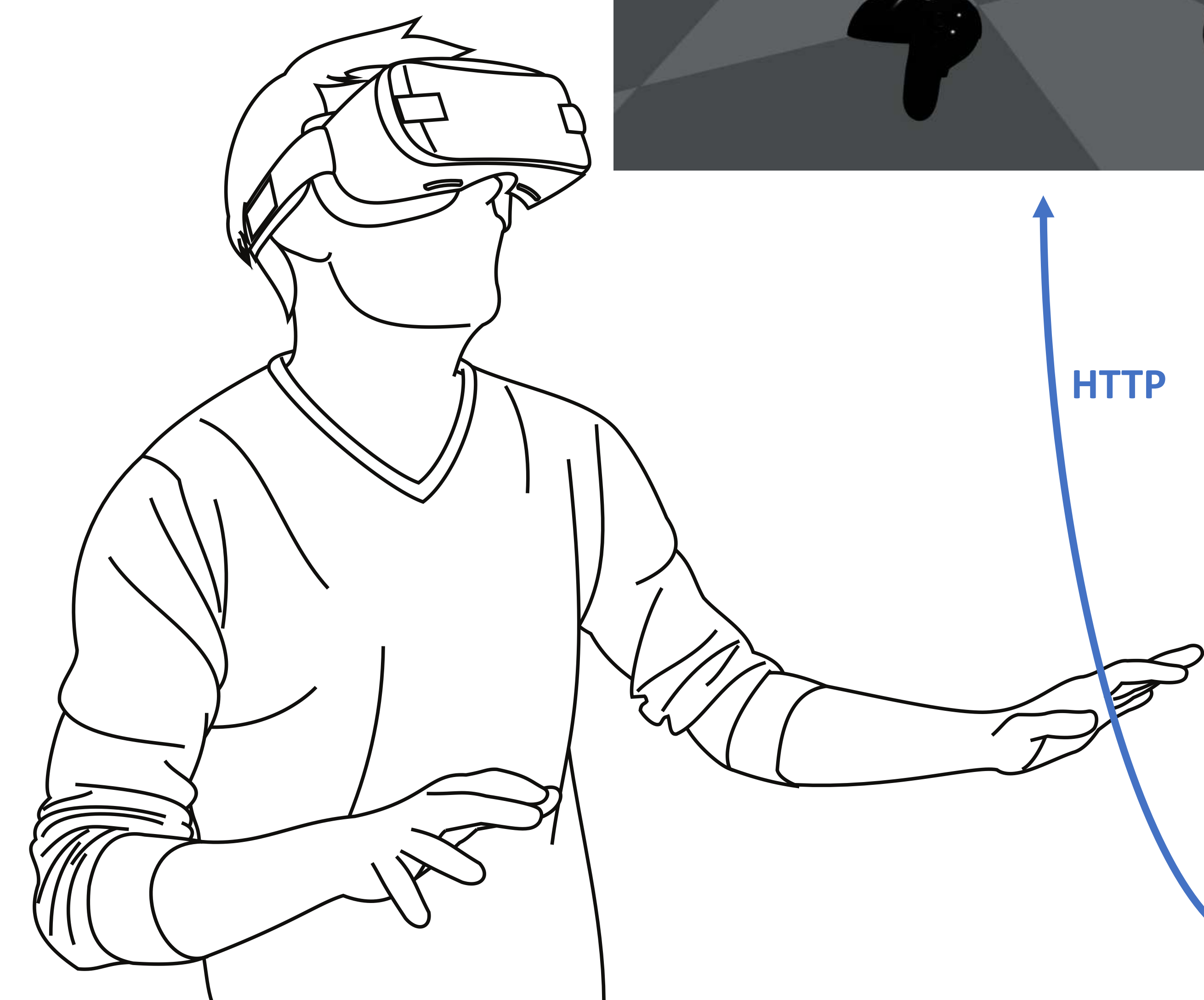
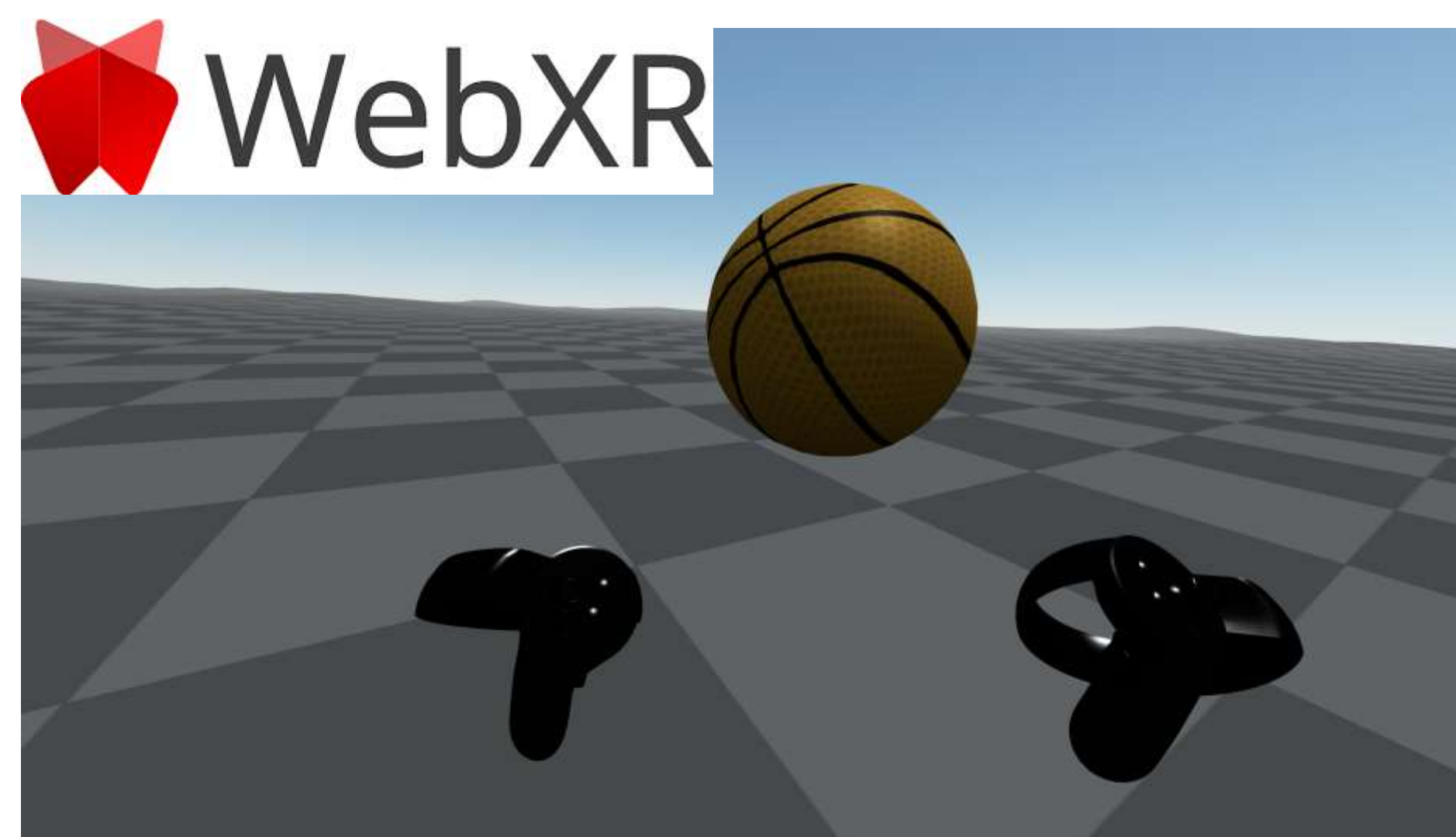


The facts:

- VR technology **more affordable** with the rise of the metaverse
- **Rich kinematic data** provided by VR headset IMU and 6-axis controllers at 60 Hz
- Segmented ecosystem with **non compatible VR apps** between different devices

1

Immersive experience running in a web browser (device agnostic paradigm)

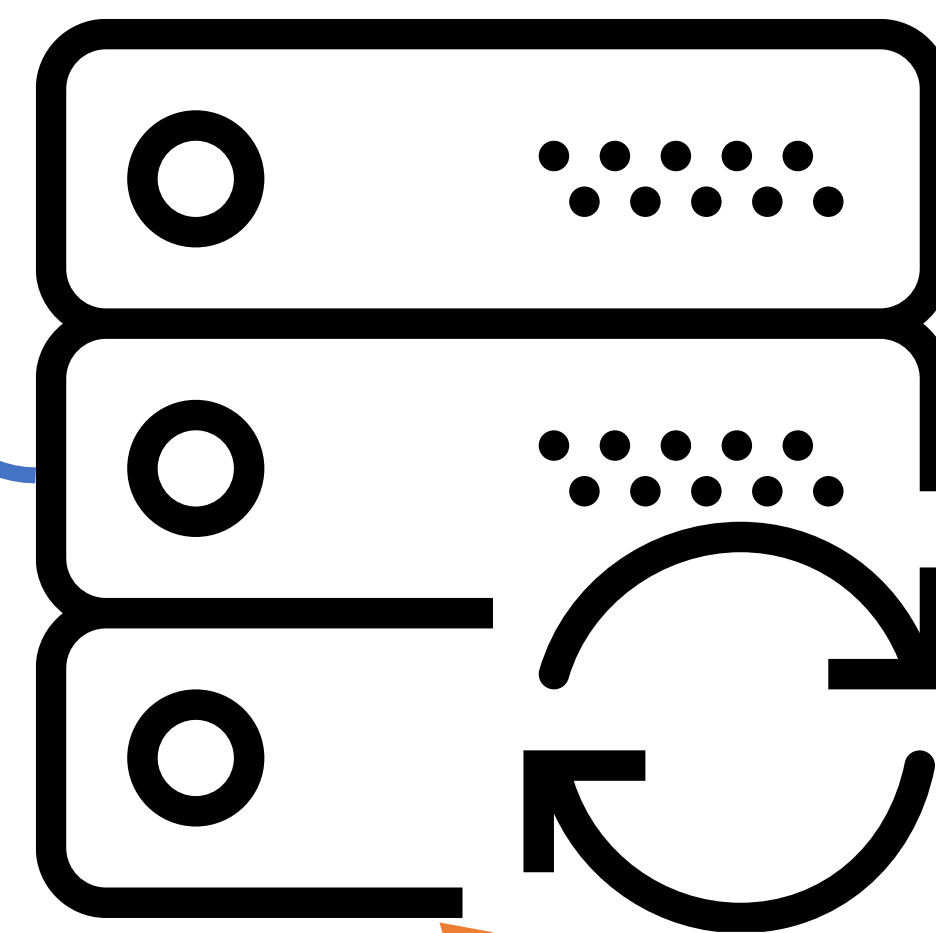


Our Solution:

A World Wide Web based software architecture enabling:

1. Immersive experiences in **all** VR headsets
2. **Remote** monitoring
3. **Realtime** motion analytics
4. **Bidirectional** communication

Web server



2

Multiple monitoring instances



W3C WebSockets for realtime bidirectional communication (60 Hz)

4

Bidirectional interaction

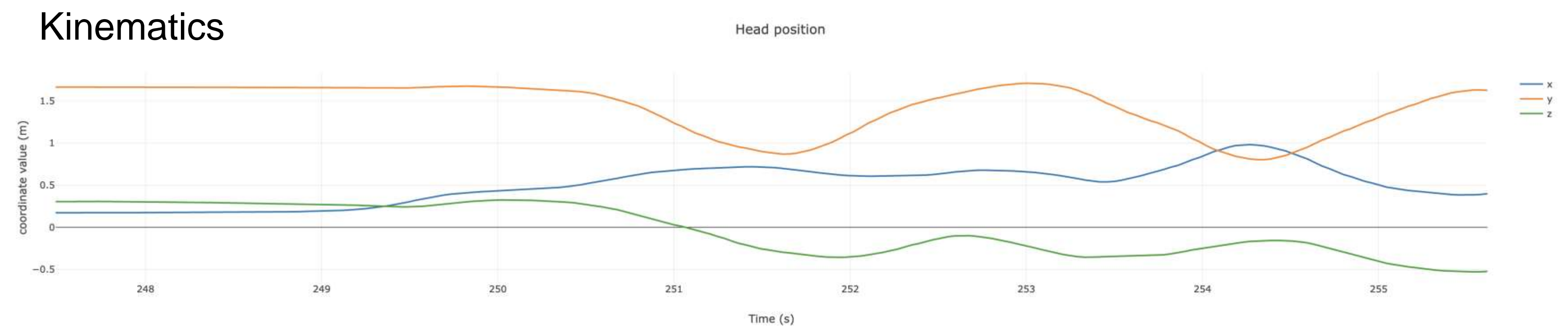
allows the monitoring interface to change the parameters of the VR app:

- Lighting conditions
- Difficulty of the motor task
- Sound volume
- ...

3

Realtime motion analytics

Kinematics



Reaction time

