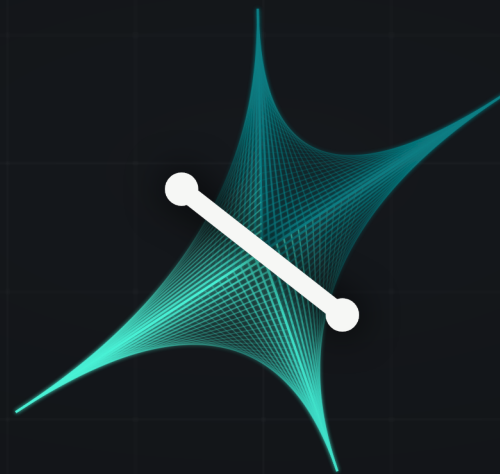




SOMA·X CORE

TRACK. BRIDGE. PERFORM.

MULTI-CAMERA BODY TRACKING BRIDGE · FEMTO MEGA

THE CONTEXT

The performer's body becomes **real-time data**.

SOMAX CORE is built for interactive installations and live performances: it tracks bodies in space through multiple synchronized Femto Mega optical sensors, transforming movement into a clean data stream ready to drive generative scenes, visuals, and virtual worlds.

theatre

dance

live visual

interactive museum

XR stage

HOW IT WORKS

One pipeline, end-to-end

01

Femto Mega

2+ optical sensors via Ethernet,
hardware-synchronized.



02

Body tracking

GPU-accelerated skeletons with
EMA smoothing.



03

Identity fusion

Cross-camera detections
become one unique ID per
person.



04

OSC → creative

Stream to TouchDesigner, Unreal, Unity,
Max/MSP.

Capture at 60 fps • fusion and OSC output at ~30 Hz • Y-up axes normalized -1...1

01 / Feature

Multi-camera, synchronized via hardware

Two or more Femto Mega cameras connected via Ethernet and synchronized by the Orbbec Sync Hub. Cover large spaces and blind angles: the architecture scales to N cameras without rewriting anything.

Hardware sync

The master waits for all subordinates to be ready before starting: aligned frames, no temporal drift.

Extended coverage

Multiple viewpoints eliminate occlusions and blind spots on stages and exhibition spaces.

Scales to N

Same logic for 2, 3 or more cameras. Ready in architecture, already structured to grow.

02 / Feature

Real-time skeletons, on GPU

GPU-accelerated body tracking (DirectML, Blackwell-ready).
Every joint is filtered and stabilized, ready for creative use.

EMA smoothing

Exponential filter in local space: fluid motion, no joint jitter.

Consistent Y-up axes

X right · Y up · Z away. Automatic inversion from native convention — data "just works" in creative tools.

2D and 3D

Tracking mode selectable based on the installation.

THE DIFFERENTIATOR

One person = **one identity**, across multiple cameras.

Identity Matching merges detections from different cameras into a single stable ID per performer: no duplicates, no identity jumps as someone crosses the space.

Cross-camera deduplication

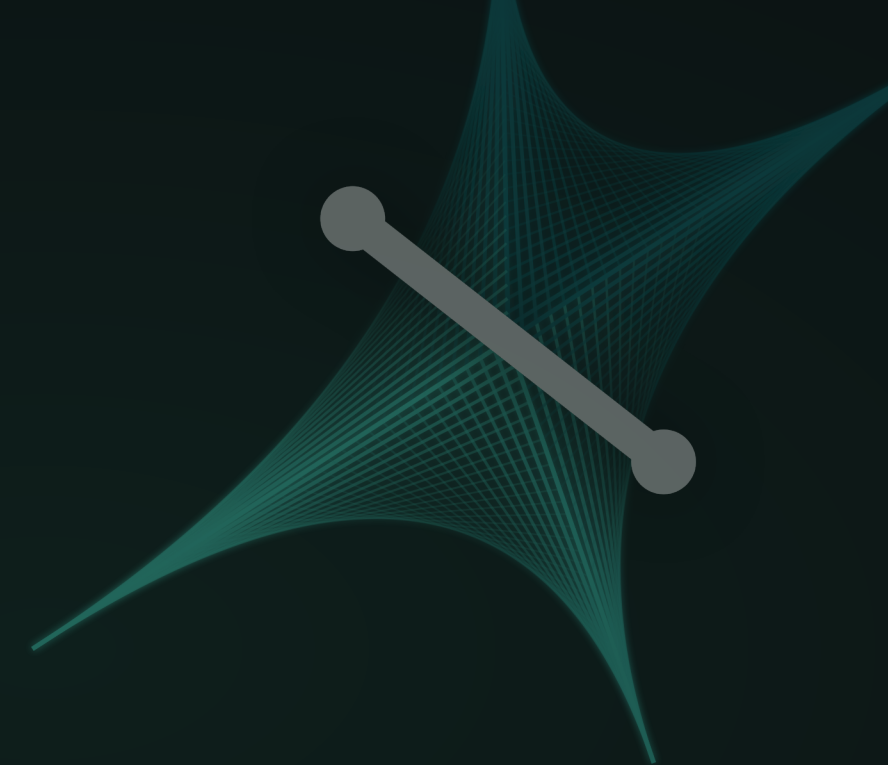
Union-find on simultaneous detections: the same person seen by two cameras is unified, not counted twice.

Persistent tracks

Greedy nearest-neighbor matching with history (600 mm threshold, 2 s timeout): the ID survives brief occlusions.

unified_id in OSC

Every message carries the unified identity: downstream you receive coherent performers, ready to address.



03 / Feature

Calibrated to real space

Guided wizards bring cameras into a shared coordinate system and map data to the physical space of your installation.

Spatial calibration

Checkerboard wizard (stereoCalibrate, OpenCV): cameras share the same reference system.

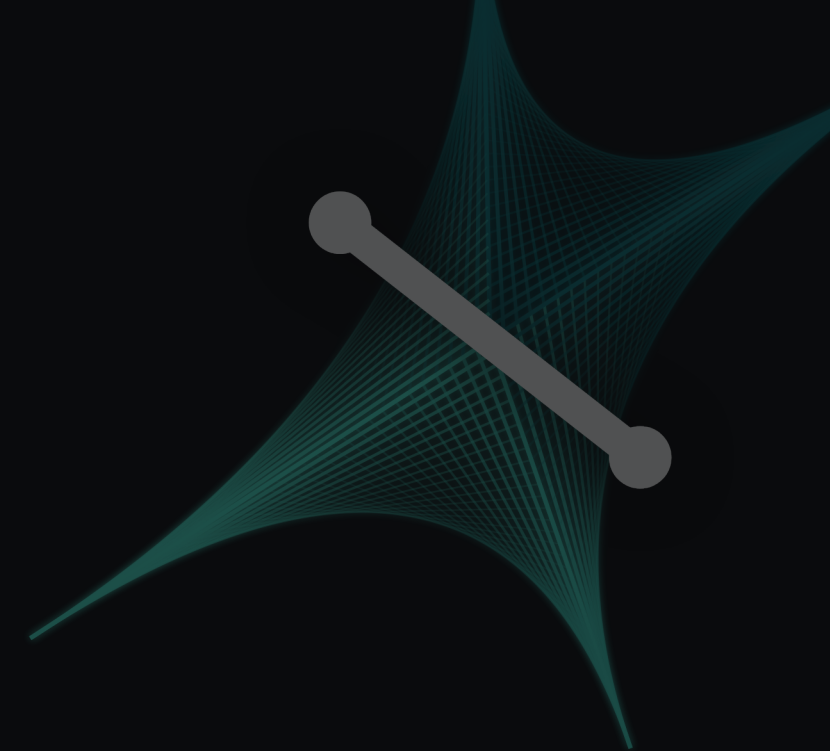
Measurement & normalization

Define min/max per axis: values arrive normalized $-1...1$, independent of room dimensions.

Live preview

Monitor with depth preview and skeleton overlay to verify on the fly.

Clean, addressable OSC output



```
/cam{N}/skeleton/{id}/PELVIS/x float  
/cam{N}/skeleton/{id}/HAND_LEFT/y float  
/cam{N}/skeleton/{id}/HEAD/z float
```

id = unified cross-camera identity
y positive = up · z only in 3D mode

Granular addressing

Per camera, identity, and single joint: filter and route exactly what you need.

TouchDesigner

Unreal

Unity

Max/MSP

Processing

any OSC

05 / Feature

Production-ready

Tab-based GUI

Setup · Monitor · Calibration · Measurement ·
Diagnostics. The entire workflow in one
desktop app.

Installation presets

Save cameras, calibration, OSC, and
normalization to a file. On stage, reload in
one click.

Live-reliable

Crash-safe persistent logs and OSC
diagnostic tab: fast debugging even during
the event.

Fluent W11 theme · auto dark/light · portable packaging

IN SUMMARY

Why SOMAX CORE

01 Real multi-camera

Hardware sync and occlusion-free coverage, scalable to N cameras.

03 Ready-to-use data

Y-up, normalized -1...1, addressable per joint via OSC.

05 Production workflow

Installation presets, guided calibration, crash-safe log.

02 Stable identity

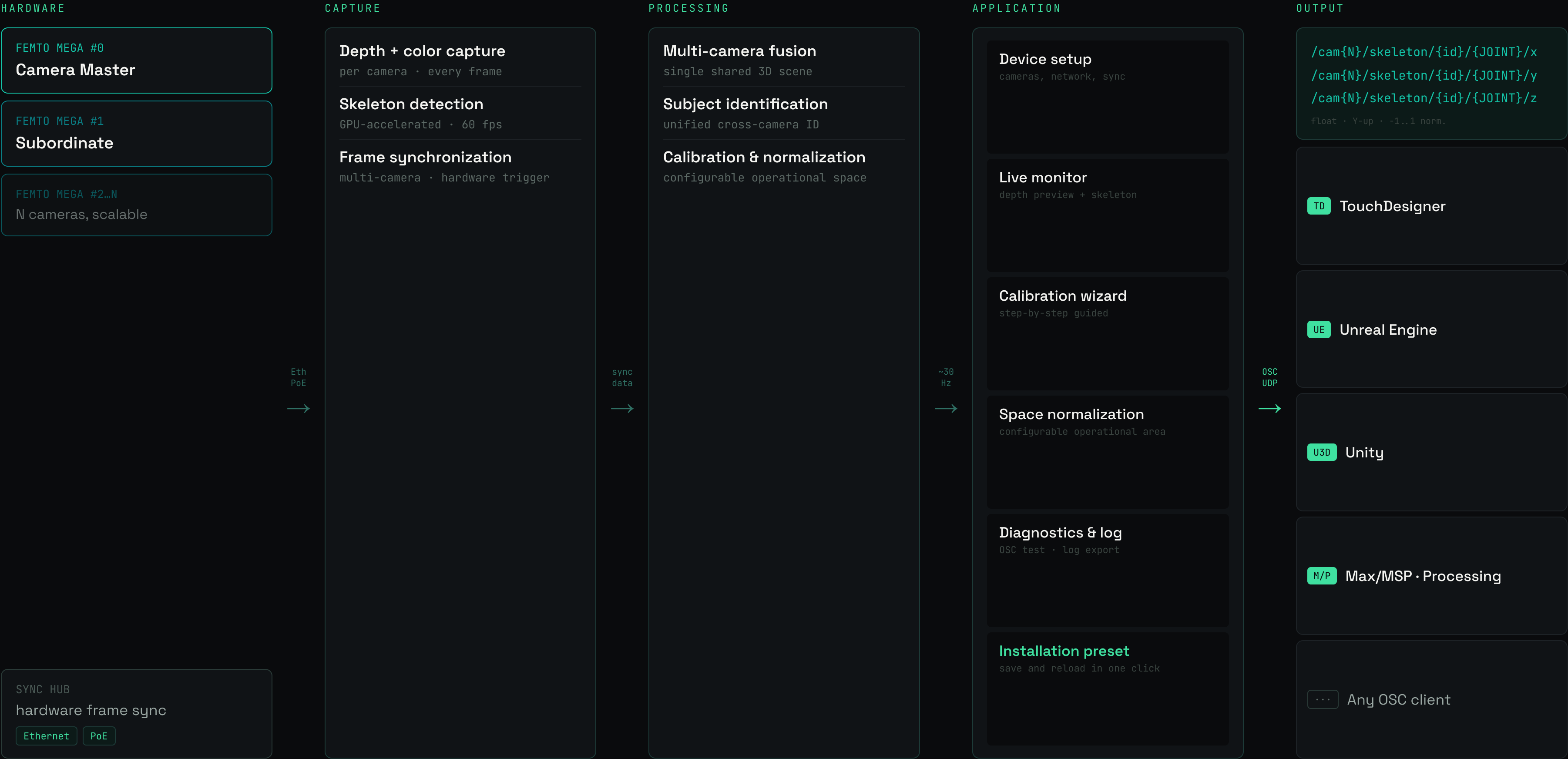
One performer = one coherent ID across cameras and occlusions.

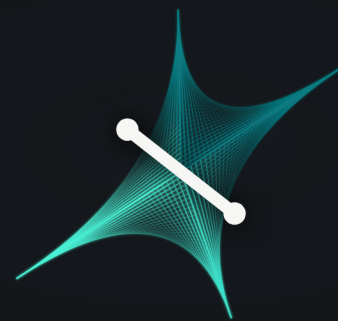
04 Direct integration

Speaks natively with the most widespread realtime tools.

06 Modern performance

GPU capture at 60 fps, OSC output at ~30 Hz.





Track. Bridge. Perform.

SOMAX CORE · BODY TRACKING BRIDGE FOR FEMTO MEGA

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