Grimage becomes Kinovis

A large environment for the visual perception of shapes in motion.

INRIA Grenoble France
Grimage: the current platform

- 2x2x3 m reconstruction area
- 8-16 cameras
Grimage: the current platform

- real-time reconstruction
  - subtract background
  - intersect visibility cones
  - project textures from camera images
Grimage: the current platform

- immersion via a head-mounted display
Computation

- 8-machine cluster
  - offline capture: fast storage
  - real-time reconstruction: parallel processing
- software environment
  - capture: 4DViews software
  - 3D reconstruction: EPVH
  - rendering: CUDA
  - distribution: FlowVR
More cameras (50x5MP)
Depth cameras (TOF)
Larger acquisition space 15x7x3 m
New processing cluster: 36 machines
2 Head mounted displays
Motion capture equipment: ART & Vicon
Millimetric static mesh capture: Arthroscan
Improved software interface: Kinodev
More cameras (50x5MP)

Depth cameras (TOF)

Larger acquisition space

15x7x3 m

capture:

• someone running
• more people
• large animals?

new processing cluster:

36 machines

motion capture equipment

Arthrospec

Improved software interface:

Kinodev

Challenges:

• partial visibility
• large-scale calibration & reconstruction
• distribution of reconstruction algorithm

2 Head mounted displays

• local interaction
• VR interaction

• necessary to support 3D reconstruction in the larger capture area.
• Integration of modalities

Kinovis

integration of information

2 Head mounted displays

• local interaction
• VR interaction

new processing cluster: 36 machines

• support more cameras
• costly algorithms
• stress-test distribution
Kinovis interface

• transition in 2012-2013
  • Grimage not available...
  • after: Kinovis available to Visionair

• software:
  • 1.5 engineers for software development
  • objective: integration of modalities
  • the INRIA/Fraunhofer Vcore project
    - integrate state-of-art VR components: scene graph, distributed processing, physical interaction...
    - improved compliance with standards