

CTU @ BeNoGo kick-off meeting

Tomas Pajdla

**Center for Machine Perception
Czech Technical University in Prague**

CTU team

Researchers

- 1. Tomas Pajdla** CTU Team leader
- 2. Hynek Bakstein** Principal researcher
PhD @ CMP, reconstruction from stereo-panoramas
- 3. Daniel Vecerka** Acquisition/Technology
Technical support/system admin. @ CMP

Contributors

- **Daniel Martinec** PhD @ CMP, camera tracking, s-tv calibration
- **Branislav Micusik** PhD @ CMP, omnidirectional vision

Session 3: Plans for WP-2 (CTU)

1. Objectives, Major Tasks

To develop theory and practice for space-time volume acquisition

Task 2.1 **Space-time volume acquisition**

CTU & HUJI

Task 2.2 **Camera tracking and space-time volume calibration**

CTU & HUJI

Task 2.3 **Partial 3D scene reconstruction for augmenting**

AAU(E) & CTU

Task 2.4 **Space-time volume acquis. for the demonstrators**

CTU & HUJI

Input: specifications (REX, resolution, fps, ...)

Output: data = s-tv + calibration

2. Long Term Approach

- Basic research (**Research**)
- Data acquisition for Demonstrators (**Demo**)
- Expertise & support (**Expert**)

3. Focus for Demo-1

Demo Month

1. 4 [Point Interactive](#)

4. Required Input

[specifications](#) (REX, FOV, resolution, ...) from HUJI , AAU(A), NU

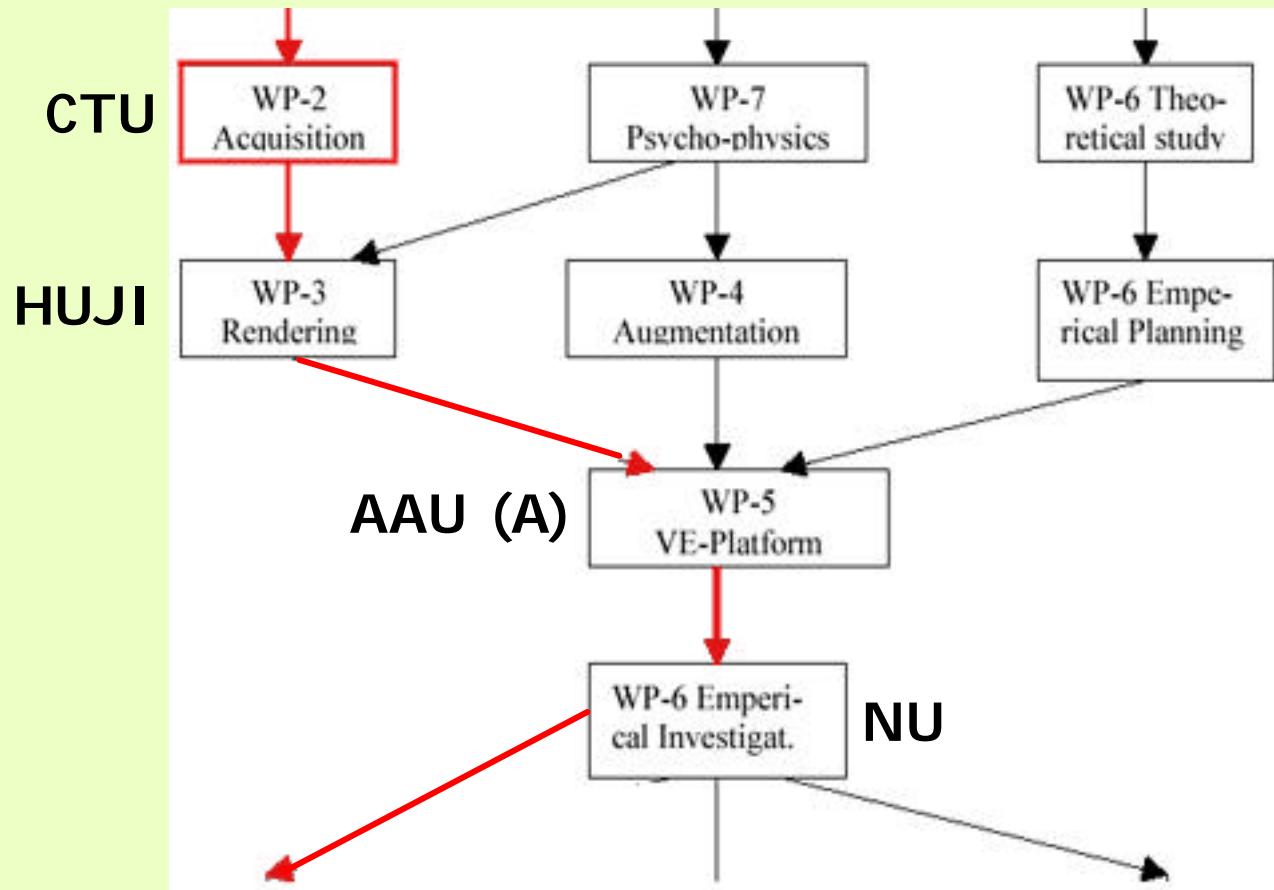
5. Generating Output

[data](#) (s-tv + calibration) for HUJI & AAU (A)

6. Collaboration

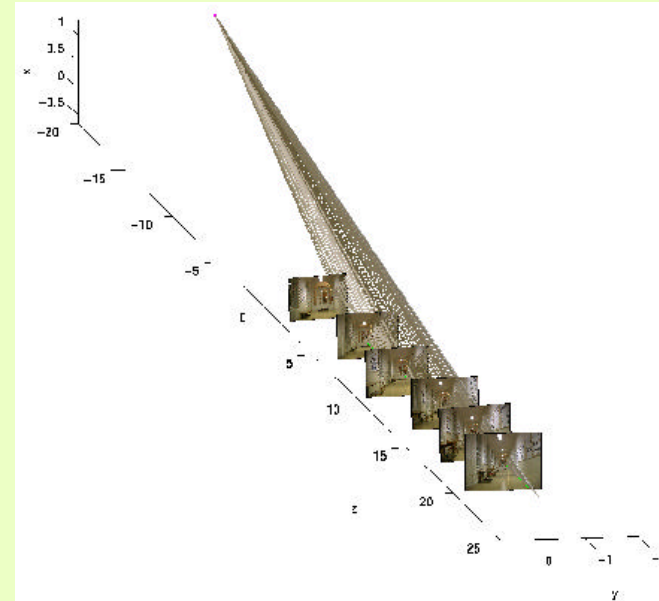
All partners

-> HUJI -> AAU(A) -> NU -> CTU -> HUJI -> AAU(A) ->



Session 5: Technical Issues of Demo-1 (CTU)

1. Space-time volume acquisition and calibration



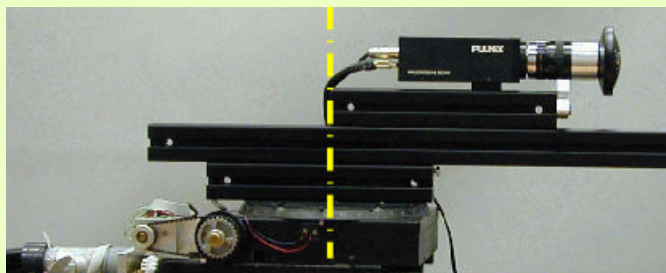
Hand-held camera video -> Boujou -> Calibrated s-tv



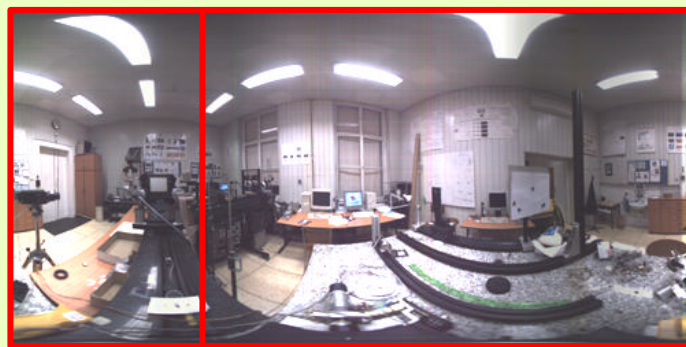
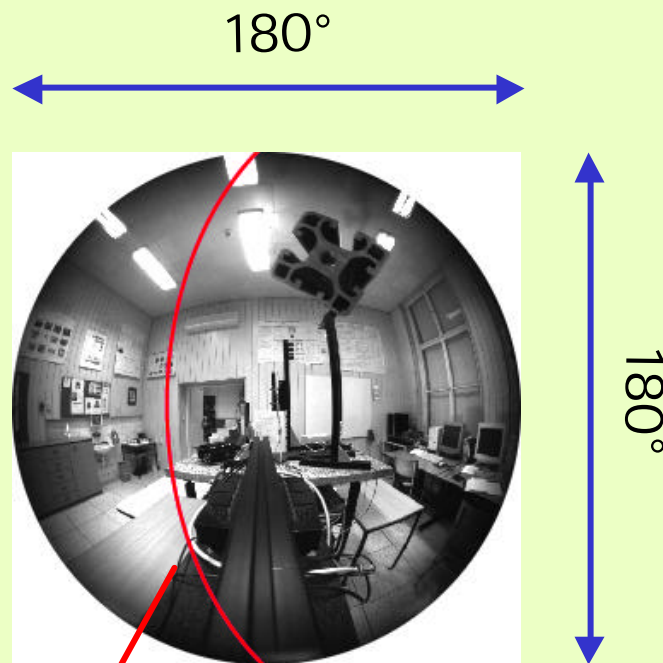
each_Premiere_xvid.avi

1. Space-time volume acquisition and calibration

Demo 1: Calibration from a turntable

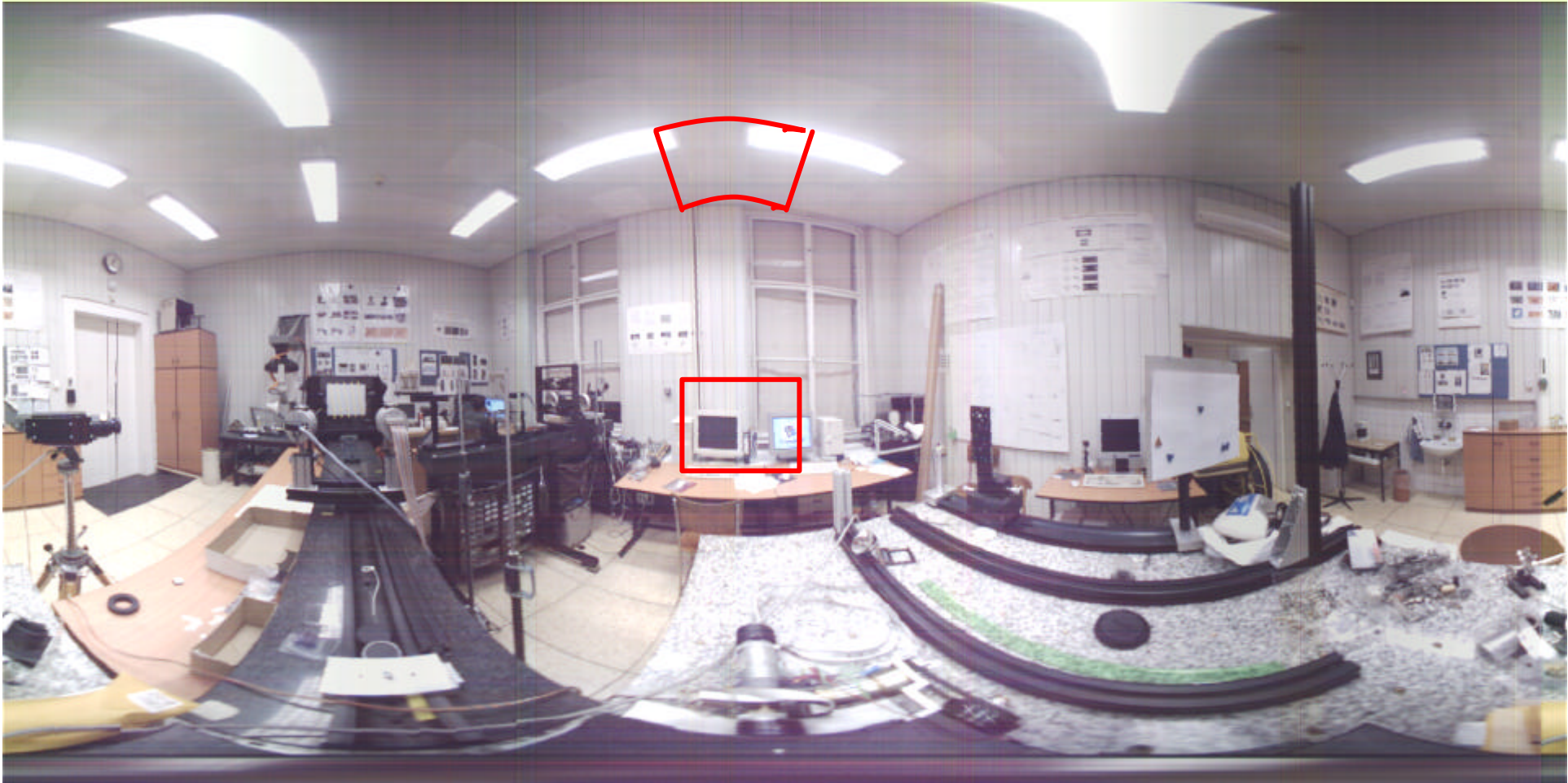


Nikon FC-E8: 360° x 180°

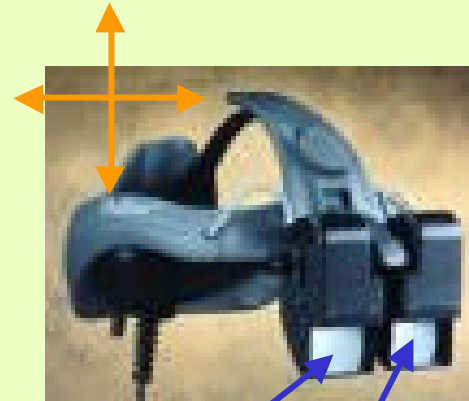


180°

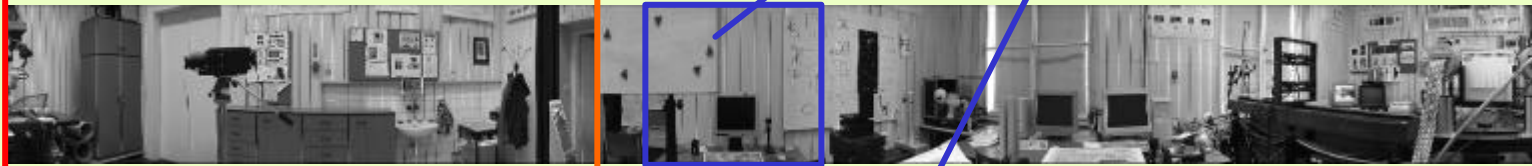
360°



1. Motion: $360^\circ \times 180^\circ$
2. Arbitrary FOV
3. Arbitrary vergence



Left



Right







2. Real-time generation of new views

3. Data format

- + space-time volume (resampled)
- + calibration data
- + indexing function

4. Augmentation -> WP2 @AAU(E)

5. Integration and Visualisation

Botanical garden

