

AR-Based Assistance System for Search of Disaster Victims Using Teleoperated Unmanned Helicopter

Robotics Laboratory
Masanao KOEDA

2005/3/23

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Background

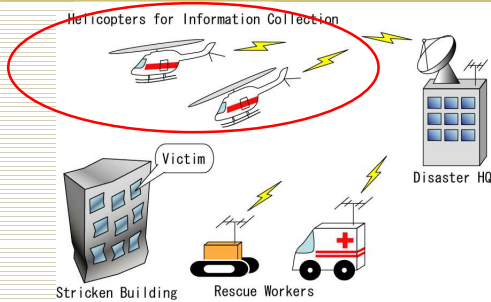
- Immediate and appropriate action is needed to reduce disaster damage.
- Process of Rescue
 - Collect information of devastated area
 - Search disaster victims
 - Clearing away the rubble
 - Rescue and transport victims
 - etc.

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Research Purpose



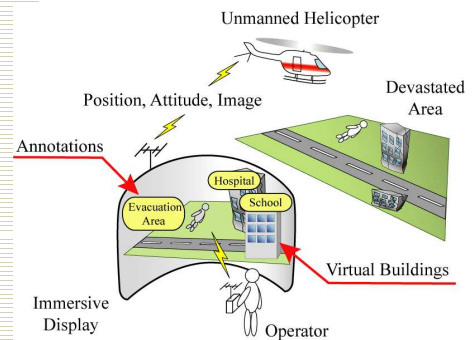
AR-Based Assistance System for Search of Disaster Victims

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Envisioned Situation

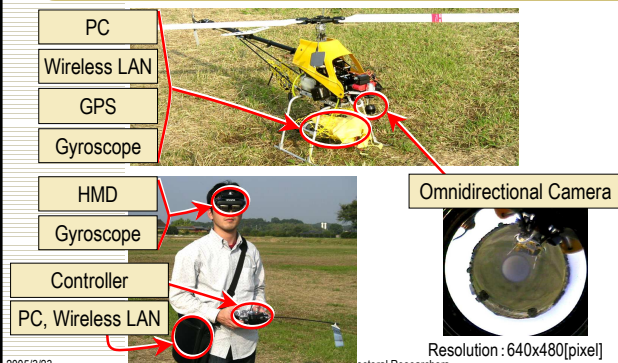


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System Overview

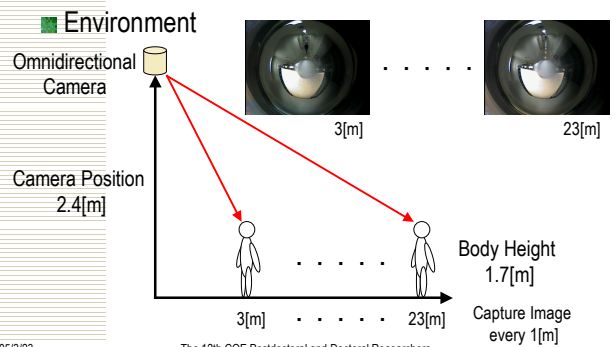


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Experiment: Identification of Human Figure



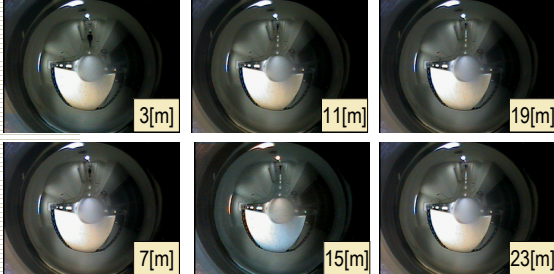
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Experiment: Identification of Human Figure

■ Still image, Resolution 320x240[pixel]



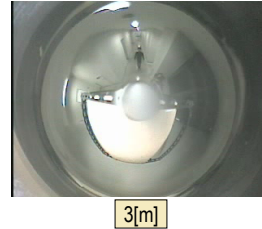
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Experiment: Identification of Human Figure

■ Moving Image, Resolution 320x240[pixel]

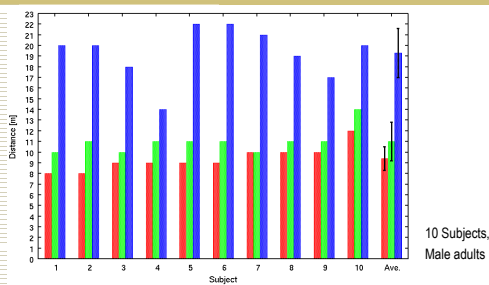


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Experimental Result



10 Subjects,
Male adults

■ Still Image, Human Figure, Average 9.4[m]
 ■ Moving Image, Human Figure, Average 11.0[m]
 ■ Moving Image, Moving Object, Average 19.3[m]

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Size of Human Figure



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Environment



Heijyo Palace Site



Textual Annotation



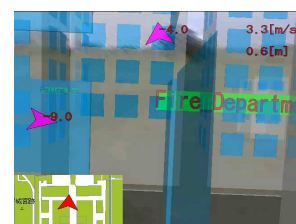
Virtual Object

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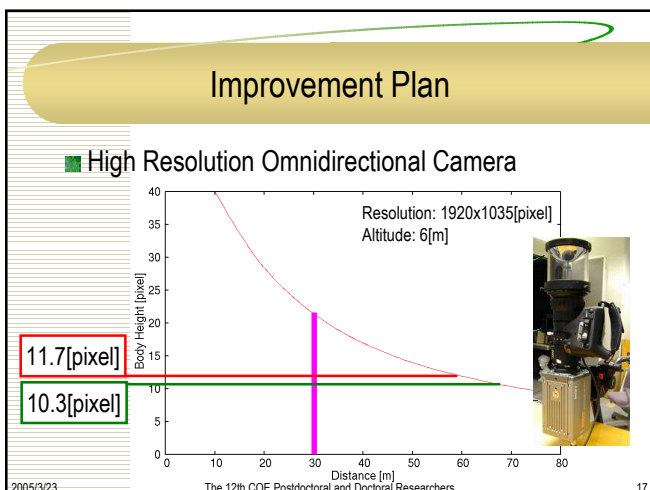
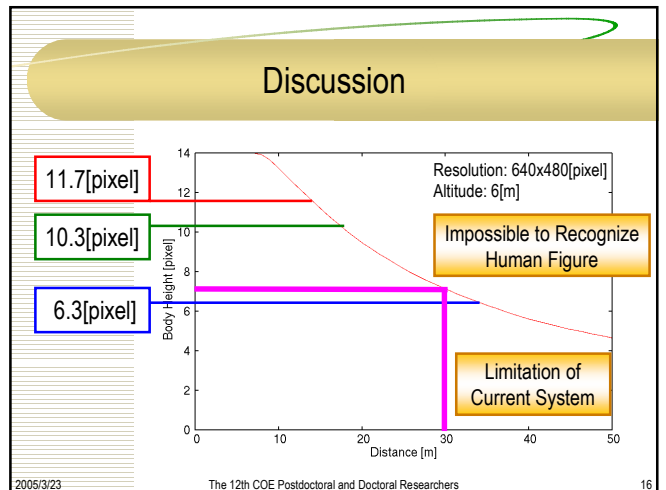
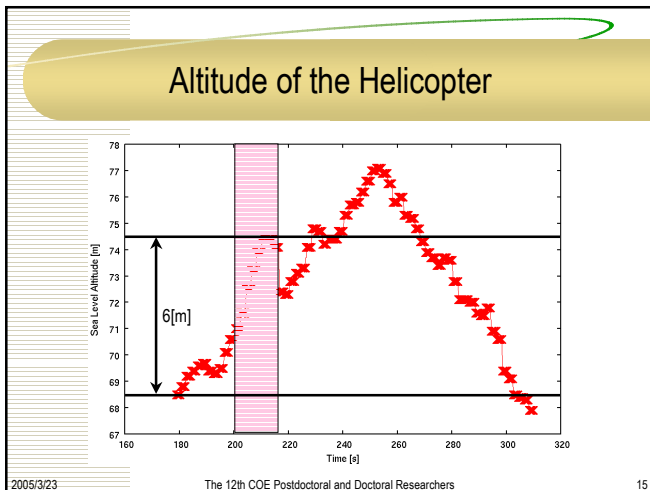
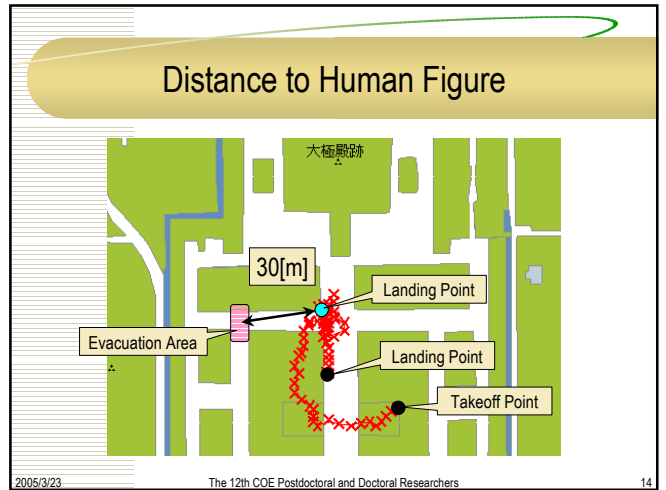
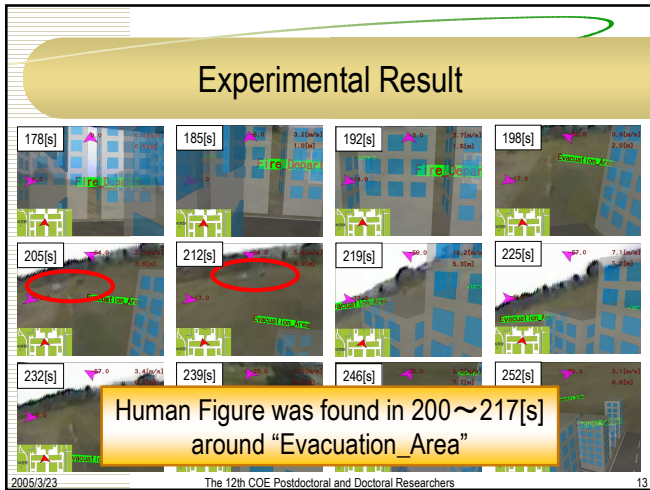
Experimental Result



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- ### Conclusion
- To search disaster victims effectively, AR-based assist system using an unmanned helicopter was developed.
 - We conducted the experiment to estimate the performance of the developed system.
 - The limitation of the recognizable size of human figure from still Images and moving images
 - Using the developed system, an experiment to search humans was conducted.
 - Study of an improvement plan
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