

A WiMAX-Based Public Safety 3D Surveillance Network



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Overview

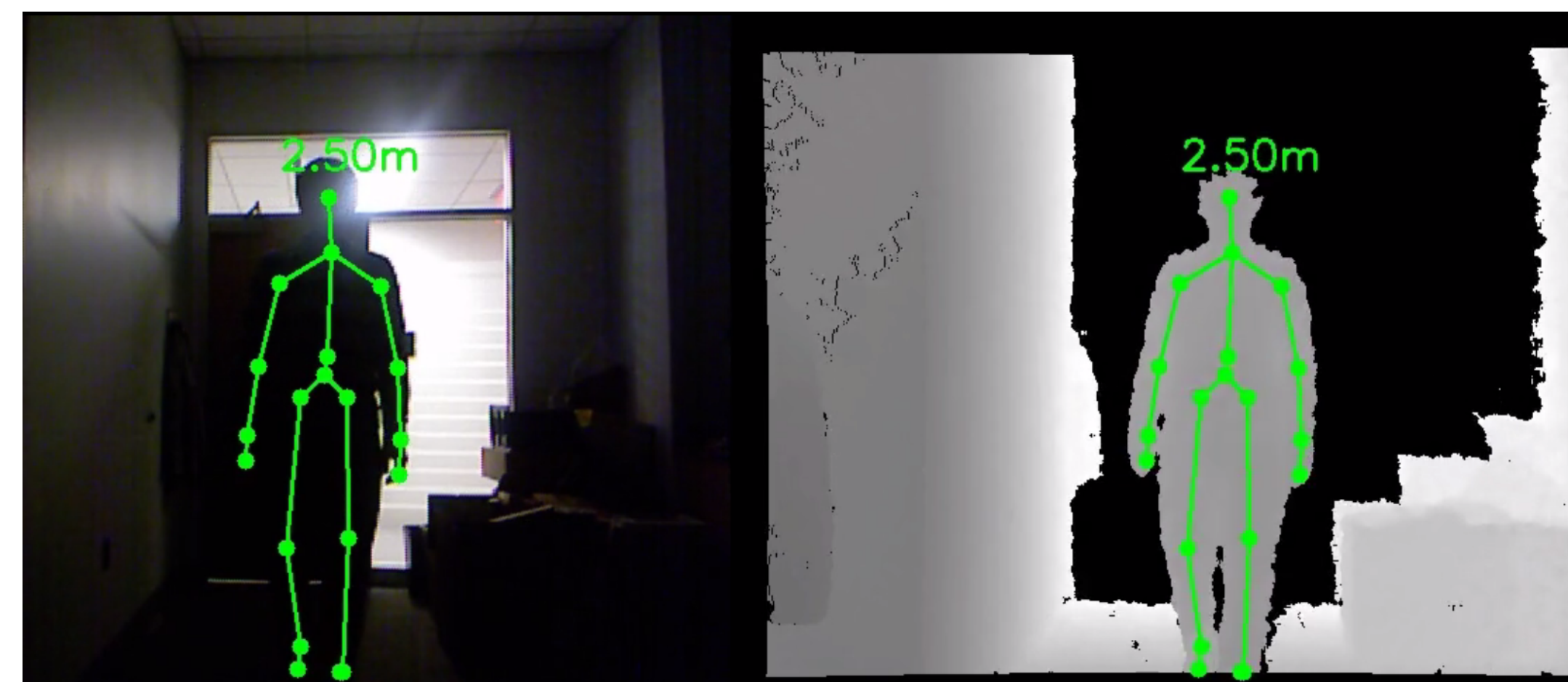
- Use 3D cameras (e.g. Microsoft Kinect) for monitoring for poor light conditions
- Cameras can be mobile (vehicle-mounted) or stationary
- Supercomputer backend for video surveillance algorithms (e.g. anomaly detection, suspect facial recognition, etc.)
- Quality of service based on wireless performance feedback
- Secure data transmission and data sharing



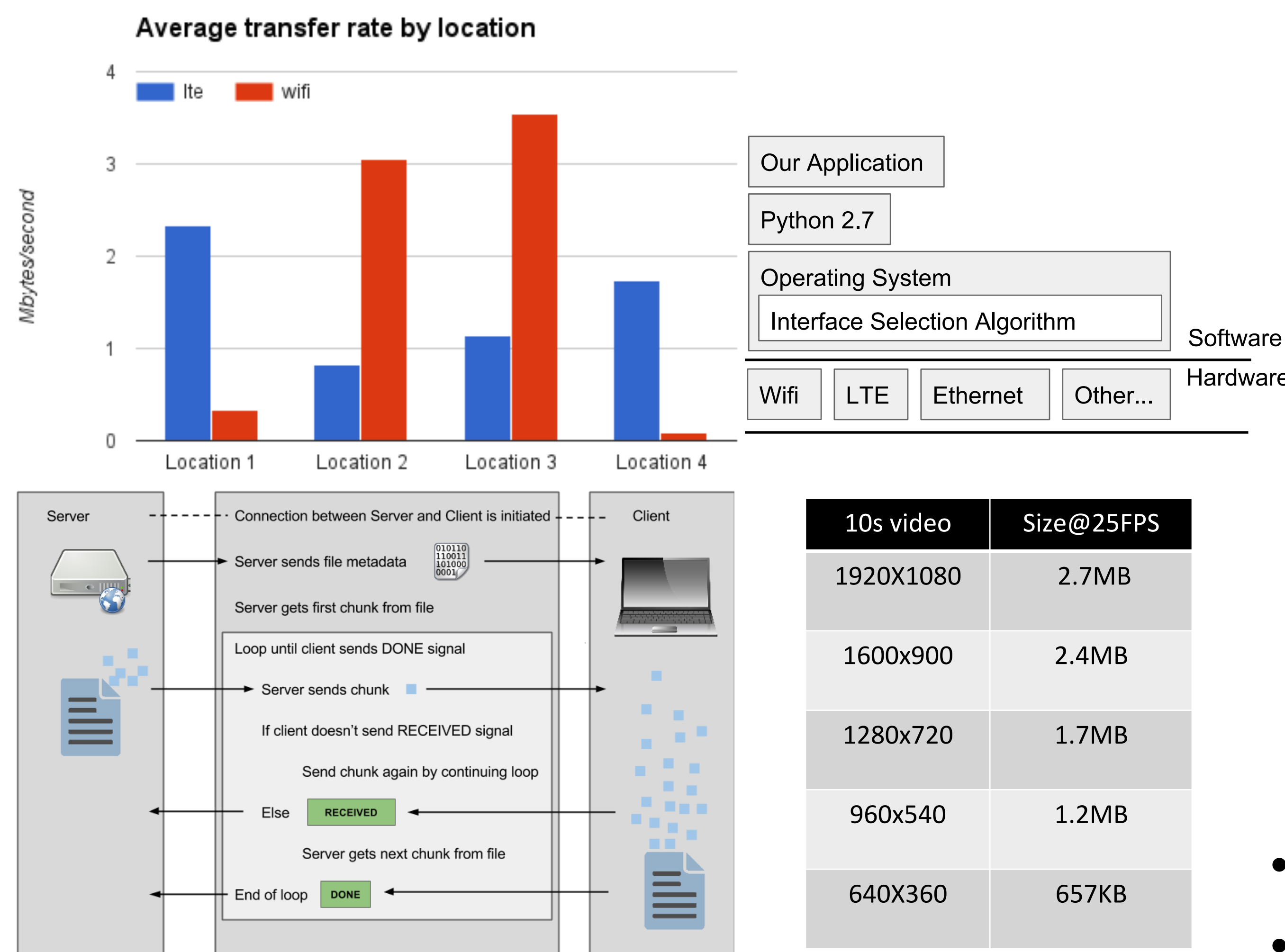
Objectives

- Integrate video and wireless quality-of-service
- Expand and implement video processing algorithms for 3D cameras
- Prototype experiments on real world test beds

3D Cameras

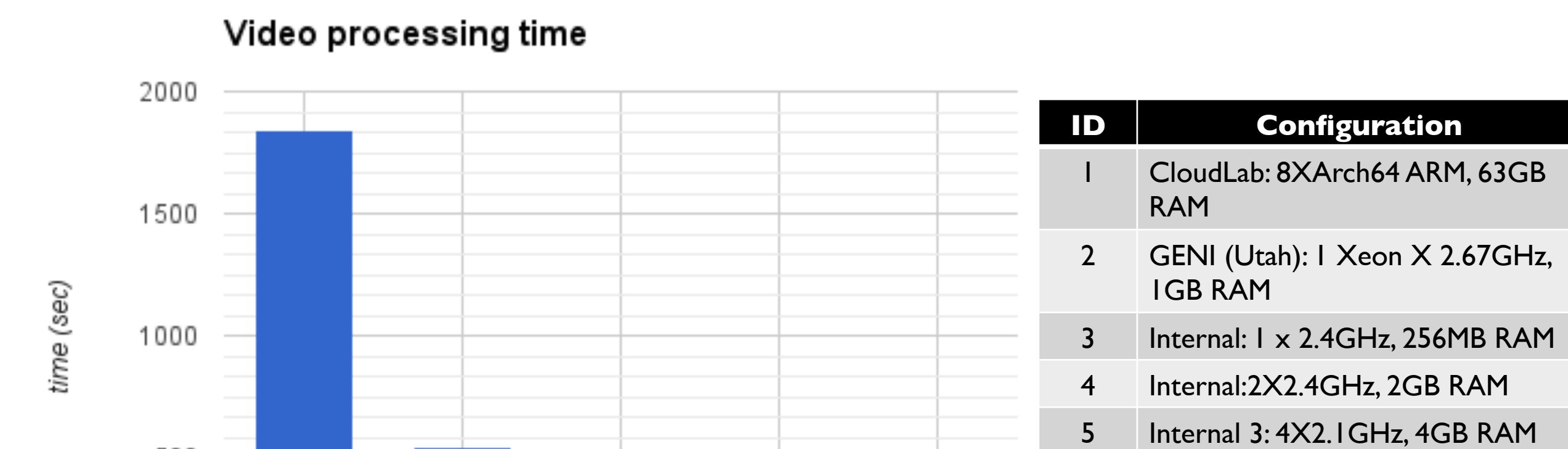


High-speed Wireless Networks

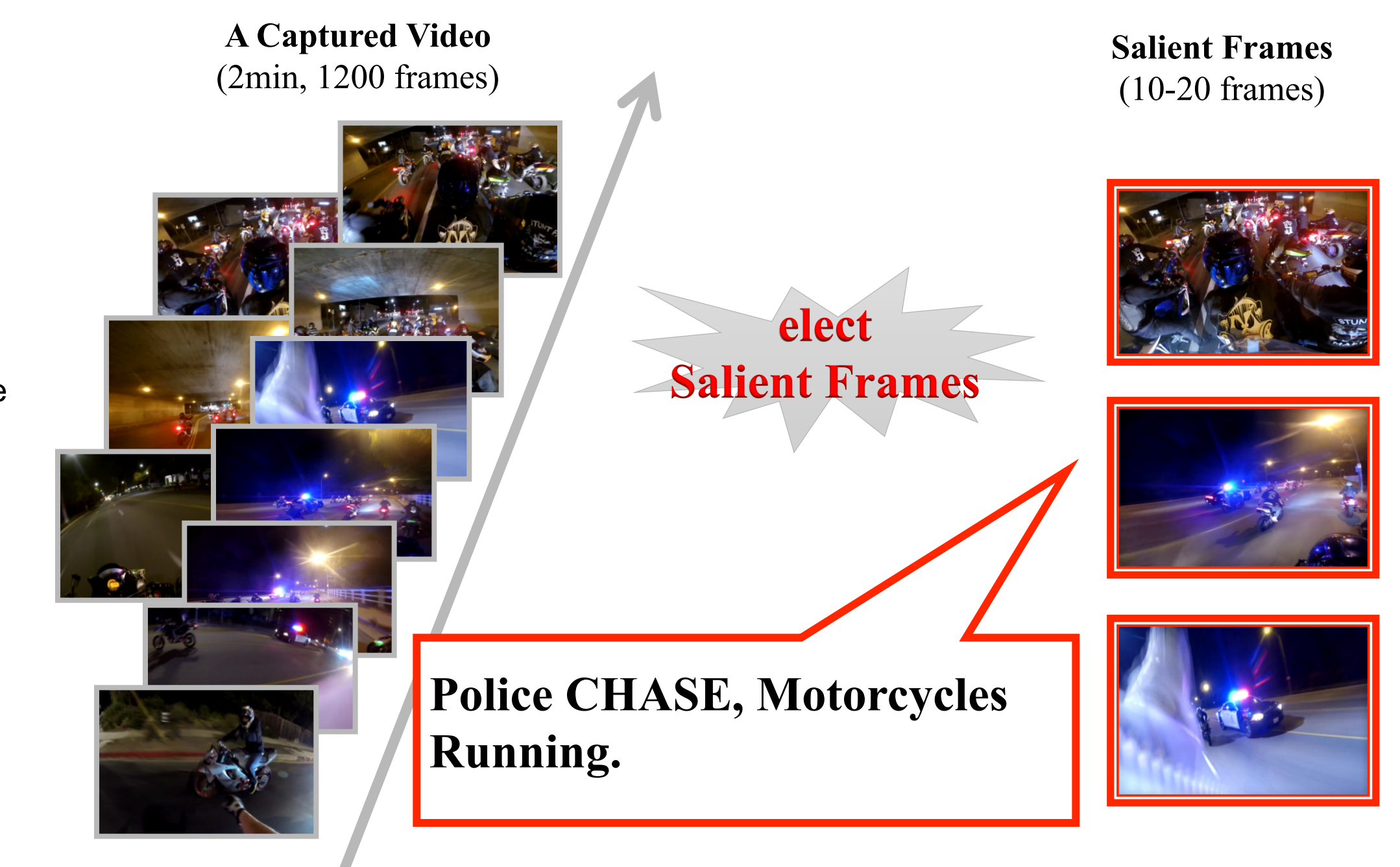


- No wireless communication medium or provider is consistently best
- Video files are large, stressing the file transfer capabilities of the wireless network
- Switching between networks incurs its own overhead

Backend Processing



Video Summarization



Next Steps

- Adjust 3D cameras for outdoor environments
- Splitting computation between local and remote servers
- Combine video summarization into SDN control of bandwidth

