

## Motivation & Goals

### ❑ Motivation

- 3,468 casualties due to fire in 2013
- Build single system for multiple applications
- Help save lives without endangering another

### ❑ Goals

- Produce an autonomous firefighting unit
- Present conceptual system that is modular, autonomous, and able to track desired target in real-time

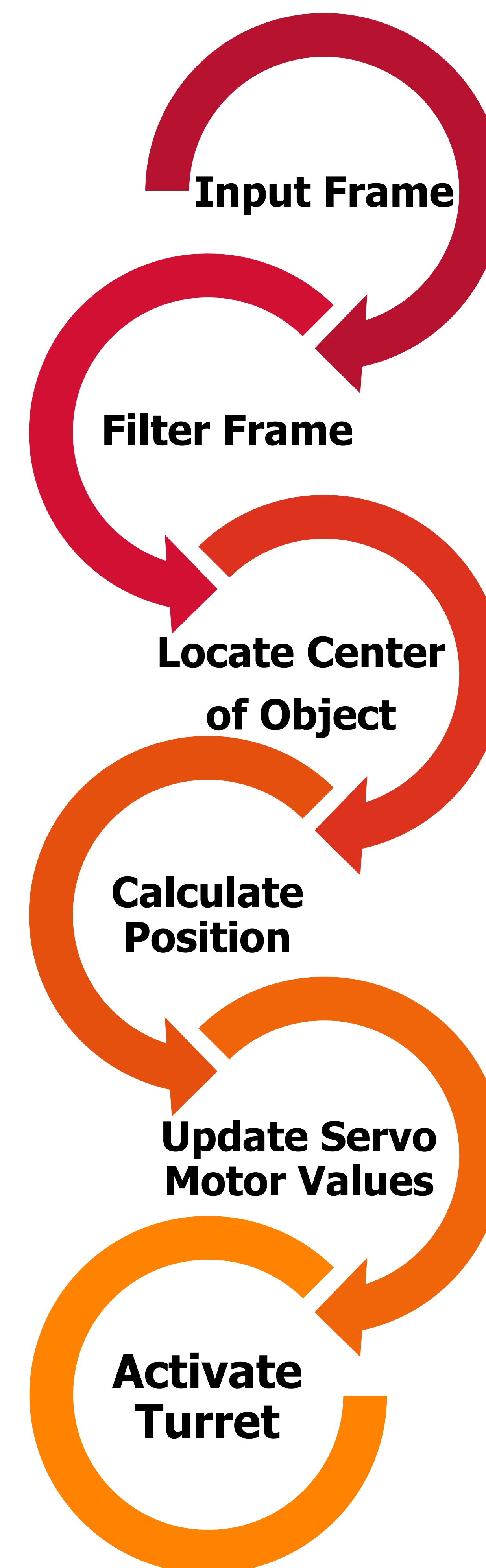
## Research Challenges

- ❑ Obtain funding to develop the projects
- ❑ Real-time tracking of object
- ❑ Scanning methodology when no object in sight
- ❑ Binocular vision
- ❑ Allow computer to do heavy computation and communicate with NI myRIO microcontroller
- ❑ Build a rig capable of withstanding situational conditions
- ❑ Turret calibration
- ❑ Developing manual control capabilities

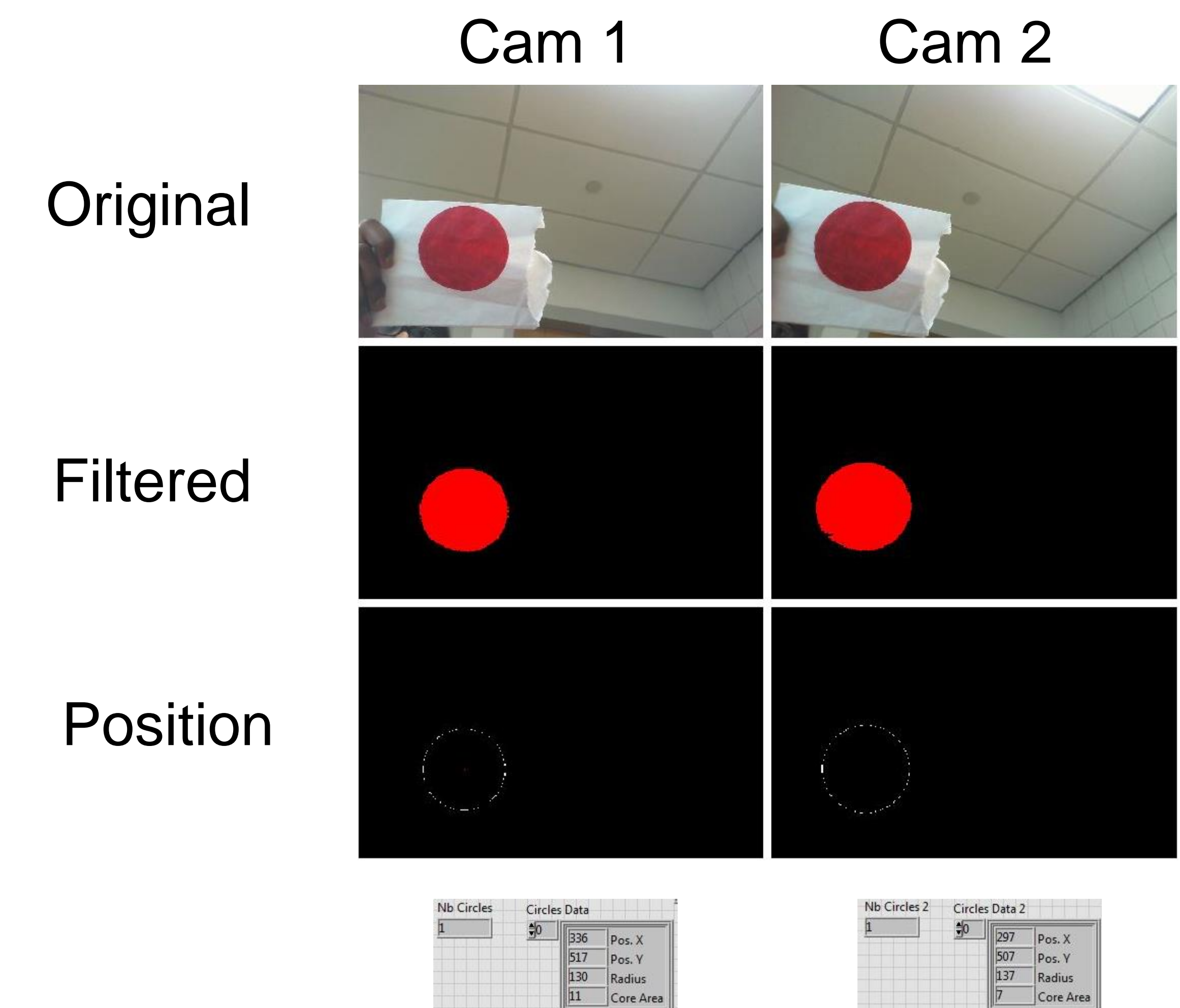
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## Methodology



## Results



## Future Development

- ❑ Faster and more accurate tracking
- ❑ Edge detection for fire recognition
- ❑ Use of thermal cameras
- ❑ Use of mini PC for mobility
- ❑ Wireless communication

## References

- [1] U.S. Fire Administration. (2016, April 22). Retrieved April 25, 2016, from <https://www.usfa.fema.gov/>
- [2] Hussain, K., Kumar, M., Zepherin, R., & Abirami, S. (2015). Anaglyph 3Dimensional Image Processing Using NI-LabVIEW. *Internation Journal for Innovative Research in Science & Technology*, 1(8). Retrieved April 25, 2016.