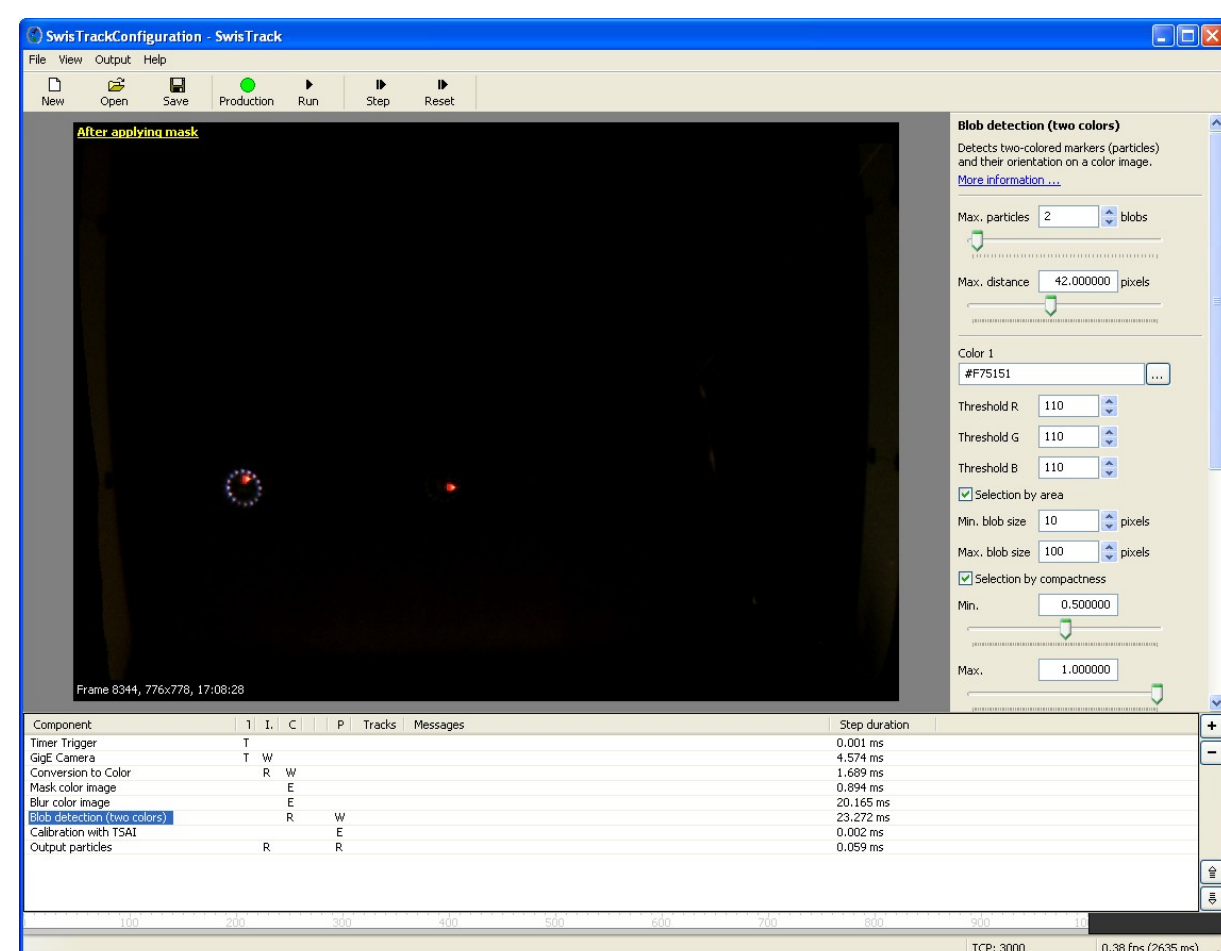
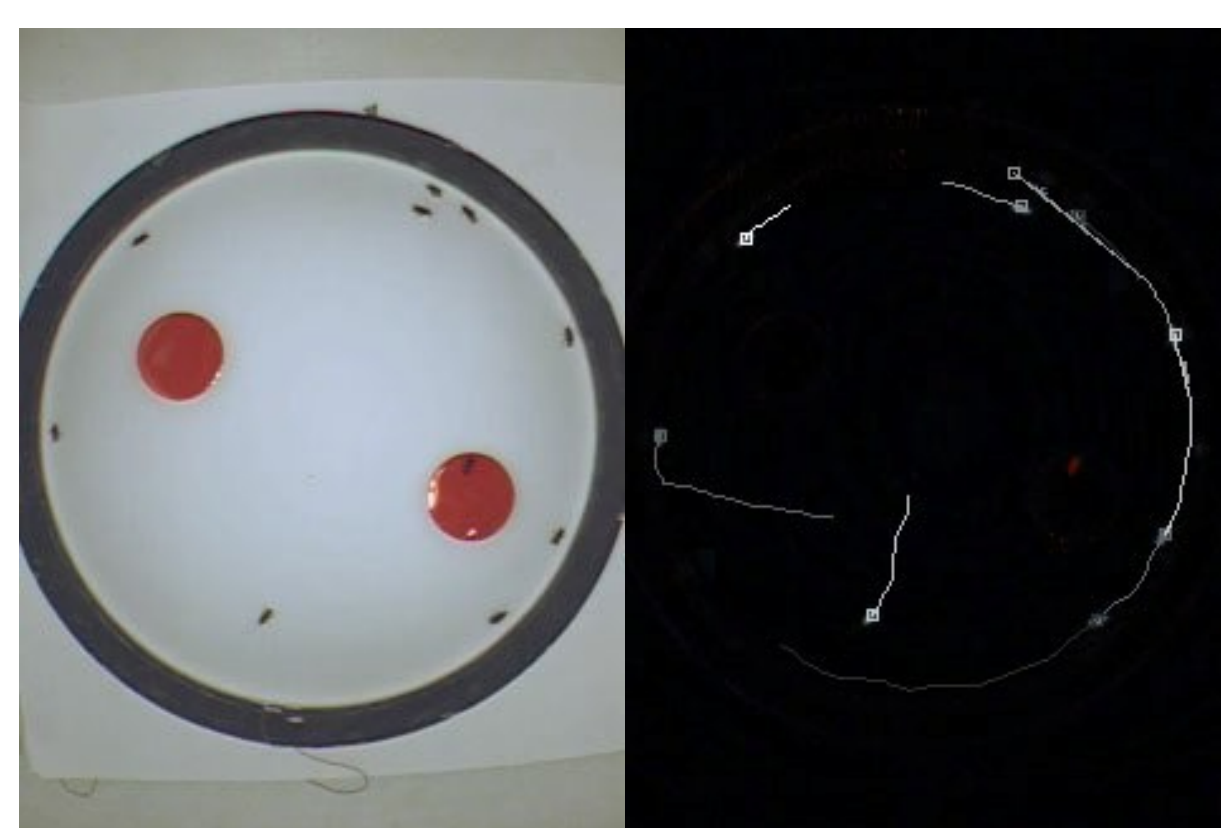


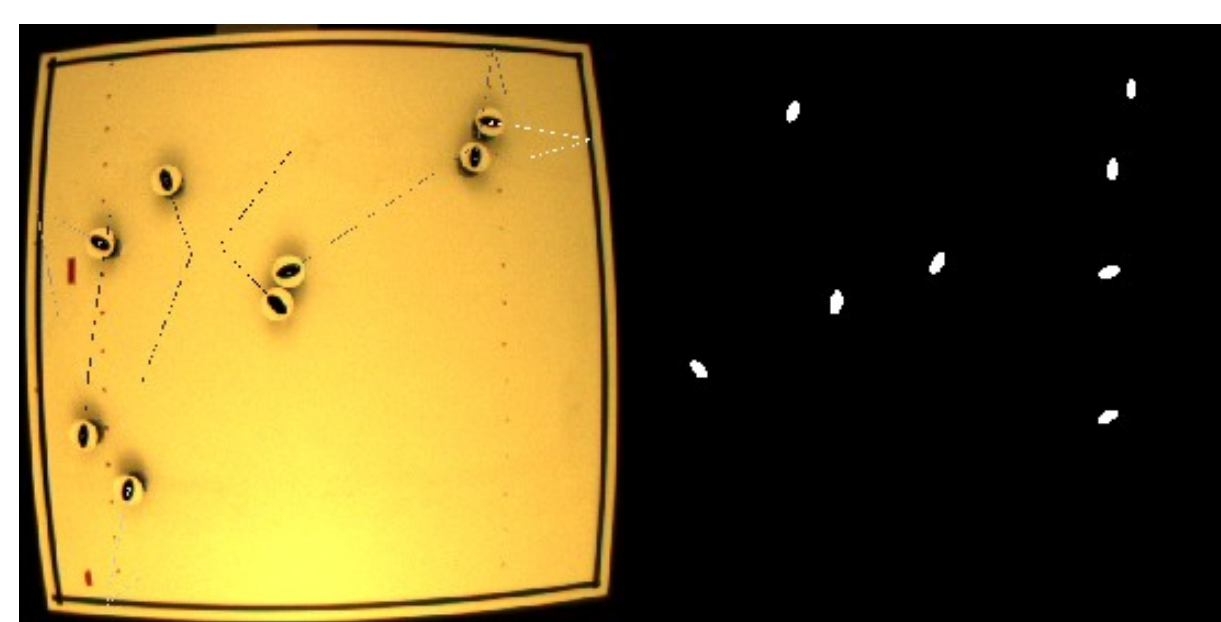
SwisTrack



Main window of SwisTrack.



Tracking of moths.



Tracking of e-puck robots on a table.



Two blobs with IDs. SwisTrack detects their position, orientation and ID.

A Flexible Open Source Tracking Software for Multi-Agent Systems

T. Lochmatter, P. Roudit, C. Cianci, N. Correll, J. Jacot, A. Martinoli

Main Features

- General-purpose tracking tool
- Component-based design
- Configuration panes for on-line configuration
- Visualization of intermediate steps
- Simple interface (TCP, NMEA, XML)
- Support for USB, Firewire and GigE cameras; various video formats
- Cross-platform (Windows, Linux)
- Easy-to-use user interface
- Extensive documentation

SwisTrack is Extendable

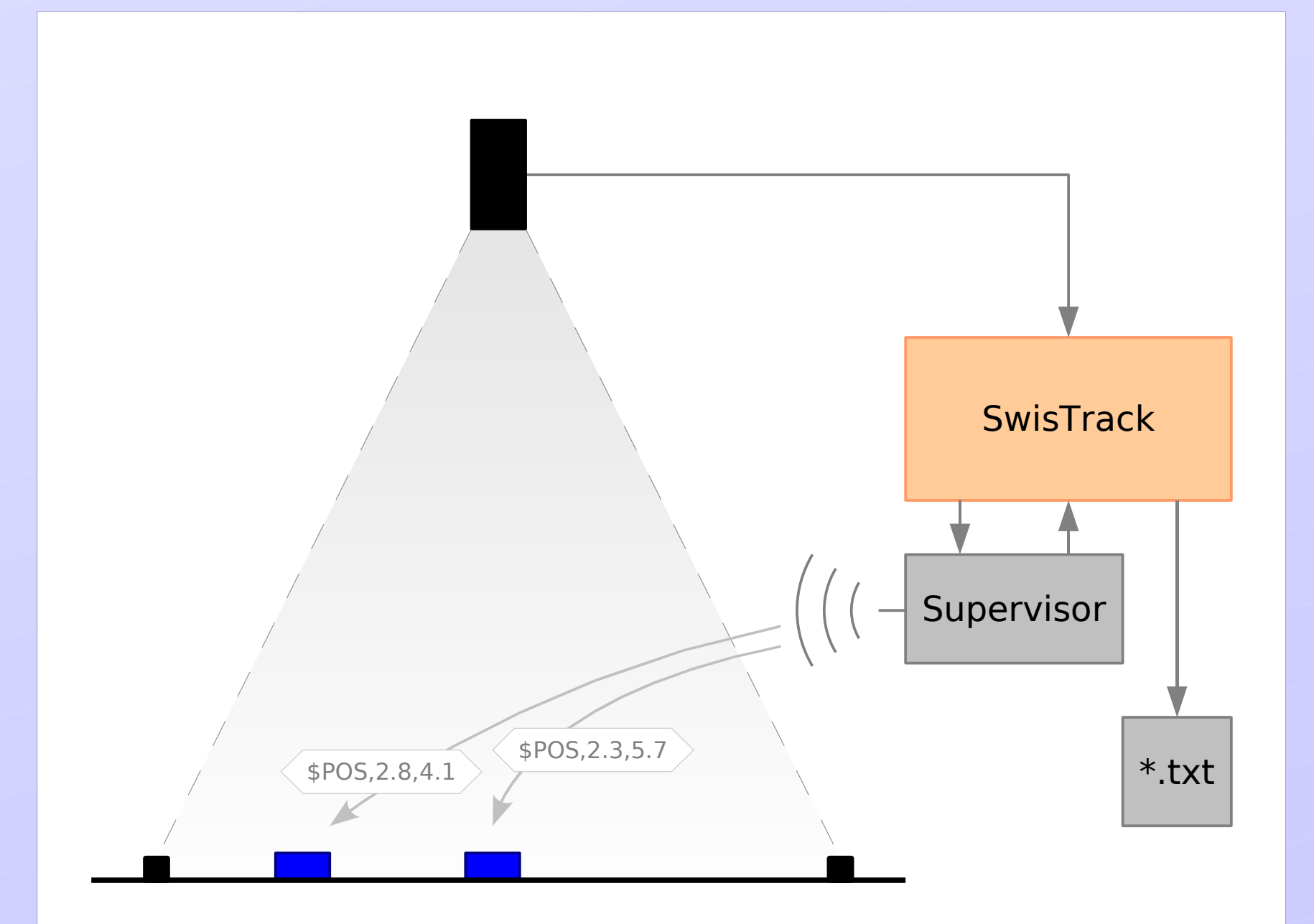
- Implement your own algorithm as a new component
- Reuse the framework and other components for your task
- Simple, documented interface
- Create configuration panes (XML)
- Visualize intermediate steps of your algorithm
- Optimize your code by measuring execution times
- Document your component, and provide to the community

References

- [1] SwisTrack: A Tracking Tool for Multi-Unit Robotic and Biological Systems. N. Correll, G. Sempo and Y. Lopez de Meneses, J. Halloy, J.-L. Deneubourg, A. Martinoli, Proceedings of IROS 2006, p. 2185-2191, 2006.
- [2] SwisTrack: A Flexible Open Source Tracking Software for Multi-Agent Systems. T. Lochmatter, P. Roudit, C. Cianci, N. Correll, J. Jacot, A. Martinoli, Proceedings of IROS 2008, to appear.

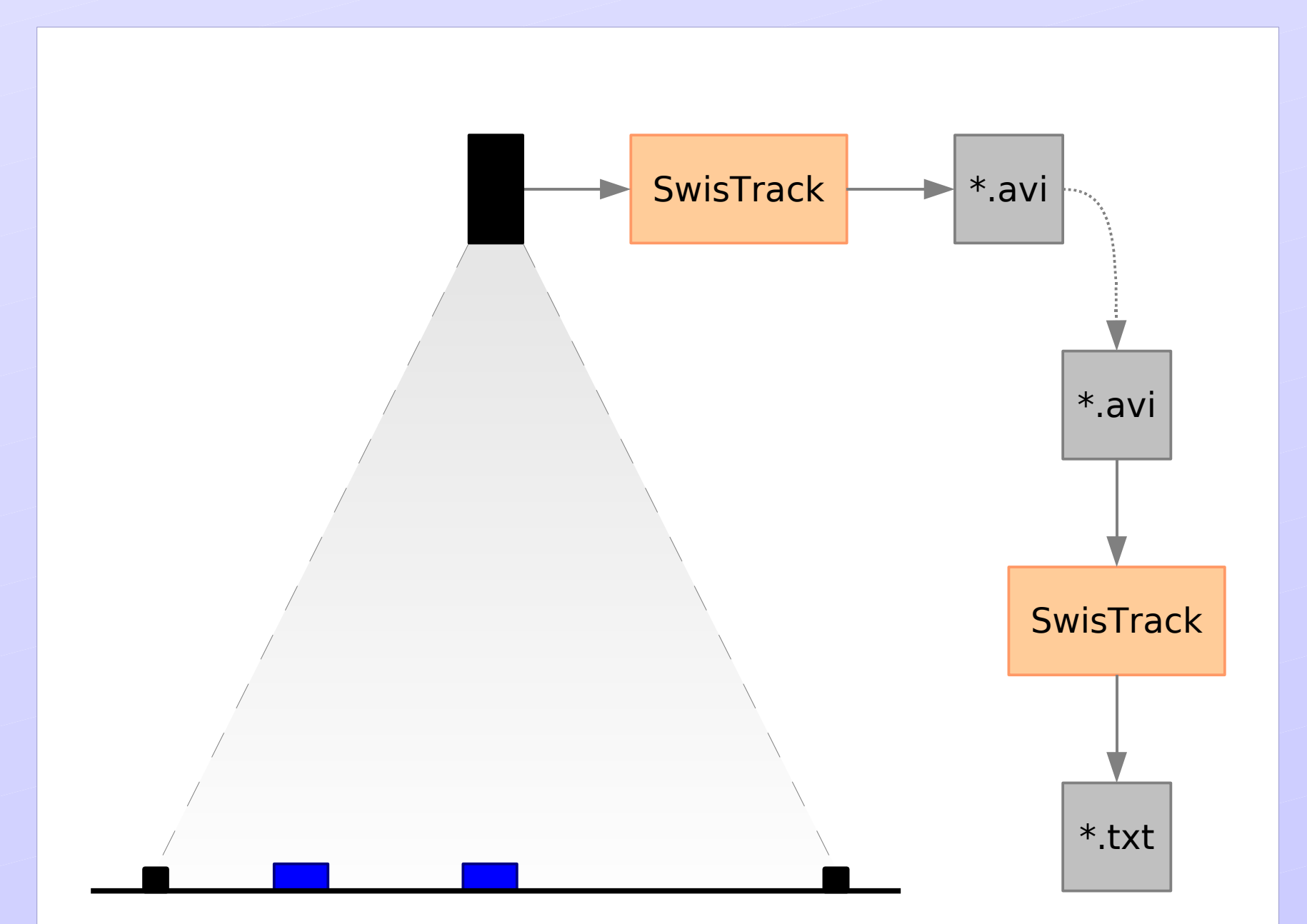
Application Example 1: Real-time Robot Tracking

Self-localization (indoor GPS)
 Ground truth measurements
 Off-line trajectory analysis
 Failure / success detection



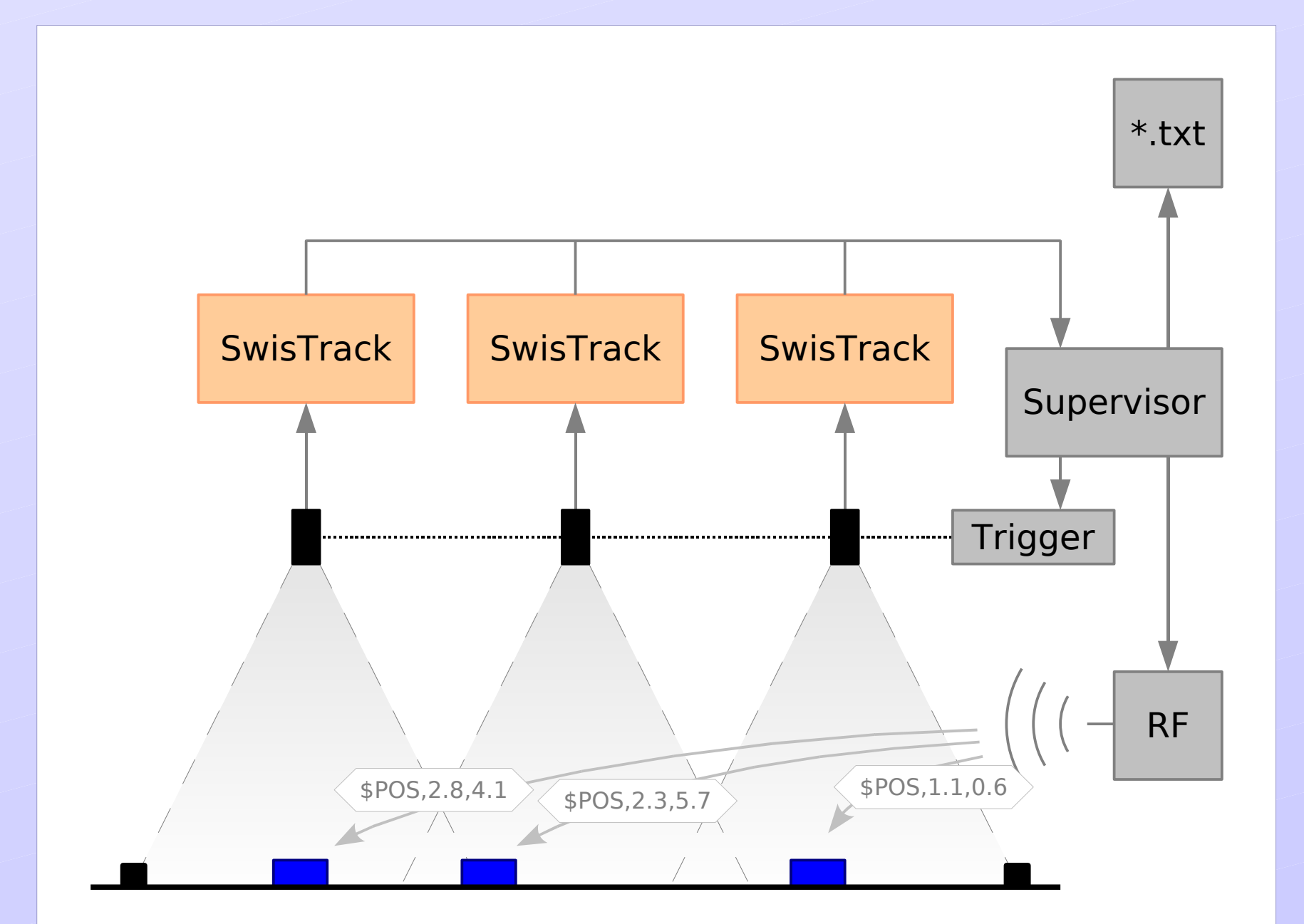
Application Example 2: Tracking Animals on Videos

Trajectory analysis of animals
 Social behavior of animals



Application Example 3: Multi-Camera Tracking

Larger arenas
 Camera not necessarily overhead



Application Example 4: Experiment Monitoring

Monitor failure condition
 Monitor position of a token
 Replace a specialized sensor

