Cybernetics

Quadcopter drones and other autonomous vehicles are undergoing fast development. The algorithms that govern their decision-making abilities and actions are becoming exponentially more complex. Qualisys systems track positional data to supplement the control algoritms of autonomous machines and vehicles, ensuring safe and efficient interaction.

The versatility of the Qualisys cameras allows you to work in any space necessary to perform cybernetics measurements. Qualisys cameras can track motion indoors, outdoors, and are the only commercially available optical motion capture cameras suitable for underwater use.

Qualisys Track Manager (QTM) software can measures six-degrees of freedom (6DOF) position and orientation as the cameras observing light-weight markers attached to the object. Accuracy down to 1mm on position and 0.1° on rotation can be achieved, depending on the capture volume. Rigid bodies can be streamed in real-time and to external applications using Qualisys real-time SDK

FEATURES

- High-speed motion capture
- Real-time 6DOF measuring & streaming
- Large volume coverage
- Resolution up to 12 MP
- Real-time latency < 5ms
- Indoor, outdoor & underwater tracking
- Weather resistant IP67 housing[1]
- Daisy-chained connection
- High-speed video[1]
- Passive & active marker support

[1] Optional accessory/feature, not available for all camera models.

REFERENCES

Ericsson, Sweden

NTNU AMOS, Norway

TRACKING THE FUTURE OF AUTONOMOUS FLIGHT

Qualisys motion tracking solutions offer accurate and reliable real-time 6DOF positioning data. Drone flight entails the use of large spaces to ensure a free-flying experience. Qualisys systems ensure large volume coverage, and active marker technology allows for long-distance tracking within large volumes. The system is portable and weather resistant if your project requires indoor and ourdoor flying experiences. The position of single quadcopter or an entire swarm can be tracked and its behavior controlled, allowing for self-correcting autonomous flight.

DEVELOPING HUMANOID ROBOTS

Human biomechanics is in our DNA, which is why Qualisys systems excel within the humanoid robotics field. Use our proven technology to monitor or mimic human movement movement with ultra-high resolution, in real-time and in perfect sync. Track actual human motion to develop motion algorithms for robots. The Qualisys Track Manager (QTM) software easily identifies markers regardless of marker set using the Automatic Identification of Marker (AIM) feature. Just define your model, feed it with sample motion data and you are ready to go.

THE ONLY UNDERWATER OPTION

Subaquatic autonomous machines provide remote presence without the complication and cost of keeping a human alive in a hostile environment. Our motion capture technology is the only one capable of operating at a depth of several tens of meters under water (pressure tested to 40m).
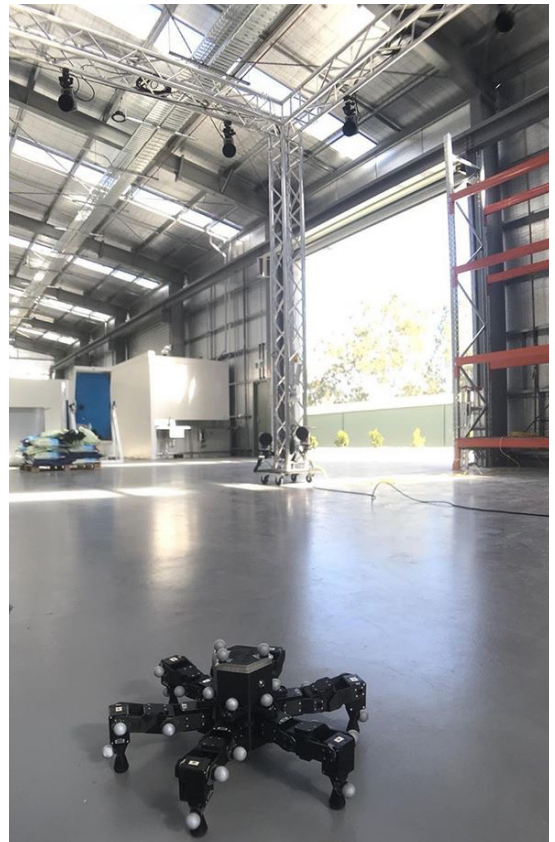
An autonomous hexapod at CSIRO inspects & maps ceiling cavity and underfloor as Qualisys cameras track it.
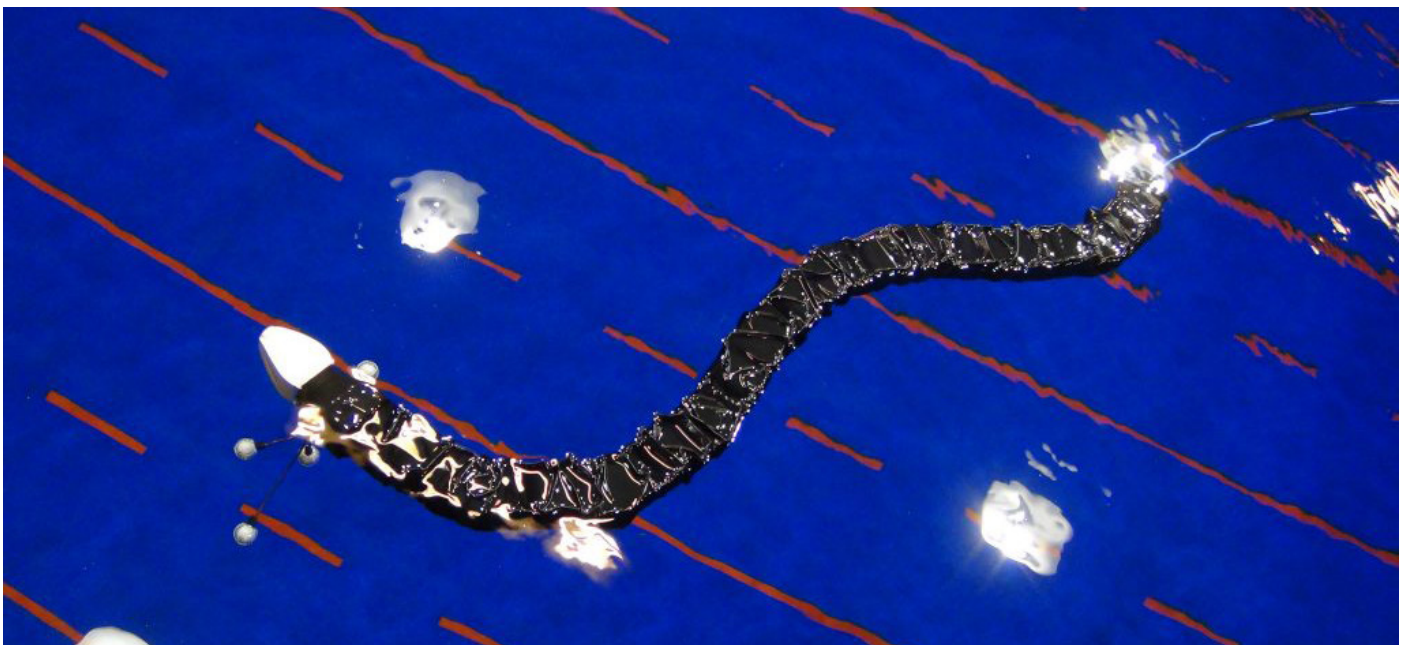
A Qualisys Underwater camera system is able to capture the movement of the snake robot at NTNU AMOS for path control analysis.