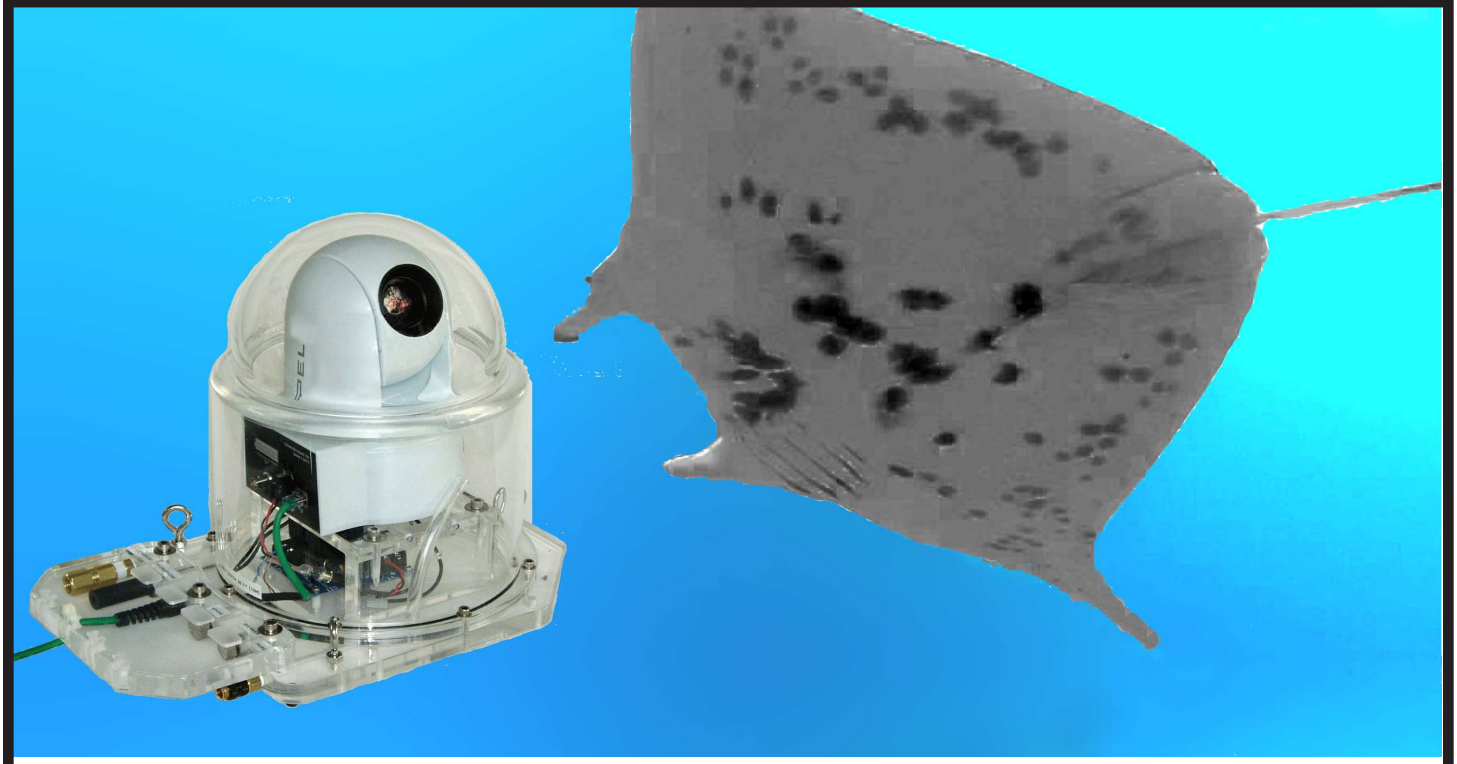
the MANTA network
protection and conservation



Manta Network's Underwater Internet Camera system (UWIP Cam™) is the world's first underwater camera that is able to be controlled at depths of several hundred feet from anywhere on the globe over the Internet. The IP camera and underwater housing has been specially designed for a wide range of applications including marine animal monitoring.

Camera systems with fiber-optic cables as long as 20 kilometers can be connected to the Internet on shore or attached to a research vessel. The fiber and power cables are wet-mateable, making underwater connections and camera removal possible. With on-board motion detection, the camera will automatically wake up when a marine creature swims by.

The UWIP Cam uses a Sony Pan-Zoom-Tilt camera that was originally designed for professional video surveillance and security applications. The camera produces high resolution, low-light, color video and has a high-precision pan-tilt mounting with an 18x optical zoom lens. Low-light sensitivity makes night recording possible. Multiple viewers can access a single camera.

Cameras produce real-time video using an embedded MPEG4 encoder. Individual images can also be captured from the real-time video stream.

The UWIP Cam has a built-in Internet server which is connected to a high-speed Ethernet network using a fiber-optic cable. It uses standard Internet protocols for command, control and video delivery, and is addressable from anywhere that the Internet is available.

When motion is detected, an image is captured and an alert can be sent via email to announce the presence of underwater activity. The camera can be programmed to record selected time intervals and with various camera recording paths.

Bi-directional audio is fully supported making possible an optional real-time DSP hydrophone array that can be used to record sound, sonic fingerprints and to indicate direction.

The UWIP Cam can monitor marine and freshwater species and can be used in a variety of security and monitoring applications in almost any situation. including high-humidity or harsh environments.

UWIP Cam systems can be purchased or leased. Custom housings, multi-camera systems, installation and maintenance contacts are also available. Please contact Robert Aston at robert@mantas.org for more information and pricing.

UWIP Cam™ Product Sheet

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The UWIP Cam™ is the world's most advanced underwater Internet-controlable camera. The uniquely designed housing is intended for permanent underwater use.

The MPEG4/JPEG network camera with a Pan-Tilt-Zoom (PTZ) capability is packaged in a sleek body and fits efficiently into our compact underwater housing. The built-in Web server connects over a high-performance fiber optic channel to permit installations up to 20 kilometers from the base station.

Once the network connection is established, images and video from the camera can be efficiently streamed over the network. MPEG4 is well suited for streaming images over limited bandwidths. Higher quality JPEG-compressed still images and motion video are also available. When the built-in motion detection is triggered, a still image is sent via email to alert the onset of activity.

The pan, tilt and an 18x optical zoom can be controlled from a standard web browser from anywhere in the world. The viewing software has a unique feature that allows control of the camera simply by clicking on the panorama image.

System Features & Specifications

- 60% spherical glass dome specially designed to maximize the camera's optics
- Maximum operational depth is 300 feet
- Built-in Web server connects via 10-100Tbase using fiber converters
- Fiber-optic cable lengths up to 20 kilometers can be deployed
- Underwater-mateable fiber-optic/power connectors allows housing to be removed for maintenance
- Pan angle -170 to +170 degrees, tilt angle -90 to +30 degrees, zoom ratio 18x optical zoom (additional 16x digital zoom)
- MPEG4 video compression for network transmission of streaming video. Selectable MPEG4 and motion JPEG formats.
- Maximum frame rate JPEG 320 x 240 at 30 fps; 640 x 480 at 18 fps and MPEG4 320 x 240 at 30 fps; 640 x 480 at 15 fps.
- Internet Protocol connection with secure network connectivity supporting 10 MPEG4 and 20 JPEG clients
- Day/night function with 0.7 lux minimum color illumination.
- Internal moisture detection system to alert the first sign of leakage
- Moisture purge system allows housng to operate in a dry gas (air or N2) environment
- Special anti-theft, tamper-resistant locking system with leveling device
- Powered with DC 12 V or AC 24V from shore, solar panels, wave generators or by battery
- Power consumption 17 W max.

Accessories

- Adjustable weight tray (included)
- Sturdy mobile container (included)
- Video recording and archival software (additional)

UWIP CAM™ Specifications