PANOMORPH\textsuperscript{EYE} DEVELOPMENT KIT

ENABLE YOUR DEVICE WITH INTELLIGENT VISION
The panomorph\textsuperscript{EYE} Development Kit is an all-in-one toolkit to simplify the integration of an intelligent camera system with your device or application.

OPTIMIZE VISUAL CAPTURE WITH ULTRA WIDE-ANGLE PANOMORPH TECHNOLOGY
Included are 3 ultra wide-angle Panomorph cameras calibrated to give you 2D hemispheric, 3D stereoscopic hemispheric or full 360 x 360 spherical capture and viewing greater than 180° field of view.

COLLECT, SYNCHRONIZE AND STORE METADATA ON EACH AND EVERY FRAME
With Data-in-Picture technology, metadata such as IMU and GPS are embedded in each frame providing easy access to rich contextual data on the environment.

GET REAL-TIME AWARENESS OF THE SURROUNDINGS WITH SENSOR FUSION
Combining ultra wide-angle for visual capture with real-time access of contextual information on the environment allows for the development and integration of cutting edge concepts, devices and applications.
PanomorphEYE Development Kit

INTELLIGENT VISION IN A BOX

The PanomorphEYE accelerates the development of a wide range of concepts, devices and applications.

PRODUCT DESCRIPTION

The kit includes three ultra wide-angle Panomorph cameras calibrated to give you 2D hemispheric, 3D stereoscopic hemispheric or full 360 x 360 spherical capture and viewing of the environment. Each camera has a greater than 180° field of view and all three cameras and other sensors are all synchronized within Socionext Milbeaut® Image Processor M12MO.

PanomorphEYE is a USB connected smart camera (UVC compliant), and includes Immervision Data-in-Picture technology, so that each video frame delivers data fusion from sensors such as IMU and GPS for advanced perception and environmental awareness. The data-rich video provides more contextual information to AI and neural networks, computer vision and SLAM algorithms, increasing scene understanding, decreasing false detections, and enabling better decision-making.

Included with this product:
- 3 x 187° Panomorph lenses - provide side-by-side stereoscopic wide-angle capture and back-to-back 360° capture
- Immervision software development kit including Adaptive Dewarping, Blending, Stitching, EIS (Electronic Image Stabilization), Data-in-Picture
- Socionext M12M0 ISP
- GPS sensor
- IMU [9 DoF]
- USB-C port - connectivity and power

Product capabilities:
- Sensor fusion
- Calibration: 180VR, full 360 back-to-back
- Real-time 180 VR viewing
- Real-time 360 Stitching
- Real-time Electronic Image Stabilization
- Compatibility with computer vision and NN SDK (e.g. OpenCV)
- Compatibility with UVC capture on PC (Windows and Linux), smartphone (Android)

Camera features:
- Auto Exposure
  - Auto / center-weighted / average / spot
  - Manual exposure control
- 50Hz/60Hz flicker-less mode
- Brightness control (-3.0 EV ~ +3.0 EV)
- AE ROI (region of interest)
- AE lock / unlock
- Auto White Balance
  - Auto / pre-set, AWB lock / unlock
- Image Quality Control
  - JPEG Q value setting [1~100]
  - Contrast, saturation, sharpness
- Output Format
  - YUV422, Motion JPEG [4MB/frame, 2MB/frame, 1MB/frame, 400KB/frame]
  - RAW (Bayer) output

Product specifications:
- Size (L X W X H): 98mm x 56.5mm x 17.2mm
- Video format: YUV422 and JPEG
- USB: 3.0
- Supported OS: Windows 8, Windows 8.1, Windows 10 and Linux
- Image Processor: Sony IMX298 16 MP

DEEP SEEING
[deep-sēiNG]

Deep Seeing enables smart devices with augmented vision. By capturing high quality visual and contextual data in new ways, it unlocks the potential of artificial intelligence. Like superhuman eyes for your smart device.