NINOX
Remote Towers

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# REMOTE TOWERS
## UNMANNED AIRPORT


## NINOX PAN TILT PLATFORM

The NINOX Electro-Optical Sensor Suite (EOSS) from KONGSBERG, consists of a rotating platform housing a visual and infrared 360° camera and a pan-tilt platform housing a visual zoom camera, a fixed lens IR camera, a laser range finder and signal lamp.

The Pan Tilt Platform holding the Pan Tilt Zoom day camera, PTIR camera (optional), Laser Range Finder (optional) and the mandatory signal light gun, will have gyros in all three axis integrated which will be used for servo stabilization. The stabilization will be a control loop closed by a controller located inside the PTP housing. This close location between controller and PTP will avoid extra delay in the control loop.

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The Pan Tilt Platform will have freedom to perform multiple rotations in azimuth. In elevation it will be adjustable from - 20° to + 80°. Combined with the PTZ field of view which can be continuously zoomed out to 95° horizontally and 71° vertically, the operator will cover the whole spherical angle around the platform including the “cone of silence”.

The Pan Tilt Platform (PTP) containing the Pan Tilt Zoom (PTZ) camera is able to turn very fast in the horizontal plane. The PTP is easy to operate using the joystick and only a minimum of training is required to be a skilled operator. Following an aircraft doing a low pass over the runway at 220 knots with the tower 90 meters away from the runway center line is an easy task for a skilled operator.

**PAN TILT INFRA RED CAMERA**
The Pan Tilt IR (PTIR) camera is a high performance uncooled IR camera which is able to depict thermal contrasts in the scene and is well suited for detecting animals, people, vehicles etc. even in darkness.

The PTIR is able to detect small-sized objects at a minimum of 3 kilometers, verified by the product manufacturer with STANAG 4347 and 4349.

**LASER RANGE FINDER**
The KONGSBERG Laser Range Finder named BATRAM 1550, is the third generation LRF from KONGSBERG. The BATRAM 1550 LRF is eye safe Class1. Nominal laser wavelength is 1530 nm which is outside visible range for the human eye.

The LRF is an integrated unit in the PTP and optically aligned with the cameras. This means that the LRF beam is in center of the video. The LRF can be operated simultaneously with the PTZ and PTIR. The laser beam will not be visible in the videos as the wavelength is outside the sensitivity spectrum of the cameras and such no dazzling or saturation of the cameras will occur.

**SIGNAL LIGHT GUN**
A Signal Light Gun (SLG) is integrated in the PTP and optically aligned with the PTZ and the PTIR. The operator has to direct cameras against the actual object, placing the object on a reticule in the in centre of the video and activate the Signaling Lamp. There will be a feedback system designed into the SLG to give the user information that the lamps are operating.

The signal light gun is designed to comply with ICAO “Signaling Lamp”. There are red, green and white signals, and they can be switched on and off in any sequence. The luminaires will make use of high power LEDs, to ensure efficient high-intensity light with well-defined chromaticity over many years, without the need to replace lighting components or other parts.


For more information, contact:

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