

## Product Description

### Longview 2

Long Range Surveillance in the  
Visible Spectrum

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# Longview 2 is fundamentally different to other long range surveillance systems

- Non-Thermal Technology

Offers an evidential quality alternative to 'traditional' thermal systems.

- 4 Cameras in 1 system

With multiple sensors in a single 'head' Longview offers complete versatility for use in all weath and lighting conditions.

- Ultra Low-Light

Longview 2 harnesses unique pixel-bining technology that makes it far more sensitive than other CCTV cameras

- Ultra High-Contrast

Longview can penetrate significantly further and in lower visibility conditions such as fog, mist, rain and sand storms.

- Ultra Low-power

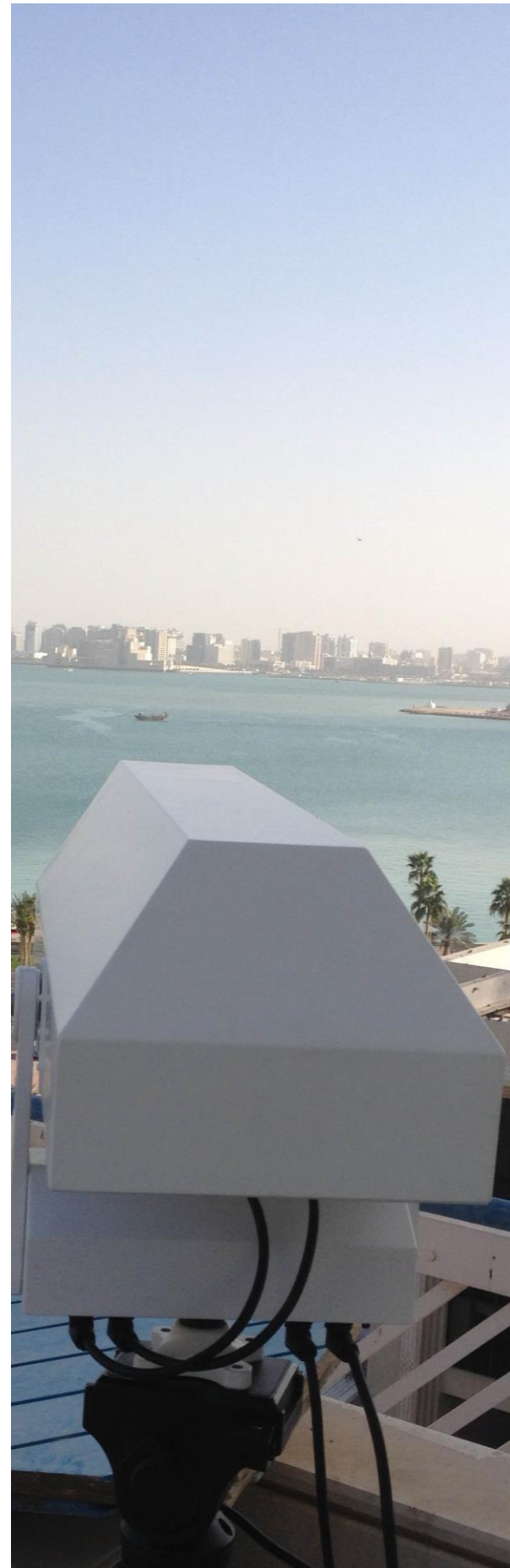
Longview 2 runs entirely off a 12V power supply.

- Low Cost

Both CAPEX and through life cost of ownership are significantly lower than alternatives

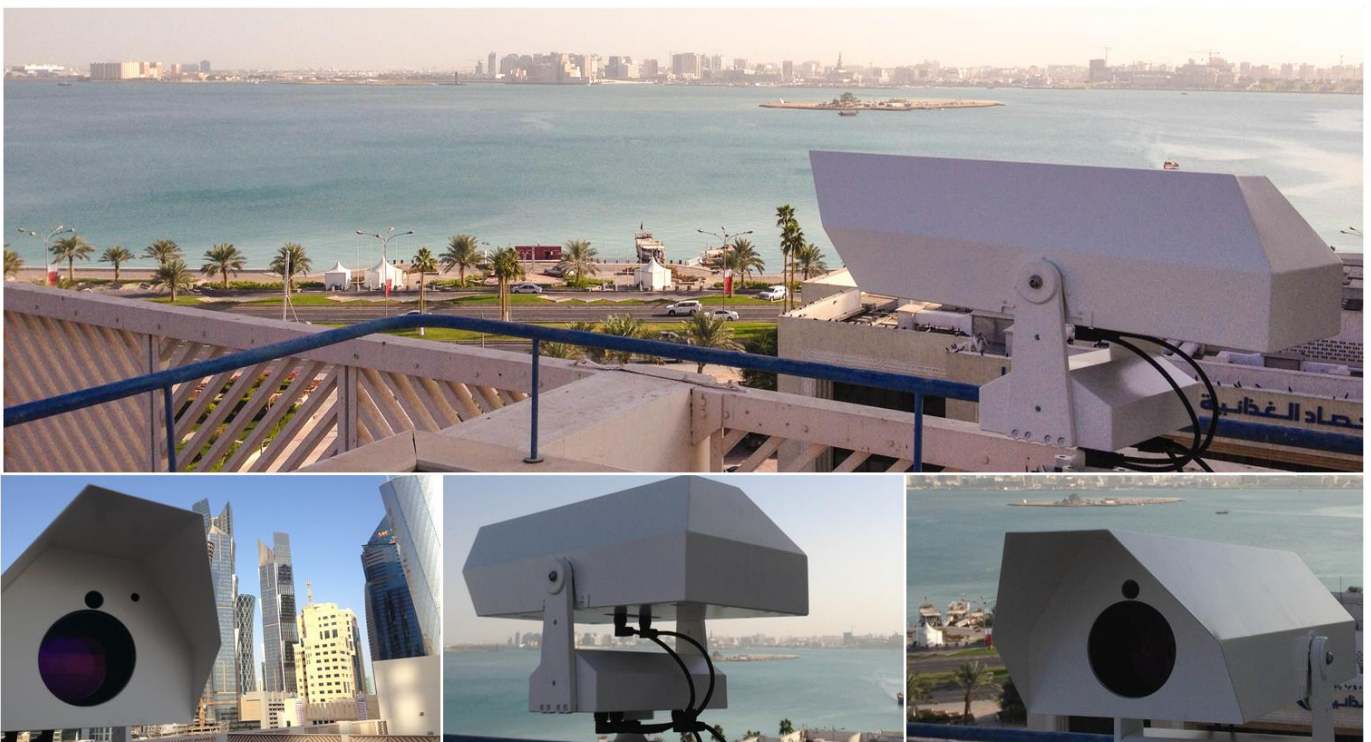
- 100x Optical zoom

Longview offers pure high powered optical zoom which contrasts with the typical 36x zoom of CCTV competitors and offers extreme long range capability



## Contents:

- System Overview
- 100x Optical Zoom
- Ultra Low Light Camera
- Ultra High Contrast Camera
- PTZ, Control & Recording
- Through-Life Management
- Mounting Options
- Technical Specifications
- Illumination Options





# System Overview



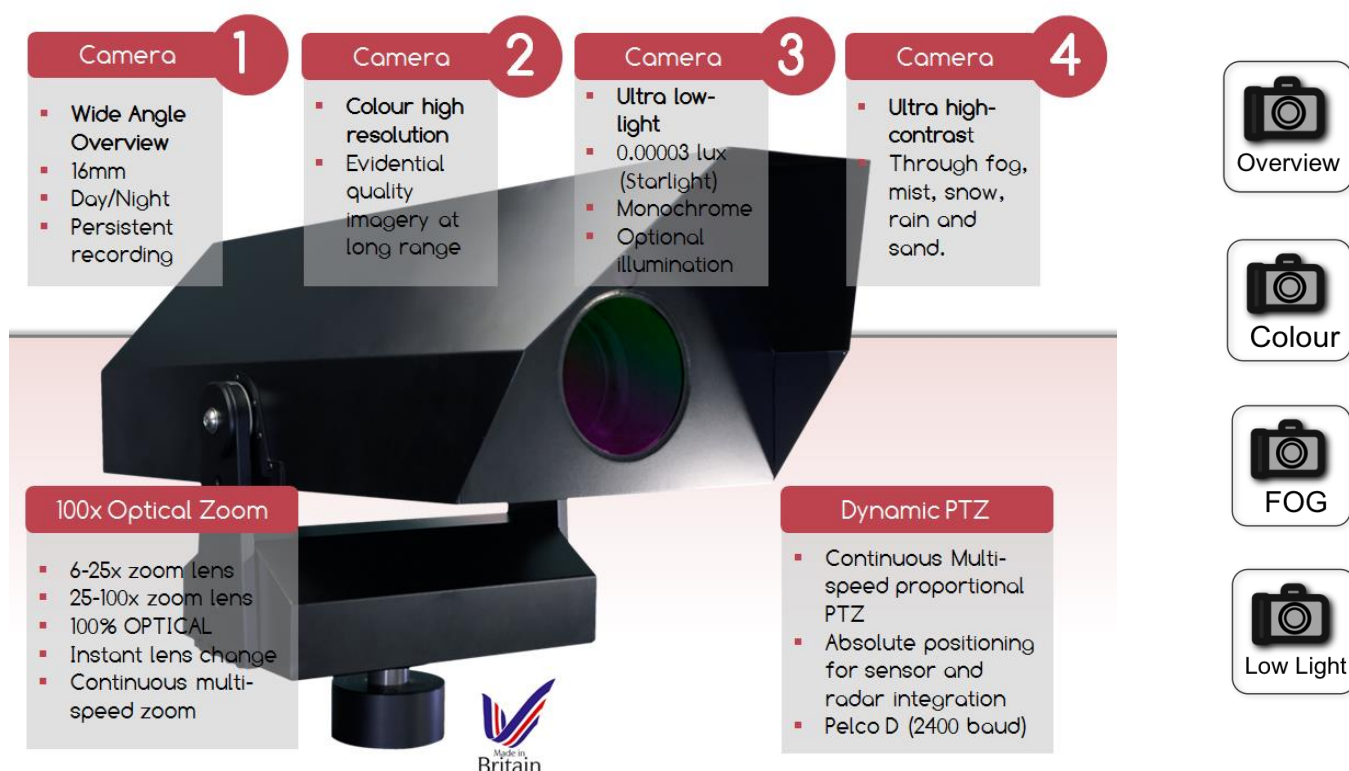
Longview 2 is the latest of VIT's specialist long range surveillance systems. Longview 2 is optimised for deployment in a wide range of environments and is particularly well suited to coastal, perimeter and mobile surveillance.

## Key Features include:

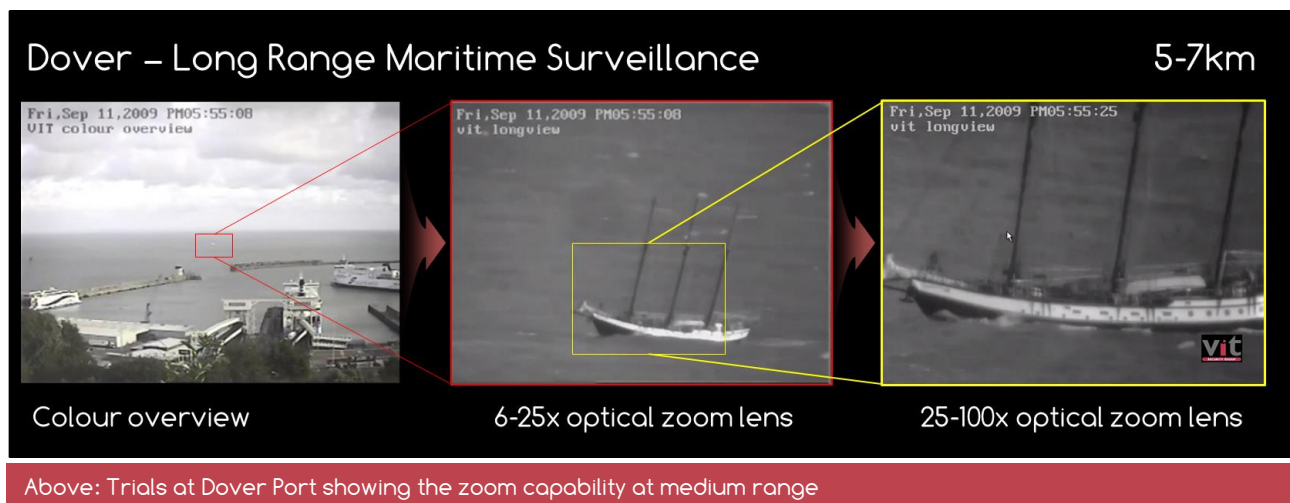
- 6-100 x optical zoom
- 4 Camera sensors in one surveillance housing:
  - Colour overview for situation awareness
  - Colour high-resolution
  - Ultra low-light for night vision (0.00003lux)
  - Ultra high-contrast for vision through fog, mist, snow, rain and sand
- Automatic tracking and slew-to-cue (with manual override)
- Rugged IP67 housing for
- Extremely low maintenance
- Extremely low power draw



Longview 2 (Temperate) – complete with PTZ and mount. Colour can be selected at time of order.

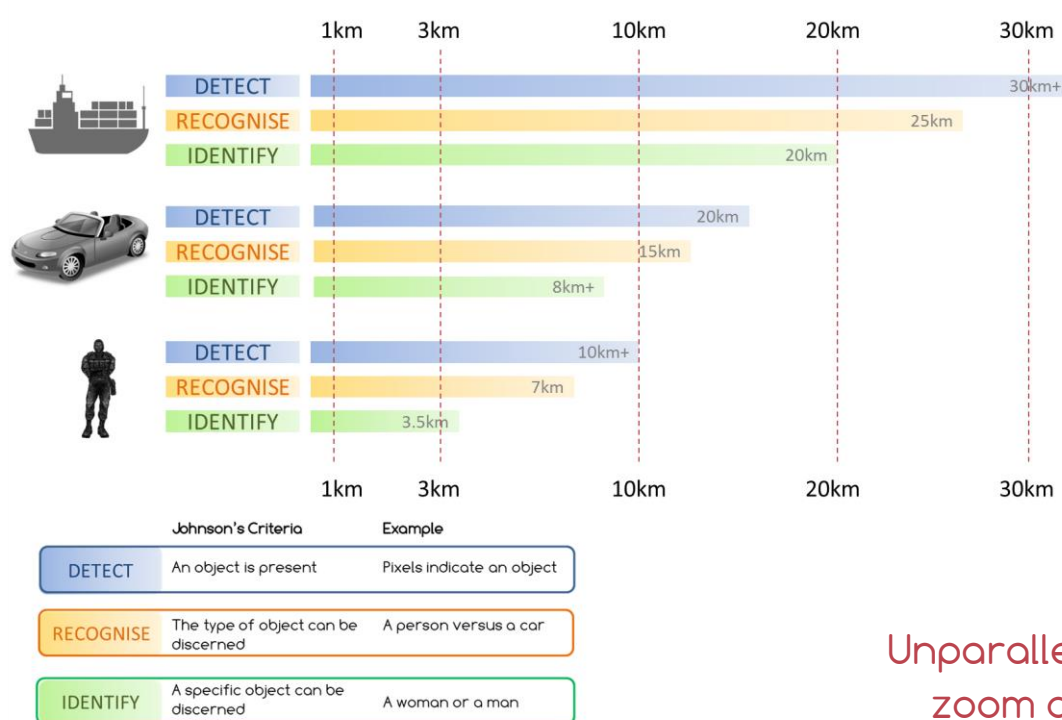


## 100x Optical Zoom



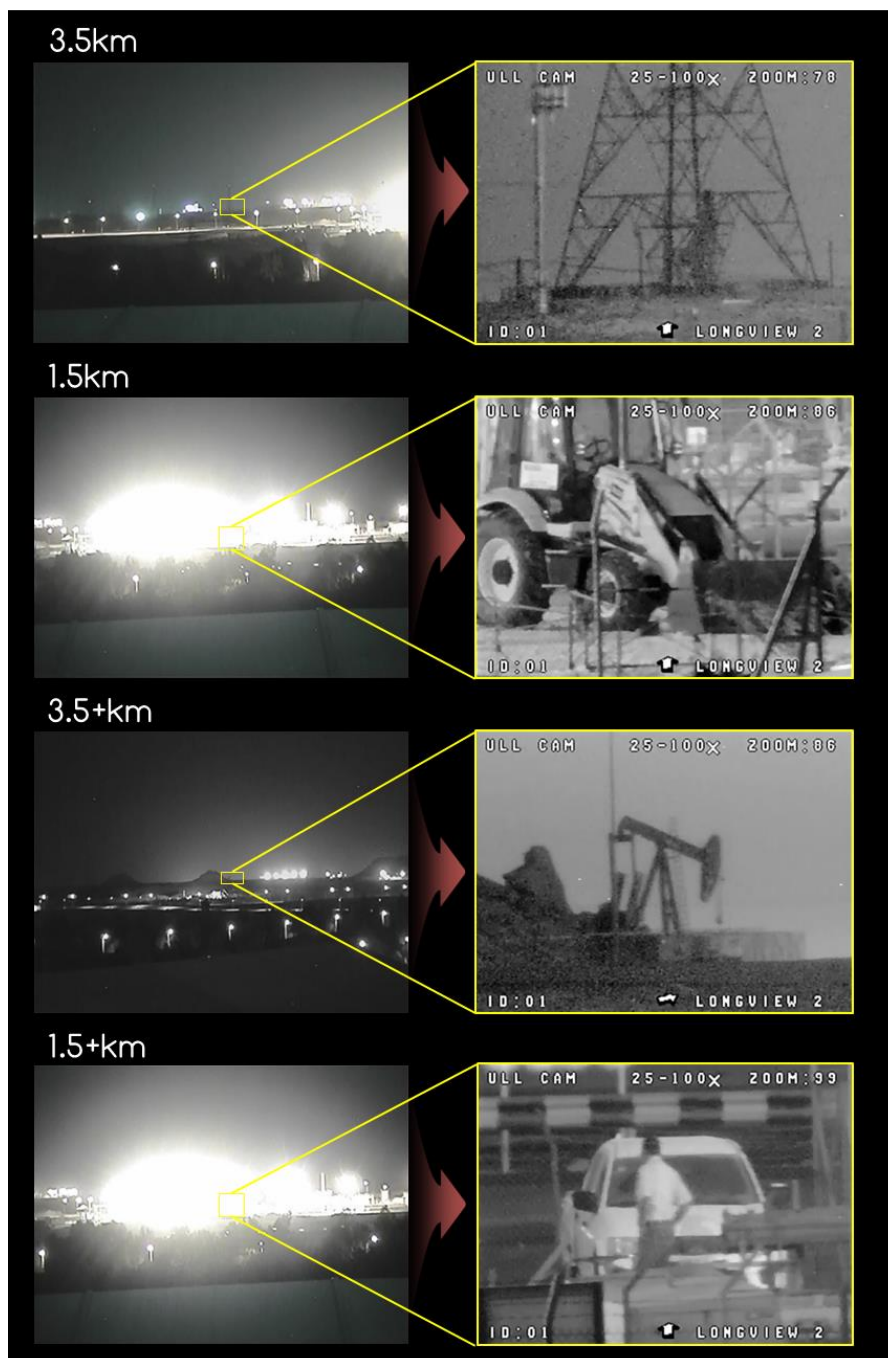
Longview 2's powerful 100x optics enable extremely long range surveillance. Unlike other camera systems that employ 'doubblers' to achieve range but in so doing sacrifice low-light capability, Longview 2 houses two high performance lenses (6-25x and 25 – 100x) giving the system a 100x fully optical zoom.

The lenses can be switched instantly by operators who will also be able to continuously zoom the optics.



Unparalleled optical  
zoom capability

## Ultra Low-Light Camera



The Ultra low-light camera in Longview 2 is over 150x more sensitivity than standard industry CCTV cameras

One of the four camera sensors within Longview 2 is the Ultra Low-light camera (ULL). The ULL camera utilises a uniquely specialist technology to generate evidential quality images down to 0.00003lux or starlight conditions.

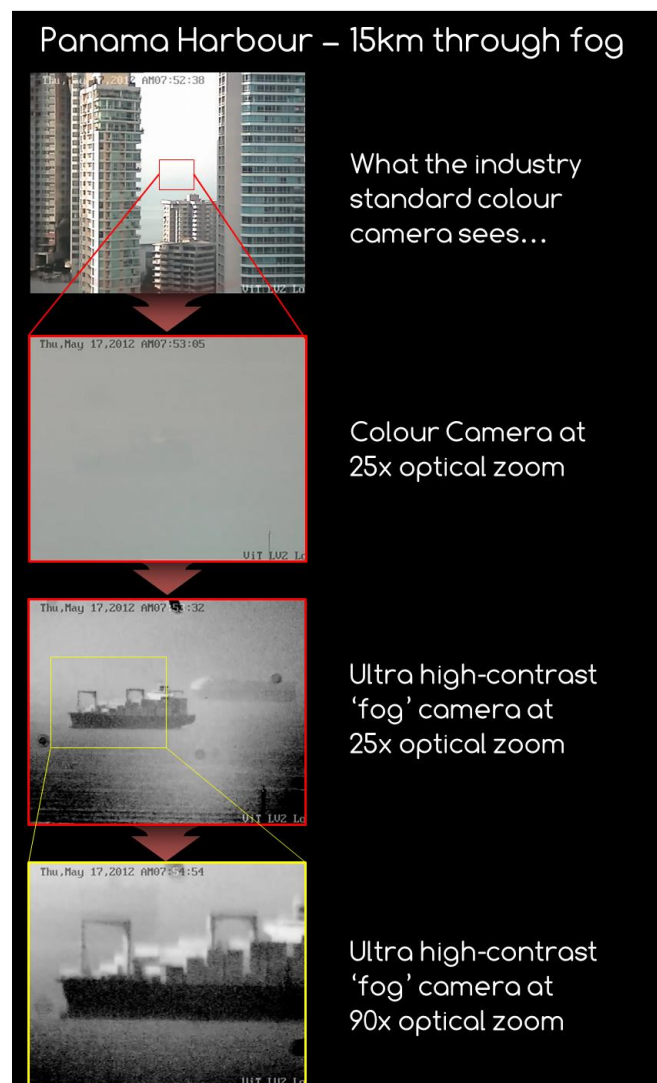
By conducting image adjustment on-board the camera and at a pixel level, the ULL Camera uses 'pixel binning' technology to achieve low light images with over 150x more sensitivity than the leading colour cameras.

Not only do we have an unparalleled ability to generate useable imagery in low light but we are also able to look into dark areas and brightly lit areas simultaneously without suffering flaring, blurring or artefacts.

Left: Images recorded in Bahrain in 2012 showing the capability of Longview 2 at night. Note the ability to defeat flaring whilst looking into and through bright lighting – these are typical airport perimeter conditions.



# Ultra High-Contrast Camera



The Longview 2 ultra high-contrast camera offers auto contrast correction by up to 15dB.

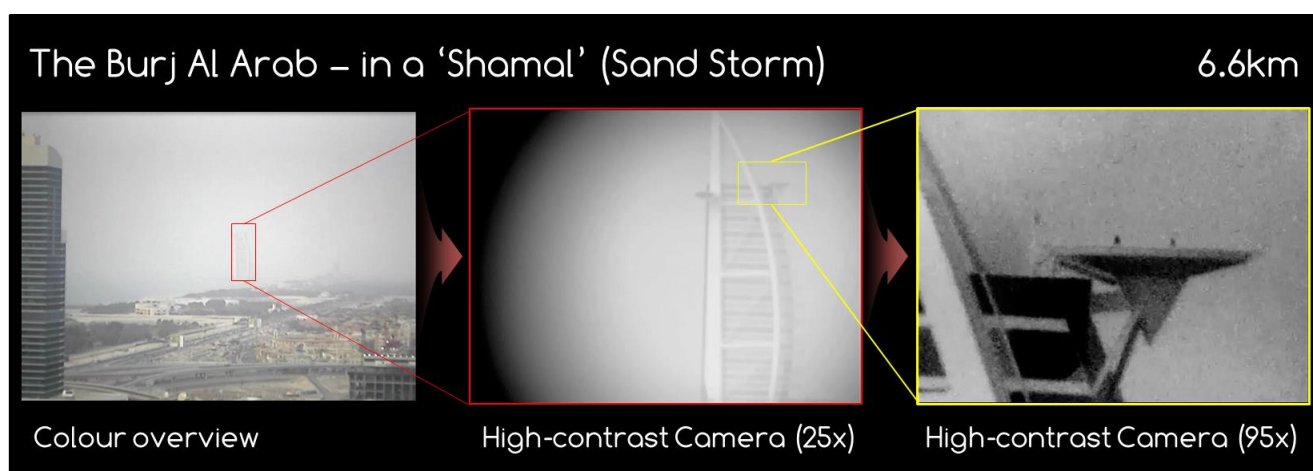
This means that Longview 2 is able to generate useable imagery in extremely poor visibility to provide surveillance continuity in poor weather and significantly lower visibility levels than other cameras, Thermal imagers or intensifiers.

The high-contrast camera is effective in:

- Fog & Mist
- Rain
- Hail
- Snow
- Sand & dust

Left: Trials in Panama showing Longview 2 penetrating medium fog to offer surveillance out to 15 and 20km.

Below: In temperate regions where the air quality varies greatly. The combination of the high contrast camera and the variable zoom enables extremely effective penetration in sand storms and obscuration caused by dust and humidity.

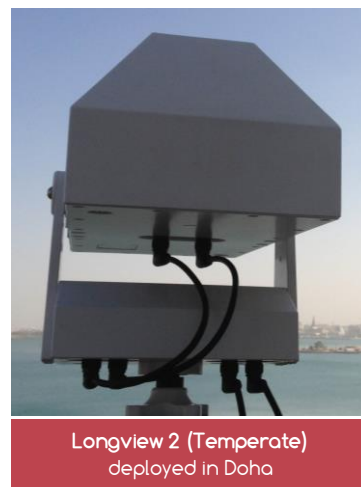


Longview 2's high contrast camera is capable of providing operational surveillance even in the most challenging visibility

## PTZ, Control & Recording

The Pan and Tilt mechanism on the Longview 2 camera is designed and built by VIT specifically to match the long range and high performance demands of Longview 2.

- **Operationally Appropriate** - Our multi-speed, proportional PTZ gives operators extremely fine motor control of the camera when zoomed in (potentially 100x). Our Pan and tilt mechanism has been designed with a three speed proportional Pan, tilt and zoom control via the joystick of control interface. This allows fast medium and slow PTZ allowing the operator total flexibility to manoeuvre the system and manually 'track' subjects.
- **Near Zero Backlash** - Our system is designed to deliver almost no backlash when panning and tilting the camera. This means that unlike standard CCTV systems, the operator will not experience moving subjects jumping in and out of frame.



Longview 2 (Temperate)  
deployed in Doha

### Radar Integration, Tracking & Slew-to-Cue



Longview is already controllable using industry standard Pelco D extended protocol. This provides absolute positioning and positional feedback.

Should a Radar type be used that does not support Pelco D extended protocol output, we are able to write an interface SDK plug-in for Longview to other radars. A price for this development work is included in the cost of the Longview 2.

**Longview is equipped now to integrate with Radars utilising Pelco D Extended protocol.**

Above: tracking a fast moving small craft in the harbour at last light. The combination of the high zoom with the high-contrast camera and the near zero backlash PTZ mechanism, the operator is able to keep the subject in frame and capture perpetual high quality imagery.

### Digital Video Recording

Our Rapid Deployment KIT (RDK) consists of:

- Digital Image Stabiliser
- DVR & Storage (typically 30 days)
- Joystick controller

The RDK is an ideal control and recording solution for Longview 2 when deployed in a mobile or remote location.

Should users wish to utilise their own control and VMS solutions, Longview 2 is fully compatible with all Pelco D based systems and can be configured for customised requirements.





# Through-Life Management

## Low Maintenance

Longview is designed with the minimum number of moving parts and is constructed in a fully modular fit to enable ease of servicing and to give greatest protection and longevity in real world conditions.

The Longview 2 unit is designed to run on 12v DC and the sensors incorporated are uncooled. This means there is no need for expensive on-going sensor maintenance. The Sensors are maintenance free.

The standard maintenance for the system is to annually check connections and cables for damage or wear. If the system is being continuously driven in pan and tilt mode, there may be some wear on gearbox and drive belts. These are modular and can be adjusted or replaced during servicing as required. We recommend servicing every 12 -18 months for standard usage (panning and tilting up to 4 hours per day) and every 9 to 12 months for higher pan and tilt daily usage.

Compared to equivalent thermal systems that can cost upwards of \$80,000/yr to maintain, Longview 2 is a significantly more cost effective option

## Reliability & MTBF Data

We can confirm MTBF for the camera at 50,000 hours

## Low Power

Longview 2 is an extremely low power system. Running off only a standard 12V power supply, Longview 2 can be run off a car or leisure battery for extended durations.

## Declaration of Conformance

VIT will supply the system with UK/EU CE certification.

## Export License

As this product is based upon standard CCTV CCD technology, is not intensified or thermal technology, it is not designed or modified for military usage and has been sold commercially for several years to the commercial markets, it is not required to have an export license.

## Training, Support & Maintenance

Longview 2 and its control and illumination accessories (if required) require extremely little training to achieve proficiency. We typically

offer 2 days training (in the form of train the trainer) with our system delivery.

## System Maintenance & Support

As well as system operation our training will cover system assembly and dis-assembly and will cover the full actions on and troubleshooting for error correction. This will give you the ability to deliver first line, 'in the field' maintenance on the camera should a failure occur.

For more serious failures, in-country support will be provided by our partners at 2<sup>nd</sup> line support who will have the capability to diagnose, repair, replace or backhaul the system for factory maintenance.

- 1<sup>st</sup> line – customer (troubleshooting delivered as part of system training)
- 2<sup>nd</sup> line – System Integrator, i.e. yourselves
- 3<sup>rd</sup> Line – Return to base, VIT

All units are sold with 12 month return to base warranty as standard.

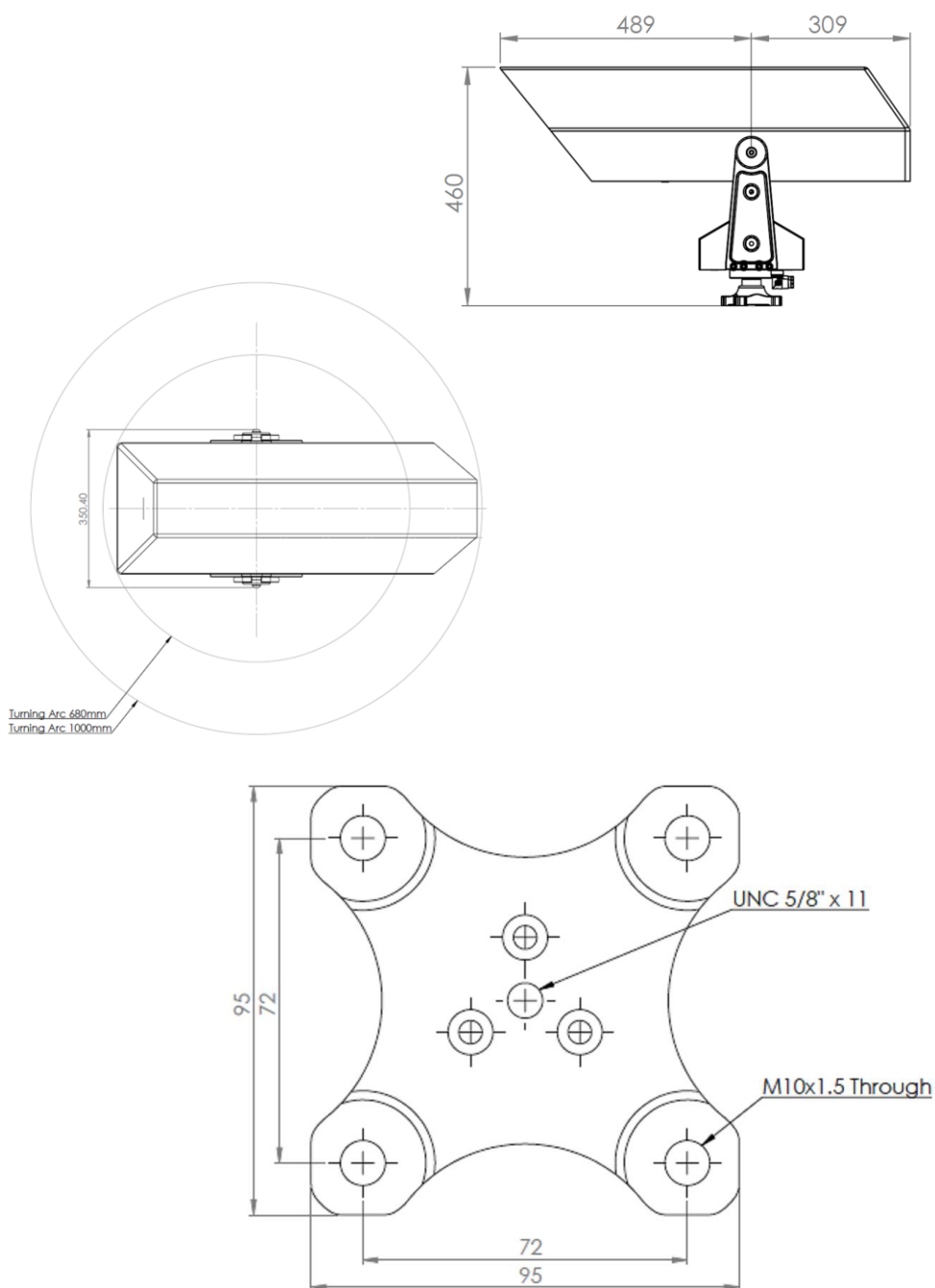
Longview 2 in 'cammo' mounted on a vehicle with laser and white light illumination



## Longview 2 – Physical Dimensions

All measurements are in millimetres

Longview 2 weighs 23kg<sup>1</sup> and is fitted with an industry standard 4 point mounting bracket (see image below). This bracket is typical in the CCTV industry and will allow the Longview 2 to be mounted on most poles, brackets and hydraulic masts.



<sup>1</sup> This weight is for Longview 2 standard without the Laser or white light illumination.



Vehicle/Mobile  
Mounting



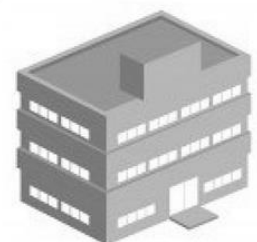
Rapid  
Deployment



Integrated Fixed  
Tower



Building  
Mounted





## Longview 2 - Technical Specifications

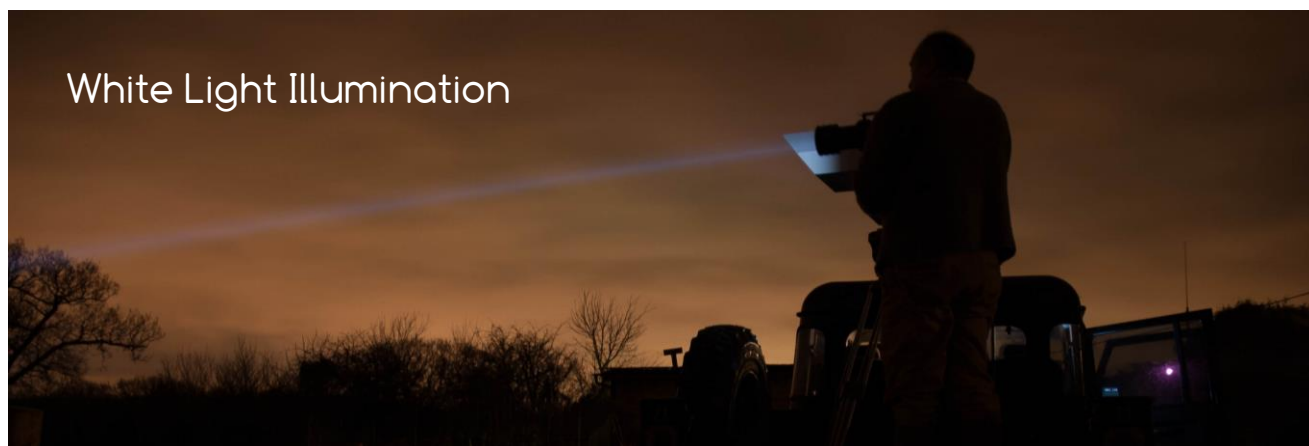
| Feature                         | Details                                                                                                                                                                                                        |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ruggedized Housing              | IP66 rated housing with marine grade finish to counter corrosion. Multiple housings and finishes available on request.                                                                                         |
| Ultra-sensitive PTZ             | Improved stepper motor for greater pan and tilt accuracy to 11 cm at 1km range                                                                                                                                 |
| 3 + 1 cameras                   | 3 x carousel mounted cameras, electronically selected to offer total versatility in varying light conditions. Additional 4 <sup>th</sup> fixed camera for colour day and night overview.                       |
| Camera 1 – Low Light Camera     | 0.00003 lux ultra low light camera unit 570 lines TV resolution and night mode 1 + 2                                                                                                                           |
| Camera 2 – Hi-res Colour Camera | 540 line colour hi-res colour camera 0.1 lux                                                                                                                                                                   |
| Camera 3 – Fog Camera           | VIT fog camera for penetrating sand storms, rain, snow, fog, mist, smog and smoke                                                                                                                              |
| Camera 4 – Overview Camera      | Day/night overview camera 550 TVL resolution                                                                                                                                                                   |
| Lens 1                          | 6x to 25x zoom (400mm with 25mm objective)                                                                                                                                                                     |
| Lens 2                          | 25x to 100x zoom (1050mm with 115mm objective)                                                                                                                                                                 |
| Signal Output                   | PAL (NTSC available)                                                                                                                                                                                           |
| Pan Speed                       | Variable Max to 11 degrees per second                                                                                                                                                                          |
| Pan Resolution                  | Max 19cm at 1000m                                                                                                                                                                                              |
| VIT Controller                  | Colour screen hi-contrast. Proportional PTZ control via joystick                                                                                                                                               |
| Remote Operation                | Longview is optimised for matrix deployment with multiple cameras deployed to cover interlocking arcs of observation for control and monitoring at a central (as well as secondary and tertiary) control room. |
| Versatile Control Options       | Numerous control options are available which can be facilitated by a number of communication bearers including, wired, STACOM, GSM, wifi etc.                                                                  |
| Low Power Consumption           | The system operates on 12v DC to allow for installation and operation and servicing without need to have 240 mains power. Simplifies maintenance and reduces through life costs.                               |
| Rapid Deployment                | All components of the Longview 2 system are man portable in a single rugged transport case. Unpacking and set up to full operation can be completed in 10 minutes (5 minutes by an experienced operator).      |



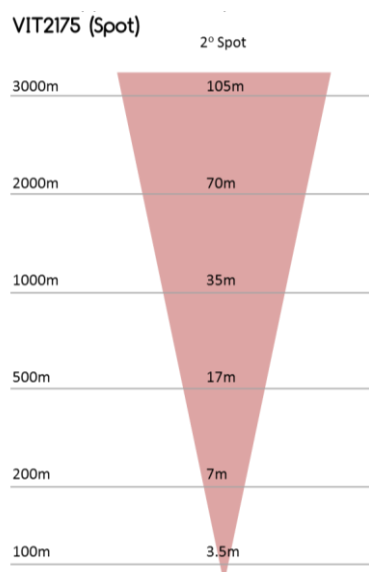
## Illumination Options

Although Longview 2's ULL camera has an impressive capability down to star light (0.00003 lux), we offer both white light and laser illumination solutions..

Longview 2 offers uniquely powerful performance at low light, however, in total darkness in rural areas illumination might be necessary



- **White Light** – effective in illuminating a person sufficiently to enable recognition out to 1.5km+
  - Range: 3km / 1.6 miles illumination
  - Can be fixed and 'zeroed' to Longview 2
  - Light weight and user-friendly
  - Fixed beam spread
  - Simple HIGH | STROBE | OFF beam settings
  - Collimated light beam with uniform field of illumination
  - Operates from 18 - 32VDC external power
  - Reverse polarity protection
  - Strobe (8Hz)
  - Over-temperature protection
  - Optional rechargeable lithium polymer battery
  - Can be externally operated by software or hardware



VIT2175 – White Light Illuminator

## Laser Illumination

- 950nm
- Fixed 'Flood' view
- Variable Power long range spot



We offer two customised laser illumination accessories both of which are fully integrated with Longview 2 to offer enhanced visibility in zero lighting conditions. Both options utilise a laser produced by a separately packaged laser generator. This system directs the laser to either a fixed or variable focused optic via fibre optic cable. The laser optic is mounted to the Longview 2 using a custom made bracket and 'mimic' Longview 2 housing for environmental protection.

**Fixed FoV, Low Power 'Flood' Laser** – Fixed power (© 6W) and focus (wide angle) laser illumination offering effective illumination of a person at ranges in excess of 5km.

**Variable Power and focus P&T Laser** - Variable powered laser capable of delivering illumination at ranges between 1km (0.5 W) to 25km (25 W). The laser optic is electrically focused and the beam zeroed to the Longview zoom optic using commands that are integrated in the hand held controller.



Below: The laser illuminator fitted to Longview in this picture is being calibrated to offer a customised power and concentration (focus) to illuminate subjects at 9NM.

Above: in use in Ankara, Turkey.

Effective  
illumination in total  
darkness at  
ranges of up to  
25km



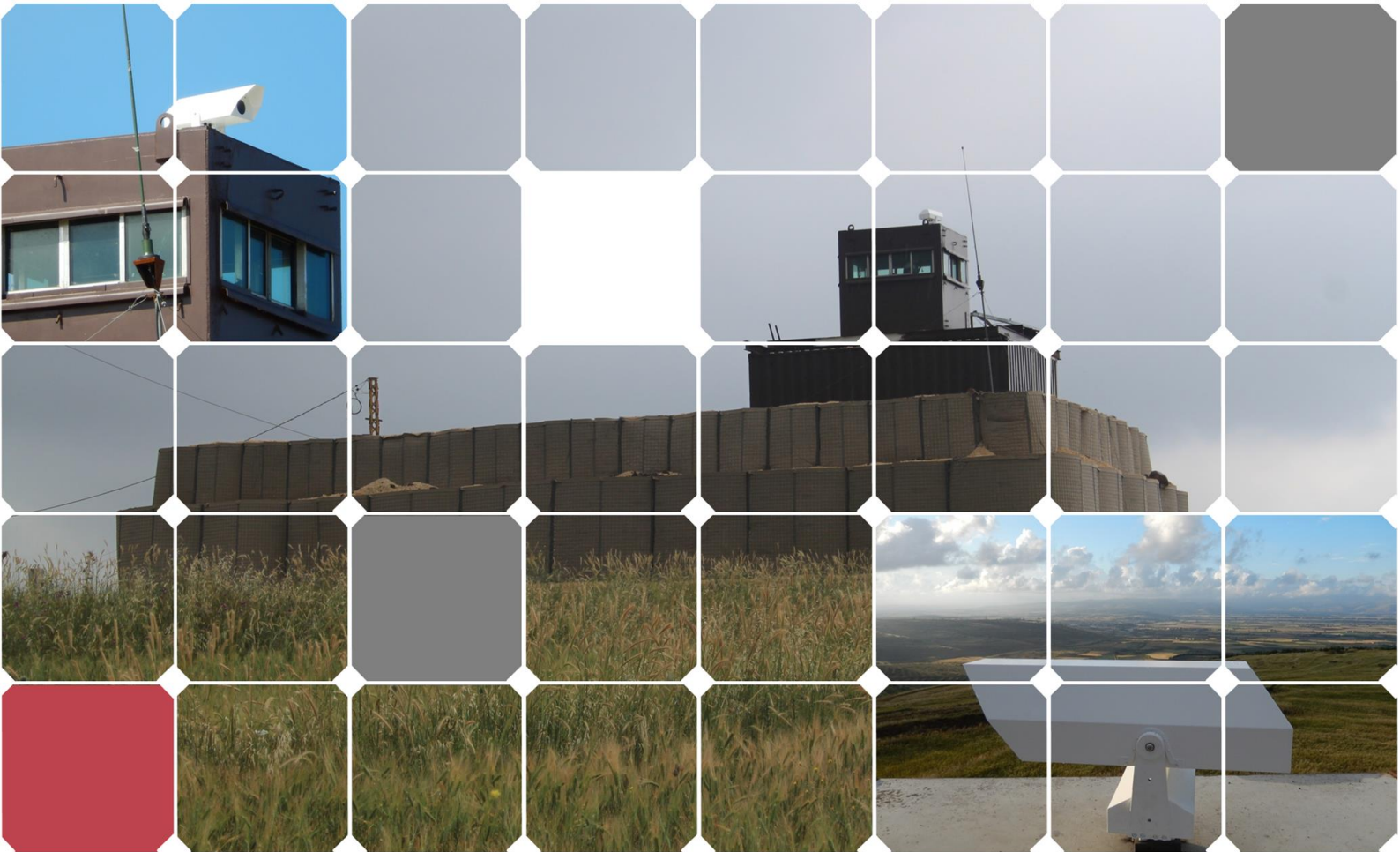


# Lebanon 2013

Longview 2 helps to protect the Northern Border







## The Challenge

The Lebanese border is one of the most contentions frontiers in the world. Home to the oldest continually inhabited cities in the world this rich, fertile strip of Mediterranean land lies on the fault lion of a religious and ethnic conflict the roots of which stretch millennia.

Maintaining the integrity of the Lebanese borders today is critical in containing the Syrian crisis and in protecting the people of Lebanon.

The challenges facing the Lebanese Armed Forces (LAF) are many.

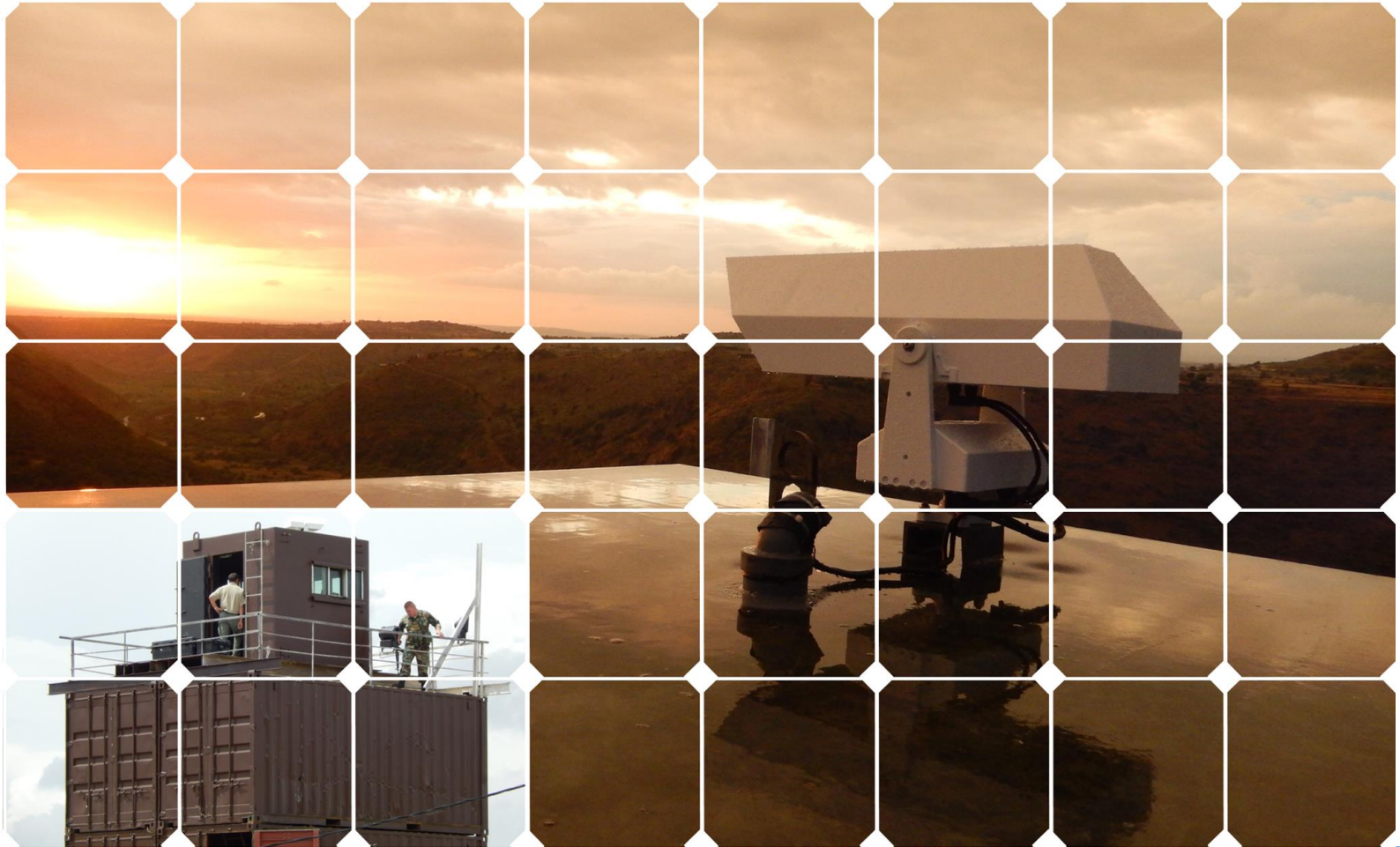
As well as the on-going conflict in neighbouring Syria, The LAF is confronted with locally base militia fighters from Hezbollah and growing international pressure to stem the flow of weapons and fighters across their borders.

## The Solution

In a bid to address these security issues; to close the borders and to provide security and reassurance to the local population, the LAF have devised a network of mutually supporting watchtowers erected on dominating ground. These watchtowers, equipped with cameras and other surveillance equipment will provide a home and operating base for the Army's border regiments.







Longview 2 provides twenty a four hour surveillance capability to the observer and Tower commander.

The 100x optical zoom gives the watchtowers unprecedented range and this coupled with its exceptional low light and bad weather performance generates a powerful surveillance capability.

Despite this high performance, Longview 2 is a low power system making it ideal for deployment in the isolated locations typically selected for the watchtowers.

**Below:** A permanent training facility provides an ideal location to train operators and system engineers



Providing  
reassurance, local  
security and  
protection

