Boundless Security Systems, Inc.
the communications bandwidth experts

Covert cellular IP camera
High definition, low power
Private investigations
Disability insurance fraud
Unmanned bespoke
surveillance vehicles
Rapid deployment

Repurposable Low Power, Ultra Low Bandwidth, High Definition, Cellular Covert Video Surveillance System in Traffic Channelizer Barricade Cone

internal *Cylindrical 5 MP Smart uPTZ Camera* can be removed and used in other housings, use with cellular network, or set up via internal concealed WiFi hotspot when no cell service

Benefits

- Complete cellular high definition system with long range zoom lens in 42" orange traffic barricade
- Easily set up ultra low bandwidth, covert outdoor **high def** digital video surveillance via Internet with live and recorded video, and remote control, or via concealed WiFi when no cell service
- Internal Boundless' *Cylindrical 5 MP Smart uPTZ Camera* can be removed and used in other external enclosures for wide application
- Very low power dissipation, typ. 3 to 4 watts[3] with 3G CDMA or 3.5G HSPA cell service
- Optional *Rapid Review* speeds reviewing recorded video *over the air by* **120X**
- 5 MP, ¼" CMOS color image sensor with back-side illumination for better low light performance
- IR-cut filter is automatically removed in low light
- Records video internally, avoiding distant network video recorder and constant network traffic, recording better video than could be sent to it, **reducing cellular traffic by 250+ GB/month**
- Unique concealed *Forward Pivot II™* micro-PTZ camera is unusually small yet provides remotely controlled mechanical pan, digital tilt at full resolution, and optical zoom, with very small window, just 1/2" dia., avoiding need for large, telltale, light-losing, dark camera window
- 12-33 mm motorized optical zoom at 1920x1080, +/-15º mechanical pan, with focal lengths for long range use (license plate at 150 yards[5])
- Dual-stream optimization: *monitoring stream* is live and int. recorded at 960x540 @ 5 fps with high compression, PLUS much sharper, *evidentiary stream*: 1920x1080 @ 5 fps is int. recorded
- View natively in browser on PC's and Android, view live on iOS using a media player
- Rapid access video file system greatly reduces time to access and view desired video segments
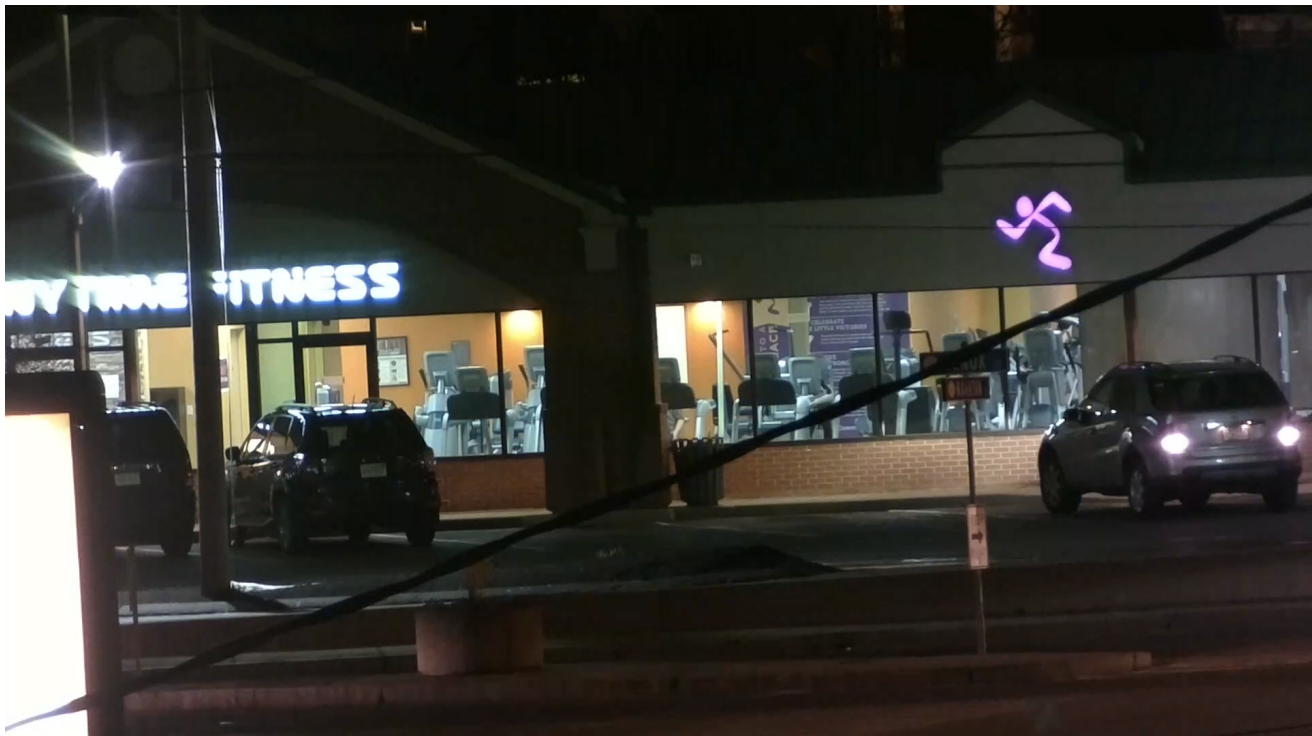- 128GB int. storage, opt. encrypted int. flash drive

High definition yet ultra low bandwidth, very low power, and repurposable, 150 yd license plate range

Custom built and configured in USA

4"

1/2" dia. window for concealed, removable, *Cylindrical 5 MP Smart uPTZ Camera*

internal concealed WiFi hotspot antenna and jack for opt. encrypted usb flash drive for video

internal concealed high gain cell antenna and ground plane

42"

internal concealed batteries (not incl.)

16# rubber base with holes for earth screws

Concept drawing

Place with other traffic channelizers, splash with muddy water, and make them look like they have a purpose

- Triple-axis accelerometer and pan/tilt sensor
- 12 VDC nominal, wide range input (11.5 to 15V)
- "Smart" battery monitoring with estimated run time remaining
- Remote power management – run when needed
- Approx. 5 days[3] continuous run time on three internal 12V 12AH LiFePO4 batteries (not incl.)
- Internal battery-free shutdown UPS bridges brief power failures and provides clean shutdowns
- Industrial grade cell modem[1,2] (svc. not incl.)
- Cloud-based *Portal* for flexible user interface and ability to tunnel through cellular firewalls
- Custom built and configured, ready to use

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Repurposable Covert Video Surveillance System in Traffic Channelizer Cone

Low power, ultra low bandwidth, high definition, custom-preconfigured, covert cellular system for use at 50 to 150 yards from a subject. Photos made by Boundless' *Smart uPTZ Camera* in other housing.

Vehicle license plate can be read at a distance of approx. 150 yards in daylight at max. zoom

Vehicles approx. 200 yards from camera at night at maximum optical zoom

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Optional *Rapid Review* speeds up reviewing of recorded video 120X over the air

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BSSI-8 Low Power, 5 MP Covert Cellular Smart Micro-PTZ Camera with Stranger Detector(TM)

This *Smart Camera™* was accessible when this page loaded. This page updates every 30 minutes or right-click it to update.

This page has a demo version of our optional, patent-pending, *Integrated Timelapse Software* that runs within our *Smart uPTZ Camera™* and **reduces time reviewing recorded video 100x.** Contact us for more information.

Status: Playing delayed live video
Date: 5/27/16, 09:44:51
Data rate: low

[View/Refresh live video] [Copy time to time selector]

Year: 2016 ▾ **Month:** May ▾ **Day:** 27 ▾
H(24): 09 ▾ **M:** 44 ▾ **S:** 15 ▾
[View recorded video] **Data rate:** low ▾ **Speed:** 1x ▾
Type: Normal ▾

[Download files] **Duration:** 1 minute ▾ **Data rate:** low ▾
Type: Normal ▾

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BSSI-8 Low Power, 5 MP Covert Cellular Smart Micro-PTZ Camera with Stranger Detector(TM)

This *Smart Camera™* was accessible when this page loaded. This pag updates every 30 minutes or right-click it to update.
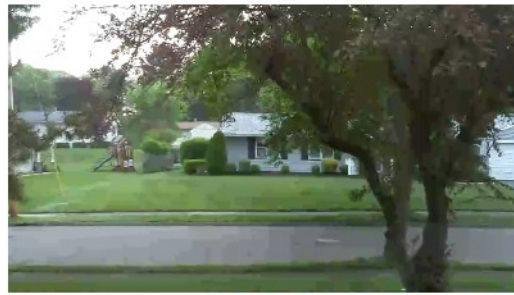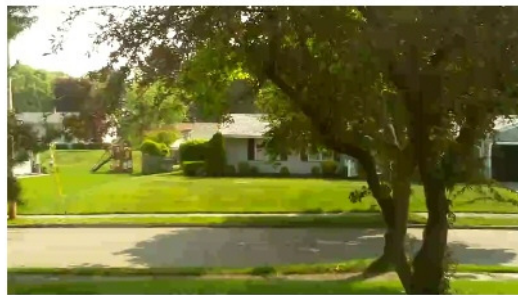
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Status: Playing recorded video
Date: 5/27/16, 06:44:17
Data rate: low

[View/Refresh live video] [Copy time to time selector]

Year: 2016 ▾ **Month:** May ▾ **Day:** 27 ▾
H(24): 06 ▾ **M:** 44 ▾ **S:** 15 ▾
[View recorded video] **Data rate:** low ▾ **Speed:** 1x ▾
Type: Normal ▾

[Download files] **Duration:** 1 minute ▾ **Data rate:** low ▾
Type: Normal ▾

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Status: Playing timelapse video, 1-hour files
Date: 5/27/16, 06:04:00
Data rate: low

[View/Refresh live video] [Copy time to time selector]

Year: 2016 ▾ **Month:** May ▾ **Day:** 27 ▾
H(24): 06 ▾ **M:** 44 ▾ **S:** 15 ▾
[View recorded video] **Data rate:** low ▾ **Speed:** 120x ▾
Type: Timelapse ▾ **File Duration:** Hour ▾

[Download files] **Duration:** 1 minute ▾ **Data rate:** low ▾
Type: Normal ▾

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Initial view from camera main viewing page, showing **delayed live video**.

View from camera main viewing page showing **Normal recorded video** being viewed over the air.

View from page showing optional, **Timelapse recorded video**, being viewed over the air, speeding up the reviewing of recorded video **120X** for when you don't know when something happened. Click over to **Normal recorded video** for more details once you know when something occurred. Then switch back.

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Boundless' optional *Rapid Review* provides a new, much more efficient paradigm for investigators to monitor subjects and determine patterns of activity.

Boundless' optional, *Rapid Review*, aka *Integrated Timelapse Video Software*, runs in Boundless' *Smart uPTZ Cameras,* along with all the other functions performed by the camera*. Smart Cameras* automatic-ally create timelapse videos internally so long periods of time can be viewed very quickly, at *120X speed over the air*. A timelapse video of the previous hour is automatically created at the beginning of each hour. No cellular bandwidth, external equipment or effort is required to create the timelapse videos because they are automatically created within the *Smart uPTZ Camera*. It is a new kind of analytics.

Viewing of the timelapse video is integrated with Boundless' normal, high definition video recordings. Timelapse video can be viewed *over the air* at very high speed, paused, and the normal recorded video quickly and easily viewed *over the air* at the time paused, for much more detailed images.

Using our optional, patent-pending, *Integrated Timelapse Video Software* in our *Smart uPTZ Cameras,* private investigators and law enforcement can deploy fleets of covert traffic barricades and unmanned, bespoke surveillance vehicles and **improve monitoring productivity an estimated 9X** using these steps:

Determine subject activity using Boundless' recorded videos from a previous day as follows:

1. While Boundless' *Smart uPTZ Camera* is online in the field, a centrally located monitoring person visually searches for a subject's previous day's or days' activity at very high speed using Boundless' *Integrated Timelapse Video.* Activity is confirmed using Boundless' normal recorded video.
2. The monitoring person processes one subject at a time so he/she can give it their full attention. Only a photo of the subject, a browser window for viewing Boundless' normal recorded video, and a browser window for viewing Boundless' timelapse recorded video, are placed on the screen.
3. Choose the starting date and time desired, and place timelapse video of the subject's location on the screen. The monitoring person focuses on that single video intently, maintaining concentration and avoiding the tedium and high cellular bandwidth of watching multiple live video streams continuously and simultaneously. Playback can be paused to take a break or obtain assistance.
4. When the subject is spotted, pause playback of the timelapse video, click over to the same point in time in the normal recorded video, and view much the sharper and smoother normal recorded video
5. View the low data rate, *monitoring*, normal recorded video stream to home in on events, then pause playback and click over to the much sharper, high data rate, *evidentiary*, normal recorded video
6. Switch back and forth between normal and timelapse video to view the entire time period desired
7. Repeat the above process for each subject in turn
8. We estimate, but do not guarantee, that 12 hours for a given subject can be monitored in 5 minutes, providing monitoring productivity of 12, 12-hour periods per hour, times 8 hours per day per monitoring person, for a total of 96, 12-hour periods (1,152 subject hours) per monitoring person per day, as compared to a 16-camera live screen for a total of only 16, 8-hour periods (128 subject hours) per monitoring person per day, an improvement in productivity of **9X**, not counting improvements due to higher alertness and ability to pause playback and take breaks without missing activity.