



Boundless Security Systems, Inc.

the communications bandwidth experts

© 2007-8 Boundless Security Systems, Inc. (BSSI)

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www.BoundlessSecurity.com

Ultimate Pole Camera System: Turn-Key Boundless' Nail-and-Go™ Provides Two- to Four-Camera, Cellular, Wireless, Outdoor, Ultra Low Bandwidth, Digital Video Surveillance Pod



User-supplied enclosed, AC / 12 VDC power supply or large batteries in outdoor housings, e.g., with AC power from street light photo sensor

Internally records sharper video than can be sent live and avoids flooding wide area wireless networks with continuous video

Boundless uses bandwidth-saving video-on-demand with near-camera recording, not bandwidth-hogging video streaming with central recording. Many different digital IP-video streams and recording internal to **Nail-and-Go™** provide much better recorded video than can be sent live and avoid heavy continuous traffic on cellular and other wireless networks. A mere 128 Kbps EVDO uplink can carry two live QVGA video streams at 5 fps. **Instant Replay** enables users to quickly remotely select and upload exact segments of highest quality recorded video for sharpest images.

Boundless' Nail-and-Go™ with Two Built-In Cameras

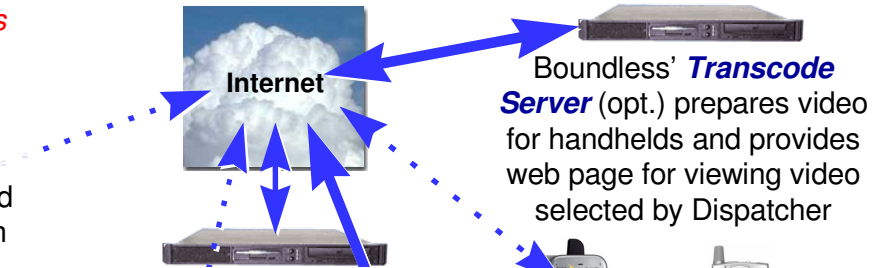
Weatherproof system contains an internal, ultra low bandwidth, advanced IP-based, Boundless' **Multi-Stream Video Server**, a fixed camera with wide angle lens to give a large area view to help aim the PTZ camera, a PTZ camera, two opt. unused video inputs, and an opt. cellular modem. It is a wireless, turn-key, digital video surveillance, pole camera system that can be set up in minutes and monitored remotely via the Internet or like IP-data network. All cameras are digitized and continuously recorded internally with three resolutions using MPEG-4. Rapid search for motion with post-recording selection of motion parameters is provided. Hours of video can be searched in seconds. Optional **Live Alerts** give automatic detection and prompt notification of zoned motion without e-mail delays. An industrial-grade modem such as AirLink *Raven-X* is used (opt.). Box approx. 20x18x9 in.

Internal Boundless' **Multi-Stream Video Server** creates three to eight internal IP-video streams *per camera* simultaneously, with different resolutions, frame rates and data rates, optimizing video for live and recorded remote viewing for **situation assessment, monitoring** and **investigations**. Three resolutions are produced simultaneously for each of two to four cameras. Live video can be viewed remotely with as little as 8 Kbps.



VGA, QVGA, QQVGA

white fiberglass box
Two unused video inputs inside (opt)
Built-in PTZ camera
Built-in wide angle camera



Boundless' **Name Server** resolves dynamic IP addresses used by **Multi-Stream Video Servers**. Or, Boundless' **Tunneling Broadcast Server** supports **Live Alerts**, dynamic IP addresses and non-routable networks, and enables many to view same stream in **Control Panel** simultaneously without burdening slow uplinks.



Mobile Command Center

Wireless laptops with Boundless' **Control Panel** client viewing and searching software access Boundless **Multi-Stream Video Servers** for live and recorded video, and to quickly search recorded video. Dozens of cameras can be viewed simultaneously with only a few hundred (total) Kbps of downlink. Opt. **Live Alert** (yellow) shown.

Boundless' **Transcode Server** (opt.) prepares video for handhelds and provides web page for viewing video selected by Dispatcher



Mobile teams view live or recorded video selected by Dispatcher on select Pocket PC, Palm Treo, BlackBerry, cell phones.



Command Center with Boundless' **Broadcast Control Panel** client viewing, searching and transcoding software on PC's. Dispatcher selects live or recorded video for viewing by mobile teams on handheld devices. Laptops can also view selected video in Windows Media Player.



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Photograph of Boundless' *Advanced* IP-Based, Ultra Low Bandwidth, *Nail-and-Go™* with Internal Recording and Cellular Modem, on Telephone Pole

- 1) Semi-concealed, day / night, 360-degree, PTZ camera
- 2) Semi-concealed, ultra wide angle, global-view camera
- 3) Dual-band, magnetic mount, high gain, cellular antenna (opt.) sticks to top of box, or can be mounted on pole (small steel bracket required not provided) for best signal
- 4) 8' cable for cellular antenna, feeds thru waterproof plug
- 5) 12 VDC (nominal) power input via 1/2" outdoor flexible conduit with quick-connects, can connect to Boundless' outdoor battery box(es) (opt.) or other DC power source
- 6, 7) 1/2" waterproof plugs for video cables for two external additional cameras (opt., external cameras not included)
- 8a, 8b) Aluminum pole-mount brackets (opt.) for 1/2" stainless steel bands, with stainless steel exterior hardware
- 9) Hood for heat exchanger air exhaust, waterproof fan
- 10) Hood for heat exchanger air intake (sealed chamber)
- 11) Stahlin weatherproof, sun-rated, white fiberglass box with Boundless' video and thermal management systems

Notes:

- 1) Preliminary and subject to change without notice
- 2) Cover approx. 20"H x 18" W, box approx. 9" Deep
- 3) Be sure to have authorization to use utility and other poles



Bottom View



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Benefits of Boundless' Ultra Low Bandwidth, Ultimate Pole Camera System, *Nail-and-Go™*

- 1) enables comprehensive, two- to four-camera, wireless digital video surveillance systems with high quality continuous internal digital video recording and high frame rate live video, to be installed and operating outdoors in minutes, and monitored and controlled remotely, out of sight and out of harm's way, via the Internet or like private IP-network
- 2) turn-key, fully configured, outdoor wireless digital system has two mostly concealed, built-in color video cameras, optional provision for two external additional cameras, built-in continuous digital video recording of all cameras, and opt. built-in industrial-grade, AirLink / Sierra Wireless cellular data modem (wireless service required not provided, use of WiFi, WiMAX, satellite and other IP-networks optional)
- 3) Boundless' ultra low bandwidth requires only a few percent of others' "low" bandwidth, avoids flooding wireless networks with continuous video uploads greatly reducing monthly data transfer, and alleviating distant video downloads for mobile viewing
- 4) takes advantage of high burst speeds while helping users avoid abusing carriers' fair use policies on daily / monthly data transfers, and being shut down
- 5) uses bandwidth-saving, video on demand with continuous internal recording not bandwidth-wasting continuous video streaming with central recording
- 6) internal network video recorder continuously records much better images than can be sent live over cellular and other wireless networks to central recorders
- 7) maintains high quality, continuously recorded digital video internally regardless of number of nearby surveillance units and speed of cellular network
- 8) up to nine internal digital IP-video streams per camera with different resolutions, frame rates and data rates optimize live and recorded video for situation assessment, monitoring and investigations
- 9) enables two to four cameras to be viewed live remotely simultaneously from each location, with multiple frames per second per camera, using a single wireless modem and realistic uplink speeds
- 10) internal ultra wide angle camera helps remote users know where to aim the internal pan-tilt-zoom camera
- 11) internal motion search engine searches hours of recorded video in only seconds, provides a graph showing amounts of motion over time, and enables recorded video clips to be quickly selected, viewed and assessed remotely for relevance
- 12) optimized video transport for built-in pan-tilt-zoom camera minimizes video delay for remote control

No need for video surveillance vans

Avoid excessive monthly data transfer

Many cameras per square mile





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Benefits of Boundless' Ultra Low Bandwidth, Ultimate Pole Camera System, *Nail-and-Go™*

- 13) does not require any external recording equipment, recording servers or recording software
- 14) internal Boundless' hyper rapid access digital video file system enables precise, short, desired recorded video clips from as recently as five seconds ago to be accessed remotely very quickly, even over cellular and satellite wireless networks
- 15) optionally supports two additional, external, user-supplied, video cameras so a single Internet or like connection can handle a cluster of up to four video cameras simultaneously for 360-degree viewing, with global views and closeup views simultaneously
- 16) uses Boundless' **Control Panel** client software for remote viewing of live and recorded video, and motion searching, that runs on Windows PC and does not require cyber-security-risky Active-X
- 17) optional remotely programmable, zoned motion detection for each stationary camera produces an immediate, **Live Alert** using Boundless' internal instant messaging system that avoids e-mail delays in critical public safety and corporate applications
- 18) can use external hybrid IP-PTZ cameras such as Sony SNC-RZ30N that have analog video outputs, replacing their high bandwidth IP-video and central recording by Boundless' ultra low bandwidth video and continuous internal digital video recording
- 19) when multiple Boundless' **Nail-and-Go™** units are used across a city, county or municipality, each user can safely remotely monitor dozens of video surveillance sites simultaneously on a wireless laptop PC with a cellular Internet or like connection
- 20) optional Boundless' video transcoding client software enables dozens of users to view the same video simultaneously for live situation assessment on laptops and handhelds that support Windows Media Player without placing any additional demands on cellular or other wireless uplink from **Nail-and-Go™**, via secure web page (not provided) without requiring viewers to have any special software to see video selected by a Dispatcher
- 21) **Nail-and-Go™** can use dynamic IP address for Internet or like connection (optional)
- 22) **Nail-and-Go™** can use non-routable, mobile originated, IP networks (opt., may affect PTZ control)
- 23) very efficient, wide voltage range internal power converter with 12 VDC nominal input
- 24) optional external weatherproof, rust-proof, outdoor Boundless' battery box(es) avoids need for AC power for brief applications (batteries not included, certain makes and models required)
- 25) designed and made in USA by woman-owned small business



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Photograph of Boundless' *Advanced* IP-Based, Ultra Low Bandwidth, *Nail-and-Go™* with Optional, Rust-Proof Battery Boxes on Telephone Utility Pole

Boundless' *Nail-and-Go™* with two semi-concealed cameras, video recording and opt. cellular modem built-in, and external battery box(es), enable brief outdoor video surveillance to be used virtually anywhere, without any wired connections.

- 1) Boundless' *Nail-and-Go™* stays sealed, held in place with aluminum pole-mount brackets and 1/2" stainless steel bands
- 2, 3) Boundless' sun-rated, light weight (without battery), gray fiberglass, outdoor battery box is held in place with aluminum pole-mount brackets and 1/2" stainless steel bands
- 4) 1/2" outdoor conduit carries 12 VDC (nominal) to *Nail-and-Go™* from daisy-chained Boundless' battery boxes, enabling two large, 6V batteries (certain models) to be used in series
- 5) 1/2" outdoor flexible conduit with quick-connects carries low voltage power from one Boundless' battery box to another
- 6) full-length, stainless steel piano hinge (not visible) for cover
- 7) stainless steel latch for easy installation or removal of battery (not included) once battery box is mounted on utility pole

Notes:

- 1) Preliminary and subject to change without notice
- 2) Various wired and wireless networks can be used with appropriate client (not provided)
- 3) Battery box approx. 15" H x 13" W x 8" Deep
- 4) Be sure to have authorization to use utility and other poles

