

Bastille

Cellular Intrusion Detection

Detect. Locate. Alert.



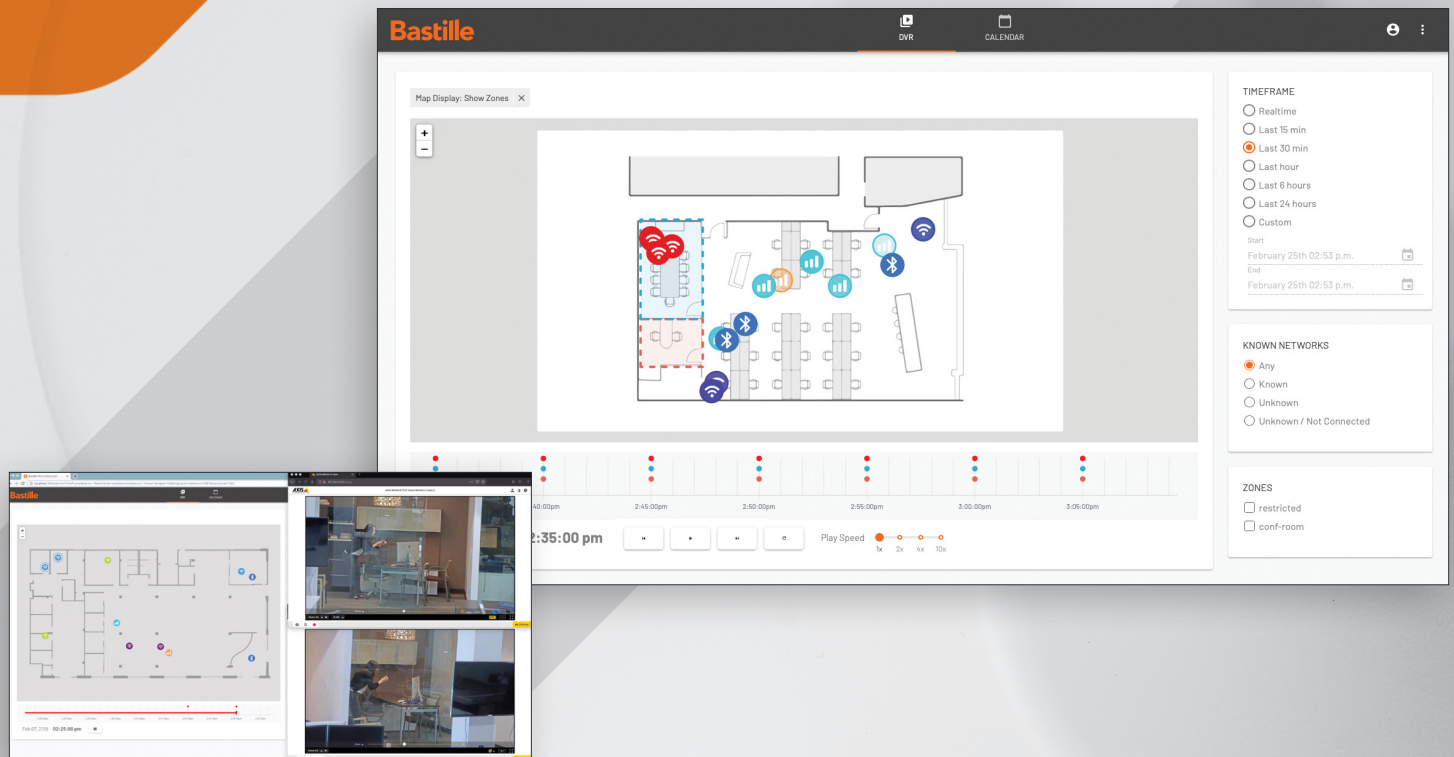
CELLULAR



WI-FI



BLUETOOTH



Since the launch of Bastille Enterprise in 2016, Bastille has been able to detect and locate Wi-Fi and Bluetooth devices within an organization. With the addition of Bastille Cellular Intrusion Detection, Bastille is the first and only product able to detect and locate cellular phones within a building using only their cellular signal. Bastille delivers real-time detection and location with alerts, plus DVR-like playback for forensics.

Cellular phones are a ubiquitous productivity tool, but they are also the most prolific security and compliance threat faced by organizations. Cell phones have cameras, recording devices, the ability to become out-of-network hotspots, and they can tether to laptops and computers in the building for data-exfiltration.

Companies and government agencies can best protect themselves by monitoring both authorized and unauthorized phones that enter and move around their environments. This functionality can directly alert organizations to potential security threats and compliance issues in real time.

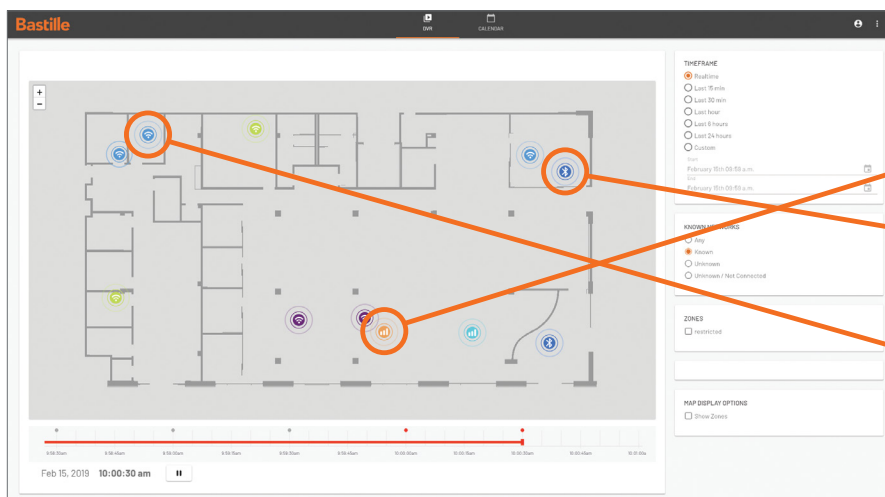
Cell phone location has been historically difficult because a comprehensive cell phone detection and location product must be able to discover a cell phone even when the Wi-Fi and Bluetooth are not active. After four years of intense R&D and more than a dozen patents, Bastille has created the solution.

The World's First Accurate Cellular Intrusion Detection Solution

With the ability to accurately detect cell phones, enterprises and federal agencies will finally have a solution to a serious set of problems which until now have only been solved using the 'Honor System.' Under the "Honor System" employees, contractors, and visitors are asked to leave their cell phones outside an area or not use them within an area. The Honor System too often fails due to an "Oops" oversight from a well-intentioned actor or a malicious action from a bad actor.

CELLULAR INTRUSION DETECTION FOR REGULATORY COMPLIANCE

- **UNAUTHORIZED CELL PHONE DETECTION**
Detecting when an unauthorized cell phone becomes active
- **INSIDER THREAT**
Real time alerting and forensic "DVR" replay of cell phone locations
- **BROKER AND TRADING COMPLIANCE**
Monitor all cell phones for complete trade communications surveillance monitoring
- **SECURE PROCESSING AND MANUFACTURING**
Exclude Cell Phones from Facilities engaged in activities such as:
 - Financial Services
 - Lockbox Processing
 - Credit Card Manufacturing
 - Passport Application Processing
- **ANY PLACE WHERE CELL PHONES ARE NOT ALLOWED BY CONTRACT**
 - Detect and remediate infractions
 - Keep an audit trail to prove that your firm is complying with the "no cell phone rule."



Bastille UI shows the office floor plan with location of Cellular, Wi-Fi and Bluetooth devices



CELLULAR



BLUETOOTH

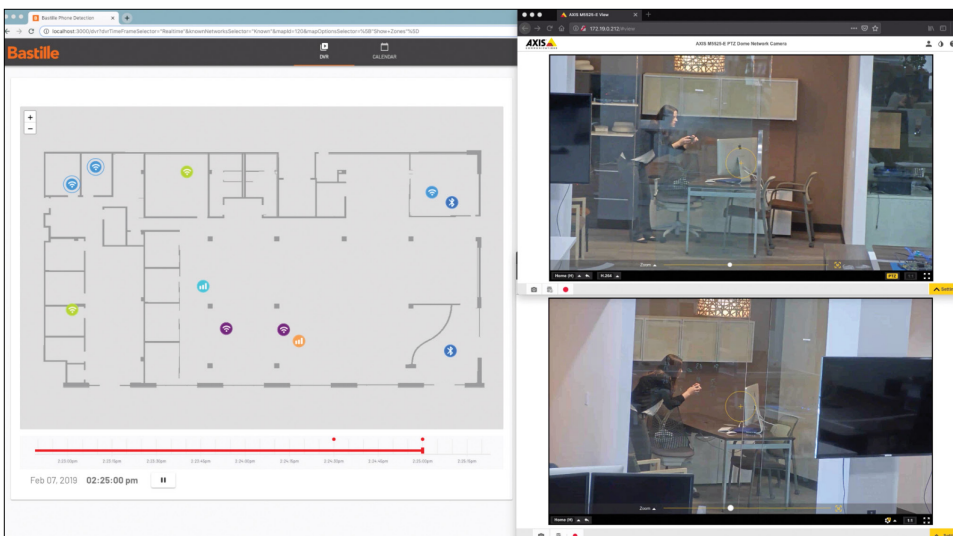


WI-FI

Accurately Locate Cell Phones Inside Your Facility Using Just Their Cellular Signals

Other solutions claim to 'detect smartphones' when all they can do is detect Bluetooth and Wi-Fi signals, not cellular signals. Still other companies claim to detect cellular phones when all they can do is detect cellular energy. Those systems can not tell the difference between one phone close to a sensor and 10 phones farther away.

Bastille's Cellular Intrusion Detection is the first system which accurately detects, counts, and locates cellular devices inside your facility. We can track devices via Bluetooth and Wi-Fi like the other companies but the bad guys turn off those signals when they plan to do bad things. To know that your facility is locked down from unauthorized devices you need to detect and locate cellular signals.



Bastille locates a cell phone in geo-fenced area and triggers 3rd party video camera

CELLULAR INTRUSION DETECTION FOR SECURITY (PHYSICAL AND INFORMATION)

- **SECURE AREA PROTECTION**
Detect and alert to cell phones in and around:
 - C-Suite Meeting rooms
 - Government SCIFs
- **VIDEO CAMERA SURVEILLANCE ENHANCEMENT**
 - Cue and Slew a camera to an individual target of interest in real time and alert
 - Use Outside the Frame Analytics to select and display a suspect on video
- **CELLULAR INTRUSION ALARM**
Alert when an unauthorized cell phone just entered a building or protected area inside or outside regular hours
- **VISITOR DEVICE MONITORING**
Both authorized and unauthorized devices can be tracked without invading visitors' privacy. Policies requiring visitors to leave cell phones outside a facility can now be enforced.

Video Integration Option

Bastille locates a cell phone and in real-time sends the coordinates of the cell phone to the 3rd party PTZ video camera system via open standards based APIs. The closest PTZ video camera "slews and cues" and focuses on the individual with the cell phone. The video recorded can be used in conjunction with Bastille's DVR record of the device and its characteristics. When an individual with a cell phone enters a geo-fenced area, an alert is sent via SMS, or to an Incident Alert System and/or a video camera "slews and cues."

In environments where there are multiple fixed position cameras covering a facility or campus, Bastille can send the coordinates of the suspect with the phone and an alert which causes the current image of a particular camera to be served to security personnel. The same API which activated the video cameras can send information and/or a real time alert to any other system such as a SIEM or Incident Response System.

Bastille's enhancement of video surveillance systems delivers 24/7 security and surveillance, ideal not just for perimeter security, but also to protect sensitive areas or rooms inside a building which can be geo-fenced using Bastille.

KNOW WHAT THE PHONE IS DOING

You want to know what those phones are doing. Does somebody sitting in the board meeting have an open cellular connection where he is streaming the entire meeting to an accomplice outside? The Chairman of the Board wants to know that right in the meeting and to know which seat that active phone is sitting in. Has someone brought his personal cell phone into a facility in "Off" mode and then secretly turned it on? You want to be alerted that happened and you want to know where that device is before the individual can use the device illicitly. Has someone forgotten she has a cell phone in her pocket and entered a "no cell phone" area? You want to be alerted and perhaps have the right video camera highlight the intrusion so that you can see who made the error and then remind them to take their cell phone back outside.

Since 2016 Bastille has been detecting and protecting our customers from a range of Wi-Fi, Bluetooth, and other IoT threats. However, the #1 request Bastille received was 'can you accurately locate cell phones if they don't have Bluetooth or Wi-Fi turned on? Can you locate them using their cellular signal only?'

TWO VERSIONS OF THE SOLUTION

Bastille will soon have two versions of the solution: one for commercial customers and one for government customers. The Government version is available now. Government customers have some special exemptions from FCC regulations which allow their Cellular Intrusion Detection to be deployed more quickly. Enterprise Cellular Intrusion Detection solutions will be available when all FCC certifications are complete.

DON'T BE FOOLED BY MISTY CLOUDS OF CELLULAR ENERGY

Distinguishing and locating individual cell phones, and placing an accurate dot on a map to show you exactly where a cell phone is right now, is a very hard problem. Technologies based on spectrum analyzers just alert you when they detect energy in a cellular frequency. They cannot distinguish between one phone being close to a sensor or 10 phones being farther away, resulting in false positives and wasted time.

NOT ALL CELL PHONES ARE SMART OR SMART ALL THE TIME

Many cell phones have Wi-Fi and Bluetooth capabilities. Bastille can detect cell phones by their Wi-Fi and Bluetooth signals, but when Wi-Fi and Bluetooth are disabled, Bastille can still detect the cell phone by its cellular signal, which means Bastille also sees basic and 'burner' cell phones which don't have Wi-Fi or Bluetooth.

WHEN A DEVICE IS SMART, BASTILLE SEES IT BETTER THAN ANYONE ELSE

Bastille's sensor arrays provide advanced detection and location for Wi-Fi and Bluetooth. For example, Bastille is constantly demodulating all 79 Bluetooth channels all the time. This is in contrast to other technologies that only listen to one Bluetooth channel at a time. That is, other devices can only see 1.2% of the traffic that Bastille can see. Moreover, by listening to all channels,

CELLULAR INTRUSION DETECTION FOR INDUSTRIAL SAFETY

- MANUFACTURING AND LOGISTICS CELL PHONE POLICY ENFORCEMENT

Enforce no cell phone policy

- Inside a warehouse
- At a machine
- On a vehicle

all of the time, Bastille's patented device and traffic fingerprinting machine learning technology can determine the types of data traffic being conveyed by each Bluetooth network. For example, Bastille can tell the difference between malicious Bluetooth tethering event and other innocuous events like music streaming.

CONSTANT CELL PHONE MONITORING

It's not sufficient to spot a cell phone only when it is first turned on or taken out of airplane mode. For accurate location, you need to continuously monitor for cell phones, update their location and alert when they enter a restricted area.

LOOK BACK OVER THE CELLULAR HISTORY OF YOUR FACILITY USING BASTILLE'S DVR CAPABILITY

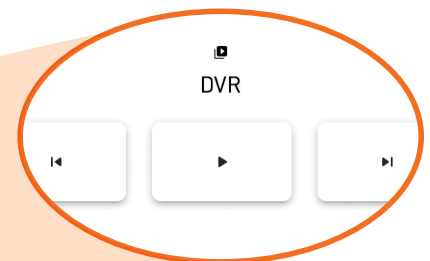
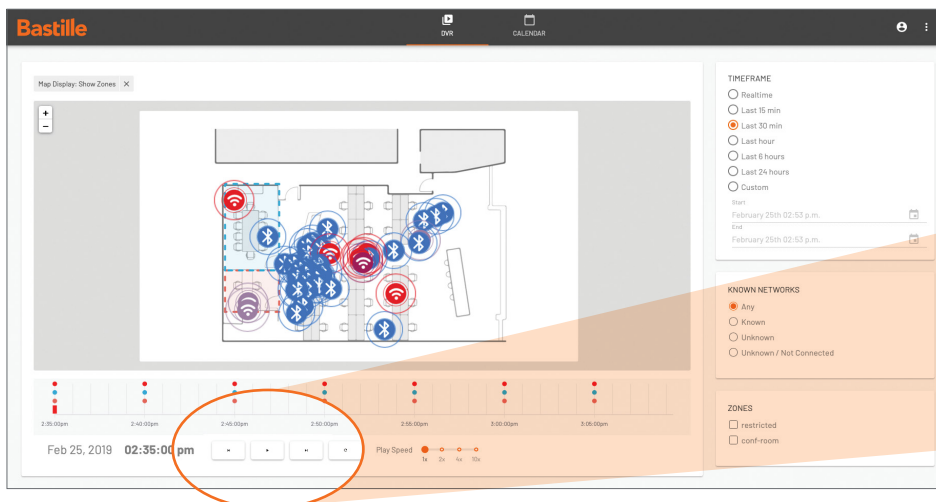
In addition to showing you where cell phones are right now, Bastille's DVR functionality lets you look back over days or weeks and see where cell phones in your building were 3 weeks ago and how they moved around your facility. This forensic capability contributes to security investigations.

100% PASSIVE, FCC COMPLIANT TECHNOLOGY PROTECTS PRIVACY

Bastille is a 100% passive technology and complies with all FCC requirements. Currently only approved for use in Government environments, the Bastille Enterprise Cellular Intrusion Detection solutions will be available when all FCC certifications are complete.

"These new capabilities give DHS better insight and awareness into wireless network device detection."

U.S. DEPARTMENT OF HOMELAND SECURITY PRESS RELEASE



Bastille's DVR functionality records historic cell phone, Wi-Fi and Bluetooth device location for forensic investigations

Bastille's Patent Protected Key Cell Phone Detection Technologies

Bastille's localization technology is covered by 6 patents. A critical feature of the technology is the use of RF Tomography to estimate the shadowing loss field of the environment being monitored. Shadowing loss is created by the walls, and other physical features of a facility. By knowing the loss field, Bastille's multilateration algorithm is able to create extremely accurate position estimates of all emitters in a facility. That is, Bastille can resolve whether an emitter is far away or whether it is just behind a wall. The localization happens autonomously and passively without any calibration.

SET YOUR OWN GEO-FENCES AND POLICIES

Bastille's ability to accurately detect and locate cell phones, and distinguish between multiple phones leads to the ability to create a geo-fenced area within a facility, set a policy for that area, and alert when a phone enters. For example, the trading floor or research lab can be "geo-fenced" and alerts sent when an unauthorized cell phone enters.

ON YOUR PREMISE, YOUR PRIVATE CLOUD OR OUR SECURE AWS DEPLOYMENT MODELS

Bastille can be installed as a Virtual or Physical Appliance in your Private Cloud, data center or on your premises. Alternatively, you can use Bastille's Secure AWS Cloud deployment with versions Certified for the Enterprise and Federal Government.

Key Capabilities

DETECTION VIA CELLULAR SIGNAL ONLY

Bastille is the first and only solution to detect and locate the presence of cell phones even if the only available signal they are producing is the cellular signal.

DON'T BE FOOLED BY OTHER SOLUTIONS' CLAIMS

Other solutions claim to observe phones but actually rely on detection of Wi-Fi and Bluetooth which can easily be turned off by bad actors. Some even claim to detect cell phones but, in fact, they are only detecting energy in cellular frequencies near a sensor. So the other solutions can't tell if it is one cell phone close to a sensor or 10 cell phones farther away. Only Bastille can tell you how many cell phones are in a room and where those phones are located.

DETECT & ALERT IN REAL TIME

Bastille alerts on the presence of a cellular phone in a facility within seconds and alerts via the system of your choice via open standards based APIs.

ROBUST PATENT PORTFOLIO

- 12 issued patents
- 19 patents in process covering Bastille's abilities to defend against cellular, Wi-Fi, Bluetooth and IoT threats.
- 4 Patents specifically around Bastille's unique abilities for cell phone detection and localization.



DVR PLAYBACK

Bastille records all the cell phones seen, and their movements, to permit DVR-like playback for forensic purposes. If you want to find out what happened in your facility 2 months ago, simply jump back to that date and replay all activity before and after that event.

LOCATION

Bastille sees every cellular phone within a space and puts a separate Dot-on-a-Map to mark the location of each device. Location accuracy is 1 to 3 meters.

DETECT WHEN A CELL PHONE POWERS ON

If someone brings a cell phone into the building which is powered down, Bastille can alert you when it is powered back up in your facility.

DETECT UNAUTHORIZED CELL PHONE ACTIVITY

Some organizations allow employees to bring personal cell phones into secure facilities but ask them to leave the secure area if a call comes in. Bastille alerts you when an inactive personal cell phone becomes active and lets you track whether it leaves the secure area to continue to call.

ALERTING VIA YOUR EXISTING SYSTEMS

Bastille integrates with your existing SIEM and/or alerting systems via its open standards based APIs. Native Integration with systems like Splunk®, Elasticsearch/Kibana®, PagerDuty®, SMS and email. Alternatively, customers can view alerts via the Bastille Portal, and use that platform to dig into alerts for more information.

PASSIVE MONITORING PROTECTION

Bastille provides a passive monitoring solution by allowing firms to detect and locate cellular phones without accessing data content, thus alleviating key privacy concerns.

For more information on the Bastille Cell Phone Detection and Location Solution, visit bastille.net/cellular.



ABOUT BASTILLE

Launched in 2014, Bastille is the leader in enterprise threat detection through software-defined radio and is now the first to market with a Cellular Intrusion Detection solution which can accurately locate cellular devices in your facility using just their cellular signals.

Bastille provides full visibility into the known and unknown cellular, mobile, wireless and Internet of Things devices inside an enterprise's corporate airspace. Through its patented software-defined radio and machine learning technology, Bastille senses, identifies and localizes threats, providing security teams the ability to accurately quantify risk and mitigate airborne threats that could pose a danger to network infrastructure.

For more information, visit bastille.net.
Follow us on Twitter [@bastillenet](https://twitter.com/bastillenet) and on [LinkedIn](https://www.linkedin.com/company/bastille-networks).

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