

Remote Location Monitoring— A Supervision Strategy to Enhance Risk Control

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HISTORY WILL show that at the close of the 20th century, community supervision's "best practices" for verifying compliance with court-ordered release conditions called for officers to personally check on their offenders¹ at home, work, and other locations. Offender compliance was also typically verified by officers speaking with family members, treatment providers, and employers, and by reviewing pay stubs, sign-in logs, and time sheets.

History will also show that in practice, community corrections had scarce resources and a concomitant profile of desk-bound officers and crowded reception rooms of offenders and defendants waiting to report to their assigned officers.

The 21st century holds many promises for humankind. Perhaps it also holds the promise of resolving the question of how community supervision can be both effective and efficient. This article explores cost-effective technological solutions to this banal problem in community corrections. No longer do we have to keep one foot in the past century and the other foot in the current one. Application of remote supervision technologies can help us make that final step. The future of community corrections has arrived!

Background

In 1998 the Federal Corrections and Supervision Division and a workgroup of U.S. probation and pretrial services officers began exploring technologies that officers can use to remotely monitor the physical location of an offender. For example, home-based electronic monitoring (EM) is often used by officers to remotely monitor offenders who are

restricted to their homes.² A popular alternative technology uses a system that identifies offenders over the telephone with a voice verification technique.

The workgroup's study of remote supervision technologies sprang from issues encountered while developing policies and procedures for the federal home confinement program. While it is common to refer to home confinement as EM, the latter term actually refers to only one technological tool for monitoring a participant's compliance with some of the rules of the home confinement program.

While focusing on the technological tools currently used in the federal home confinement program, workgroup officers began focusing conceptually on ways they could perform their jobs more effectively without increasing resources. Coining the concept, *remote location monitoring*, the workgroup officers defined its purpose as improving the officer's ability to maintain awareness as a necessary first step in controlling and addressing defendant/offender risk.

With the home confinement program, an officer's primary task is to monitor and verify an offender's location at all times. But even when offenders are not participating in the home confinement program, there are typically other conditions of supervision that may require them to show for required appointments, conduct a job search, and maintain regular employment. An offender's compliance with some of these required activities can be more effectively and efficiently monitored remotely by the supervising officer.

This is not to make a case against officers spending time in the field checking on their cases, or reviewing documents. What remote

monitoring adds to this traditional mix is an inexpensive way to monitor compliance when it is supposed to occur, rather than finding out about it at some later time. The application of remote location monitoring should free the officer's time so that the traditional functions are more purposeful and focused.

Remote location monitoring requires technological systems, such as EM, voice verification, and other tracking systems that can verify a person's physical location, either periodically or continuously, 24 hours a day. Location monitoring systems provide a tool to verify—in real-time—a person's whereabouts for specific risk issues or court-ordered release conditions. In this way, technology aids the officer in effectively satisfying specific supervision functions without loss of officer efficiency.

Risk-related Applications

Which technology to use for remote location monitoring should depend on the apparent risk that an offender presents to the community. Higher risk cases obviously require tighter monitoring parameters. Remote supervision technologies can be categorized into three risk-related applications: Random/Programmed contact systems, hybrid systems, and GPS monitoring systems.³

Random/Programmed contact systems can address a broad range of supervision risk-control issues. Such systems are typically comprised of automated telephone contact systems that require the subject to call-in or receive a telephone call, followed by a process of identification and location, usually through voice identification methods. The automated verification contacts can be configured to provide frequent and random con-

tact verifications at multiple locations.

Example: An offender wears a pager. Each time the pager beeps, the offender calls from the nearest approved telephone. This could occur while the person is at home, at work, or elsewhere. During the verification call the system prompts the offender to repeat a series of words or phrases. The system compares the spoken words or phrases to a voice template created during the system enrollment. A successful matching between the offender's voice and the voice template positively identifies the offender. The officer sees the results on a computer screen showing a successful voice identification and the telephone number from which the identification took place.

All current automated telephone contact systems require the officer to enroll the participant, set and revise schedules, review data, and—for pager-initiated call-ins—distribute and maintain equipment. Even with these added tasks, the automated contacts still provide a significant time reduction over the officer contacting the offender by conventional means.

Hybrid systems combine the EM and a programmed contact method like voice verification. The EM verifies the person's location while at home and the programmed contact system periodically verifies the location when away from home. The programmed contacts substitute for the officer's telephone calls or in-person field visits to monitor the person's compliance with an approved schedule and location. Possible applications for hybrid systems include the following:⁴

- Adding voice monitoring to EM to address increased risks that may be related to a participant's location while away from home.
- Using programmed contact to verify an offender's locations that are varied or distant, making frequent community visits by the officer difficult.

Global Positioning System (GPS) satellite monitoring is a technology that has the capacity to continuously map the exact location of defendants or offenders. It also alerts the officer when participants venture into set geographically excluded locations or fail to be present at required locations at specific times of the day.

A GPS uses a network of 24 satellites to calculate the location of a GPS receiver. A link to a cellular telephone network allows the reporting of location to a monitoring center. In currently available systems, these components are housed in a small box that the participant carries by hand, with a shoulder strap, or in a fanny pack. To assure that the participant is close to the tracking/reporting systems, the participant also wears an ankle transmitter that reports to a radio receiver in the tracking/reporting system. It is similar to a conventional electronic monitoring system except that instead of being attached to a residential telephone, the receiver is attached to a cell phone interface that always knows its location because of data coordinates from the GPS receiver.

GPS monitoring provides continuous remote location monitoring to enforce specific court-ordered conditions without increasing labor costs. Like traditional electronic monitoring, the officer must set up a daily time schedule for the participant. But with GPS, the officer also incorporates geographical locations where the participant must be present at certain times as well as locations that are off-limits. For example:

- *Exclusion zones* can be designated for locations where the participant is prohibited, such as within physical proximity of a victim or potential victim.
- *Inclusion zones* can be designated for the participant to be present at a location for set time periods, such as an employment site. The inclusion zone verifies the

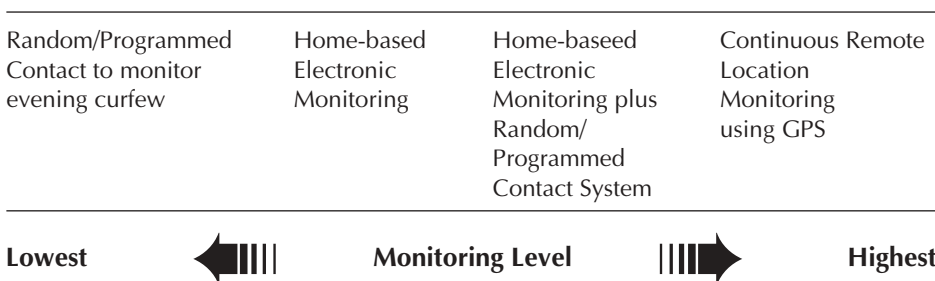
participant's adherence to a location schedule.

Because GPS can signal when an offender enters a prohibited location, it can be used for persons whose risk is associated with an identified personal or institutional victim. Its continuous mapping features might also be used when a subject's adherence to strict physical parameters is not limited to the residence but presence in or absence from certain locations is a paramount supervision risk-control issue. Potential participants are limited by the current state of technology that requires the offender to carry the field monitoring device and perform a number of daily maintenance tasks.

Certain types of construction may block the reception of GPS signals. If a high-risk offender works in an office building sub-basement, the portable receiver unit (that the offender must carry) may not receive GPS signals. More common issues arise, however, with cellular coverage dead spots. Although a GPS receiver may continue to receive and calculate location coordinates, the ability of a portable monitoring unit to report may be sufficiently impaired in a few areas. The officer knows the offender's location only after the portable unit has successfully communicated GPS coordinates to a monitoring center, which in turn reports its information to the officer. Thus, the officer must weigh any cellular coverage limitations and potential GPS signal blockages against the type of risks presented by the potential participants.

Continuous remote location monitoring systems offer officers a different type of information about defendants/offenders. Alerts that the defendants/offenders are entering an "exclusion zone" may signal the potential of imminent danger to persons or groups, requiring a quick predetermined response from the officer. For this kind of monitoring, probation and pretrial services offices need to develop working agreements with local police who are capable of emergency response prior to implementing real-time tracking. Even then, officers need to verify cellular availability in exclusion zones. In addition, officers should make sure that the perimeter of any exclusion zone can be set wide enough to allow for proper response time to the actual "target." For example, in setting an exclusion zone for a domestic abuse victim, the officer estimates how long it might take the offender to travel from the zone boundary to the actual victim's home. However, unnecessary alert notifications could occur if exclusion zones encompass all elemen-

FIGURE 1
Levels of Remote Location Monitoring



tary schools and child care centers but the offender's approved travel route crosses into an exclusion zone.

Use of the GPS for remote location monitoring presents a restrictive supervision condition that would generally require a court order. Setting inclusion and exclusion zones can be driven by court-imposed orders aimed at specific risks, such as travel, employment, associations, and contact with others. Setting parameters (zones) can also be determined by identified risk issues in the supervision case plan and requires methodical assessment by the officer.

Participant Selection

Where the home confinement program for postsentence offenders is primarily used as an alternative to prison for punishment purposes, remote location monitoring can focus on a particular case's risk to the community. Some examples of potential application include the following:

- Persons presenting third-party risks that have an identifiable victim, e.g., domestic violence or sex offenders—focus on exclusion zones.
- Persons presenting a flight risk but no specific victim. In such cases, GPS could be used with parameters set for a broad inclusion zone (city or county) and specific exclusion zones, such as airports.
- Drug defendants and offenders—tight focus on inclusion zones; exclusion zones. The officer can adjust exclusion zones as the participant's location patterns are discerned and suspect areas (e.g., high drug-trafficking areas) then also excluded to reduce community risk.

When officers look at potential participants, they should identify specific community or flight risks that this program can directly address—risks that other supervision programs, tools, or techniques cannot address effectively or efficiently. To further illustrate this, figure 2 presents some conceptual levels of remote location monitoring for designated levels of offender risks.

Information obtained through the use of GPS monitoring or other remote location monitoring technologies could result in some additional reasonably foreseeable risks for which officers would have a duty to warn an identifiable third party at risk. This situation might arise, for example, if an offender with a history of domestic violence is tracked to

Figure 2
Conceptual Levels of Remote Location Monitoring for Designated Levels of Offender Risk

Level 1

is reserved for the highest risk pretrial defendants and postconviction offenders. It involves real-time tracking of set inclusion and exclusion zones and routes of travel. Use this level if the case has an identifiable victim or potential victim(s), such as a domestic abuse or sexual assault victim.

Level 2

is used for cases where there is no identifiable victim or potential victim but the case presents significant general risks to the community or flight, such as might be the case with a pretrial defendant with drug-related charges. This component allows the officer to receive next day mapping of participant locations rather than real-time coordinates. Component parameters include a larger inclusion zone (stay in this area or city) and specific exclusion zones (e.g., stay out of housing projects).

Application Levels 1 & 2 are reserved for the highest risk populations

Level 3

This level uses programmed contacts (e.g., voice monitoring) or hybrid (e.g., voice & electronic monitoring) systems to focus on inclusion zones only (not exclusion zones) for risk control purposes. Level three would not be appropriate for low-risk home confinement participants without any significant risk control issues.

an area close to the residence of a person whom he has a history of abusing.

The use of continuous remote location monitoring is likely to bring to light situations in which officers can reasonably be expected to react to protect a person or persons at risk. Program procedures, such as the sample notification schedule presented in figure 3, should incorporate appropriate responses from officers to lessen the community risk that may be presented by persons being monitored with remote location monitoring systems.

Remote Access to Monitoring

One key aspect of remote location monitoring is the number of work tasks the officer must perform to access and work with monitoring data and information. Most of the available monitoring systems provide remote access to their monitoring network via the Internet or terminal access. Remote access typically involves officers using their own properly configured computer, software, and Internet connections to exchange monitoring data (including enrollment, data/curfew changes, caseload review, reports, and terminations) with the monitoring center via secure access to a web site. Remote access increases officer efficiency by reducing data entry time, increasing accuracy, and providing real-time access to monitoring data.

Prompt and accurate officer notification of violations is a necessity for monitoring offenders. However, because notification requirements are commonly unique for each participant, basic notification processes traditionally have required human intervention, resulting in longer response times and decreased accuracy. Remote access to a monitoring system enables fully automated violation notifications to be sent to officers for each participant. The automated notifications can be configured to immediately page the officer with the participant's name, violation type, and time of occurrence. Other simultaneous or staged notifications could be sent to others (e.g., officer's supervisor, potential victim, or law enforcement agency) via pager or email.

Performance measurement is an essential component of any successful program. Remote access to monitoring systems provides officers the capability to track program statistics. A number of commercial systems provide customizable reports that automatically extract program statistics at the level of detail desired and format the information into customizable reports.

Remote access for officers enhances the managing of resources and identification of trends in supervision, and provides correctional agencies with an important tool to balance caseloads among line staff to monitor and improve program performance.

Figure 3
Sample Notification Schedule for GPS Monitoring Key Events

Key Event	Officer Alert Notification Schedule
Exclusion Zone	Immediate
Inclusion Zone	Variable
Equipment Tamper	Immediate
Proximity Violation	~5 min
Loss of Cellular Phone Contact	~ 10 min for level one participants; variable for level two.
Loss of GPS Signal	~ 10 min for level one participants; variable for level two.
Low Equipment Battery	Variable

Although remote access requires some technical and management skills on the part of the officer, the quick access to monitoring information aids officers in making more timely decisions that may ensure greater public safety.

Conclusion

The proper application of remote supervision technologies in supervision is a cost-effective way for officers to do a better job with the same or even fewer resources. Remote supervision technologies offer a reliable tool for officers to monitor compliance with location

restrictions, such as those by which home confinement program participants must abide, or offenders who are given other travel or location restrictions as special conditions of court-ordered supervision. The elegance of this concept is that a particular remote technological application can be tailored on a case-by-case basis. Remote access to monitoring data eliminates many of the manual tasks officers previously performed with EM systems. Remote technologies are a critical component of community supervision in the twenty-first century.

Endnotes

1. Use of the term *offender* is used here as a generic reference to all persons under criminal justice supervision, including pretrial defendants.
2. Electronic monitoring systems alert the officer when a participant leaves a specific location, usually their residence, or tampers with the electronic monitoring equipment. The participants wear a waterproof, shock-resistant transmitting device around the ankle 24 hours a day. The transmitter continuously emits a radio frequency signal, which is detected by a receiving unit connected to the home telephone. When the transmitter comes within the signal range of the receiver unit, the receiver unit calls a monitoring center to indicate the participant is in range or at home. The transmitter and the receiving unit work in combination to detect and report the times participants enter and exit their homes. The electronic monitoring equipment only indicates when participants enter or leave the equipment's range--not where they have gone or how far they have traveled.
3. Although I provide a brief description of various technologies, my focus is on their application by officers. For a more detailed description of the available technologies, see Peggy Conway, *A Basic Introduction to Electronic Monitoring Technologies* in *Journal of Offender Monitoring*, volume 13, Number 1, winter 2000 pp.9-10,17.
4. Voice monitoring methods could be used in lieu of EM if the participant is a low-risk. This has the benefit of increased location monitoring but the trade off is lack of continuous monitoring when at home—programmed contacts while at home instead.