



June 11, 2010

RESPONSE to National Telecommunications Information Administration Notice of Inquiry (Docket # 100504212-0212-01) Requesting Information on Preventing Contraband Cell Phone Use in Prisons

BAHIA 21 Corporation and its partners offer various equipments and solutions to prevent the use of contraband cell phone in prisons. These equipments and solutions have been offered to customers located in Europe or Asia.

Below are the comments from BAHIA 21 Corporation with regards to the Notice of Inquiry on Preventing Cell Phone Use In Prisons

The NOI list three categories of possible solutions defined as: jamming, managed network access, and detection.

### **Jamming**

#### **Location Selective Jamming Solution**

The “Jamming” category includes of broad array of solutions that rely on the deliberate radiation, re-radiation, or reflection of electromagnetic energy for the purpose of disrupting cell phone use.

Most jamming solutions prevent cell phone communications without differentiation of the source of the call and without control of its effects on cell phone services outside the boundaries of the prison. Furthermore, traditional jamming solutions rely on high level of radiated power to overwhelm the transmission between the cell phones and the base stations, thus leading to possible risk of exposure to radiation for the inmate population, prison visitors and personnel. To avoid these issues and limitations, BAHIA 21 Corp proposes a solution that would be a unique subset of the jamming category. Our “Location Selective Jamming” solution denies the use of cell phone by using a proprietary technique of re-emission of cell phone signals coupled with a spatial filtering that limits the denial of service to only those phones located inside the unauthorized area.

The system is reactive, radiating only when an attempt to communicate is detected in the unauthorized area, thus limiting its impact on the networks. Furthermore, when inmates realize that their calls do not go through, they abandon their phones and the number of phone attempts is drastically reduced.

The advantages of the “Location Selective Jamming” solution are:

- Denial of 2G and 3G cell phones operating on all standards (GSM, DCS, UMTS, DCMA). No Voice, data, SMS message can be sent or received.
- Reliance on very low radiated power (only Few watts) to jam small or large prisons

- Reactive jamming. No jamming when there is no communication attempt to or from the prison.
- No health radiation hazard for the inmates, visitors and prison personnel due to the very low radiated power of the system.
- No interference with cell phones outside of the perimeter of the prison as spatial filtering prevents the trigger a blocking signal. This ensures that outside the prison perimeter, access to 911 is unaffected.
- No interference with other systems as the re-emitted signals are in cell phone bands only.
- Ability to tailor the area of denied service to the perimeter of the prison. The precision of the blocked area (spatial filtering) depends on the density of detectors (antennae) deployed on the site.
- Spatial filtering is also used to display the position of cell phones inside the prison.

Our “Location Selective jamming solution does not capture any information on the cell phone, cell phone owner or the content of the communication. This prevents any violation of privacy. Our “Location Selective Jamming” solution is best and most cost effective for large prisons (10 to 50 acres). Each installation is site specific.

## **Detection**

### **Non Linear Junction Detector**

In the NOI, detection is defined as detection of source of radiation. The definition of that category should be broadened to include the detection by other means such as Non Linear Junction Detectors (NLJD) that allows detecting the electronic devices, be they turned on or off. The NLJD we offer is currently used by many customers for various applications including the detection of contraband cell phones in prisons.

### **Geolocation and inhibition of cell phone**

Commercial geo-location services to locate and track cell phones are now broadly available. In addition to providing the location of the phone, some geo-location services can also access the identity (IMSI, IMEI) of the phones they track.

The technology used for these services can be deployed around prisons to provide a service that allows authorities to accurately (10-15m) locate, track and identify all the active cell phones inside the prison perimeter.

Our company offers such solutions that consist of modules (hardware and software) that are embedded in the network of the service providers to extract the data used to generate the geo-location. The data, along with the identity of the phone (IMSI/IMEI) is then displayed on a Geographic Information System at the prison.

The system stores in its database the geolocation data along with the IMSI and IMEI data of each phone. This allows, as needed, to selectively act upon contraband and unauthorized phones in the prison while leaving authorized phone (if any) unaffected.

Actions on targeted phones include, based on authority of prison administrators:

- Location and tracking of cell phones activity inside the prison



-Request network operators to immediately disable specific targeted phones based on their data (IMSI, IMEI).

Our geo-location solution can also be augmented to include specialized modules used to extract data from the network for Government restricted use. The data allows authorized personnel to do traffic monitoring (call to, call from, date, time, duration, etc.)

The advantage of our geo-location solution is that it does not require having access to the prison to install it and its installation can remain unknown to the inmates.

This geo-location service allows differentiating between authorized and contraband phones by using the identification of the service and equipment (IMSI/IMEI).

The geo location typical accuracy (10-15m) is sufficient to initiate physical search of the prison if needed.

The phone identification provided by the system can be fed to other means such as IMSI catchers described in the managed access section below to act on the contraband phone (disabling, monitoring, etc.)

## **Managed access**

### **IMSI Catchers**

Eliminating contraband cell phone use in prison using managed access techniques can be achieved using IMSI catcher (or man in the middle) techniques.

IMSI catcher technology (Virtual BTS) is a technique that covertly redirects cell phone to a virtual Base Station that can then control the phone

IMSI catchers can easily trick 2G phones covertly and 3G phones by forcing them to a GSM mode (loss of covertness).

Our company offers a True 3G IMSI catchers allows now to covertly handling 3G phones. Our catcher integrates a ranging capability for spatial filtering.

3G IMSI catchers covertly capture IMSI/IMEI data of 2G and 3G cell phones in range of the catcher. The information allow to discriminate between contraband and authorized phones and to take any actions such as blocking incoming or outgoing calls, identifying origin and destination of calls, etc... The ranging capability of the system allows limiting these actions to a specific area. IMSI catchers can also work in conjunction with external geolocation systems

For prison operations, our 3G IMSI catcher can be used to in two different ways;

- As a fix system, to covertly capture IMSI/IMEI data of 2G and 3G cell phones in range of the catcher inside the prison and to take any actions such as blocking incoming or outgoing calls Voice, Data, SMS), identifying origin and destination of calls, etc... The addition of a ranging and direction finding capability function can filter geographically the phones to high security area. The IMSI catcher can also be integrated in our geolocation system and be feed the precise position and identification of the phones of interest



- As a portable system to locate and take control of a specific cell phones using it's own ranging and direction finding capability or using information from external geolocation systems.