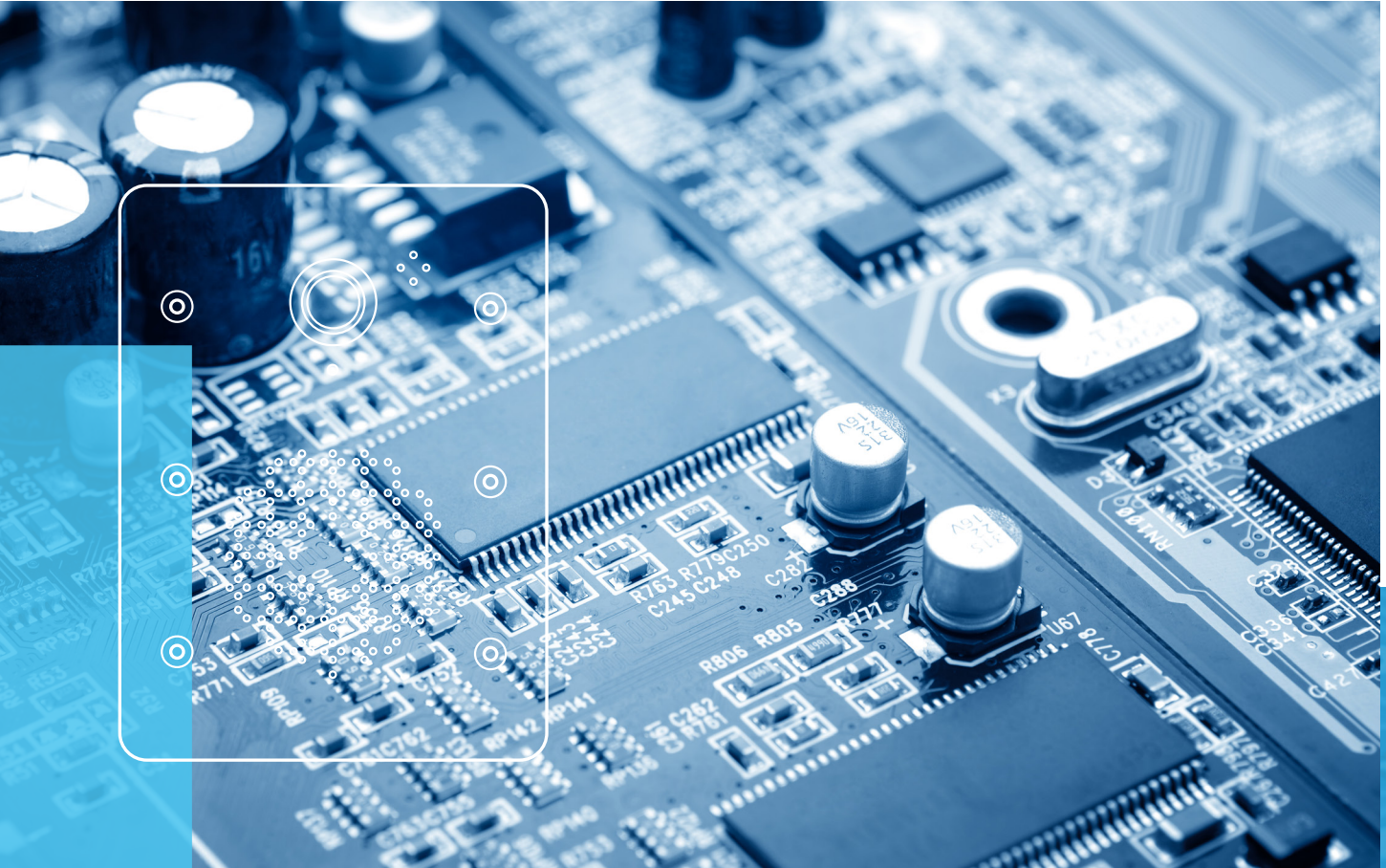




Enhancing Security and Communication in Correctional Facilities

Intercom System Whitepaper and Project References



Executive Summary

In correctional environments, effective communication systems are crucial for maintaining security, ensuring operational efficiency and life-safety.

CellGuard by Guardian Communication Systems (GCS) is a state-of-the-art IP based intercom solution purpose-made for prisons and correctional facilities. By providing a secure, reliable, and monitored communication platform, CellGuard enhances both inmate management and staff integrity. This white paper delves into the challenges in prison communication, the technological gaps addressed by CellGuard, and the measurable benefits that facilities can achieve through its implementation.

Introduction

Background

Guardian Communication Systems (GCS) is an Australian owned company that has expanded its portfolio and focus, becoming a leader in secure communication solutions for high-security environments. CellGuard represents the company's commitment to addressing the unique needs of the correctional sector with technology, reliability, and security.

Our Vision

To accelerate a safer and secure future with a world-class communication system.

Our Mission

To work as a team in conjunction with clients, consultants, contractors and the community to deliver innovative and customised technologies that improve safety and security for all.

Our Values

We value *Integrity*, *Innovation* and *Collaboration*



Integrity

We are focused on honesty and accountability to ensure we deliver the highest customer service and product reliability.



Innovation

We aim to be a global leader in the industry through making positive changes and by our commitment to continuous innovation towards future-proof technologies.



Collaboration

We strive to be a cohesive team and pride ourselves in our ability to work in collaboration with clients, consultants, contractors and the community to deliver exceptional results.

Industry Landscape

Correctional facilities today face complex and unprecedented challenges, from managing large populations to ensuring staff safety in high-risk situations. The demand for secure, dependable communication solutions within these facilities is higher than ever, yet traditional systems often fall short. CellGuard is designed to fill this gap, providing correctional facilities with the tools needed for real-time, dependable and secure communication that improves both security and efficiency.

The Challenge

■ Security and Reliability Needs

Prison environments demand a communication system that can withstand rigorous use and guarantee high system availability. Staff members need quick and reliable access to communication, especially during emergencies, to mitigate risks and coordinate effectively. Traditional IP intercom systems are prone to breakdowns with suboptimal redundancy options and lack security features required in these high-stakes environments.

■ Technological Gaps

Many existing intercom solutions are unable to scale or adapt to modern correctional facility requirements, leading to frequent interruptions and increasing maintenance costs. Additionally, they often lack on-going support processes necessary to maintain the intercom system to protect sensitive communications and eliminate vulnerabilities that can jeopardize facility safety.

■ Compliance and Regulatory Demands

Correctional facilities are required to meet strict compliance standards for communication and safety. CellGuard was designed with these regulations in mind, ensuring facilities can maintain compliance without sacrificing efficiency or security.



GCS Solutions

Overview of CellGuard

CellGuard is a comprehensive real-time IP based intercom system purpose made for correctional environments. It is uniquely based on a high-available distributed IP node model, integrates with building and security systems, and adaptable software to provide a seamless communication experience. CellGuard supports correctional officers and staff by enabling reliable, secure, and instant communication within and across facilities.

Key Features

■ Native High-Availability

CellGuard's uniquely distributed node architecture provides unmatched system redundancy as the highest available system on the market. The operation of the Intercom system does not depend on the availability of the server/IP controller. As a distributed system, the CellGuard server has no limit to how many multiple server instances can be running in parallel and lends itself to flexible virtualisation options as a software based solution.

■ IP Based Intercom System

Compliance with modern TCP/IP based cabling regulatory standards and standard ethernet networks

■ Hot-Swappable Intercoms

Continuing to maintain CellGuard's unique 'hot-swap' ability with the latest generation of digital intercom. This greatly reduces the required downtime, maintenance cost and training required to support the most common hardware component of the intercom system.

■ Durable and Tamper-Resistant Hardware

Designed to withstand harsh environments, CellGuard's hardware can endure daily wear and tear, reducing the need for frequent replacements.

■ Intercom Self-Test Function

The push-button, microphone and speaker on the intercom can be manually and scheduled tested for diagnosing the integrity of these components. Every test status (Pass or Fail) is logged and reported with separation of the button and audio component. The Fail status immediately triggers an alarm within the system for action by staff and maintenance.

■ Full-Duplex Audio

Full Duplex audio allows both parties to talk at the same time. This function is independently built into each intercom (not centrally server based). The Acoustic Echo Cancelling reduces unwanted feedback and also background music on the music enabled intercoms when covertly listened to. Additionally, our Voice-Recorder can independently record the two parties on Left and Right channels, so each party can be isolated and heard clearly one at a time, not just at the same time.

■ Fully monitored system

All components and events of the intercom system are logged and reported for the safety and security of the officers and inmates. The logging system is built to support the granularity required for software developer investigation for the ongoing support and maintenance over the life of the intercom system.

■ **Low and High-Level Interface**

Interface options at both low and high levels for control and audio. The High-Level Interface is fully bi-directional with enhanced protocol handshakes and a comprehensive 3rd party control list. The SIP audio interface is a standardised protocol for audio in/out of the intercom system.

■ **Dashboards and Reporting**

Dashboard enables officers to monitor system analytics and report on data insight, ensuring a real-time overview of facility activity.

■ **Flexible Configuration**

Responsible for the functions and operation of the system as a single configuration file. The Adaptable Common Module (ACM) is a highly flexible and capable configuration to suit the specific needs of complex prison environments.

■ **Scalability**

CellGuard can be adapted for both small and large facilities, making it a versatile solution for various correctional needs.

■ **Public Address Function**

The intercom system includes a PA function which can interface to and from 3rd party PA equipment and systems at low and high levels.

■ **Music and TV function**

Intercoms can include inmate music functions for distributed music channels and control, light and TV controls.

■ **Non-Contact Visit systems**

Standalone intercom pairs and integrated system pairs which can interface with the main intercom system and features, like Officer Station management and listening, Voice-Recorder and logging.

■ **iButton Integration**

The digital intercom integrates with ibutton one wire technology, an ID tagging system. Intended for use by officers for patrol points, officer-only calls/cancels, or specialist functions that require an ID fob.

Benefits



Increased Operational Availability and Efficiency

Staff can communicate and respond to incidents reliably, leading to more efficient facility management.



Reduced Maintenance Costs

CellGuard's durable hardware and minimal maintenance requirements contribute to cost savings.



Enhanced Monitoring and Security

Ensuring inmates and staff safety and integrity by providing high quality, reliable and real-time calls, monitoring and audio, 24/7.



Future Proof

Providing flexibility and scalability, the CellGuard system can adapt for future needs using structured cabling and standard ethernet networks.



Mid North Coast Correctional Centre Expansion Project

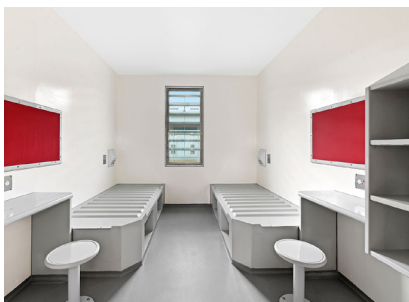
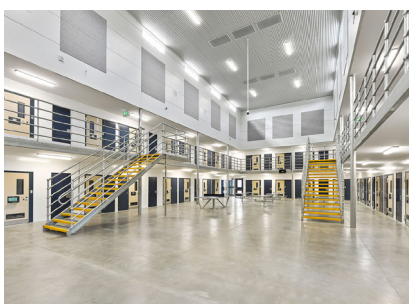


Image credit: BESIX Watpac, besixwatpac.com.au

Case Study

Mid North Coast Correctional Centre is in New south Wales, located 455kms north of Sydney.

The new expansion upgrade has seen four new accommodation blocks, each with 110 beds and an exercise yard, were delivered along with an industry building, programs building, health clinic, segregation building, custodial offices, network of secure walkways, outdoor recreational areas and a new secure perimeter with integrated security system. Refurbishments works to the gatehouse, visits building, staff amenities intake reception and the existing security services were undertaken.

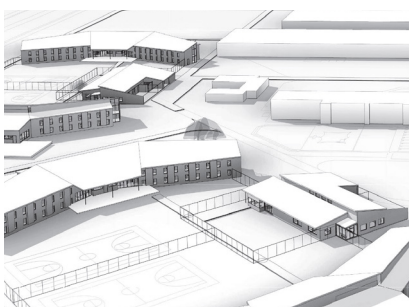
Work included a breakthrough of the existing secure perimeter to link the new and existing centres and was delivered in a live environment with no impact to the centre's security and operations.

The expansion provides the centre with a safer and more secure environment for inmates and the new industries complex and program spaces are dedicated to inmate rehabilitation.

CellGuard provided the latest secure intercom technology to the new expansion. These products were seamlessly integrated with the existing communication system utilising the high level of backward compatibility of CellGuard's future proof design. Therefore, eliminating need for a full site upgrade, minimising the overall impact to the facility day to day procedures and being a cost-effective solution.



Casuarina Prison Expansion Project



Case Study

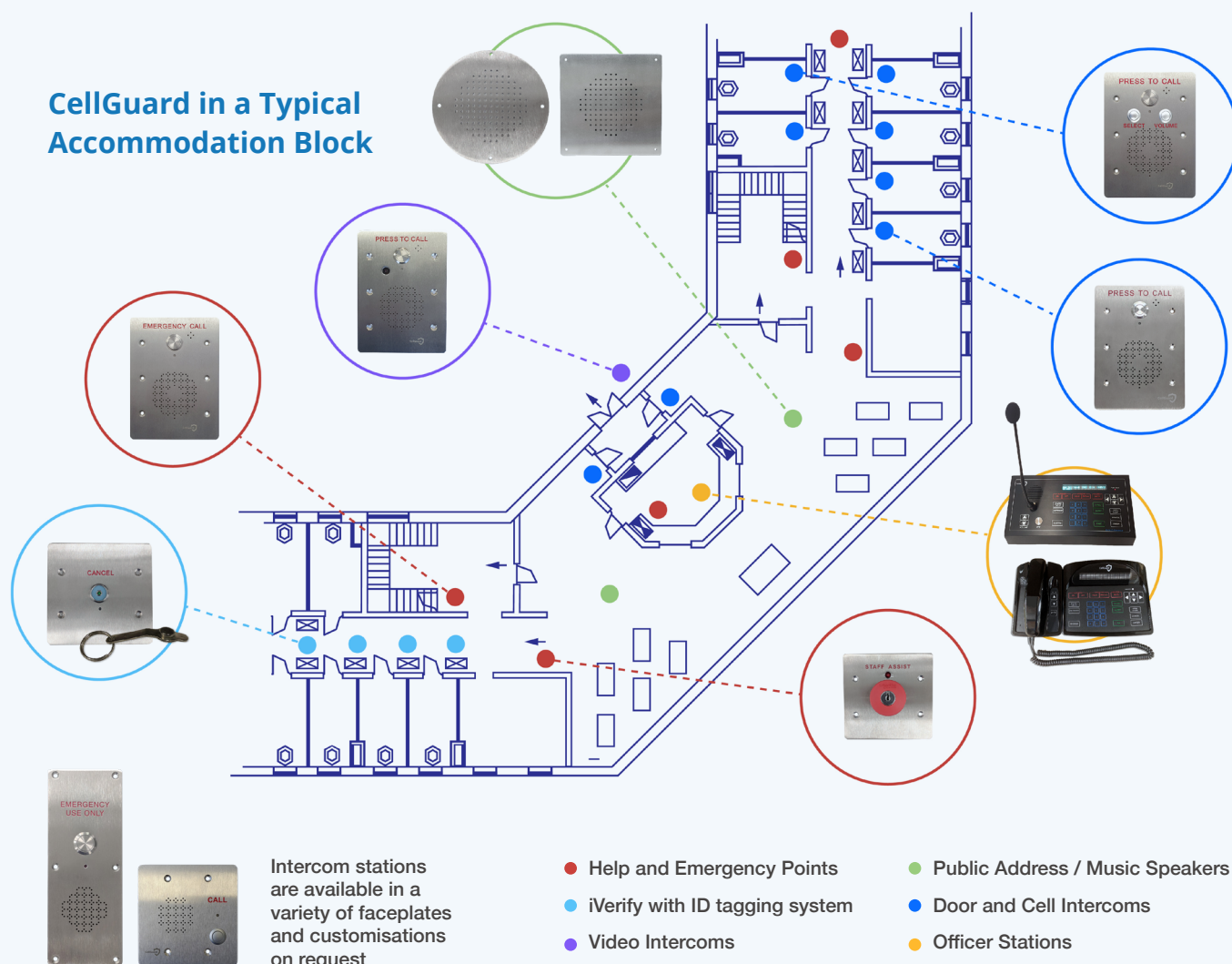
Casuarina Prison is a maximum-security facility for male prisoners, located 35 kilometres south of Perth, Western Australia. Originally intended primarily for sentenced prisoners, it now also holds a large number of remand prisoners.

The 344 bed expansion, along with the recent addition of 512 new beds including a new alcohol and other drug treatment prison for men, will make Casuarina the State's biggest and most complex prison by the end of 2023.

To support the additional accommodation, upgrades have been undertaken to the utility services on site, as well as construction of new ancillary support buildings containing program and education rooms, interview and medical consultation rooms and a video link facility. The expansion additionally includes a super max unit, upgrades and expansions to the existing medical centre, visitor area, reception area and car park.

CellGuard provided the latest secure intercom technology to the new expansion. These products were seamlessly integrated with the existing communication system utilising the high level of backward compatibility of CellGuard's future proof design. Therefore, eliminating need for a full site upgrade, minimising the overall impact to the facility day to day procedures and being a cost-effective solution.

CellGuard in a Typical Accommodation Block



Technical Specifications and Innovations

Technical Overview

CellGuard leverages high-availability and real-time communication protocols within the facility. Its tamper-resistant hardware is designed specifically for high-security environments, ensuring longevity and reliability with quick and easy maintenance. The system also features advanced and feature rich technology, allowing clear communication even in noisy environments with self-test functions to ensure intercom integrity.

Integration Capabilities

CellGuard can integrate with other facility management systems, such as CCTV, access control, SMS, BMS and PSIM creating a comprehensive security ecosystem. This interoperability allows for a streamlined communication process, reducing redundancy and improving response efficiency.

Market Analysis and ROI



Demand and Growth Opportunities

With rising demands for secure and efficient communication in correctional facilities, the market for specialized intercom systems like CellGuard is poised for growth. The correctional sector increasingly values solutions that are purpose made for them and can provide reliability, compliance, and cost-efficiency, which are precisely the attributes that CellGuard delivers.



Financial Benefits

A correctional facility can expect significant cost savings by adopting CellGuard due to its low maintenance needs, reduced downtime, and enhanced security measures. With improved operational efficiency, facilities can reallocate resources from system upkeep to other essential functions.



Australian Made and Owned

The only prison intercom system made by a 100% Australian owned private company. Designed, developed and manufactured in Western Australia.



Conclusion

CellGuard by GCS stands out as a robust, reliable, and secure communication solution tailored to the specific needs of correctional facilities. It addresses key challenges faced by the industry, ensuring safety and compliance while optimizing costs and operations. GCS invites facility administrators to explore how CellGuard can be a transformative addition to their security and communication infrastructure.

Project References

Australia

- Acacia Prison
- Adelaide Remand
- Adelaide Women's Prison
- Albany Regional Prison
- Alice Springs Correctional Centre
- Alice Springs Juvenile Justice
- Amber Laurel Correctional Centre
- Ashley Detention Centre
- Bandyup Women's Prison upgrade
- Banksia Hill Juvenile Detention Centre
- Barwon Prison
- Baxter Detention Centre
- Beechworth Prison
- Broome Prison
- Brush Farm Academy
- Bunbury Courthouse
- Bunbury Regional Prison
- C. W. Campbell Remand Centre
- Cadell Training Centre
- Canning Vale Regional Prison
- Canning Vale Remand Centre
- Carnarvon Court House
- Casuarina Metropolitan Prison upgrade
- Cavan Remand Centre
- Central Law Courts
- Commonwealth Law Courts
- Corella Detention Centre (Ararat)
- Darwin Correctional Centre
- Deer Park Prison
- Dhurringile Prison
- Eastern Goldfields Prison
- Emu Plains Laurel Correctional Centre
- Freswater Place 1 & 2
- Fullham Prison
- Goulburn Correctional Centre
- Graylands Mental Health
- Greenough Regional Prison
- Hakea Prison (sections A & B)
- Hobart Reception Prison
- Hopkins Correctional Centre (Ararat)
- Karreenga (Marngoneet Annexe)
- Langi Kal Kal Prison
- Liverpool Court House
- Loddon Prison
- Long Bay Prison
- Magill Training Centre
- Malmsbury Juvenile Justice Centre
- Mandurah Court House
- Maribyrnong Immigration Detention Centre
- Marngoneet Correctional Centre
- (MCC) Lara
- Metropolitan Remand Centre (MRC)
- Mid North Coast Correctional Centre
- Midland Courthouse
- Mobilong Prison
- Mt Penang Correction Centre
- Mt. Gambier Prison
- Mulawa Correctional Centre (Silverwater)
- Nyandi Hostel
- OMMPPC (John Maroney)
- Orange Court House
- Orico
- Pardelup Prison
- Parklea Correctional Centre
- Parklea Prison
- Perth Children's Court
- Perth District Courts
- Perth Supreme Court
- Port Augusta Prison
- Port Hedland IRPC
- Port Lincoln Prison
- Port Philip Prison
- QV1 Building
- Rangeview Remand Centre
- Ringwood Court House
- Robertson Barracks (Darwin)
- Rockhampton Courthouse
- Roeburn Prison
- Sir Samuel Way Building
- Sonoma
- Symonston Remand Centre
- Tarrengower Prison
- Tomago Detention Centre
- Victorian Forensic Prison
- Wandoo Prison
- Wave
- Wellington Correctional Centre (MWCC)
- WKRP (Derby)
- Woomera Rocket Range
- Wooroloo Prison Farm
- Yatala Labour Prison

New Zealand

- Arohata Women's Prison
- Auckland Central Remand Prison (ACRP)
- Auckland Prison (At Risk)
- Auckland Prison (East)
- Auckland Prison (West)
- Auckland Prison AS
- Auckland Region Women's Corrections Facility (ARWCF)
- Christchurch Mens Prison
- CP Kingslea South

- Department of Social Welfare
- Dunedin Prison
- Epunu Boys Home
- Hawkes Bay Regional Prison
- Invercargill Prison
- Manawatu Prison
- Mt. Eden and Auckland Central Remand Prisons (MECF)
- New Plymouth Prison
- Otago Corrections Facility (OCF)
- Paparua Prison (South)
- Rangipo Prison
- Rimutaka Prison
- Rolleston Prison
- Spring Hill Corrections Facility (SHCF)
- TGA Acute Mental Health Unit
- Tongariro / Rangipo Prison Complex
- Waikato Mental Health Unit
- Waikeria Prison
- Wanganui Prison
- Whangarei Community Corrections
- Youth Justice Facility (YJF) South

International

- Abu Dhabi Military Prison
- Acton Magistrates Court
- Addiewell Prison
- Airforce Prison Abu Dhabi, U.A.E.
- Brentford Court
- Bur Dubai Immigration Prison
- Corradino Prison
- Croydon Magistrates Court
- Dovegate Private Prison
- Dubai Central Prison
- Enfield Magistrates Court
- Exeter Court
- Exeter Crown Court
- Greenwich Magistrates Court
- Lindsay Jail
- Logford Detention Centre
- Logford Prison Hospital Wing
- Medway Remand Centre
- Midlands Prison
- North York Prison
- Ottawa jail
- Rainsbrook Secure Training Centre
- Rangebrooke Private Detention Centre
- Redbridge Magistrates Court
- Rugby Remand Centre
- Somerset County Jail
- Waltham Magistrates Court
- Yarlswood, Private Detention Centre



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