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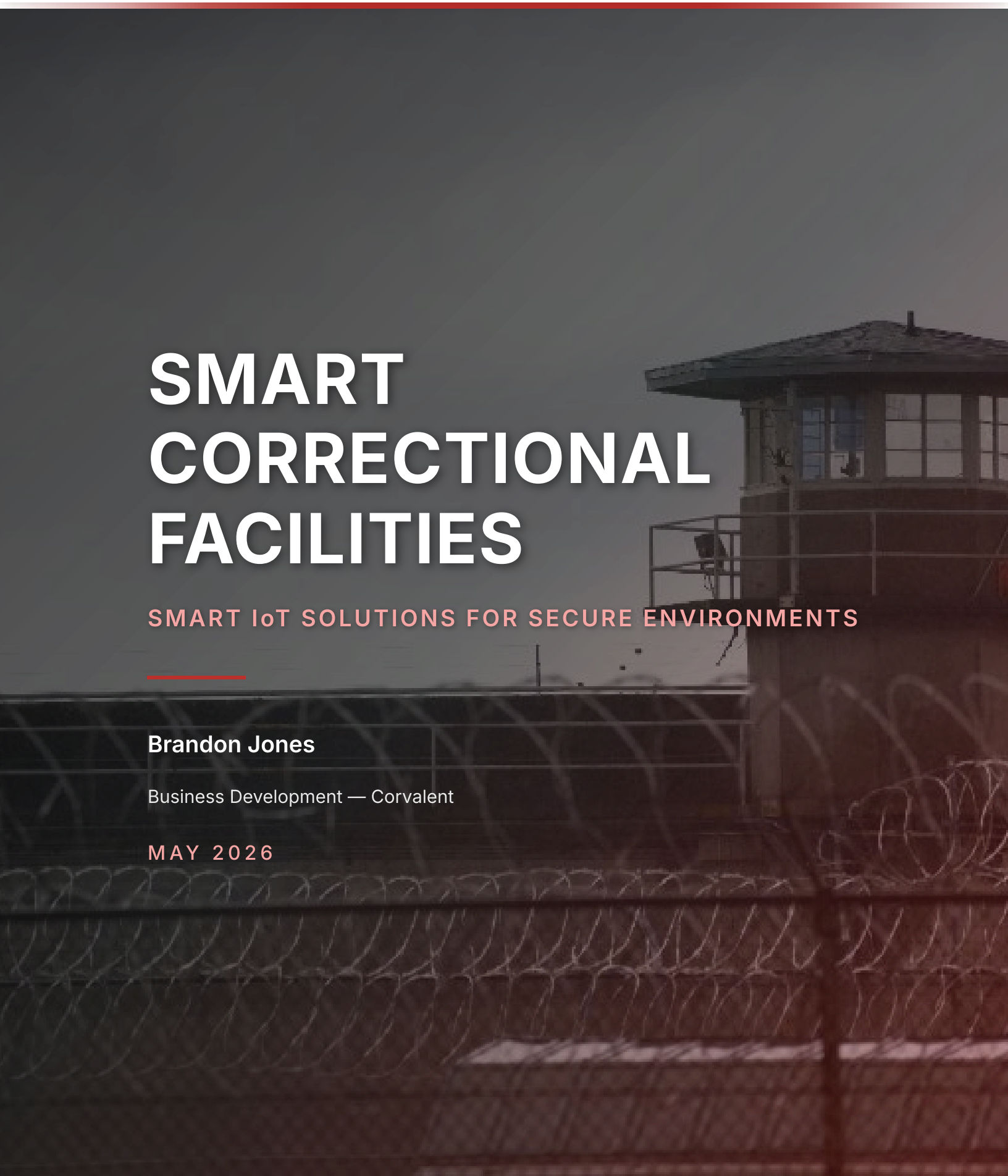

SMART CORRECTIONAL FACILITIES

SMART IoT SOLUTIONS FOR SECURE ENVIRONMENTS

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Business Development — Corvalent

MAY 2026

Introduction Letter

02

May 2026

To

IMEG

Attn: Mark Bellon

Dear Mark Bellon,

I hope you are doing well.

My name is Brandon Jones, and I represent Corvalent's business development team. Based on IMEG's expertise in engineering, infrastructure, building systems, energy performance, and complex facility modernization, Corvalent has prepared this introductory material to present a strategic opportunity focused on Smart Correctional Facilities.

Correctional facilities across the United States are facing increasing pressure to modernize aging infrastructure while maintaining safe, secure, and continuous operations. Many prison upgrade programs are no longer focused only on new construction; they are increasingly centered on retrofitting existing facilities, extending asset life, improving energy efficiency, upgrading mechanical and electrical systems, and modernizing security infrastructure.

In this context, Corvalent's Smart IoT Solution, powered by the CorGrid platform, can support IMEG in delivering a digital intelligence layer for correctional facility projects. Our technology can connect critical building systems, energy assets, environmental sensors, smart cameras, access control systems, security platforms, and other third-party technologies through APIs to create a unified operational view.

This document outlines how Corvalent's IoT, AIoT, Edge Computing, and API integration capabilities can support smarter, safer, more efficient, and more resilient correctional environments.

We would like to propose an initial Discovery & Technical Alignment conversation to explore potential synergies between IMEG's correctional facility expertise and Corvalent's Smart IoT Solutions.

Sincerely,

Brandon Jones

Business Development

CORVALENT

Understanding IMEG and the Correctional Facility Upgrade Landscape

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IMEG is well positioned to support complex infrastructure projects that require multidisciplinary engineering, high-performance building systems, operational reliability, and compliance-driven design. Correctional facilities represent a highly specialized segment of the built environment, where engineering decisions directly affect security, life safety, resilience, maintainability, energy consumption, and long-term operating costs.

Across the correctional sector, aging facilities are increasingly partnering with civil engineering, design-build, and infrastructure modernization firms to execute major rehabilitation programs. These initiatives often prioritize structural repairs, seismic upgrades, life-safety improvements, mechanical and electrical overhauls, energy efficiency, water and wastewater modernization, and hardened security upgrades.

Unlike conventional buildings, prisons and detention centers operate 24/7 and must remain secure even during renovation. Many upgrade projects occur while facilities remain occupied, requiring careful phasing, strong coordination, worker safety protocols, and minimal disruption to daily operations. This creates a strong need for real-time monitoring, centralized visibility, predictive alerts, and data-driven coordination between engineering, facilities, maintenance, and security teams.

This is where IMEG and Corvalent can create value together. IMEG brings engineering and infrastructure expertise; Corvalent adds the connected technology layer that enables real-time insight, automation, and system integration across the correctional environment.

30%
Reduction in Operational Costs via Smart Monitoring

25%
Energy Savings in 24/7 Facility Operations

40%
Reduction in Unplanned Downtime with Predictive Maintenance

SOURCES: Deloitte — Smart Building Technologies & Predictive Maintenance Solutions; McKinsey — Connected Building Era & Building Decarbonization; Correctional facility upgrade trends: aging infrastructure modernization, structural rehabilitation, energy savings performance contracts.

About Corvalent

Corvalent is a U.S.-based technology company with 32 years of experience and international presence, specializing in the development and integration of advanced solutions in IoT, AIoT — Artificial Intelligence of Things — and Edge Computing.

Our key differentiator lies in our ability to integrate hardware and software through TaaS models, creating intelligent ecosystems that solve complex challenges in automation, monitoring, security visibility, and real-time data management.

Corvalent acts as a technology partner for organizations seeking to transform physical operations into digital, connected, and data-driven environments, delivering robust, scalable, and adaptable solutions for mission-critical facilities and complex operational environments.

About the CorGrid Platform

CorGrid is Corvalent's central IoT platform, designed to be modular, scalable, and data-oriented — the "brain" of our Smart Solutions. It enables real-time monitoring of thousands of sensors, assets, cameras, systems, and distributed operations, allowing intelligent automations based on advanced rules and AI models, with fully customizable dashboards oriented toward operational, security, energy, infrastructure, maintenance, and compliance KPIs.

With a flexible, agnostic architecture — supporting TaaS, SaaS, On-Premises, or Hybrid models — CorGrid integrates with BMS, access control, electronic locking systems, CCTV, video analytics, SCADA, energy meters, HVAC controllers, water and wastewater systems, emergency and alarm systems, facility management platforms, and third-party applications through APIs. This API-first capability allows CorGrid to operate as an integration layer across existing correctional facility technologies, reducing silos and improving real-time operational intelligence.

How the Smart IoT Solution Supports Correctional Facility Upgrades

05

01

REAL-TIME MONITORING OF AGING INFRASTRUCTURE

Challenge: Many correctional facilities operate with aging infrastructure — outdated HVAC, old electrical panels, deteriorating plumbing, legacy security systems, and structures requiring rehabilitation. Without real-time visibility, maintenance teams may only detect issues after failures occur.

Solution: Corvalent's Smart IoT Solution connects sensors, gateways, edge devices, and existing facility systems to monitor equipment status, environmental conditions, vibration, temperature, humidity, current, water flow, pressure, leaks, and system alerts in real time.

Expected Outcome: Better visibility into aging infrastructure, faster issue detection, reduced emergency repairs, improved asset planning, and stronger support for rehabilitation programs.

02

STRUCTURAL, SEISMIC, AND FACILITY REHABILITATION SUPPORT

Challenge: Correctional facility upgrades often include structural repairs, concrete rehabilitation, seismic improvements, foundation stabilization, and civil engineering interventions requiring ongoing monitoring, especially in occupied environments.

Solution: Sensors monitor vibration, movement, environmental exposure, moisture, temperature variation, and infrastructure indicators. CorGrid consolidates inputs into engineering dashboards supporting assessment, phasing, and long-term monitoring.

Expected Outcome: Improved visibility during rehabilitation, stronger documentation of structural conditions, better risk management, and more informed decision-making for phased upgrades.

03

PREDICTIVE MAINTENANCE FOR MISSION-CRITICAL ASSETS

Challenge: Failures in correctional facilities create security vulnerabilities and operational disruptions. Critical assets such as HVAC units, locking systems, pumps, generators, elevators, surveillance equipment, electrical panels, and water systems require continuous reliability.

Solution: Through IoT sensors and analytics, CorGrid monitors operating patterns and generates alerts when assets show abnormal behavior, enabling maintenance teams to act before equipment failure.

Expected Outcome: Reduced unplanned downtime, lower corrective maintenance costs, longer asset life, better reliability, and improved continuity of mission-critical operations.

Smart IoT Solutions — Continued

04 MECHANICAL AND ELECTRICAL SYSTEM MODERNIZATION

Challenge: Prison modernization projects frequently involve replacement or upgrade of HVAC, plumbing, lighting, emergency power, electrical distribution, and other building systems. These are capital-intensive and must demonstrate measurable performance improvement.

Solution: CorGrid monitors the performance of upgraded systems in real time, tracking KPIs such as energy usage, runtime, fault frequency, maintenance events, temperature stability, air quality, and equipment efficiency.

Expected Outcome: Better validation of modernization investments, improved system commissioning, ongoing performance tracking, and stronger reporting for owners, operators, and public-sector stakeholders.

05 SMART ENERGY MANAGEMENT AND ESPC SUPPORT

Challenge: Many correctional facilities face budget constraints but have significant energy savings opportunities. Energy Savings Performance Contracts are commonly used to fund infrastructure improvements through guaranteed energy savings.

Solution: CorGrid tracks energy consumption by building, zone, panel, circuit, or equipment. It identifies peak demand, inefficient systems, abnormal loads, lighting inefficiencies, HVAC waste, and savings opportunities for ESPC measurement and verification.

Expected Outcome: Stronger M&V of energy savings, better ESPC program support, lower operating costs, reduced energy waste, and improved sustainability reporting.

06 HARDENED SECURITY UPGRADES AND SMART CAMERA INTEGRATION

Challenge: Correctional modernization includes upgrades to electronic locking, biometric controls, surveillance, perimeter monitoring, alarms, and command center technologies — but these systems often remain fragmented across multiple platforms.

Solution: CorGrid connects with smart cameras, CCTV, video analytics, access control, electronic locks, perimeter sensors, and alarms through APIs, consolidating security and facility data into a unified dashboard. A door alarm can be correlated with nearby camera activity, motion detection, lighting status, HVAC zone data, access logs, and maintenance history.

Expected Outcome: Better incident context, faster response, stronger coordination between security and facilities teams, improved command center visibility, and reduced operational blind spots.

07 WATER, WASTEWATER, AND UTILITY MONITORING

Challenge: Older correctional facilities often face plumbing, water usage, wastewater capacity, and leak management issues that create high costs, operational disruptions, and safety concerns.

Solution: Flow meters, pressure sensors, leak detection sensors, pump monitoring, and wastewater system telemetry are integrated into CorGrid to provide real-time visibility into water infrastructure.

Expected Outcome: Reduced water waste, faster leak detection, improved utility management, better maintenance planning, and support for sustainability initiatives.

08 OCCUPIED RENOVATION AND PHASED CONSTRUCTION VISIBILITY

Challenge: Correctional upgrades often occur while facilities remain operational, requiring careful coordination between construction teams, prison staff, maintenance teams, and security operations.

Solution: CorGrid supports phased renovation projects by monitoring temporary systems, restricted zones, environmental conditions, contractor access areas, equipment status, power availability, and safety indicators throughout the construction period.

Expected Outcome: Improved project visibility, reduced operational disruption, stronger safety controls, better communication across teams, and more effective renovation phasing.

Environmental Monitoring for Safety, Health & Compliance

Correctional facilities must maintain acceptable environmental conditions across housing units, medical areas, kitchens, staff areas, control rooms, and common spaces. Sensors for temperature, humidity, CO_2, particulate matter, smoke, water leaks, and air quality feed real-time data into CorGrid. Alerts are configured for thresholds, abnormal patterns, or high-risk areas — supporting compliance documentation and healthier spaces for staff, inmates, and contractors.

Discovery & Technical Alignment

08

Corvalent proposes an initial **Discovery & Technical Alignment** meeting with IMEG to co-design the smartest path forward for correctional facility modernization projects. This structured engagement produces a clear roadmap, a validated PoC scope, and a prioritized list of quick-win use cases.

QUICK-WIN USE CASES

Energy Monitoring

Circuit-level metering + ESPC M&V dashboards within weeks of sensor deployment.

Predictive Maintenance

Vibration & current sensors on HVAC, pumps, and generators — alerts before failures.

Environmental Safety

CO_2, temperature, humidity, and smoke monitoring across housing and medical units.

Integrated Security Dashboard

API-bridge connecting CCTV, access control, and alarms into a single CorGrid view.

EXISTING SYSTEMS MAPPING

SYSTEM / ASSET	INTEGRATION PATH	PRIORITY
BMS (Building Management System)	BACnet / Modbus / OPC-UA	High
Access Control & Electronic Locks	REST API / Wiegand	High
CCTV & Video Analytics	RTSP / REST API	High
HVAC / Mechanical	Modbus / BACnet / Sensors	High
Energy Meters / Electrical Panels	Modbus / MQTT	High
Water / Wastewater Sensors	LoRaWAN / NB-IoT	Medium
SCADA / CMMS / ERP	REST API / OPC-UA	Medium

Proof of Concept & Deployment Model

09

PROOF OF CONCEPT — DEFINITION

SCOPE

One correctional facility block or building. Deploy energy meters, HVAC sensors, environmental sensors, and API connection to existing access control and CCTV. Activate CorGrid dashboards for real-time visibility.

KPIS

- Energy baseline vs. monitored usage (% delta)
- HVAC anomaly alerts generated vs. actual events
- Environmental threshold breaches detected
- System API integrations operational
- Dashboard uptime and data latency (< 5 s)

TIMELINE

01 **Discovery & Alignment**
Weeks 1–4

02 **Sensor Deploy & Integration**
Weeks 5–10

03 **Validation & KPI Review**
Weeks 11–14

04 **Scale-Up Decision**
Week 15+

SUCCESS CRITERIA

- ≥ 10% energy savings identified in monitored zone
- ≥ 2 predictive maintenance alerts validated
- 100% of targeted API integrations live
- IMEG team trained on CorGrid dashboards
- Mutual agreement to proceed to full deployment

DEPLOYMENT MODEL EVALUATION

TaaS

Technology as a Service

Full hardware + software + support in a single monthly fee. Ideal for public-sector clients with capex constraints. Corvalent manages infrastructure end-to-end.

SaaS

Software as a Service

Cloud-hosted CorGrid platform. IMEG clients own or manage their sensors; Corvalent provides the intelligence layer. Scalable and low-overhead.

On-Premises

On-Site Deployment

Full CorGrid stack deployed inside the facility network. Required for high-security environments with strict data sovereignty or air-gapped network policies.

Hybrid

Hybrid Cloud + Edge

Edge computing processes sensitive data on-site; aggregated, anonymized insights sync to cloud dashboards. Best balance of security, resilience, and analytics power.

Key Technologies

Smart Cameras and Video Analytics Integration:
CorGrid connects with smart cameras and video analytics platforms through APIs, combining visual intelligence with IoT, access control, environmental, and facility data for unified correctional security visibility.

Access Control and Electronic Lock Integration:
Integration with door sensors, electronic locking systems, biometric platforms, and access control systems improves visibility over secure areas and restricted zones across the correctional environment.

Energy Monitoring Sensors:
Energy meters and circuit-level monitoring identify waste, peak demand, inefficient equipment, and savings opportunities — critical for ESPC measurement, verification, and public-sector sustainability reporting.

Environmental and Air Quality Sensors:
Temperature, humidity, CO_2, smoke, particulate, and air quality sensors maintain safer, healthier conditions across housing units, medical areas, staff zones, kitchens, and control rooms.

Predictive Maintenance Sensors:
Vibration, current, pressure, temperature, and runtime sensors support condition-based monitoring of HVAC, pumps, generators, motors, elevators, and other critical assets throughout upgrade programs.

Water and Wastewater Sensors:
Flow, pressure, leak, and pump monitoring technologies help manage water consumption, detect failures early, and improve utility resilience in aging correctional infrastructure.

Edge Computing Devices:
Edge devices process critical data locally close to the facility, reducing latency and supporting reliable operations even when connectivity is limited — essential for secure correctional environments.

API Integration Layer:
CorGrid's API-first architecture integrates with BMS, SCADA, CMMS, ERP, access control, smart cameras, video analytics, emergency management tools, and facility management software — preserving existing investments.

ESG and Compliance Dashboards:
Operational data is converted into dashboards and reports for energy, emissions, water usage, environmental conditions, maintenance activity, asset performance, and regulatory documentation.

PROTOCOLS & STANDARDS: LoRaWAN, NB-IoT, WiFi 6, Modbus, MQTT, OPC-UA, REST APIs, BACnet, Edge Computing, BMS/SCADA/CMMS/ERP Integration

Expected Benefits

Operational Efficiency

Centralized monitoring helps correctional facility teams reduce manual inspections, detect problems faster, and manage infrastructure more effectively.

Predictive Maintenance

IoT-based monitoring anticipates failures in HVAC, locking systems, pumps, generators, elevators, electrical systems, and surveillance infrastructure.

Security Modernization

Integration with smart cameras, access control, electronic locks, alarms, and video analytics platforms improves real-time security visibility across the facility.

Energy Optimization

Granular energy monitoring supports lower operating costs, ESPC measurement and verification, demand management, and improved efficiency across 24/7 facilities.

Infrastructure Rehabilitation

Sensor-based monitoring supports structural upgrades, phased renovations, occupied construction coordination, and long-term asset condition tracking.

Water & Wastewater Management

Real-time monitoring reduces waste, detects leaks, improves pump reliability, and supports modernization of aging utility systems in correctional facilities.

Environmental Safety

Continuous monitoring of air quality, temperature, humidity, smoke, and leaks supports safer conditions for staff, inmates, visitors, and contractors.

Compliance & Traceability

Automated logs, alerts, and performance dashboards create stronger documentation for inspections, audits, maintenance records, and regulatory requirements.

Resilience & Continuity

Edge-enabled monitoring and automation help reduce disruptions and maintain continuity of mission-critical facility operations around the clock.

Platform Interoperability

API integration connects CorGrid with existing third-party systems, reducing technology silos and preserving previous technology investments across the facility.

Innovation Potential and Next Steps

We believe the convergence between IMEG's engineering and infrastructure expertise and Corvalent's IoT, AIoT, Edge Computing, and API integration capabilities represents a strong opportunity to develop smarter, safer, and more efficient correctional environments — across aging infrastructure, occupied renovations, energy programs, security modernization, and facility-wide operational visibility.

01 **Initial meeting** between IMEG and Corvalent for strategic and technical alignment.

02 **Identification of priority use cases** such as energy monitoring, predictive maintenance, smart camera integration, environmental safety, water monitoring, or security dashboards.

03 **Mapping of existing systems** — BMS, access control, CCTV, smart cameras, CMMS, SCADA, HVAC, electrical, water, and security infrastructure.

04 **Evaluation of API integration opportunities** with existing third-party platforms currently in use across correctional facilities.

05 **Definition of a Proof of Concept** with scope, KPIs, timeline, and success criteria tailored to IMEG's correctional facility projects.

06 **Evaluation of deployment model:** TaaS, SaaS, On-Premises, or Hybrid — aligned with IMEG's client requirements and project architecture.

What would be the best day and time next week to move this conversation forward?

SUPPORTING SOURCES: Deloitte — Smart Buildings & Predictive Maintenance Solutions; McKinsey — Connected Building Era & Building Decarbonization; IMEG — Engineering, infrastructure, building performance & consulting services; Correctional facility upgrade trends: aging infrastructure modernization, structural rehabilitation, M&E upgrades, ESPCs, security modernization, occupied renovations.

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