SEAPORT Manatee



Lighthouse Award Application

Integrated TWIC-Based Access Control & Operational Intelligence System

Award Categories:
Excellence in Security Practices (Large Port)
Excellence in Technology Solutions (Large Port)

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Executive Summary

SeaPort Manatee's Integrated TWIC-Based Access Control & Operational Intelligence System transforms the federally issued Transportation Worker Identification Credential (TWIC) from a compliance requirement into a comprehensive security and operational platform. By integrating TWIC-based identity validation with biometric verification, real-time credential authentication, escort accountability, enrollment, financial processing, surveillance integration, and analytics, the port has created a unified system that strengthens maritime security while improving efficiency across a complex multi-tenant environment.

The system has enabled SeaPort Manatee to scale securely as gate activity grew from 451,200 transactions in 2022 to more than 814,000 in 2025, while reducing average enrollment time from approximately six minutes to under two minutes, including financial transactions. It also provides real-time card authentication, biometric matching, and electronic tracking of escorted non-TWIC individuals, allowing both tenants and SeaPort Manatee Security to maintain a shared operating picture and stronger accountability. These capabilities are essential to meeting current U.S. Coast Guard Maritime Transportation Security Act requirements and MARSEC screening standards across multiple tenant operators at a volume that would be operationally impractical to manage through manual processes alone.



Beyond compliance and access control, the platform generates actionable operational intelligence that supports staffing, infrastructure planning, tenant coordination, and long-term strategic decision-making. Its combination of security innovation, measurable operational performance, scalability, and stakeholder value positions SeaPort Manatee as a model for modern port security and a compelling candidate for recognition in both Excellence in Security Practices and Excellence in Technology Solutions.

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1. Background, Purpose, and Goals

SeaPort Manatee serves as a critical logistics hub for Florida's Gulf Coast, supporting regional and international trade. As cargo volumes increased, the port faced the dual challenge of strengthening maritime security while maintaining efficient cargo throughput. Traditional access control systems often depend on multiple credentials, manual identity checks, and disconnected security platforms, creating operational friction and unnecessary risk. Personnel may be required to carry separate badges, cards, fobs, PINs, or visitor passes for separate locations or functions, increasing confusion, slowing entry, and raising the likelihood of lost, shared, expired, or misused credentials.



These legacy models also carry significant direct and indirect costs: organizations must design, print, encode, issue, track, replace, and deactivate physical credentials, while also investing in badge printers, card stock, key fobs, smart cards, readers, enrollment stations, software licenses, maintenance, and staff time to administer the program. More advanced technology-based credentials, including biometric enrollment and specialized card technologies, can further increase upfront and lifecycle costs through hardware purchases, system integration, calibration, training, and ongoing support.

When these systems are not fully integrated, access events, surveillance data, visitor records, and compliance checks remain fragmented across platforms, limiting real-time visibility, complicating audits, and introducing vulnerabilities that can delay operations and weaken accountability. To address these challenges, SeaPort Manatee first evaluated whether the Transportation Worker Identification Credential (TWIC) could function as a practical and reliable access control credential at the port's gates using the technology available at the time. That analysis confirmed that, because the card is built on a FIPS 201-compliant architecture, it could be integrated into standard physical access control systems rather than treated as a standalone compliance instrument.

By aligning TWIC validation with commercially available readers, enrollment tools, and access control software, the port was able to leverage existing infrastructure while building a secure, scalable gate solution. Just as important, the credential's structured data model created the opportunity to import cardholder information directly from the TWIC during enrollment, reducing manual data entry, improving data accuracy, and significantly accelerating the onboarding process for authorized personnel. This approach transformed a federal security credential into the

foundation of an integrated operational system that strengthened security, reduced administrative burden, and improved throughput at the port's access points.

The overarching goal was to create a unified, scalable, and data-driven system that enhances security, improves accountability, and delivers measurable operational improvements while positioning the port as a model of excellence across security and technology domains. More specifically, the system was designed to maximize the ability to import and validate data directly from government-issued identity credentials, including state-issued driver licenses, identification cards, Common Access Cards (CAC), and TWICs, to reduce manual entry, improve enrollment accuracy, and accelerate processing. The goals also included integrating point-of-sale functionality into the enrollment workflow so staff could complete required financial transactions at the time of registration, improving convenience, supporting cost recovery, and reducing administrative handling.

To better support tenant operations, the system was designed to provide an interface that alerts tenants when individuals access gates associated with their facilities, reinforcing the integrity of the TWIC escort process while enhancing operational awareness. Another key objective was to establish a dependable mechanism to ensure, track, and document the custody of all non-TWIC individuals entering the port, thereby strengthening accountability, regulatory compliance, and overall security oversight. On average, SeaPort Manatee Security escorts between 30 and 60 non-TWIC truck drivers to warehouses on port property to retrieve loads, while an additional 30 drivers are monitored to areas where cargo has been pre-staged for rapid pickup. The status of all escorted individuals is electronically logged and is available to both tenants and SeaPort Manatee Security. The SeaPort Manatee Security Dispatcher is a provided live status board to instantly track the status of all non-TWIC holders with the port's secure area.

Finally, the system was designed to generate robust reporting on security fee collections, gate counts, traffic slowdowns, dwell times, and other throughput indicators, providing actionable statistical data to port leadership and terminal operators to support operational planning, staffing, and continuous improvement.

2. Implementation & Resources

The system was implemented using a phased, risk-managed approach to minimize disruption to port operations while ensuring successful deployment. In doing so, the port deliberately incorporated concepts reflected in Homeland Security Presidential Directive 12 (HSPD-12), which established a common federal standard for secure and reliable identification designed to strengthen security, reduce identity fraud, improve efficiency, protect privacy, and enable rapid electronic authentication. By leveraging the TWIC credential—whose underlying architecture aligns with the FIPS 201 identity framework developed to support HSPD-12 objectives—SeaPort Manatee advanced a solution consistent with that directive's core principles: using a standardized, electronically verifiable credential that can integrate with access control systems rather than relying on duplicative locally issued badges and manual processes.

Core components included FIPS 201-compliant readers; deploying biometric enrollment readers; enabling live and continuous verification of cardholder data against the [Transportation Security Administration's (TSA's) TWIC Canceled Card List; and fully integrating the access control environment into the port's surveillance system to support Maritime Transportation Security Act security screening requirements for the port and its tenant operators. A cross-functional team of SeaPort Manatee security professionals, IT specialists, and operational leaders collaborated to ensure alignment with mission objectives and regulatory requirements. The project emphasized efficient resource utilization by leveraging existing federal infrastructure (TWIC) rather than investing in redundant systems, reflecting financial stewardship and innovation.

Challenges including system integration, user adoption, and real-time validation were mitigated through training, stakeholder engagement, iterative system refinement, and the development of processes to support multiple tenants, each with its own cargo release and cargo management workflow. This also included the development of workflows to support the escort of non-TWIC temporary labor and truckers supporting tenant operations, while maintaining port security oversight in accordance with the port's approved Facility Security Plan.

A significant operational challenge involved developing workflows that could effectively support both TWIC-holding and non-TWIC personnel while remaining aligned with the port's approved Facility Security Plan. Because tenant operations, escort requirements, and access decisions varied across the port environment, SeaPort Manatee had to refine processes for identity verification, escort accountability, tenant coordination, and access authorization to ensure that TWIC status was appropriately incorporated into daily operations. Addressing these workflow and process challenges was essential to translating technical capability into a system that could function reliably in a complex, real-world maritime environment.

3. Innovation & Relevance

SeaPort Manatee's system represents an innovative approach to access control because it moves beyond the traditional model of issuing and managing separate local credentials. Through a first-of-its-kind integration of the federally issued Transportation Worker Identification Credential (TWIC) into a unified access control and operational intelligence platform, the port leverages TWIC as the primary identity token rather than simply a compliance credential. This transformation converts a regulatory requirement into a comprehensive security and business operations tool, eliminating the inefficiencies associated with maintaining multiple badges, cards, and access systems while creating a single trusted source of identity verification. The result is a more secure, efficient, and accountable operating environment that strengthens both regulatory compliance and operational performance.

The innovation is further enhanced through the integration of biometric verification and continuous automated validation against the TSA TWIC Canceled Card List. Unlike conventional systems that often rely on periodic checks or static credential databases, SeaPort Manatee's solution continuously confirms both the validity of the credential and the identity of the individual presenting it. This creates a higher level of assurance that only authorized personnel gain access to secure areas, significantly reducing the risk of credential misuse, fraud, or unauthorized entry.

Another significant enhancement is the introduction of real-time escort tracking for non-TWIC personnel. Traditional escort programs often rely on manual logs or limited oversight, making it difficult to maintain accountability once an individual enters a facility. By digitally tracking escorts and maintaining a live record of responsibility, the system creates a transparent chain of custody for visitors, temporary workers, and other non-TWIC personnel. This strengthens compliance, improves situational awareness, and allows security personnel to respond quickly if questions arise regarding an individual's location or authorization.

These enhancements are highly relevant because modern ports must balance increasingly stringent security requirements with the need to maintain efficient cargo movement and operational productivity. The system demonstrates that enhanced security does not have to create bottlenecks. Instead, by automating identity verification, credential validation, enrollment, and tracking functions, the port improves both security and throughput simultaneously.

The system's analytical capabilities also extend the value of access control beyond security. Access events, traffic patterns, escort activity, and operational metrics are transformed into actionable intelligence that can support staffing decisions, resource allocation, infrastructure planning, and long-term strategic initiatives. This elevates access control from a standalone security function to a business intelligence tool that contributes directly to organizational performance.

Finally, the solution is relevant to the broader maritime industry because it offers a scalable and replicable model for other ports. By leveraging existing federal credentials and integrating them with access control, surveillance, and analytics platforms, SeaPort Manatee demonstrates how ports can improve security, reduce administrative costs, and enhance operational efficiency without creating redundant credentialing programs. This positions the initiative as a forward-looking model for future port security and operational management.

Collectively, these innovations demonstrate leadership, scalability, and the ability to address complex industry challenges with practical, forward-thinking solutions.

4. Results, Evidence & Impact

The most immediate and measurable security impact of the system has been its ability to support significant growth in gate activity without compromising security standards or operational performance. In 2022, SeaPort Manatee processed 451,200 gate transactions. By 2025, that volume had increased to more than 814,000 transactions, demonstrating the system's scalability and its ability to sustain substantially higher traffic levels while maintaining secure and efficient access control operations. At the same time, the average time required to enroll an individual into the access system was reduced from approximately six minutes in 2022, sometimes longer when financial transactions were involved, to under two minutes in 2025, including financial processing. This dramatic reduction in enrollment time has improved throughput, reduced administrative burden, and strengthened the port's ability to deliver both security and customer service.

The system has also generated a measurable return on investment by eliminating the need to design, produce, issue, replace, and manage locally issued access credentials for TWIC holders.

By leveraging the federally issued TWIC credential as the primary access credential, SeaPort Manatee avoids more than $200,000 annually in credentialing-related costs, including card production, credential administration, replacement expenses, enrollment processing, and associated labor. These cost savings are achieved while simultaneously enhancing overall security effectiveness through real-time credential validation, biometric identity verification, and continuous authentication against federal security databases.

In addition, the platform's integrated screening capabilities have significantly streamlined access control and security screening operations. Automated credential authentication, biometric verification, and electronic validation processes have reduced or eliminated many legacy manual screening procedures that traditionally required substantial personnel resources and administrative oversight. As a result, the port has increased screening efficiency, improved consistency in the application of security standards, reduced processing delays, and minimized the manpower required to facilitate regulatory-compliant screening operations. This combination of enhanced security, operational efficiency, and cost avoidance demonstrates the system's value not only as a security solution but also as a strategic investment that delivers measurable financial and operational benefits to SeaPort Manatee and its tenant partners.

Because SeaPort Manatee's Facility Security Plan provides centralized screening and access control services for all port tenant operators, the system has also enabled the port to perform personnel vetting and access authorization on behalf of terminal operators in a manner that satisfies the U.S. Coast Guard's rigorous Maritime Transportation Security Act (MTSA) access control and screening requirements. The use of real-time card authentication and biometric matching has significantly enhanced the effectiveness of the port's screening operations, providing a higher level of assurance that only properly credentialed and verified individuals are granted access to secure areas. These capabilities have expanded and enriched the port's screening program by enabling SeaPort Manatee to conduct compliant, consistent, and efficient screening services for multiple tenant operators through a single integrated platform.



Given the port's obligation to meet Coast Guard screening standards outlined in current MARSEC directives, conducting adequate screening in support of more than 814,000 gate transactions would be exceptionally challenging without this system. By centralizing these functions, the port ensures consistent application of security standards across all facilities while reducing duplicative efforts and enhancing overall compliance, accountability, and situational awareness. This coordinated approach allows tenant operators to focus on cargo handling and terminal operations while relying on the port's security infrastructure to provide robust access control and personnel screening services.

Beyond security operations, the data generated by the system has become a valuable planning and infrastructure resource. Statistical information collected through the port's access control and gate management systems, including vehicle counts, traffic volumes, processing times, and throughput trends has been utilized by the Florida Department of Transportation (FDOT) to support the justification and planning of roadway and transportation improvements serving the port. This demonstrates the system's value not only as a security platform but also as a source of actionable operational intelligence that supports regional transportation planning, infrastructure investment, and long-term economic development.

5. Integration, Adaptability & Scalability

SeaPort Manatee's Integrated TWIC-Based Access Control & Operational Intelligence System was designed to function as more than an access control solution. It serves as a unified operational platform that brings together identity management, credential validation, biometric verification, surveillance, enrollment, escort accountability, financial processing, and operational reporting into a single environment. By consolidating previously separate functions, the system provides security personnel, tenants, and port leadership with a common operating picture that improves situational awareness, accountability, and decision-making.

The platform combines commercially proven access control technologies with custom-developed software and secure database solutions tailored to the unique requirements of a multi-tenant maritime environment. Through the use of open system integration and custom application development, SeaPort Manatee transformed traditionally independent security and business processes into a coordinated ecosystem that supports both regulatory compliance and operational efficiency.

A key advantage of the system is its ability to seamlessly exchange information across multiple operational domains. Access events, credential validation, surveillance activity, escort management, enrollment records, financial transactions, and performance metrics are connected through a unified interface that simplifies workflows while improving data accuracy and visibility. This integration allows the port to continuously adapt operational processes without requiring significant changes to underlying infrastructure.

The platform was intentionally designed for long-term scalability. Secure databases, role-based access controls, encrypted communications, and controlled information sharing provide strong cybersecurity protection while supporting collaboration among port personnel, tenants, and regulatory stakeholders. As port activity grows and operational requirements evolve, new capabilities can be incorporated without disrupting existing operations.

This flexibility is already supporting the next phase of development. SeaPort Manatee is actively expanding the platform through the deployment of a private cellular network that will provide secure, high-speed connectivity throughout the port. This infrastructure will extend operational intelligence directly into the field, enabling security personnel to receive escort assignments, accountability alerts, access control notifications, and operational updates on mobile devices in real time.

The enhanced communications environment will transform escort management from a centrally monitored process into a fully connected field operation. Escort status updates, custody transfers, identity verification activities, and compliance actions will be recorded as events occur, providing supervisors with real-time visibility while improving accountability, response times, and resource utilization.

Beyond escort management, the communications infrastructure establishes the foundation for future capabilities including mobile credential validation, field-based inspections, incident reporting, location-aware dispatching, live video sharing, workforce accountability, automated alerts, and expanded operational analytics. Because the platform is built on a modular architecture, these capabilities can be integrated without requiring major system redesign.

By combining proven commercial technologies with custom integration and a forward-looking architecture, SeaPort Manatee has created a scalable operational intelligence platform capable of supporting future growth, evolving security requirements, and emerging technologies. The result is not simply an access control system, but a foundation for next-generation smart port operations.

6. Stakeholder Engagement & Collaboration

Stakeholder engagement was a cornerstone of the project's success. Internal collaboration between security, IT, and operations ensured seamless implementation and alignment with port objectives. From project conception through deployment and ongoing refinement, cross-functional teams worked together to balance security requirements with operational efficiency, ensuring that the system enhanced both compliance and customer service.

External partners, including tenants, trucking companies, labor providers, and federal agencies, were actively engaged through training, communication initiatives, workflow development, and operational testing. Because SeaPort Manatee serves a diverse tenant community with varying operational requirements, significant effort was dedicated to understanding each tenant's business processes and integrating those needs into the system design.

A key component of this collaboration involved collaborating closely with tenant operators to provide the most effective access control, security screening, and TWIC escort support possible. The system was specifically designed to enhance tenant visibility into personnel movements while allowing port security personnel to provide centralized oversight and assistance. Through real-time notifications, escort accountability tools, and live status monitoring, tenants gained greater situational awareness of personnel supporting their operations while maintaining compliance with security requirements. This collaborative approach strengthened security while reducing administrative burdens on tenant operators and improving overall operational efficiency.

SeaPort Manatee also worked closely with the U.S. Coast Guard Captain of the Port and Coast Guard inspection personnel throughout the development and implementation process. Regular coordination ensured that system capabilities, escort procedures, screening protocols, and operational workflows remained aligned with Maritime Transportation Security Act (MTSA)

requirements and the port's approved Facility Security Plan. This partnership helped ensure that technological innovation was implemented in a manner that enhanced security effectiveness while maintaining full regulatory compliance.

The project further fostered collaboration among port users by establishing standardized procedures for credential validation, temporary worker management, visitor processing, and non-TWIC escort accountability. These shared processes improved consistency across facilities, strengthened communication among stakeholders, and created a more unified security environment throughout the port.

This collaborative approach fostered trust, facilitated adoption, strengthened relationships across the port community, and demonstrated how effective partnerships between port authorities, tenants, industry stakeholders, and federal regulators can produce sustainable, high-impact outcomes that benefit both security and commerce.

7. Conclusion

SeaPort Manatee's Integrated TWIC-Based Access Control & Operational Intelligence System demonstrates how a federally issued security credential can be transformed into the foundation of a comprehensive, data-driven operational platform. By leveraging TWIC as a trusted identity credential and integrating it with biometric verification, real-time credential validation, surveillance systems, escort management, financial processing, and advanced analytics, the port has created a unified solution that simultaneously strengthens security, improves accountability, and enhances operational efficiency.

SeaPort Manatee's system has supported significant growth in gate activity while reducing processing times, increasing throughput, maintaining strict security standards, and ensuring regulatory compliance across a multi-tenant environment. Beyond access control, it provides actionable operational intelligence for resource planning, infrastructure development, tenant coordination, and strategic decision-making. Designed for scalability, its modular architecture and integration capabilities enable seamless adoption of emerging technologies and evolving security requirements without disrupting operations.



By combining innovation, measurable results, operational excellence, stakeholder collaboration, and long-term vision, SeaPort Manatee has established a model that extends well beyond traditional access control. The initiative demonstrates how ports can leverage existing federal security infrastructure to create smarter, more efficient, and more resilient maritime operations. As a result, it stands as a compelling example of excellence in both security practices and technology solutions, and a model that can be replicated throughout the maritime industry.