Stadium RFID Access:
Balancing Secure Screening
with Key Stakeholder Satisfaction
Who We Are

• **Toledo Ticket**: Efficient, flexible ticketing solutions to keep businesses running smoothly & securely, since 1910

• **TransCore®**: RFID transportation solutions – pioneered much of AVI systems; over the past 75 years, TransCore tags & readers used in airports, colleges, universities, medical centers, gated communities, parking garages all over the world

• **Cypress Integration Solutions**: Unique & reliable security & access control solutions trusted worldwide, since 1983
Recent events have made it clear that stadia must be increasingly vigilant to prevent tragedies.

Stadia risk losing key customers to a comfortable game-day at home, instead of long waits at stadium entrances.

RFID has traditionally been used in security, tracking and revenue remittance; today we will discuss a smart, flexible RFID solution: the Cypress Stadium Access Bollards.
RFID Fundamentals

• RFID: Radio Frequency Identification

• Invented in 1948, development increased in 1970s, with widespread use by 1990s; leading-edge applications today

• Focusing on passive RFID with tags that require no battery / internal power source
Passive RFID: The Parts

• RFID reader

• RFID credential tag (contains tiny antenna + microchip with serial number / ID information)
Passive RFID: The Process

• RFID reader broadcasts radio waves; tag absorbs power from waves

• Tag microchip alters waves, reflects back to reader (backscatter)

• Reader captures tag chip info, shares with access controller

• When tag is in proximity of the reader, no contact is required; RFID frequency (Low, High, Ultra High) affects proximity distance
RFID Frequencies

- **Low Frequency (LF)**: Operates in the 30–300 kHz range with short read range/slower speeds. Security access control example: 125 kHz prox cards & tags

- **High Frequency (HF)**: Operates in the 300 kHz–300 MHz range with medium read range/higher speeds/more data. Security access control example: MIFARE 13.56 MHz

- **Ultra High Frequency (UHF)**: Operates in the 300 MHz–3 GHz range with longest read range/fastest speed. Reputable UHF readers can read multiple tags at once without interference. TransCore’s SeGo protocol is a highly respected example of ultra high-frequency RFID; used in the Cypress Stadium Access Bollards
Why Cypress selected TransCore’s RFID for Stadium Access Bollards

- In 2016 alone, TransCore designed, developed & shipped 87.9 million RFID tags / 95,700 readers for securing access in tolling facilities, airports, hospitals, parking garages, border patrols, trucking fleets, & the rail industry

- SeGo protocol is proven & reliable: Uses same backscatter technology as American Trucking Association (ATA) with added advantages
TransCore® SeGo Protocol Advantages

• Reader can be configured so when multiple tags are present, only tags of interest respond

• Quicker tag-reader transaction and more accurate reads at a given speed, due to higher data rate than ATA

• Better security due to SeGo protocol’s proprietary encryption algorithms
TransCore® SeGo Protocol Advantages

Why SeGo is used in many high-speed tolling, rail, parking, access, & fleet applications:

• Anti-cloning capabilities via Tag Authentication at high speed operations

• Multiple pages can be customized for the specific application
TransCore® SeGo Protocol Advantages

Why SeGo is used in many high-speed tolling, rail, parking, access, & fleet applications:

• Robust against RF interference

• Capability for easily determining tag ownership

• Robust tag packaging: Qualified & proven to support varying environments
TransCore® SeGo Protocol Advantages

Why SeGo is used in many high-speed tolling, rail, parking, access, & fleet applications:

• No tag duplication due to highly integrated automated tag production

• Secure programming capabilities / secure write transactions

• High performance read-only & read/write transactions
CYPRESS
Stadium Access Bollard System
**Key Stakeholder Satisfaction**

“I will be monitoring this throughout the season. I split season tickets with a group of people. I go to 20 or so regular season games a year, plus about 75% of the home playoff games. If it’s terrible through the entire season, I’ll probably drop out. I can only imagine how bad week night games are going to be when everyone is rushing to get there after work.”

–Season ticket holder’s Facebook post after waiting in a long security line to enter a stadium. The stadium received substantial negative press over the slow lines.
Cypress Stadium Access Bollards

Summary:

• **High speed & security**: Embedded TransCore® ultra high-frequency SeGo RFID protocol

• **Convenience & satisfaction**: User-friendly access control using Toledo Ticket badges

• **Flexibility**: Cypress bollard system with self-contained power can be moved wherever needed
Stadium Custom Solutions

• Access bollards are just one example of stadium security solutions

• Contact Cypress for custom solutions: 30+ years expertise in creating custom solutions in place around the world

• Share your issues and concerns with us in the planning stages; we engineer RFID solutions to address access control needs specific to your stadium, and save time, money, and bring projects to life
Stadium Access RFID

Stop by and see us in Toledo Ticket Booths 327 & 329
Stadium Access RFID

Contact us:

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