THE ROLE OF TECHNOLOGY IN PHYSICAL SECURITY

Port Fourchon

(Louisiana)

The Gulf's Energy Connection

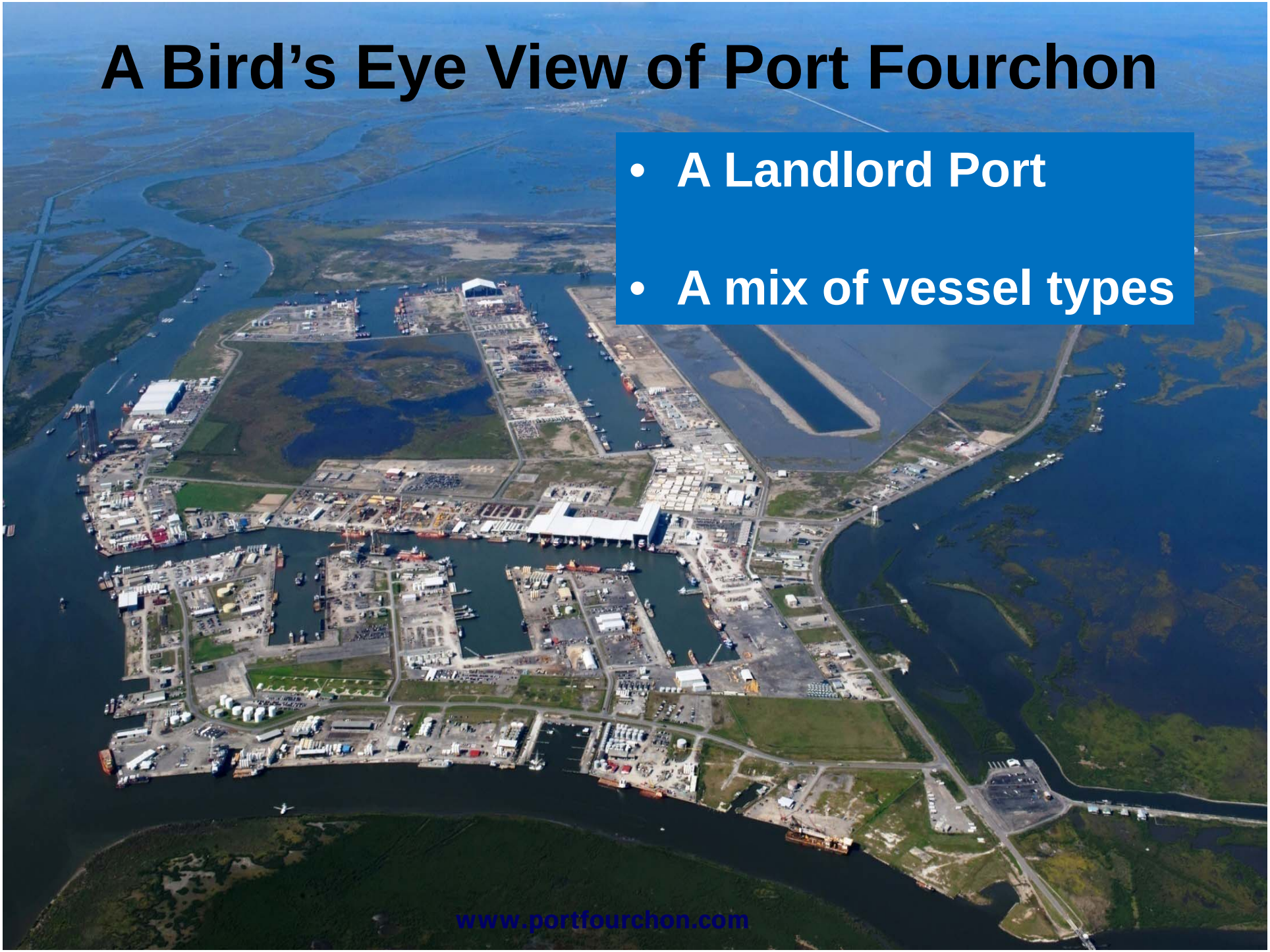
Presented by

April Danos

Director of IT

BACKGROUND AND ROLE OF OUR PORT

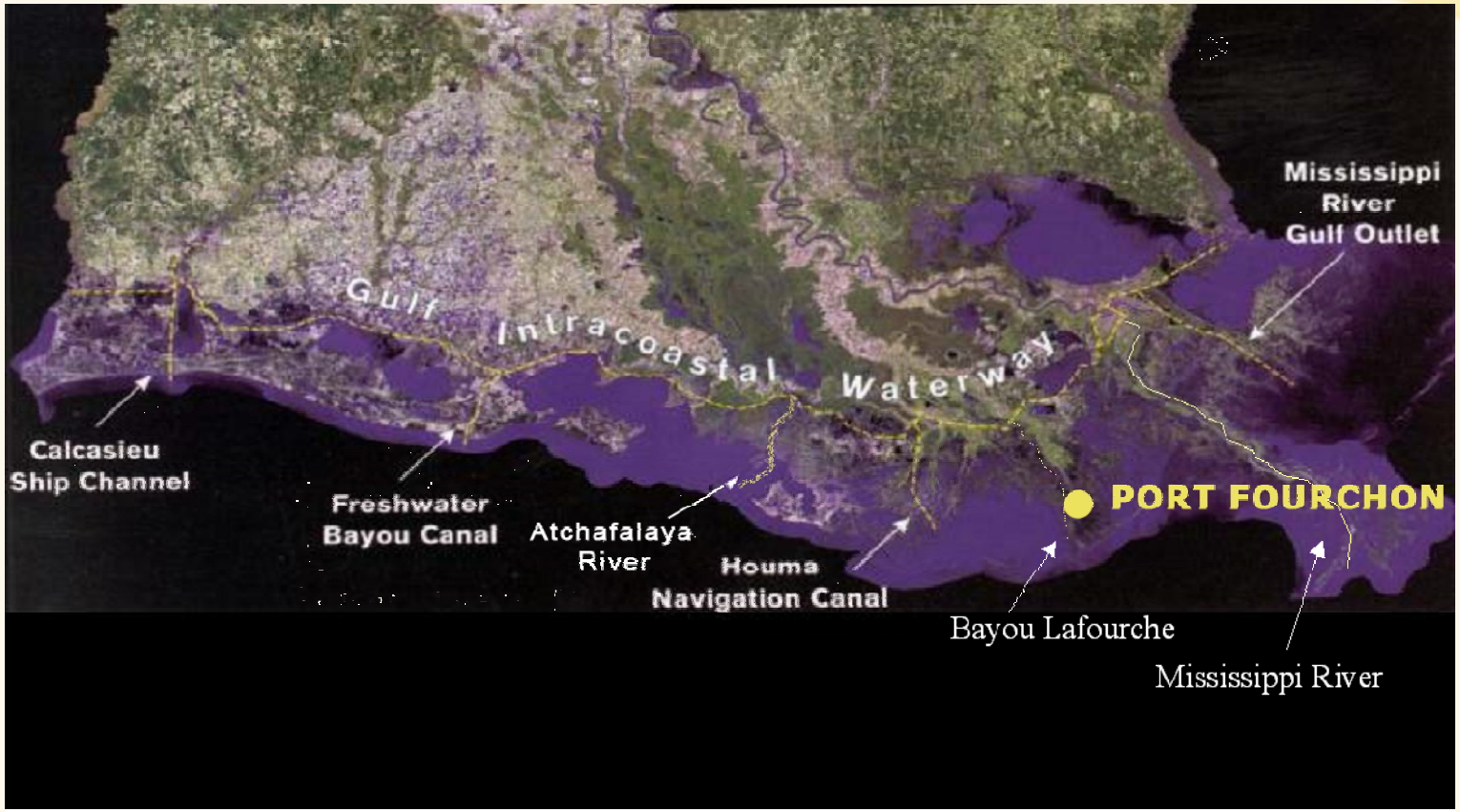
A Bird's Eye View of Port Fourchon



- A Landlord Port
- A mix of vessel types

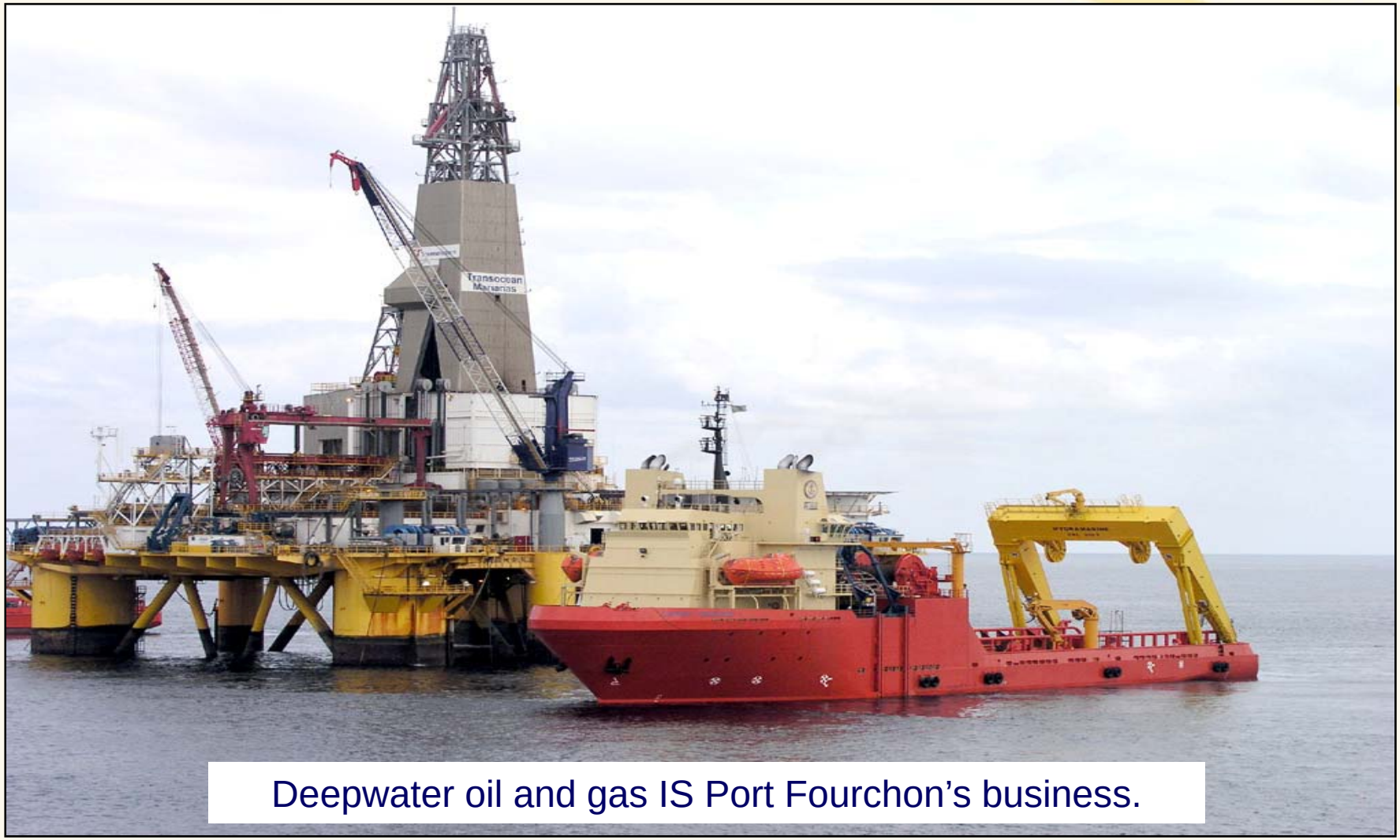
www.portfourchon.com

Location:
Louisiana's Southernmost Port



- **Easy access from to the Gulf of Mexico.**
- **Approximately 60 miles Southeast of New Orleans.**

Supporting Deep Water Oil & Gas Drilling

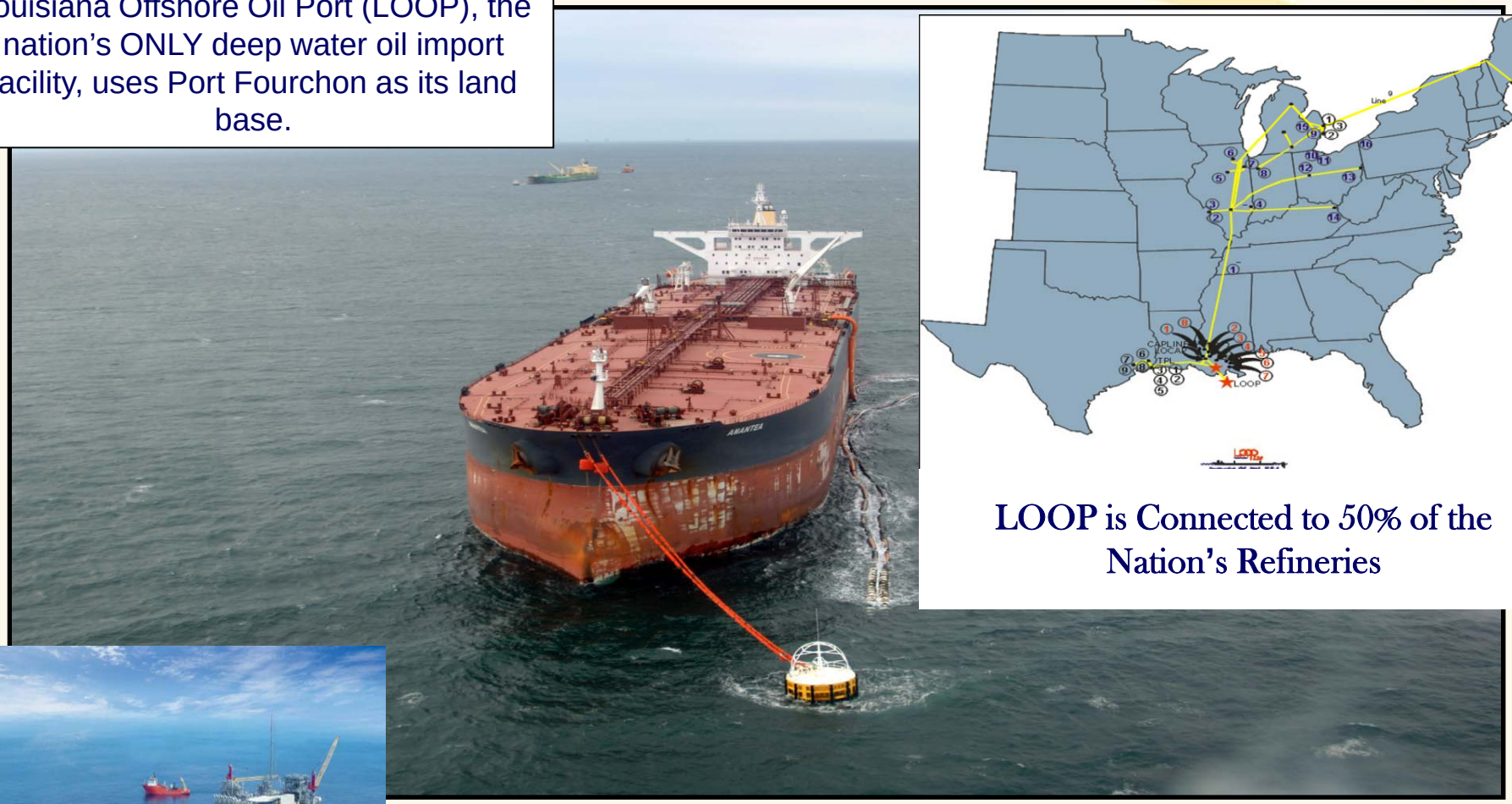


Deepwater oil and gas IS Port Fourchon's business.

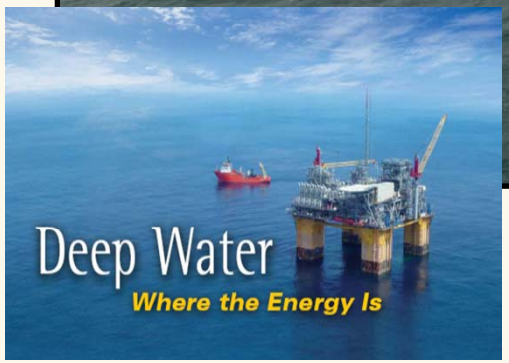
www.portfourchon.com

Supporting an ***Offshore*** Oil Port

Louisiana Offshore Oil Port (LOOP), the nation's ONLY deep water oil import facility, uses Port Fourchon as its land base.



LOOP is Connected to 50% of the Nation's Refineries



In total, Port Fourchon plays a strategic role in furnishing this country with about 18% of its entire oil supply.

Supporting Commercial Fishing

Commercial fishing vessels docked in Port Fourchon.

Cooperation with our Sister Site: South Lafourche Airport

- 6,500 ft. runway with a 75,000 lb. wheel load capacity capable of handling 20-passenger business jets

- 1,200 surrounding acres slated for industrial park development

- Full parallel taxiway

- Usage of airport facilities including private recreational aircraft, search and rescue, crew transportation, flight instruction, fish spotting, and oilfield support service

- Fixed Base Operator Terminal, Hangar, and Apron

- Navigational Aids including:
  - -Approach Lighting System
  - -Localizer/DME
  - -AWOS Class III
  - -Ground Communications Outlet
  - -Precision Approach Path Indicators (PAPI)
  - -Runway End Identifier Lights (REIL)
  - -GPS approaches to both runways with LPV minimums

The port acquired this airport in 2001, adding another dimension to industry services.

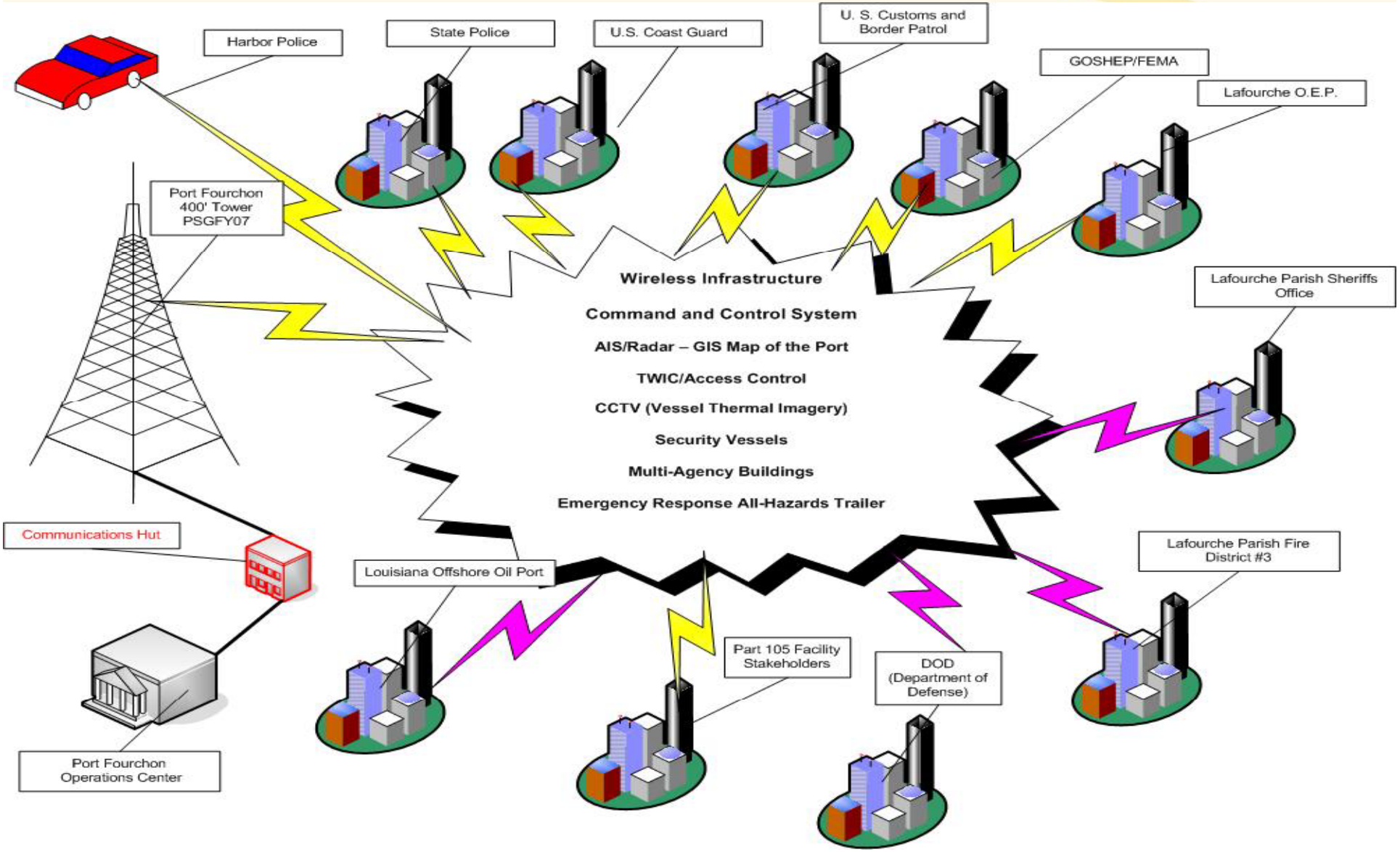
www.portfourchon.com

Bringing Security, Emergency Response and Operations into one Common Operating Picture for Greater Situational Awareness and Interoperability with Local, State and Federal Agencies.

Business Continuity

- Risk Mitigation Plan
- Emergency Response
- National Priorities

Port's Vision



Maritime Domain Awareness

- Secure Port Fourchon/LOOP Port-Wide Area
- Some of the Key Areas for MDA
    - Airport
    - Floodgates
    - Elevated LA Hwy 1
    - LOOP

Some Challenges We Needed to Address Across the Region

- Disparate Data Systems

- Lack of a Common Operating Picture among all offices, departments and local, state and federal agencies for real-time Situational Awareness

- Port Operations: lack of visibility across the Port

Where Was the Need for Better Cooperation & Information Sharing for our Port?

Allow local, state and federal agencies to collaborate effectively and become more proactive instead of reactive

- Port Fourchon
- LOOP
- Galliano Office
- Port Operations
- Multi-Agency Dispatchers
- Fire Central
- Floodgates
- Airport

Internal Customers

- Harbor Police
- Accounting
- Administrative
- Maintenance
- Dispatchers
- Human Resources
- Operations
- Floodgates
- Airport
- DOTD
- Tenants
- LPSO
- LPG-EOC
- Customs
- Coast Guard

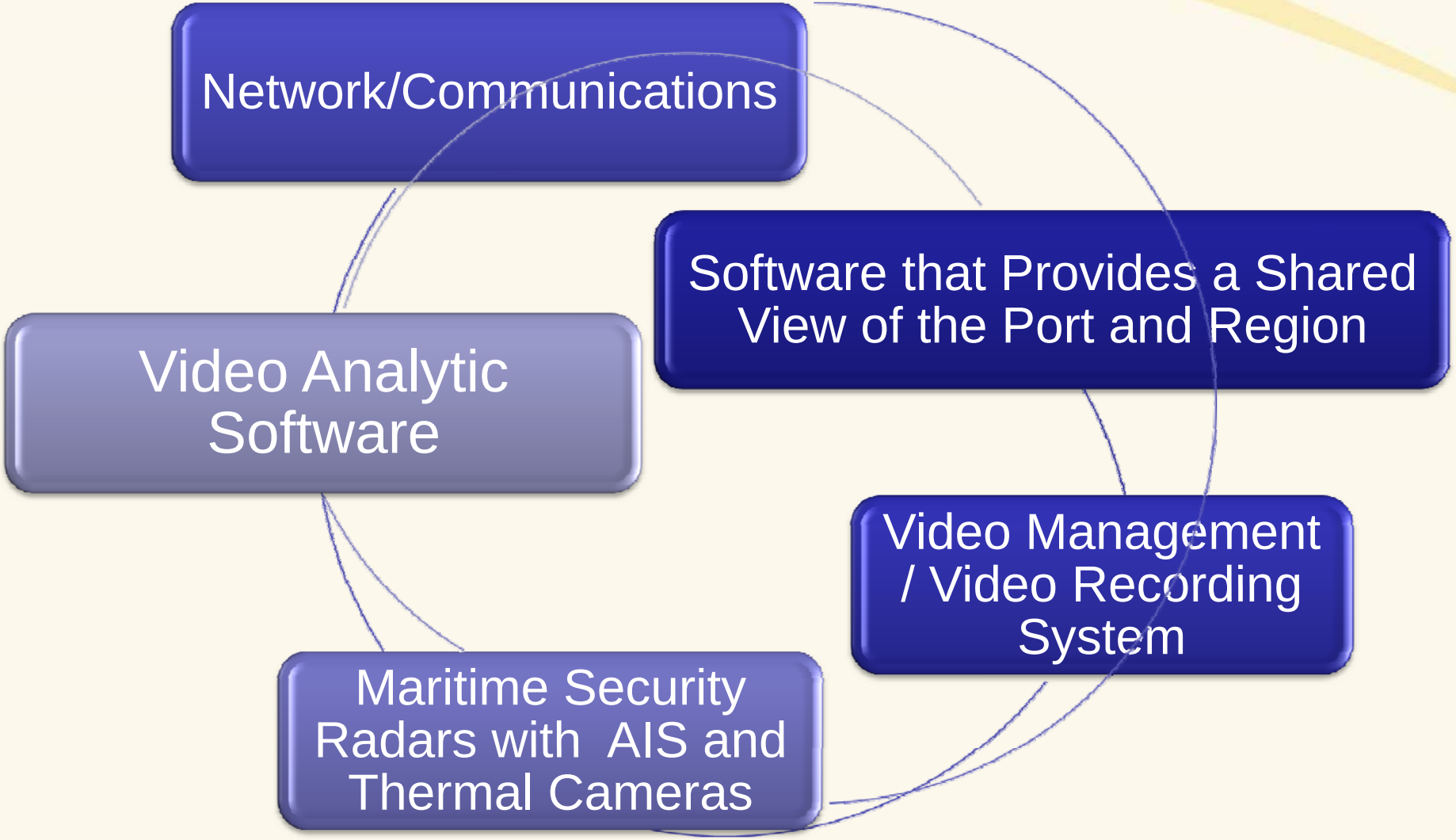
Security and Public Safety for the Port Fourchon/LOOP Port-Wide Area

Harbor Police:
Patrols by Vehicle…

… and by Vessel

Security Initiatives & Strategies

Some of the Main Projects



Some of the Key Parties

Company	Capability
GLPC	The Customer
DMT	Radars, AIS, Blue force / gray force tracking
AIC	Wrote RFP for video analytics; prime contractor for radar project
PRIORITY 5	Software for providing a shared view of the port & region
BRS	Video analytics
CGI Protects	Video analytics implementation
TSA LLC	Harbor Intrusion Detection System Design & Oversight
MILESTONE	Video management system
PRIME CONTROLS	Installation of software and cameras for video analytics project
CONVERGINT	Installation of video management system

What is GLPC-C4?

Our Lingo

- GLPC =
  - Greater Lafourche Port Commission
- “C4” =
  - from Military Lingo, with a slight modification:
    - Command
    - Control
    - Communications
    - Computers / Collaboration

Goals of C4

- Improve communications between the Port Commission and its tenants and regional first responders.

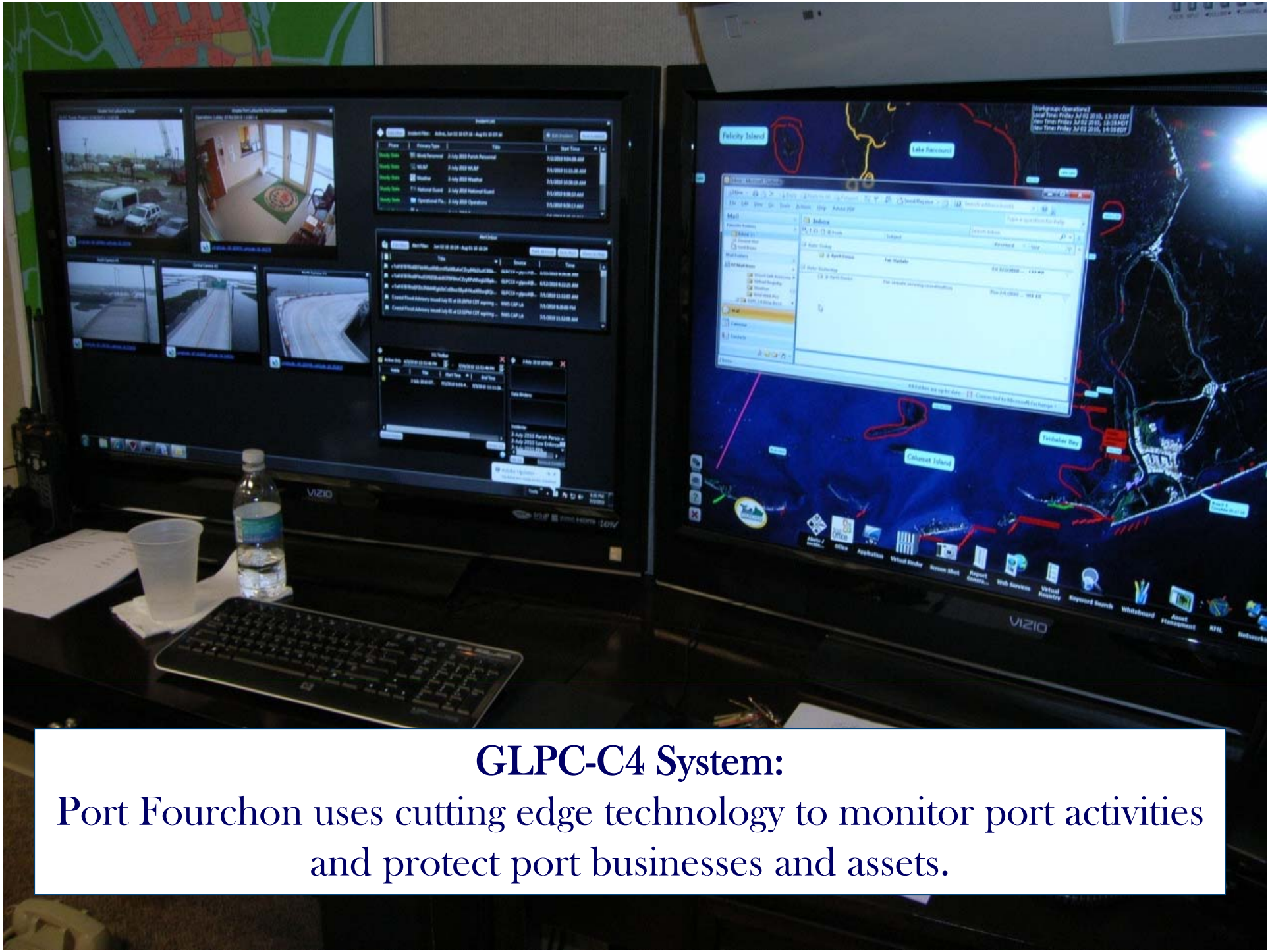
- Leverage existing investments in technology, where applicable and upgrade where necessary

- Utilized as an everyday system

- Provide the Port Commission and its partners with an application to support common situational awareness.

Communicating Outside of Our Region

- CIKR Conference in San Antonio, Texas
- DOD – Department of Defense
- FEMA – Federal Emergency Managment



GLPC-C4 System:

Port Fourchon uses cutting edge technology to monitor port activities and protect port businesses and assets.

Current GLPC-C4 Partners

Why You Should Care About this Case Study?

Some of the Benefits We Hope You Will Take Away

- Understand how we leveraged PSG Funding
- See how port security technologies not only for P.S. but for day to day operations
- See how IT and Harbor Police/Security Departments can work together for the betterment of Port Security
- Working together with our parish, local, network and integrate systems, because Port Fourchon - DOD Kdas , FEMA
- Opportunity to showcase, what a strategic role IT can play, shows the *business* role of IT and its customer base
- Business Case

More Reasons to Take Good Notes

- Set foundation for Interoperability – radios and data too
- Basis for rethinking from a Port Operations perspective
- Lower cost compared to traditional port security projects
- Landowner perspective for showcasing Port Fourchon and its available lease space as well as services, etc.
- Introduce user-friendly interface to sophisticated security systems
- BP Oil Spill
  - Concerns, wildlife - give guidance on where to deploy oil booming
- Introduce What-if Scenario Planning into the business

Cool Factoids

- It was deployed one month before the BP Oil Spill and was user friendly enough to utilize in the EOC for day to day operations, situational awareness and response.
- It is currently operating and used on day to day basis.
- FULL-TIME I.T. PERSONNEL at the port:
  - Just 2!

Some Important Themes

- Important to have good relationships with Vendors/Contractors
- Important that vendors realize you are *relying* on their technologies
- Vendor's Support *Attitude and Actions* play a critical role
- Integrator Support

What are the BUSINESS BENEFITS derived from the GLPC-C4 System?

Benefits to the Business

- Day to Day Operations
- Marketing
- Projects
- Economic Impacts

Using Behavioral Recognition to Improve Safety and Security

Anticipating vs. Reacting to Potential Threats

Ray Cavanagh
CGI Protects

Port Security Challenges

- Large numbers of big, disparate areas that require protection
- Challenging to monitor using “feet on the street” or staff watching monitors
- Too much territory, too many cameras, too much footage for real-time situational awareness and response

Behavioral Recognition vs. Rules Based Software

- Real-time identification of suspicious behavior
- Teaches itself what's relevant within every camera's field of view – no need for predefined classifications
- Recognizes both predictable and unpredictable threats in real-time
- Open systems approach leverages existing cameras and networks

Behavioral Analytics Benefits

- Real Time Alert Distribution
- Actionable Intelligence (Security, Operations, and Safety)
  - Busy/Robust Areas
  - Powerful Recognition, Behavioral, Distinction (Abnormal vs. Normal)
- Better Utilization of Personnel (Monitoring and First Response)
- Risk Reduction
  - Accidents , Intrusion, Operations Areas, Parking Lots, Entries /Exits
  - Highly Protected Areas

Advantages over Rules Based Analytics

- Machine Learning has proven Scalability and Manageability
- Rules are camera/position based – complex and Difficult to Manage
- Behavioral Based Distinction/Internal Intelligence is Superior
- Whole Field of View Enables Complex Wide Views & Busy Scenes
- Unlimited Recognition Capability
- Technical Cost of Ownership is Lower

Data-Driven Situational Awareness

Sensors such as cameras deliver key objective information that improves:

- Situation Management
- Incident Response
- Forensics
- Reporting

Enhanced Situational Awareness

Uses Data to Learn/Improve over Time

- Turns motions/behaviors of objects into data that a computer can understand
- Builds bodies of evidence to deliver only highest quality alerts
- Helps human operators rapidly determine the appropriate response
- Few if any false alarms

Behavioral Recognition…

Transforms Safety & Security

- Scales without limits and monitors hundreds or thousands of camera feeds
- The only realistic solution for detecting suspicious behavior across large, complex and/or multi-site deployments

Adds Value to Existing Assets

- Works with any open systems cameras and infrastructure – no need for new investment in video walls, PSIM or VSM
- Makes existing cameras and infrastructure smarter and “teaches” them how to work together
- Increases productivity and improves alert responsiveness

Recap

- ***Reason-based*** system reduces installation time by over 90%
- Scales to thousands of cameras
- Matches alert volume to resources
- Robust vision & tracking handles the most complex scenes
- Ideal for complex, busy environments
- No rules, zones, masks or complex custom programming

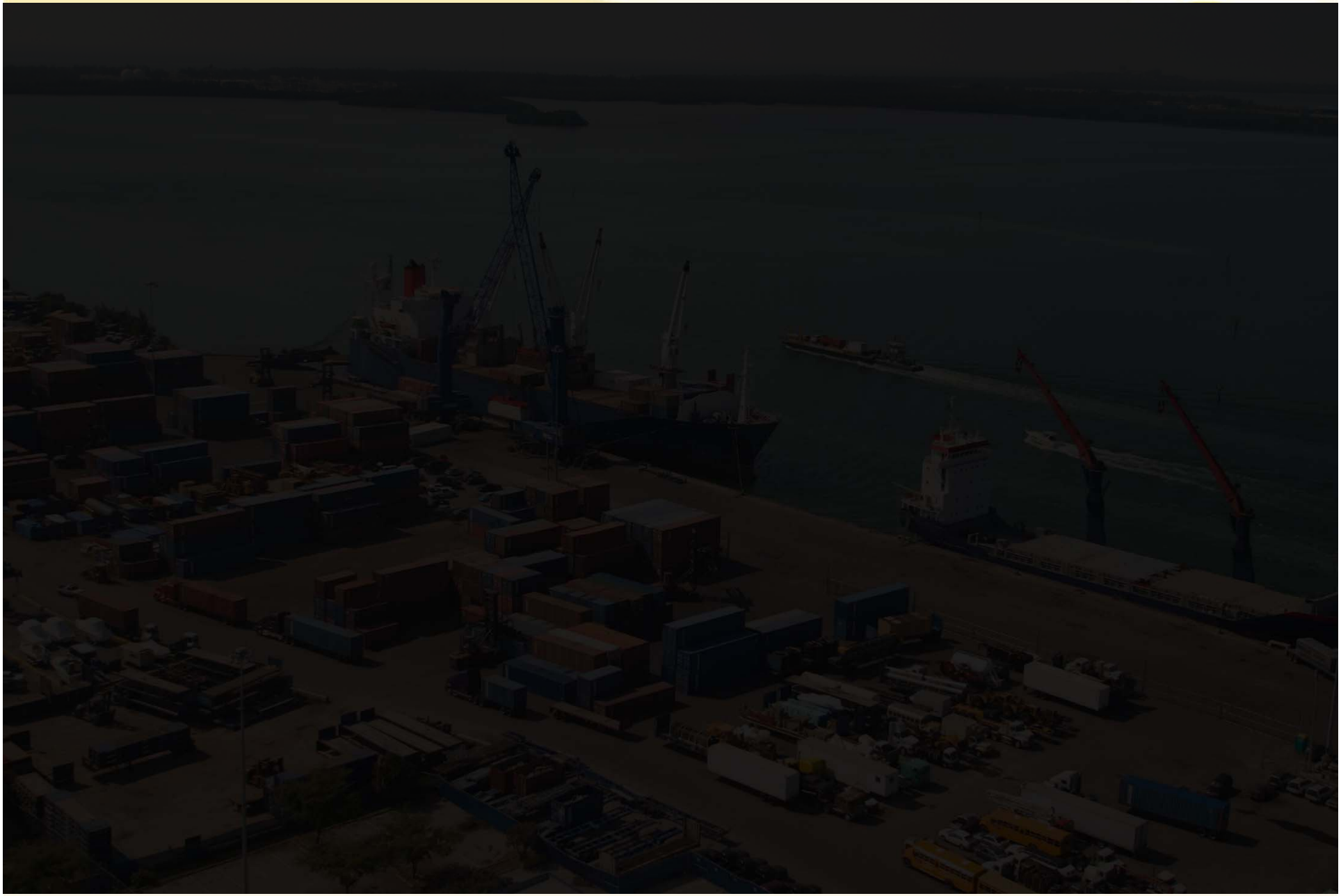
Conclusion

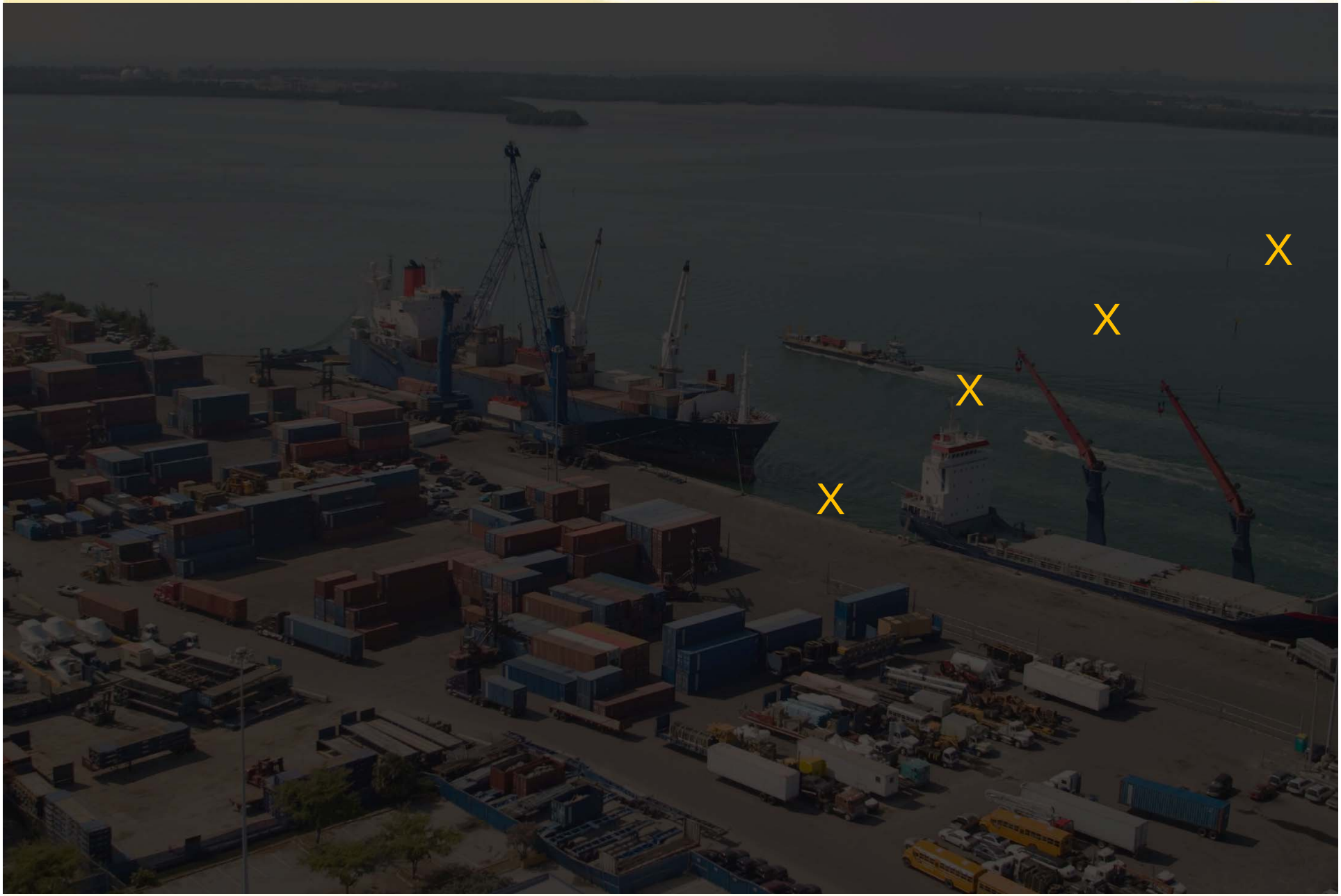
Behavioral Recognition…

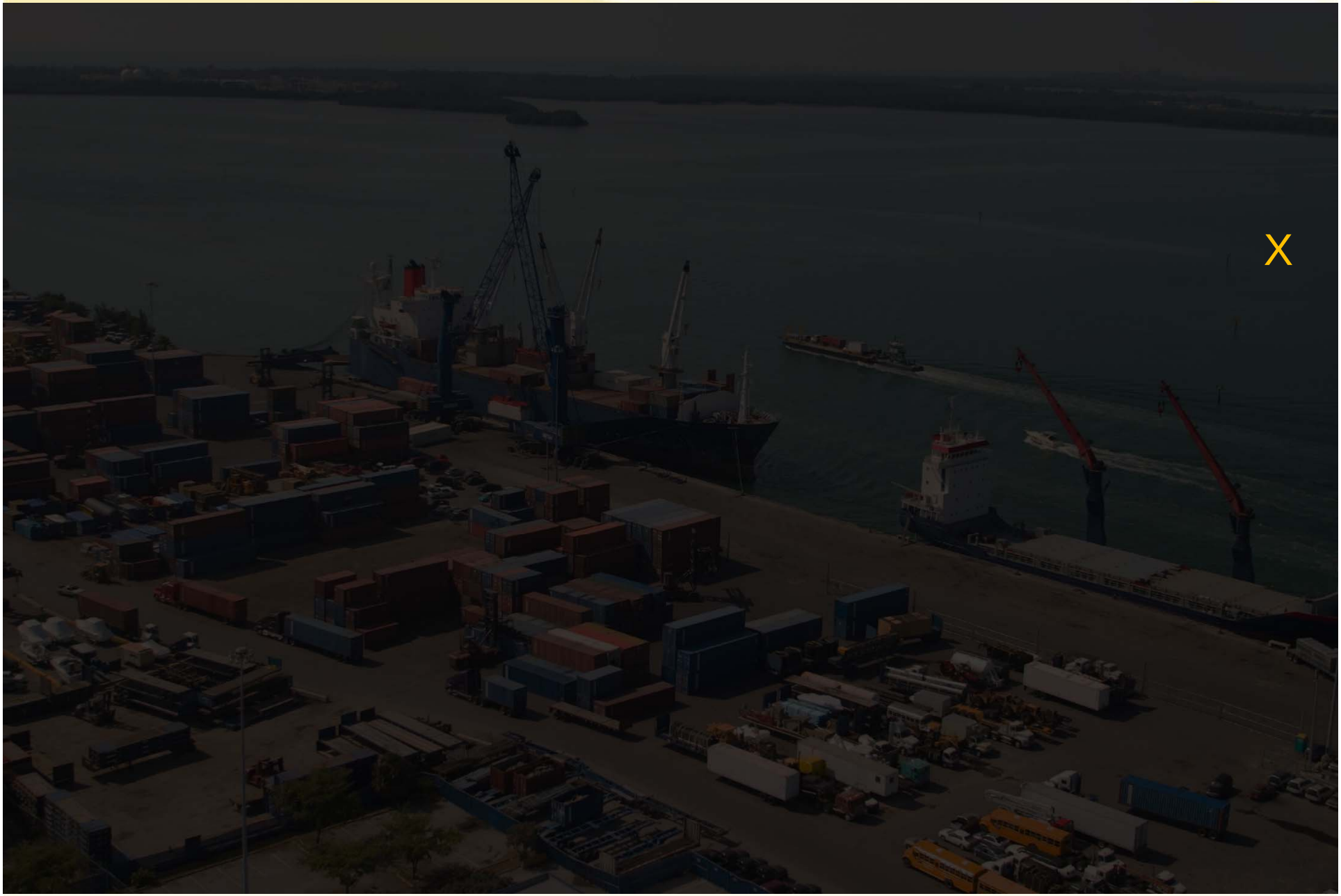
- Improves situational awareness, accelerates threat recognition and reduces false alarms
- Delivers real-time alerts
- Uses existing infrastructure to minimize expense
- Simplifies expansion and reduces sensor issues
- Saves time by automating complex tasks
- Frees staff for improved response

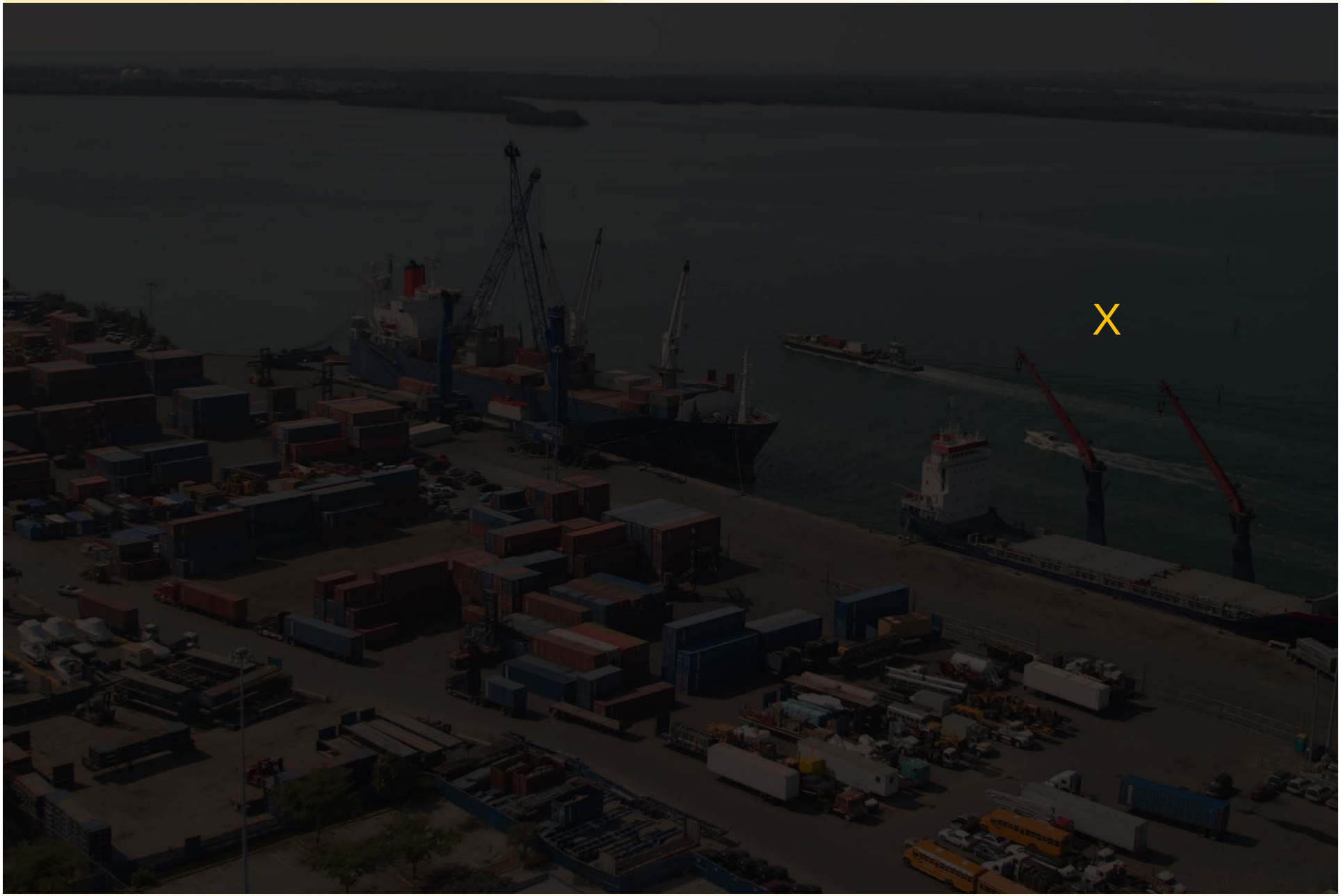
Radars, Cameras, and Other Related Security Equipment

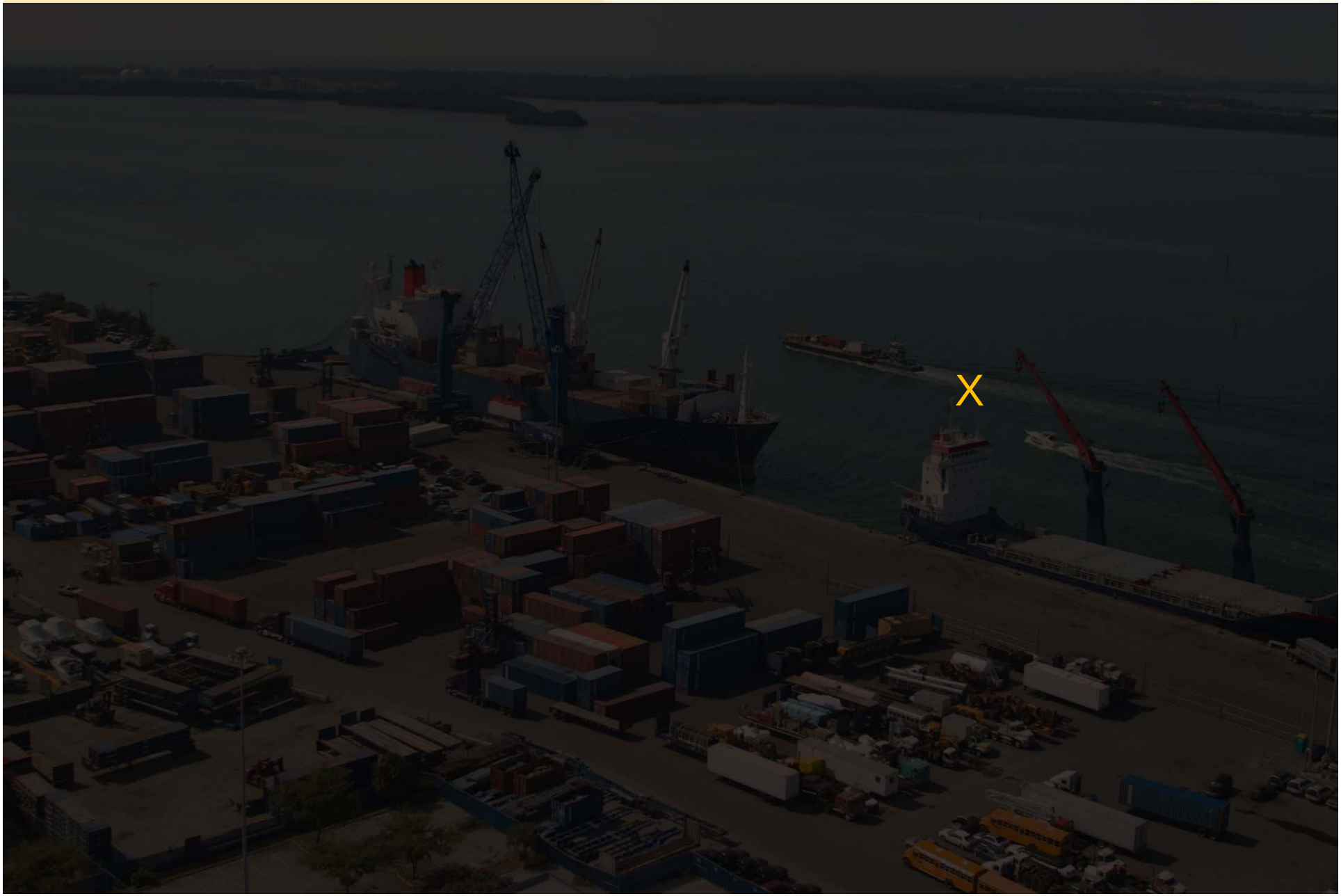
Glenn Dunoff
Wide Area Security Corp.
U.S. Marketing Representatives for DMT Radars

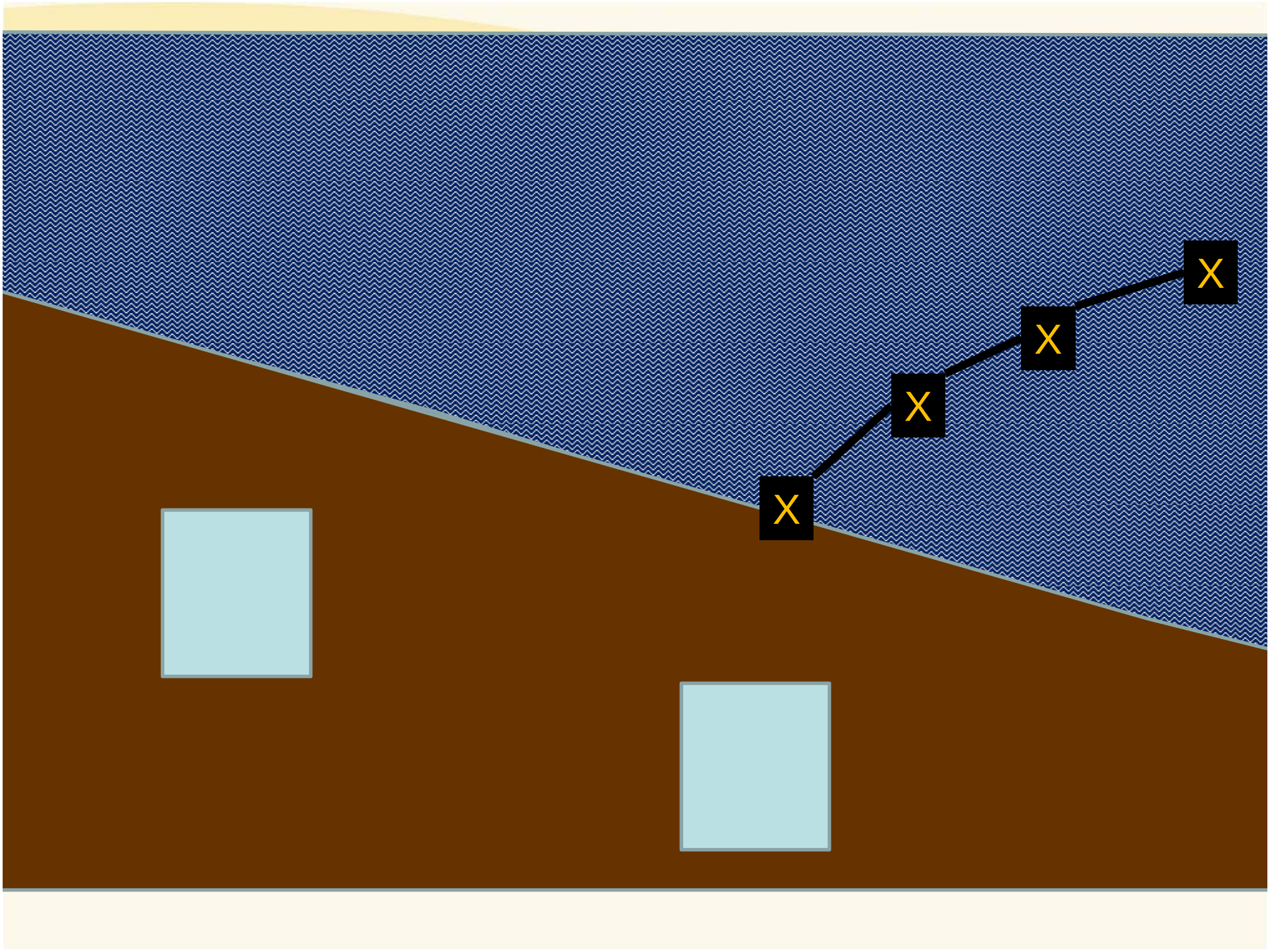



X
X
X
X


X


X




X
X
X
X

Challenges of traditional approaches to securing large, wide areas

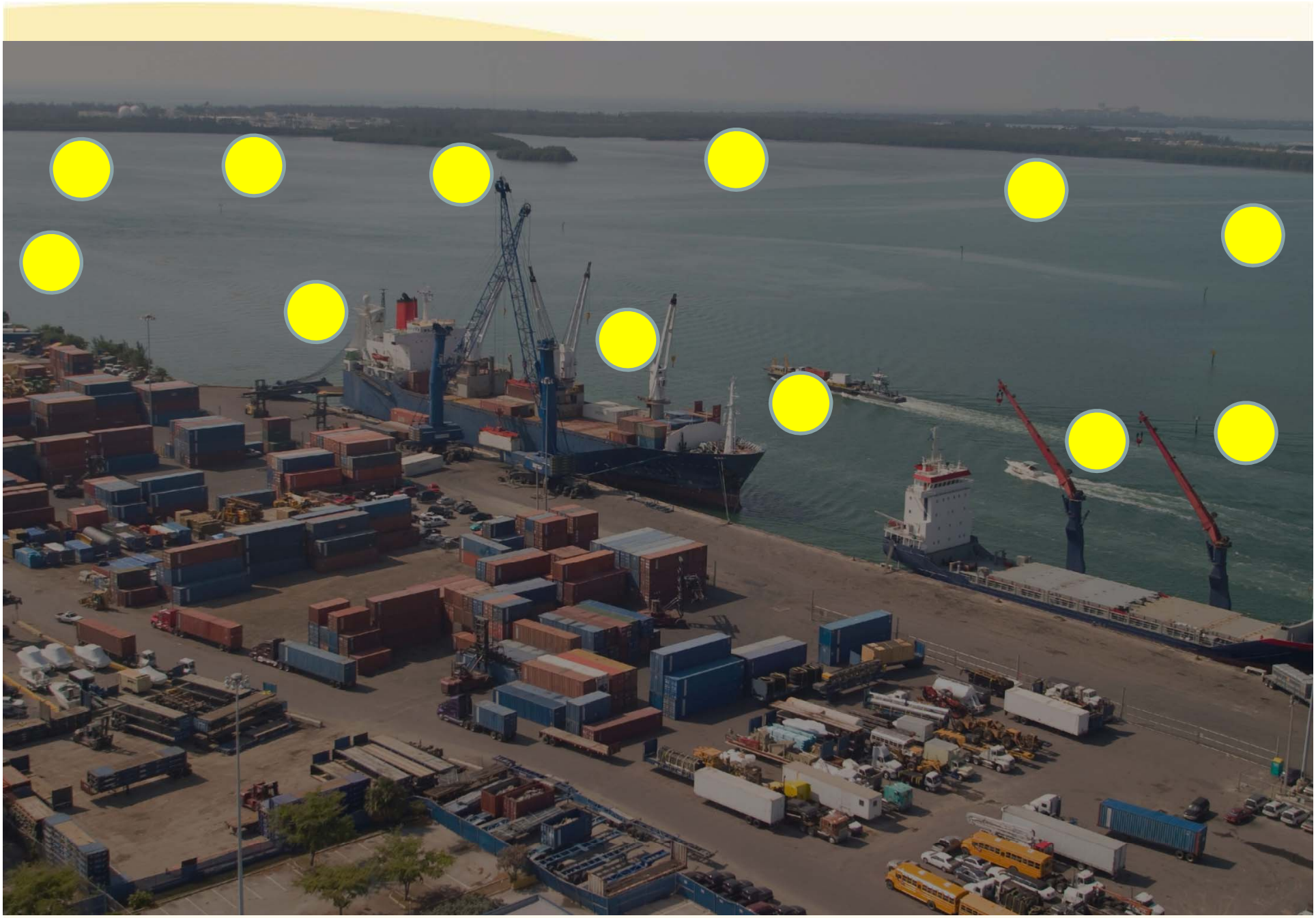
FOURCHON

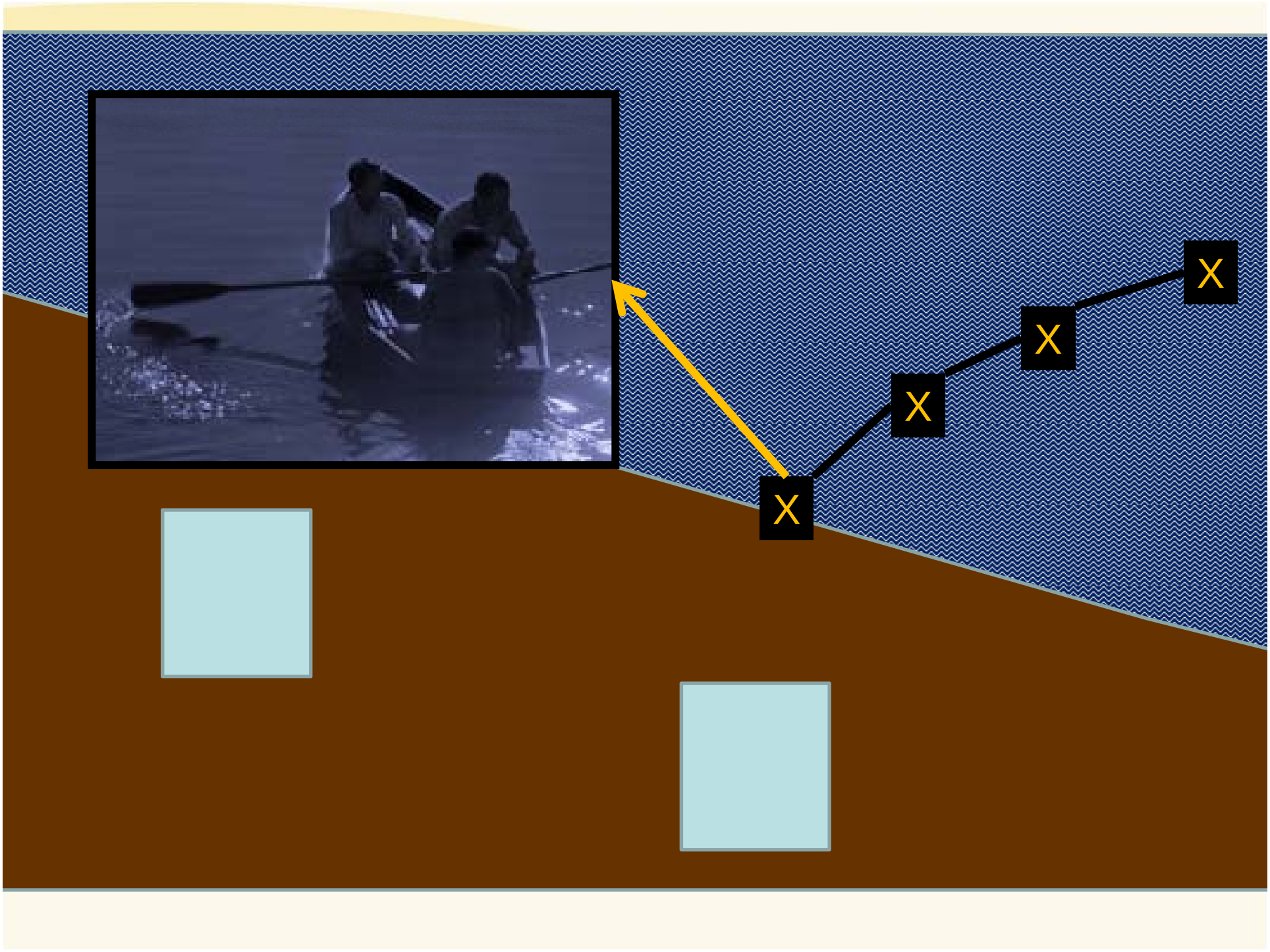

ENTRANCE-2-1902
ENTRANCE-1-1901
EXIT-3-1905
EXIT-4-1904
EXIT-3-1903
OFFICE-PL-1941
DUST-SERV-1951
POP-1-1917
POP-2-1918
STAIR-NE-1950
ELEVATOR-3-1931
ELEVATOR-2-1932
ELEVATOR-4-1934
ELEVATOR-5-1935
PANO-ENT-1955
20:42:44 12/15/2004


ENTRANCE-2-1902
ENTRANCE-1-1901
EXIT-3-1905
EXIT-4-1904
EXIT-3-1903
OFFICE-PL-1941
DUST-SERV-1951
POP-1-1917
POP-2-1918
STAIR-NE-1950
ELEVATOR-3-1931
ELEVATOR-2-1932
ELEVATOR-4-1934
ELEVATOR-5-1935
PANO-ENT-1955
20:42:44 12/15/2004


ENTRANCE-2-1902
ENTRANCE-1-1901
EXIT-3-1905
EXIT-4-1904
EXIT-3-1903
OFFICE-PL-1941
DUST-SERV-1951
POP-1-1917
POP-2-1918
STAIR-NE-1950
ELEVATOR-3-1931
ELEVATOR-2-1932
ELEVATOR-4-1934
ELEVATOR-5-1935
PANO-ENT-1955
20:42:44 12/15/2004


ENTRANCE-2-1302
ENTRANCE-1-1301
EXIT-5-1305
EXIT-4-1304
EXIT-3-1303
OFFICE-PL-1941
DUST-SERV-1951
POF-1-1917
POF-2-1918
STAIR-NE-1930
ELEVATOR-3-1933
ELEVATOR-4-1934
ELEVATOR-5-1935
RAND-ENT-1951
20:42:44 12/15/2004




X
X
X
X

Real World Example:

What are some of the security technologies the Port put in place as part of the radar initiative?

Why Did the Port choose a DMT Pulse Doppler Radar for Looking Out Over Water for Small and Large Vessels …

Photo courtesy of

DMT
Security Radar Solutions

why “x-band”

Radars operate on various frequencies

For seeing through dense fog and rain,
The radar’s frequency matters

why “pulse doppler radar”

Maintenance Hassles & Downtime

Avoids a major mistake ports are making: Shipboard radars for security

Possible to have very low maintenance or zero maintenance radar

why “pulse doppler radar”

Ability to Distinguish Speeds

Tremendous ability to distinguish *speeds*
of many objects in the direction it’s “looking”

Why Important for Security?

why “pulse doppler radar”

Non-Moving Objects

1. **In these kinds of applications, non-moving object like a pier is usually a distraction**

why “pulse doppler radar”

Quickly Tracking a Small Vessel

2. You want a high likelihood of detecting a small vessel, and you want it quickly

why “pulse doppler radar”

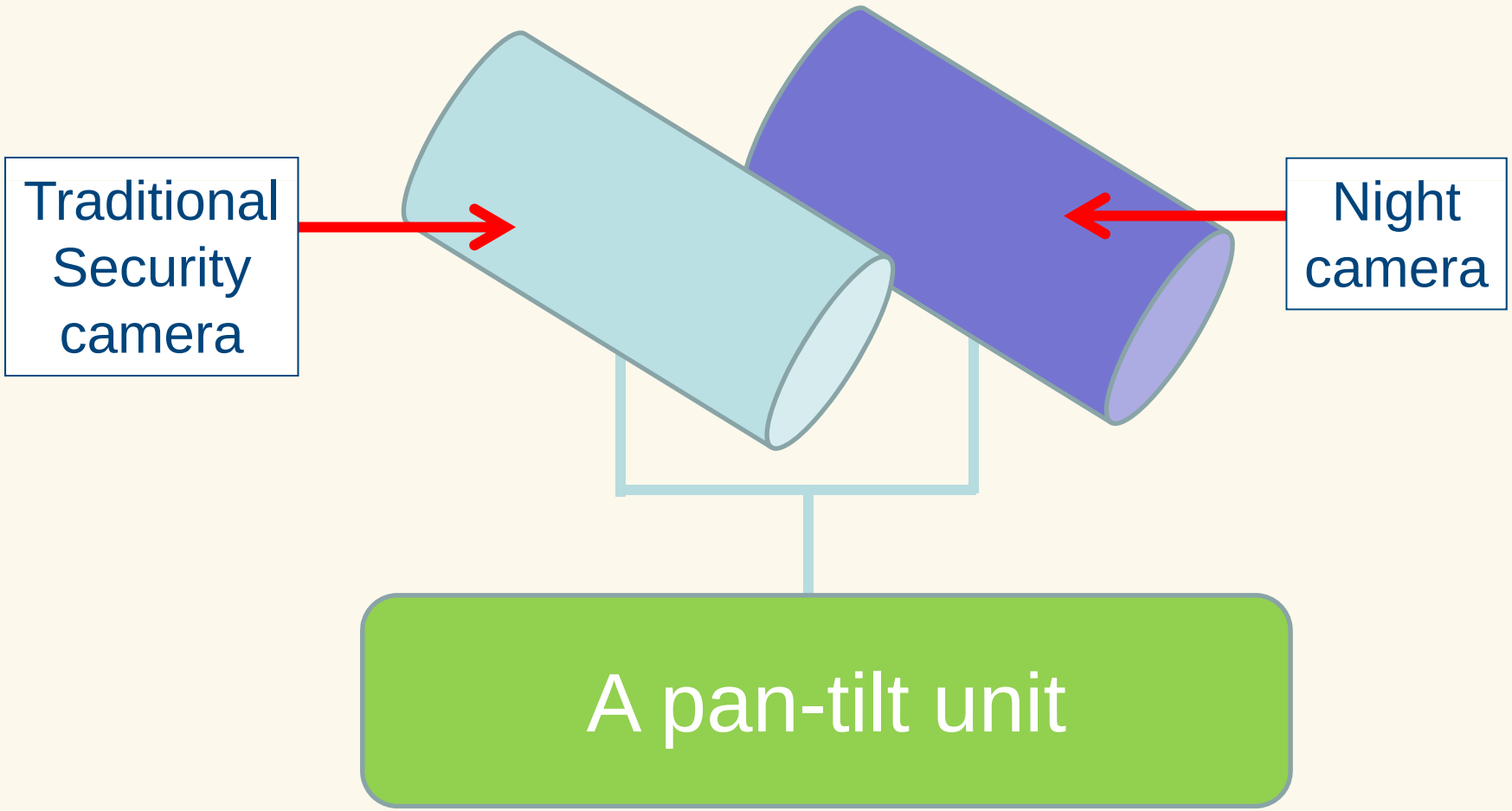
Excessive False Alarms / Nuisances cause projects to Fail

3. With ship-board radars, tall wind-blown grass can look like a boat. Low likelihood of that with a good pulse doppler radar.

why “pulse doppler radar”

Can be Extremely Cost-Effective Over Time

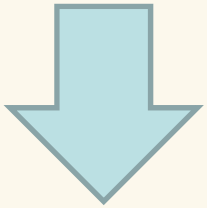
High Power Camera System


Traditional Security camera
Night camera
A pan-tilt unit

“thermal infrared”

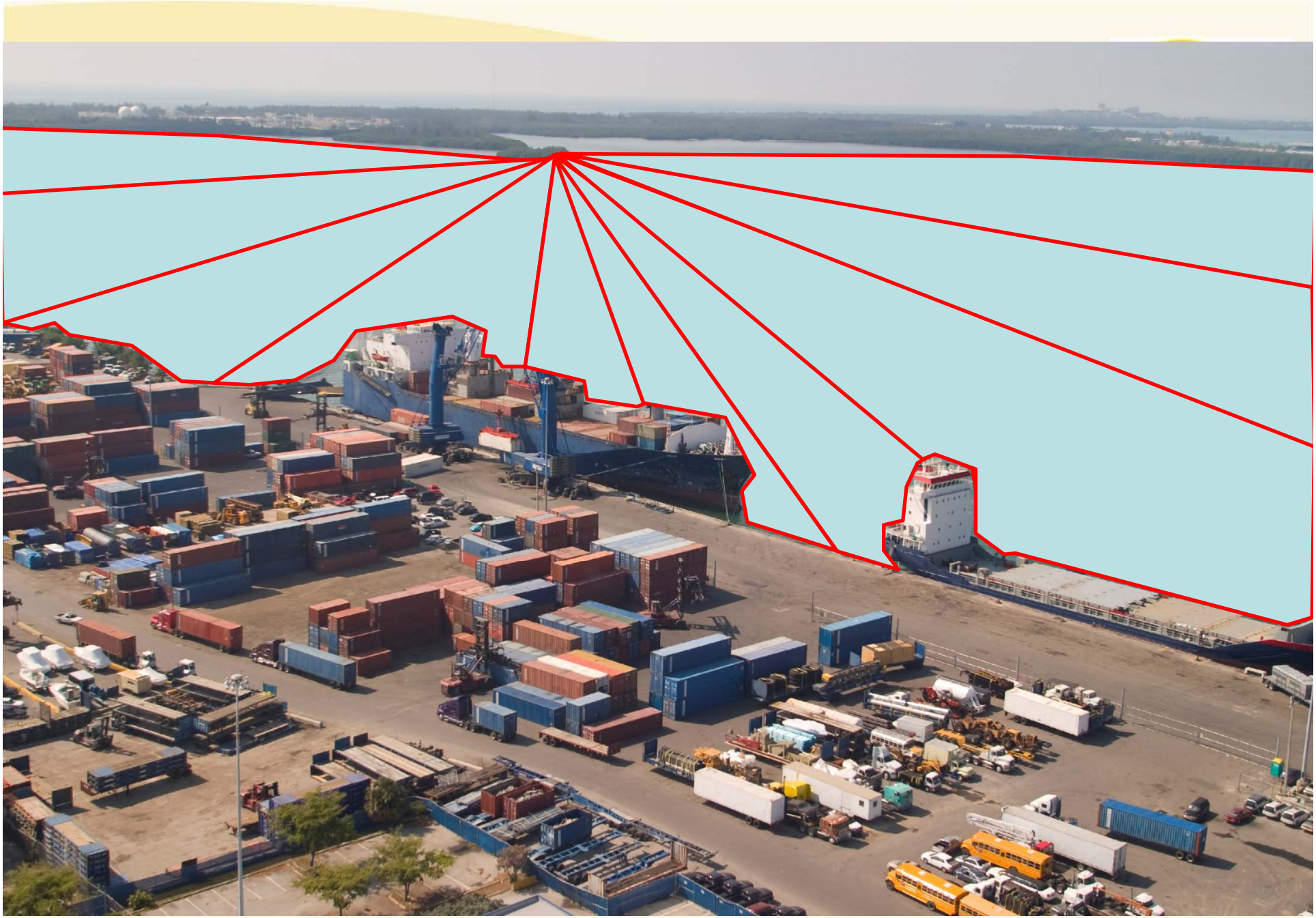
Some Other Considerations

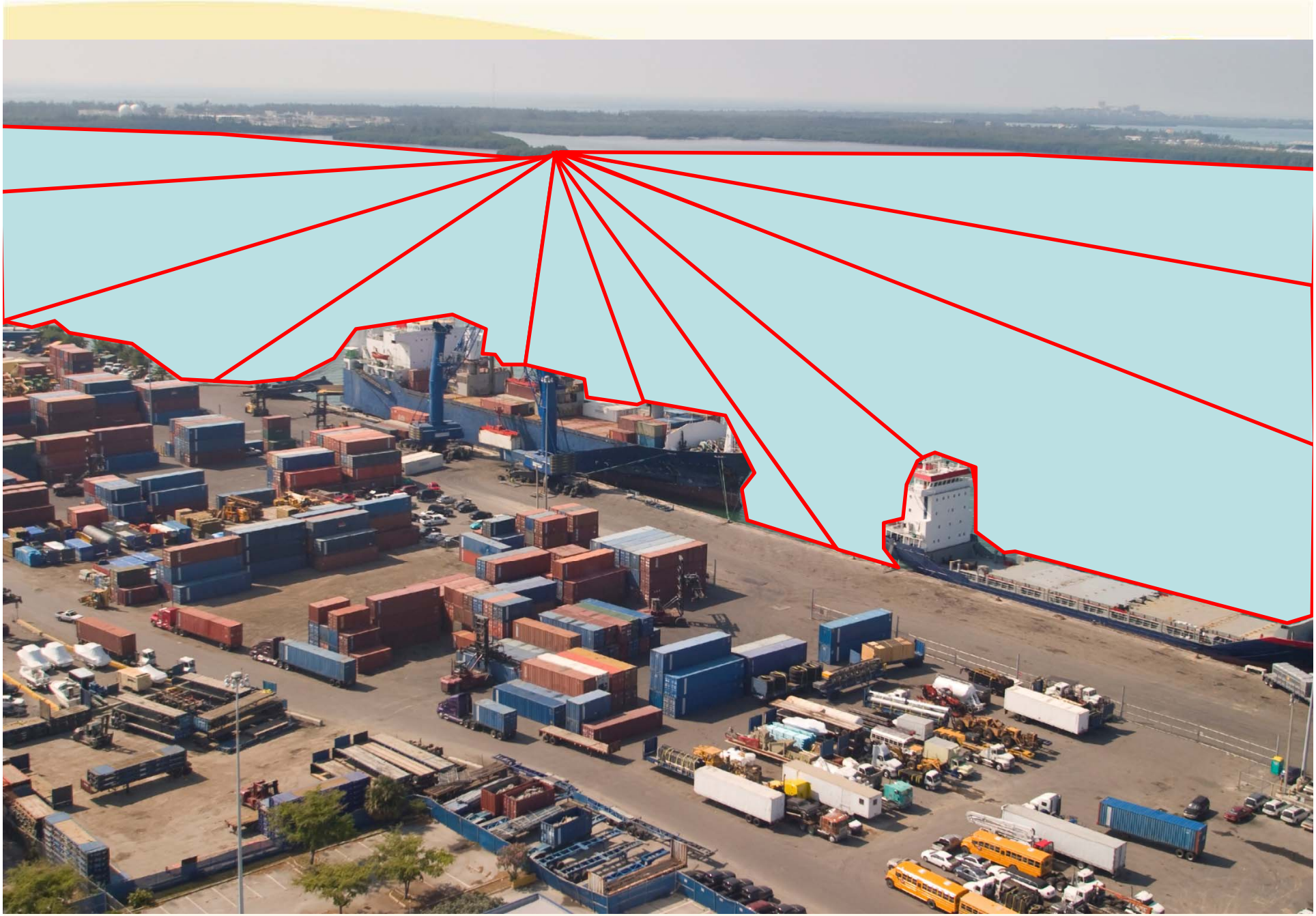
Dispatcher doesn't need to understand how radar works

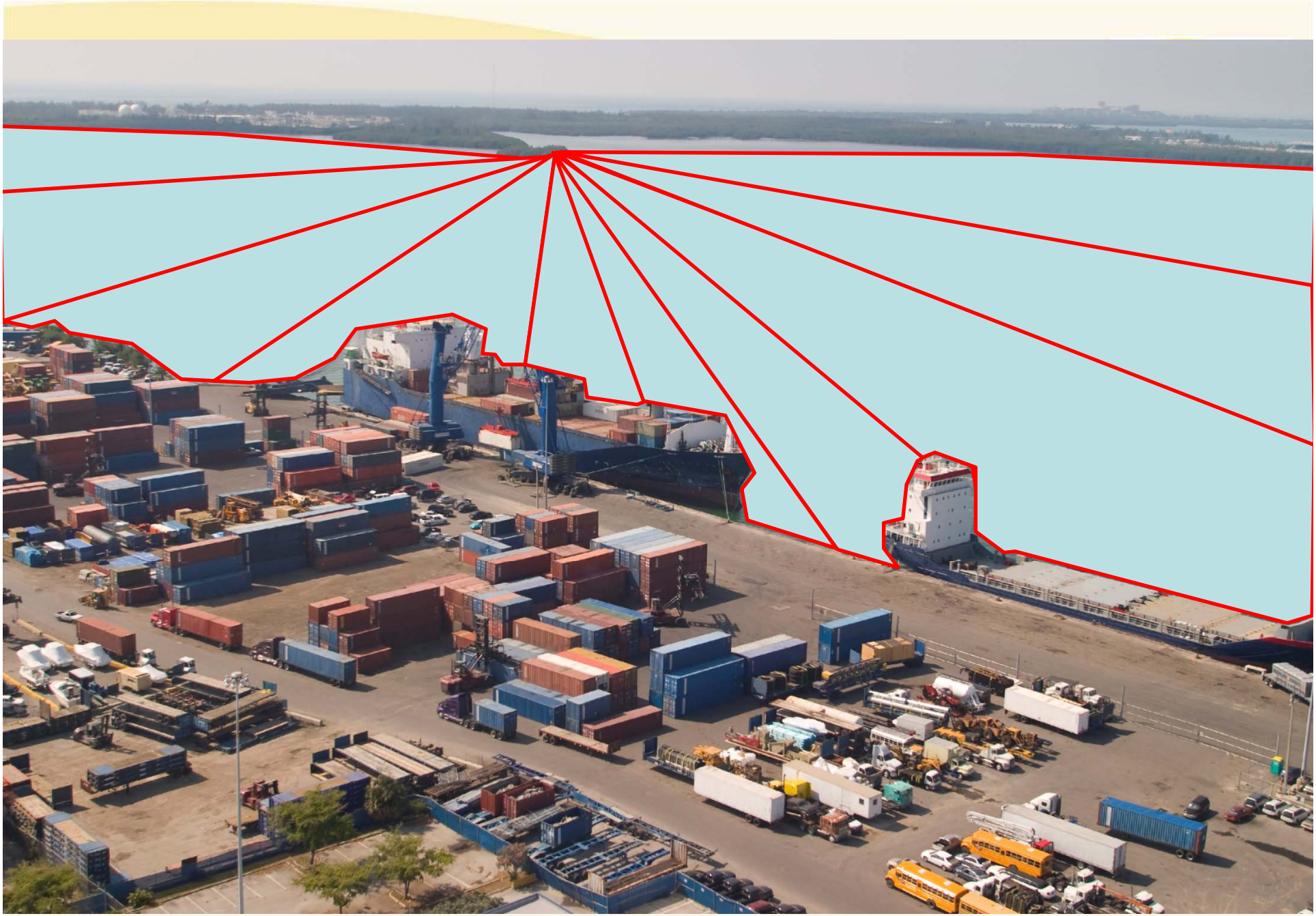


Dispatcher doesn't need to understand how to get the radar to work effectively

How do these solutions work?

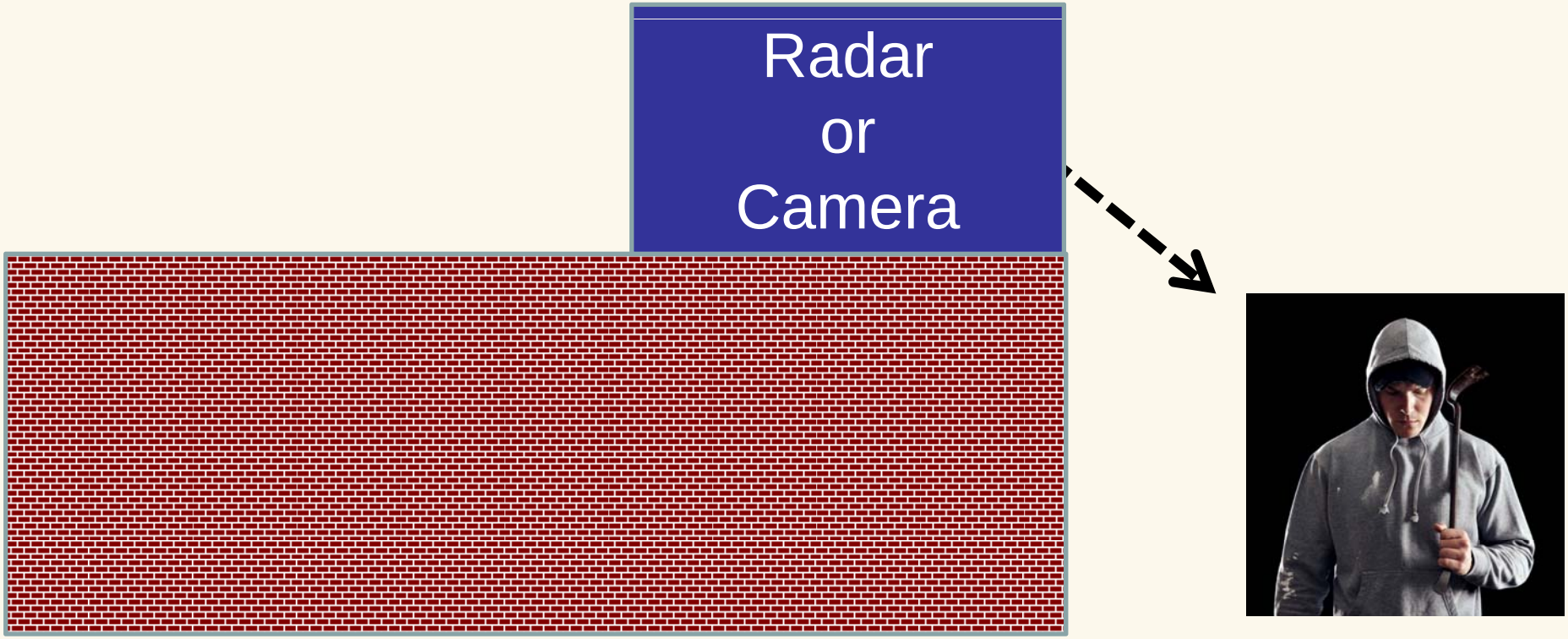






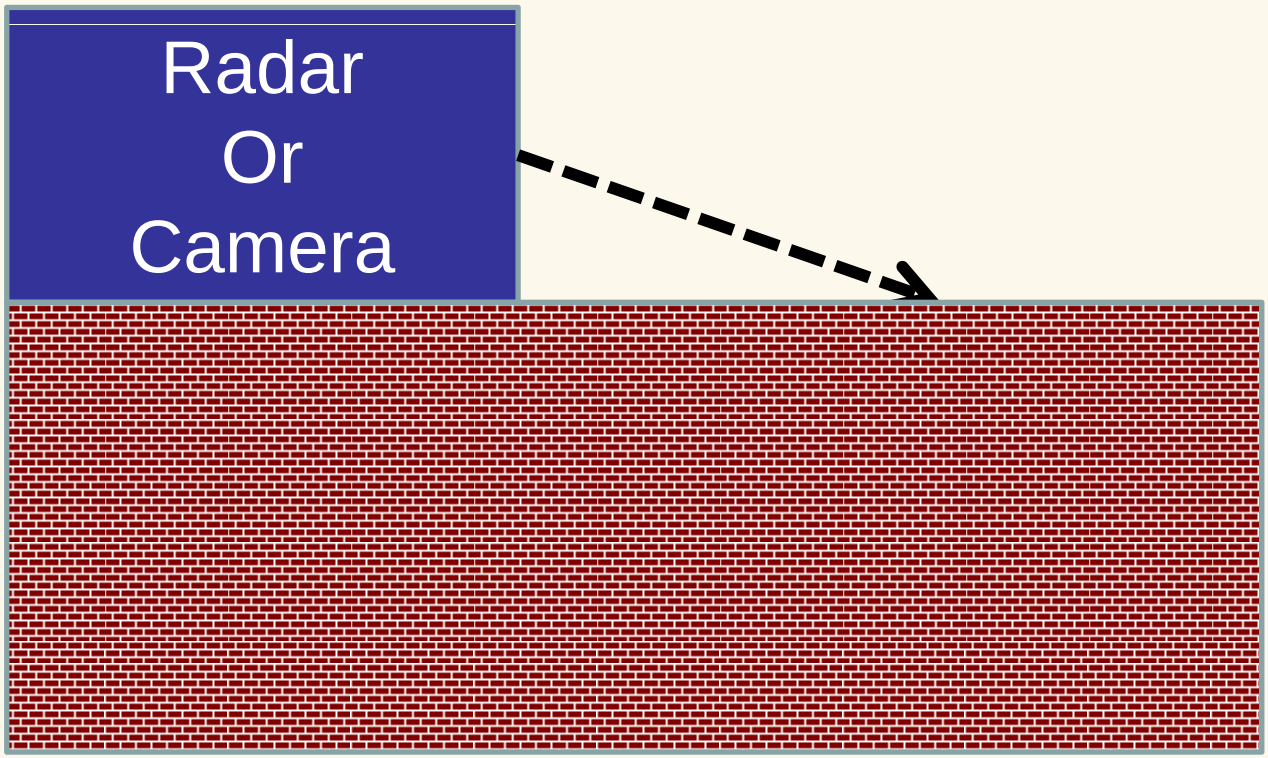
Reminder:

“Line of Sight” required.



Reminder:

Not X-Ray Vision.



Some Other Equipment Used in the Solution

AIS

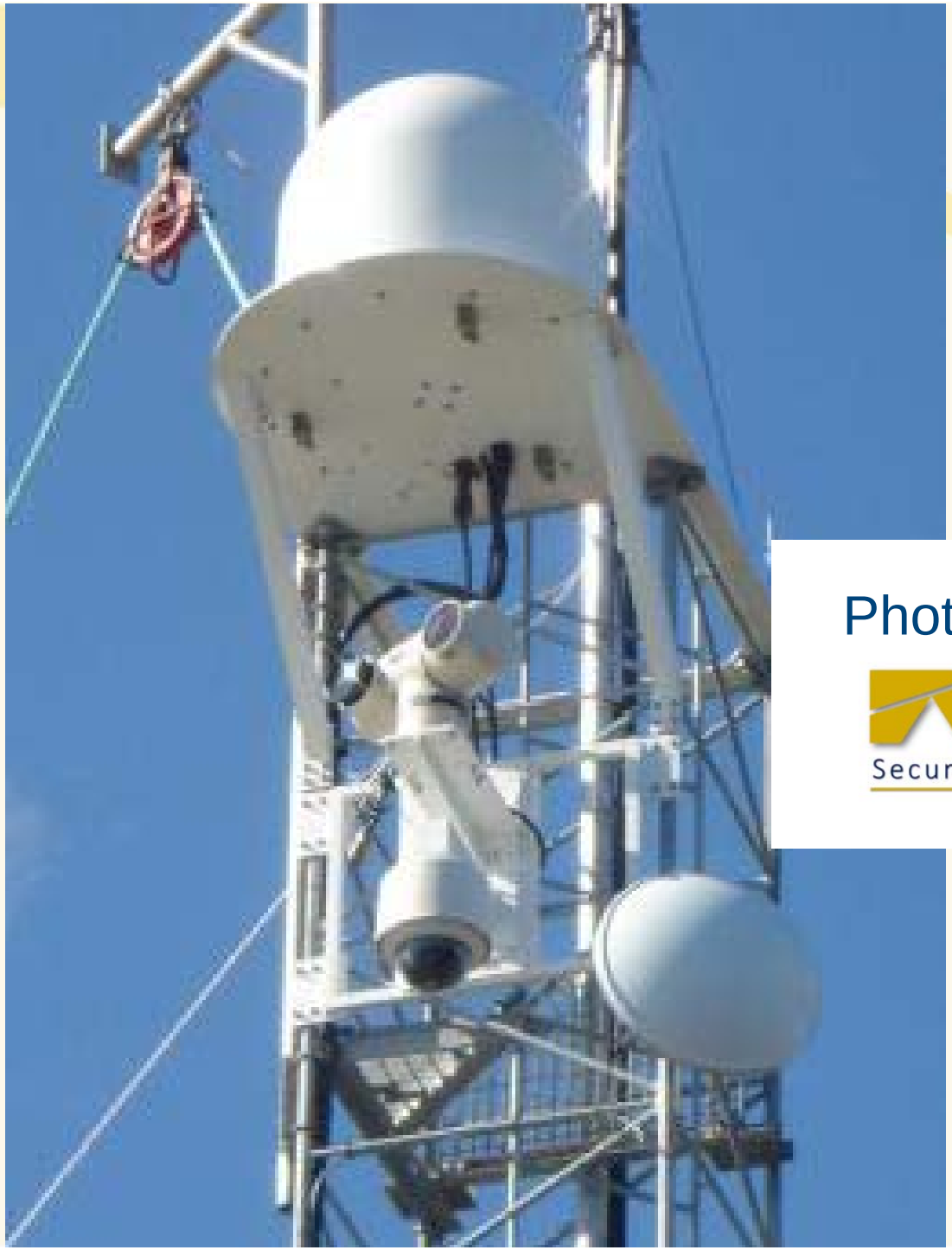
Distinguishing Your Team from Everyone Else:

BFT

What these solutions tend to look like when you put them all together

Photo courtesy of

DMT
Security Radar Solutions



FOURCHON

Photo courtesy of

DMT
Security Radar Solutions


Radar
Thermal
Infrared
Camera

Photo courtesy of DMT Security Radar Solutions

Wrap-Up / Key-Takeaways

What options do you want available once a vessel or intruder is detected?

Text alert.

Point a camera.

Show on a Map.

Pop the right video.

Record the video.

Wrap-Up / Key-Takeaways

Camera technology for general assessment of scene at night?

thermal infrared

Wrap-Up / Key-Takeaways

Excellent frequency band for seeing through most rain and fog?

x-band

Wrap-Up / Key-Takeaways

Radar technology that minimizes nuisances and capable of quickly creating vessel tracks?

pulse doppler

This Team of Presenters has a booth here.

Come visit us and ask questions!

The Role of System Integrators and Communications Backbone

Craig Noel
American Integration Contractors of Louisiana

Convergence

- Old definition
  - computers & phones on same network
- Newer definition
  - add video feed security cameras
- Definition for today
  - add alerts from radar
  - take all info: vessel locations, radar alerts, video – and share across the port & region

Wireless Communications

- Concept: imagine:
  - Wi-Fi router in your house
  - Computers connect to it
- Except Bigger Distance
  - measured in miles!
- And a Bigger Pipe
  - Wi-Fi: think garden hose
  - Port's Wireless: think fire hydrant

Major Building Blocks

- Port Fourchon system was installed in stages
  - Each stage: major building block
  - Lingo -“Subsystem”

Major Building Blocks at Fourchon

- Radars & thermal cameras that point at vessels detected by the radars
- Video analytics & stationary thermal cameras
- Wireless communications
- Software that provides shared view across the port and region

What is a system integrator? Some or all of the following

- *Much like General Contractor on Construction Project*
- *Gather Needs*
- *Determine Products*
- *Determine How It will All Work Together*
- *Install*
- *Integrate*
- *Test*
- *Oversee specialized subcontractors*

What is the profile of a PSIM-specialized integrator?

- *Non-traditional integrator with advanced consulting, engineering and security skills*
- *Advanced certifications and training in most, if not all, of the subsystems feeding into the PSIM*
- *Strong technical expertise in all subsystem types*
- *Strong partnership with PSIM provider*
- *Possess excellent team-building skills*
  - *PSIM consists of subsystem team players with new players (new technologies feeding into PSIM) being recruited constantly*

The role of the PSIM-specialized integrator in various phases of the Port Fourchon GLPC-C4 projects

- *Worked closely with GLPC to gain a high understanding of existing systems and of GLPC's vision for the future*
- *Played a large role in the PSIM selection and procurement process*
- *Hardware Selection and installation*
- *Subsystem considerations – The importance of open architecture.*

Focus: Long-Term Partnership

- *A true partnership should be formed between the integrator and the PSIM owner.*

- *Systems integrator should stand side-by-side with you in support of your PSIM and should provide continual counsel and system support.*

- *Having a trusted PSIM-specialized systems integrator partnered with you will provide you with a necessary resource for immediate and long-term system growth and support.*

GLPC-C4
Port Situational Awareness and Decision Support

Bill Donaldson

Priority 5

TACCS™: Touch Assisted Command and Control System

TACCS™ provides an open architecture, standards based, geospatial operating platform that aggregates multiple datasets into a single framework to support Situational Awareness and Decision Support.

Core capabilities include:

- Mesh multi-agency datasets into a single dynamic visual operating system to improve event recognition
- Create seamless coordination between the operations center and field users
- Model the cascading impacts of critical infrastructure and optimize response capabilities.

Genesis of *TACCS™*

- KDAS was originally deployed to support Situational Awareness for the Office of the Assistant Secretary of Defense, Homeland Defense and America's Security Affairs
  - Designed specifically for the purposes of supporting the DCIP to provide real time force readiness and mission status

Other TACCS Users
- DCHSEMA Regional Dashboard – multiple jurisdictions and agencies
- AMTRAK IRAIL - multiple data sources and applications
- ACTIC-KDAS – Fusion Center
- NJOHSP – Decision Support Tool
- Port of NY/NJ

Example of applications integrated
- Intergraph CAD
- BSR Labs Video Analytics
- WebEOC
- ESRI Products
- DMT Radar
- Milestone
- MEAP (GPS tracking)

Goals of C4

- Improve communications and situational awareness between the Port Commission, its tenants, and regional first responders. (go beyond the Port boundary)

- Leverage existing investments in technology, where applicable and upgrade where necessary

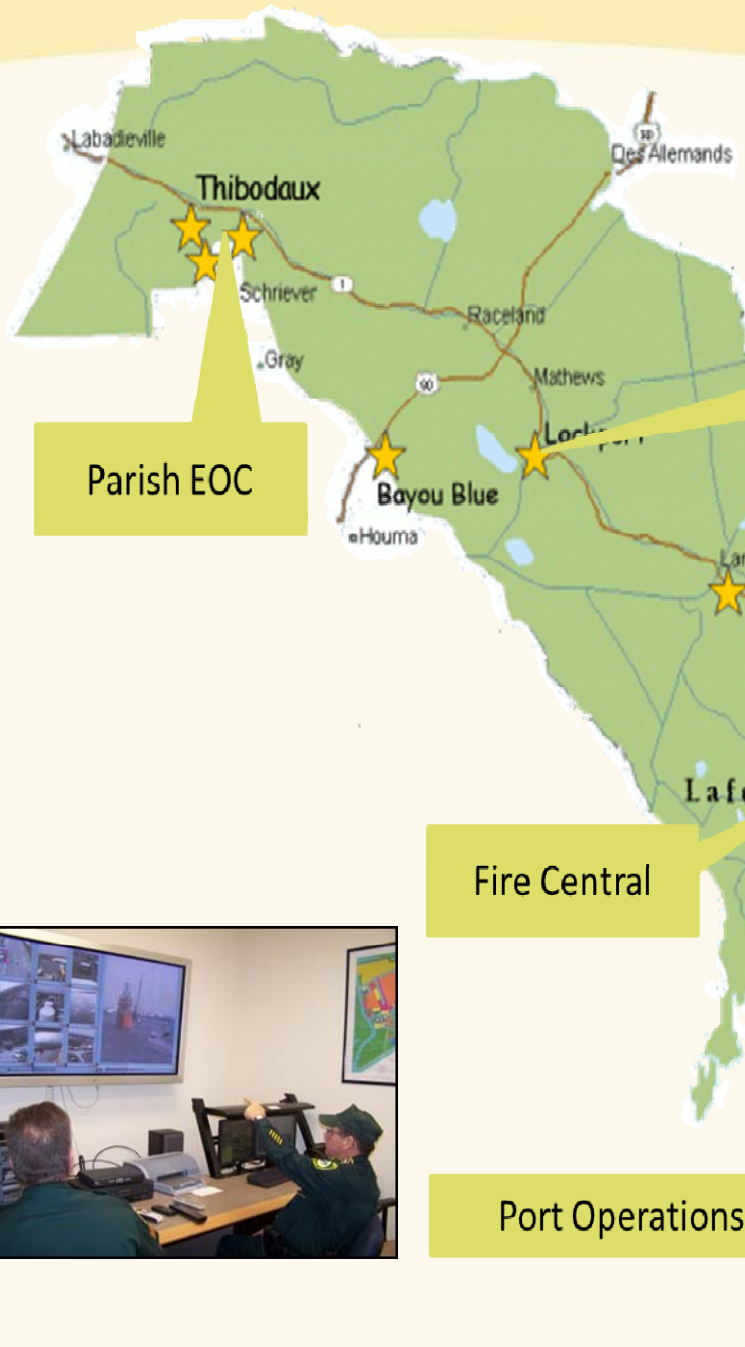
- Utilize as an everyday system and not in case of emergencies

- Improved understanding of an impact of a disaster through consequence analysis

- Monitor trends to better understand potential event escalation.

GLPC-C4 System Deployment terminal

Current GLPC-C4 Partners



Parish EOC

Lafourche Parish Sheriffs Office (x3)

Greater Lafourche Parish Port Commission HQ

Fire Central

Harbor Patrol

Port Operations

LOOP (x2)

.

Live Demonstration

Reminder:

This Team of Presenters has a booth here.

Come visit us and ask questions!