

“Interoperability of Diverse Security Systems - a Framework Approach”

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Agenda

- What is a Framework?
- Why Utilize a Framework?
- Industry Trends
- Emerging Standards
- Framework Concepts
- Example Solutions
- Summary of Benefits
- Q & A

What is a Framework?

- From Wikipedia
 - Framework, a basic conceptual structure used to solve or address complex issues.
 - Software Framework, a re-usable design for a software system (or subsystem). A software framework may include support programs, code libraries, a scripting language, or other software to help develop and *glue together* the different components of a software project.

Why Use a Framework?

- Integration only makes sense if it adds *value*
- All stakeholders must agree
 - CFO, COO, CIO, Facilities Director, Security and Safety Director, Energy Manager
- Test the business model then design a technology architecture
- Think about usage scenarios and general information transfer required to meet the needs of the tenant and stakeholders
- Model the interactions between systems
- Develop an Architecture to represent the physical world
- “Think, Model, Architect”

Industry Trends

- Closed Proprietary, OEM Driven Industry
 - Similar to the state of the BAS industry in early 90s
- Industry Push to Open Systems
 - IP movement results in many like devices that need to communicate
 - No open standards...Wiegand reader communication protocol is the one exception
 - Emergence of many standards organizations
- Increasing Role of IT Departments / Systems
 - Global permissions through corporate IT security policy
 - Convergence of physical and logical security
 - Network utilization issues associated with IP video

Industry Trends (Cont)

- Devices Moving to IP Network
 - Recent migration from serial based communications to IP
 - Network topology flattening, systems becoming more distributed
 - POE solutions becoming reality
- Web Based Solutions Becoming More Accepted
 - No PC required, standard web browser access
 - Remote access pros and cons
 - Flattening of architecture
- Facilities Seeking Integration with Rest of Building
 - Access control integrated with HVAC for energy management
 - Common user experience for all building systems

Emerging Standards

- Security Industry Association (SIA)
 - Open Systems Integration and Performance Standards (OSIPS)
 - Access Point Controller
 - Access Control Roles
 - Digital Video Standards
- ASHRAE BACnet
 - Access Door Object Type
 - Access Point Object
- OASIS oBIX
 - Common Alerting Protocol
 - Common Biometric Format
 - Directory Services Markup Language



Not One Protocol Will Dominate

Systems



Security



Energy



Lighting

Enterprise



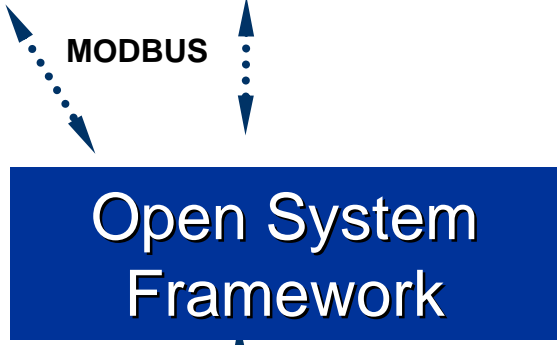
CFO



Fire



LEGACY



MODBUS



XML SQL

HTTP HTML

ODBC SNMP

JDBC FTP



Facility Management



HVAC



And More

SMTP

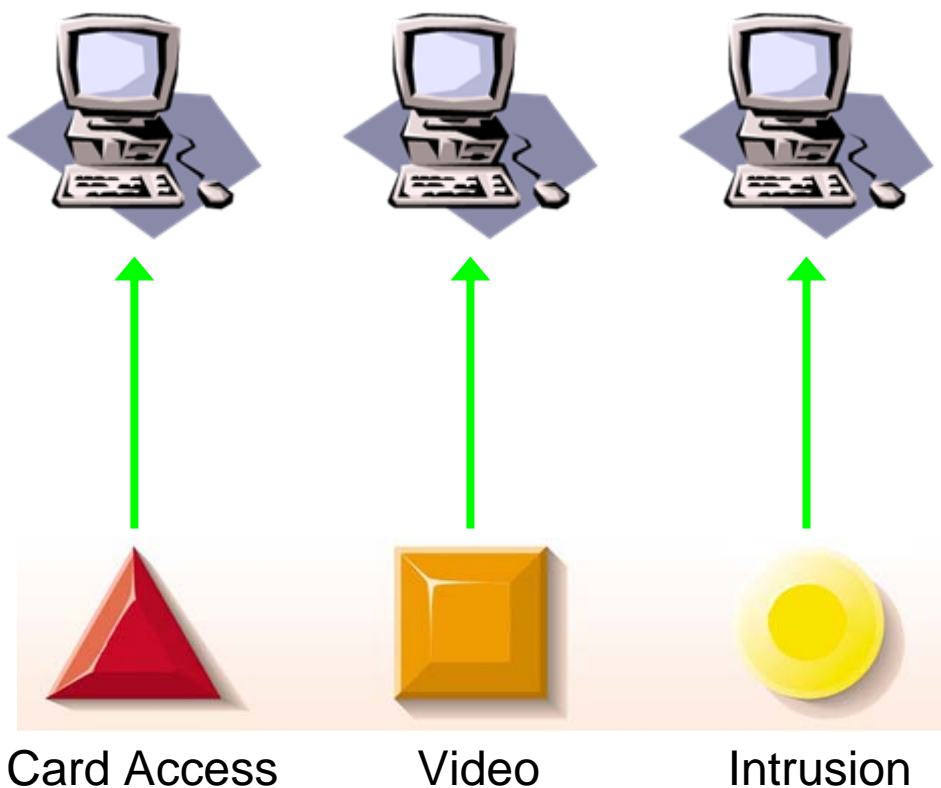
WAP



Maintenance

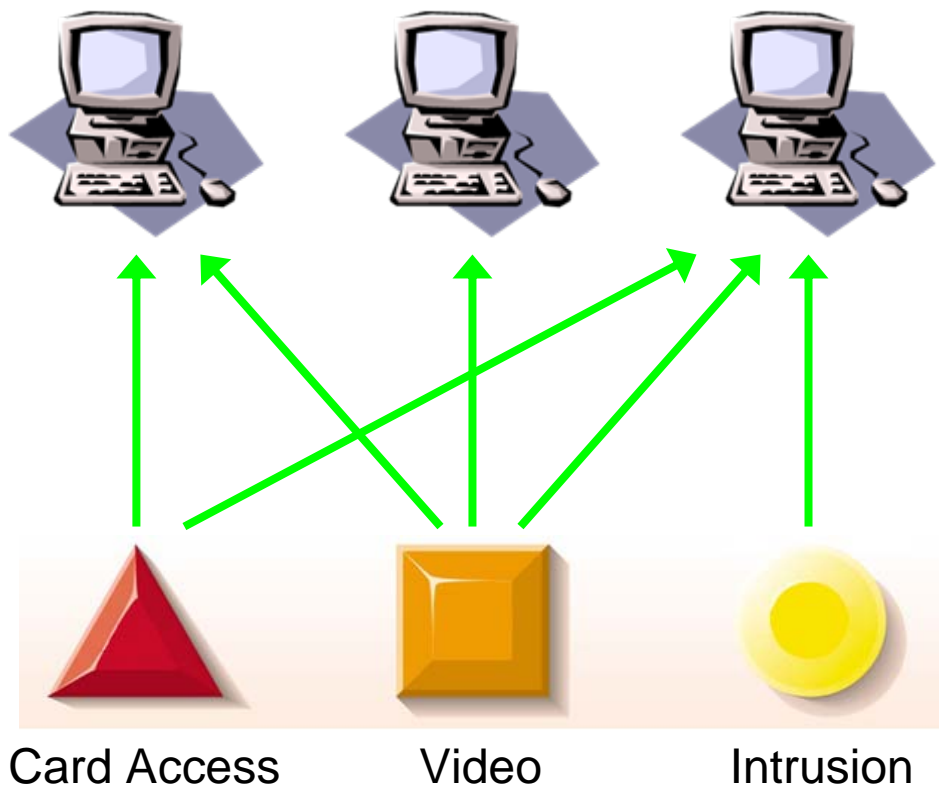
Traditional Security

- Isolated Systems each with dedicated workstations

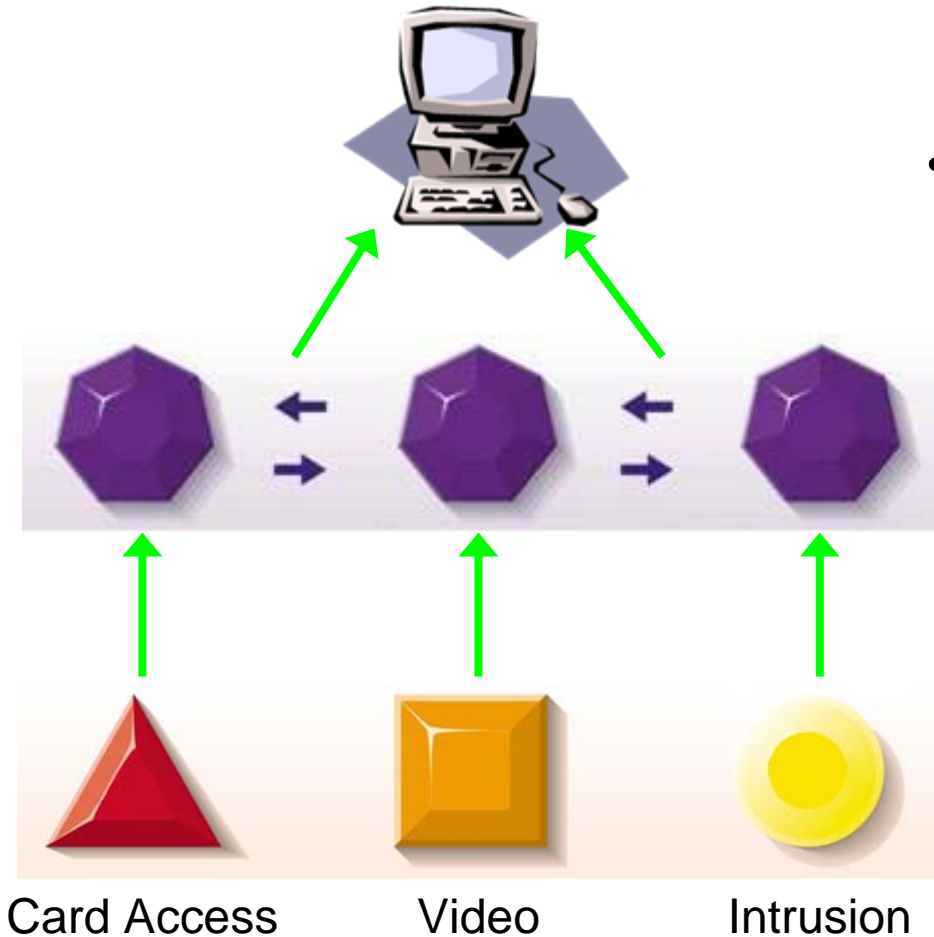


Current Security

- Diverse systems, many different connections
- Complexity creates barriers to true interoperability



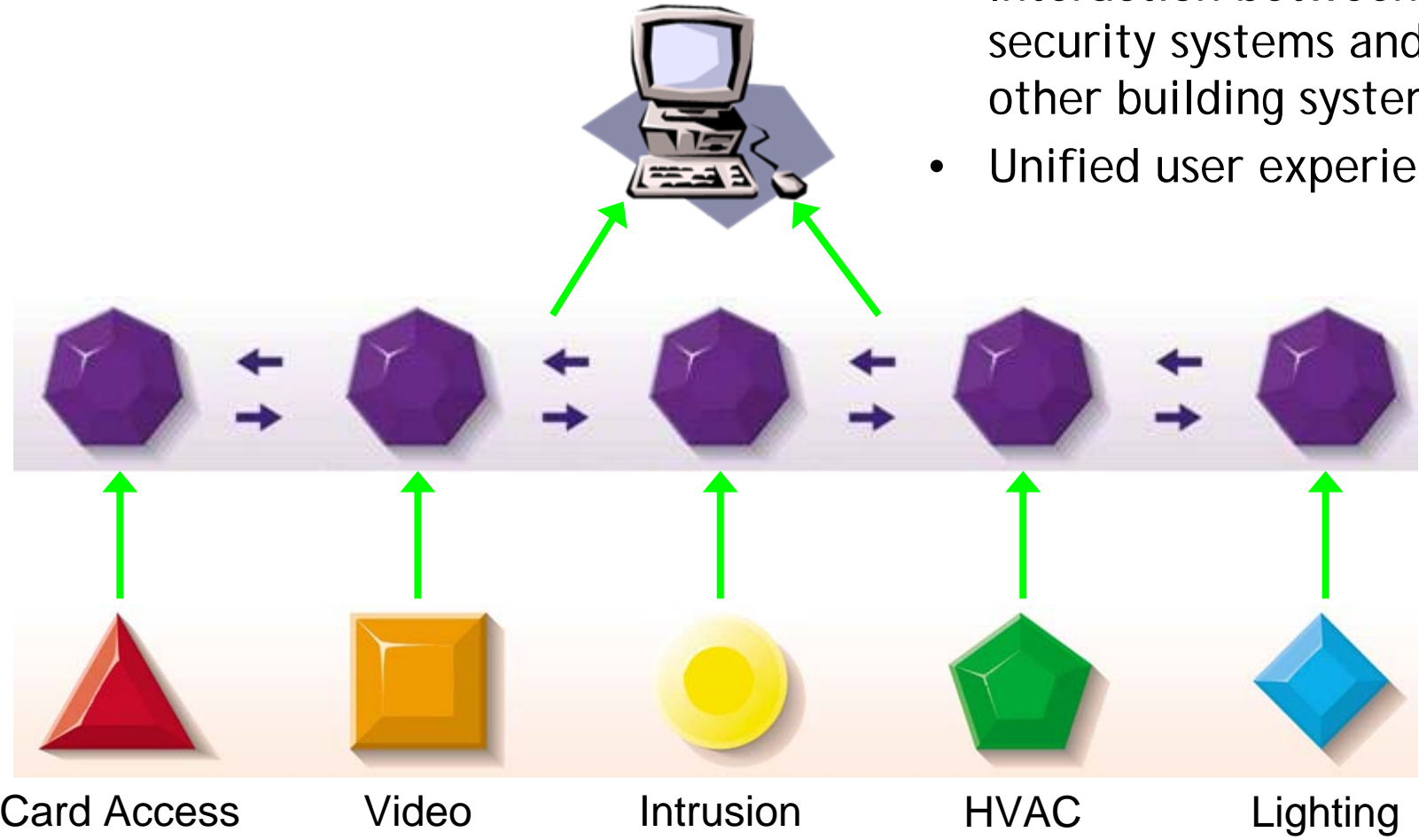
Normalized Security



- Diverse systems normalized to common object model
- Interaction between security systems and unified workstation

Intelligent Building

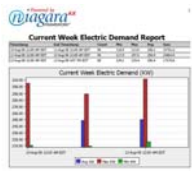
- Interaction between security systems and other building systems
- Unified user experience



Framework Example



Card Access



Tenant Billing



Video



Energy



Intrusion



Elevator



HVAC



Lighting

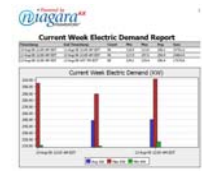
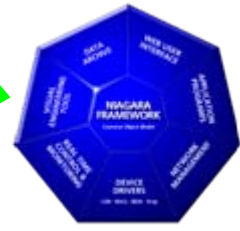
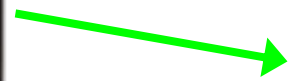
System Interaction: Unoccupied building, Saturday night

Framework Example

"Access Granted,
Zone 4"



Card Access



Tenant Billing



Video



Energy



Intrusion



Elevator



HVAC



Lighting

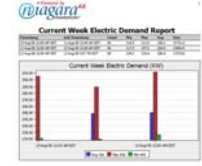
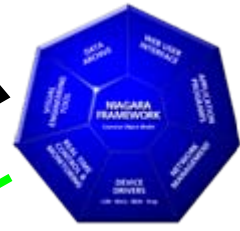
System Interaction: Scott swipes card at main entrance, works on 4th floor South

Framework Example

"Access Granted,
Zone 4"



Card Access



Tenant Billing

"Camera Preset 1,
Initiate Recording"

HTTP



Video



Energy



Intrusion



Elevator



HVAC

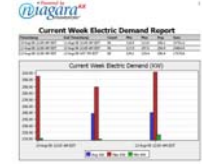
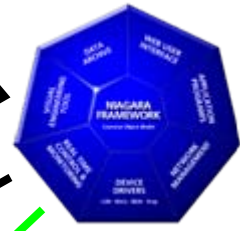


Lighting

System Interaction: Video system needs to verify and record Scott's entrance

Framework Example

"Access Granted,
Zone 4"



Tenant Billing

"Camera Preset 1,
Initiate Recording"

HTTP



Video



Energy

"Disarm Intrusion
Zone 4"

LEGACY



Intrusion



Elevator



HVAC

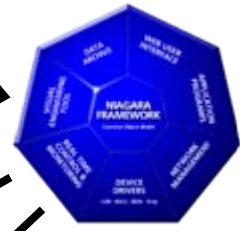


Lighting

System Interaction: Alarm system armed, need to disarm 4th floor intrusion zone

Framework Example

"Access Granted,
Zone 4"



"Camera Preset 1,
Initiate Recording"
HTTP



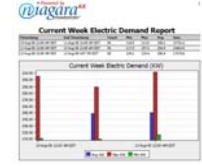
"Disarm Intrusion
Zone 4"
LEGACY



Elevator
"Floor 3 Enable"
XML



HVAC



Tenant Billing



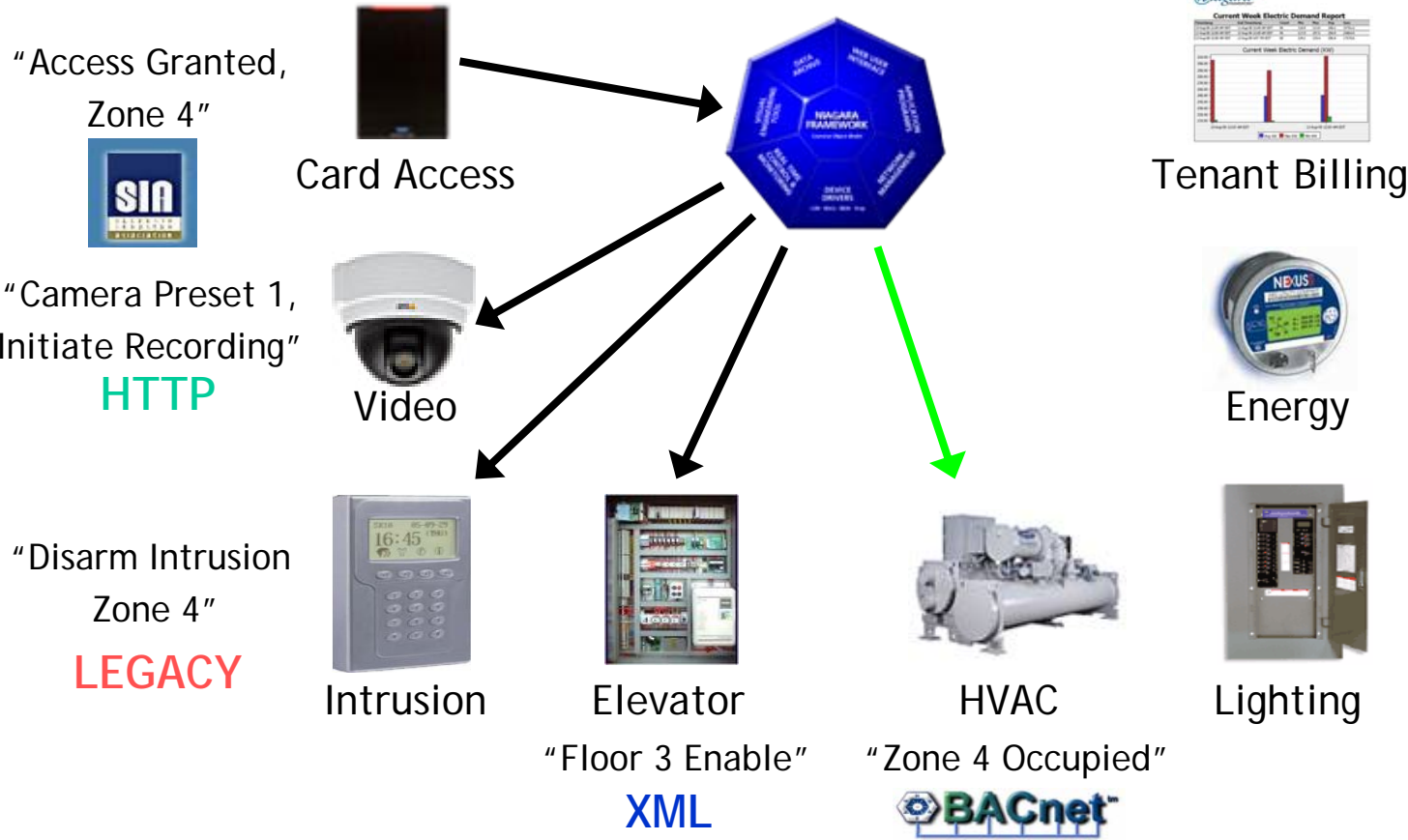
Energy



Lighting

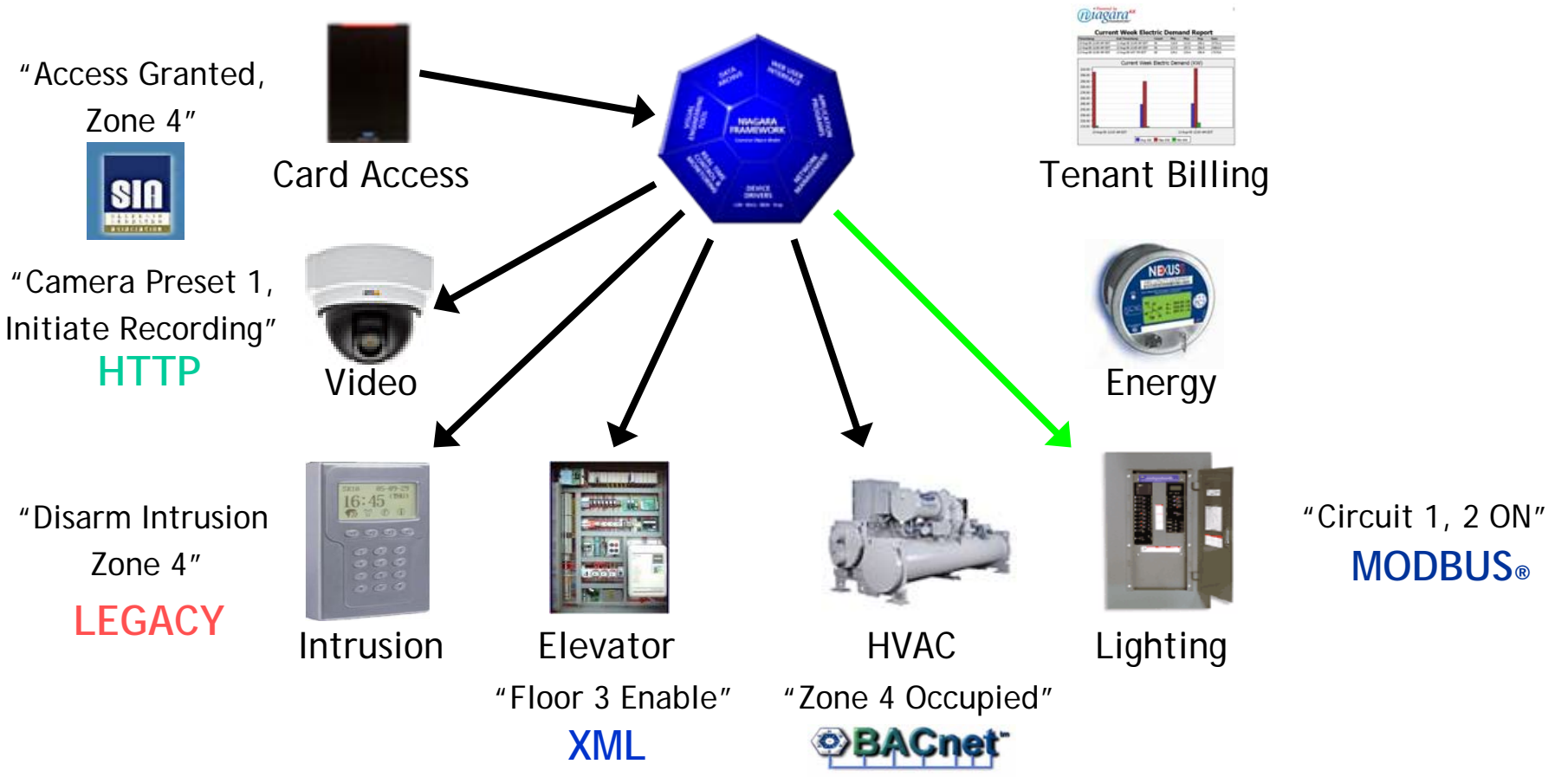
System Interaction: Allow access to 4th floor

Framework Example



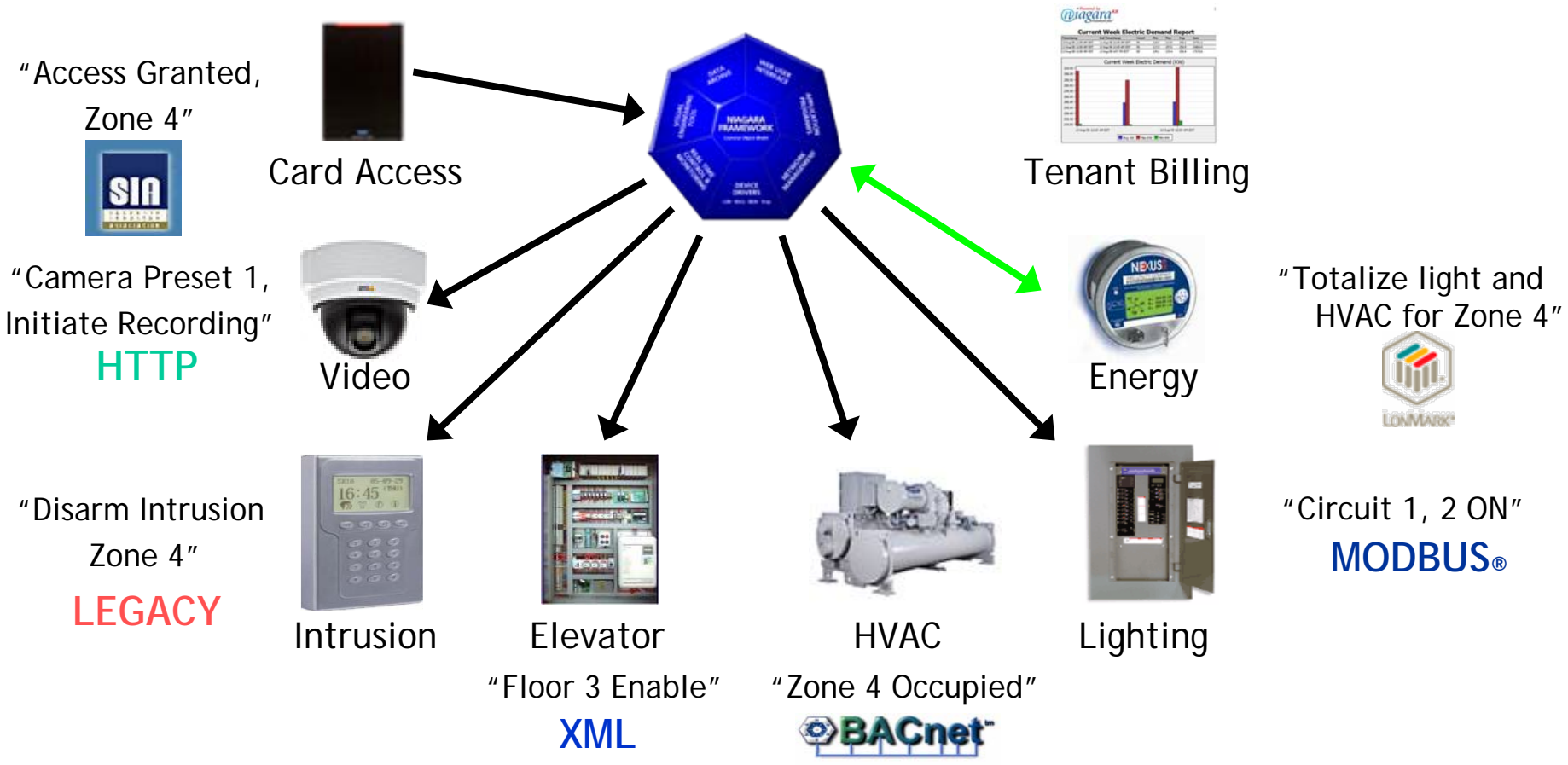
System Interaction: It is hot in Scott's office, turn on AC

Framework Example



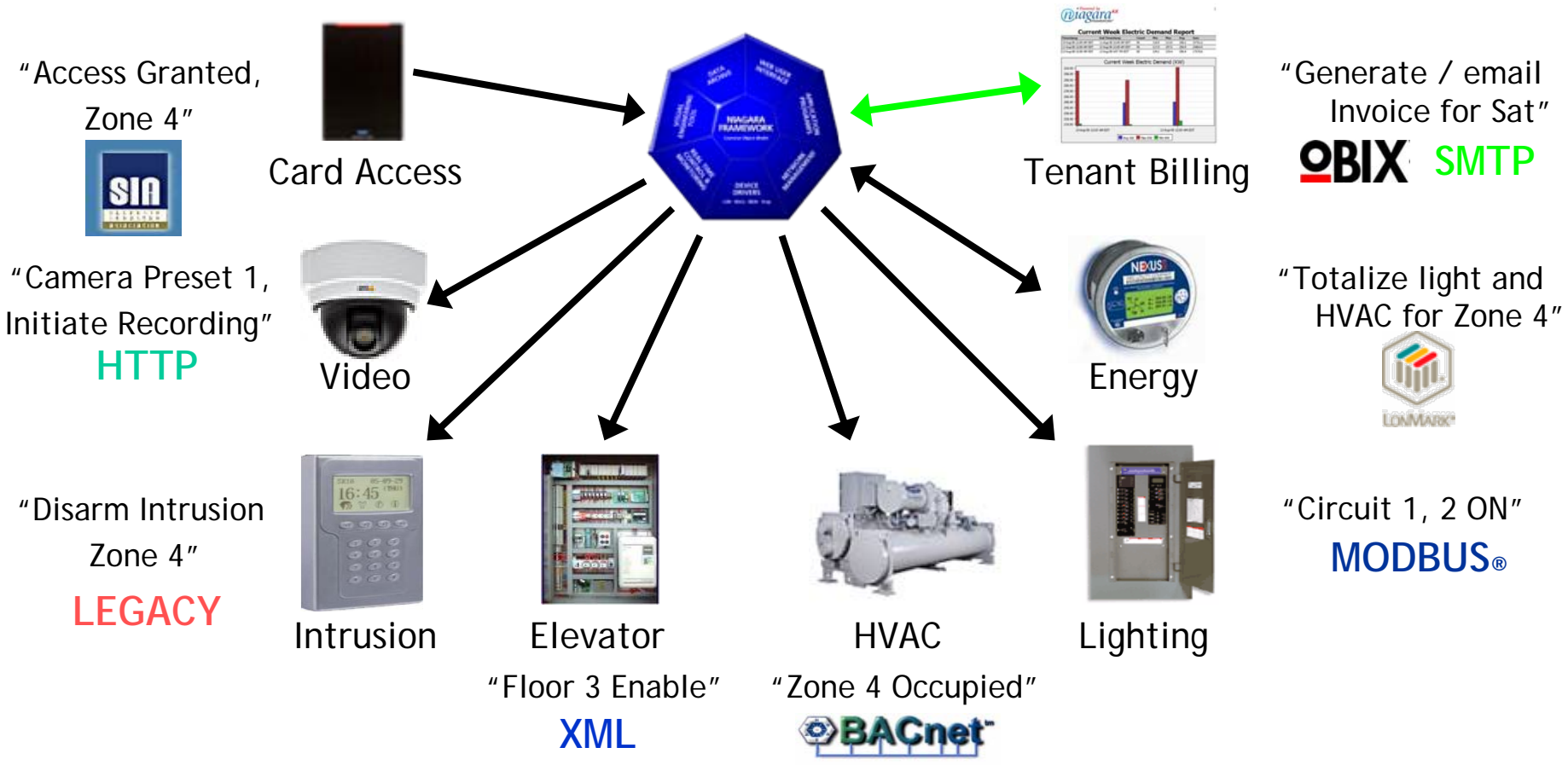
System Interaction: Scott needs light on 4th floor hallway and office

Framework Example



System Interaction: Lights and AC for Scott used 50 kWh

Framework Example



System Interaction: Invoice Scott for \$150 of after hours energy usage

Traditional Architecture

Central Server
Full client workstations
Isolated Systems

Client Workstation



Host Based Server



Local Area Network



Access Control



Video



Intrusion



Elevator Control



Lighting



HVAC



Energy

Framework Architecture

Network topology is flattening
Systems becoming more distributed
Integrations through IP open protocols

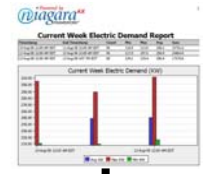
Embedded Controller



Web Browser



Tenant Billing



Local Area Network



Access Control



Video



Intrusion



Elevator Control



Lighting



HVAC



Energy

Think about Advantages from a Business Perspective

- Multi-tenant Office Building
- Marketed as Class A, High tech, Energy efficient, “Green”, Comfortable and Safe
- Systems being installed:
 - Card Access/Elevator Access
 - HVAC
 - Lighting
 - Energy Monitoring
 - Business Enterprise
- HVAC and Lights from 7am-7pm M-F
- After hours usage billed extra
- What degree of systems integration makes sense?
- Where can I derive *value*?

Benefits of a Framework Approach

- Open Architecture
 - Maximum freedom of choice for end users
 - Competitive marketplace
 - Ease of systems integration / interoperability
 - Reduced installation / upgrade costs
 - Vendor / protocol neutral platform
- Niagara Framework
 - Solutions focused, open framework architecture
 - Capability to support many different communication protocols - legacy and open standards
 - Integrated application development tools to customize solutions
 - Scalable, embedded solution with built in internet standards

Q & A

- We would like your feedback on today's TridiumTALK
- If you have any further questions, comments or topic suggestions, please email them to SalesSupport@Tridium.com
- Exhibiting at ASIS - Booth # 4905 - stop by and see us!



Steve Lucas



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Scott Muench