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Presentation Topics

- Hazards faced by Companies
- Know Your Enterprise
- Governance.
- Risk Management,
- Compliance,
- Business Continuity Management,
- Vulnerability Management,
- Full Systems Development Life Cycle,
- ATO / cATO Production Services,
- Business Continuity

Tom Specializes in:

- Enterprise Resilience,
- Corporate Certification,
- Vulnerability Management,
- Cyber Security,
- Post Quantum Cryptography (PQC),
- Inventory, Configuration & Asset Management,
- Strategic and Tactical Planning,
- Project and Team Management
- Awareness and Training

Governance, Risk Management, and Compliance - GRC

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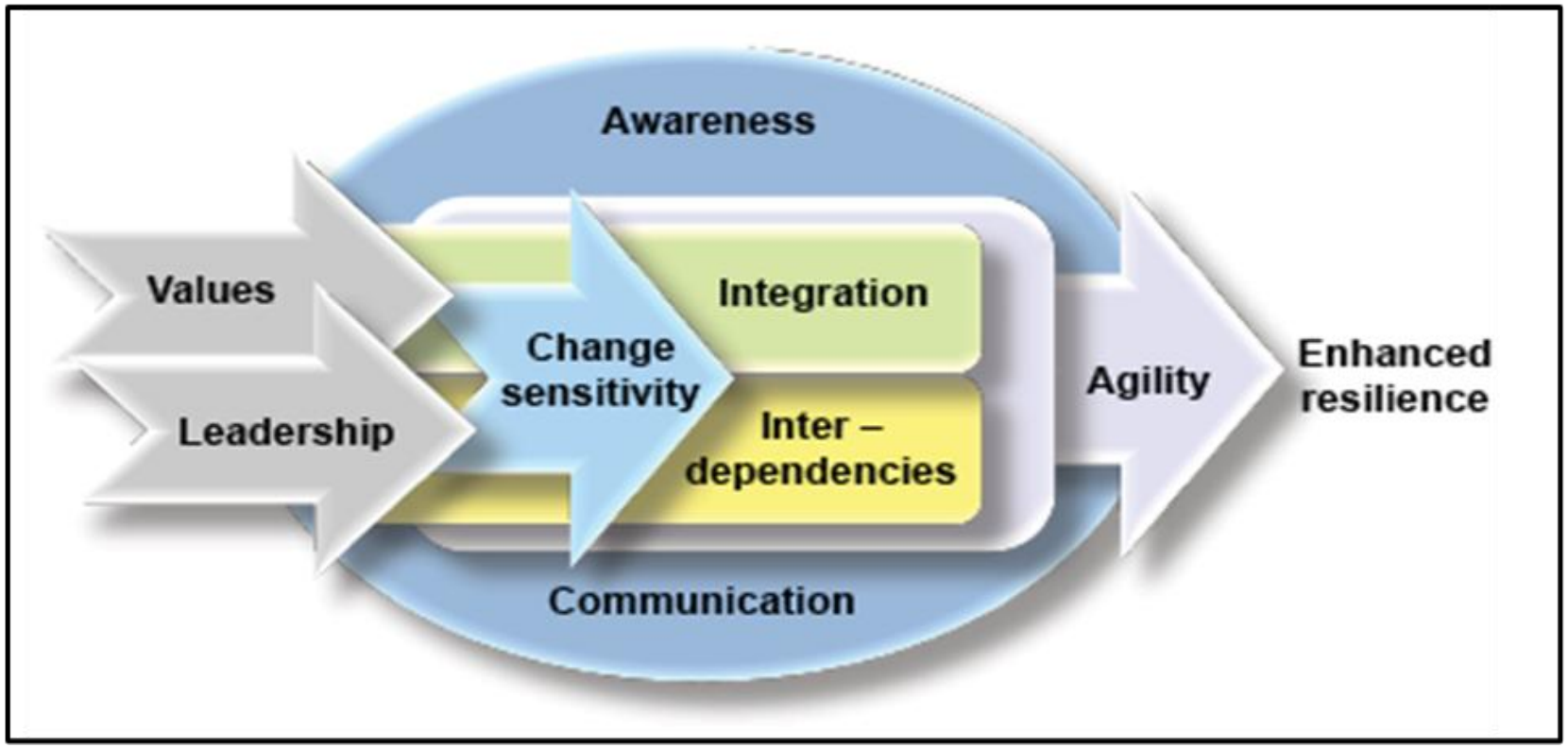
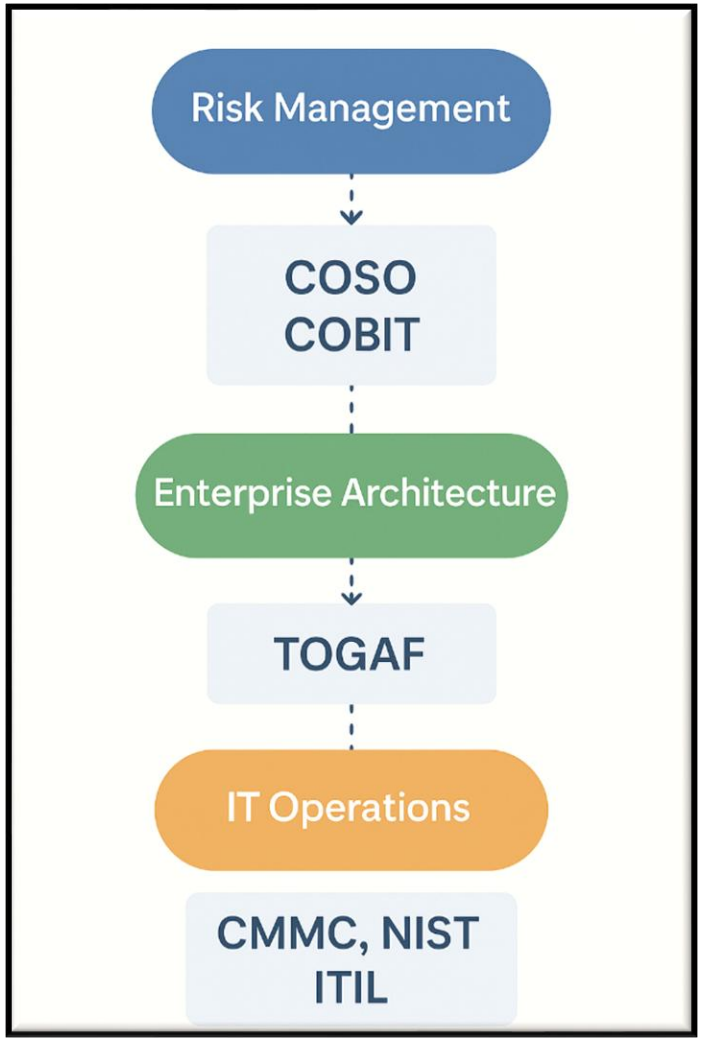
The Pathway to a Resilient Business

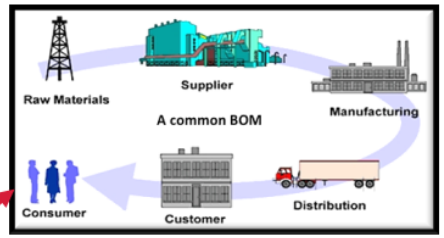




- Know your Business (i.e., Products, Services, Clients, GRC, Problem Mgmt.
- Relate your business goals to IT Services (i.e., Develop & Deploy).
- Analyze Risks and Define Controls(Support & Maintain).
- Build your Service Environment and ensure quality (Vulnerabilities).
- Provide Service Continuity and Recovery Management
- Ongoing Monitoring and improvement (CTEM, CNAPP)

Protecting your organization is difficult

A World in Turmoil can choke supplies



Supply Issues cause delays in building and delivering goods, and increased costs

Suppliers

Vendors

Transport

Manufacturing

Builder Concerns

World Concerns

Delivery Concerns

Customers

Organization

Supply Chain

Technical Problems

Secure by Design

Cyber Crimes

Sales

Marketing

Services

Products

Applications

Engineering

Development

Operations

Inventory

Supply Chain

Delivery

Idea

Engineer Solution

Develop Solution

Verify & Validate

Deploy & Continuity

Audit & Compliance

Deliver

Support & Maintain

Product Engineering and Development Life Cycle

Getting started with facts and a defined direction

Know your company:

1. Most Important Applications & Services (**Family Jewels**).
2. Damage caused if lost and maximum duration of survival without the application or service.
3. Define Requirements, Risk, Security, DevSecOps, Testing, Recovery, Acceptance, Deployment, and ITSM, ITOM.
4. Define Audit Universe implement legal & auditing functions.
5. Implement Systems Engineering Life Cycle (SELC) to respond to new ideas or business opportunities.
6. Implement Systems Development Life Cycle (SDLC) to deploy new products and services.
7. Define Company Organization to respond to cybersecurity and technology problems in a timely manner to the appropriate authorities (i.e., SEC Rule 2023-139)

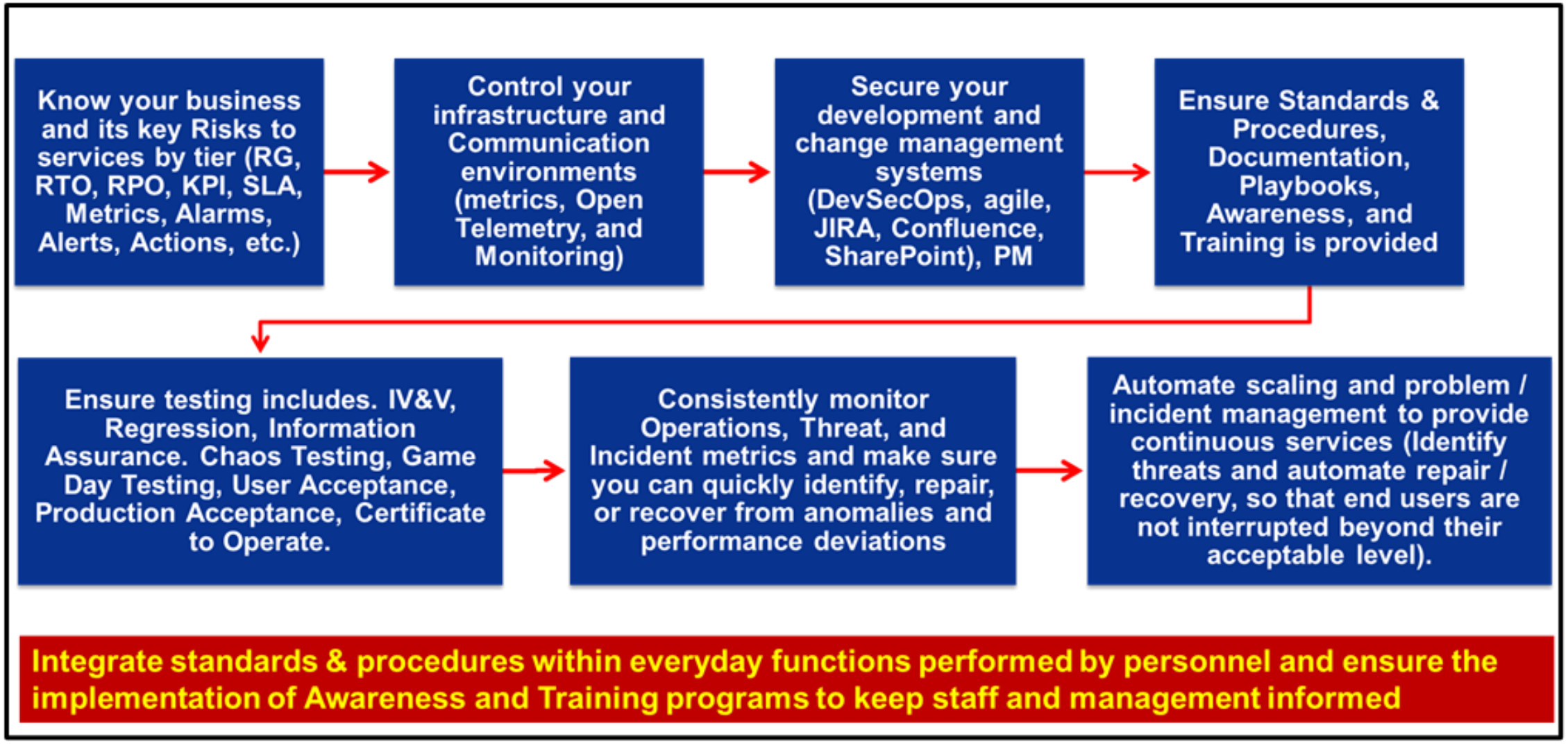
Know your Environment:

1. Physical and Data Security (Data Sensitivity & Data Flow).
2. Architecture and engineering process.
3. Asset Inventory and Configuration Management.
4. Identify and Access Management.
5. GRC based compliance and attestation, CIA based cybersecurity and elimination of viruses and malware.
6. Development and implementation of DevSecOps.
7. Personnel Titles, Job Functions and Responsibilities, and the integration of sensitive and required services within their everyday work tasks.
8. Staff training and development.
9. Continuous Monitoring and Improvement, along with the adoption of new technologies and processes (i.e., SRE).
10. Deploying error-free products and services (see EO 14028 and OBM M-22-18) and utilize the latest technologies to respond to encountered anomalies and verify compliance.

Set you direction:

1. Most efficient, compliant, and secure production environment, capable of recovering from disaster events and providing continuous vulnerability-free products and services to customers. **Continuity of Succession / Delegation of Authority** must be included along with definition of duties.
2. Integrate guidelines, standard Operating Procedures, skill development, and awareness throughout the organization.

Understanding your Business for better protection



Laws and Regulations, by groups

Risk Posture and Audit Preparedness	Domestic Compliance	International Compliance	Industry Compliance
• Risk Analysis • Define Domestic and International needs • Likelihood • Impact • Defense Strategies • Controls • Insurance • Audit Universe • Crosswalks • Audit Questionnaire and Artefacts • Audit Schedule • Reporting & Monitoring • Improvement & Automation	• **COSO** – Risk Appetite • **COBIT** – IT Governance Framework • **RMF** – Risk Management Framework • **CSF 2.0** – Cybersecurity Framework • **CIA** – Confidentiality, Integrity, and Availability • **GRC** – Governance, Risk, and Compliance • **NIST** – National Institute of Standards and Technology • **EO** – Executive Orders	• ISO - International Organization for Standardization: • **ISO 3001 –** Risk Management • **ISO 9000** – Quality Management • **ISO 22301** – Business Continuity Management • **ISO 14000** – IT Environment • **ISO 20000** – IT Services • **ISO 27000** – Information Security • DORA, GDPR. NIS 2,	• **PCI DSS** – Payment Card Industry Data Security Standards • **FDA** – Food & Drug Agency • **OMB** – Office of Management and Budget • **SEC** – Securities Exchange Commission • **FFIEC** – Federal Financial Institutions Examination Council • "**Whole of World**" • "**Whole of Nation**" • "**Secure by Design**"

Know and Control your Environment

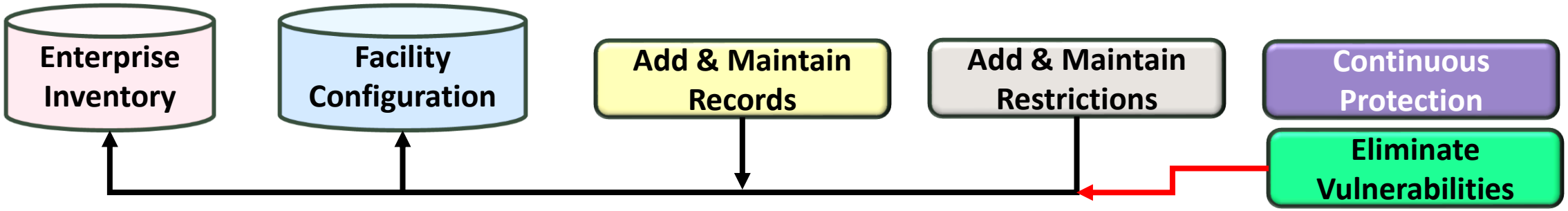
- **HW**AM
- **SW**AM
- **Technology** Management
- **Release** Management
- **Patch** Management
- **End-of-life**

- Facilities, or Locations
- Configuration of equipment
- Services and Applications
- COOP Recovery
- Location Recovery

- **Acquisition** - Order through Delivery
- **Install** and Test
- **Turnover** to User
- **Redeploy** as needed
- **Terminate** within laws and regulations

- **Components** via SBOM RBOM, or AIBOM
- **Identify Countries** parts origin
- Adhere to Laws and **country restrictions**
- Identify Vulnerabilities
- License Management

- **Identify** Vulnerabilities prior to production
- **Apply** Patches and Update Releases
- **Validate** mitigations
- **Vulnerability-free** production
- **CTEM** after Production



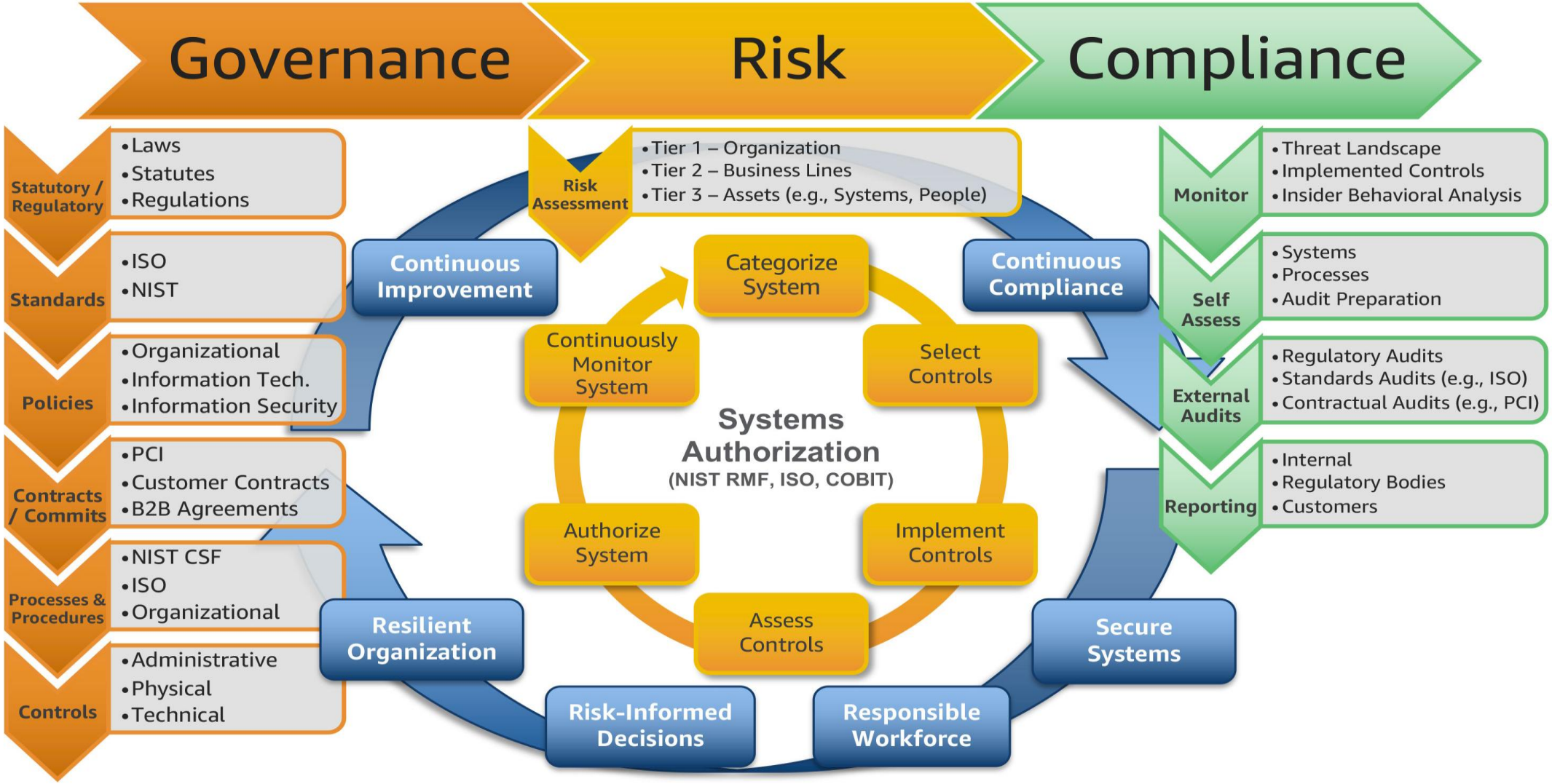
Existing laws and regulations

- **Gramm Leach Bliley** – Safeguard Act (was Bank Holding Act);
- **HIPAA** – Healthcare regulations (including ePHI, HITECH, and Final Ombudsman Rule);
- **Sarbanes – Oxley Act** (sections 302, 404, and 409) on financial assessment and reporting by authorized "Signing Officer";
- **EPA and Superfund** (how it applies to Dumping and Asset Management Disposal);
- **Supply Chain Management "**Laws and Guidelines" included in ***ISO 24762*** (SSAE 16 for Domestic compliance and SSAE 3402 for International Compliance, and NIST 800-34);
- **Supply Chain Management "**Technical Guidelines" described in ***ISO 27031***;
- **Patriots Act** (Know Your Customer, Money Laundering, etc.);
- **Workplace Safety and Violence Prevention** via OSHA, OEM, DHS, and governmental regulations (State Workplace Guidelines and Building Requirements);
- **Income Tax and Financial Information protection** via ***Office of the Comptroller of the Currency*** (OCC) regulations (***Foreign Corrupt Practices Act***, **OCC-177** Contingency Recovery Plan, **OCC-187** Identifying Financial Records, **OCC-229** Access Controls, and **OCC-226** End User Computing).

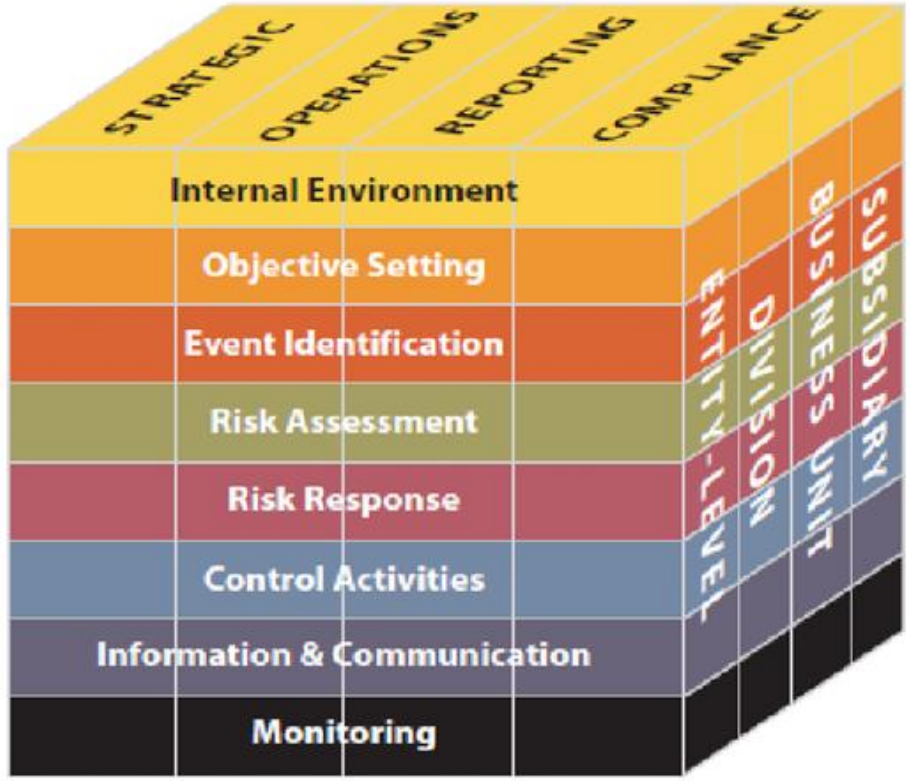
These laws and regulations have been around for many years (Starting with OCC regulations and growing from there) and have served as the basis for Governance Regulations and Compliance (GRC). Additional industry compliance requirements like SEC, FFIEC and HITECH must be adhered to as well.

The CIA (Confidentiality, Integrity, Availability) deals with security and should be adhered to with the same aggressiveness as GRC.

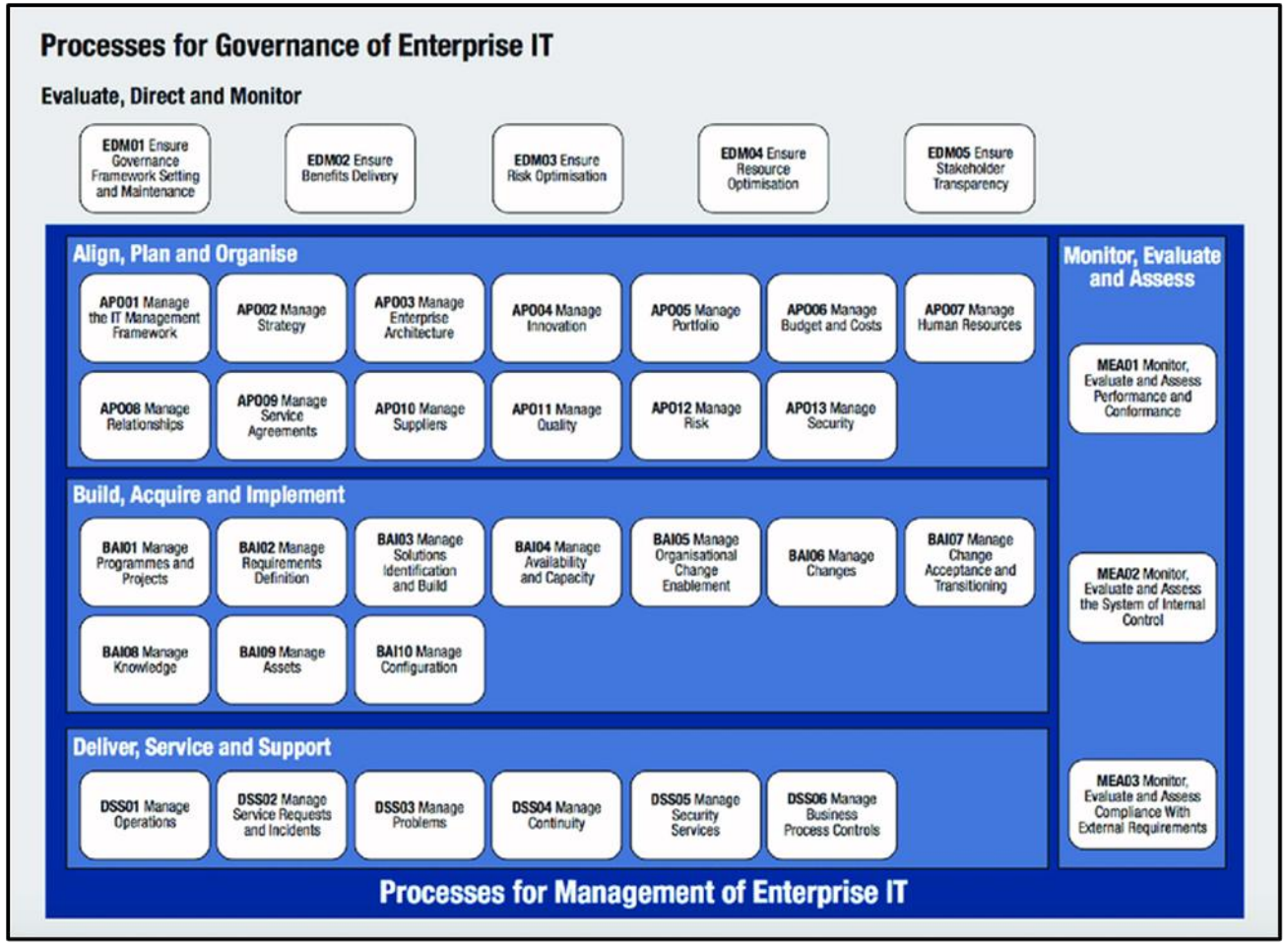
The three pillars of GRC – Governance, Risk, and Compliance



COSO and COBIT Analysis Frameworks

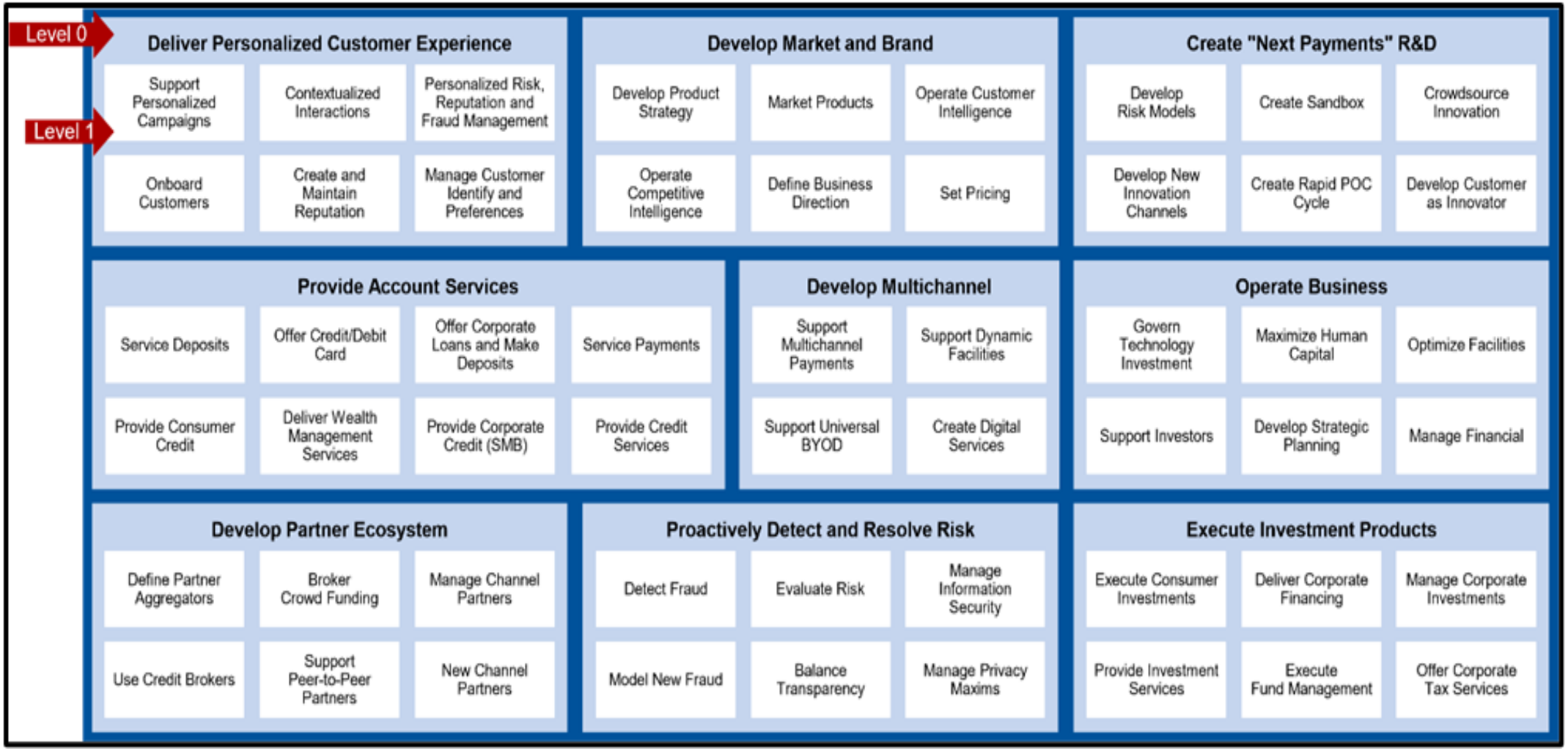


COSO – Committee of Sponsoring Organizations

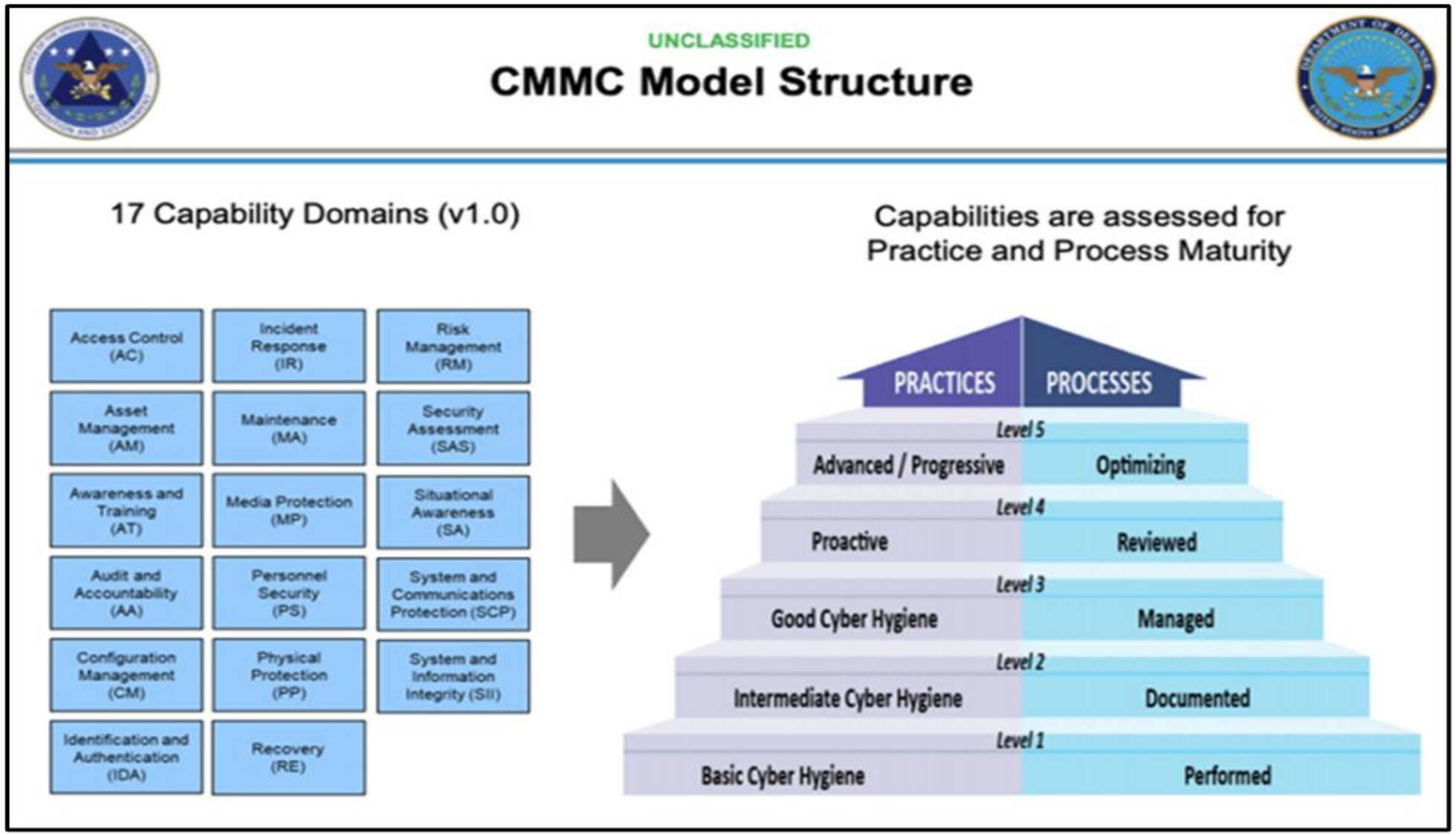


COBIT - Control Objectives for Information and Related Technology

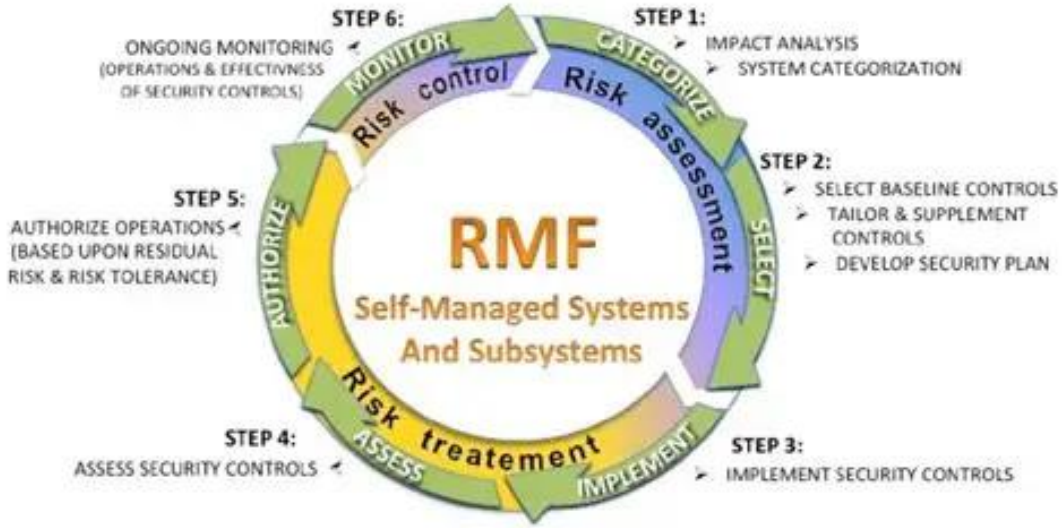
CMMI - Cybersecurity Maturity Model Integration



CMMC - Cybersecurity Maturity Model Certification



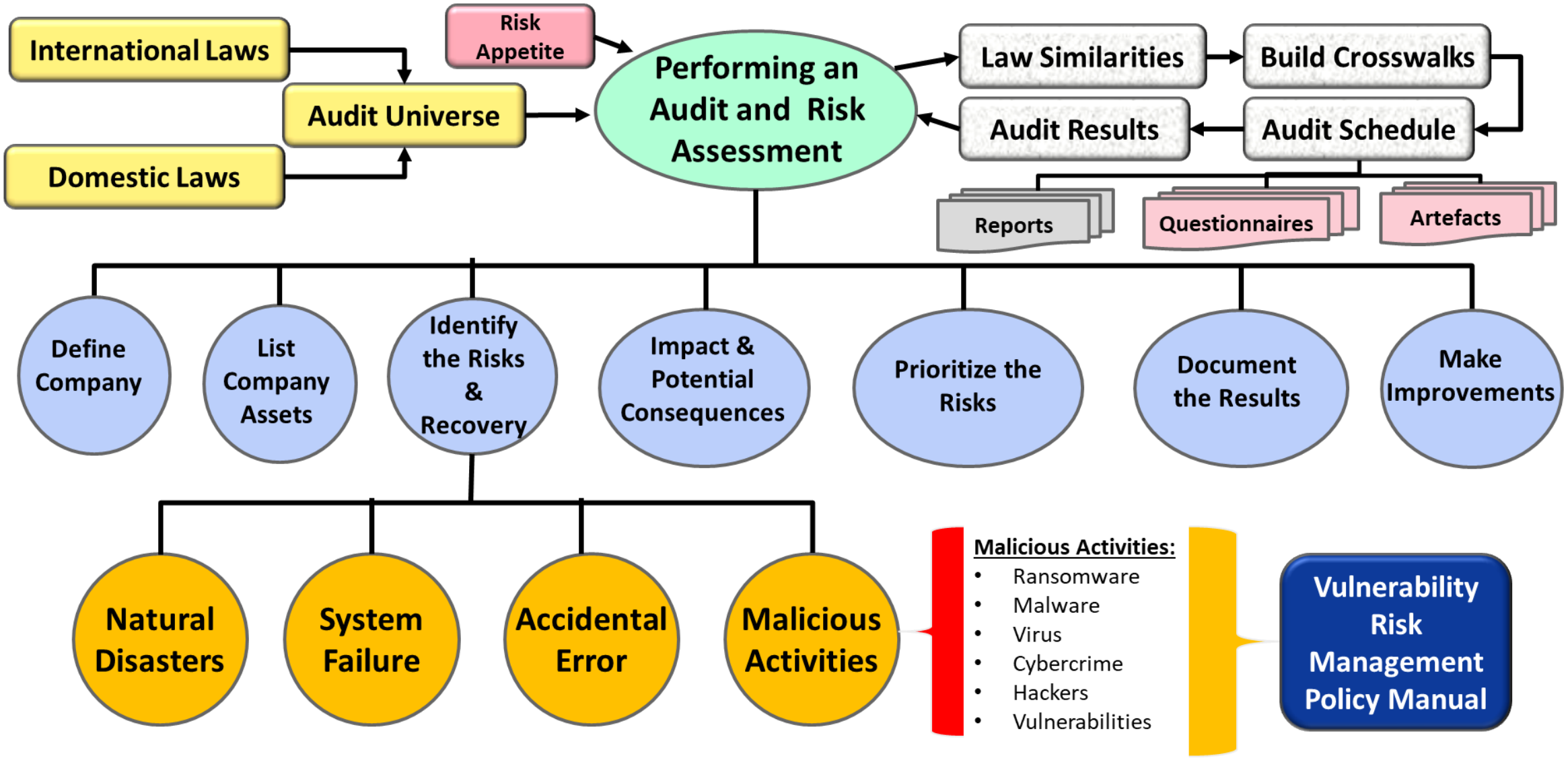
Risk Management Framework (RMF) NIST SP 800-37



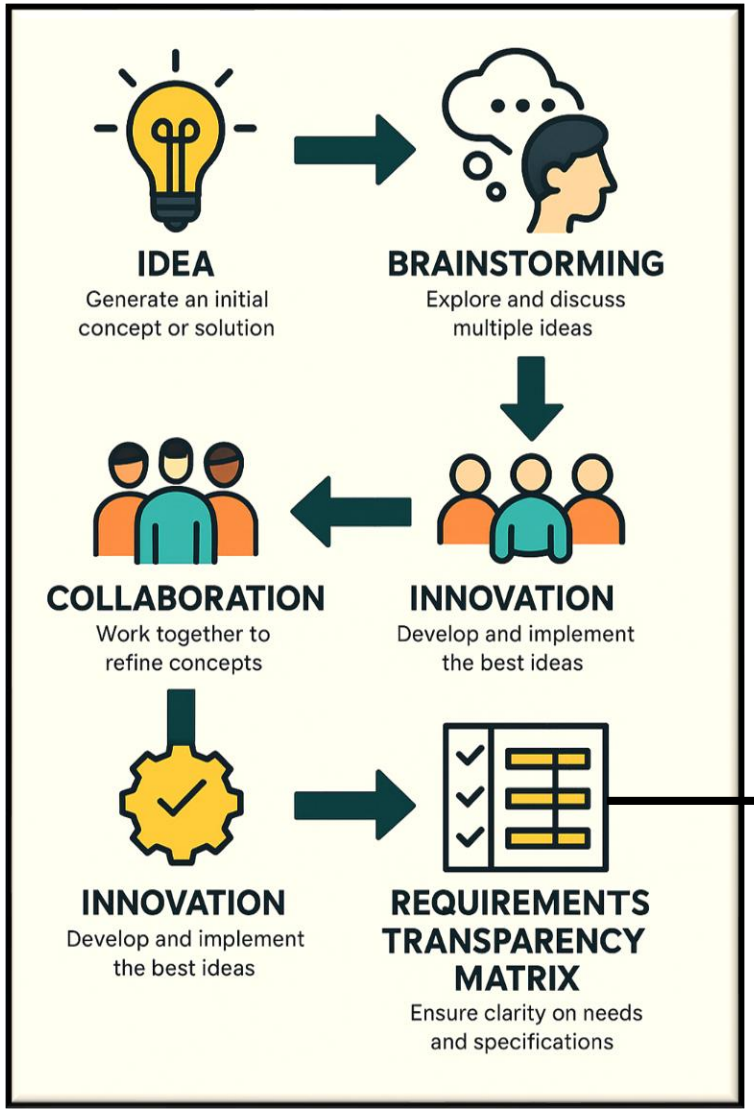
RMF Stages:

1. **Impact Analysis**
2. **Baseline Controls**
3. **Security Controls**
4. **Assess Security Controls**
5. **Authorize Operations (ATO & cATO)**
6. **Monitoring and Repair**

Performing an Audit and Risk Assessment



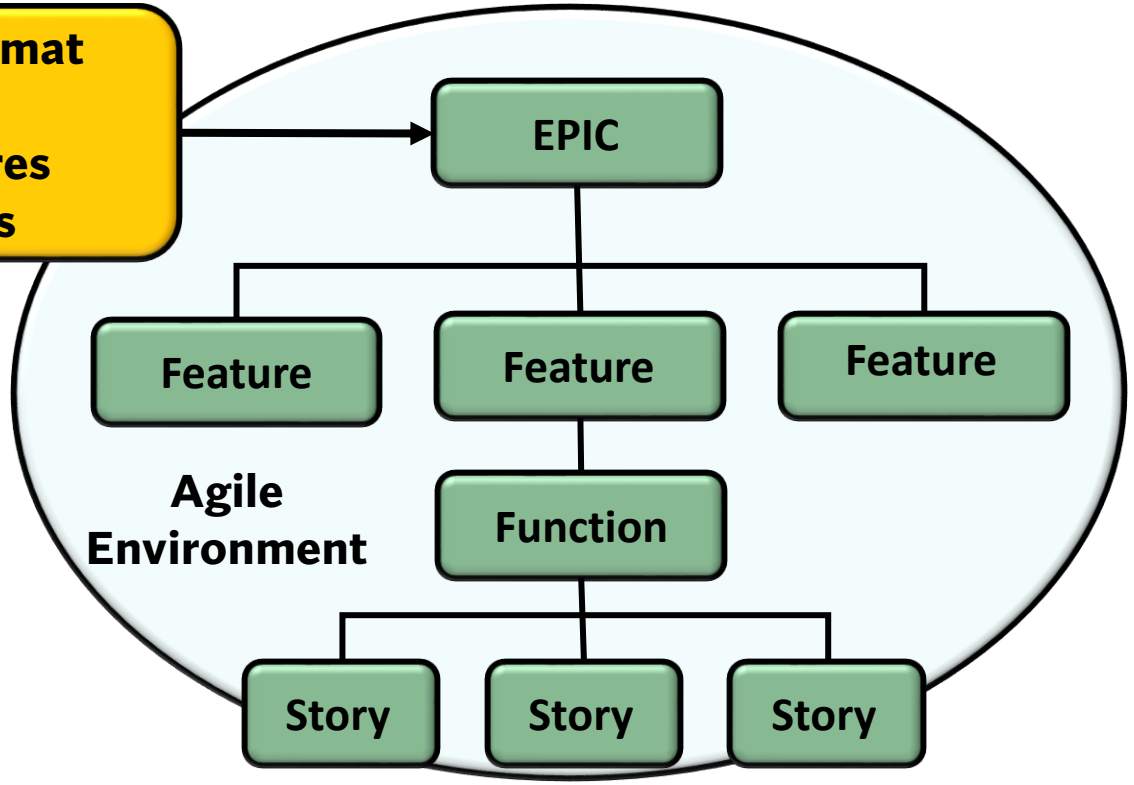
Concept to Requirements Transparency Matrix (RTM)



Requirements Transparency Matrix (RTM)

RTM Review
- Acceptance Review
- Features & Functions
- Specific Operations

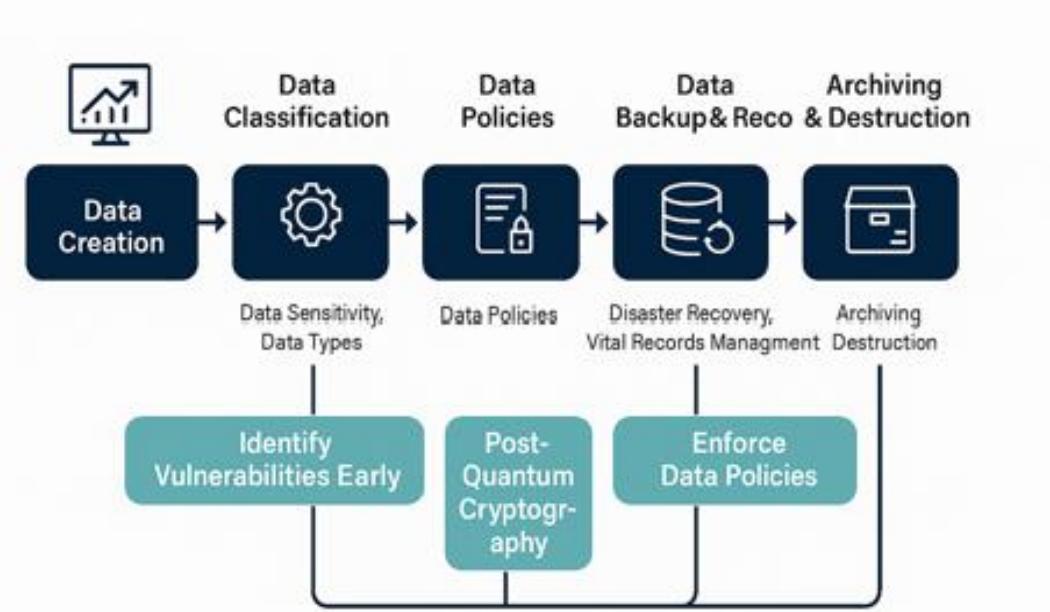
Agile Format
- Epic
- Features
- Stories



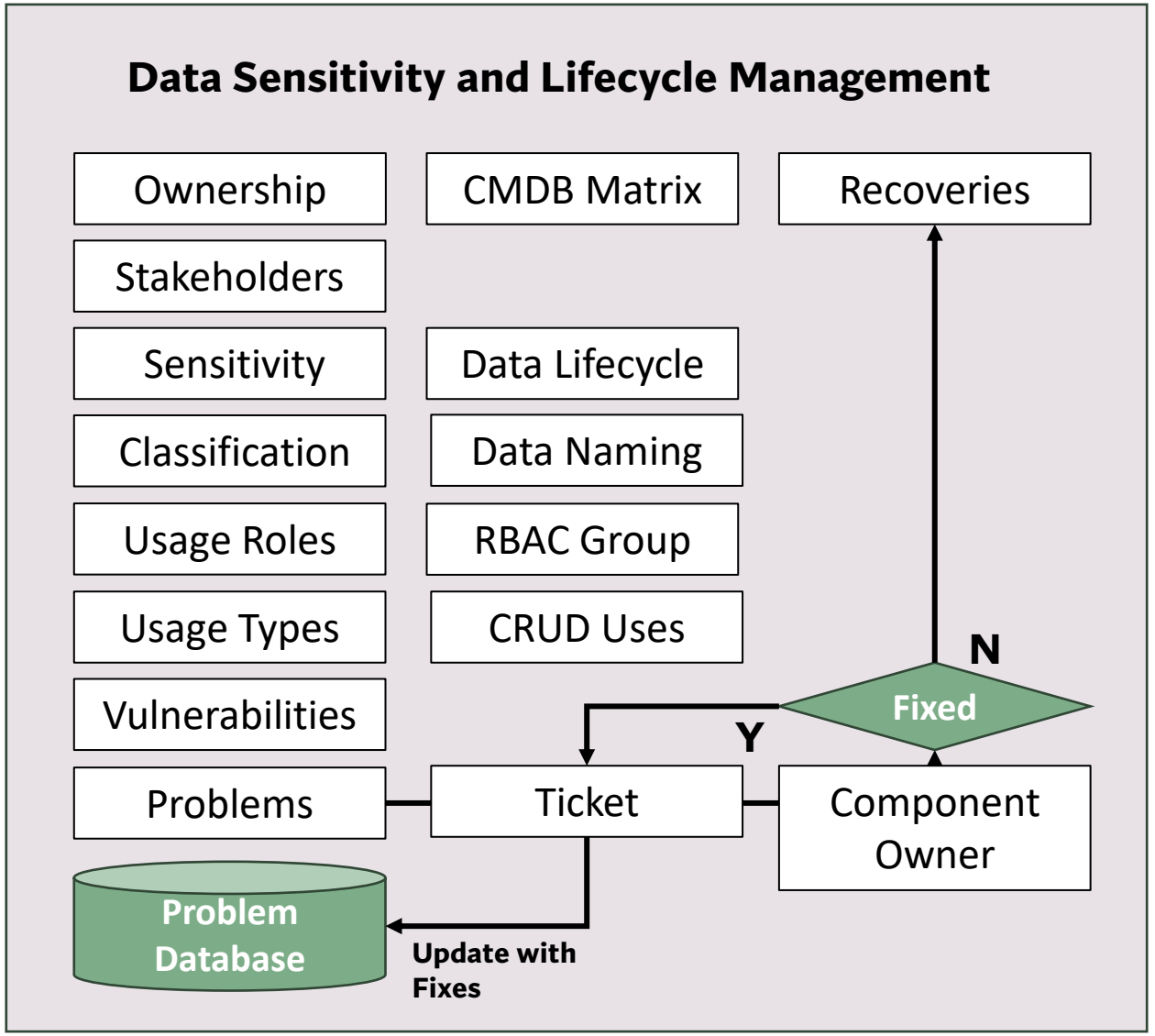
Requirements Transparency Matrix (RTM)

Requirements Transparency Matrix (RTM)	
Column Title	**Description**
Requirement ID	Unique identifier for traceability (e.g., REQ-001)
Requirement Name	Short title or label for the requirement
Description	Clear and detailed explanation of the requirement
Source / Stakeholder	Origin of the requirement (department, person, or document)
Business Objective	Related strategic goal or business driver
Priority (High/Med/Low)	Relative importance or urgency of the requirement
Type (Functional/Non-Functional)	Categorization of requirement type
Status (Proposed/In Progress/Met)	Current state of the requirement
Owner / Responsible Party	Individual or team accountable for delivery
Dependencies	Other requirements or systems that this one depends on
Acceptance Criteria	Conditions or tests for requirement to be considered fulfilled
Verification Method	How the requirement will be tested or validated
Traceability to Use Case / Feature	Related use case, user story, or system feature
Change History	Notes or logs of revisions to the requirement
Comments / Notes	Additional context or communication between stakeholders

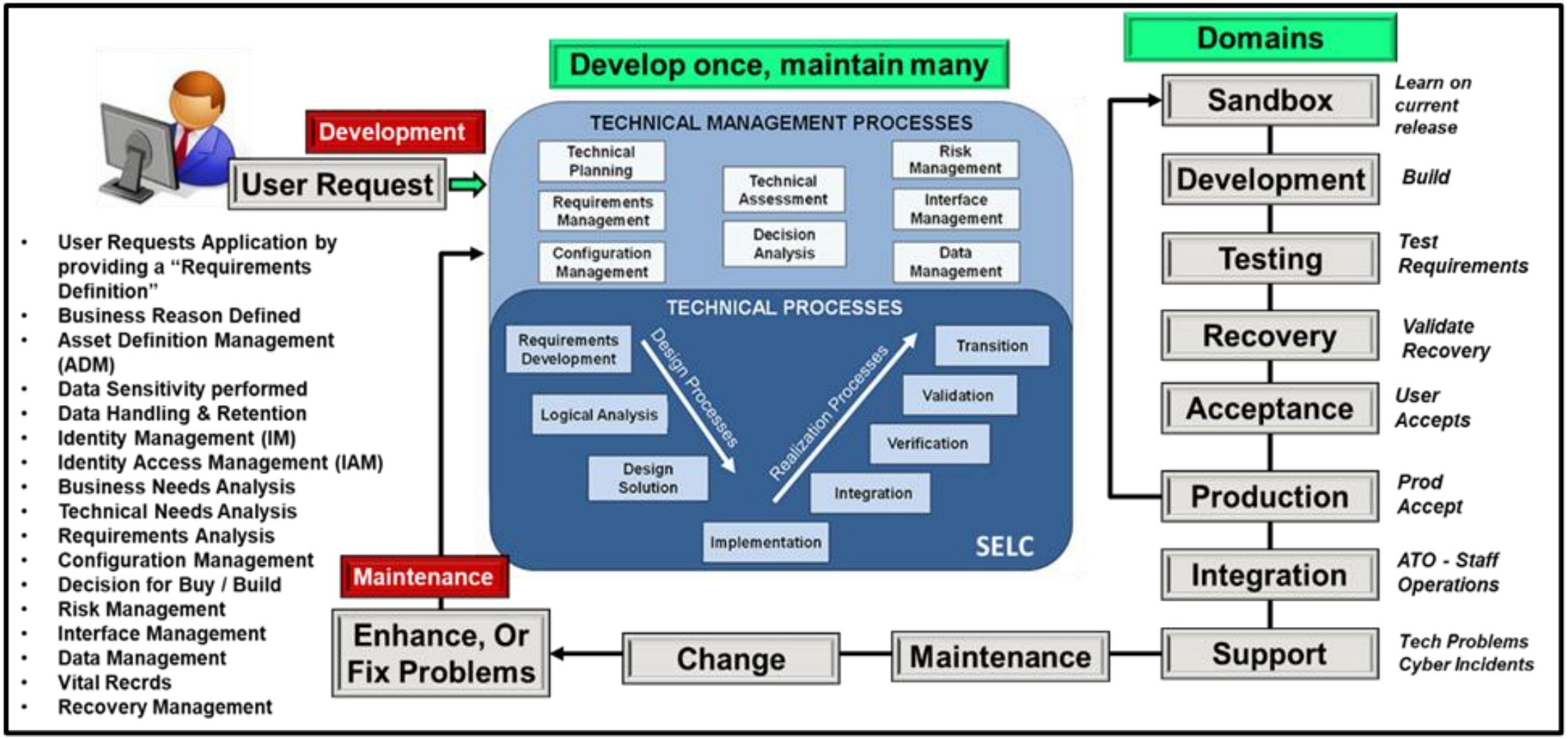
Data Sensitivity, Security, and Problems Resolution



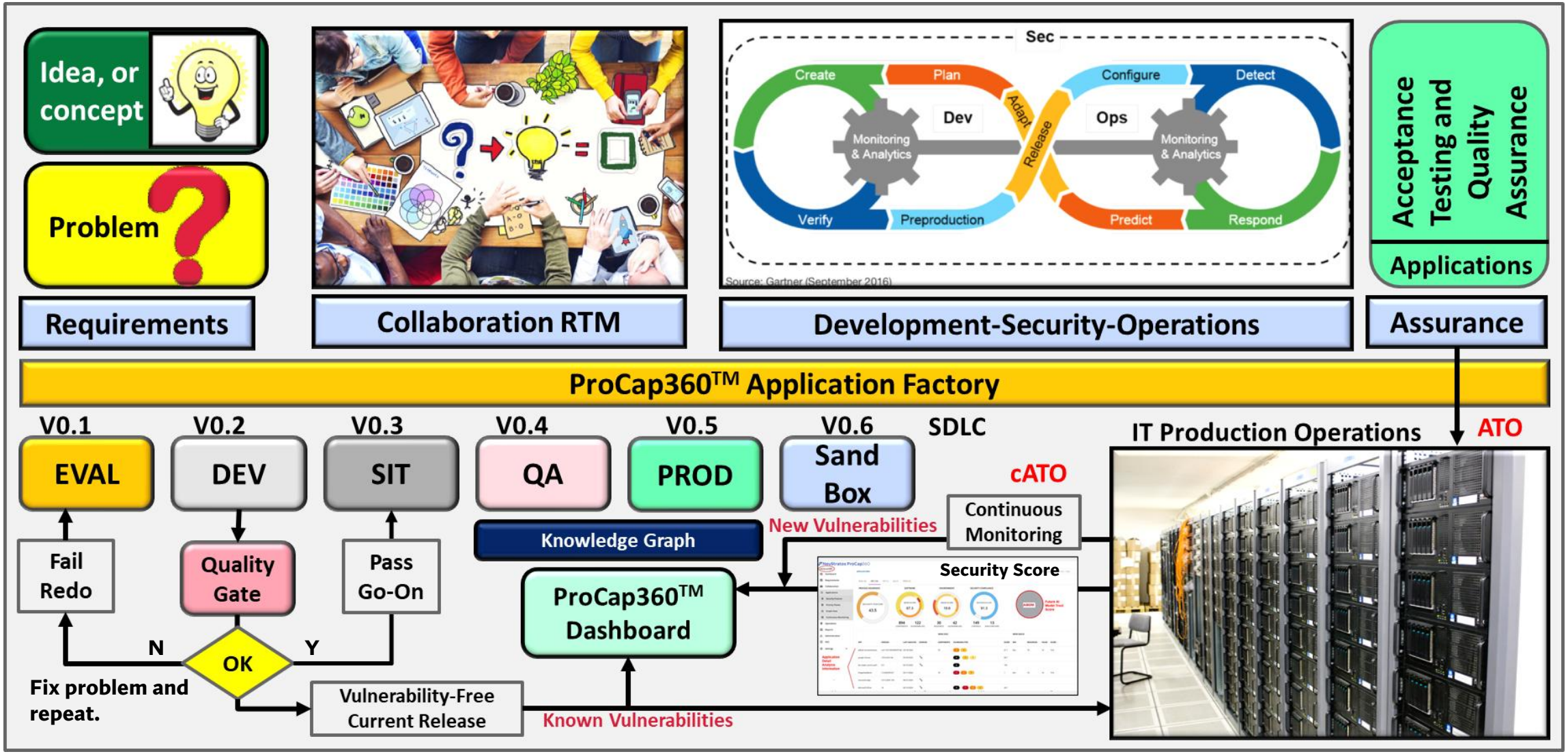
- Identify Data and its owner, then
- Define Sensitivity and Protection Requirements,
- Data Lifecycle and Naming conditions,
- Employ Data Security & Encryption, and
- Allow access based on Location, Group and Usage Type (RBAC).
- Include in Problem and Vulnerability Management system, by tying component to owner for quick repair and update.



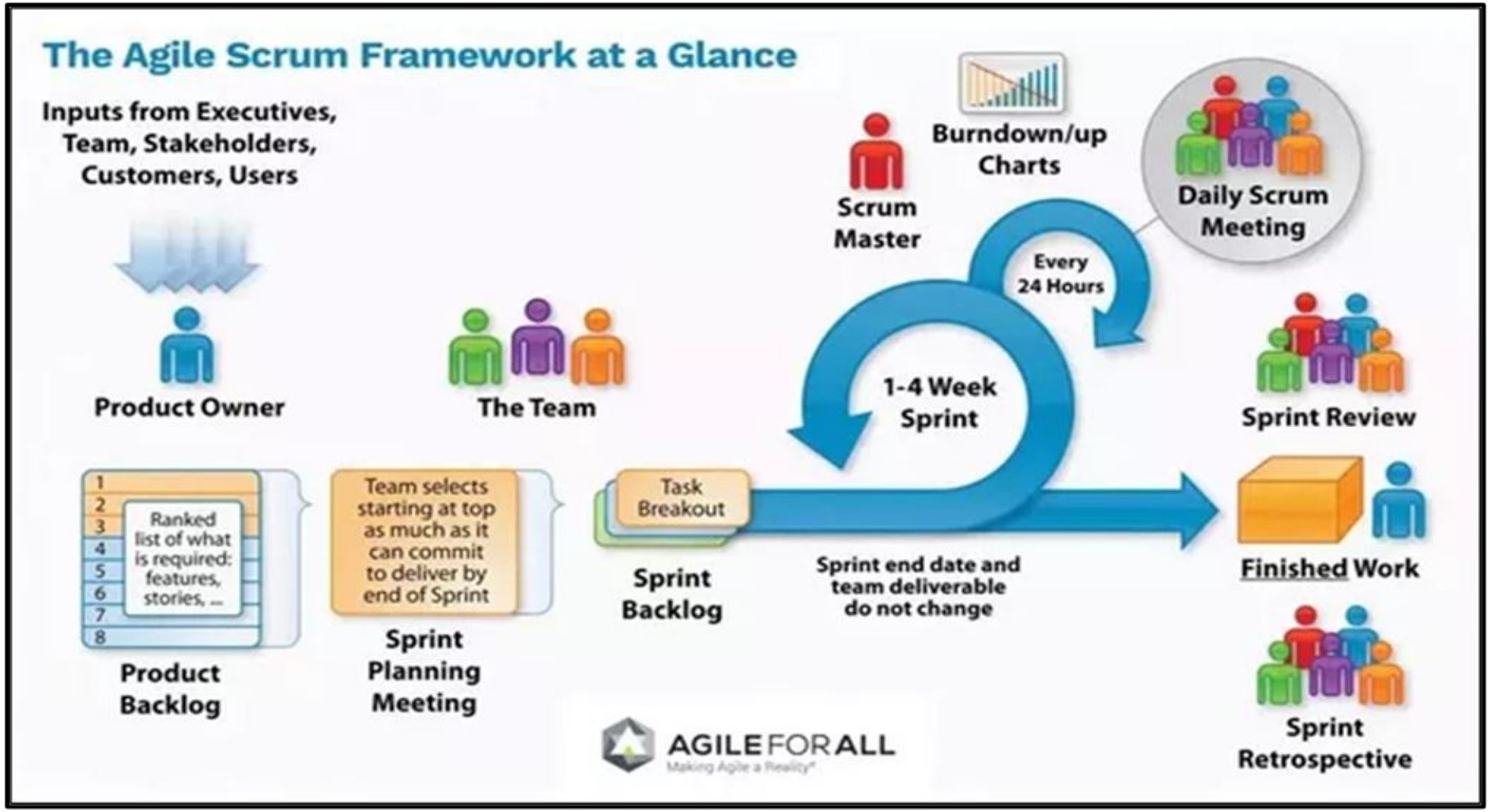
Applications Development Stages



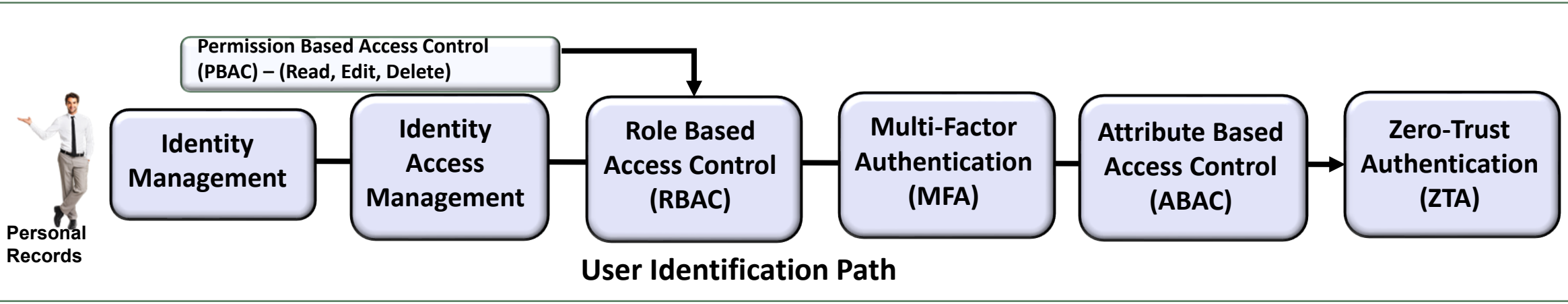
From Concept to Applications via DevSecOps



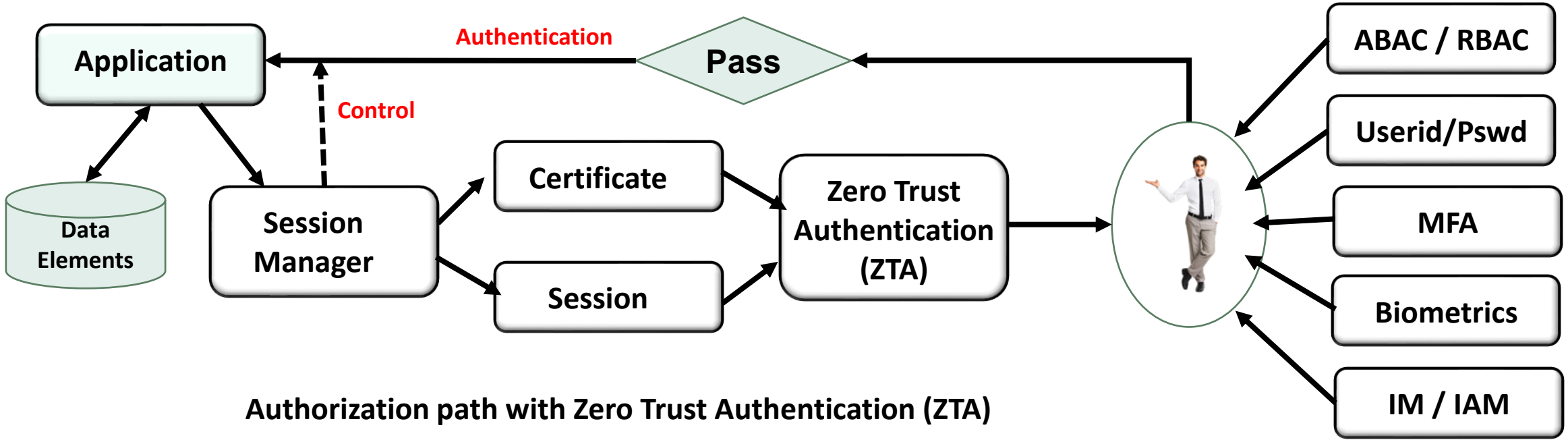
Agile, JIRA, Confluence, and SharePoint



Identity and Access Management technologies



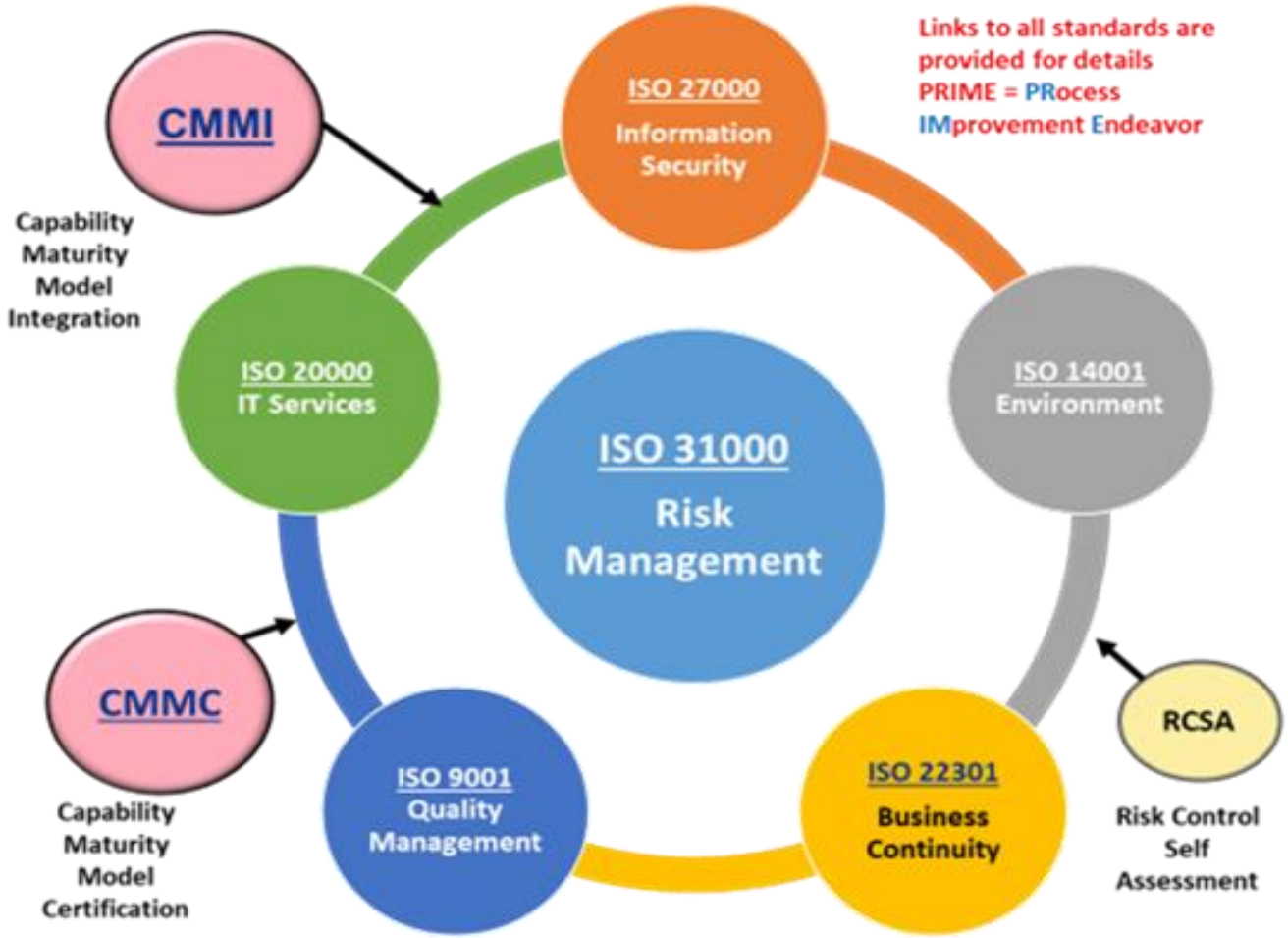
User Identification Path



Authorization path with Zero Trust Authentication (ZTA)

Integrating Protection Frameworks

The newest Integration Model – PRIME Approach



Developing a business optimization approach that combines these ISO Standards will help your company achieve certification more quickly.

Implementing the standards separately will result in overlaps and inefficiencies.

Start with **Risk Management** (31000) and ensure that **Information Security** (ISO 27000) is current and best suited to protect your **Data** and **Environmental facilities** (ISO 14001).

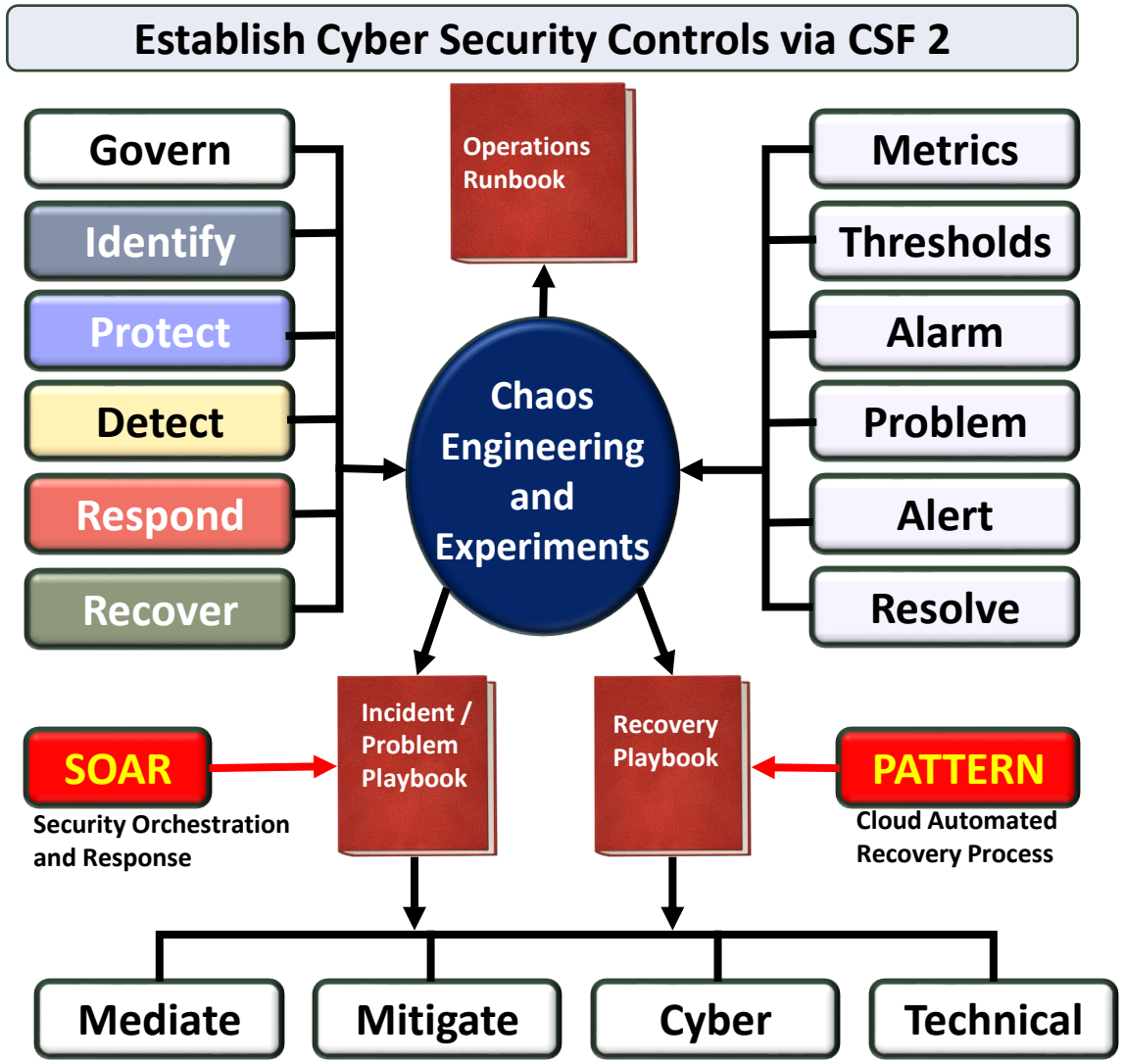
Then implement your **Business Continuity** (ISO 22301) Recovery Certification Process for Emergency, Crisis, Business, and IT Disaster Recovery Management.

Integrate Quality Management (ISO 9001) within all of your processes to ensure the products and services your company delivers will be of the highest quality and capable of protecting your brand and reputation.

Finally ensure your **IT Services** (ISO 20000) are of the highest quality possible and that all ISO standards are adhered to in compliance with existing laws and regulations, so that you never have to fear failing an audited.

NIST CSF 2.0 Categories and Application

NIST Cybersecurity Framework 2.0		
CSF 2.0 Function	**CSF 2.0 Category**	**CSF 2.0 Category Identifier**
Govern (GV)	Organizational Context	GV.OC
	Risk Management Strategy	GV.RM
	Roles and Responsibilities	GV.RR
	Policies and Procedures	GV.PO
Identity (ID)	Asset Management	ID.AM
	Risk Assessment	ID.RA
	Supply Chain Risk Management	ID.SC
	Improvement	ID.IM
Protect (PR)	Identity Management, Authentication, and Access Control	PR.AA
	Awareness and Training	PR.AT
	Data Security	PR.DS
	Platform Security	PR.PS
	Technology Infrastructure Resilience	PR.IR
Detect (DE)	Adverse Event Analysis	DE.AE
	Continuous Monitoring	DE.CM
Respond (RS)	Incident Management	RS.MA
	Incident Analysis	RS.AN
	Incident Response Reporting and Communication	RS.CO
	Incident Mitigation	RS.MI
Recover (RC)	Incident Recovery Plan Execution	RC.RP
	Incident Recovery Communication	RC.CO



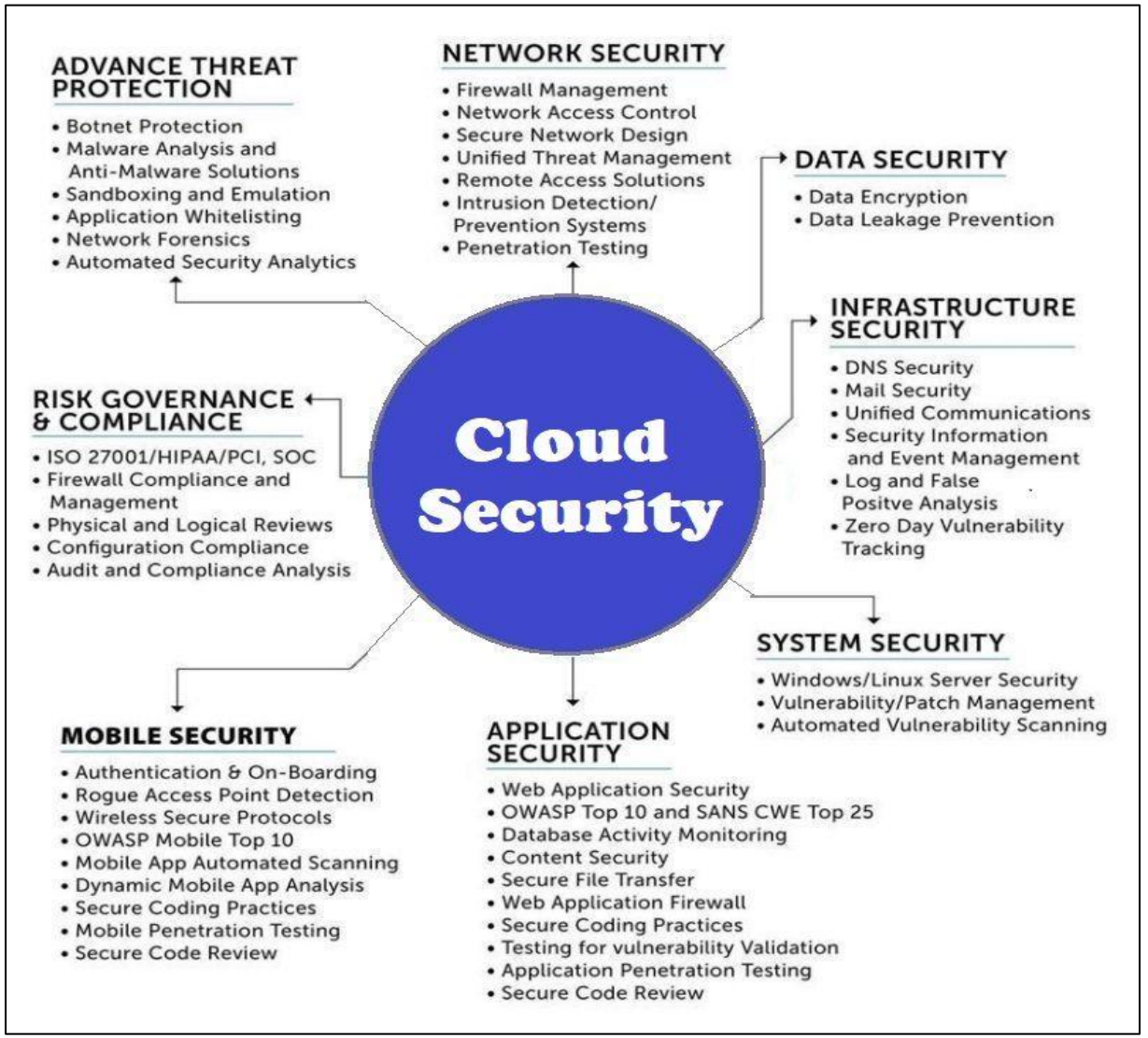
Cloud Security Disciplines

Advanced Threat Protection:
- Botnet Protection
- Malware Analysis and Anti-Malware Solutions
- Sandboxing and Emulation
- Application Whitelisting
- Network Forensics
- Automated Security Analytics

Risk Governance & Compliance:
- ISO 27001/HIPAA/PCI. SOC
- Firewall Compliance & Management
- Physical & Logical Reviews
- Configuration Compliance
- Audit and Compliance Analysis

Mobile Security:
- Authenticating & On-Boarding
- Rogue Access Point Detection
- Wireless Security Protocols
- OWASP Mobile Top Ten
- Mobile App Automated Scanning
- Dynamic Mobile App Analysis
- Secure Coding Practices
- Mobile Penetration Testing
- Secure Code Review

Data Security:
- Data Encryption
- Data Leakage Prevention



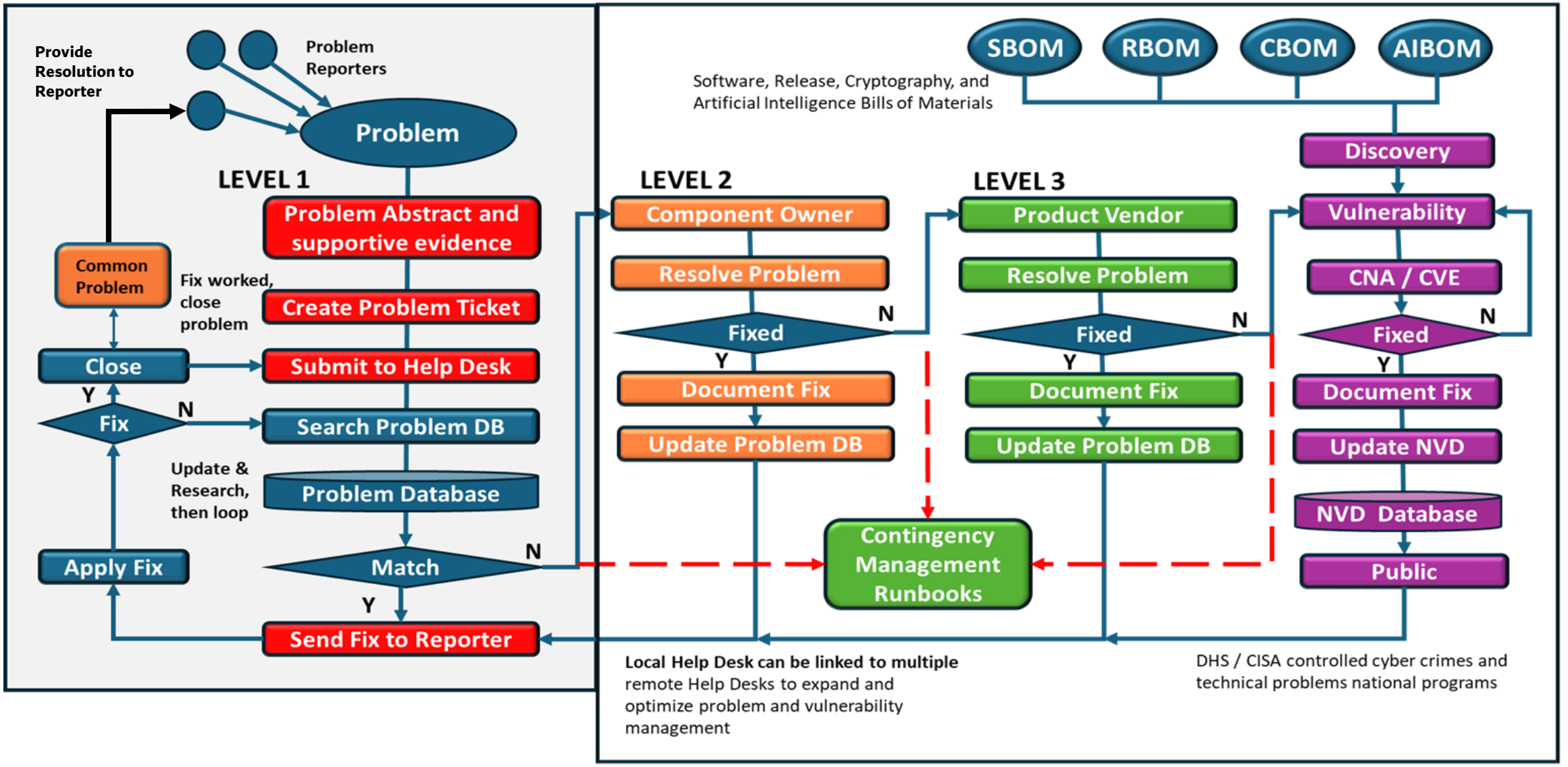
Network Security:
- Firewall Management
- Network Access Control
- Secure Network Design
- Unified Threat Management
- Remote Access Solutions
- Intrusion Detection
- Prevention Systems
- Penetration Testing

Infrastructure Security:
- DNS Security
- Mail Security
- Unified Communications
- Security Information and Event Management
- Logs and False Positive Analysis
- Zero Day Vulnerability Management

System Security:
- Windows/Linux Server Security
- Vulnerability/Patch Management
- Automated Vulnerability Scanning

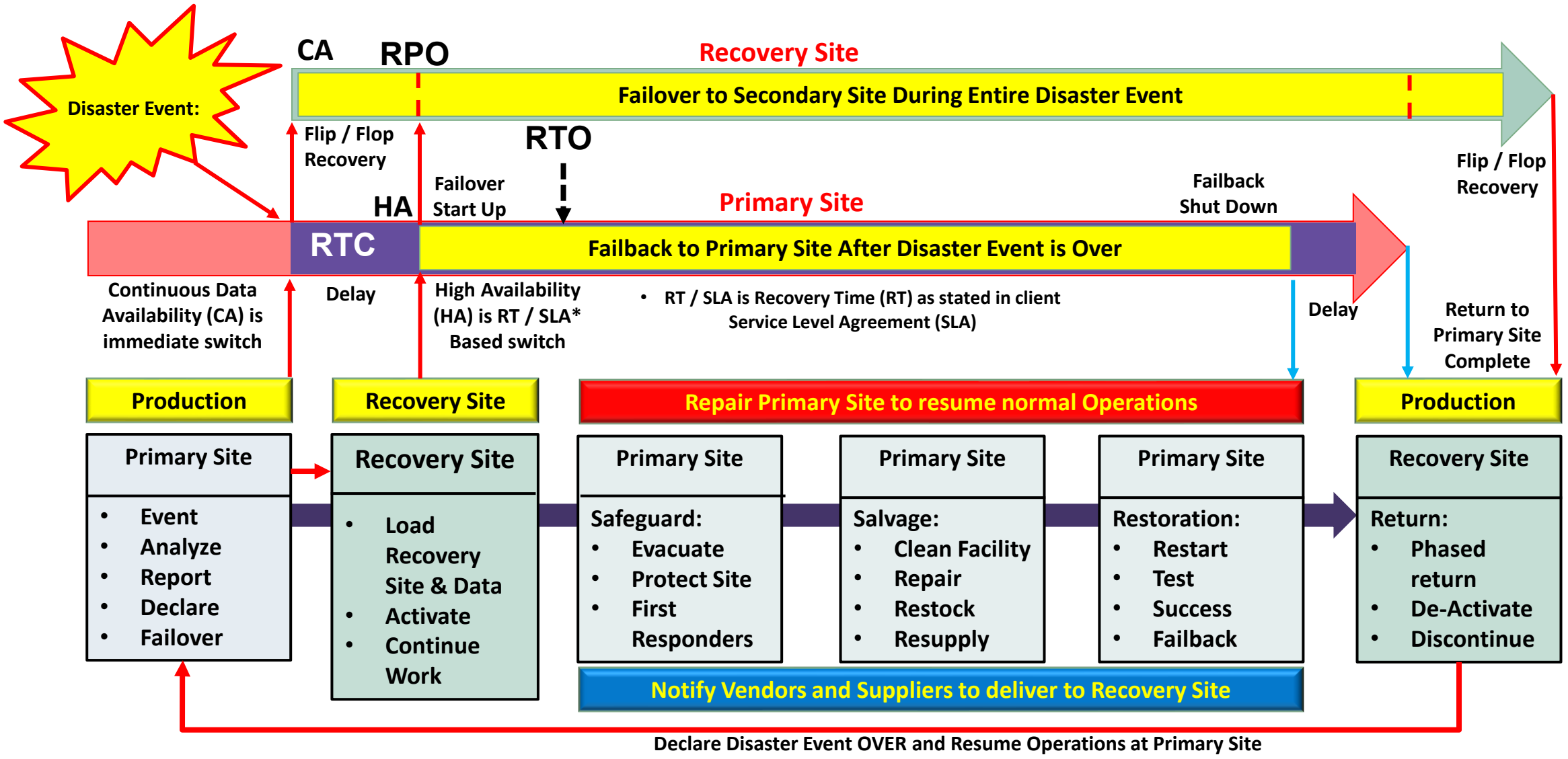
Application Security:
- WEB Application Security
- OWASP Top 10 and SANS CWE Top 25
- Database Activity Monitoring
- Content Security
- Secure File Transfer
- Secure SDLC practices
- DevSecOps implementation

Problem Management and Control



The Disaster Event Life Cycle

CA is Continuous Availability
HA is High Availability
RTO – Recovery Time Objective
RPO – Recovery Point Objective
RTC – Recovery Time Capability
MTO – Maximum Tolerable Outage



Ten Step Process to establish BCM/DR Practice

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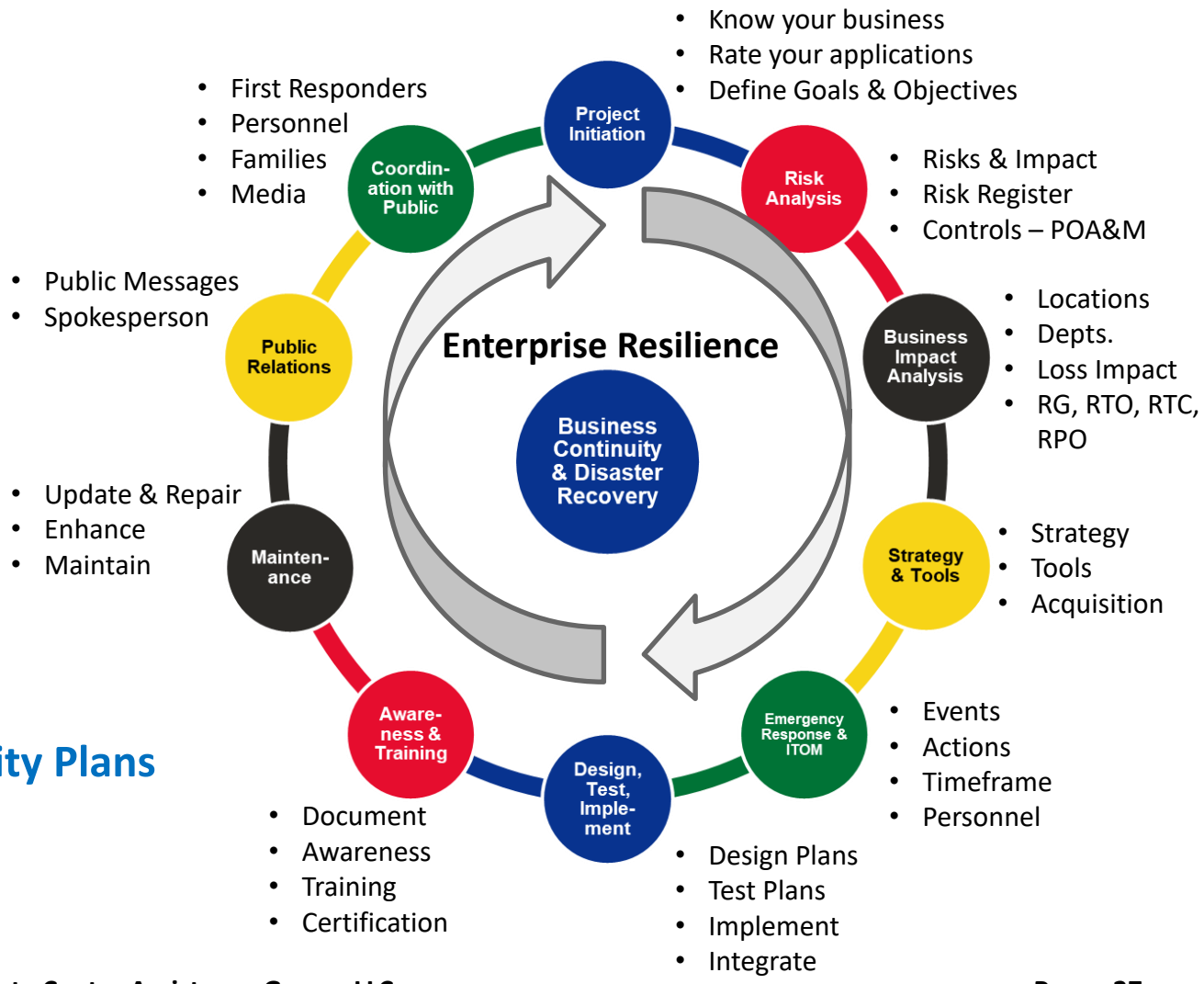
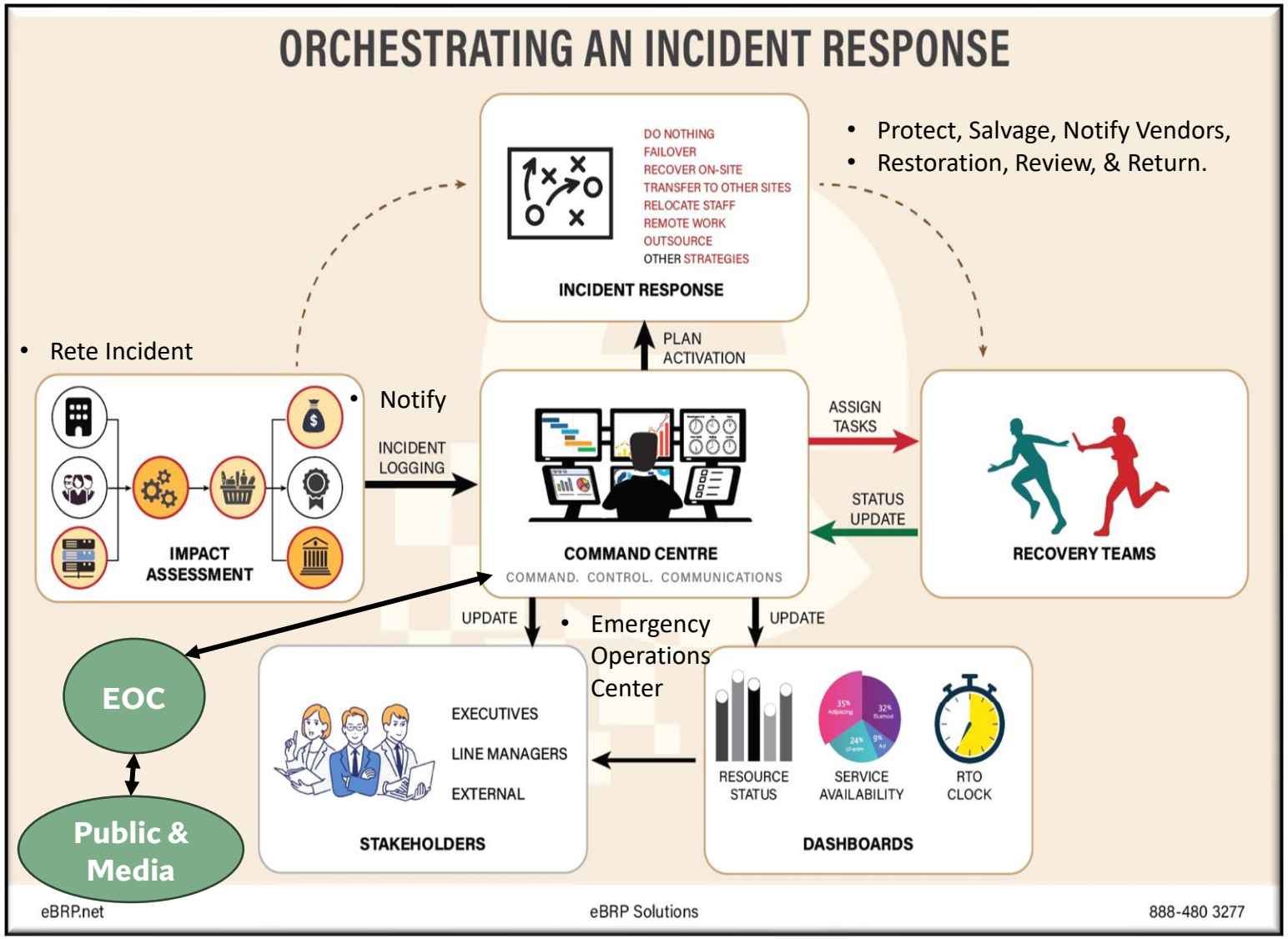
1. Project Initiation and Management
2. Risk Evaluation and Controls Improvement
3. Business Impact Analysis
4. Developing Business Continuity Strategies
5. Emergency Response and Operations Restoration (Backup, Vaulting, Restoration)
6. Designing and Implementing Business Continuity Plans
7. Awareness and Training
8. Maintaining and Exercising Business Continuity Plans
9. Public Relations and Crisis Communications
10. Coordinating with Public Authorities



Business Continuity Command Center → EOC



Incident and Recovery Management.

1. Incident Occurs – Problem Ticket, Alarm
2. Impact Assessment performed – Problem Ticket completed and failing component
3. Command Center notifies Recovery Teams
4. Stakeholders are informed
5. Dashboards Maintained
6. Status Reports provided to EOC
7. EOC only Talks to Public & Media (single voice)
8. Incident Tracked until Completed
9. Post Incident Review
10. Improvements
11. Update & Maintain Recovery Plans

Overall Benefits

Efficiency: Centralized control improves response times and reduces the duplication of efforts.

Effectiveness: Enhanced coordination and resource allocation lead to more effective incident handling.

Compliance and Reporting: Ensures that response efforts are documented and reported, meeting regulatory and compliance requirements.

Sequence of Events to enact a Recovery Operation

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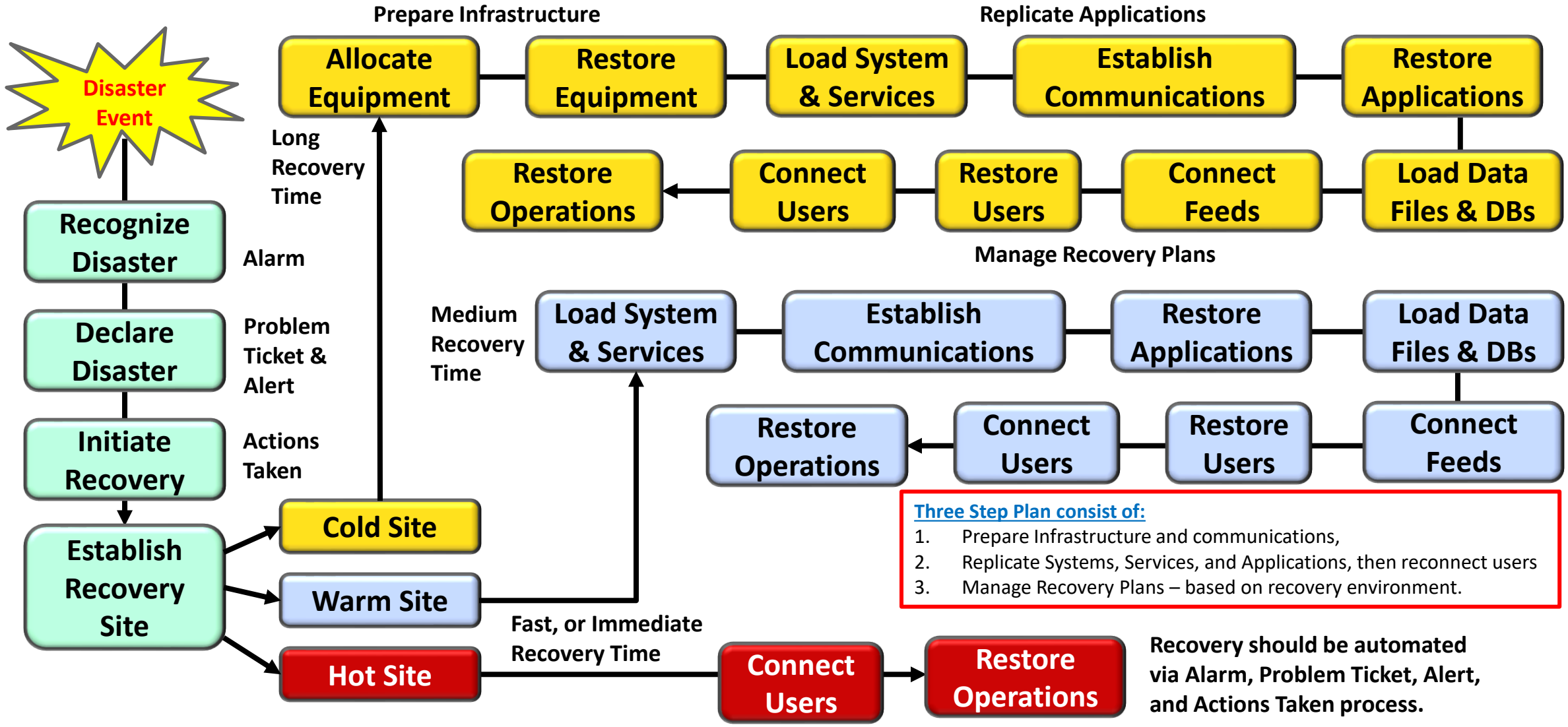
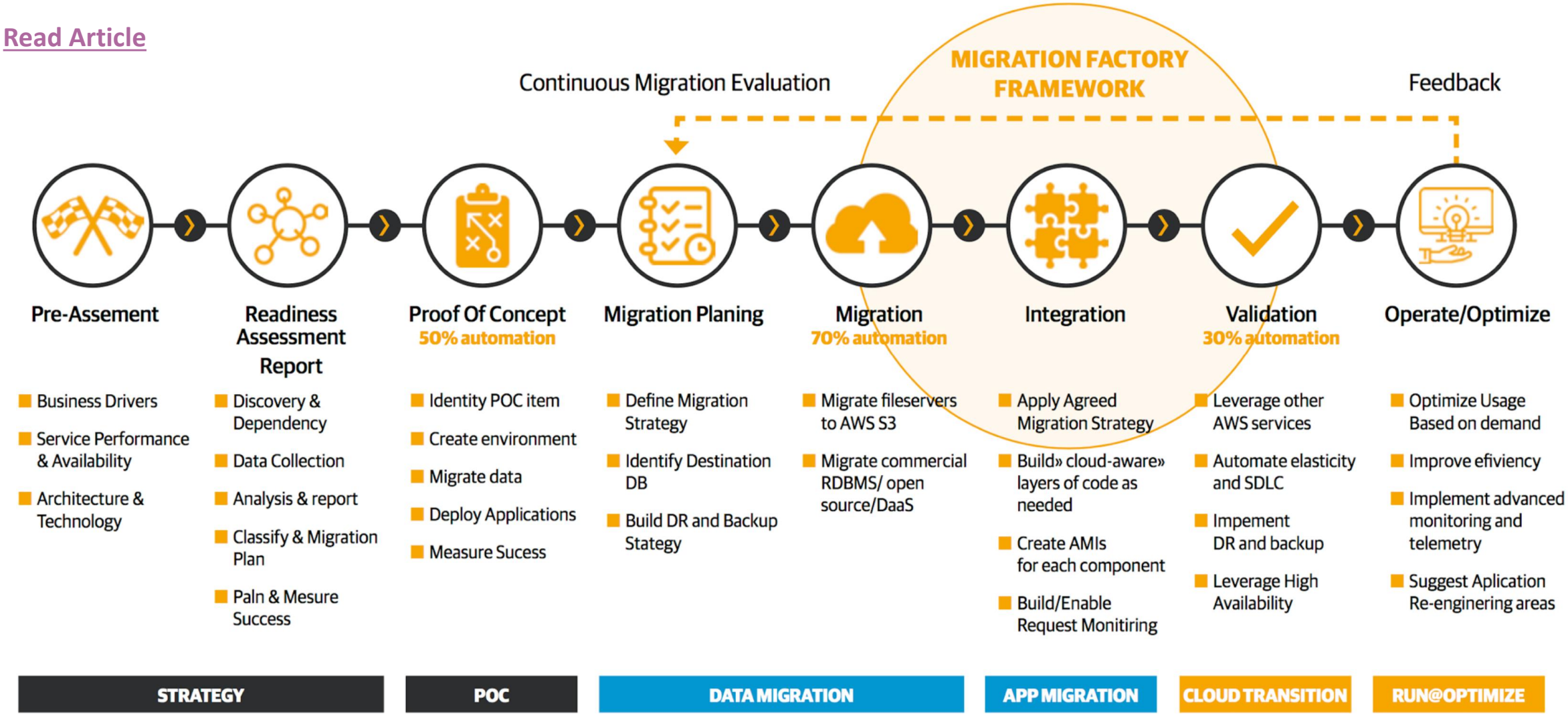


Using AI Planning for Migrating Applications to AWS Cloud

Read Article



Backup, Archive, and Recover Data Files

BEYOND BACKUPS: TRUE DIGITAL RESILIENCE

Incident Response

- Develop and maintain a comprehensive incident response plan
- Conduct regular simulations to ensure readiness

Cloud Solutions

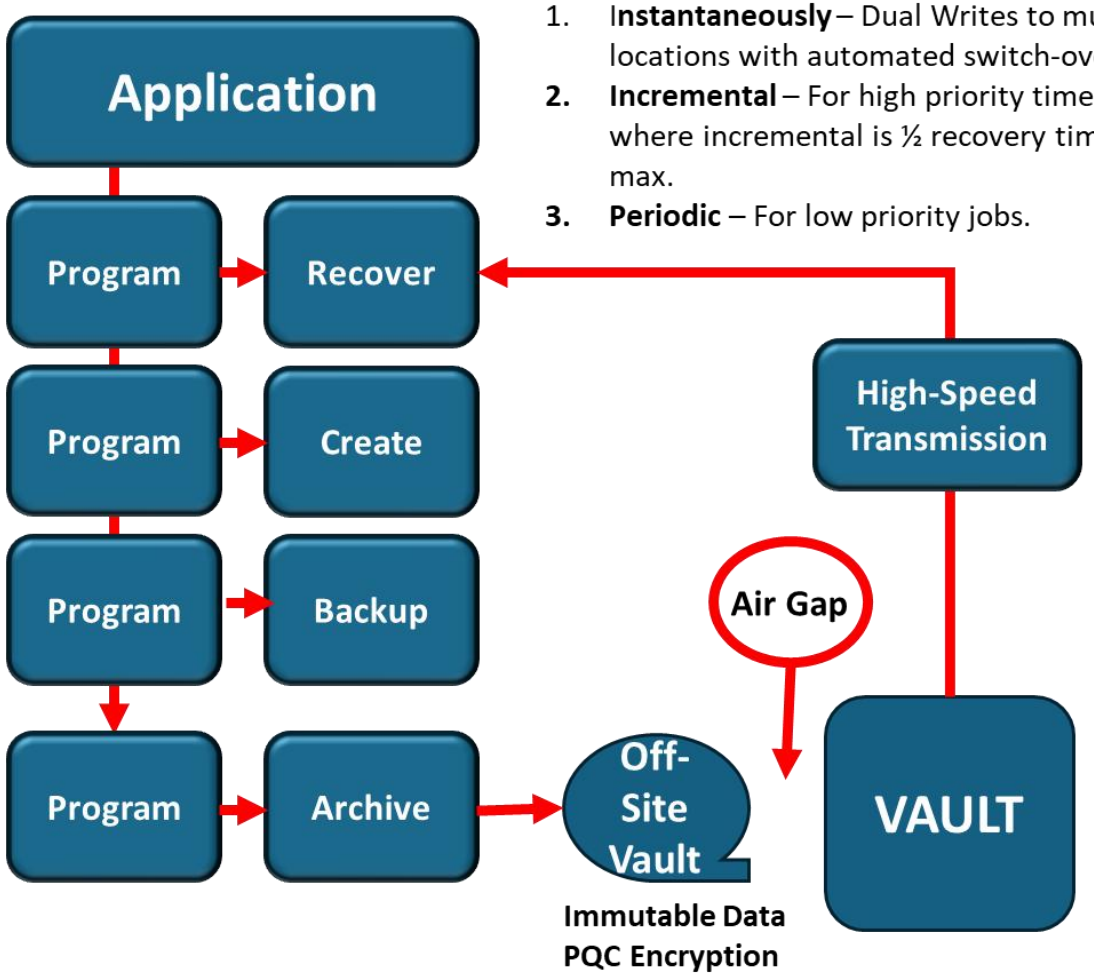
- Implement hybrid cloud solutions for scalability and flexibility
- Utilize cloud-based disaster recovery

RTO/RPO Metrics

- Recovery Time Objective (RTO): maximum acceptable time to restore functions
- Recovery Point Objective (RPO): maximum acceptable data loss measured in time
- Define RTO and RPO to establish clear recovery goals

Case Studies

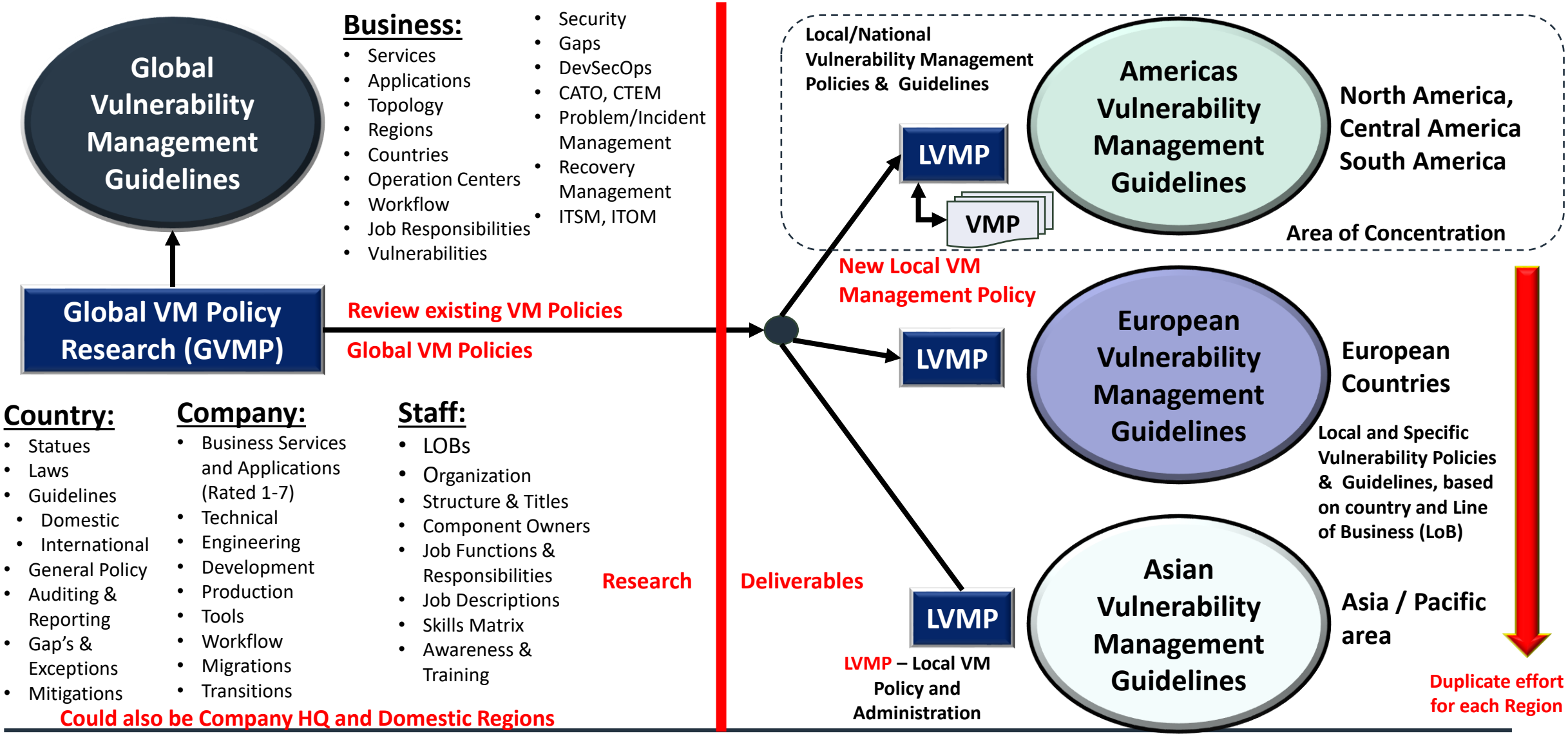
Downtime can cost up to $9,000 per minute



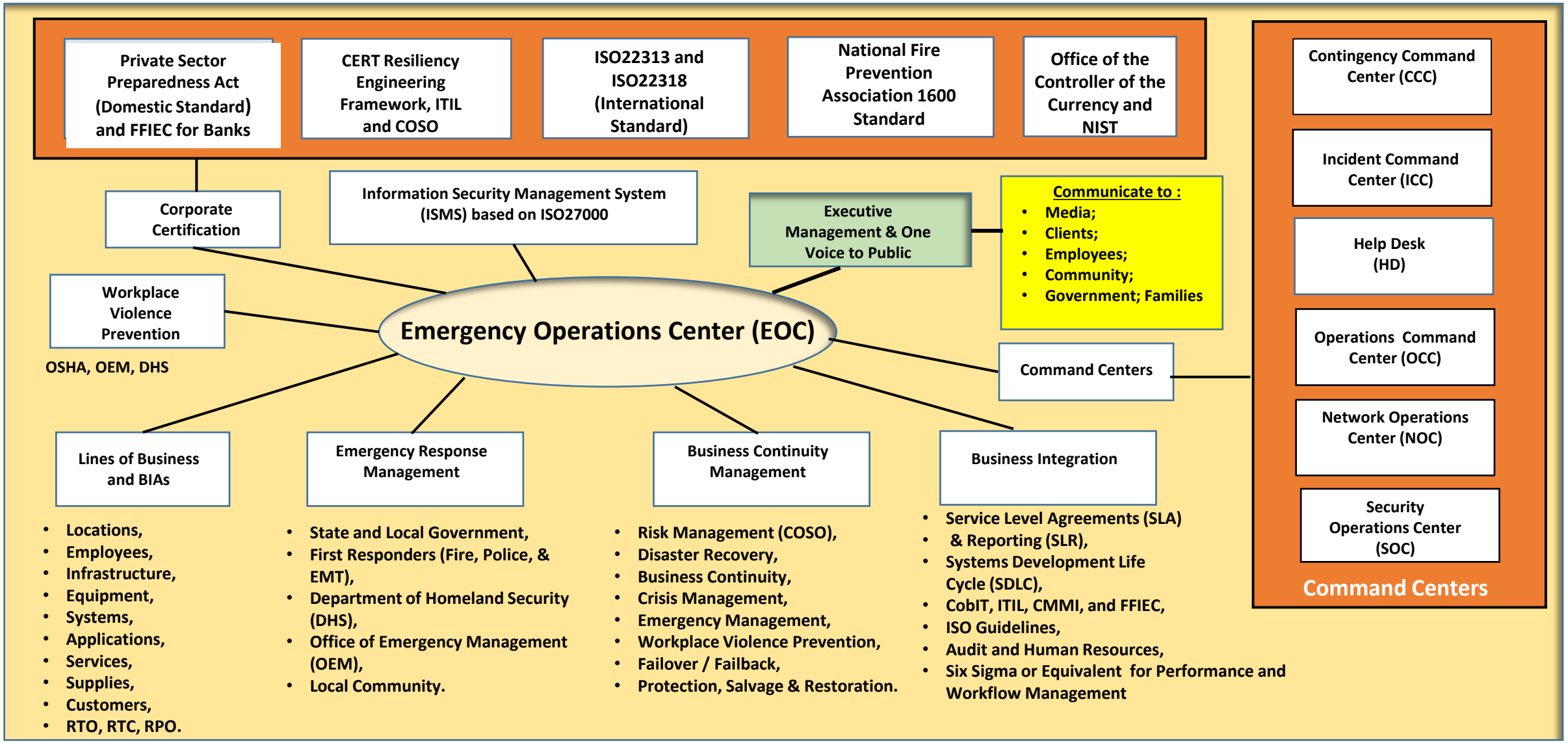
Backup / Recovery Times by RTO:

1. **Instantaneously** – Dual Writes to multiple locations with automated switch-over.
2. **Incremental** – For high priority times where incremental is ½ recovery time at max.
3. **Periodic** – For low priority jobs.

Global Vulnerability Management Policy generation



Emergency Operations Center (EOC)

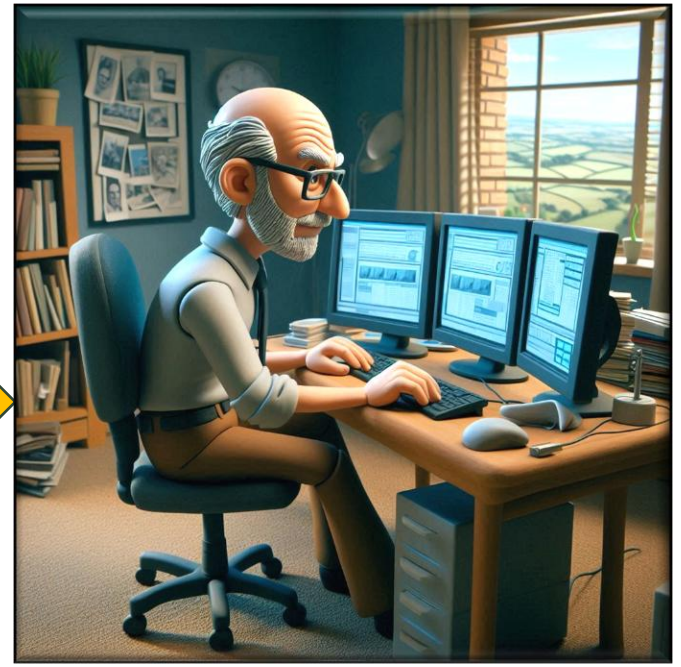


Reaching out to assist our clients

- Discuss
- Define
- Propose
- Achieve

Quality Service at a Reasonable Price

Helping Clients to achieve success



If you find the information included in this presentation of value and want to explore methods to improve the reliability of your enterprise and IT environment, please contact me to discuss your needs and request our assistance.

We look forward to our future relationship.

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