

Department of Veterans Affairs CIO Conference



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Why Are We Here?

- **To establish a forum to foster improved department-wide communications across all elements of the VA IT community**
- **To present the department's Information Technology strategy for the future and obtain feedback**
- **To understand critical issues facing IT people in the field**
- **To reconcile differences between the strategy and the critical issues**
- **To develop action plans to achieve the strategy and reconcile the differences**

Achieve a One-VA IT Team



Six Strategic Thrusts



- **Implement a One-VA Enterprise Architecture**
- **Implement a One-VA data network**
- **Secure the One-VA enterprise against Cyber attack**
- **Establish a disciplined, non-bureaucratic IT project management structure**
- **Establish effective metrics to measure performance**
- **Implement an effective Command & Control, COOP and COG infrastructure**

***Number One Priority:
Secure the Enterprise Against Cyber Attack
In the Context of the Enterprise Architecture***



Number One Priority Securing the Enterprise



- **Vulnerabilities exist that can disrupt our ability to execute our mission (e.g., Code Red Worm)**
- **Critical infrastructure protection is a must given current events**
- **To effectively secure the enterprise, we must:**
 - **Do it in connection with the Enterprise Architecture**
 - **Know the data network that we are protecting**
 - **Be able to isolate ourselves from the Internet when necessary**
 - **Have an effective, real time, operational Command and Control (C2) process for operating the Cyber security infrastructure**

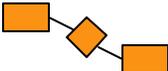
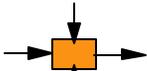
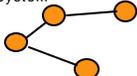
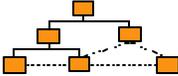
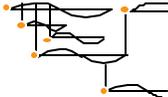
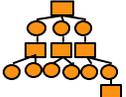
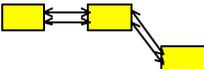
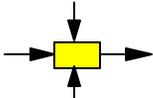
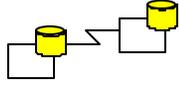
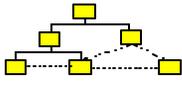
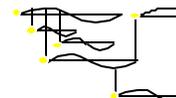
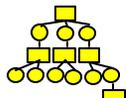
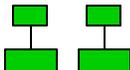
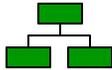
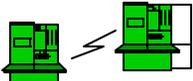
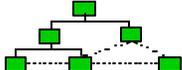
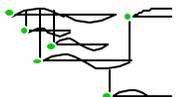
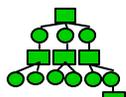
***One Goal for the Conference:
Establish the Operational C2 Reporting Structure
To Secure the Enterprise Against Cyber Attack***



VA Enterprise Architecture Framework



ENTERPRISE ARCHITECTURE - A FRAMEWORK TM

	DATA <i>What</i>	FUNCTION <i>How</i>	NETWORK <i>Where</i>	PEOPLE <i>Who</i>	TIME <i>When</i>	MOTIVATION <i>Why</i>	
SCOPE (CONTEXTUAL) <i>Planner</i>	List of Things Important to the Business  ENTITY = Class of Business Thing	List of Processes the Business Performs  Function = Class of Business Process	List of Locations in which the Business Operates  Node = Major Business Location	List of Organizations Important to the Business  People = Major Organizations	List of Events Significant to the Business  Time = Major Business Event	List of Business Goals/Strat  Ends/Mean=Major Bus. Goal/ Critical Success Factor	SCOPE (CONTEXTUAL) <i>Planner</i>
ENTERPRISE MODEL (CONCEPTUAL) <i>Owner</i>	e.g. Semantic Model  Ent = Business Entity ReIn = Business Relationship	e.g. Business Process Model  Proc. = Business Process I/O = Business Resources	e.g. Business Logistics System  Node = Business Location Link = Business Linkage	e.g. Work Flow Model  People = Organization Unit Work = Work Product	e.g. Master Schedule  Time = Business Event Cycle = Business Cycle	e.g. Business Plan  End = Business Objective Means = Business Strategy	ENTERPRISE MODEL (CONCEPTUAL) <i>Owner</i>
SYSTEM MODEL (LOGICAL) <i>Designer</i>	e.g. Logical Data Model  Ent = Data Entity ReIn = Data Relationship	e.g. Application Architecture  Proc. = Application Function I/O = User Views	e.g. Distributed System Architecture  Node = I/S Function (Processor, Storage, etc) Link = Line Characteristics	e.g. Human Interface Architecture  People = Role Work = Deliverable	e.g. Processing Structure  Time = System Event Cycle = Processing Cycle	e.g., Business Rule Model  End = Structural Assertion Means = Action Assertion	SYSTEM MODEL (LOGICAL) <i>Designer</i>
TECHNOLOGY MODEL (PHYSICAL) <i>Builder</i>	e.g. Physical Data Model  Ent = Segment/Table/etc. ReIn = Pointer/Key/etc.	e.g. System Design  Proc. = Computer Function I/O = Data Elements/Sets	e.g. Technology Architecture  Node = Hardware/System Software Link = Line Specifications	e.g. Presentation Architecture  People = User Work = Screen Format	e.g. Control Structure  Time = Execute Cycle = Component Cycle	e.g. Rule Design  End = Condition Means = Action	TECHNOLOGY MODEL (PHYSICAL) <i>Builder</i>
DETAILED REPRESENTATIONS (OUT-OF-CONTEXT) <i>Sub-Contractor</i>	e.g. Data Definition  Ent = Field ReIn = Address	e.g. Program  Proc. = Language Stmt I/O = Control Block	e.g. Network Architecture  Node = Addresses Link = Protocols	e.g. Security Architecture  People = Identity Work = Job	e.g. Timing Definition  Time = Interrupt Cycle = Machine Cycle	e.g. Rule Specification  End = Sub-condition Means = Step	DETAILED REPRESENTATIONS (OUT-OF-CONTEXT) <i>Sub-Contractor</i>
FUNCTIONING ENTERPRISE	e.g. DATA	e.g. FUNCTION	e.g. NETWORK	e.g. ORGANIZATION	e.g. SCHEDULE	e.g. STRATEGY	FUNCTIONING ENTERPRISE



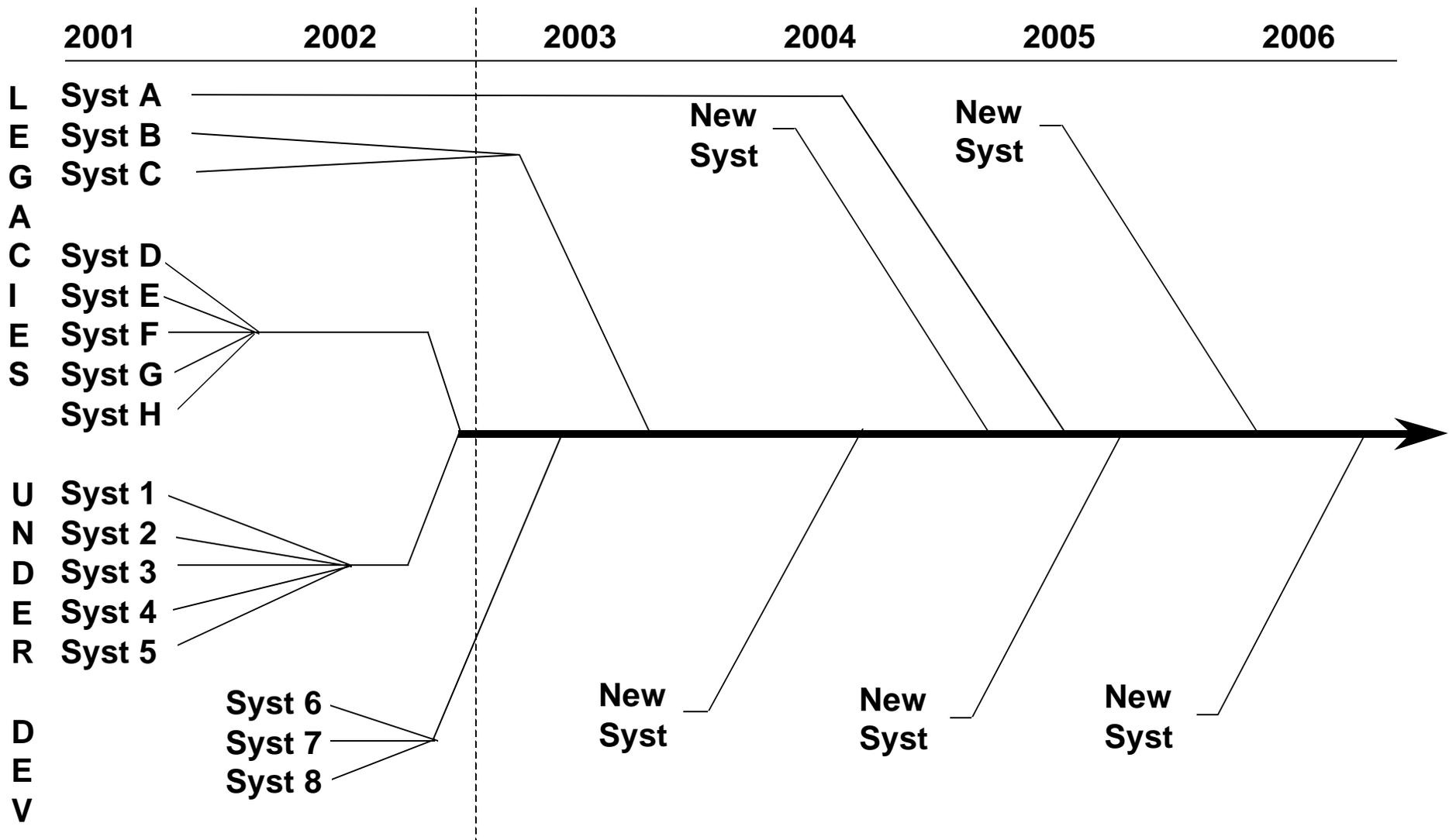
VA Enterprise Architecture Framework



- **The Zachman Framework defines 36 engineering disciplines or “primitives”**
- **When completed prior to “manufacturing” a product, you have:**
 - **Minimum rework, scrap and waste**
 - **Maximum reuse**
 - **Maximum interoperability**
- **The 36 cells of the Zachman Framework will be defined for the One-VA “to be” Enterprise Architecture**
- **Evolution of the One-VA EA will be:**
 - **Top down for new IT projects, and**
 - **Bottom up for modernizing elements of the infrastructure**



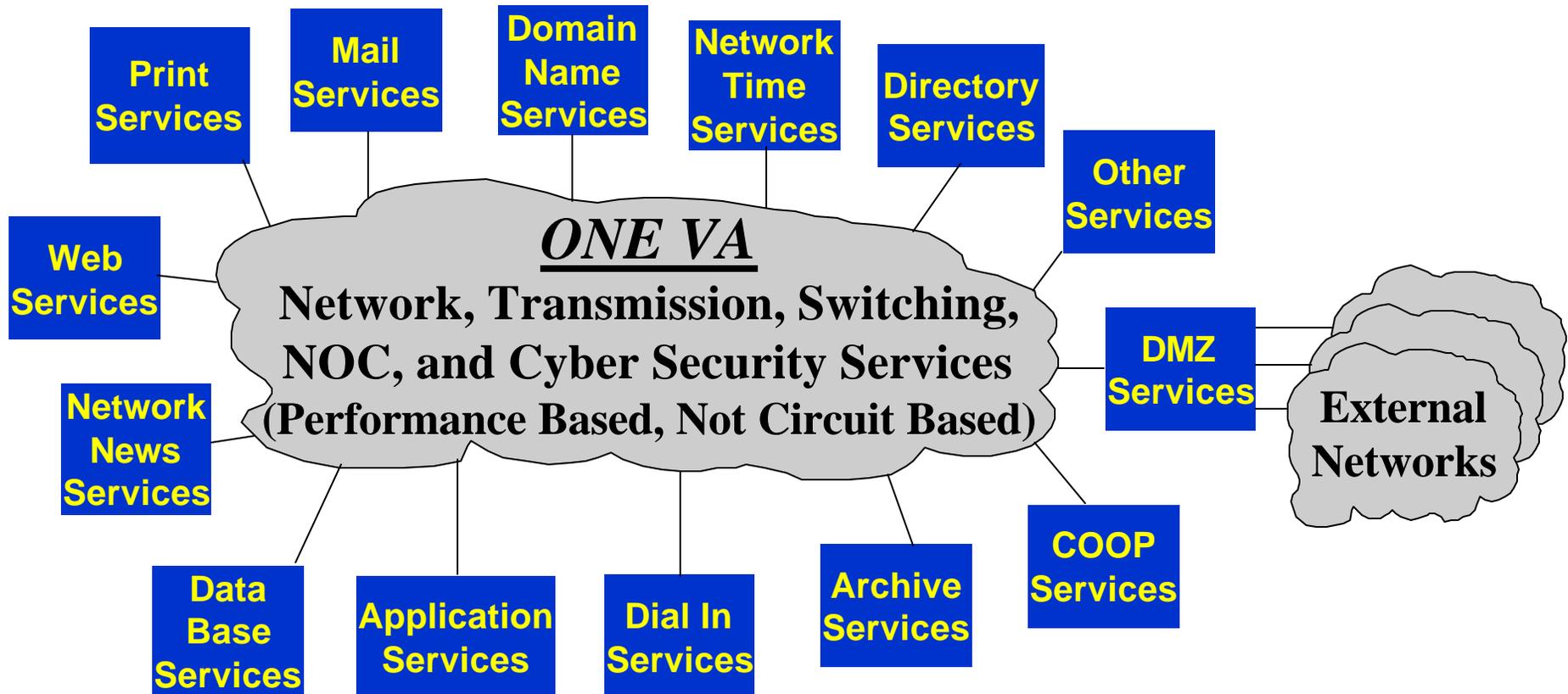
VA Enterprise Architecture Notional Sequencing Plan





VA Enterprise Architecture

Functional “To Be” Technical Architecture



7-layer Defense in-Depth Information Security Model

Network infrastructure protection (denial of service)
Securely configurable OS's
Secure protocols (authentication and privacy)
Boundary protection

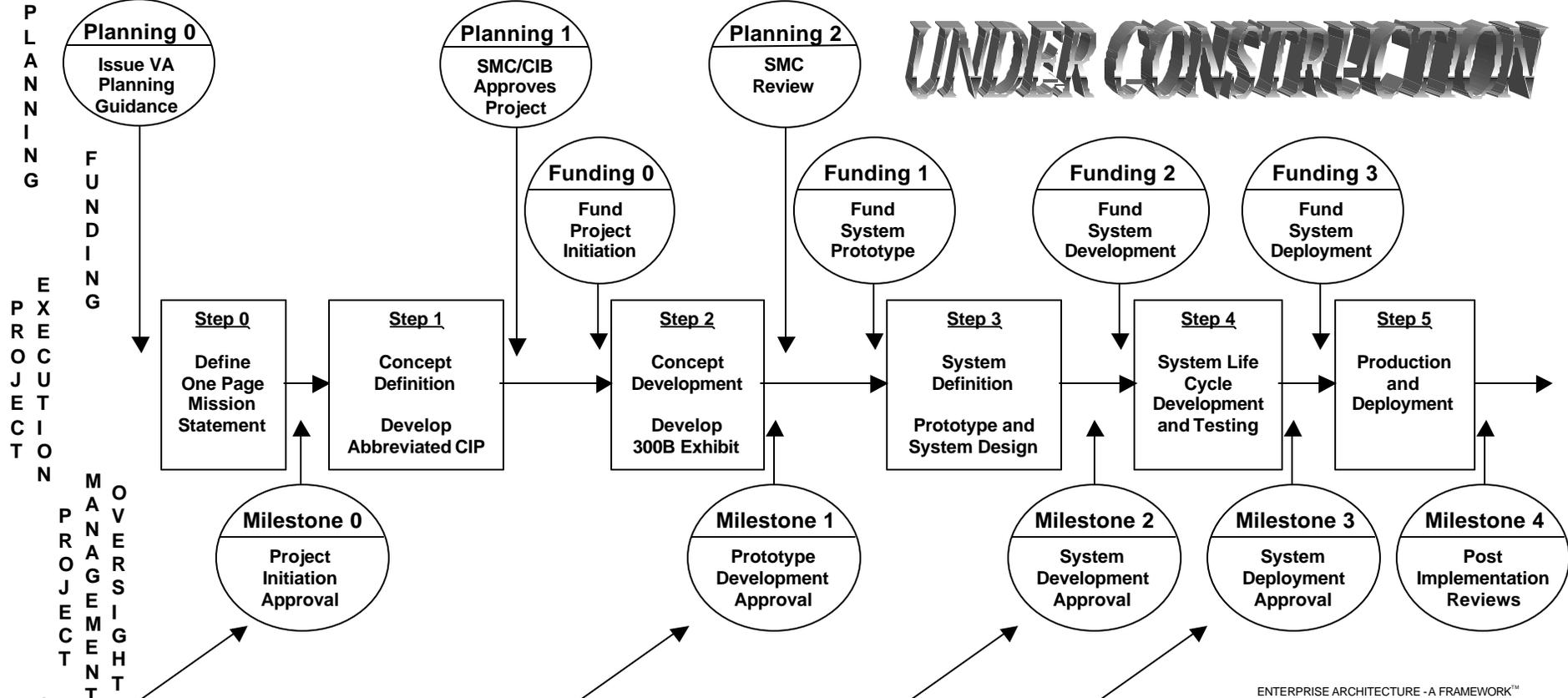
Intrusion detection
Anti-virus protection
Active monitoring



Integrated Process Flow For VA IT Projects



UNDER CONSTRUCTION



- ARCHITECTURE**
- M1 – List of Business Goals / Strategies
 - T1 – List of Events significant to the business
 - T2 – Master Schedule
 - P1 – List of Organizations important to the business
 - N1 – List of Locations in which the business operates
 - N2 – Business Logistics System
 - N4 – Technology Architecture
 - F1 – List of Processes the Business performs
 - D1 – List of Things important to the business

- M2 – Business Plan
- T3 – Processing Structure
- P2 – Work flow model
- F2 – Business Process Model
- D2 – Semantic Model

- M3 – Business Rule Model
- M4 – Rule Design
- T4 – Control Structure
- P3 – Human Interface Structure
- P4 – Presentation Architecture
- P5 – Security Architecture
- N3 – Distributed Systems Architecture
- N5 – Network Architecture
- F3 – Application Architecture
- F4 – System Design
- D3 – Logical Data Model
- D4 – Physical Data Model

- M5 – Rule Definitions
- T5 – Timing Definitions
- F5 – Programs
- D5 – Data Definitions

Zachman Enterprise Architecture Framework Cells

ENTERPRISE ARCHITECTURE - A FRAMEWORK™

	DATA	FUNCTION	NETWORK	PEOPLE	TIME	MOTIVATION	SOUL
CONCEPTUAL	Entity Relationship Model	Functional Decomposition	Network Topology	Organizational Chart	Timeline	Business Case	Conceptual Model
SYSTEM MODEL	Entity Relationship Model	Business Process Model	Network Topology	Organizational Chart	Timeline	Business Case	System Model
LOGICAL	Entity Relationship Model	Business Process Model	Network Topology	Organizational Chart	Timeline	Business Case	Logical Model
PHYSICAL	Entity Relationship Model	Business Process Model	Network Topology	Organizational Chart	Timeline	Business Case	Physical Model
DETAILS	Entity Relationship Model	Business Process Model	Network Topology	Organizational Chart	Timeline	Business Case	Details
CONCEPT	Entity Relationship Model	Business Process Model	Network Topology	Organizational Chart	Timeline	Business Case	Concept
FUNCTIONAL	Entity Relationship Model	Business Process Model	Network Topology	Organizational Chart	Timeline	Business Case	Functional

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Performance Metrics



- **How do we measure cost, schedule, and performance of our IT projects during development?**
- **How well do IT systems perform in operation?**
 - **From a technical perspective?**
 - **From a VA user perspective?**
 - **From a Veteran and his/her family perspective?**

***In the End:
It's all about providing
Quality Service to our Veterans***

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