

# Government-wide Enterprise Architecture In KOREA



National Computerization Agency

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# About NCA

- ❑ Established in 1987 by the Law of Information Technology and Service Promotion
- ❑ Mission
  - ❑ IT Standardization
  - ❑ Information System's Audit
  - ❑ IT Consulting Services for the Public Sector
  - ❑ Construction of e-Government in Korea
  - ❑ Supporting project for construction and services for Information system
- ❑ Joined The Open Group in July, 2001
  - ❑ Silver : Forum buy-out member

# Works on IT Architecture

- ☐ IT Architecture Project for 5 years(1999-2001)
  - ☐ 1999
    - ☐ Survey on IT Architecture
    - ☐ Research on IT Standard Profile
  - ☐ 2000
    - ☐ Development of IT Technical Reference Model
  - ☐ 2001
    - ☐ Research on measurement of Interoperability levels for Information Systems
    - ☐ Promotion plan for IT Architecture
    - ☐ Development of Standard Profile Provider
  - ☐ 2002
    - ☐ Technical Standard on interoperability for public IT project
    - ☐ Case studies on e-Government interoperability policy
    - ☐ Study on reformation of Government CIO policy
  - ☐ 2003
    - ☐ Government-wide Enterprise Architecture Framework

# GEAF of NCA(1/12)

## Terminology

### ? Architecture

- Architecture is the structure of components, their interrelationship, and the principles and the principles and guidelines governing their design and evolution over time[Webster Dictionary]

### ? Framework

- A logical structure for classifying and organizing complex information [Practical Guide for Federal Enterprise Architecture : FEAPMO]

### ? Government-wide Enterprise Architecture Framework

- A logical structure for arranging and classifying components and their interrelationship to develop governmentwide-level Enterprise Architecture

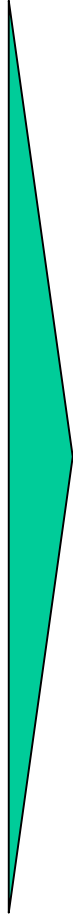
# GEAF of NCA (2/12)

## ■ Factors considered for developing GEAF

**- Characteristics of IT projects  
for public sector**

**- Support for entire SDLC ?**

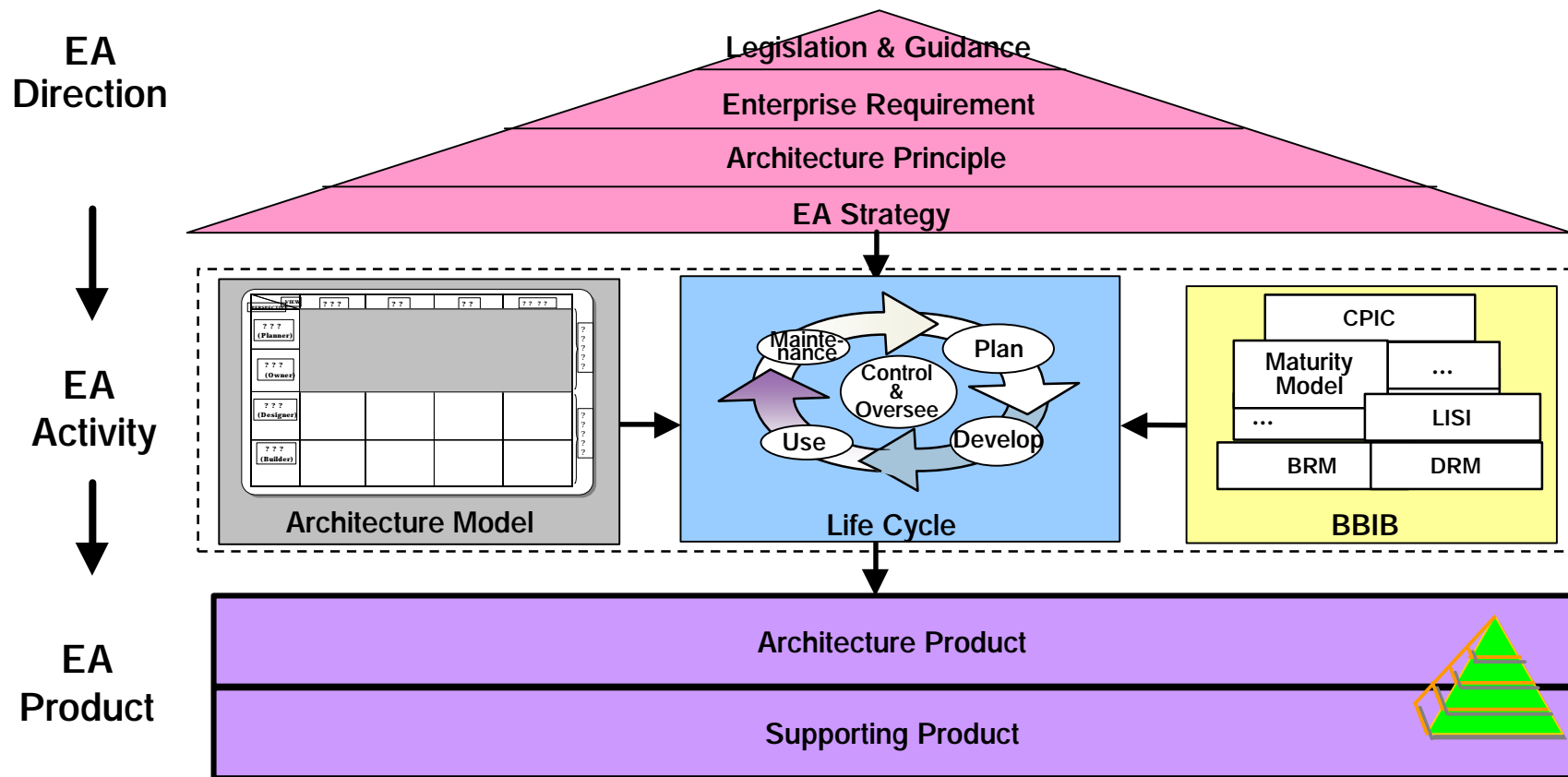
**- Single or Multi- Organization ?**



**Integration  
&  
Interoperability  
Among  
Public IT projects**

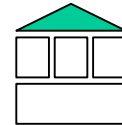
# GEAF of NCA (3/12)

## Overview of GEAF



# GEAF of NCA (4/12)

## EA Direction(1/2)

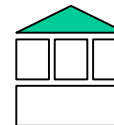


<b>Legislation &amp; Guidance</b>	A statement governing the development, implementation, and maintenance of the enterprise architecture with the government-wide level
<b>Enterprise Requirement</b>	<b>Enterprise- wide(government-wide) requirement to fulfill EA Strategy</b>
<b>Architecture Principle</b>	A statement of preferred directions or practice. Principles constitute the rules, constraints, and behaviors that a bureau will abide by in its daily activities over a long period of time
<b>EA Strategy</b>	Enterprise Transition Strategy – Approaches for transitioning an enterprise from its current business processes to the target business processes using IT support



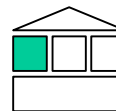
# GEAF of NCA (5/12)

## EA Direction(2/2)



PGFEA	TEAF	C4ISR/AF	GEAF
EA Policies and Guidelines	Direction for EA	N.A.	Legislation & Guidance
	Direction for TEAF		
IT Vision, Requirement and Practices	Vision & Mission Statement	Guidance (Architecture Use)	EA Strategy
Strategic Plan	Strategic Plan		
Principles - EA - Enterprise	Enterprise Responsibility	Guidance (Determination of EA Scope)	Architecture Principle
Business Need	Enterprise Requirement	N.A.	Enterprise Requiremen

# GEAF of NCA (6/12)



## Architecture Model(1/3)

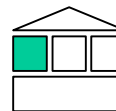
	Data	Function	Organization	Infrastructure
Planner	Defines The type of information needed to perform integrated business process	Defines how enterprise- wide business process is performed	Defines on vision, mission statement, business activities, operating principles	Defines on infra- systems to build integrated system and each technical component
Owner				
Designer				
Developer				

[Architecture View]

	Data	Function	Organization	Infrastructure
Planner	Defines the relationship between planner's view and subordinating views including system functions, scope, and relations with other systems			
Owner	Defines interoperability among entity and process in architecture built with owner's view			
Designer	Arranges Developer view's working products which determine data types and functions with designer view's working products			
Developer	Defines working products which specify information technologies, applications and programming languages according to constraints of Developers' working products such as database and applications			

[Architecture Perspective]

# GEAF of NCA (7/12)

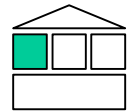


## Architecture Model(2/3)

### - Comparison with other frameworks

Zachman Framework	C4ISR/AF (SBA)	FEAF	TEAF	GEAF
Data	Intelligence Systems	Business	Function	Business
Function				
Network	Command And Control Systems	Data	Information	Data
People		Application	Organization	Application
Time	Combat Support Systems	Technical	Infrastructure	Infrastructure
Motivation				

# GEAF of NCA (8/12)

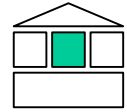


## Architecture Model(3/3)

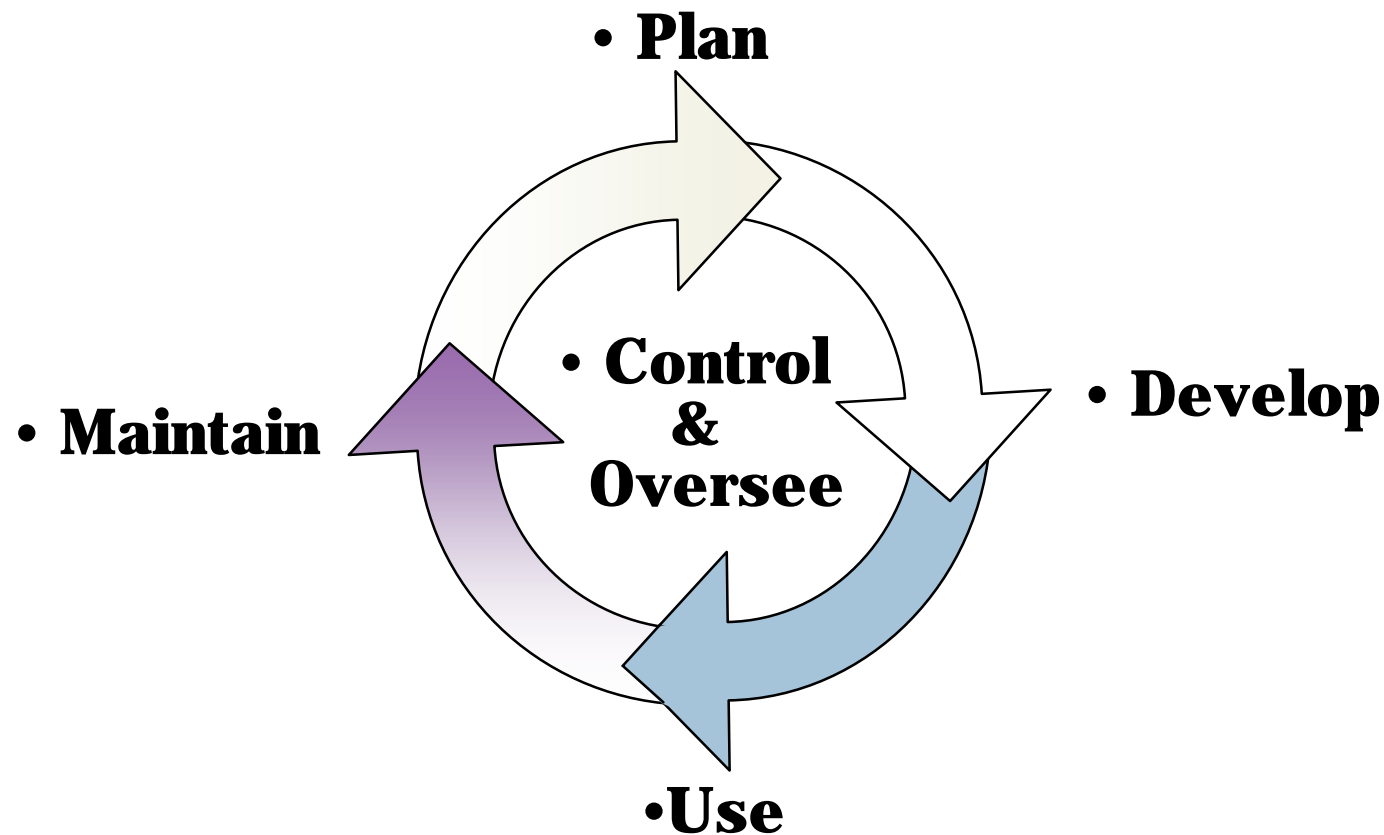
### - Comparison with other frameworks

Zachman	C4ISR /AF	FEAF	TEAF	GEAF
Planner	N.A.	Planner	Planner	Planner
Owner		Owner	Owner	Owner
Designer		Designer	Designer	Designer
Builder		Builder	Builder	Builder
Sub-Contractor		Sub-Contractor		
(Functioning System)				

# GEAF of NCA (9/12)

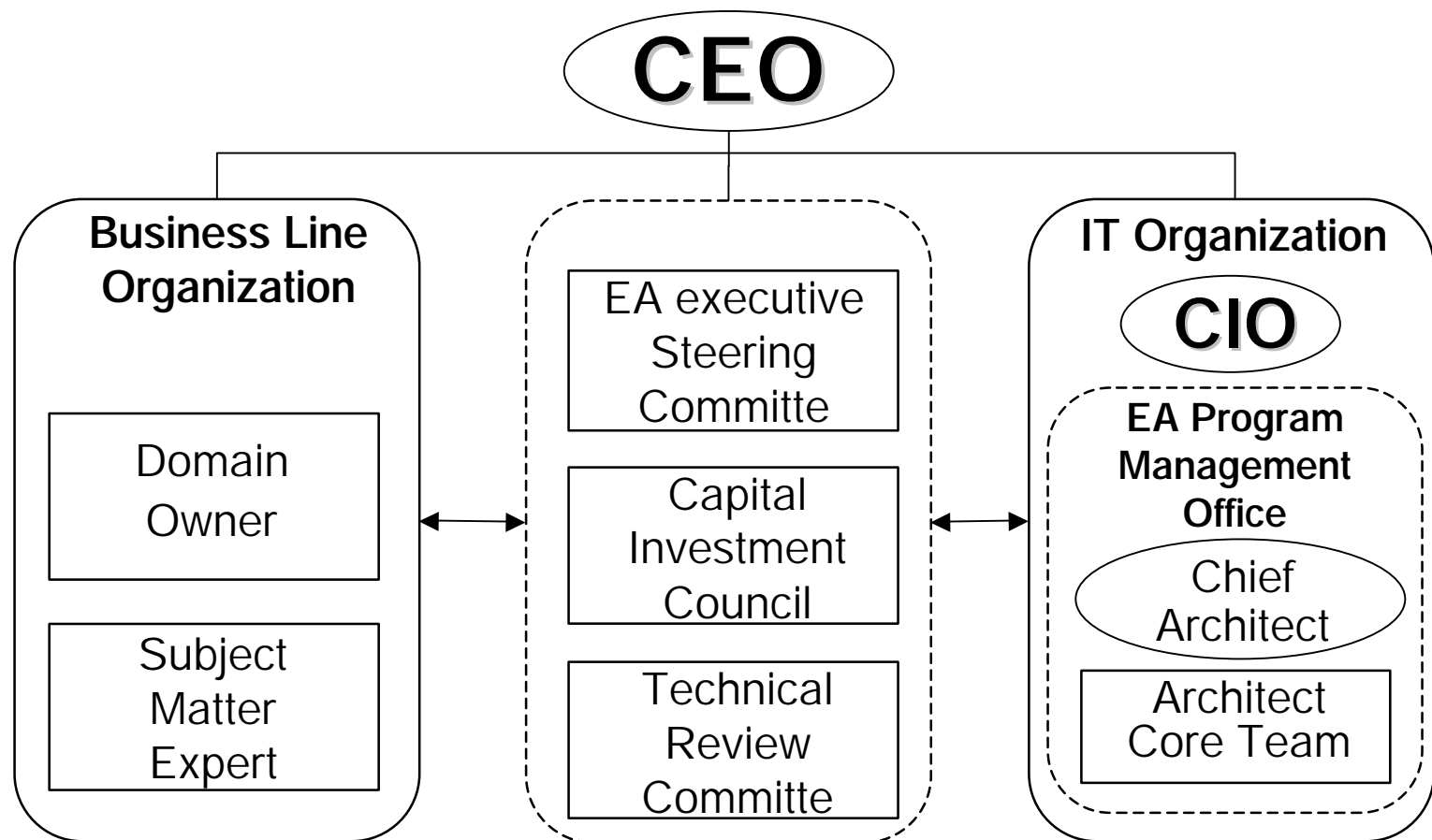
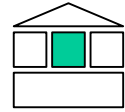


## ■ GEAF Life Cycle(1/3)



# GEAF of NCA (10/12)

## ■ GEAF Life Cycle(2/3) - GEAF Governance Structure



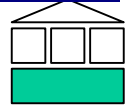
# GEAF of NCA (11/12)

## GEAF Life Cycle(3/3) - Comparison with other frameworks

PGFEA (FEAF)	TEAF	TOGAF(SBA)	EAP	GEAF
Obtain Executive Buy-in and Support	Strategic Planning	Architecture Vision	Architecture Planning	Plan
Establish Management Structure and Control		Business Architecture		
Define an Architecture Process and Approach	Enterprise Engineering	Information System Architecture		
Building the Baseline & Target Architecture	Enterprise Planning	Technology Architecture	Business Modeling	Develop
		Opportunities & Solutions	Current System & Technology	
Sequencing Plan		Migration planning	Data Architecture	
	Project Execution	Architecture Change Management	Application Architecture	
Technical Architecture				
Approve, Publish, and Disseminate the EA Products	Enterprise Integration	Architecture Change Management	Implementation/ Migration Plan	Use
Use the IT Architecture	Operations			Architecture Change Management
Maintain the IT Architecture	Evaluation	Control & Oversee		
	Management Oversight			
Continuously Control and Oversee the Enterprise Architecture Program	Technical Oversight			

# GEAF of NCA (12/12)

## Building Blocks & Working Products



### ? Architecture vs. Supporting Work Products

- **Architecture products**

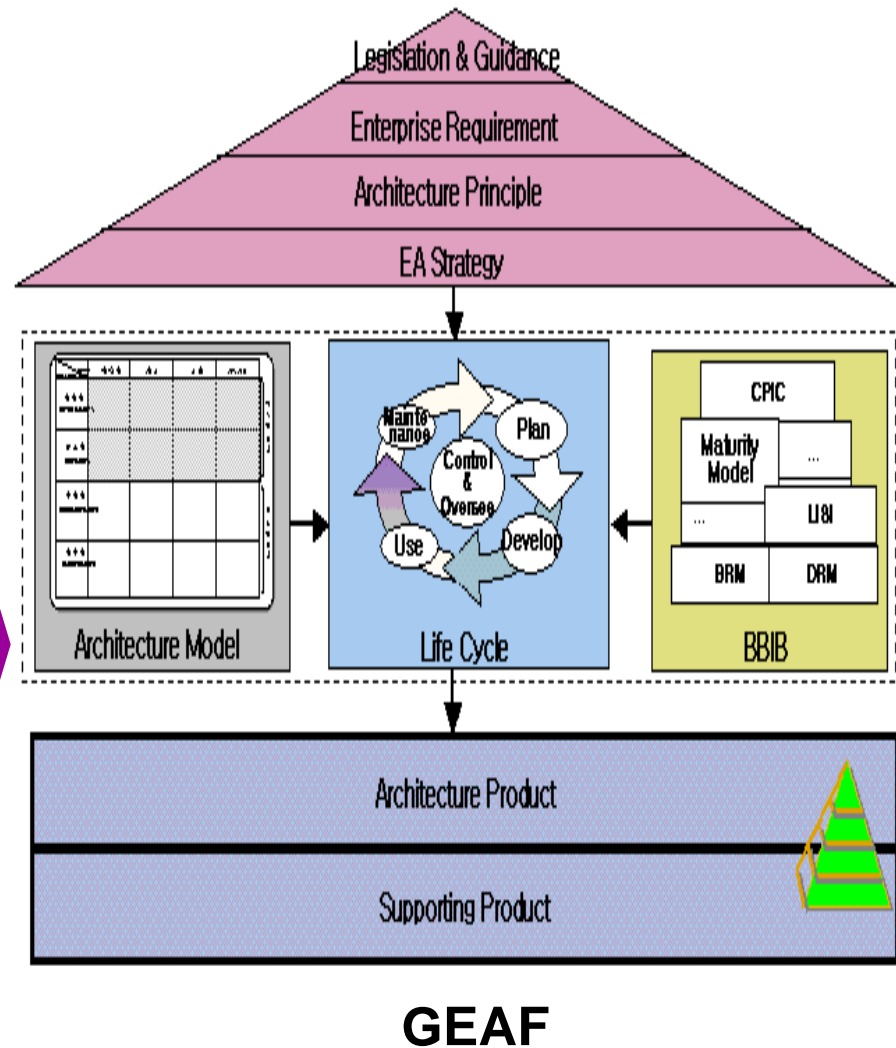
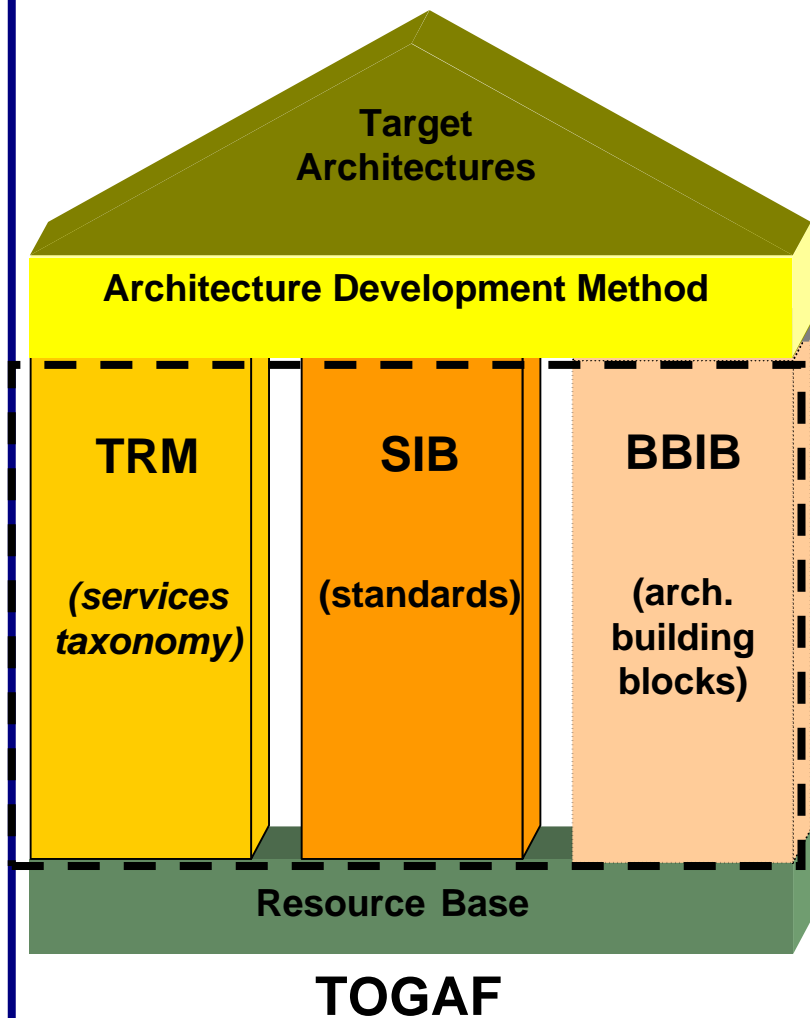
**Essential work products are required to be produced for an enterprise. These generally present the broadest perspective of the enterprise.**

- **Supporting products**

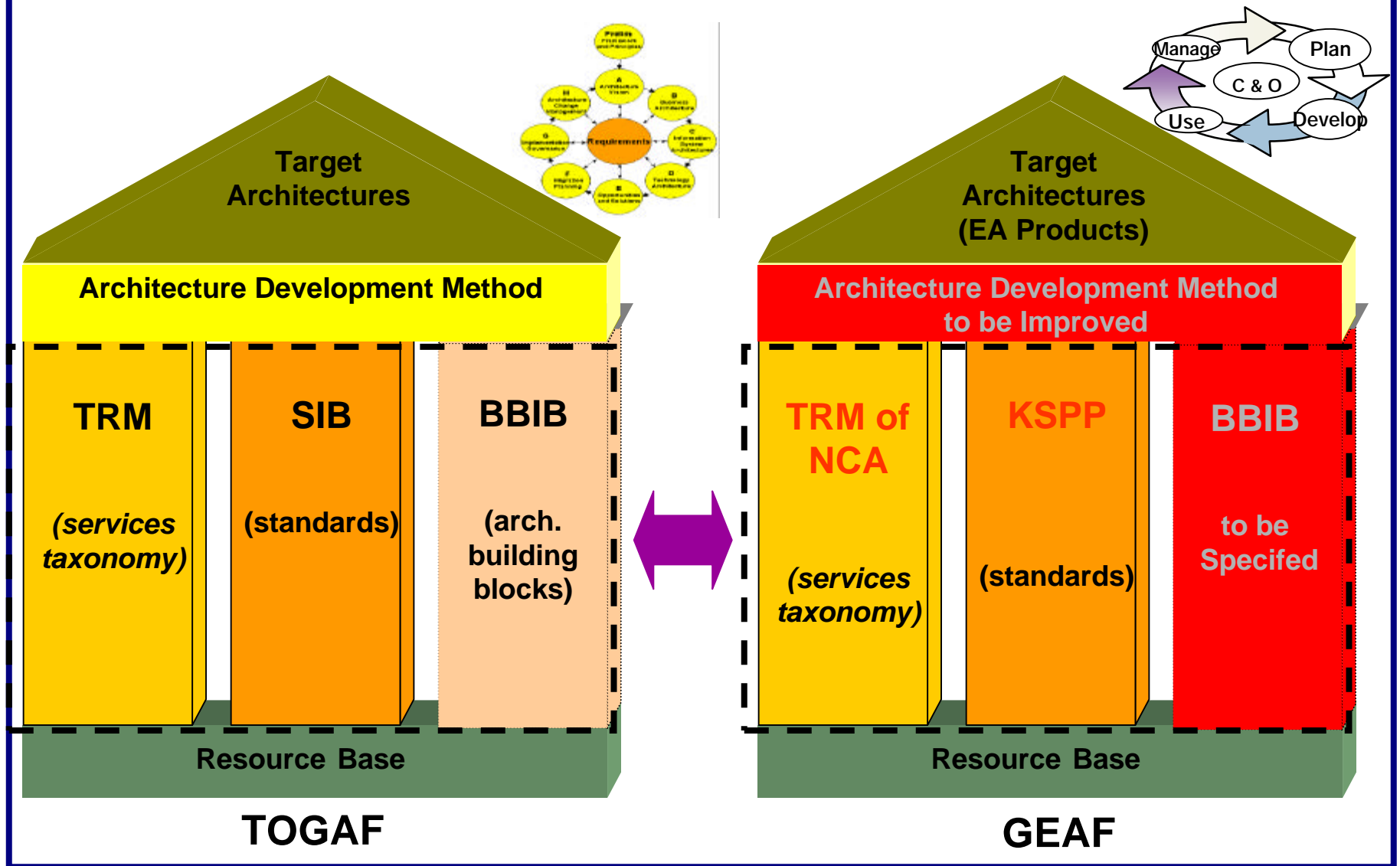
**Supporting work products generally provide more depth or more specialized perspectives of the enterprise.**



# Comparison with TOGAF(1/9)



# Comparison with TOGAF (2/9)



# Comparison with TOGAF(3/9)

## TRM of GEAF(1/2)

### ☐ Technical Reference Model

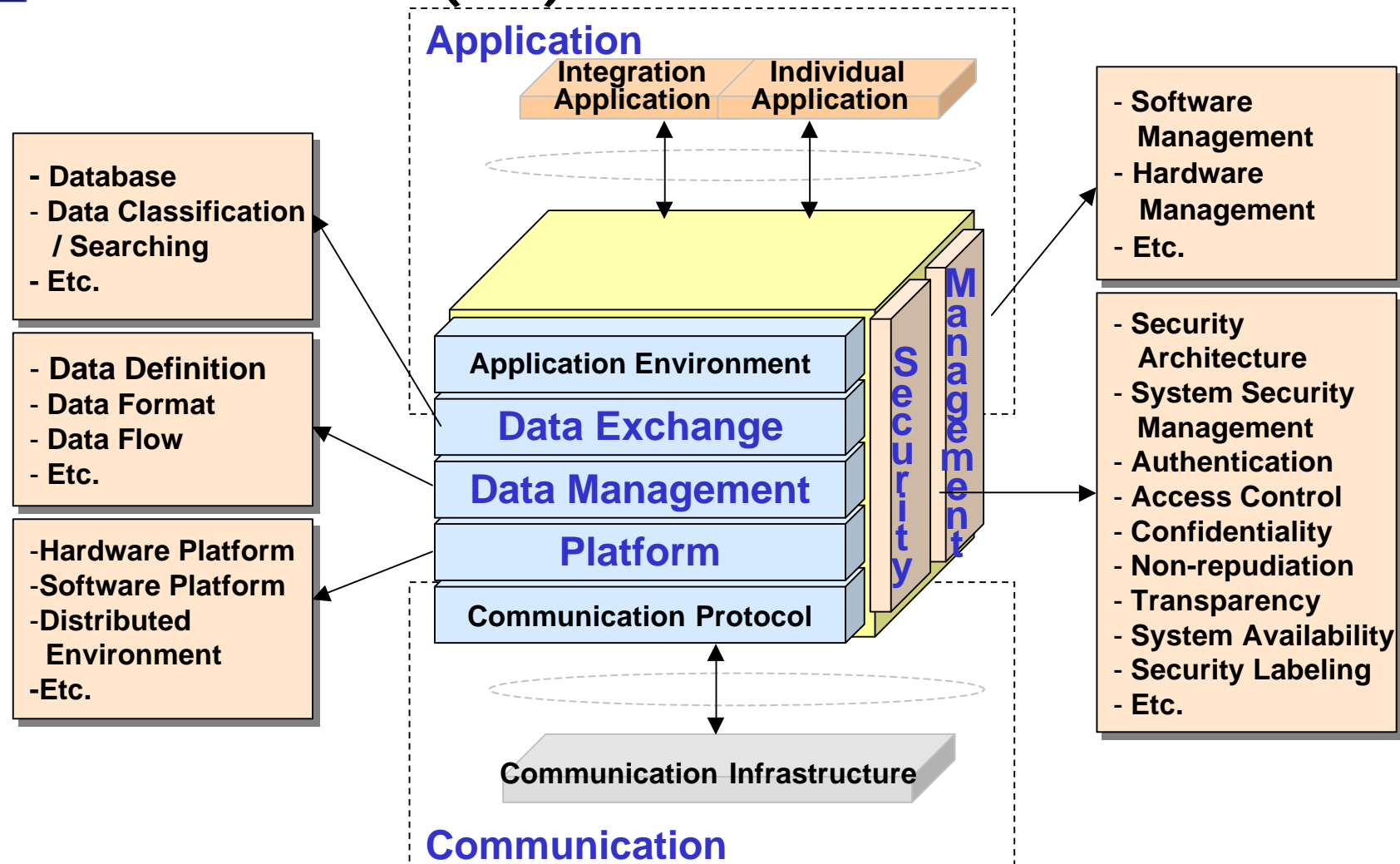
- ☐ Identifies and describes the information services
- ☐ used throughout organizations

### ☐ References for GEAF's TRM

- ☐ TRM of The Open Group
- ☐ ITSG (Information Technology Standards Guidance) of DoD
- ☐ OSE(Open System Environment) Reference Model of IEEE

# Comparison with TOGAF(4/9)

## TRM of GEAF(2/2)



# Comparison with TOGAF(5/9)

## Standard Profile of GEAF

Search Result

- ID
- Title
- TRM Category
- Organization
- Search Frequency

National Computerization Agency - Microsoft Internet Explorer

주소: C:\Temp\Wincc\윈전정착업\WUN1-4.htm

National Computerization Agency

e-표준연구소

표준프로파일 검색

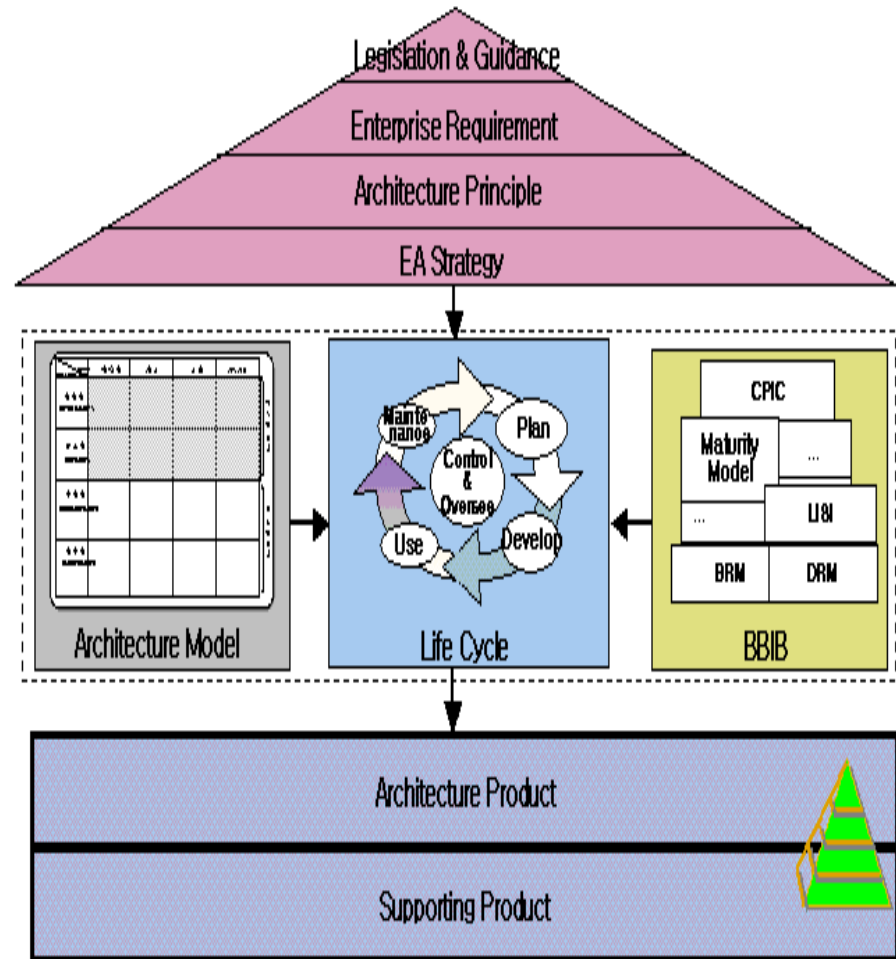
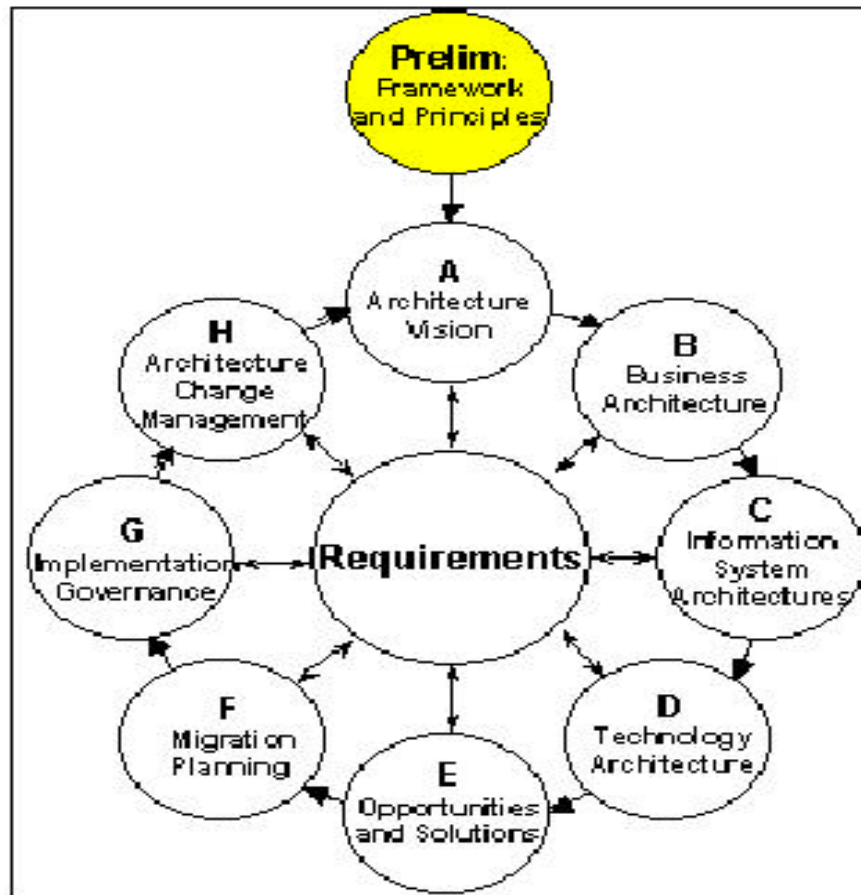
제목별 검색결과

번호	제목	분류	제정기관	조회	제정연도
KIS 111195	시계-LSI 에뮬레이션 표준	통신	정보통신부	18	1996-06-01
KICS-IF-RFC1009	게이트웨이 요구사항 표준	통신	정보통신부	15	1996-06-01
KICS-IF-RFC1	인터넷그룹 다중전송 규약 (IGMP) 표준	통신	정보통신부	18	1994-06-01
KICS-IF-RFC1122	인터넷 호스트 요구사항 - 통신 계층 표준	통신	정보통신부	24	1996-01-09
KICS-K0-10-0022	정부기관 OSI 규약 - 상위 및 하위계층 기술 표준	통신	정보통신부	33	1994-01-08
KICS-K0-10-0058	정부개발시스템 통신망 구조 표준	통신	정보통신부	33	1996-01-08
KICS-IF-RFC1350	단순 파일전송 규약 (TFTP) 표준	통신	정보통신부	27	1994-05-28
KICS-IF-RFC1548	종단대종단 규약 표준	통신	정보통신부	28	1996-01-08

후가

# Comparison with TOGAF(6/9)

## EA Direction



# Comparison with TOGAF(7/9)

## Architecture Model

GEAF	TOGAF Ver 8.0
Planner	User, Planner, Business Manager
Owner	
Designer	
Developer	DataBase Designers and Administrators, System Engineer
	System/Software Engineers
	Acquirers, Operators, Administrators & Managers

# Comparison with TOGAF(8/9)

## Life Cycle

TOGAF Ver 8.0	GEAF
Architecture Vision	Plan
Business Architecture	
Information System Architecture	
Technology Architecture	Develop
Opportunities & Solutions	
Migration planning	
Implementation Goverance	Use
Architecture Change Management	Maintain
	Control & Oversee



# Comparison with TOGAF(9/9)

## Working Products & Building Blocks

### ? **TOGAF :**

- **has detailed and specified working products according to developing processes in ADM**
- **shows changes & updates of working products as process flows**
- **shows various kind of Building Block such as ADML...**

### ? **GEAF :**

- only giving definition statement of Building Blocks and Working Products.
- not clearly demonstrating naming of detailed Building Blocks and Working Products.

### ? **Characteristics of Public Sector's IT project in Korea**

- BB and Working Products are not clearly defined
- IT Outsourcing Industries' demand

# Future Work

- ? **“TOGAF” as TTA Standard for private IT Sectors**
  - \* TTA : Telecommunications Technology Association
- ? **“GEAF” as TTA Standard for public IT Sectors**
- ? **Development of ADM & BBIB for GEAF**
  - ☐ **Methodology is more important**
  - ☐ **TOGAF as reference for GEAF**
  - ☐ **Utilization of TOGAF results and following-up of TOGAF**