

Construction IT Round Table Meeting
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Construction IT in Korea

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KOREA INSTITUTE OF
CONSTRUCTION TECHNOLOGY

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Current Status of Construction Industry

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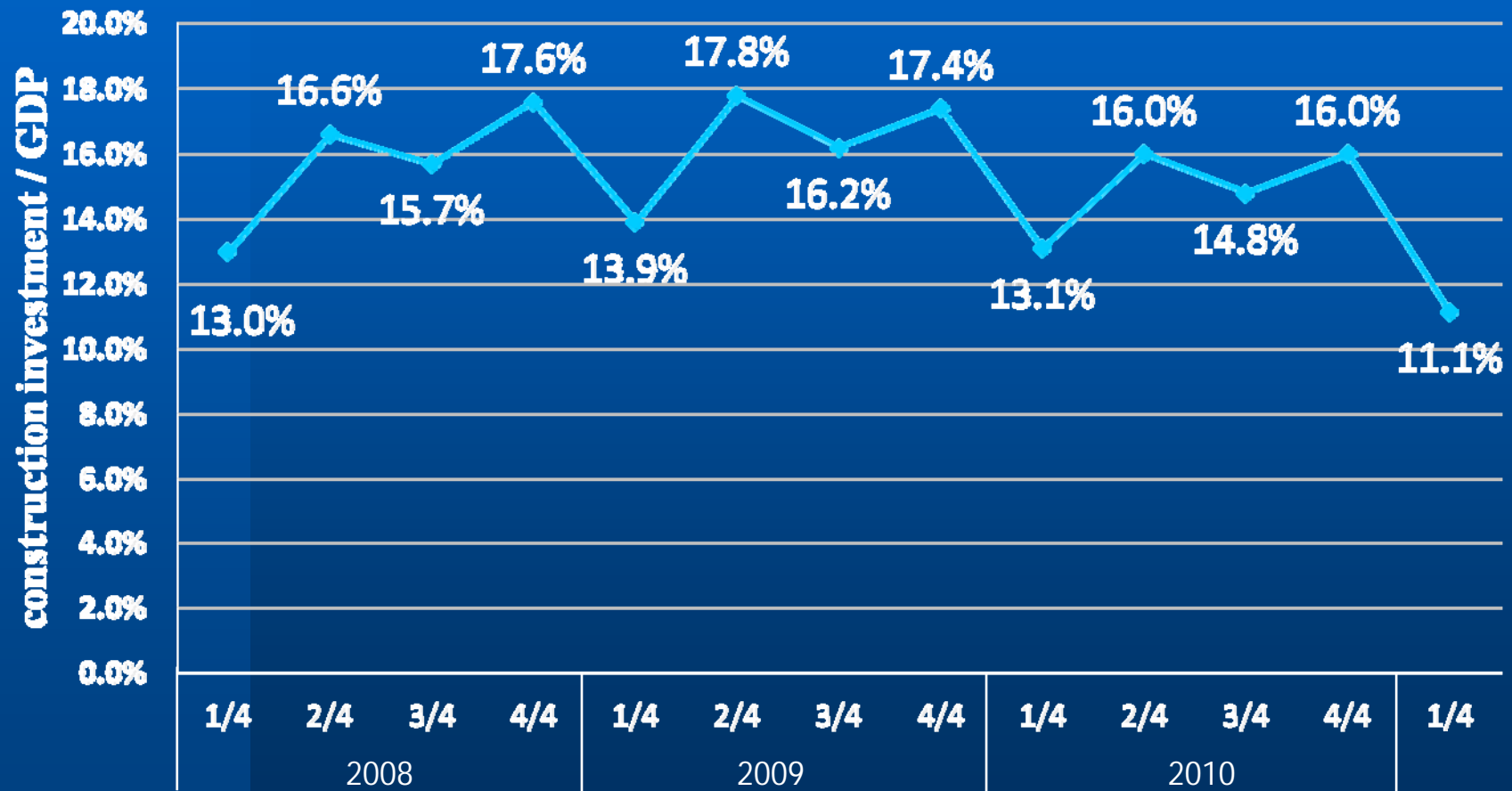
1. Current Status of Construction Industry



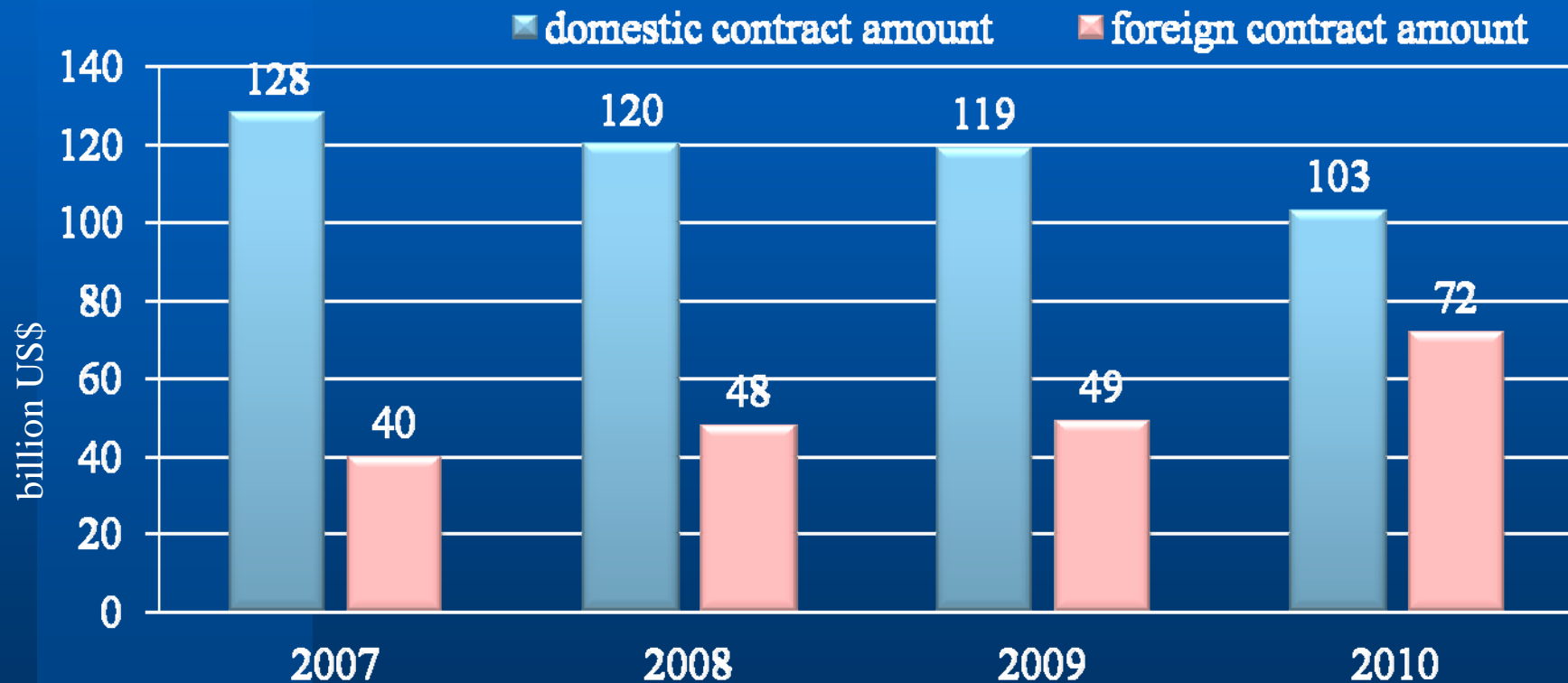
- GDP-to-Construction Investment Ratio
- Contract Amount
 - * domestic/foreign contract amount
 - * public/private contract amount



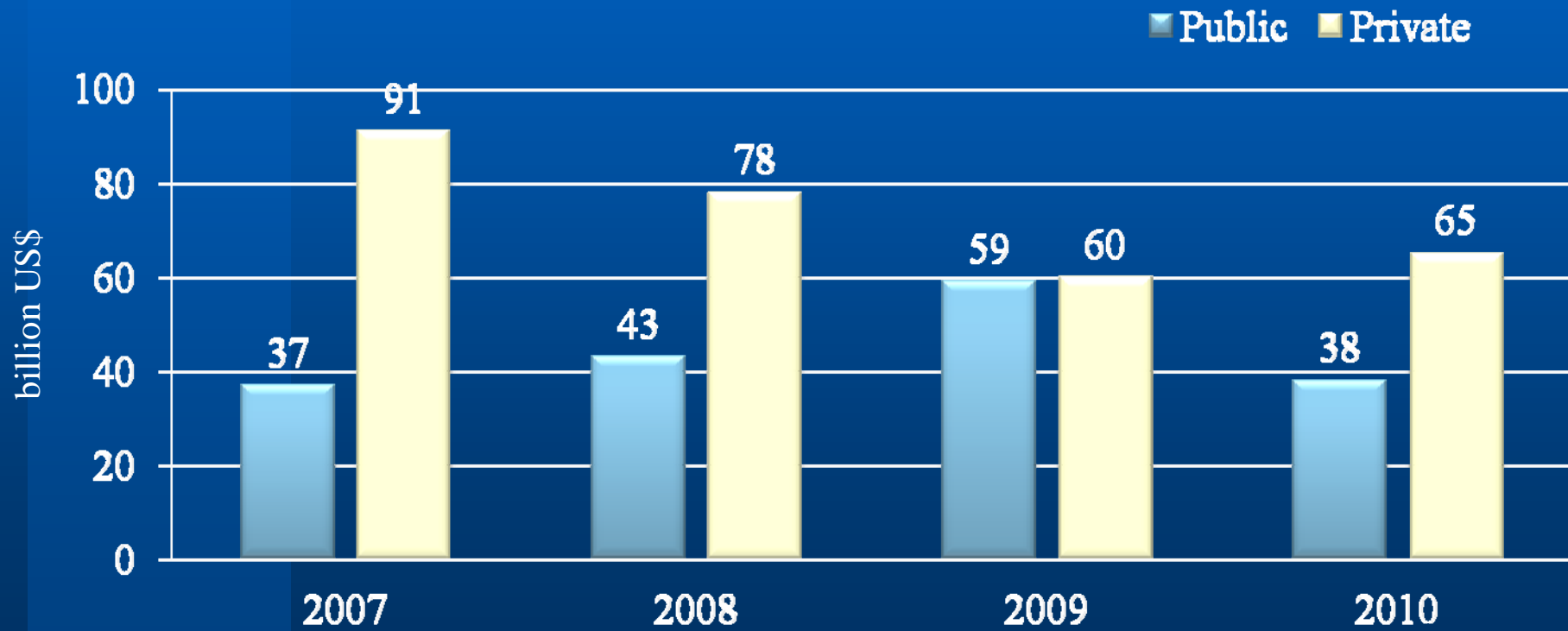
GDP-to-Construction Investment Ratio



Domestic/Foreign Contract Amount



Public/Private Contract Amount





2. Construction CALS in Korea



- CALS Overview
- CALS System
- CLAS Standard
- SOC BIM



Overview

Object

Improving Construction Industry Productivity and Construction Management Efficiency

Main Agent

- MLTM (Technology Policy Division)
- KICT

Preparation of Construction CALS Base

- Informatization of the current business
- Implementation of function oriented system
- Partial, fragmental informatization

Computerization of Unit Business

Advancement of Construction CALS

- Owner oriented informatization
- Interface between unit systems
- Status report, output accumulation

Implementation of Institutional System

Settlement/Expansion of Construction CALS

- Business-system integration
- Interconnection of institutional and private systems
- Comprehensive analysis, government support

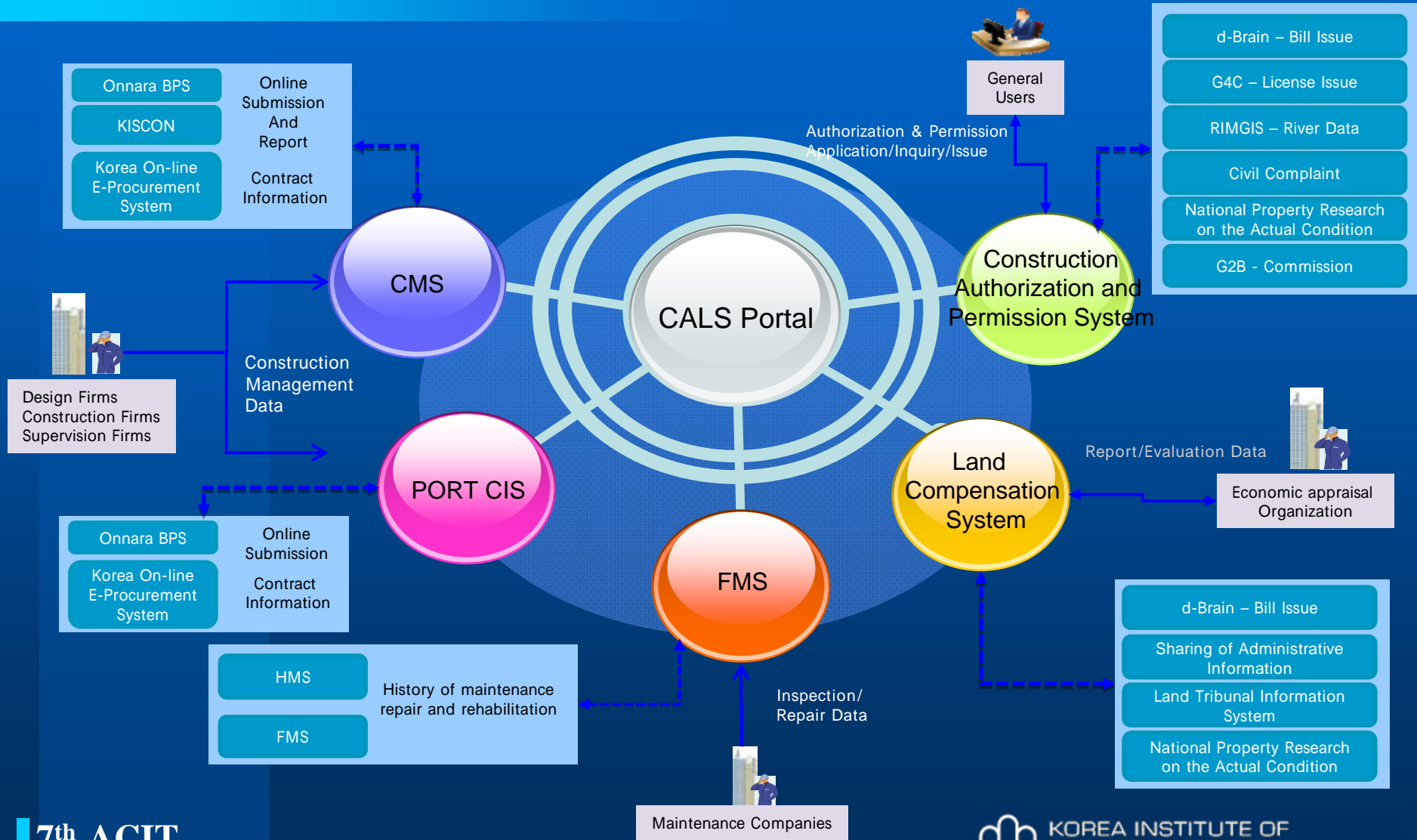
Connection/Integration and Policy Support

1st Master Construction CALS/EC Plan
(1998~2002)

2nd Master Construction CALS/EC Plan
(2003~2007)

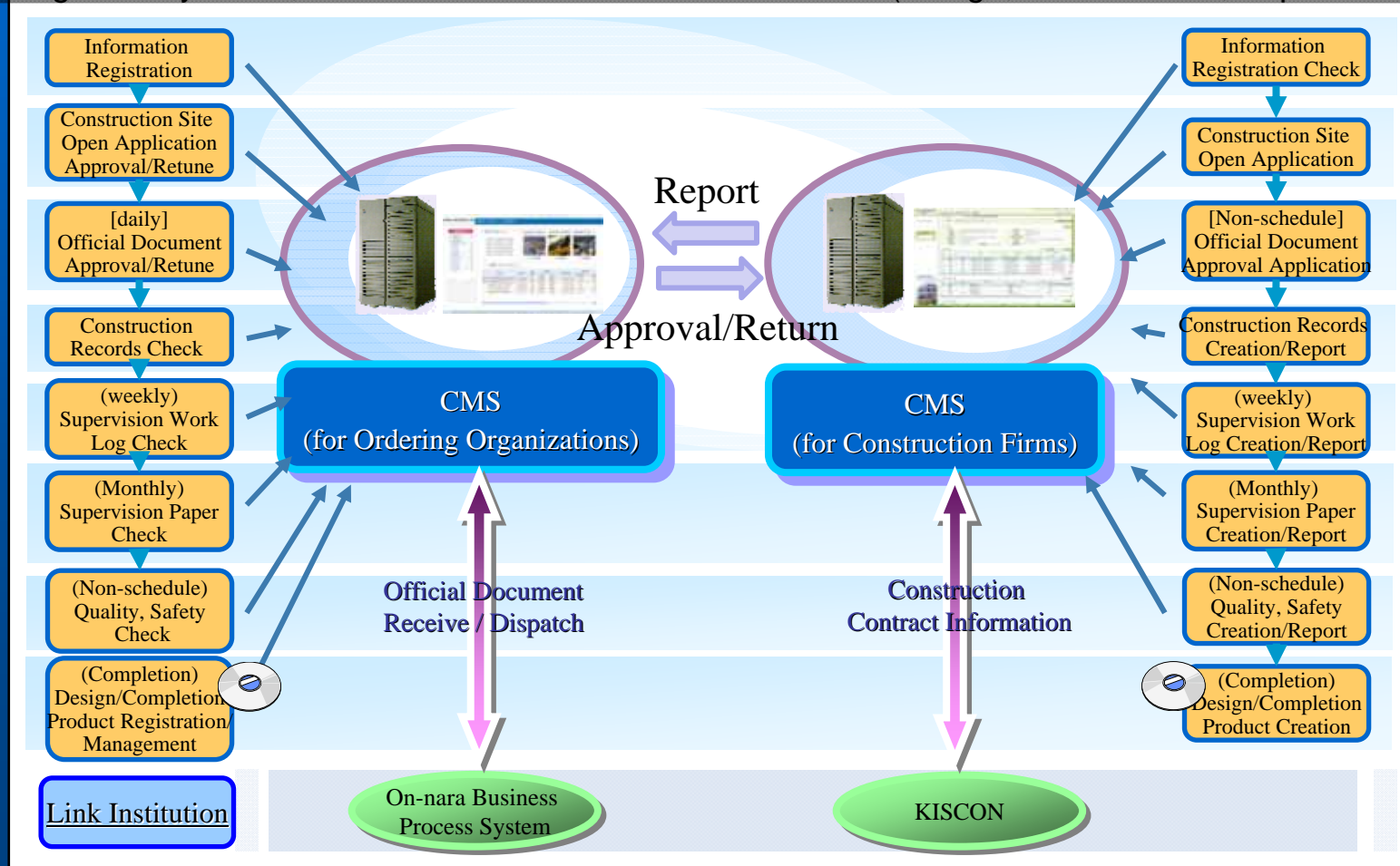
3rd Master Construction CALS/EC Plan
(2008~2012)

Construction CALS System



CMS(Construction Management System)

Construction Project Management Information such as Electronic Document Distribution, Process, Progress Payments, etc. between Owner and Contractors (Design, Construction, Supervision)



Web Camera Assisted Construction Site Management System

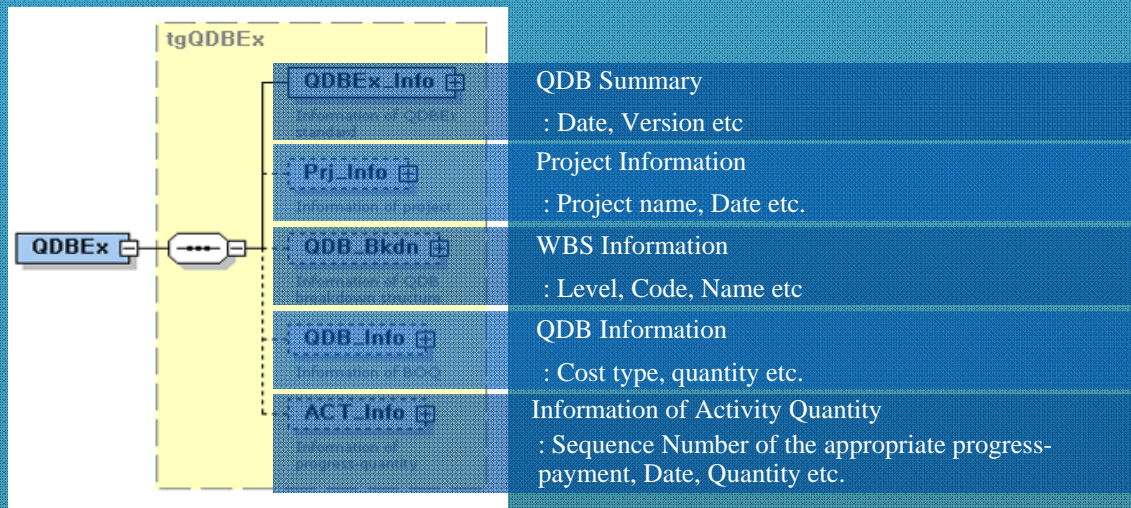
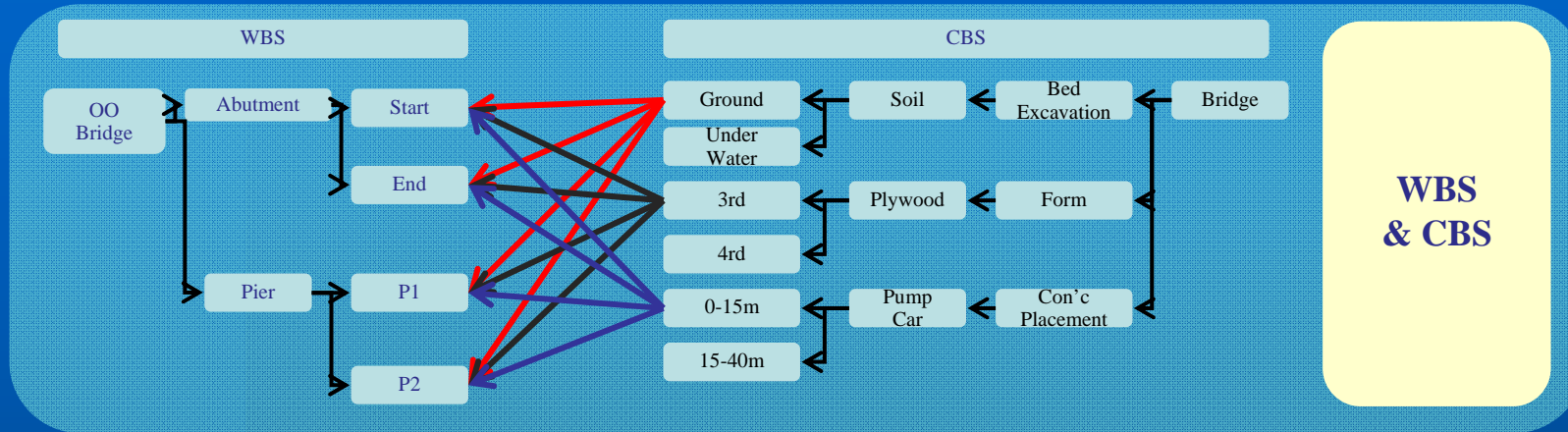


Set Up a Web Camera on Sites



Real Time Monitoring on Site

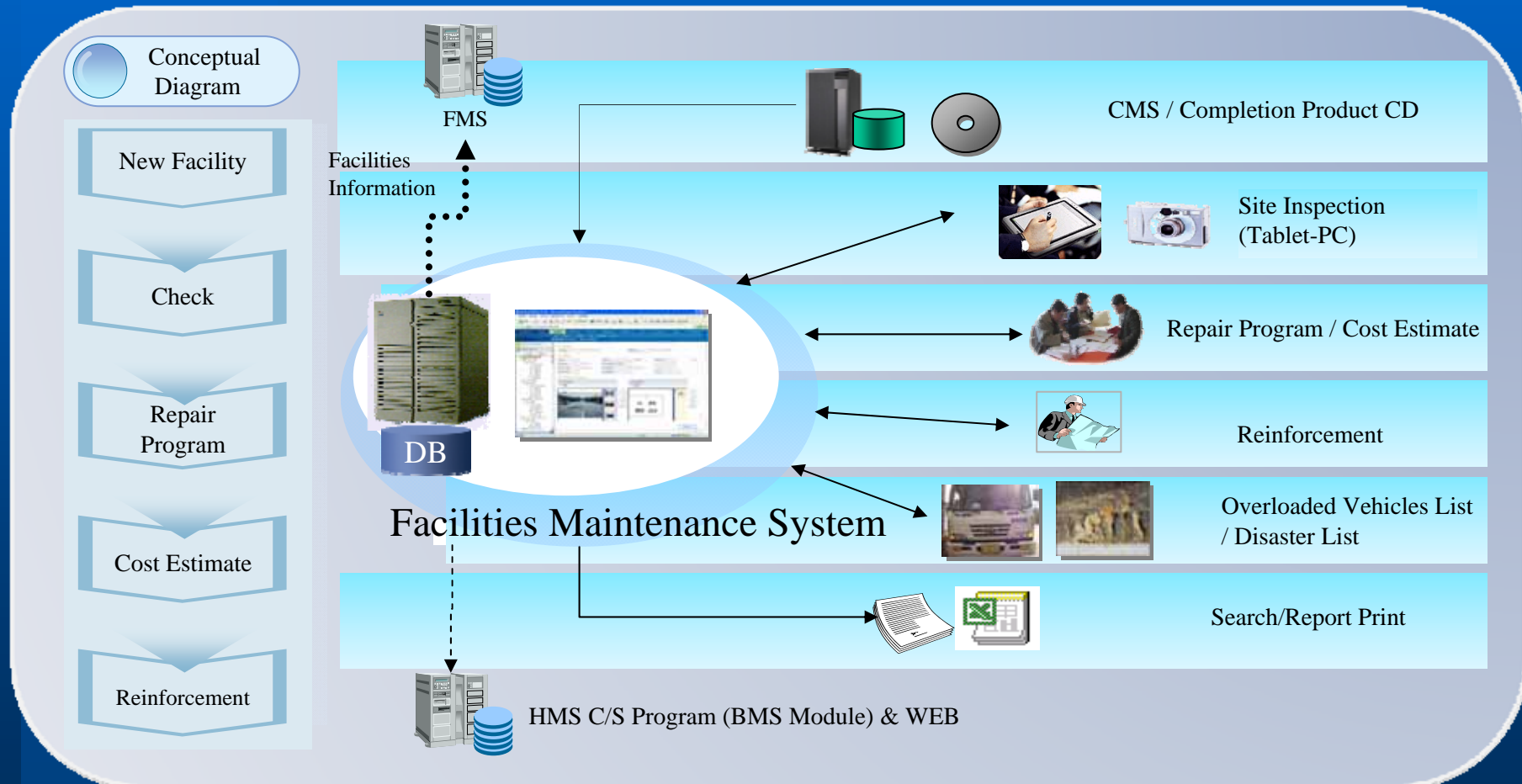
WBS Assisted Cost Management System



Digital QDB
(Quantity Database) in Construction

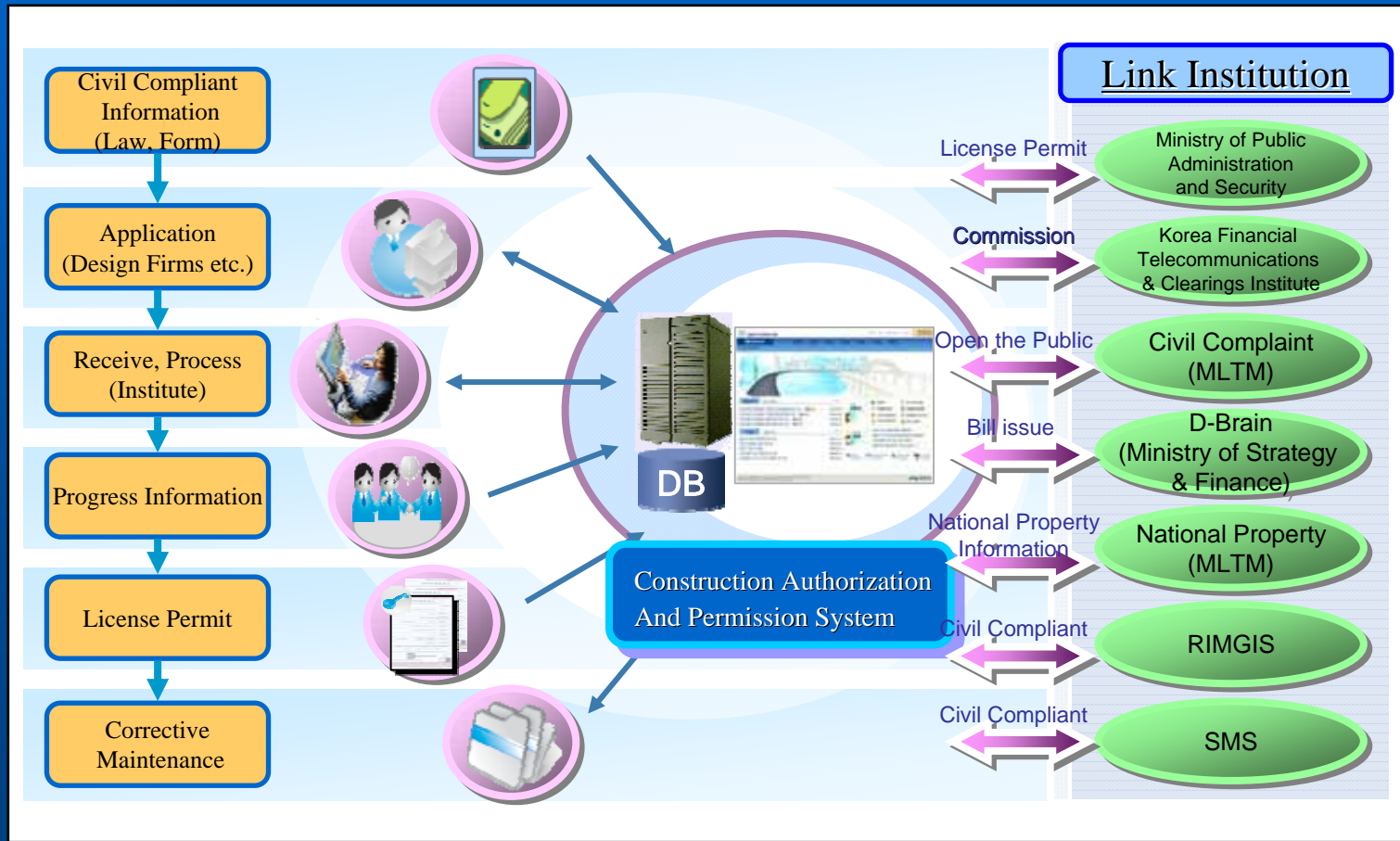
Facilities Maintenance System

Management of Facility Specifications,
Inspection History information and Overload Prosecution Information



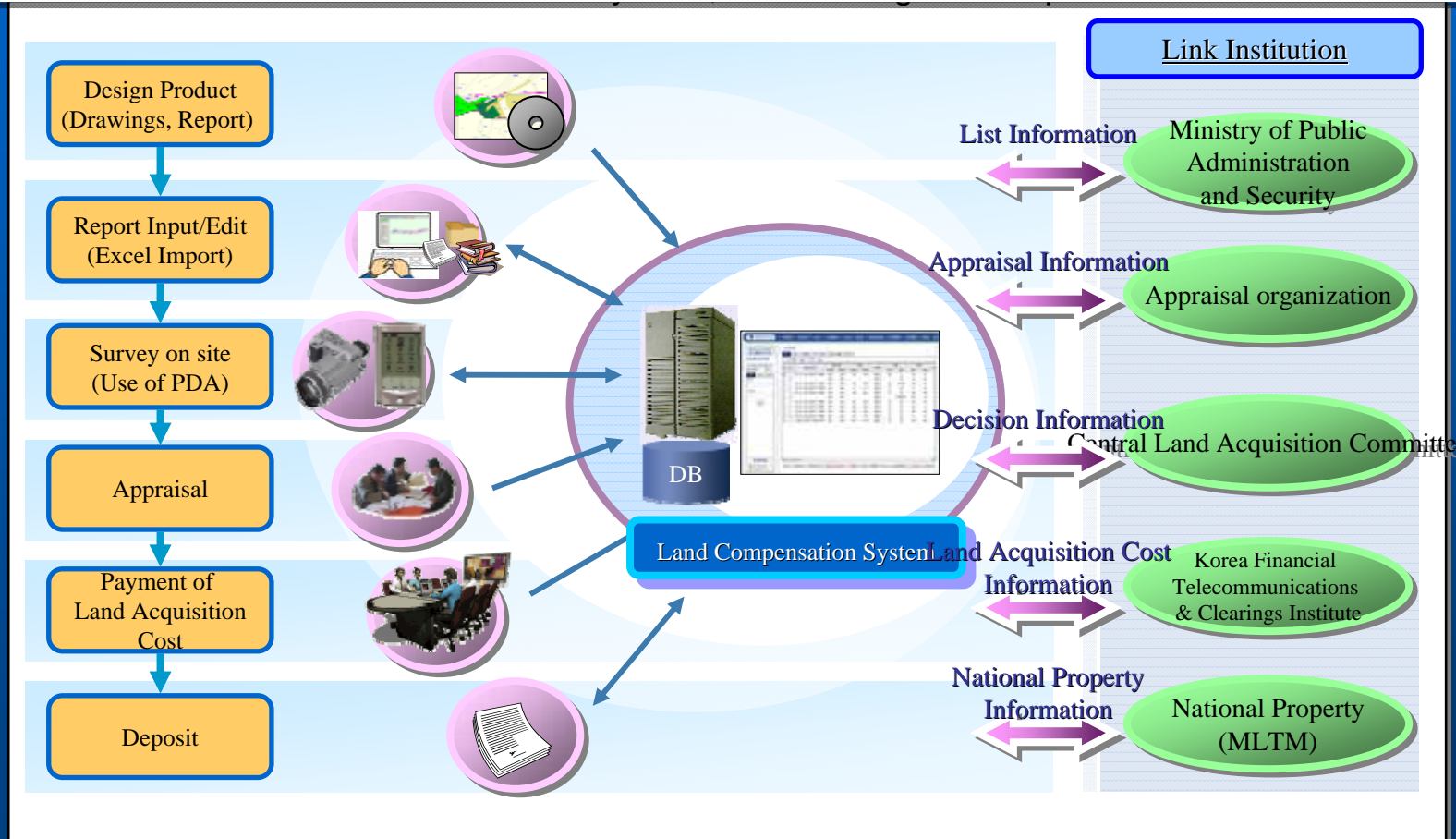
Construction Authorization and Permission System

Supporting Electronic Processing of the entire Processes of the such as Application, Processing, Finish, Post Management, etc. of Construction Authorization and Permission Services



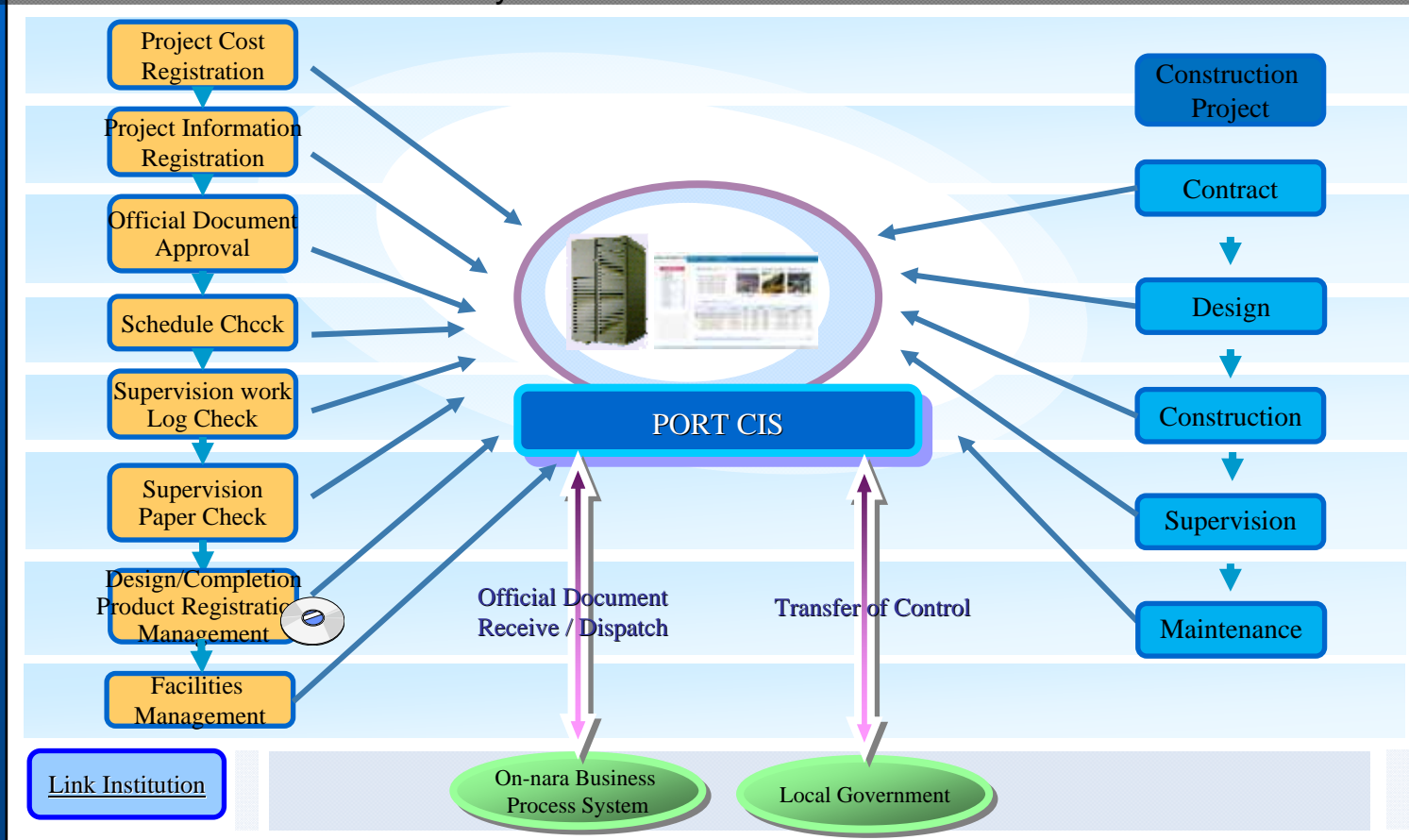
Land Compensation System

Compensation History Management such as Basic Written Evidences, Appraisal, Compensation Amount Calculation/Payment, etc. relating to Compensation



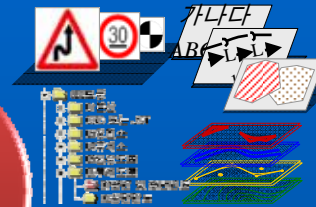
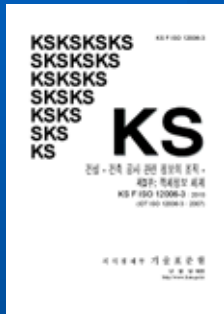
PORT CIS (Construction Information System)

Management of Construction Project Management of Port and Specification/Inspection History Information of the Port Facilities



Construction Standard

Building Construction - Organization of information about construction works - Part 3: Framework for object-oriented information



Standard for drawing classification, file naming, line type, color, layer, and symbol in construction CAD drawing



Standard for CAD File format to exchange, delivery and store regardless of kind and version of CAD software in construction



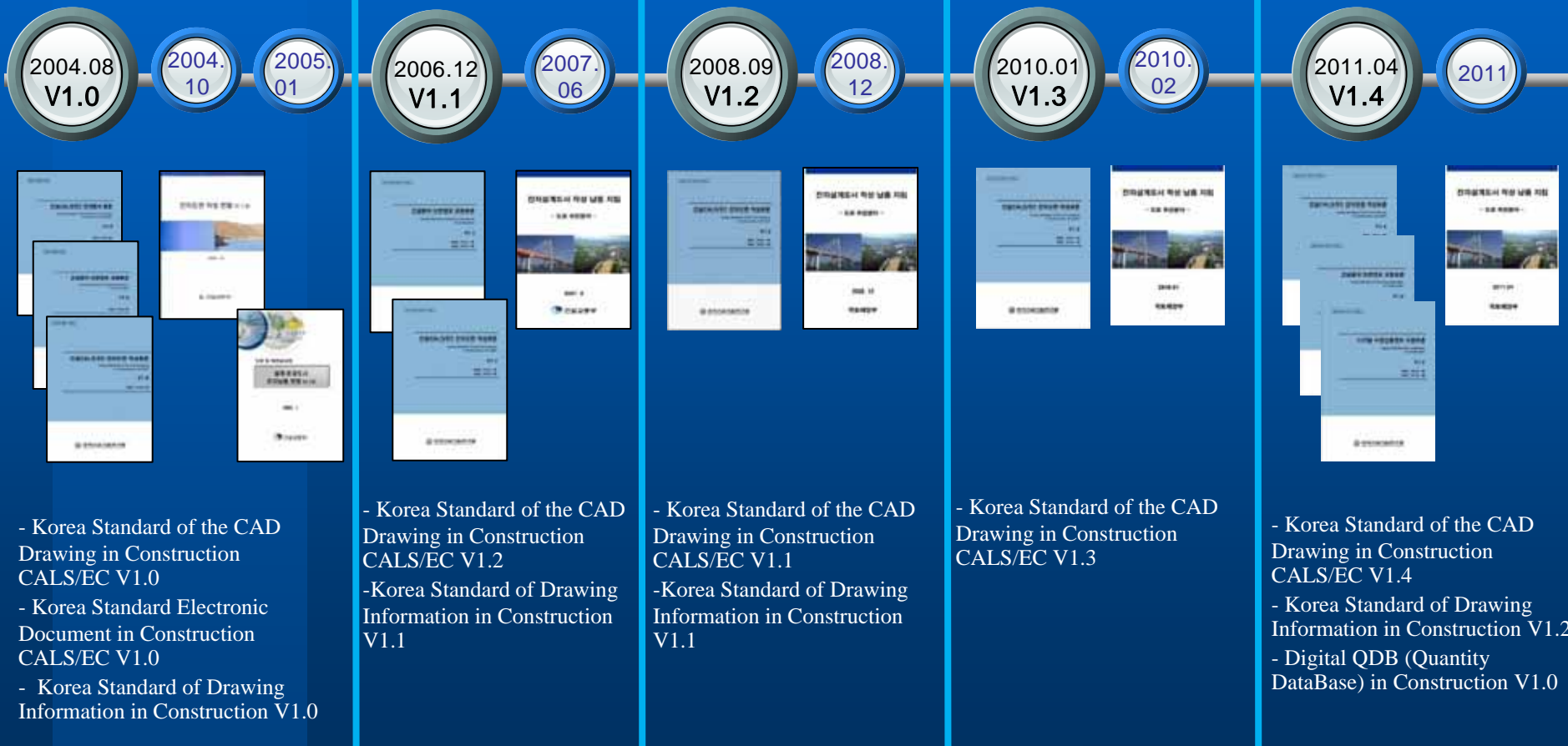
Standard for classification and coding conventions to organize and exchange construction information efficiently in all construction phases



Standard for requirements to make and manage the various construction document forms, drawings and specifications in electronic forms

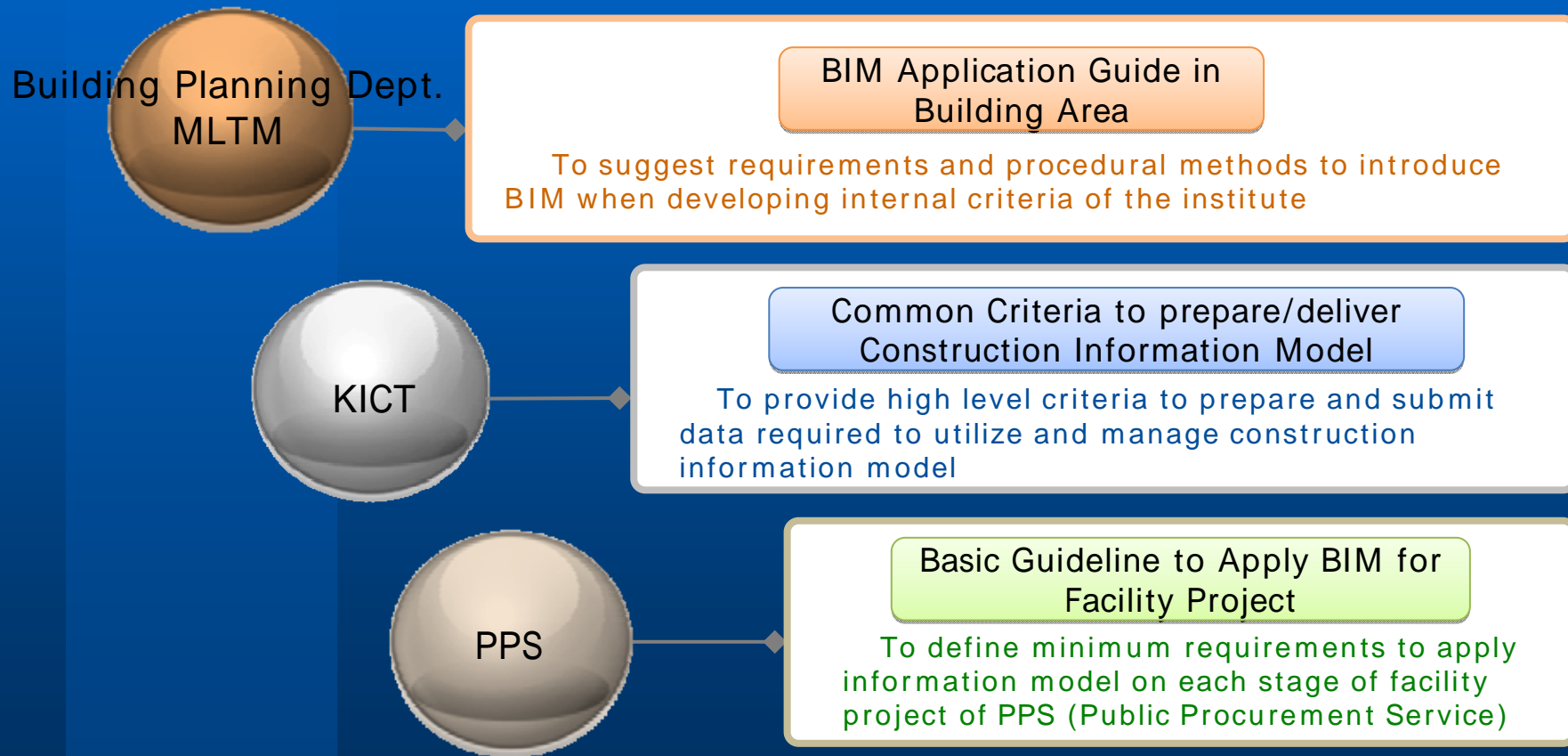


Construction Standard



Construction Standard

Status of Guidelines related to Domestic BIM

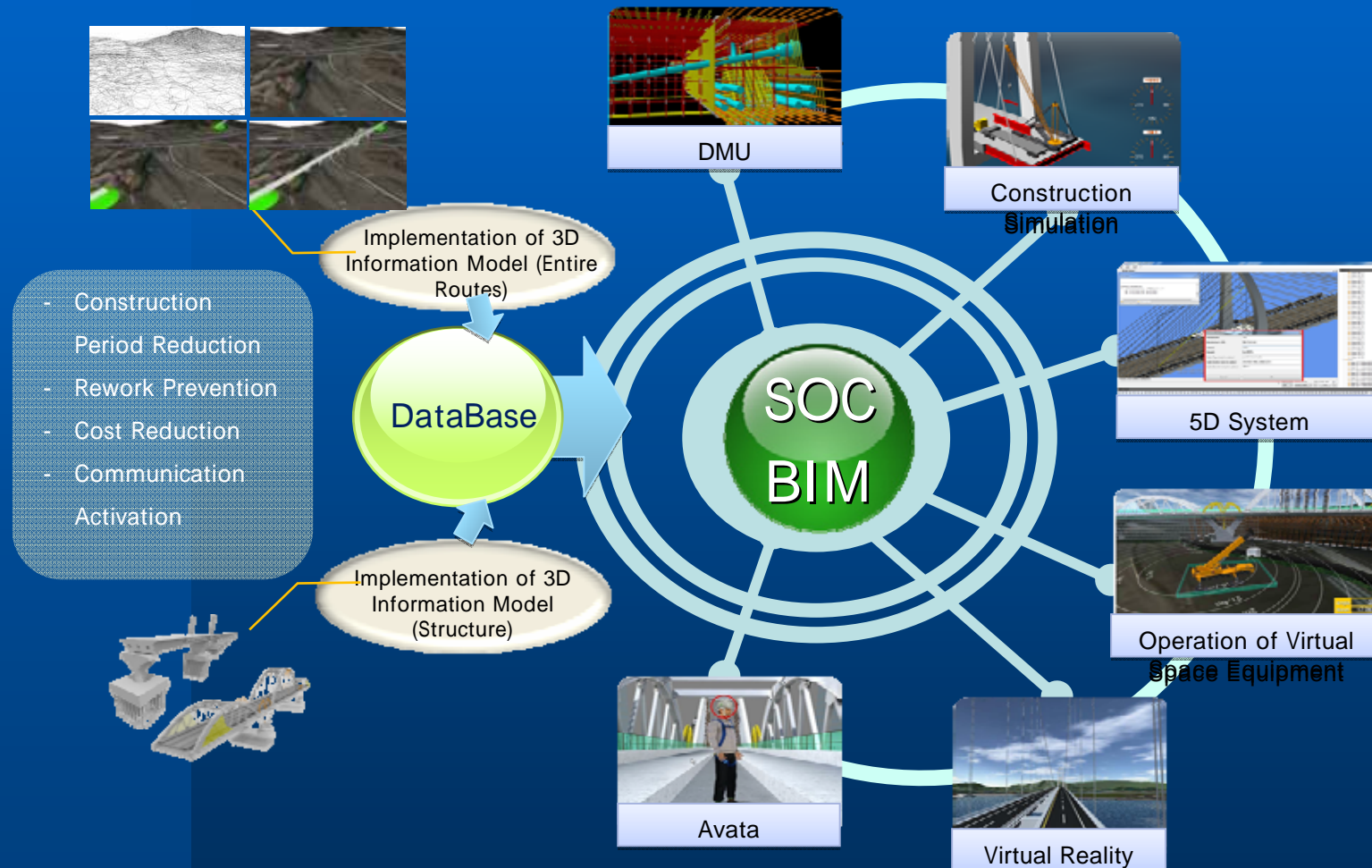


Status of Public BIM Projects in Korea

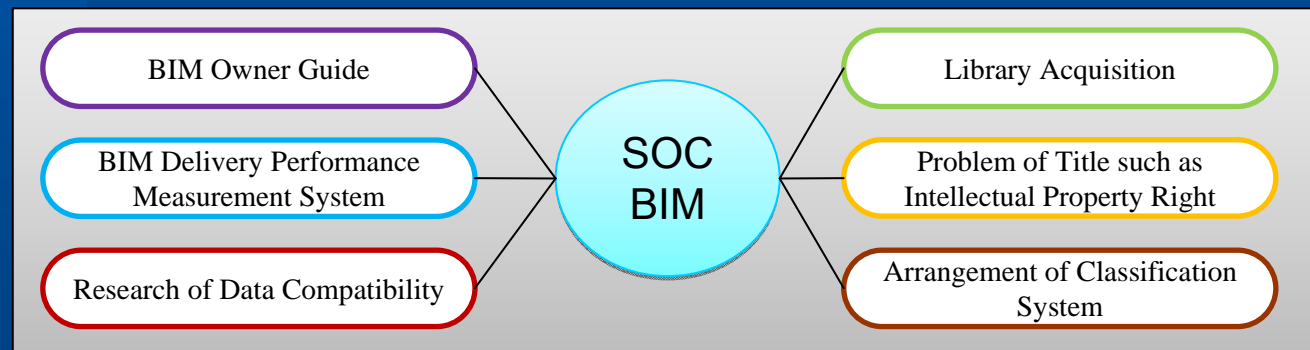
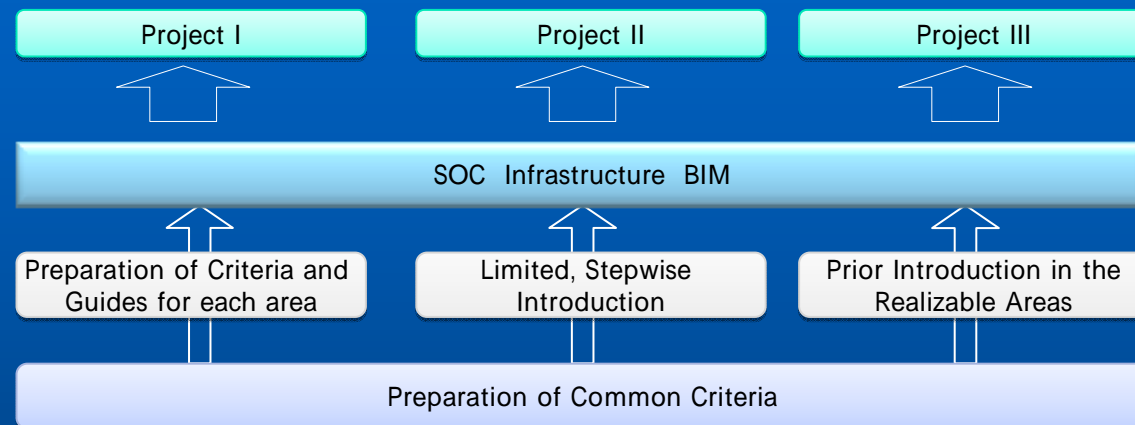
Notice	Institute	Project Title	Remarks
2007.02	Seoul City	Dongdaemun Design Plaza & Park	Design Competition
2008.02	Ministry of Defense	00 Project	PQ
2008.12	Office Administration Oriented Complex City	Complex Community Center	Design Competition
2009.04	PPS (Yongin City)	Construction of Yong Citizen Sports Part	Turn-Key
2008.07	LH Corp.	Yangju Hoicheon District A-1BL	Design Competition
2009.07		Paju Unjeong District 3 A4BL	
2009.09	Seoul National Unit. Hospital	Underground Complex Medical Space of Seoul National Unit. Hospital	BTL
2010.04	Korea Power Exchange	Moving Head Office of Korea Power Exchange to the Local Area	Design Competition

Introduction of BIM in SOC Infrastructures

Examples of BIM introduced in SOC Infrastructures by Domestic Contractors



Introduction of BIM in SOC Infrastructures





3. Construction IT in KICT



- Development of Assets Management Information for Public Facilities

- Development of Building Automation Management Technologies



시설물 관리 (Facility Management, FM):
 주어진 예산으로 가능한 많은 시설물을 유지보수

자산관리 (Asset Management, AM):
 공공시설물 관리 주체와 사용자의 합의를 통하여
 서비스수준 (LOS)을 정하고 투자전략에 의한
 최적 비용 효율적 시설물 관리



FM

**유지관리 관련 건설산업
 패러다임의 변화**

AM

- 대응적(Fix-on-failure)
- 시설물별 유지보수 (1년 단위)
- 예산에 따른 시설 유지보수

- 산업** 유지관리 비용의 상승
- 조직** 유지관리 체계 개선 필요
- 예산** 예산의 합리적 지출 대책 필요
- 공공** 사용자 요구 수문에 대응

- 예방적(Preventive,)
- 장기 전략유지보수(10년 이상)
- 예산의 객관적 분배와 집행의
 정량성 확보

Development of Assets Management Information for Public Facilities

Facility Management, FM: To manage facilities as much as possible with given budget

Asset Management, AM: To set forth level of service (LOS) through agreement of public facility management principal and users and conduct the optimal cost effective facility management with investment strategy

FM

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AM

FM

Change of Construction Industry Paradigm related to Maintenance

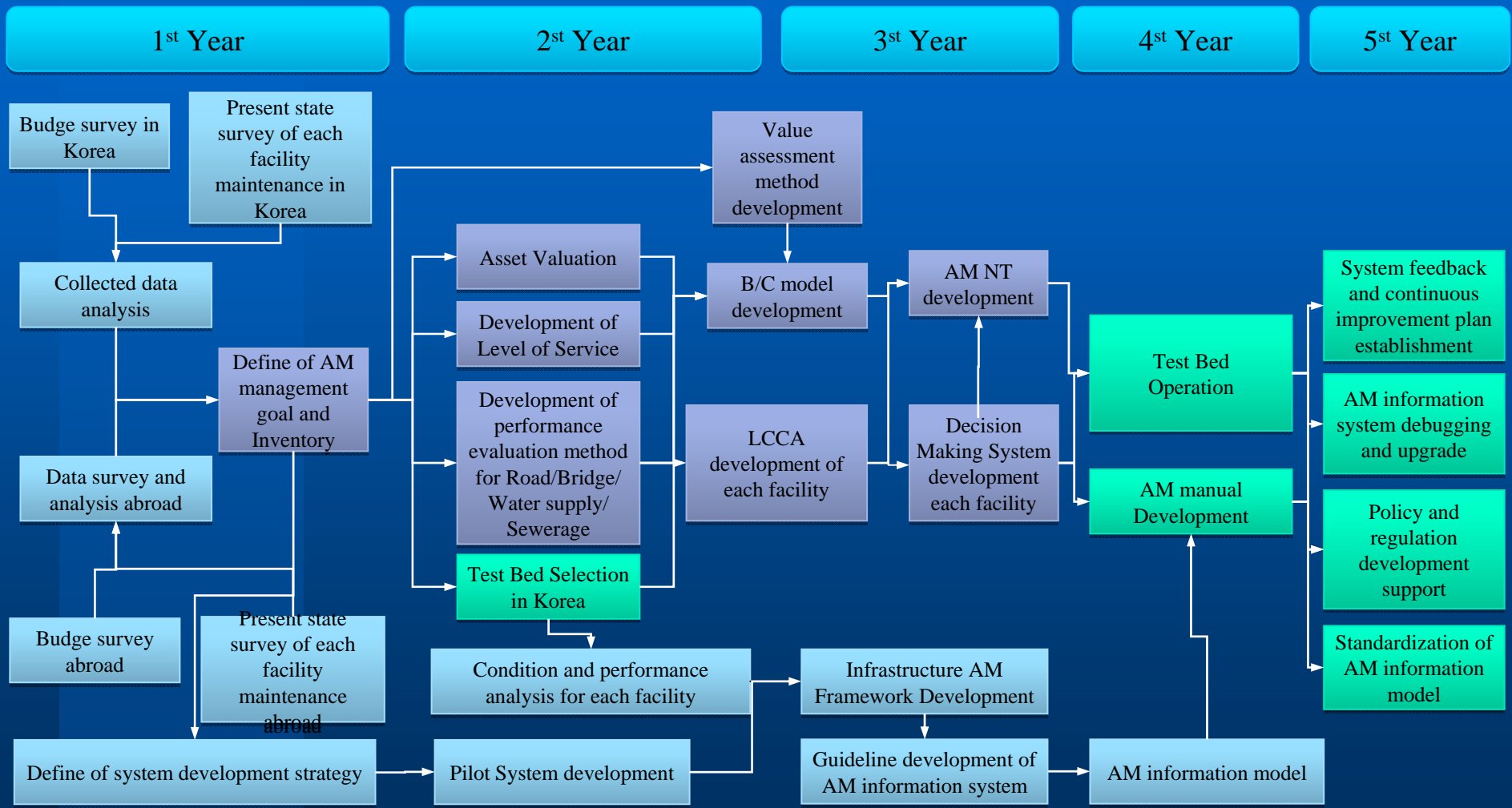
AM

- FIX-on-failure
- Facility maintenance (1 year unit)
- Facility maintenance upon budget

- Industry: Increase of maintenance cost
- Organization: Need to improve maintenance system
- Budget: Need reasonable expenditure measure of budget
- Public: Respond against user requirement level

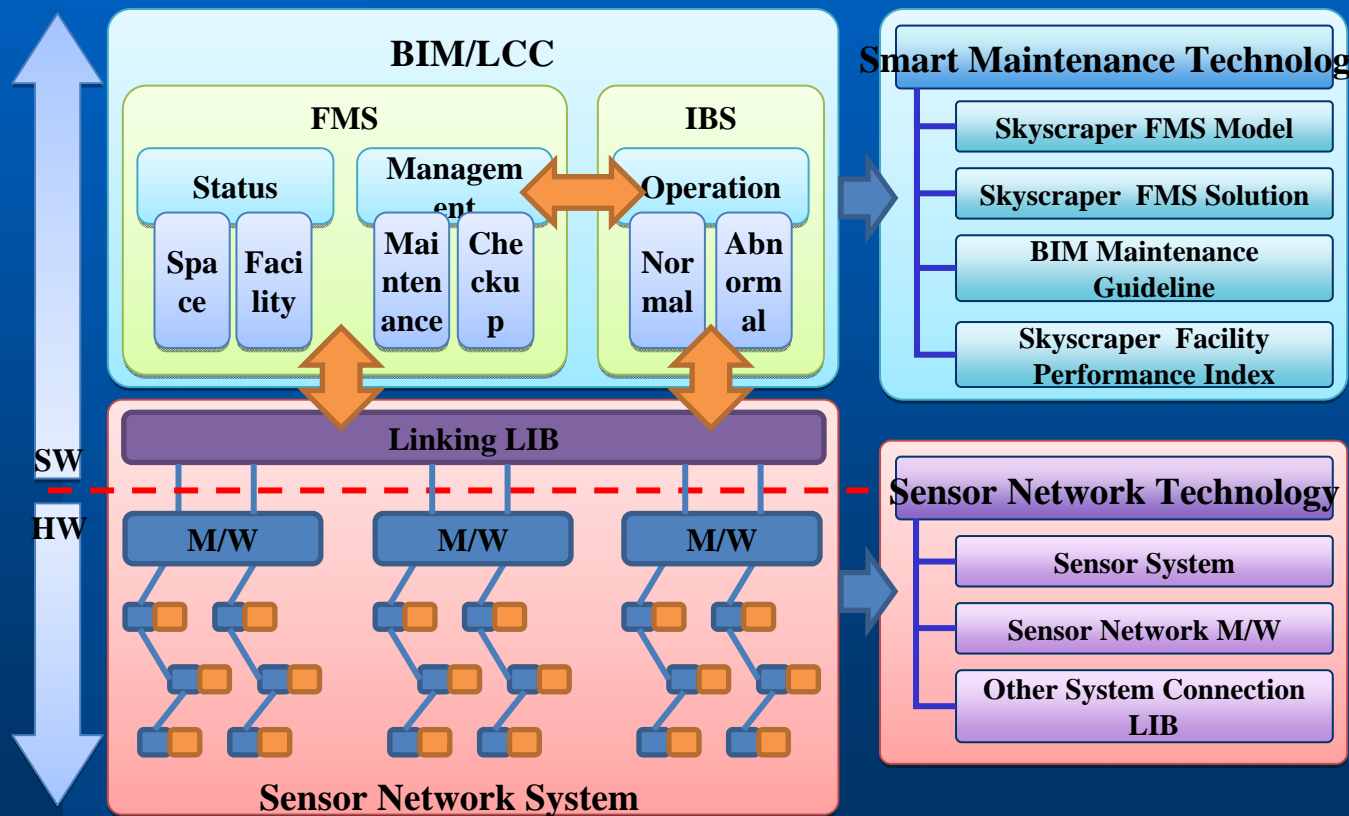
- Preventive
- Long term strategic maintenance (10 years or more)
- Ensure justness of objective distribution and exercise of budget

Asset Management Promotion Status



Overview of Development of Building Automation Management Technologies

Intelligent FMS for SuperTallBuilding



Background of Technology Development

- It is required to develop integration technology, BIM connection technology and related systems in order to systematically, economically and stably operate, maintain and manage the entire facilities and equipment under usual normal operation conditions of the skyscraper complex building.
- Need to improve energy efficiency of building is being emerged due to economical, social and political impacts.

Definition of Smart Maintenance Technology

- Integration technology operate, maintain and manage the entire facilities and equipment of the skyscraper complex building
- Technology to intellectually maintain the skyscraper complex building by connecting FMS, BIM, sensor network, hybrid power, disaster safety technology, etc.

Thank you.

