

An aerial photograph of a city skyline, likely Singapore, viewed from across a body of water. In the foreground, there is a small, circular green island. The water is blue with some white wake from a boat. The city skyline is composed of numerous skyscrapers of varying heights and colors, set against a blue sky with scattered white clouds. The word "Welcome" is overlaid in a large, stylized font.

Welcome

A Presentation
by
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Council Member of SCAL
Director of Eng Keong Pte Ltd

CORENET

Introduction to CORENET

The logo features the word "CORENET" in a bold, blue, sans-serif font. The letter "O" is stylized with horizontal lines. A blue swoosh underline starts under the "C" and curves over the "O". The entire logo is enclosed in a white rectangular box with an orange border and a dark blue drop shadow.

CORENET

COnstruction and **RE**al **E**state
NETwork

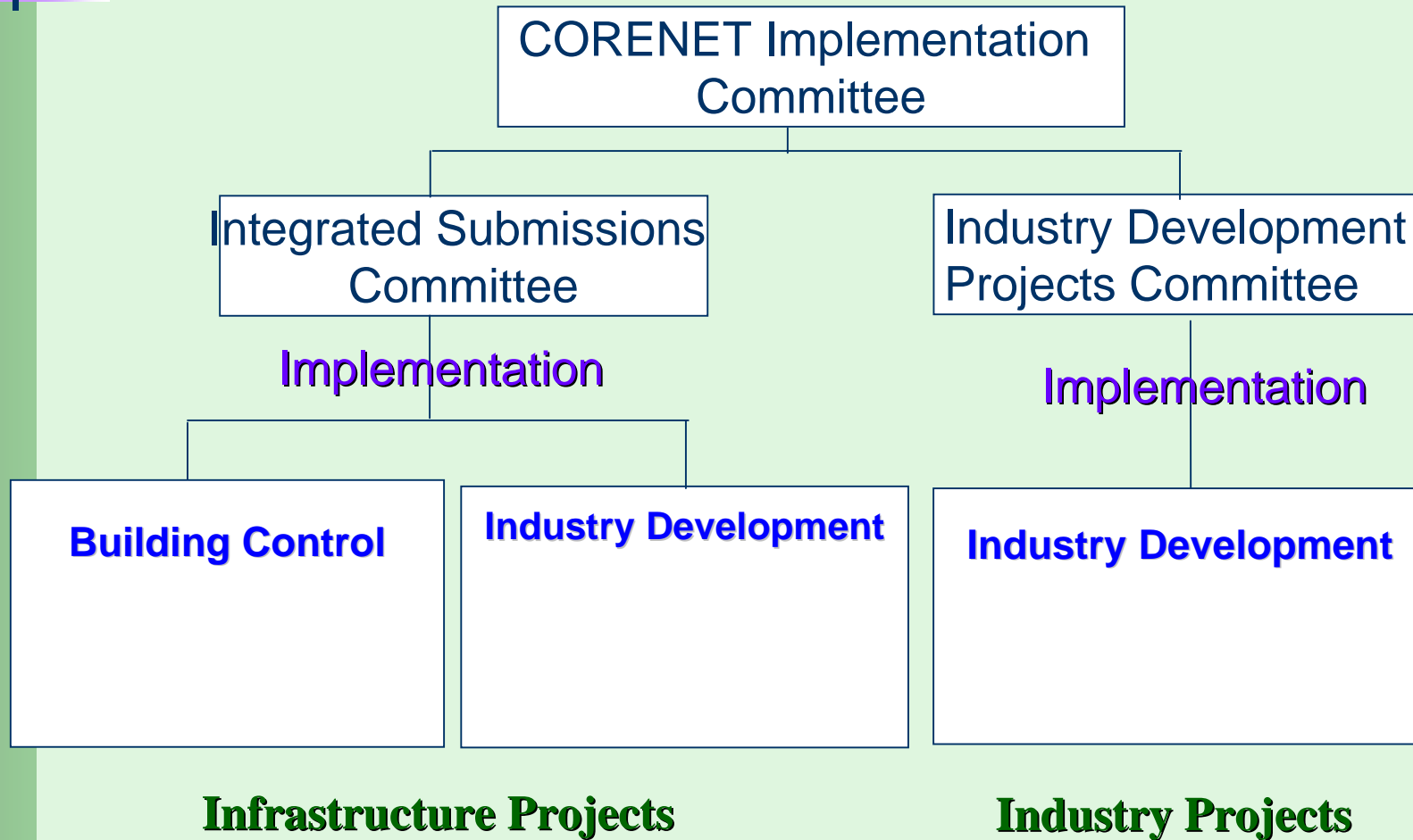
Introduction to CORENET

- ▶ Major IT initiative driven by BCA
- ▶ Aims to re-engineer industry's business processes to achieve quantum leap in turnaround time, productivity and quality

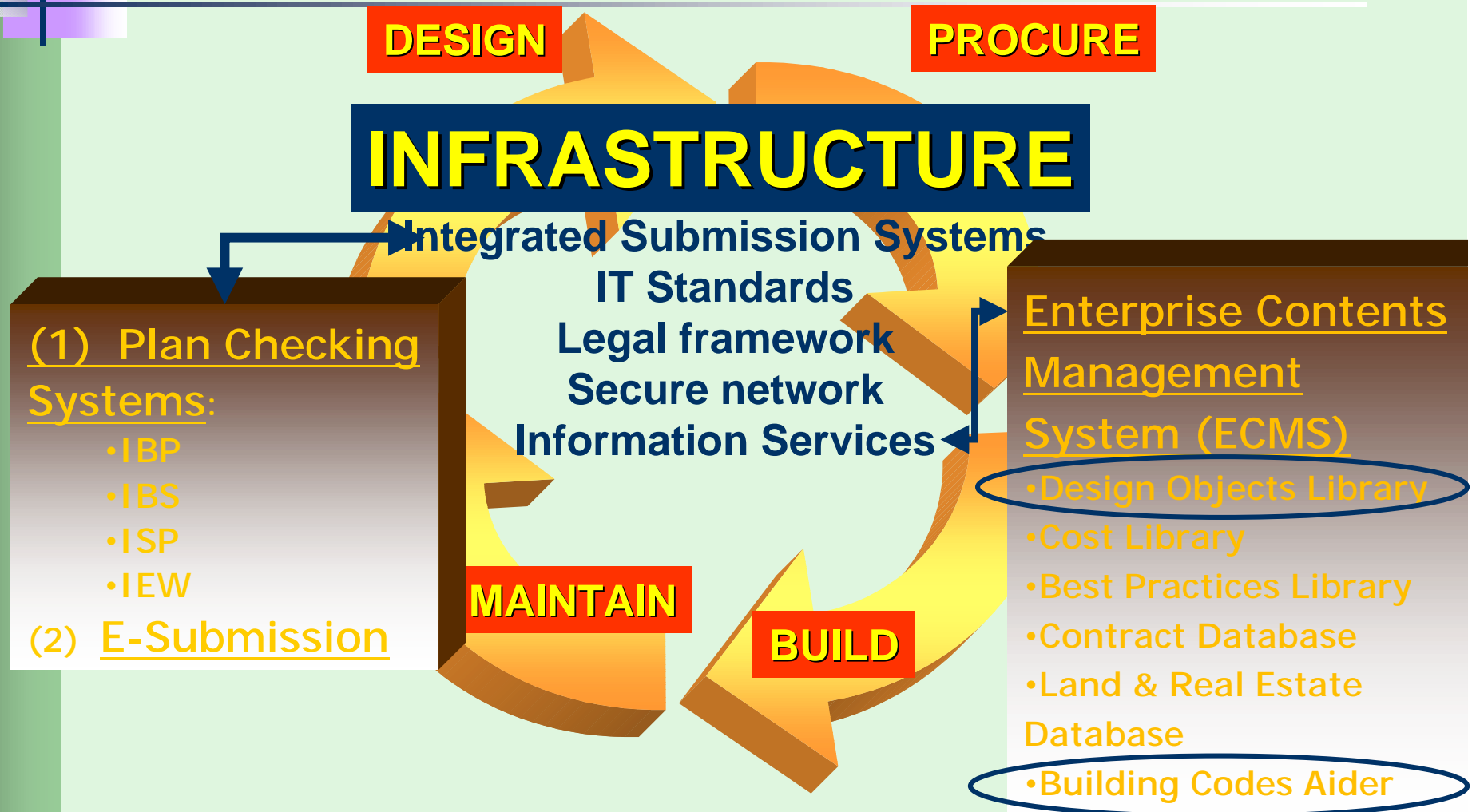
Objectives

- ▶ Enable compliance of statutory requirements with minimal intervention and guidance from regulatory authorities
- ▶ Support business planning and project execution through relevant information availability
- ▶ Accelerate industry adoption of IT and e-business solutions for collaborative commerce to streamline business processes
- ▶ Establish standardisations and good practices for practice efficiency and effectiveness

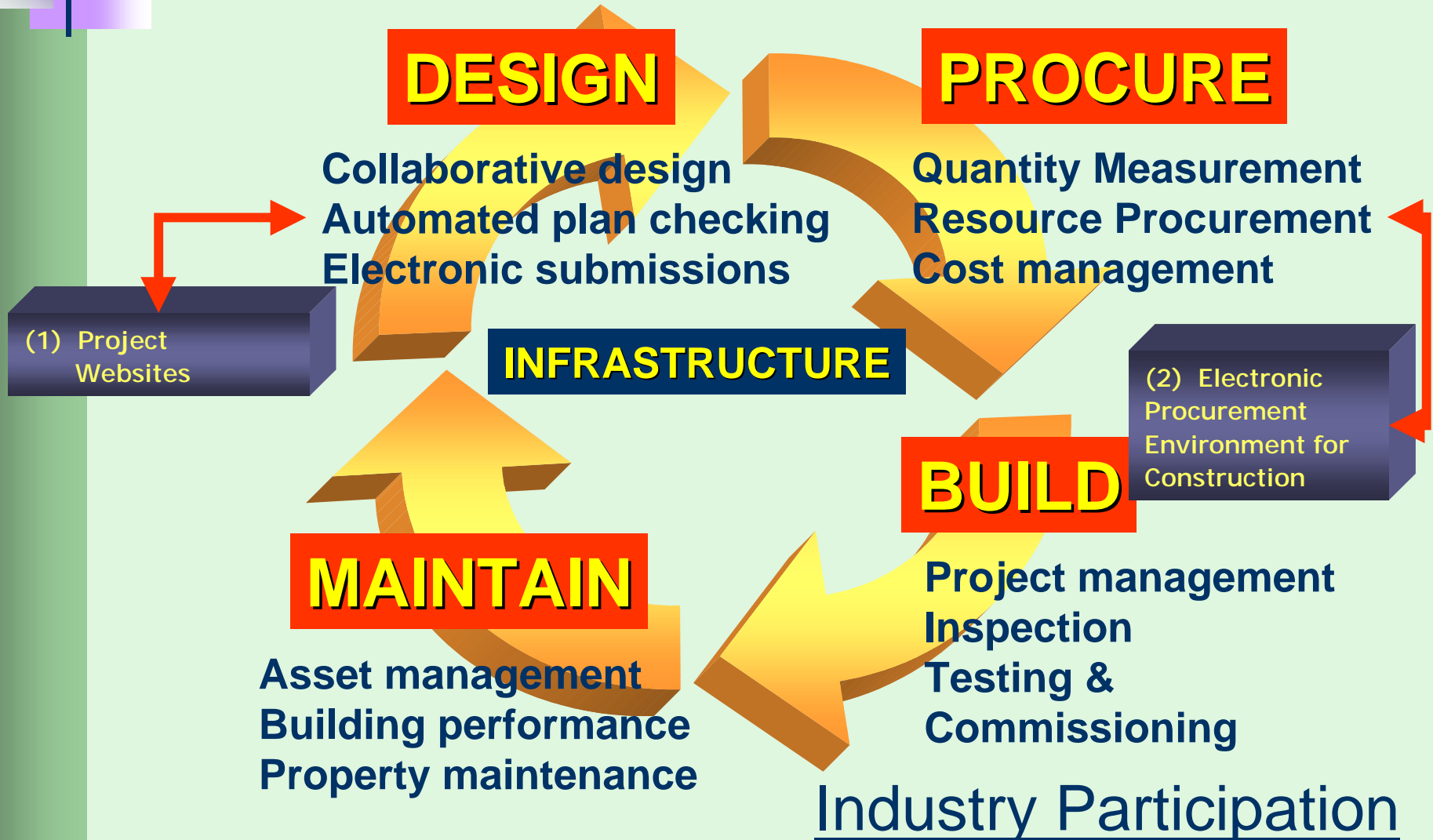
Implementation Group



IT Thrusts - Infrastructure Projects



IT Thrusts - Industry Projects



Current Infrastructure Projects

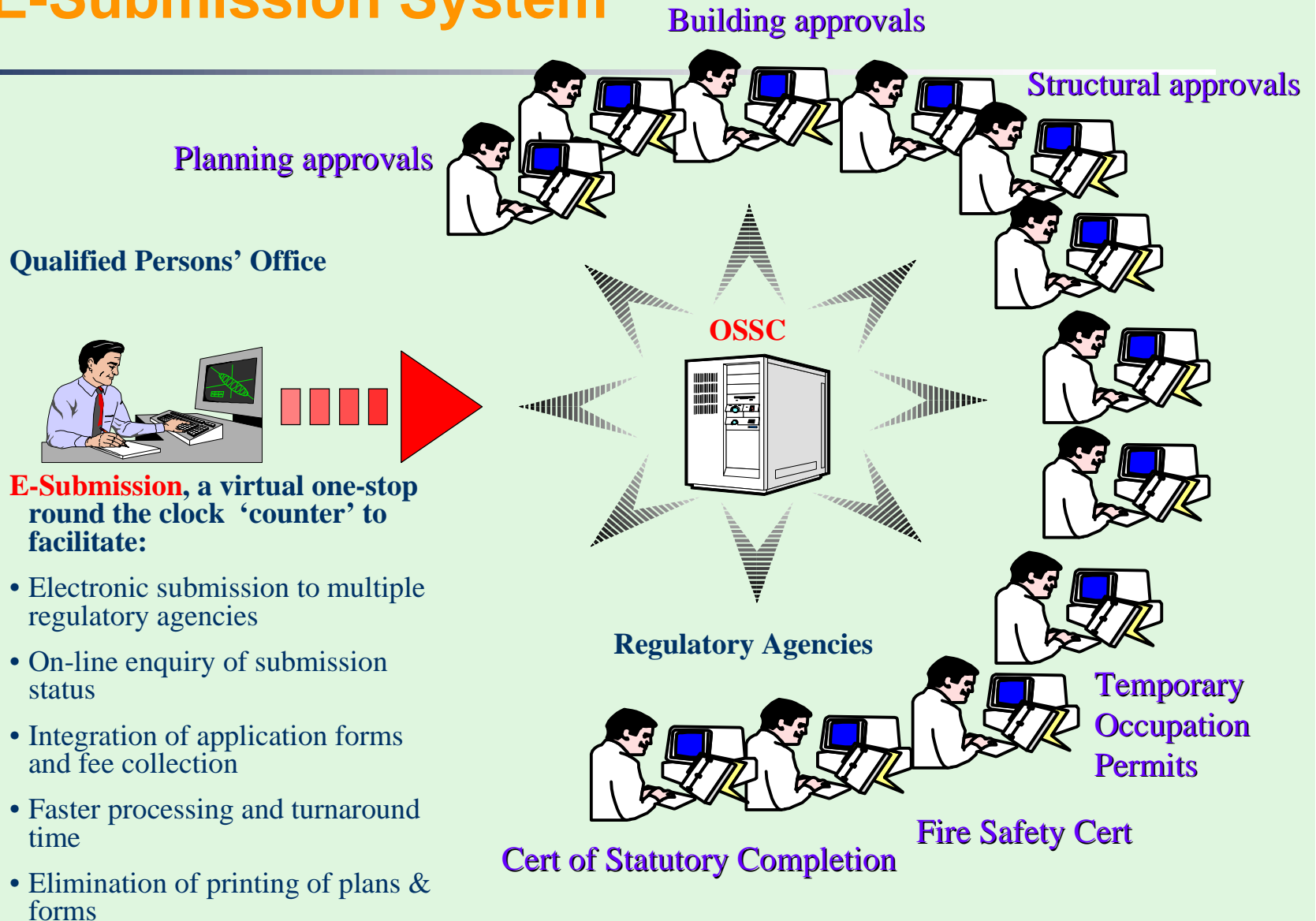
- ▶▶ E-Submission System
- ▶▶ Integrated Building Plan and Building Service Plan Checking System (IBP / IBS)
- ▶▶ Electronic Buildable Design Appraisal System (eBDAS)
- ▶▶ Enterprise Content Management System (ECMS)
- ▶▶ Integrated Structural Plan Checking System (ISP)
- ▶▶ Design Objects Library (DOL)

A decorative graphic consisting of overlapping colored squares (cyan, purple, white) and a black crosshair.

E-Submission System

- ▶ E-Submission System (E-Submission) is one of the key project, identified in CORENET, to serve both the public and private sectors
- ▶ E-Submission System is network infrastructure / system to facilitate the electronic submissions and processing of project-related documents in a secure environment using Internet / S-ONE as the delivery medium
- ▶ One-stop, 24/7 convenience centre for industry professionals to submit project-related documents with electronic payment “counter” to facilitate fees processing

E-Submission System



E-Submission, a virtual one-stop round the clock 'counter' to facilitate:

- Electronic submission to multiple regulatory agencies
- On-line enquiry of submission status
- Integration of application forms and fee collection
- Faster processing and turnaround time
- Elimination of printing of plans & forms

Integrated Building Plan and Building Service Plan Checking System (IBP/IBS)

- ▶ Integrated Building Plan / Building Services (IBP / IBS) Checking System is an artificial intelligence (AI) system that automatically checks electronic plans for compliance to regulatory requirements
- ▶ Expert tool to enhance overall effectiveness and efficiency of building plan and building services approval process
- ▶ Ensure consistency in the interpretation of codes and regulations from 9 government agencies - BCA, CDSB, CBPU, FSB, HDB, LTA, CBPU, Power Gas, Water Dept
- ▶ Provide Qualified Persons (QP's) with self-checking capabilities in their design process prior to submission for approval

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Electronic Buildable Design System

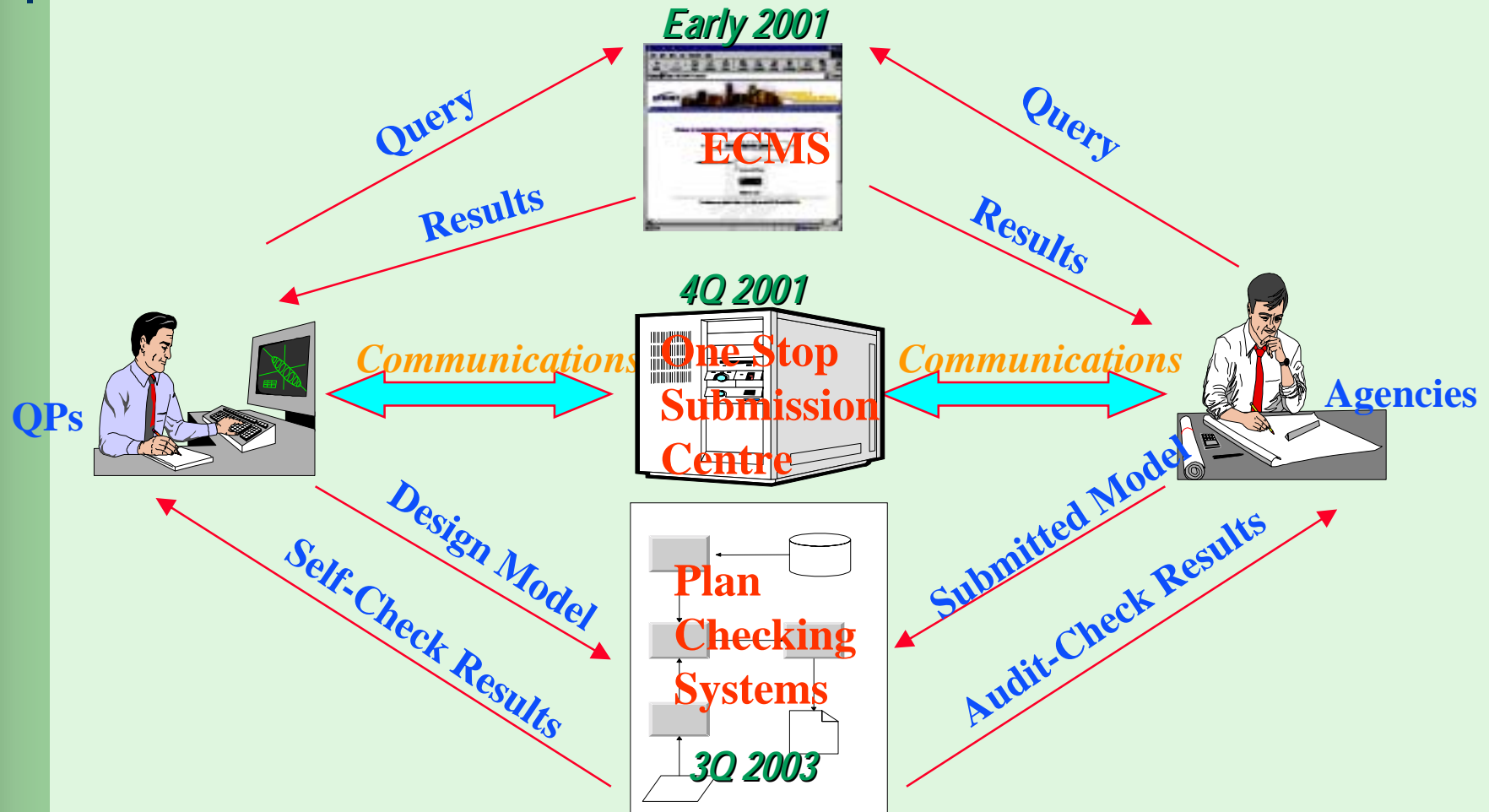
- ▶▶ eBDAS is an electronic module to compute the buildability score and check compliance to building plans against the “Code of Practice on Buildable Design” (CP on Buildable Design) in support of the deployment of the BDAS system
- ▶▶ Electronic geometric-based Buildable Design Appraisal System (eBDAS) to support legislation compliance
- ▶▶ Provide both the qualified persons (QPs) and BCA an electronic tool to assist them in computing, reporting, and analysing Buildability Scores

A decorative graphic consisting of a vertical black line intersecting a horizontal black line, with a cyan square above the intersection and a purple square below it, all on a light green background.

Enterprise Content Management System

- ▶ Enterprise Content Management System (ECMS) is an infrastructure that provides a central repository of building and construction related information that is accessible anytime, anywhere via the Internet
- ▶ Set of coherent solutions under one roof to facilitate content design, creation, authorship, conversion, publication and distribution ;
- ▶ Effective XML structured document management system to handle document processing, document versioning and document archiving
- ▶ Database foundation to support development of web-based and desktop applications

Summary : CORENET Infrastructure Projects



Industry Development Projects -Objective and Scope

- ▶▶ To spearhead the adoption of IT solutions and services amongst practitioners in the construction industry
- ▶▶ Champion: Industry Development Project Committee
- ▶▶ Terms of reference of IDPC:
 - To monitor IT-readiness
 - To identify & pilot critical technologies
 - To accelerate IT adoption
- ▶▶ covers four logical phases of building lifecycle:
 - **Design**: collaborative design
 - **Procurement**: automatic measurement, online procurement & cost management
 - **Build**: construction management
 - **Facilities management**: asset management & maintenance

E-Collaboration

- ▶ Secured Internet-based project centric communication and management platform to integrate and coordinate project partners, activities and information throughout project lifecycle
- ▶ Single-source, updated mission-critical information to support executive decision



A decorative graphic consisting of a vertical black line and a horizontal black line intersecting at a purple square, with a teal square above the intersection.

Industry Pilot

- ▶▶ An industry pilot was launched by Minister of National Development on 15 May 2000
- ▶▶ Commitment of 25 live projects from 12 industry leaders: Allgreen, Capitaland, Centrepont, CDL, Far East Org, Keppel Land, MCL Land, HDB, JTC, PWDCorp, SembCorp and Wing Tai which command >70% of local market
- ▶▶ Pilot is powered by CyberIB.com Pte Ltd
- ▶▶ Status:
 - ▶▶ 23 projects online
 - ▶▶ 74 individual firms
 - ▶▶ 184 users have gone live online as at May 2001
 - ▶▶ 594 practitioners trained
- ▶▶ Today, at least 4 other ASPs - icFox (ProjectNet), Bentley (Viecon), CX Hub, HDBuilders.com - have entered or are entering the local scene to offer similar services

E-Marketplace

- ▶▶ Marketplace for sourcing and procurement of construction resources that include product & material, plant and equipment, labour and services, and subcontracting between main contractors and their sub-contractors & suppliers
- ▶▶ Procurement value account for 70% to 80% of the contract value
- ▶▶ Tangible benefits can be derived from:
 - reduce resources cost due to more competitive bid and more direct assess to source
 - improve productivity via automation of procurement processing and documentation

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Industry Pilot

- ▶ Lead Company is the Singapore Contractors Association Limited (SCAL)
- ▶ Accredited vendors/partners: Accomplir Pte Ltd, National Computer Systems Pte Ltd, NTT Singapore Pte Ltd, SAP Asia Pte Ltd, tx123 Pte Ltd and icFox.
- ▶ A Memorandum of Understanding for an Electronic Procurement Pilot Programme was signed between SCAL and 21 large Construction Firms on 22 May 2001 witnessed by BCA and PSB
- ▶ Involving
 - 21 top contractors and 10 each of their subcontractors and suppliers to transact major & high-value resources
 - inter- & intra-organization tendering & procurement functions/activities
 - inter-portal communication, security and legal matters

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Industry Pilot Status

- ▶▶ Requirement study has completed in Sept 2000
- ▶▶ 1st service provider (icx123.com, effort by NTT and tx123) has launched their online services in Dec 2000. Two more, ecglobalconstruct.com (Accomplir) and icFox.com (NCS, SAP and icFox) has also officially launch their initiative under this project.
- ▶▶ Testing of Construction Resources Classification Standards to commence in August 2001
- ▶▶ Preparation of contractors, subcontractors and suppliers sites in progress
- ▶▶ Other prominent marketplaces: HDBuilders.com, CX Hub and Asiabuilders.com

A decorative graphic consisting of overlapping colored squares (cyan, purple, grey) and a black crosshair.

Construction IT Standards

- ▶▶ 8 major professional bodies (ACES, IES, REDAS, SCAL, SIA, SIBL, SISV & SPM) signed a MoU in Sept. '98 to jointly develop and adopt a set of IT Standards for the Construction industry to enhance communication and data reuse over the entire project life-cycle

Construction Industry IT Standards Technical Committee (CITC)

- ▶▶ An industry led committee was formed under the National IT Standards Committee (ITSC) to spearhead the development of the construction related IT standards
- ▶▶ BCA, IAI (S), IDA & PSB co-funded the effort
- ▶▶ Out-sourcing strategy: paid consultants are employed to work with domain experts to speed up the Standards development

Construction IT Standards

- ▶▶ Current Efforts are:
 - Computer Aided Design (CAD) Standards
 - Cost and Resources Classification Standards
 - IT Best Practices and Guidelines

- ▶▶ New Efforts are
 - Electronic Measurement Standards
 - Object-oriented CAD Standards
 - More IT Best Practices and Guidelines

Summary

Current Thrusts

- ▶ e-Collaboration
- ▶ e-Procurement
- ▶ IT Standards
- ▶ IT Training & Promotion

New Thrusts

- ▶ Automatic Quantity Take-Off System
- ▶ Integrated Construction Management
- ▶ Integrated Facility Management

Thank You