Towards Effective Execution of Public Works by IT

CALS/EC National Promotion

Ministry of Land, Infrastructure and Transport
2002
CALS/EC Local Promotion Action Program (National Version)

Full-scale CALS/EC introduction has begun for public works projects administrated by the Ministry of Land, Infrastructure and Transport, as an effort to improve the execution system for public works via the use of IT. Nevertheless, CALS/EC must be introduced to local government agencies to demonstrate the effect of CALS/EC. This document will outline the "CALS/EC Local Promotion Action Program (national version)" where measures in which CALS/EC is to be introduced for local government agencies throughout Japan is presented, as well as a description of the background to the action program.

Construction-Related Industries
- Difficulties in support for different purchasers
- Is there a future plan for introducing CALS/EC to local government agencies? (From when? What kinds of preparations are needed?)

Local Government Agencies
- What are the advantages of introducing CALS/EC?
- What are the actions being taken by the central government?
- Are other prefectures starting to introduce CALS/EC?
- From what point should CALS/EC introduction be started?
- Support is desired

Establish CALS/EC Promotion Council in each local block

Settling on a CALS/EC Local Promotion Action Program (local version)
- Advantages (localization)
- Questionnaire survey results (actual)
  - Local characteristics
- Concepts, plans for local government agencies, etc. within blocks
  - System preparation
  - Organization, coordination of problems and issues that appear at introduction
  - Implementation schedule for Electronic bidding and electronic delivery

Support

Ministry of Land, Infrastructure and Transport
- Establish a "Local CALS/EC Promotion Council"
- Free, low-cost publication of technology development results
- Settlement and disclosure of a standardization manual
- Support for verification field tests

Public Utility Foundation
- Establish an "Electronic Bidding Core System Development Consortium"
- CALS/EC Qualification System
- Technical support for construction technology centers of prefectures
- Training and spreading activities
- Support for settling on measures for Basic Maintenance Plan, etc. of local government agencies
Liaison & coordination as well as information exchanges for local government agencies

Questionnaire survey on efforts for CALS/EC

Sharing know-how for verification test

Information exchanges concerning support from the central government, etc.

Standardization

Targets to be Realized for CALS/EC by FY 2010

- IT strategy and consistency
- Separate promotion plans
- Verification field tests
- Trial operation

Others

Targets for Yearly Plan

Ministry of Land, Infrastructure and Transport’s Targets for Supporting CALS/EC Introduction

<table>
<thead>
<tr>
<th>e-Government</th>
<th>e-Local government</th>
<th>Prefectural authorities and ordinance-designated cities</th>
<th>Major regional cities</th>
<th>Local governments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set up a CALS/EC Local Promotion Action Program (national version)</td>
<td>Partial electronic bidding</td>
<td>Establish a Local CALS/EC Promotion Council</td>
<td>Start preparations on CALS/EC</td>
<td>Start preparations on CALS/EC</td>
</tr>
<tr>
<td>“Millennium Project”, constructing an e-Government core</td>
<td>Constructing a total government network (prefectural authorities and ordinance-designated cities)</td>
<td>Set up a Local CALS/EC Promotion Program (for each local block)</td>
<td>Start verification tests on CALS/EC</td>
<td>Start verification tests on CALS/EC</td>
</tr>
<tr>
<td>“World Millennium Project”, creating a high-speed Internet and computing environment</td>
<td>Constructing a total government network (local government offices)</td>
<td>Start CALS/EC operations</td>
<td>Partial CALS/EC operations</td>
<td>Partial CALS/EC operations</td>
</tr>
</tbody>
</table>

Move up electronic bidding one step

Expand the scope sequentially
Information can be exchanged from anywhere, in less time, with electronic data communication via communication networks, which allows work to be executed even faster. The information user can utilize information that’s always up-to-date and error-free, by using one centrally-managed data, which eliminates information misses and transmission failures. Storage space can be reduced through storage of electronic materials, such as diagrams, documents and account statements, which had previously been exchanged via paper. In addition, searches can be done easily and in less time. These advantages are raised further through the participation of more and more people.

**Importance of Systematic Promotion**

Efforts linked with public works purchasers, including local government agencies, are vital to amply demonstrate the effects of CALS/EC introduction.
**Support Measures of Ministry of Land, Infrastructure and Transport**

*Local CALS/EC Promotion Council*

"Local CALS/EC Promotion Council" is established in 8 Regional Development Bureaus, the Hokkaido Regional Development Bureau and the Okinawa General Bureau in fiscal year 2001, in participation with Local government agencies and construction-related industries, etc.

**CALS/EC Local Promotion Action Program (National Version)**
Settled in June 2001

**CALS/EC Local Promotion Action Program (Local Version)**
To Be Settled in March 2002

**Participating Agencies**

- Prefectures, Ordinance-designated Cities
- Prefectural Construction Technology Center, etc.
- Affiliated Public Corporations
- Related Industry Groups
- JACIC, SCOPE

* *Sponsored by Okinawa General Bureau, Cabinet Office*

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**Action Program by Ministry of Land, Infrastructure and Transport**

Aiming for CALS/EC realization by fiscal year 2004 for public works projects administered by the Ministry of Land, Infrastructure and Transport.

**Schedule Outline**

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>By FY 2010</th>
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</thead>
</table>

**Construction CALS/EC**

- Preparing a PC environment for all staff to make use of the Internet
- Start of verification test

**Port CALS**

- Preparing a Port CALS environment
- Start of model projects

**Airport Facilities CALS**

- Setting Airport Facilities CALS Grand Design
- Start of model projects

**Airborne Facilities CALS**

- Construction of Integrated Database System

**Estimated Effects**

Costs are expected to be reduced by at least 36 billion yen via space-savings, transfer cost reductions, etc., when electronic delivery and electronic bidding is implemented at public works projects administered by the Ministry of Land, Infrastructure and Transport. However, only a small amount of the actual cost-cutting effect is reflected, as the % covering all public works organizations is small, even when CALS/EC is introduced only at public works projects administered by the Ministry of Land, Infrastructure and Transport.

**Figure 1** Image of Public Works Cost-Cutting

<table>
<thead>
<tr>
<th>Current Cost</th>
<th>Computed Rate for Public Works</th>
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<tbody>
<tr>
<td>36 billion yen</td>
<td>e = 100%</td>
</tr>
</tbody>
</table>

Projects by Local Government Agencies, etc. / Public Works Projects Administered by Ministry of Land, Infrastructure and Transport

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**CALS/EC Local Promotion Action Program (National Version)**

This action program

**CALS/EC Local Promotion Action Program (Local Version)**

Settled by the CALS/EC Promotion Council (for each local block)

**Basic Maintenance Plan, Action Program for Local Government Agencies**
Support Measures by Public Utility Foundation

Support for Settlement of Measures for Basic Maintenance Plans and Action Programs of Local Government Agencies

Basic maintenance plans and action programs have been settled on by some agencies, as efforts for local government agencies CALS/EC, and such effort have more and more proceeded. In addition, local government agencies, in advanced efforts, have begun verification tests on electronic procurement and sharing information.

Example of Process for CALS/EC Introduction in Local Government Agencies

"Electronic Bidding Core System Development Consortium"

Based on the electronic bidding system provided free of charge by the Ministry of Land, Infrastructure and Transport, JACIC and SCOPE jointly established a consortium in order to economically develop essential functions added on whereby purchasers such as local government agencies pay jointly for costs. Public purchasers can become members at no cost.

Advantages of core system installation

- Installation of system that guarantees identification and fairness
- Avoids multiple investments for development
- Reduces system development cost via standardization
- Suitable for government procurement agreements

Electronic Bidding Core System: The core part of the electronic bidding system, which has high flexibility and can be applied to multiple public purchasers.

CALS/EC Qualification System

Registered CALS/EC Expert (RCE)

The Japan Construction Information Center established the RCE and RCI qualification systems in June of 2001 for personnel training and spreading information in order to support, spread and promote the introduction of CALS/EC by local government agencies, etc. The Japan Civil Engineering Consultants Association performs secretariat duties such as tests and registration.

Contributions towards CALS/EC application by Ministry of Land, Infrastructure and Transport and CALS/EC Introduction by local government agencies

- Eliminating the information divide between agencies and regions by properly extending information partially concentrated in the Ministry of Land, Infrastructure and Transport, etc.
- Hearing opinions from the site and reflecting these to spread and promote their application
- Step-by-step realization of CALS/EC Local Promotion

Trends towards RCI/RCE Acquisition

Registered CALS/EC Instructor (RCI)

Persons who have more ample achievements in CALS/EC-related work and public work supply
For Further Information, Contact:

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1st Research Department,
Institute of Construction Management,
Service Center of Port Engineering (SCOPE)
URL: http://www.scopenet.or.jp/main/english/