

Task Force on Electronic Tendering

Discussion Paper 1/2000

Electronic Dissemination of Tender Documents

1. Purpose

- 1.1. The purpose of this paper are-
- (a) to present Works Bureau's preliminary framework for the electronic dissemination of tender documents;
 - (b) to formulate the implementation programme for the framework; and
 - (c) to review the cost and benefit for electronic dissemination.

2. Introduction

- 2.1. In the working programme presented in Discussion Paper No. 2/99 and accepted by the various Sub-Groups, the deliberation of the Task Force is to be divided into four main stages-
- (a) Stage 1 – Business justifications for electronic tendering
 - (b) Stage 2 – Electronic distribution of tender documents
 - (c) Stage 3 – Electronic submission of tender returns
 - (d) Stage 4 – Draft Final Report for Sub-Group
- 2.2. This Discussion Paper is submitted for the purpose of initiating the discussion for Stage 2.

3. Definition

- 3.1. In this paper, unless the context otherwise requires-

"Document Files" means Native Files and Image Files;

"Image File" means a data file containing the printed/plotted image of Document Files.

"Initial Tender Documents" means the initial set of documents issued with tender invitations or collected by tenderers in response to tender invitations;

"Map Data" means the map features in hard copies or soft copies of survey sheets produced by Lands Department, but excluding the land surveys commissioned for works projects.

"Native File" means data file containing the contents of the Tender Documents in the native format of the application used for creating these documents;

"Tender Addendum" means the tender addendum issued during tendering stage to make alterations to the Initial Tender Documents;

"Tender Documents" means Initial Tender Documents and Tender Addenda

4. Framework for Electronic Dissemination

4.1. Overview

4.1.1. Our proposed framework for electronic dissemination of Tender Document consists of the following elements-

- (a) Policy on electronic dissemination;
- (b) Technical arrangements for dissemination;
- (c) Map Data;
- (d) Cost of electronic tender documents;
- (e) Legal status of electronic copy;
- (f) Licence conditions for use of tender documents; and
- (g) Revision to standard tender documents to facilitate electronic dissemination.

4.1.2. Our preliminary proposal for each element of the framework is presented in the following paragraphs.

4.2. Policy on Electronic Dissemination

4.2.1. For works contracts managed by Works Departments, we will adopt the policy of providing Document Files for all Tender Documents.

4.3. Technical Arrangement

4.3.1. The technical arrangements for electronic dissemination are as follows-

(a) Distribution media

Electronic versions will be distributed on CD-ROM's. The distribution of hard copies will continue. The set of hard copy documents will be reduced, however, from two to one. The CD-ROM version will be considered as a substitute for the second set of hard copy tender documents.

Web dissemination is not part of the proposed framework. It will be considered at a later stage;

(b) Data format

There will be two types of files-

(i) Image Files

These are electronic version of the printed/plotted images of the native files created using the native applications or some add-on applications. For instance, Microstation may be used to create a plotted image of a drawing file in CGM format. As another example, Adobe Acrobat may be used to create a printed image of Word document. As Image files are less susceptible to loss of fidelity in data exchange, they will serve as replica of the hard copy tender documents;

(ii) Native Files

As these files are susceptible to loss of fidelity in the exchange process, they are not intended to be replica of hard copies. Instead, they are provided to facilitate re-use of the Document Files and customization of these files for downstream workflow.

Our proposal for data formats of Image File and Native Files is included in Annex 1.

(c) Tender addenda

Hard copy of tender addenda will continue to be distributed but the number of copies will be reduced from two to one. The hard copy will be accompanied by CD-ROM's containing

the latest versions of the Document Files updated as a result of tender addenda;

- (d) Digital signature

All Document Files will be digitally signed in accordance with section 6 of the Electronic Transactions Ordinance by an authorized person. The name of the authorized person will be announced in the tender invitation and may be an employee of the Government or a staff of the consultant responsible for the contract.

4.4. Map Data

- 4.4.1. Lands Department (Lands D) has confirmed they will charge the full commercial rate for map data issued with tender drawings. To simplify administrative arrangements, we will investigate the possibility of separating the map base from tender drawings. Under this arrangement, tenderers may licence the map base directly from Lands D or use other map bases (such as aerial photographs or high-resolution satellite images).

4.5. Cost of Electronic Tender Documents

- 4.5.1. The Government and consultants will incur additional cost in preparing electronic tender documents. We propose to offset the cost by reducing the number of hard copies of tender documents from 2 to 1 as indicated in paragraph 4.3.1(a) above. The main advantage of this arrangement is that the reduction in the number of hard copies may be used as a justification for providing the electronic copy free of charge.
- 4.5.2. The other alternative is not to reduce the number of hard copies. Under this arrangement, Government will need to recover from tenderers the cost of the electronic copy. We do not favour this option because of the additional costs for tenders and additional administration procedures for both the Government and the industry.
- 4.5.3. The Finance Bureau (FB) is the authority for deciding on whether electronic tender documents should be charged. Subject to members' support, we will propose for FB's approval the scheme described in paragraph 4.5.1 above.

4.6. Legal Status of Document Files

4.6.1. The information presented on the hard copies, editable Document Files and non-editable Document Files will be deemed as identical. In case of discrepancies, the order of precedence will be as follows-

- (a) the hard copy will prevail over image files;
- (b) the image files will prevail over native files.

4.6.2. The Government, its employees, consultants, contractors and any other agents will not be responsible for any direct or consequential loss arising from any errors and omissions in the Document Files.

4.7. Licence Conditions on Tender Documents

4.7.1. With the heightened awareness of intellectual property right protection, it is timely to formulate a set of licence conditions regulating the use of tender documents. These conditions should provide proper protection to intellectual property rights and should facilitate the legitimate use of these documents for tender preparation.

4.8. Revision of Standard Contract Documents

4.8.1. The standard contract documents need to be revised to facilitate electronic dissemination. The framework presented in this paper provides a starting point for identifying the necessary revisions.

5. Programme

5.1. Overview

5.1.1. The proposed programme for implementing electronic dissemination is shown in Annex 3. The programme will be divided into three phases-

- (a) Phase 1 – Initial draft of Works Bureau Technical Circular (WBTC) for electronic dissemination;
- (b) Phase 2 – Final draft of WBTC; and
- (c) Phase 3 – Implementation of electronic dissemination.

5.2. Phase 1 - Initial Draft of WBTC for Electronic Dissemination

5.2.1. We intend to develop the framework proposed in this paper into a WBTC for electronic dissemination. Phase 1, the preparation of the initial draft, will start after the endorsement of the framework by the Sub-Groups. The drafting will be divided into two parts-

(a) Part 1 - Technical and administration topics

This part will include the following topics-

- (i) Policy on electronic dissemination;
- (ii) Technical arrangements for dissemination;
- (iii) Map Data; and
- (iv) Cost of electronic tender documents;

(b) Part 2 - Legal and IT topics

This part will include the following topics-

- (i) Legal status of electronic copy;
- (ii) Licence conditions for use of tender documents;
- (iii) Revision to standard tender documents to facilitate electronic dissemination; and
- (iv) file formats for Tender Documents.

5.2.2. The Secretariat for the task force will be responsible for drafting Part 1. The Infrastructure Facilities Sub-Group will be responsible for drafting Part 2. Upon completion, the drafts for these parts will be submitted to the Sub-Groups for endorsement.

5.3. Phase 2 - Final Draft of WBTC

5.3.1. Upon the endorsement of the initial draft by the Sub-Groups, the Secretariat will consolidate parts 1 and 2 and prepare the final draft of the WBTC. The final draft will be circulated in the following sequence-

- (a) to stakeholders including concerned government agencies and construction industry organizations having an interest in the subject;

- (b) to Sub-Groups for initial endorsement;
- (c) Plenary Meeting for final endorsement;
- (d) Works Group Directors' Meeting comprising the heads from WB and the Works Departments for policy support; and
- (e) Contract Committee of the Construction Advisory Board for final approval.

5.4. Phase 3 – Implementation of Electronic Dissemination

- 5.4.1. The works departments will start the preparatory works for electronic dissemination upon the completion of Phase 1. The preparatory works include developing the operating procedures and procuring the required equipment.
- 5.4.2. We expect that electronic dissemination will be implemented in mid-June 2000.

6. Cost and Benefits of Electronic Dissemination

- 6.1. The computer facilities for producing and reading tender documents are already commonplace in the construction industry. We do not therefore envisage that electronic dissemination will involve significant capital investment. Works departments and consultants may incur minor start up costs for procuring CD writers.
- 6.2. Regarding recurrent costs, we believe the extra efforts required for producing electronic version of tender documents will be offset by the savings resulting from the proposed reduction of the number of hard copy tender documents from 2 to 1.
- 6.3. On the benefit side, the availability of soft copies of tender documents will streamline tender workflows. Soft copies may be used directly in computer-aided construction planning and estimating tools, without going through the labourious process of re-typing and re-digitizing. The contract documents may also be customized readily for issuing to sub-contractors and suppliers. In view of these benefits, electronic dissemination will enhance the productivity of the industry and the quality of tenders.
- 6.4. For the reasons in paragraph 6.1 to 6.3, the investment in electronic tendering is well-justified by the potential benefits.

7. Issues and Concerns

- 7.1. During the incubation stage of the task force and the initial discussions, members have expressed concerns on electronic dissemination. We have summarized these concerns in Annex 2 and explained how they are addressed in the proposed framework.

8. Internet Dissemination

- 8.1. As stated in paragraph 4.3.1(a) above, the dissemination of Tender Documents will not be part of the initial framework. We propose to include Internet dissemination in the next implementation of electronic dissemination. To pave the way for this, we will conduct trial Internet dissemination for several contracts. We are conducting active discussion with the firms that have expressed interest in participating in the exercise and will announce further details in due course.

9. Conclusion

- 9.1. We have presented the framework for electronic dissemination. We have also identified the issues that need to be addressed in developing the framework into a full implementation. The programme for this undertaking is presented in paragraph 5 above.
- 9.2. Members are requested to express their views on the contents of this paper.

Annex 1 – Proposed Data Format for Tender Documents

Component of Tender Document	Format for Native File	Format for Image File
Bill of Quantities and Schedule of Rates	Rich Text Format Word 97 Excel 97	Adobe Acrobat
Other text documents	Rich Text Format Word 97	Adobe Acrobat
Scanned text documents	Not applicable	Adobe Acrobat
Drawings	Microstation AutoCAD DXF	Adobe Acrobat
Scanned drawings	Not applicable	TIFF

Annex 2 – Issues for Electronic Dissemination

Serial No.	Description	Explanation	Observation
1	Availability of soft copies of tender documents	Some contract documents are not currently available in electronic format	<p>This is not an issue because most software tools are now commonplace.</p> <p>There may be legacy documents that cannot be converted to soft copy format in the near future. These documents can be converted into electronic format by scanning. Normal size documents can be scanned using scanners available in the office. The scanning of drawings with large sizes may be outsourced at a unit rate of about \$200 (including cleaning up the scanned version and indexing).</p>
2	Compatibility of file format	The participants in a tendering exercise may use different software packages necessitating data conversion. The conversion may result in loss of fidelity.	<p>We have prescribed non-editable format for all contract documents. The non-editable documents will solve most of the problems of data conversion because-</p> <ul style="list-style-type: none"> (a) free viewers are available for them; (b) they are less susceptible to loss of fidelity. <p>Editable format will also be issued for the purpose of facilitating downstream workflow. The formats prescribed are either industrial standard or de-facto industrial standard.</p> <p>In case of discrepancies, the hard copy will take precedence over the non-editable version and the non-editable version will take precedence over editable formats.</p>

Serial No.	Description	Explanation	Observation
3	Authentication of tender documents	There may be difficulties in ascertaining whether a document that is claimed to originate from a Government agency or consulting firm is authentic.	All tender documents will be digitally signed by Authorized Officers. Tenderers will still be free to adapt tender documents for their downstream workflow. As alterations will, however, invalidate the digital signature, the verification of digital signature will provide conclusive proof on authenticity.
4	Unauthorized alteration to the original entries in bills of quantities and schedule of rates in tender returns	There may be difficulties in detecting whether unauthorized alterations have been made to the original entries in bill of quantities and schedule of rates.	This question is relevant to the electronic submission of tender returns but not to the electronic dissemination of tender documents. It will therefore be considered in the next stage of the deliberation.
5	File size	There may be technical problems in disseminating files with large sizes (for instance drawing files).	This is not an issue. The large storage capacity of CD-ROM's will make it possible to disseminate the documents for complex tenders in compact packages. The dissemination of large files through the Internet will not be considered in the initial implementation.

Annex 2 - Implementation Programme for Electronic Dissemination

ID	Task Name	Duration	Start	Finish	March			April				May				June										
					7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25			
1	Endorsement of discussion paper on electronic	1 day	21-03-2000	21-03-2000																						
2	Phase 1 - Initial draft of WBTC	21 days	22-03-2000	19-04-2000																						
3	Technical and administrative issues	20 days	22-03-2000	18-04-2000																						
4	Drafting of pertinent part of WBTC	20 days	22-03-2000	18-04-2000																						
5	Legal issues	20 days	22-03-2000	18-04-2000																						
6	Drafting of proposed revisions to tender	20 days	22-03-2000	18-04-2000																						
7	Endorsement of initial drafts by Sub-Groups	1 day	19-04-2000	19-04-2000																						
8	Phase 2 - Final Draft of WBTC	42 days	20-04-2000	16-06-2000																						
9	Drafting	10 days	20-04-2000	03-05-2000																						
10	Consultation with stakeholders	10 days	04-05-2000	17-05-2000																						
11	Submission to Sub-Groups	1 day	18-05-2000	18-05-2000																						
12	Submission to Plenary Meeting	1 day	19-05-2000	19-05-2000																						
13	Submission to Works Group Directors' Meeting	10 days	22-05-2000	02-06-2000																						
14	Submission to Contracts Committee	10 days	05-06-2000	16-06-2000																						
15	Phase 3 - Implementation of electronic dissemination	47 days	20-04-2000	23-06-2000																						
16	Preparatory works for electronic dissemination	35 days	20-04-2000	07-06-2000																						
17	Start of electronic dissemination	5 days	19-06-2000	23-06-2000																						