

**For consideration
on 7 November 2002**

**Legislative Council Panel on
Information Technology and Broadcasting**

Review of the Electronic Transactions Ordinance

Purpose

This paper briefs Members on the major comments received during the public consultation on the review of the Electronic Transactions Ordinance (ETO) (Cap. 553) conducted in March to April 2002 and our revised proposals, formulated after considering the comments received, to improve and update the ETO.

Background

2. The ETO, enacted on 5 January 2000, aims to provide a clear legal framework so that electronic records and digital signatures have the same legal recognition as that of their paper-based counterparts and that a voluntary recognition scheme for certification authorities is established, thereby promoting and facilitating the development of e-business in Hong Kong. We have committed to conduct a review of the ETO to ensure that Hong Kong has the most up-to-date legislative framework for the conduct of e-business.

3. Following an internal review within the Government to seek the views of individual bureaux and departments on the implementation of the ETO, we issued in March 2002 a public consultation paper ([Annex A](#)) containing a set of proposals to improve and update the ETO. Members were briefed on the proposals at the Panel meeting held on 11 March 2002. The public consultation period ended on 30 April 2002.

4. During the consultation period, we received 40 submissions from IT industry bodies, professional bodies, trade associations, universities, industry support and statutory organisations, a political party, companies and individuals. A list of those which have submitted

comments is at [Annex B](#). The major comments received and our responses and revised proposals, formulated after considering the comments received, are set out in the ensuing paragraphs.

Legal Recognition of Other Forms of Electronic Signatures

Proposals in the consultation paper

5. In the consultation paper, we proposed to examine whether legal recognition should be extended to cover other forms of electronic signature¹, in addition to digital signature², so as to provide a wider choice to the public for authentication in electronic transactions, thus promoting the adoption and further development of e-business and E-government. Specifically, we proposed to accept personal identification number (PIN) as a form of electronic signature for satisfying the signature requirement under law in specified cases where the level of security offered by it is commensurate with the risk of the service involved. To give this legal effect, we proposed to amend the ETO and add a new schedule so that the Secretary for Information Technology and Broadcasting, now Secretary for Commerce, Industry and Technology (the Secretary), may, by subsidiary legislation, specify in the new schedule legal provisions with signature requirement for which the use of PIN would be accepted for satisfying the signature requirement. We also proposed that other means of authentication including biometrics should be examined at a later stage when they became more mature and when the related institutional support emerged in the market.

¹ Under the ETO, an “electronic signature” means any letters, characters, numbers or other symbols in digital form attached to or logically associated with an electronic record, and executed or adopted for the purpose of authenticating or approving the electronic record. Digital signature is one form of electronic signature.

² Under the ETO, a “digital signature” means an electronic signature of the signer generated by the transformation of the electronic record using an asymmetric cryptosystem and a hash function such that a person having the initial untransformed electronic record and the signer’s public key can determine whether the transformation was generated using the private key that corresponds to the signer’s public key, and whether the initial electronic record has been altered since the transformation was generated.

Major comments received

6. Some respondents supported the proposal to accept PIN as satisfying the signature requirement under law in specified cases. They considered that, with appropriate security controls, giving PIN legal recognition would provide users with a wider choice and help promote e-business and E-government in Hong Kong.

7. Nevertheless, many respondents opposed to or had reservations about the proposal. Some expressed concern about the security level offered by PIN, as it is less secure than digital signature and is a shared secret between the user and the application/service provider. They also considered that the proposed recognition of PIN would weaken the incentive for the public to adopt digital signature, and the introduction of less secure alternatives would reduce the public's confidence in electronic transactions. Some further suggested that PIN could not satisfy the non-repudiation function expected of a signature, which digital signature could.

8. Some other respondents, while considering PIN less secure than digital signature, could accept the PIN proposal provided that a secure system and a proper PIN management framework would be put in place, and that the use of PIN would be limited to less sensitive applications, personal services or non-financial transactions with low risks. Some suggested that the Government should set out guidelines on the circumstances under which the use of PIN could be accepted and the minimum level of security to be attained. Some further suggested that a risk assessment should be conducted before PIN was adopted in any application. Some were of the view that PIN should be carefully introduced so that users would understand the differences between PIN and digital signature and be guided accordingly, in particular in understanding and accepting the corresponding levels of security and legal risks.

9. Separately, some of the submissions considered that the ETO should be technology-neutral, as in the case of some other places. It should set out in general the principles or criteria for giving legal effect to electronic signatures, and then leave matters such as security level and

choice of technology to the parties involved in the electronic transactions to decide. In their view, the current ETO, by specifying digital signature as a form of electronic signature that satisfies signature requirement under law, had adopted a technology-specific approach, and the proposal to give legal recognition to PIN would be another step towards the technology-specific approach.

Our responses and revised proposals

(a) Security concerns about PIN

10. We note the concerns expressed by the respondents over the security level of PIN. We have also conducted an internal review and Government departments consider that at this stage there are not many Government services where it would be useful and suitable to introduce PIN as an alternative to satisfy the signature requirement under law. While we remain of the view that PIN should be introduced for services where the level of security offered by it is commensurate with the risk of the services involved so that users may have a wider choice and greater convenience, having considered the comments received during the public consultation, we are of the view that there may not be a case to make a general and sweeping amendment to the ETO for the purpose. We should make specific amendment to the concerned legislation so that the implications of the amendment can be fully examined by the Legislative Council and the community. Section 14 of the existing ETO clearly allows specific provisions on electronic transactions to be enacted in other legislation. A good example is the recent introduction of the Inland Revenue (Amendment) (No.2) Bill 2001 to provide the legal framework for the use of PIN in filing tax return which is now being examined by a Bills Committee, with representations made by the relevant sectors of the community.

11. We, therefore, do not propose to make a general amendment to the ETO on the use of PIN for satisfying a signature requirement under law. Where the use of PIN is appropriate, we will deal with it by specific legislation and will address the security concerns of the community, having regard to the comments received as set out in paragraph 8 above.

(b) Technological neutrality

12. We fully recognize the merit of adopting a technology-neutral approach in our legal framework for electronic transactions, as this can ensure that the legal framework can keep pace with technological advancement. The subject was debated when the ETO was enacted. The ETO indeed follows such an approach generally. The general concept of electronic signature has been incorporated in the Ordinance. Section 17 of the Ordinance also provides that in the context of contract formation, unless otherwise agreed by the parties, an offer and the acceptance of an offer may be in whole or in part expressed by means of electronic records. There is no stipulation as to what technology should be used to generate the electronic record. By extension, if an electronic signature is contained within or otherwise associated with the electronic record, there is also no stipulation as to what technology should be used to generate the electronic signature. It is a matter to be determined by the parties concerned, in accordance with the terms of the contract. Thus, a technology-neutral approach is adopted for the use of electronic signature in contract formation. However, we note that this point has not been very clearly and prominently set out in the Ordinance.

13. As for satisfying a signature requirement under a rule of law (most concerning transactions with Government entities), section 6 of the ETO stipulates that a digital signature supported by a recognised digital certificate has to be used. There is good reason for doing so. Under the ETO, the Government has to accept the submission of electronic records under law unless a specific exclusion has been made under the Ordinance. As such and if without any specification on the type of signature technology to be used, the Government may have to accept all types of electronic signature generated by different types of technology for satisfying the signature requirement. However, because of resource, operational and technical constraints, it would be impracticable for Government bureaux and departments to put in place all the necessary systems and software to accept all types of electronic signature that members of the public may wish to use when transacting with the Government electronically. Nor is there any justification for doing so in the public interest. The ETO has therefore specified that only digital

signature (a secure form of electronic signature supported by public key technology which is readily available in the market) is accepted as satisfying a signature requirement under law. This provides clarity and certainty to the public as to which type of electronic signature can be used in carrying out electronic transactions with the Government.

14. The electronic transactions/signature laws of some other economies, such as India, Malaysia and South Korea, also specifically provide for the use of digital signature as satisfying a signature requirement under law. We are aware that some other economies, such as Singapore, Australia, etc., adopt in general a technology-neutral approach in their electronic transactions laws. However, many in fact adopt a two-tier approach, i.e. while the laws do not prescribe any specific technology for electronic signature, digital signature or specified types of electronic signature are indeed required in certain specified cases (for example, for documents as evidence or proof, statements made under oath, etc.), or individual Government departments are empowered to specify their own technology requirements for electronic signature, and in many cases, the use of digital signature is specified.

15. A summary of our research into the electronic transactions/signature laws of other jurisdictions is at [Annex C](#).

16. To address the comments we have received in respect of adopting a technology-neutral approach under the ETO and to more clearly reflect the approach we have adopted, we propose to amend the ETO in the following manner –

- (a) for transactions involving Government entities under law, digital signature has to be used as in the present case;
- (b) for all other cases where there is a requirement for signature under law, the requirement is met if a method is used to identify the person and indicate the person's approval of the information communicated and having regard to all the relevant circumstances the method used was as reliable as was appropriate for the purposes for which the information is communicated (a technology-neutral requirement). Moreover,

the method to be used has to be subject to the mutual consent of the parties involved; and

- (c) in the case of contracts, if a contract contains a signature, the parties concerned may by mutual consent use any type of electronic signature provided that similar conditions set out in (b) in respect of reliability, etc. are met.

The Legal Requirement of “Delivery by Post or in Person”

Proposal in the consultation paper

17. Some legislation at present contains express requirements that the documents etc. to be submitted under the relevant legal provisions shall be delivered to the parties concerned either by post or in person. These legal provisions were drafted and enacted at the time when electronic transactions were not prevalent. In some cases, there is now no justified need to maintain such a requirement and these legal provisions have become an impediment to the adoption of electronic means and the implementation of E-government. We therefore proposed in the consultation paper to amend the ETO and add a new schedule so that the Secretary may, by subsidiary legislation, specify in the new schedule legal provisions for which the requirement of “delivery by post or in person” will be construed as covering “delivery by electronic means” as well.

Major comments received

18. In general, the submissions received are supportive of the proposal and consider it efficient to add a new schedule to the ETO to achieve the purpose. But there are different views on the implementation details. While some respondents opined that the ETO should provide for the manner of proof of the delivery of documents by electronic means and the time of receipt, others considered that the ETO should not impose any specific technical or procedural requirements, or stipulate the manner and format of the electronic submission.

Our responses and proposals

19. We note the unanimous public support for this proposal and recommend to pursue it. We propose to amend the ETO so that the requirement for delivery by post or in person under the legal provisions specified in the proposed new ETO schedule will be construed as covering the submission of the concerned document etc. in the form of an electronic record³ if the electronic record is accessible so as to be usable for subsequent reference. At this stage, we intend to include in the proposed new schedule provisions under the Landlord and Tenant (Consolidation) Ordinance (Cap. 7), the Rating Ordinance (Cap.116), and the Government Rent (Assessment and Collection) Ordinance (Cap. 515) which provide for notice, application or other documents to be served on or issued by the Commissioner of Rating and Valuation⁴.

20. However, because of resource, operational and technical constraints, it would be impracticable for the Rating and Valuation Department to put in place all the necessary systems and software to accept electronic submissions using different formats or standards. We therefore intend to specify by order published in the Gazette under section 11(2) of the ETO the format and manner of servicing the documents mentioned in paragraph 19 above. This is in line with the existing practice under the ETO for electronic submissions to be made to other bureaux and departments under law .

³ “electronic record” is defined in section 2 of the ETO as a record generated in digital form by an information system, which can be – (a) transmitted within an information system or from one information system to another; and (b) stored in an information system or other medium.

⁴ These documents include requisition forms for ratepayers and Government rent payers to provide rental and occupation information to the Commissioner of Rating and Valuation (the Commissioner), notices issued by the Commissioner to inform ratepayers and Government rent payers of his assessments, objections against assessments made by the Commissioner, notices issued by the Commissioner of his decisions on objections, applications to the Commissioner for rental information and rateable values, notices issued by landlords and tenants to the Commissioner on renewal or termination of tenancies, applications to the Commissioner for determination of matters such as the primary user of premises, etc.

Exemptions under the ETO

Proposals in the consultation paper

21. Schedule 1 to the ETO sets out matters which are exempted from the electronic means on a generic basis, e.g. will, trust, power of attorney, oath, affidavit, statutory declaration, etc. We have reviewed the need for these exemptions. Notwithstanding technological advancement and social changes, there is still a practical need to retain these exemptions because of the solemnity and complexity involved. We therefore proposed in the consultation paper not to amend Schedule 1 for the time being. Schedule 2 to the ETO sets out court and quasi-judicial proceedings which are exempted from the electronic process. As electronic filing has yet to become a common practice in the legal profession, we also proposed in the consultation paper not to amend Schedule 2 for the time being.

22. For some specific statutory provisions concerning the operation of individual bureaux or departments, there is a genuine and practical need to exclude them from the electronic process. To ensure that the bureaux or departments concerned could continue to operate smoothly, the Secretary has made an Electronic Transactions (Exclusion) Order (with subsequent amendments) under section 11(1) of the ETO to exclude specified provisions in the laws of Hong Kong from the application of the electronic process. While most of the exclusions should be retained, some⁵ have become unnecessary and should be withdrawn. We proposed in the consultation paper to repeal these provisions from the exclusion order.

Major comments received

23. Not many respondents commented on these proposals. Those who commented generally agreed with the proposals to retain the exemptions in Schedules 1 and 2, though a couple of respondents would wish to introduce electronic process in judicial proceedings. The proposal

⁵ The examples of exclusions quoted in the consultation paper include the production of documents for examination and inspection by the Commissioner of Labour under the Employment Ordinance (Cap. 57) and the Employees' Compensation Ordinance (Cap. 282), and the production of documents required under the Immigration Ordinance (Cap. 115) by employer to the Commissioner of Labour.

to remove the examples of exclusions quoted in the consultation paper from the exclusion order made by the Secretary was welcome.

Our responses and revised proposals

24. The Judiciary has examined the subject of electronic filing in judicial proceedings and considers that it is not the time yet to implement it, as it involves many legal issues which have yet to be resolved. The Chief Justice's Working Party on Civil Justice Reform, comprising representatives of the Department of Justice and all branches of the legal profession, has suggested that electronic filing and electronic document sharing should be viewed as longer-term projects. As such, we propose not to amend Schedules 1 and 2 in the meantime.

25. We propose to remove the examples of exclusions quoted in the consultation paper as well as other exclusions which have become unnecessary after the publication of the consultation paper from the exclusion order made by the Secretary. Since these exclusions can be removed by way of subsidiary legislation which is an on-going process, we propose to proceed with them according to the normal legislative procedures, without waiting for the exercise to amend the principal legislation of the ETO.

The Operation of the Voluntary Recognition Scheme for Certification Authorities

Proposals in the consultation paper

26. The ETO establishes a voluntary framework for recognition of certification authorities (CA). The voluntary recognition scheme has generally worked well, and there are now four CAs recognized under the scheme. We therefore stated in the consultation paper that we did not consider that any substantial changes should be made to the voluntary recognition scheme for the time being. That said, we proposed in the consultation paper two changes relating to the assessment of CAs so as to further improve the recognition scheme.

27. Firstly, under the recognition scheme, the Director of Information Technology Services (the Director) will grant recognition to CAs which provide a trustworthy service. A CA applying for recognition needs to engage an independent assessor approved by the Director to prepare an assessment report to the Director on its compliance with the relevant provisions of the ETO applicable to CAs and the Code of Practice for Recognized Certification Authorities (Code of Practice) published by the Director under the ETO. For recognized CAs, such assessment has to be conducted once every 12 months. The relevant provisions in the ETO and Code of Practice generally fall into two categories - those related to trustworthiness (e.g. system security, procedural safeguard and financial viability, etc.) of the CA and those which are not related to trustworthiness but other aspects of the CA operation, e.g. the requirement to take care of the needs of persons with disabilities in the provision of the CA's services.

28. To facilitate the preparation of the assessment report, we proposed in the consultation paper to amend the ETO to split the assessment report into two parts – the first part which concerns the trustworthiness of the certification service has to be prepared by a qualified and independent person approved by the Director, and the second part which concerns provisions not related to the trustworthiness of the certification service (which the qualified person may not be in the best position to make an assessment) can be dealt with through a declaration to be made by an authorised person of the concerned CA.

29. Secondly, there is no provision in the ETO, apart from those relating to application for recognition and the annual assessment, which allows the Director to ask a recognized CA to furnish an assessment report prepared by a qualified and independent person. There can be major changes in the operation of a recognized CA in between two annual assessments which may affect its trustworthiness and thus whether the CA continues to be suitable for recognition. We therefore proposed in the consultation paper to empower the Director to require a recognized CA to furnish an assessment report to be prepared by a qualified person approved by the Director if there are such major changes.

Major comments received

30. Most respondents supported the proposal to split the assessment report into two parts and some of them considered that there should be clear guidelines on which provisions of the ETO and Code of Practice are related to trustworthiness and which are not. As regards the proposal to empower the Director to request a recognized CA to furnish an assessment report when there are major changes in the operation of the CA that may affect its trustworthiness, the comments received were generally supportive. Some suggested that clear guidelines should be provided on the circumstances under which the Director may require such an assessment.

31. In addition to commenting on the proposals in the consultation paper, some respondents had made other comments on the operation of the recognition scheme. Most of them were related to the procedures for CAs to apply for recognition and recognition of overseas CAs. On the former, some respondents considered the current procedures too complex and a review should be conducted to streamline them, so as to encourage more CAs to seek recognition. On the latter, the comments received include : the ETO should cover the recognition of digital certificates issued by overseas CAs, guidelines should be provided on the documentation and information required for overseas CAs to establish “comparable status”⁶, the Government should adopt a general principle of recognition under the ETO but without specifying the detailed technical standards, and there should be automatic recognition of overseas CAs.

Our responses and proposals

32. Most respondents supported the proposal to split the assessment report into two parts. We propose to amend the ETO to this effect. To provide clear guidance on which provisions of the ETO and Code of Practice are not related to trustworthiness of the CA operation and hence can be dealt with by a declaration to be made by an authorized

⁶ Section 20(5) of the ETO provides that the Director may waive certain requirements for application for recognition if the applicant is a CA with a status in a place outside Hong Kong comparable to that of a recognized CA and the competent authority of that place accords to a recognized CA a comparable status on the basis of it being a recognised CA.

person of the CA concerned, the Director will identify these provisions in the Code of Practice.

33. We also propose to amend the ETO to empower the Director to request a recognized CA to furnish an assessment report within a period of time specified by the Director when there have been or will be major changes in the following (which will also be stipulated in the ETO)

-

- (a) the financial status of the CA;
- (b) the arrangements to cover the liability of the CA;
- (c) the system, procedure, security arrangements and standards used by the CA to issue certificates to its subscribers; or
- (d) any other major changes that may affect the Director's determination of whether to suspend or revoke a recognized CA's recognition status having regard to all the circumstances.

34. The Information Technology Services Department (ITSD) has been striving to improve the operation of the voluntary recognition scheme for CAs. In consultation with the Advisory Committee on Code of Practice for Recognized CAs (the Advisory Committee), the Director has made revisions to the Code of Practice as necessary from time to time to improve its operation in the light of operational experience. The department has been able to meet its performance pledge in processing all of the applications for recognition received. The ITSD will continue with its efforts in improving the operation of the recognition scheme in consultation with the Advisory Committee.

35. As for comments relating to recognition of overseas CA, the ETO already contains such provisions (please refer to footnote 6). As the standards used and operational model adopted by different overseas CAs and the regulatory systems in their home economies differ, applications for recognition from overseas CAs operating in Hong Kong will have to be dealt with on a case by case basis. That said, our recognition scheme is voluntary in nature and there is adequate flexibility for overseas CAs to provide services in Hong Kong or to enter into mutual recognition arrangements with CAs in Hong Kong on a commercial basis. We do not propose to make any changes to the ETO for this purpose.

The Way Forward

36. We aim to introduce the legislative amendments arising from this review into the Legislative Council within the current legislative session.

**Information Technology and Broadcasting Branch
Commerce, Industry and Technology Bureau
October 2002**