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Progress on the implementation of the international transaction log

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Note by the secretariat

Summary

This document contains a progress report on the implementation of the international transaction log (ITL) from November 2006 to May 2007. It includes information on progress made in the development of the ITL software and the establishment of the ITL infrastructure.

The SBI may wish to consider the information contained in this document and take note of the progress made in the implementation of the ITL and other registry systems.

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I. Introduction

A. Mandate

1. The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP), by its decision 13/CMP.1, requested the secretariat to establish and maintain the international transaction log (ITL) to verify the validity of transactions undertaken by registries established under decisions 3/CMP.1 and 13/CMP.1.

2. The Subsidiary Body for Implementation (SBI), at its twenty-fifth session, reiterated the importance of making rapid progress in the implementation of registry systems by Parties to the Convention that are also Parties to the Kyoto Protocol with a commitment inscribed in Annex B to the Kyoto Protocol (Annex B Parties). The SBI, at the same session, requested the secretariat to report to the SBI, at its twenty-six session, on progress made in the implementation of the ITL.

B. Scope of the note

3. This note contains information on the progress made by the secretariat, since the twenty-fifth session of the SBI up to the time of writing, in the implementation of the ITL and national registries under Article 7, paragraph 4, of the Kyoto Protocol, including in relation to the development, testing and operation of the ITL and the initialization of registry connections with the ITL. It also contains further information on resource requirements for the 2008–2009 biennium.

C. Possible action by the Subsidiary Body for Implementation

4. The SBI may wish to consider the information contained in this document and take note of the progress made in the implementation of the ITL and other registry systems.

II. Implementation of the international transaction log

5. The progress reported in the 2006 annual report of the ITL administrator has continued. The development and deployment of the ITL software was completed in late March 2007 and the software was delivered to the secretariat by the vendors selected to develop and operate the ITL. As a result of this progress, the initialization environment of the ITL is in place and ready for registries to undergo their initialization processes to connect to the ITL. More specifically:

- (a) The core ITL software, as well as the administrator application software through which it is operated, has been completed in accordance with the specifications of the ITL and the specifications of the data exchange standards elaborated pursuant to decision 24/CP.8. The ITL software has been deployed in its primary and secondary data centres in the United Kingdom of Great Britain and Northern Ireland. Early releases of the ITL software were pilot tested using the clean development mechanism (CDM) registry and the registries of Japan and New Zealand. A third-party review of the ITL program code was conducted. This reported positive results and provided recommendations which were incorporated in the code.
- (b) The deployed software contains all the functions required to verify transactions under the modalities for the accounting of assigned amounts under Article 7, paragraph 4, of the Kyoto Protocol. The software also contains all reconciliation and administrative functions specified in the data exchange standards, including notifications to be sent by the ITL to registries indicating required transactions. In addition, the deployed ITL includes functions for passing further information between relevant registries and

supplementary transaction logs, such as the Community Independent Transaction Log (CITL) established under the emissions trading scheme of the European Union.

- (c) The ITL administrator has tested and evaluated the ITL, as delivered by the ITL vendors, to ensure that the ITL functions as specified and in interaction with registries.
- (d) Several ITL environments have been established (or are being established). A developer test environment is used by developers of registry software to test their applications before distribution to clients. The registry test environment will be established in the next weeks to host informal testing directly by registry administrators. The initialization environment is in place to host the official testing of registries, as performed by registry administrators as a demonstration that their registries fulfil all criteria necessary for the approval of a registry's connection to the ITL. Other environments are for the work of the ITL service desk and testing of new software releases.
- (e) The design, implementation and operation of the ITL has been documented. This documentation includes specifications of the ITL software and surrounding infrastructure and networks; interfaces between the ITL and other secretariat data systems used to supply the ITL with reference data; and a user guide and system operation guide for the operator of the ITL. Further specifications have been developed for interaction with other systems, such as for data migration from the CITL to the ITL when the CITL and associated registries begin live operations with the ITL.
- (f) Common operational procedures have been developed by the ITL administrator in cooperation with other registry systems administrators (RSAs). In accordance with decision 16/CP.10, these include procedures for data reconciliation between the ITL and registries, the management and coordination of changes in registry systems, and the preparation of independent assessment reports for each registry. These procedures were developed through working groups under the RSA Forum. The administrator of the ITL has convened two meetings of the RSA Forum since the twenty-fifth session of the SBI (11–12 December 2006, in Brussels, Belgium, and 29–30 March 2007, in Bonn, Germany). The next meeting of the RSA Forum is scheduled for 28–29 June 2007 in Athens, Greece.
- (g) The ITL service desk has been established by the ITL operator as the focal point for all support provided to RSAs and is currently expanding its capacity and procedures to cover the initialization and operation of registries. When complete, the service desk will support all registries on a 24-hour basis across all time zones.

6. The two data centres hosting the ITL are located in the United Kingdom and comply with commercial standards used for systems supporting financial markets and companies and government applications. The ITL has been implemented with a high degree of resilience to ensure that sufficient standards of performance and availability are maintained. In particular, while the primary data centre hosts the live production environment of the ITL under normal operations, this will be transferred to the secondary data centre in the event of problems at the primary site hindering the functioning of the ITL.

7. Registries and the secretariat are to access the ITL through communication channels conforming to security levels equivalent to those of comparable financial and market systems. The methods and protocols used have been tested and proved as workable since late 2006 through the links put in place from the secretariat and subsequently the pilot registries.

8. In parallel to the initialization of registry connections, further work will be conducted to expand and enhance the procedures to be implemented during the operation of the ITL and registries. These

include further documentation of service desk procedures and the failover mechanism for the transfer of operations between the two data centres. In addition, further work will be carried out to enhance the tools provided by the ITL administrator application and establish links between the ITL and other secretariat data systems, once they are completed (e.g. the compilation and accounting database). None of this ongoing work will affect the process of initializing registry connections.

III. Initialization of registries

9. Initialization is the formal and standardized process through which the fulfilment by registries of the technical requirements, as set out in the data exchange standards, is verified by the ITL administrator. Where these requirements are met, the connection of the registry to the ITL is approved by the ITL administrator and a date is established for its activation so that live operations may commence. Support for RSAs in setting up and implementing their initialization processes is provided by the ITL service desk.

10. The initialization process is being undertaken in the following three stages:

- (a) **Documentation review**, through which the technical and operational documentation of each registry is reviewed to assess the operational practices implemented by the system. A 'readiness' questionnaire has been developed and is to be completed by each RSA, with cross-references to the registry documentation in order to indicate more detail. The ITL operator will evaluate the submitted information on the basis of pre-defined criteria and a scoring method, both of which have been made available to RSAs;
- (b) **Connectivity testing**, through which the basic communication between the registry and the ITL will be checked to assess the ability to connect to the ITL and adhere to relevant standards for security and authentication. Documentation has been prepared through which the RSA and the ITL operator exchange data required for the connection;
- (c) **Interoperability testing**, through which the appropriate functioning of the registry is tested to ensure that it conforms to specifications set in the data exchange standards. This may only proceed once the registry connection has been fully and correctly established. Annex H of the technical specifications of the data exchange standards contains the test cases to be undertaken by RSAs and has been expanded to provide comprehensive coverage of the required specifications.

11. Readiness questionnaires and documentation have been submitted by 18 RSAs and are currently under review by the ITL operator. Experience to date indicates that the questionnaire is mostly well understood and is being completed in a satisfactory manner. In the event of clarification or further information being required, the ITL operator makes requests directly to the RSA concerned in order to receive the full set of information required for the registry.

12. The schedule for the connectivity and interoperability components of registry initialization is being compiled based on timing preferences being received by the ITL service desk from RSAs. Approximately two thirds of preferences have been received. In many cases, however, preferences given do not appear consistent with the expected timing for the distribution by developers of registry software to RSAs. For this reason, the ITL administrator is working with registry developers to clarify the distribution dates and is giving RSAs an opportunity to revise their preferred timing for initialization.

13. Some registry developers have completed their software development and have tested against the ITL. In particular, the software applications used by the CDM registry and the registries of Japan and New Zealand have been completed. These registries are now fully connected to the ITL and are about to begin their formal interoperability testing as part of the initialization process. Approximately 12 further national registries have initiated the process of becoming connected to the ITL.

14. All other developers, with the exception of one, are currently connected to the ITL and are testing their software. It is expected that developers will distribute their registry software to their partner registries in late May through to early July 2007. On this basis, the secretariat expects the bulk of registries to request interoperability testing time slots in the June to September 2007 period. For the majority of national registries, there is little or no contingency remaining between the expected timing of initialization and the deadlines for completing the review under Article 8 of the Kyoto Protocol of Parties' initial reports.

IV. Resource requirements

15. Resource requirements for activities of the secretariat relating to registry systems during the 2008–2009 biennium are contained in the proposed programme budget (FCCC/SBI/2007/8/Add.2).

16. The objectives of this work are:

- (a) To operate and maintain the ITL in order to verify the validity of transactions undertaken by national registries of Annex B Parties and the CDM registry;
- (b) To facilitate the RSA Forum for the purpose of enhancing the cooperation between administrators of registries.

17. The resource requirements estimated in the proposed programme budget for the 2008–2009 biennium amount to USD 8,043,336, including USD 254,336 allocated to support services (see the proposed programme budget for a discussion of these services). The inclusion of programme support costs brings the total resource requirements for this work to USD 9,088,970.

18. The following points should be noted in the consideration of these estimates:

- (a) It is proposed in the programme budget proposal that, for the 2008–2009 biennium, all internal staff working on ITL and RSA related issues are to be funded through fee-based funding. This differs from previous budget bienniums, in which staff working on these activities were funded through a mix of core and supplementary funding;
- (b) The resources requirements for support services are applied in a manner consistent with all resource requirements in the proposed programme budget;
- (c) The resources requirements for programme support costs are applied in a manner consistent with all resource requirements in the proposed programme budget.

19. In order to enhance the transparency of the estimates for the contractors and consultancies category, the table below provides a further breakdown of this category on an average yearly basis. The category includes all forms of external technical support for the operation and maintenance of the ITL and support for RSA cooperation, including the services of the ITL developer and operator.

Resource requirements for contractors and consultancies

Contractors/consultancies	Per year average (USD)
ITL vendor, support for changes to the ITL and data exchange standards, benchmarking services	2 320 000
Legal services	62 500
Data warehouse development	100 000
Project management resources, ITL technology review, market indicators analysis, common operational procedures change	105 000
Extranet/website development	30 000
Total	2 617 500

20. More specifically, the contractors and consultancies category includes the following activities:
- (a) “ITL vendor” includes all costs of operating and maintaining the ITL, including the hosting and operation of the ITL at two commercial data centres (primary and backup), 24 hours x 7 days system monitoring and support, security maintenance, 24 hours x 6 days global service desk support (including both operational and technical development staff) covering business hours of all RSAs from New Zealand to Canada, leased network lines, maintenance and upgrade of the software (including deployment and testing), maintenance and support of test environments for registry developers and RSAs, etc. The estimates allow for the expected scaling up of hardware and software as the transaction load grows during the commitment period, and for possible changes to the ITL and registries software. The approach to the ITL has been to engage high quality companies to provide settlement and exchange services comparable to expectations in other financial markets equivalent to the carbon trading market. The nature of such systems is that they are in a constant process of improvement and refinement.
 - (b) “Support for changes to the ITL and data exchange standards” refers to support from contractors other than the ITL vendor, primarily for the specification and design of system changes and review of their implementation. As well as providing specialist expertise not available within the secretariat, such services reduce reliance on the ITL vendor as a single source of technical expertise and provide flexible backup technical resources in order to cope with short-term peaks in workload. Such services are also made available to registries through assistance in the development of new versions of the data exchange standards.
 - (c) “Benchmarking services” refers to the comparison of ITL services and costs with equivalent providers elsewhere in the industry. Benchmarking is a means to ensure that the competitive pressures applied during the procurement of the ITL vendor services continue through the life of the project. They are to be used in particular during biennial reviews of the ITL vendor services.
 - (d) “Legal services” refers to the external legal support for the ITL work, including changes in ITL services; support for appropriate implementation and periodic reviews of the ITL vendor’s contract and other contracts; maintenance of service level agreements and terms and conditions in using the ITL; and support for the secretariat in any contractual disputes, etc.
 - (e) “Data warehouse development” refers to the extension of secretariat data systems to allow for the import and analysis of data from the ITL. This is required in order to meet

the CMP request for the secretariat to make available aggregate data on a regular basis, in accordance with decision 16/CP.10, and allow for analysis to support the future development of the ITL itself. It is not possible to include such tools in the ITL as it would restrict its performance.

- (f) “Project management resources” refers to the engagement of specialist external project management resources during times of major change in the ITL and registry systems. This is required in order to coordinate change across almost 40 systems in a manner which does affect the day-to-day operation of registry systems.
- (g) “ITL technology review” refers to the periodic review of technology employed in the ITL. This is intended to be an independent review to allow advantage to be taken of new technologies and applications and is to be used during biennial reviews of ITL services.
- (h) “Market indicators analysis” refers to monitoring and analysis of market indicators to ensure the ITL delivers sufficient performance over time, in particular during peaks in transaction load. This is essential to the reliable performance of the ITL. It is planned to use a mixture of ITL and registry data, as well as external commercial market analysis.
- (i) “Common operational procedures change” refers to specialist advice in support of changes to the common operational procedures developed under the RSA Forum. These procedures are expected to change as experience with registry systems grows.
- (j) “Extranet/website development” includes the secure RSA Extranet and the secretariat website. These tools are essential to effective communication among RSAs and with the public. It is planned to overhaul the RSA extranet during this period and maintain it as the central source of operational information for all RSAs. This is expected to include the addition of collaborative tools for implementing the common operational procedures for reconciliation, change management, and independent assessment reports.
