Annex 9:

Technical proposal template

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9.1 Technical proposal

Please indicate your capability and approach to the project by answering these questions.

9.1.1 Vendor's name

Name:

Vendors should also insert their name in the space provided in the page footer.

9.2 Engagement model

9.2.1 Type of engagement

Please indicate the scope of your proposal:

(a) the development component, as described in Annex 12 (development requirements)

(b) the operational component, as described in Annex 15 (Operational Requirements)

(c) or both components together (ensure that costs are kept separate)

9.2.2 Overall approach to organization and partnering

Describe your proposed approach to:

- *project organization*
- *partnering with the secretariat*

If this is a proposal for a single component of the work or involves sub-contractors, describe your planned approach to relationships with the vendor for the other component and with any sub-contractors.

Describe your previous experience in equivalent ventures.

9.3 Management approach

Please complete this section as applicable to the component/s of work contained in your proposal (development, operational or both).

9.3.1 Project management

The ITL is part of a broader programme of work within the secretariat to facilitate emissions trading and the accounting of assigned amounts under the Kyoto Protocol. The scope of the vendors work is confined to the development and operation of the ITL but fits within this perspective taken by the secretariat.

With this in mind, describe your proposed approach to:

- *project management and scheduling*
- *issue management*
- *risk management*

Indicate when you started to use this approach and how much experience you have gathered.

9.3.2 Project management review

The secretariat may subject the project management of the ITL development to review by a 3rd party. The vendor will need to take due account of recommendations made under this management review process.

Identify reviews points and a method of effectively working together with this 3rd party.

9.3.3 Progress reporting

Describe how the work under the development component, in particular the software development, will be reported to the secretariat.

Describe how the work under the operational component, in particular the development and build of the infrastructure, will be reported to the secretariat.

Describe the feedback and confirmation you will require from the secretariat.

9.3.4 Changes over the life of the project

The ITL design included in this RFP is not complete. The ITL is to be supported over the long-term and change is to be expected in terms of technical design, operational set-up and procedures, the parameters discussed in Annex 11, and the scope of work by the vendor/s.

Describe how you plan to manage issues and change over the lifecycle of the project during:

- *requirements*
- *development, deployment, testing and acceptance by the operator and secretariat*
- *initialization and activation of connections to the ITL*
- *ongoing support*

Describe issues you expect to encounter and your likely approach to deal with them.

9.4 Quality approach

Please complete this section as applicable to the component/s of work contained in your proposal (development, operational or both).

9.4.1 Quality management

The ITL is an essential foundation for the effective and reliable functioning of the Kyoto Protocol and the carbon market.

With this in mind, describe:

- *the quality environment in which you propose to develop software and release software*
- *the quality environment in which you propose to operate the data centres*
- *any quality certifications you possess*
- *formal processes and methodologies to be used on this project*

Indicate when you started to use this approach and how much experience you have gathered.

9.4.2 Software development review

The secretariat will subject the development of the ITL design, source code and documentation to peer review by a 3rd party. The vendor will need to take due account of recommendations made under this peer review process.

Identify reviews points and a method of effectively working together with this 3rd party.

9.5 Software development component

Please complete this section for a proposal that includes the development component.

9.5.1 Software analysis, design and build

9.5.1.1 Further development of ITL technical specifications

Describe the process you will follow to refine the specifications and ensure their completeness, consistency and quality.

Describe the documentation to be prepared for the specifications (ref documentation: 9.5.3)

Describe how the development process will include the design for the automatic interfaces.

Describe how the development process will include the design for the administrator application, including in ensuring that its design is intuitive and can function without an online help function.

Note how any change in scope and requirements will be reported in the change management structure.

Describe issues you expect to encounter and your likely approach to deal with them.

9.5.1.2 Re-use of existing code libraries

Describe your approach to any re-use of existing application code libraries.

Provide justification for this approach and the selection of code libraries to be used.

Indicate how this will impact on the schedule, level and nature of development effort, and ultimate quality of the ITL application.

Describe issues you expect to encounter and your likely approach to deal with them.

9.5.1.3 Design and architecture of the proposed system

Describe how your software will meet the requirements described in Annex 11 through Annex 15.

Outline the key components of the proposed technical architecture, identifying software components and hardware requirements, and explain the reasons why you recommend these.

Describe how this technical architecture will provide good value to the secretariat and contribute to the cost-effective operation of the ITL.

Describe how the application will be configured for production and pre-production environments.

Explain how the design will be made future-proof in relation to:

- *process change*
- *technology change*
- *future market developments*

9.5.1.4 Sub-licensed software component/s

Indicate which sub-licensed layered products will be required (e.g. software, OS, programming languages, software libraries, database, queuing tools, application servers) (also ref: 9.8.2).

Describe what hardware and network will work best with these components.

Indicate what types of licences are needed and whether these licences are needed only for development or operations.

Indicate which database product(s) are needed for this design and what type of run-time licences are required.

Describe how the application software and layered products will sit within the operational environment, and how they will be instrumented and monitored.

Describe how layered products will provide good value to the secretariat and contribute to the cost-effective operation of the ITL.

9.5.1.5 Preliminary system schematic diagram(s)

Include preliminary system schematic diagram/s and describe the proposed logical design for the software architecture.

Indicate components and their interaction.

System schematics

9.5.1.6 Security

Describe the security design and the proposed method for testing/proving it.

Describe the proposed method of implementing ACLs across the system and the supporting infrastructure.

Describe the operational consequences of this approach.

9.5.1.7 Auditability and integrity

Describe how the integrity of transactions and sessions will be guaranteed, logged, and audited.

Describe how transactions will be routed and queued between processes, and their interaction with management tools.

9.5.1.8 Performance, resilience and availability

Describe how the software design, in combination with the network and hardware design, will meet the requirements of Annex 11.

Describe your planned approach for the communications hub (multiple connections, SOAP support, message queuing, etc).

Describe how the software can be scaled-up for growth in demand and peak loading periods in conjunction with higher-powered network and hardware configurations.

Describe how it will meet the requirements for 24/7 resilience and how it will recover from failure.

Describe how the design will support the needs of business continuity and fail-over.

Message queues must be visible, resilient, manageable, well documented, and support different ACLs. Identify how you plan to achieve this using custom code or a 3rd-party tool.

Describe issues you expect to encounter and your likely approach to deal with them.

9.5.1.9 Software testing and test data

Describe your approach to testing, including coordination with other parties, documentation to be prepared, and acceptance.

Describe the test schedule, including the points at which you will develop test data, and when you will require access to what sort of data.

9.5.2 Deployment and configuration

Describe your proposed relationship with the Operator of the system, including:

- *what documentation would be provided relating to the hardware and software configuration (ref. documentation: 9.5.3)*
- *how deliveries would be made into the test, initialization, and live environments*
- *how releases would be managed during initialization and during normal operations*
- *how the CITL data migration will be achieved*
- *what types of scripts will be provided*

Describe issues you expect to encounter and your likely approach to deal with them.

9.5.3 Training and documentation

Describe the documentation to be provided to the Operator. Also describe the structure and contents of each item of documentation and the approach to be taken in developing them.

Describe the training to be provided to service desk and secretariat staff, including information on contents, methods, location, duration and trainers.

9.5.4 Support of initialization

Describe the support to be provided to the 1st line service desk during initialization.

9.5.5 Support of operations and service desk

Describe your approach to fault logging and support the 1st line service desk run by the Operator.
Note how this will vary for calls logged in different time zones.
Describe your proposed method of reporting problem resolution to the secretariat.
Describe your proposed approach to problem escalation.
Describe your proposed approach to responding to high-priority and critical operational problems that require software support and how this will support the Operator's SLA commitments.
Describe issues you expect to encounter and your likely approach to deal with them.

9.6 Operational component

Please complete this section for a proposal that includes the operational component.

9.6.1 Architecture of the proposed infrastructure

Describe the proposed facilities with the combined network and hardware infrastructure.

Describe a proposed network configuration at a point of presence at the secretariat, at a national registry and at the CITL site.

Indicate the hardware, OS and software products that you prefer to use for the ITL and indicate the nature and level of your experience in supporting them.

Identify the sub-licensed products, hardware, and network requirements to be used.

Describe how the secretariat's systems will be separated from other systems within the data centre, and any implications of this approach.

Describe how mature the existing hosting infrastructure is.

Describe how the infrastructure design will be future-proofed, including provision for changes in:

- *process*
- *technology*
- *future market developments*

9.6.1.1 Preliminary infrastructure schematic diagram(s)

Illustrate and describe the proposed hardware infrastructure configuration with any network and software components.

-    **Outline infrastructure**

9.6.2 Staffing and procedures

Describe the general approach to staffing and procedures in the proposed data centres

Describe the types of technical specialists you propose to use, including operators, networks, product and application specialists

Note how support will be split between these specialists and indicate the amount of their effort.

9.6.3 Security

Describe the proposed security infrastructure.

Include suggested firewalls, penetration tests, security audits.

Describe how application and infrastructure security will be joined-up.

Describe how security will be applied at the points of presence on remote sites:

- *secretariat*
- *national registries*
- *CITL*

Describe issues you expect to encounter and your likely approach to deal with them.

9.6.4 Resilience and availability

Describe how the design will support the requirements of Annex 11.

Describe your approach to ensure stability, communication of alerts and problem management through production management and control processes (also ref, 9.6.6).

Describe your experience in supporting high-availability systems with requests coming from many time zones.

Describe how the data centre infrastructure and processes will mitigate catastrophe, mechanical failure, malicious or accidental attack, physical failure, natural disaster, hardware or software failures, media and communications failures, human failures. Include your proposed approach to backup and recovery, resilience, and business continuity.

Describe issues you expect to encounter and your likely approach to deal with them.

Outline your proposed escalation methods and tools

9.6.5 Auditability

Describe how the design will be checked.

Describe how the ongoing operations will be audited.

Describe how transactions and sessions will be monitored and audited within the operational environment, and how transactional integrity will be assured

9.6.6 Configuration management and monitoring

Describe your proposed operational relationship with the Developer of the system.

Outline how code acceptance, testing, packaging, documentation, communication, training and deployment will be managed during releases of the ITL code through production control processes.

Describe how deliveries will be made into the test, initialization, and live environments.

Describe how releases will be managed during initialization and during normal operations.

Describe the differences in approach to be taken for scheduled upgrades, re-configuration, maintenance and emergency fixes.

Outline your approach to capacity planning and monitoring of systems, especially long-term checks on performance and sizing.

9.6.7 Network management

Describe your general approach to network management and your specific approach to this project. Include diagrams if necessary.

Describe your proposed approach to coordination if other participants wish to provide private lines.

Describe issues you expect to encounter and your likely approach to deal with them.

9.6.8 Future data centre capacity

The secretariat is embarking on a number of other IT projects over the next two years. Some may benefit by sharing the ITL's infrastructure or hosting arrangements.

Identify extra capacity that could be made available from your current infrastructure and arrangements.

9.6.9 Service desk and support approach

9.6.9.1 Administration

Describe your approach to technical administration and management for the 1st line service desk. Outline the tools and processes that you propose to use.

Describe how fault logging and call escalation will work with different countries logging calls over different time zones.

Describe how system/administration messages will be sent out through the ITL.

Describe how low-level user and data administration will be accomplished

Describe how you plan to incorporate specialist knowledge within the service desk, especially regarding:

- *resolution of data problems*
- *intelligent monitoring of activities*
- *reporting back to the secretariat.*

9.6.9.2 Liaison and transactional reporting

Describe your approach to liaison with the secretariat.

Describe how transaction and holdings data, statistics, and other data reports will be developed and provided to the secretariat.

9.6.9.3 Initialization support

Describe how adequate standards will be elaborated and ensured for the quality of registry and STL connections to the ITL.

Describe how the service desk will ensure sufficient support to registries and STLs in the initialization process and assist participants to activate their connections in the required timeframe.

Describe how the service desk will coordinate responses between the Developer and the different technical groups within the Operator

Describe issues you expect to encounter and your likely approach to deal with them.

9.6.10 SLA reporting

Refer to Annex 15 for suggested responsibilities and SLA performance measurement points.

The Operator will produce regular reports and statistics on performance of the infrastructure and service desk. These will be of a quality and breadth to be suitable for review within the steering group.

Outline a proposed way of collecting data, presenting reports and dealing with issues identified through measurement, including:

- *technical system response times, availability, performance, bugs, fixes, outages,*
- *transactional volumes and workload,*
- *service desk statistics, trouble tickets, incident reports and problem escalation*

9.7 Strategic services

Please complete this section for all proposals.

9.7.1 Strategic support

Describe your approach to managing sub-contracts on behalf of the secretariat.

Suggest areas where you may be able to contribute strategically to the secretariat's functions and support its technology direction.

Identify how you can help the secretariat identify trends and opportunities within the secretariat and participants avoid issues becoming problematic.

Describe your proposed approach to providing your strategic support, developing and maintaining necessary expertise and coordinating with the Developer..

9.7.2 Support for the RSA Forum

Describe your approach to providing the support required by the secretariat in its facilitation of the RSA Forum, including:

- *inputs to the coordination of the RSA Forum, its meetings and communication*
- *assistance in developing procedures, practices and other measures under the RSA Forum*
- *implementation of central activities under procedures*
- *knowledge transfer and capacity building of skills*

Indicate how your approach would contribute to identifying potential improvements to the support of effective operations among the ITL, registries and STLs.

Indicate how your approach would identify and address issues before they become problematic.

9.7.3 Future capacity

Over time the secretariat may seek to expand its use of ITL or other external services.

Suggest relevant additional services, linguistic, or technical capacity that you can provide that the secretariat may wish to consider.

9.8 Ownership and IPR

Please complete this section for all proposals.

9.8.1 Intellectual property rights

The secretariat will hold exclusive IPR on work developed under contracts entered into (ref Annex 5).

Describe the extent of this work, and list those items that the secretariat will have IPR over, those items (e.g. layered products) where the IPR will rest elsewhere (ref: 9.8.2). Clarify any boundaries, including tools or utilities that are to be used in the production environment.

Indicate any code libraries to be supplied under this contract where there may be joint or previous claims on ownership. Describe the extent to which ownership is proposed to be assigned to the secretariat.

9.8.2 Assets, licences, and novation

The secretariat shall generally be entitled to all proprietary rights over assets and licences (ref Annex 5) However there may be components that can be accessed or furnished more cost-effectively through the Operator's own arrangements.

Itemise the licences and hardware/software assets required for this project, and propose where it would be more cost-effective for ownership to reside with the Operator. Where licences or assets are proposed to be held by the Operator, indicate where novation charges would be applicable.

Indicate any legal or copyright conditions or issues associated with these products.

Note where production licences or development licences are to be used with the layered products

Where licences or assets are proposed to be owned by the Operator, the secretariat's preference is that their book value (for novation purposes) will follow a straight line depreciation curve over 3 years with zero residual value. Indicate any items where a different calculation method is proposed.

Item	**Owner of asset or licence** (e.g. Operator or secretariat)	**Type of purchase** (e.g. wholly-owned asset, licence-to-use…)	**Novation fee** (e.g. 0, nominal or %age)	**Book value calculation method** (e.g. 3Yr SL)

9.8.3 Data ownership

The secretariat asserts full rights over data stored on the Operator's site (ref Annex 5). In the event of a change in the scope of the contracted work or partial or complete contract termination, this data and its media must be delivered to the secretariat by a date to be specified.

Identify the data to be held, the location, and the proposed media used for storage/transfer.

Item e.g. database, transaction messages, annual backups	**Location**	**Media used** (e.g. PC disk, tape, DAT, etc)

9.9 Project plan and schedule

Please complete this section for all proposals.

Describe your proposed project plan and schedule with target dates for key milestones (ref Annex 2). Include enough detail and thoroughness to provide confidence that the plan has been carefully considered and will meet the requirements set in this RFP.

Depending on your proposed engagement (development component, operational component, or both), ensure that the proposed project plan and schedule identifies:

- *deliverables and deliverable dates to be tied to staged payments*
- *major and minor milestones (both internal and external)*
- *timing of when test plans and materials will be ready for acceptance and initialization*
- *timing of the software being ready to be deployed into the pre-production (pilot testing and initialization) and production (live) infrastructure*
- *timing of environments being ready for deployment of software versions*
- *timing of source code and documentation being provided to the secretariat*
- *development and implementation of SLA reporting*
- *timing and nature of liaison between Developer and Operator (e.g. relating to hardware/software configuration, testing, deployment)*
- *timing and nature of liaison between Operator and registries/CITL (e.g. pilot testing, initialization)*
- *timing and nature of input required from the secretariat (e.g. information gathering, reviews, feedback, acceptance)*
- *satisfactory review points for the peer review and potential project management review*
- *critical paths, activities, and areas of free float*

Attach separate pages if required.

-    **Proposed schedule**

9.10 Key staff

Please complete this section for all proposals.

Describe key individuals, their expected roles and obligation to support this project, and their expertise and qualifications that make them suitable.

Describe your approach to maintaining the level of expertise to be devoted to this project over time.

The secretariat places much value on its relationship with the vendor/s. Describe your approach to ensuring that this relationship is suitable to the secretariat's needs and how key individuals will contribute to this.

Describe your approach to ensuring that the relationship between the staff working on the development and operational components is suitable and how key individuals will contribute to this.

9.11 Locations

Please complete this section for all proposals.

Indicate the physical locations at which the work on the development and operational components, where applicable, would take place. Include the locations of any sub-contractors.

Describe your approach to ensuring effective cooperation:

- *between different locations of your organization*
- *between your location/s and those of sub-contractors*
- *between locations of the Developer and Operator, where applicable*

Describe your approach to identifying issues arising from differences in location before they become problematic and ensuring that do not impact on the conduct, quality or timing of the work.

9.12 Previous experience

Please complete this section for all proposals.

Describe your experience in executing projects of a similar nature, including size and complexity, as your proposed engagement in the ITL work. In particular, these projects should demonstrate:

- *experience in transaction-processing systems*
- *technical expertise in the subject area of emissions and registering of trades*
- *experience of building/operating 24/7 systems*
- *technical expertise in scalable, resilient systems*
- *successful project management and quality management skills*

Attach separate pages if required.