



International Labour Organization  
NIRF Programme (VNM/16/02/USA)

## REQUEST FOR PROPOSAL – ANNEX III

### TERMS OF REFERENCE FOR SERVICE CONTRACT

*Development and Test Implementation of Digital Labour Inspection Case Management System for Utilization by Viet Nam's Ministry of Labour, Invalids and Social Affairs (MOLISA) (Activity 3.5.2)*

#### I. BACKGROUND

##### 1.1. ILO's NIRF project

1. The ILO Country Office for Vietnam is implementing a technical co-operation project entitled Developing and Implementing a New Industrial Relations Framework in respect of the ILO Declaration on Fundamental Principles and Rights at Work ("NIRF Project"), funded by USDOL. The aim of the NIRF Project is to assist Vietnam to reform and improve its industrial relations framework consistent with the ILO Declaration on Fundamental Principles and Rights at Work (1998). It also aims to engage employers, workers and their representative in legal and institutional reform and enable them to realise their rights and responsibilities.
2. Long term objective 3 of the project is Labour inspectorate effectively enforces and promotes compliance with national labour laws in industrial relations. The ILO NIRF team is collaborating closely with the Inspectorate to achieve this objective.

##### 1.2. Labour inspection system and the case management application

3. In recent years, the labour inspection system has undergone changes and innovations, and now anticipates introduction of the use of technology to improve the inspectorate's efficiency and impact through better data collection and planning and monitoring of inspection action. According to an International Labour Organization (ILO) global survey<sup>1</sup> 56% of respondent countries (81 countries out of 185 member states) reported the use of an integrated computerized inspection management system, which demonstrates their prevalence but also the significant potential for increased use. The use of information and communication technologies in national labour administration systems in general, and for labour inspection systems in particular, is a trend that the ILO believes would greatly benefit Viet Nam in its effort to strengthen its ability to enforce the labour law in line with its obligations under ILO Convention 81.
4. Currently, labour inspection actions are mainly processed and recorded using a manual paper-based system. The information recorded is not organised and the inspection cases are not standardised between different inspectors or offices. The information is also not always in line with the recommended guidelines from the central level.
5. The ILO has been providing technical assistance for many years to strengthen the labour inspectorate's institutional and technical capacity, the effectiveness of the Labour Inspection system and the labour inspection information system. As part of this work, the ILO will support the development of a computerised case management system for labour inspectors as a

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<sup>1</sup> Galazka, A.M., 2015. *Report on the global survey into the use of information and communication technologies in national labour administration systems*. International Labour Office.

means to digitize inspection work processes as a contribution to implementing ongoing labour law reform and improving compliance in the changing world of work.

6. As a preliminary step, the ILO, in collaboration with MOLISA, conducted a feasibility study to understand how to build such a system given existing inspection workflow processes, IT and personnel capacity and needs of the labour inspectorate in light of international good practice. The study provided a positive standpoint for developing an electronic system to manage labour inspection cases in Viet Nam.
7. As a second step, the ILO contracted with a local service provider to develop a wire-frame mock-up of the future web application, following a user-centered design process. This work was completed at the end of 2019.
8. The ILO now seeks a contractor to collaborate closely with MOLISA Inspectorate to build, test and roll out an application based on the initial mock-up that will be effective in managing labour inspection cases in a systematic, efficient and secure manner.
9. This computerised application will be used for labour inspectors at the central and provincial levels to help record information from inspection actions, follow-up cases until their conclusion and serve as a management tool to monitor compliance, assist strategic planning and to assess performance of the labour inspection system.

## **II. OBJECTIVE**

10. The objective of this work is for MOLISA to have an efficient and user-friendly computerised system to manage the labour inspection cases and data, and for that system to be utilized in pilot implementation and refined thereafter based on the user experience.
11. In the long term, the application is expected to
  - Strengthen the capacity and efficiency of labour inspectorates to carry out and follow-up on inspections at the central and local levels.
  - Improve the quality of workplace compliance monitoring
  - Facilitate Analysis of collected data to identify trends that may inform priorities and further inspection planning
  - Assist the inspectorate in compiling data on labour inspection actions and compliance outcomes in order to fulfil its reporting obligations under ILO Convention 81.

## **III. EXPECTED OUTPUTS**

12. The Contractor is expected to complete the following key outputs to the satisfaction of the ILO:
  - a. A computerized based system that is ready to use, and to serve all the administration needs of Labour Inspectorate and meet all the technical requirements as explained in this TOR.

This system should also have characteristics/features as follows:

- Being user-friendly to labour inspectors (the front page and its titles of functions should be available in both Vietnamese and English);
- Easy to maintain;

- Offer the possibility for upgrading, up-scaling and for the development of additional functions or for use in new settings in the future.
  - Must be accessible and usable remotely (outside of the inspectorate office using laptops and/or mobile devices) as well as inside the office using desktop computers.
  - Must be functional for inspectors and inspection managers using their existing equipment.
- b. Delivery of three training courses that are intended to test and improve the system, as well as familiarize key personnel and labour inspectors with it. The first will be a two-day group training, tentatively planned for Hanoi, labour inspectors from MoLISA, and the pilot provinces, which are tentatively expected to be Ha Noi, Ho Chi Minh city (HCMC) & Dong Nai. The second training for key labour inspectors, again in Hanoi, who will be expected to teach their peers in their own provinces and other provinces when the CMS is scaled up. The third training would be for the system administrators who are working at MoLISA and pilot DoLISAs ;
  - c. Technical assistance provided to the inspectors at MoLISA in Hanoi during different phases of testing, pilot and maintenance and DoLISAs of Hanoi, HCMC and Dong Nai during the pilot phase.
  - d. A technical manual to guide on how to use the system for labour inspectors and managers, in Vietnamese and English;
  - e. A handover package in Vietnamese of the application for system administrators, including source code, information on its deployment, maintenance, licences or permits necessary to enable its long term and independent use;
  - f. Technical inputs provided to the ILO and MoLISA to develop a sustainability plan to ensure the long-term viability and scale-up of the system.

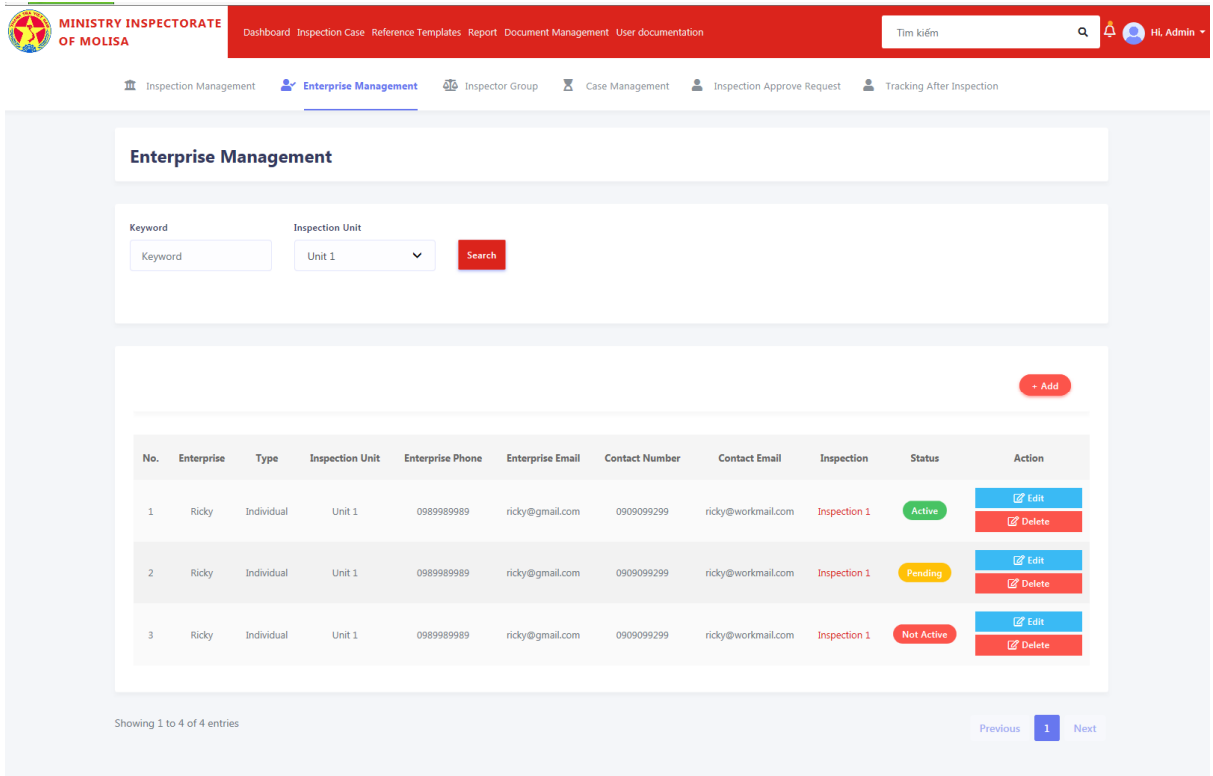
#### **IV. CAPACITY AND FUNTIONALITIES OF THE PROPOSED SYSTEM**

13. The web server application will allow the access of about 700 labour inspectors at MOLISA Inspectorate and 63 DOLISA inspectorates nationwide.
14. The application will be developed on the already existing mock-up design as following link for viewing: <http://ilo.mhsoft.vn>. Note that although the primary user interface should be in Vietnamese, the front page should allow users to “toggle” to English as well.

This is the link for downloading the files: <http://mhsoft.vn/thanhtralaodong.zip>

Pass for unzipping: qazxsw123465

Below is a snapshot of one page of the mock-up:



15. The target platform is a progressive web application (PWA) based on the following or similar technologies. If the Contractor wishes to suggest alternative options, please indicate the reason and the expected benefits.
16. Backend: The server-side part of the application will be built using a modern {Python, PHP, Javascript} web framework such as Django. The backend system will expose a REST API through which it will interact with one or more frontend interfaces (currently one) and allow data import and export (json, csv, pdf).
17. Frontend: The interface for the inspection modules and dashboards. The frontend interfaces will be responsive (mobile friendly) and built using a modern web framework such as Angular or React. The language of the frontend framework must match the language of the backend.
18. The backend and frontend systems will work together and communicate with each other via a REST API. Access to the API will be HTTPS-only and limited to authenticated users.
19. MOLISA will provide the hardware infrastructure (servers) and internet connectivity after MOLISA checks and endorses the software and before the ending date of the maintenance period. The Contractor is required to provide suggested infrastructure diagram and minimum/recommended technical requirements for processing and memory, and to assign staff to install the software on the infrastructure of MOLISA upon request, not to exceed 2 working days

**Additional stack requirements:**

20. Database: Open-source database such as MySQL or PostgreSQL.
21. Web Server: Open-source web server such as Nginx or Apache, as agreed with MOLISA
22. Offline Functionality: The system must allow inputs and store data for users even when internet connectivity is non-existent or unreliable. The following elements will leverage the offline features offered by HTML5 Service Workers and offline storage to store collected data as well as the forms themselves: The content for carrying out inspections in enterprises, including relevant administrative forms and checklists. Web Forms will always attempt to

upload data immediately and will retry until a connection has been established again. All synchronization is proofed even against poor Internet connection quality. Should a connection time out or be interrupted while a specific form is being transferred, it will be resent with the next upload attempt. The server will not integrate half received data in this case. Only when a record has been uploaded successfully and the server confirms receipt will the survey data be removed from the upload queue.

23. **Notifications:** Service brokers for in-browser notifications and email notifications for identified workflows.

**24. Core/management features:**

- Log in
- Password reset (via email). No password in clear text.
- User and entitlement management (role based access control)
- Logging: all CRUD actions taken by users (login, logout, save, upload) should be logged in the database (who, what, when, source IP)

**Security:**

25. The application should comply with OWASP Secure Coding Practices as listed in the checklist: [https://www.owasp.org/index.php/OWASP\\_Secure\\_Coding\\_Practices\\_Checklist](https://www.owasp.org/index.php/OWASP_Secure_Coding_Practices_Checklist)
26. In particular:
- the very sensitive information (user passwords for example) will be encrypted using Bcrypt2 or similarly industry-accepted mechanisms
  - Captcha verification or Multiple Factor Authentication to avoid brute force log in attempts, to be agreed with ILO and MOLISA.
27. MOLISA and ILO reserve the right to perform spot checks, code analysis and vulnerability scanning before going to production. If issues related to code are identified, the Contractor will fix these issues until MOLISA and ILO's satisfaction.

**Good practices that bidders are encouraged to apply:**

28. Agile: The Contractor will follow an agile approach. MOLISA and ILO will be regularly updated on the progress and issues. In turn, MOLISA and ILO will provide feedback to allow the Contractor to fine-tune the modules and reach milestones in a time-efficient manner. The Contractor will arrange recurrent (weekly) meetings as agreed with MOLISA and ILO to present progress and current issues requiring inputs.
29. Full HTTPS: The application will run completely on HTTPS (TLS). All calls to APIs will be over TLS.
30. Cross-browser compatibility: The application will work on modern devices (desktop, laptop, tablet, smartphone) with a recent release of any popular web browser.
31. Loading time: In the case of good internet connectivity, the application will have a fast loading and rendering time. The application will be optimized for slow connections by the use of local caching and performance optimization techniques.
32. URL routing: According to HTML and URL routing best practices, different parts of the application will be reachable via different URLs (i.e. red routes). The API will define CRUD routes to access data from the database.

33. Coding style guides: The Contractor will indicate whether they will follow coding style guides such as PEP8 for python.
34. CI/CD pipeline: The Contractor will follow MOLISA's process for code repository management, versioning and deployment pipeline, and preferably using git-flow convention or similar.
35. Ticketing system: The Contract will keep track of the tasks and issues in a ticketing system and will suggest ticket priorities which will be confirmed by MOLISA and ILO.
36. At the Synthesis - Report Module - the System should be able to generate mandatory reports on each case and multiple cases based on different aggregation. End users should also be able to customize their own reports with the following functionalities:
  - Configurable filtering, sorting, bookmarking, or aggregation.
  - Interactive dashboard with pivot tables, charts, images, or rich text.
  - Should support output formats such as PDF, XLS, CSV, HTML, and JSON.

#### **Intellectual property:**

37. Intellectual property: The ILO and MOLISA will retain the intellectual property of any original work that is produced as part of this pilot phase and that is included in the code base.

#### **V. EXPECTED TASKS**

38. The Contractor, in close collaboration and consultation with MOLISA Inspectorate and the ILO's NIRF project team, is expected to complete the following tasks:

##### *5.1. Build, deploy, test, and fix the system.*

39. Build the application in line with the already existing mock-up design at <http://ilo.mhsoft.vn>. Note that although the primary user interface should be in Vietnamese, the application should allow users to "toggle" to view the application in English also.

Link for downloading the files: <http://mhsoft.vn/thanhtralaodong.zip>

Pass for unzipping: qazxsw123465

40. Conduct an estimated two-day design consultation meeting in Hanoi with technical personnel and a couple of labour inspectors from the three tentative pilot provinces, Hanoi, HCMC, and Dong Nai, to validate the intended program design and functionality and discern any need for adjustments to the design indicated by the wire-frame mock-up. (If Covid-19 restrictions persist, bidders may have to travel to the provinces to conduct the workshops there, and/or consider a virtual design verification workshop). Establish and maintain consistent contact with provincial contacts during design phase.
41. In collaboration with MOLISA Inspectorate, the Contractor will test the system with at least five actual labour inspection cases.

##### *5.2. Pilot the system in MOLISA (Hanoi) and three provincial DOLISA inspectorates for three months*

42. The Contractor shall pilot the CMS at MOLISA in Hanoi and three DOLISA inspectorates in Hanoi, HCMC and Dong Nai, which will include a two-day training course either in Hanoi or in HCMC for labour inspectors from those localities;
43. Provide timely technical support for labour inspectors from the localities participating in the pilot during the pilot period which may include:
  - Travel to three pilot provinces, Hanoi, HCMC and Dong Nai to install the software at DOLISA and support the labour inspectors there (bidders should expect to spend four working days in each pilot province, and four more working days in Hanoi with MoLISA);
  - Provide consistent telephonic or videoconference “help desk” support, on an as-needed basis (response time should be within 24 hours), to users in Hanoi and the three pilot provinces during the 3-month piloting phase.
  - During the 3-month piloting phase, conduct meeting in person with MOLISA at least once a month in Hanoi and video or teleconferences, at least two times a month, with Hanoi and the three pilot provinces to get feedback on functionality, troubleshoot, and address user-generated questions and issues.
44. Maintain a log of problems to be summarized in technical manual and/or user’s Frequently Asked Questions (FAQ).

#### *5.3. Undertake acceptance review of system*

- Trouble shoot, fix bugs
- User acceptance testing
- Code review
- Vulnerability scanning of the code

#### *5.4. Finalise the system and develop the handover package*

45. Revise the CMS program based on results and feedback obtained from the pilot. The Contractor shall improve the system, correct the gaps and errors/debug to ensure the smooth application to real LI cases.
46. The contractor will develop a handover package which should provide information on:
  - All administration authorisation and source code
  - User Rights Matrix (entitlement matrix)
  - Database structure diagram or UML diagram
  - Workflow and structure diagram of the application
  - Application Framework Information (allowed administration rights for access and edit the application contents and interface)
  - Coding guidelines, rules and standards
  - Design elements raw files, visual guides
  - Server administration guidelines - installation, backup, server configuration, basic troubleshooting guides
  - Updated procedures, data handling and protection protocols.

47. The contractor will provide technical assistance to the ILO and MoLISA to develop a sustainability plan to ensure the long-term viability and scale-up of the system. This anticipates contractors visits to five more potential provinces (2 in the north, 1 in the central and 2 in the south) to gather knowledge about the hard and soft capacity of each province as well as their readiness, then develop an implementation plan which should clarify the requirements of the infrastructure, equipment, staffing, training and budget, etc. for the long-term viability of the system and its scale-up to the nationwide application.

*5.5. Develop technical manual(s) and provide a training of trainers for a group of labour inspectors at the central and provincial levels*

48. The Contractor will prepare a written technical guidance on applying the application. The technical guidance's contents may cover:
- Application framework information
  - Coding logic, folder structure
  - Application functions and deployment
  - Case management steps
  - Liability and rights of users
  - Practice of conducting LI case in the system.
49. The Contractor is expected to provide a training of trainers for a group of labour inspectors at the central and provincial level in Hanoi, who will be expected to teach their peers in their own provinces and other provinces when the CMS is scaled up

*5.6. Provide maintenance service and a training for system administrators*

50. Maintenance service for a period of six month following the final software completion handover date, to MOLISA in Hanoi and the three pilot provinces, to fix any issues related to the agreed system development.
51. Two days of training in Hanoi for a group of people who are in charge of system administration so that they are able to work on system administration independently

Note: For trainings and site visits organized within the scope of the CMS, the bidder's role and responsibility would be to design and conduct the training and visit, but not to facilitate travel or logistics for participants

## **VI. EXPECTED TIMELINES AND DELIVERABLES<sup>2</sup>**

52. The duration of contract will start from the signing date and is anticipated to end by end of January 2021. Below is the indicative time estimated for each implementation stage:

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<sup>2</sup> Bidders must note that their financial proposals must be broken down according to each of these tasks. Please see RFP section on Financial Proposal for further detail.



	Expected tasks	Linked to TOR paragraphs	Expected Deliverables	Tentative dates when task(s) completed
1	Build, deploy, test, and fix the system, including consultation meetings with ILO, MoLISA and DoLISAs of Hanoi, HCMC and Dong Nai	Paragraphs #39, 40, 41	A computerized system ready for running	By Aug. 1, 2020
2	<p><b>Pilot the system:</b></p> <p>Provide single 2-day training for labour inspectors from three provincial DOLISA inspectorates (Hanoi, HCMC, and Dong Nai ) and MoLISA (in Hanoi)</p> <p>Travel and install the system in those places, and provide on-site support (16 staff days and travel costs)</p> <p>Provide timely technical support to labour inspectors in those localities during the pilot time.</p>	Paragraphs #42, 43, 44	<p>Trained officials could use the software</p> <p>Technical support during the pilot period</p>	By Nov. 1, 2020
3	Carry out an acceptance review of the system	Paragraph 5.3	bugs are fixed	By Nov. 15, 2020
4	Finalise the system and develop a handover package that includes the programme, technical documentation in Vietnamese	Paragraphs#45, 46	<p>Final version of software</p> <p>Handover package in Vietnamese</p>	By Dec. 1, 2020
5	Provide technical assistance to the ILO and MoLISA to develop a sustainability plan to ensure the long-term viability and scale-up of the system. This anticipates a one day visit to five more potential provinces to gather knowledge about the hard and soft capacity of each province as well as their readiness, then develop an implementation plan which should clarify the requirements of the infrastructure, equipment, staffing, training and budget, etc. for the long-term viability of the system and its scale-up to the nationwide application.	Paragraph 47	Implementation plan originated from survey, observation, view and recommendation accumulated when conducting the pilot in provinces and other visits	By Dec. 31, 2020
6	<p>Develop technical manual in Vietnamese and English for labour inspectors and managers.</p> <p>Provide a 2 days of training-of-trainers for a group of labour inspectors in Hanoi</p>	Paragraphs#48, 49	<p>Technical manual in Vietnamese and English</p> <p>Training(s) are provided</p>	By Dec. 31, 2020

7	Provide maintenance service for a period of six month to fix any issues related to the agreed system development.  Two days of training in Hanoi for a group of MoLISA/DoLISA staff responsible for system administration.	Paragraphs#50, 51	High quality maintenance service  Training provided	Six months maintenance counting from the date of submission of agreed final products
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## VII. REQUIRED QUALIFICATIONS

53. The following qualifications and experience of the Contractor are required to successfully conduct the assignment:

- Software development: Demonstrated Software Development experience of at least 5 years; Knowledge of database architecture and design; Ability to code software according to published standards and design guidelines.
- Experience of designing and implementing similar systems for international organisations or the public sector; Knowledge of labour law enforcement in Viet Nam is an advantage;
- Quality commitment: Strong commitment to quality and a thorough approach to the work;
- Commitment to ILO standards for gender equality and non-discrimination. Firms that include both male and female engineers/designers will be particularly welcomed.
- Proven high grade service with high technical capacity, professionalism and good insurance/maintenance service.
- Should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates or an individual which have been engaged by the ILO to provide the consulting services for the preparation of the design specifications, and other documents to be used for the procurement of goods, works or services to be purchased under this Request for Proposal.

## VIII. SELECTION CRITERIA

	Evaluation Criteria	Weighting (quality)
	<b>Experience</b>	
1	Proven experience in developing and deploying web applications	5
2	Understanding of public administration systems.	5
3	Project team	2
4	Commitment to ILO standards for gender equality and non-discrimination	2
	<b>Technical proposal</b> - Capacity and functionalities of the proposed system (Annex III)	
	General	

5	Technical alignment of the proposal with the RFP,	8
6	Proposed technical solution	8
	Main components	
7	Proposed backend infrastructure	3
8	Proposed front end infrastructure	3
	Additional stack requirements	
9	Proposed database	3
10	Proposed offline feature	7
11	Proposed Notification features	3
	Information Security	
12	Security of the data and platform	5
	<b>Project management</b>	
13	Availability to adhere to proposed timelines or extent of proposed deviation from them (Bidders must address timelines in technical proposal).	2
14	Maintenance plan	4
15	Thoroughness of Proposed Handover Package, with Technical Guide and Proposed Project Documentation	3
16	Training strategy	2
17	Proposed implementation and management plan	3
18	Depth and quality of response to the Request for Proposal	2
	<b>Financial Proposal Annex II-F</b>	<b>30</b>
	<b>TOTAL SCORES</b>	<b>100</b>

## IX. ADMINISTRATION, REPORTING AND COORDINATION

54. The contract for this assignment will be issued by ILO CO-Hanoi. The Contractor will work closely with ILO's NIRF project staff and the project focal points of MOLISA Inspectorate, will report directly to the Project Manager of the NIRF USDOL Project in CO-Hanoi.
55. Office space, equipment and other logistical arrangements in the course of the work are the responsibility of the Contractor. The expenses for agreed necessary field trips will be covered by the ILO according to the UN-EU cost norms, USDOL Management Procedures and Guidelines and CO-Hanoi's practice by way of prior agreement with the ILO NIRF Project team.

## X. APPLICATION

56. Attached to this TOR is the ILO's "Request For Proposal (RFP). Bidders are advised to study this document and all of its annexes carefully, particularly the Annex I – Instructions to Bidders

### 57. Application package:

The proposal must be prepared and submitted into two separate patches, which must include all the documents as follows:

Batch A: Technical Proposal

- Annex II –A: Acknowledgement of Receipt
- Annex II – B: Bidder’s Declaration Form
- Annex II - C: Bidder’s Information Form
- Annex II – D: Recent References
- Annex II – E: Technical proposal

The Bidder may also add any other documents and information to demonstrate its technical and professional capacities and competencies to fulfil the requirements as specified in this TOR

Batch B: Financial Offer:

- Annex II – F: Financial Offer specifying cost for each of the deliverables enumerated in Section VI.

**58. Language used:**

- Application package should be prepared in English, except the Annex II – E (Technical proposal), which should be written in both Vietnamese and English

**59. How to submit application:**

- In light of the COVID-19 pandemic, ILO-Hanoi adopts the following instructions for submission of proposals. These instructions supersede and cancel the instructions for physical mailing instructions stated in the Annex I – Instructions to Bidders, article 2.3.
- The Bidders should submit the application package **via email** to **han\_lis@ilo.org**
- The application should be submitted into **two separate emails**:

With the 1st email, the Bidder should attach documents required for **Batch A- Technical proposal**, using email title “**Application\_ CMS\_Name of the Firm\_Patch A\_Technical Proposal**”

With the 2nd email, the Bidder should attach documents required for **Batch B-Financial Offer**, using email title “**Application\_ CMS\_Name of the Firm\_Patch B\_Financial Offer**”

**60. Application Due:** Application should be submitted to ILO by 17:30 GMT+7 31 May 2020.

**61. Bidders’ Conference: As noted in the RFP**, a meeting with all interested applicants will be organized at 9:30am on 15 May 2020 in Hanoi to familiarize potential bidders with the requirements and to clarify any aspect of the Request for Proposal. **Interested bidders who want to join this meeting may send your questions (in both English and Vietnamese) to quynhn@ilo.org no later than 13 May 2020.** Please also include your contact details so that we can send confirmation of the exact time and place of the meeting.

**62. Only** submissions with complete documents stated above received by the deadline will be considered. Only shortlisted candidates will be contacted.