

TENDER NOTICE  
Government of India  
Ministry of Environment, Forest and Climate change  
Botanical survey of India  
**Central National Herbarium**  
Howrah-711 103

Competitive quotations (Technical bid and financial bids separately) are invited from the bonafide, established agencies/firms for photographic digitization of herbarium specimens housed at Central National Herbarium, Howrah-711 103 on 'PER HERBARIUM SHEET/SPECIMEN BASIS with barcode assignment purely on contract basis.

IMPORTANT INFORMATION	
Name of the work	Photographic digitization of herbarium specimens belonging to different groups viz., Macro fungi (Mushrooms), Bryophytes (Liverworts and Mosses), Lichens, Pteridophytes, Selected Angiosperms and other historical herbarium collections
Location of the work	Central National Herbarium, AJC Bose Indian Botanic Garden, Howrah-711 103
Mandatory documents required for the bidder	1. Latest IT return, 2. TAN/PAN details, 3. Valid GST number, 5. Valid Registration of the firm/agency
Date of Publishing the Tender	25-09-2017
Date and venue of Pre-Bid conference	10-10-2017 – 3 PM at Committee room, Central National Herbarium, AJC Bose Indian Botanic Garden, Howrah-711 103
Last date for submission of Bids	16-10-2017- 5 PM
Bids have to be submitted to	Scientist in-charge, Central National Herbarium, AJC Bose Indian Botanic Garden, Howrah-711 103
Cost of Tender document	Rs. 500/- in the form of Demand Draft/pay order drawn in favour of the <b>PAO (BSI/ZSI), Kolkata</b>
Duration of the work	2 years
Date of opening of Technical Bid	23-10-2017 at 11-30 AM
Date of opening of Financial Bid	To be notified later to only those bidders who qualify on the basis of evaluating the Technical bids.
Clarifications if any on bidding documents can be sought from	Dr. P.V. Prasanna, Scientist-F/Dr. V. Sampath Kumar, Scientist-D. (10 AM to 6 PM on week days) Phone: 033-2668 3235/3364/3232 e mail: <a href="mailto:calherbarium@yahoo.com">calherbarium@yahoo.com</a>
Validity	2 years
Technical specifications of the photographic digitization	Detailed specifications for the photographic digitization have been separately attached as Annexure

**TERMS AND CONDITIONS:**

1. Technical and Financial bids have to be submitted in a separate sealed envelopes super scribing the bid names and both placed in a single big sealed envelope along with the Demand Draft /pay order (non-refundable) by super scribing "TENDER FOR PHOTOGRAPHIC DIGITIZATION".
2. The Bid without Demand Draft /pay order will not be considered.
3. Parties will be asked to photograph specimens of each group with their cameras and submit soft copy of the same to this office.

4. The rates quoted by the parties should mention all taxes/levies etc. Subsequent inclusions of any taxes/levies will not be entertained
5. The competent authority reserves the right to accept or reject all or any of the tenders without assigning any reason whatsoever and for making any change in the Scope of Work.
6. The final output of photographic digitization should be strictly in accordance with the Technical specifications mentioned in the annexure.

Scientist in-charge  
Central National Herbarium  
Botanical Survey of India  
AJCB Indian Botanic Garden  
Howrah- 711 103  
Phone no.: 26683235  
Fax: 26686226  
Email: calherbarium@yahoo.co.in

## Eligibility to Bidders

The bidder must own **photographic digitization**, indexing, storing and retrieval facility setup for the past 5 years.

The bidder must have (i) at least three years of experience in **photographic digitization work of similar nature**, indexing, storing and providing retrieval facility records; and (ii) must have **digitized photographically** at least 1000 records in Central/State Government Offices/ PSUs. Documentary evidence by way of completion certificate should be produced in support of experience and performance clearly mentioning **photographic digitization**.

## DETAILED DIGITIZATION PARAMETERS OF HERBARIUM & SPECIMENS

### Scope of Work

The scope of work envisaged for the agency involves Photographic Digitization of the **Herbarium/ Preserved Specimens** of the **Botanical Survey of India (BSI)**, Kolkata/ Howrah.  
**Digitization**

Digitization means acquiring, converting, storing and providing information in a computer format that is standardized, organized and available on demand from common system. With specialized digital camera. **Herbarium / Preserved Specimens** are converted into digital formats through the process of photographic digitization as per the prescribed international standards, indexed and stored systematically for future reference.

### Input Specification

The input documents are Mounted Herbarium specimens/Preserved Specimens.

**The Photographic Digitization will be done at the premises of Central National Herbarium (CNH). The CNH will provide adequate space, furniture, power supply, electrical connectivity and other basic amenities for carrying out the Photographic digitization. The Outsourced agency will install the necessary equipments. Camera, hardware/software and other infrastructure requirements.**

**Handling and Preparation of Herbarium / Preserved Specimens** Samples taken up for digitization should have undergone preparation process as necessary. Standard preparation techniques are to be used for cleaning and to increase the legibility of specimens as and where necessary.

- Samples are handled in the best way as told by BSI. Therefore, while doing digitization, placing the object on the filming platform shall be strictly done under the guidance of BSI.
- Camera operators should wear surgical gloves so as not to damage any of the Herbarium/ Preserved Specimens.

### Image Capture Selection of Imaging Equipment

It has an important impact on the quality of the image. Equipment from different manufacturers can perform differently, even if it offers the same technical capability. Digital Camera of a prescribed standard preferably with **high mega pixels FM (FULL FRAME)** shall be used to capture images of the **Herbarium / Preserved Specimens**. Other touch devices shall not be allowed to be used as they

might harm the original state of **Herbarium / Preserved Specimens**

In digital photography, flexible lighting arrangements should be made to make the object better lit. There should be option for **TetheredShooting** and flash synchronization for quick capture. **Tethered shooting** is when the camera is connected directly to the computer via fire wire or USB cable. The image appears on the computer screen within seconds.

### **Image quality**

Image quality on capture can be defined as the cumulative result of the resolution, the bit depth of the image, the enhancement processes and the compression applied the device or technique used, and the skill of the operator.

### **Image enhancement process**

- Original raw image shall be saved.
- The raw image shall be processed.
- Adjustment of brightness and contrast, gamma correction, sharpening and blurring, removing patterns and adjusting colors will also be the part of Image Processing. Cleaned image shall be saved as per Clean Master Specification.
- Two derivative images namely Access Image and Thumbnail image will be derived from the cleaned image.

### **Quality control**

#### **On-screen evaluation**

- View digital images at 1:1 (100% enlargement).
- Use of target to evaluate grayscale and colour reproduction.
- Use resolution targets and histograms to evaluate spatial resolution and tonal reproduction.
- Image Quality Control Checklist as follows:

### **Image Quality Check List**

This is an indicative quality checklist for assessing digitized images. Some of the assessments have to be made by direct comparison with the original.

Image is correct size/resolution in the long dimension

- a. Digital Master = 3000-5000 pixels
- b. FINE Master = 3000-5000 pixels
- c. Access File = 600-800 pixels
- d. Thumbnail = 100 pixels

File Name: a. Digital Master, b. FINE Master, c. Access File, d.Thumbnail

File Format:

- a. Digital Master - **Tiff**
  - b. Digital Master - **Jpeg**
  - c. Access File - **Jpeg**
- The images will be named according to ID generated by the cataloguing software.
  - Meta Data information for each herbarium/ Preserved specimens photographed will be stored in the database and is identified by its Id. So the Id and the Accession Number given by the institute where the digitization is taking place forms the basis of naming the digitized images of each sample.

### **Description of images**

To describe digital images there is a need for metadata that is structured data about data. Metadata can also be defined as data that facilitates the management and use of other data. Metadata information according to Dublin Core standards is stored through the software for each herbarium/ Preserved specimens.

- The highest quality file produced is referred to as Digital Master. These files are created as a result of direct image capture. Master file represents the original sample as close and correctly as possible. Derivative images are generated from the master image using photo editing software like Photoshop.

### **Digitized output**

The agency should produce six types of images one each in **RAW, TIFF, FINE JPEG, (L), (W), and (T)**. As per the conservative estimation, for 400 ppi TIFF image true colours of 6000 pixels width (15 inches) and 8000 pixels height (20 inches), the storage requirement of the image would be around 300 MB. For online purpose 100 ppi JPEG images colours of 100 pixels width (1 inch) and 150 pixels height (1.5 inches), the storage requirement of this image would be approx. 50 KB.

### **Output Specification**

1. Master Image
2. FINE Master
3. Access Image
4. Thumbnails

The detail specifications of these images are as follows:

#### ***Master Image (Original Digitized Image)***

File Format : Tiff latest version  
Compression : Uncompressed  
Spatial Resolution : 15" X 20", 400 ppi  
File Naming : As Specified

#### ***Clean Master (Cleaned Image)***

File Format : Tiff latest version

Spatial Resolution : 8" X 10" standards

File Naming : As Specified

***Access Image (Derivative Image)***

File Format : JPEG latest version

Spatial Resolution : 8" X 10", 96 ppi

Subject Metadata : As per standards

File Naming : As Specified

***Thumbnail***

File Format : JPEG latest version

Spatial Resolution : 1" x 1.5", 96 ppi

Subject Metadata : As per Subject Metadata standards fixed by Client

File Naming : As Specified

**Metadata Creation: Metadata should have the following mandatory fields**

BARCODE, ACCESSION number, FAMILY, GENUS, SPECIES, AUTHOR NAME, INFRASPECIFIC NAME, INFRASPECIFIC AUTHOR, CURRENT NAME, BASIONYM, DETERMINER, COLLECTOR(S) NAME, DETERMINATION DATE , COLLECTION NO., COLLECTION DATE, VERNACULAR\_NAME, LOCALITY, STATE, COUNTRY, HERBARIUM REGION, GPS coordinates (Lat., Long., and Altitude), HABITAT, USES, DESCRIPTION,

- **Important to note: It is to be ensured that the agencies carrying out this work has to provide the final output of the Digitized images in a user friendly storage component (both storage and retrieval), which should be compatible to Windows Operating System.**

## **TECHNICAL BID**

### Proforma for Submission of Technical Bids

#### **Agency/Firm details:**

- 1) **Name of the Agency/Firm**
- 2) **Address of the Agency/Firm with telephone numbers and mail ids.**
- 3) **Date of establishment of the Agency/Firm**
- 4) **Status of the Agency (Proprietorship/Partnership/Limited Company) :**
- 5) **Registration Number of the Firm/Agency:**
- 6) **Date of Validity of Registration:**
- 7) **TAN/PAN No.:**
- 8) **GST no.:**
  
- 9) **Agency's Project Methodology pertaining to this Project for Digitization of Herbarium & Specimens**
  
- 10) **Number of similar work successfully undertaken in the past**
  
- 11) **Details of Hardware, Software and technical personnel in the Company with the experience**
  
- 12) **All the pages in the technical and financial bid must bear the signature of the bidder.**
  
- 13) **A letter of authorization is necessary if any other than the bidder or an employee of the bidder attends.**
  
- 14) **Details of Earnest Money Deposit:**

**Technical Bid**

**Agency's Experience**

**Clients Details where Digitization projects have been undertaken**

**Name & Address of Client** :  
**Type of Client** :  
**Place(s) of Service** :  
**Type of Image capture done** :  
**The Agency/Agencies for whom the digitization work is done** :  
**Duration** :  
**Total Number of manpower Deployed** :  
**Cost of the project** :

**Approximate value of Service** :  
**(in Indian Rupees)**

**Details of Hardware/ Software/Technology used** :  
**Any special features of the project which the Agency may like to specify** :  
**Name, title and Contact details of the contact at Client location** :  
**Agency Signature, Name, Designation & Company Seal** :

**Note:**

1. **Separate sheets for each client to be enclosed.**
2. **Letter from the client on the project executed.**



## **Technical Bid**

### **Details of the Hardware, Software and Manpower**

1. **Details of Hardware :**  
**Equipments (Computers, Camera, and make)**
  
2. **Details of Software:**
  
3. **Details of Manpower:**

**Signature of the Agency**  
**Date**  
**Place**  
**Company Seal**

**(Note: Separate sheets may be attached if required.)**

## Evaluation Criteria

### Technical Evaluation

The Evaluation Committee shall evaluate the bids based on the eligibility criteria and strict compliance to the information sought in The EC may, at its discretion, call for additional information/ask for power-point presentation, live demonstration of technical capability of digitization or seek clarifications from the bidder(s). Such information has to be supplied within the time frame set out by the EC, otherwise BSI shall make its own reasonable assumptions and do the evaluation accordingly. Seeking additional information / clarifications can not be treated as acceptance of the bid. The bidders shall provide all the necessary documents, and reference information as desired by the EC. After due evaluation of Technical bids, the EC would submit its recommendation. **Only those bidders who score 70 marks or more evaluated in accordance with the following Technical Evaluation criteria shall be technically qualified.**

#### Technical evaluation criteria

Attribute(s)	Score
• Conceptualization of project	5
• Preparation of documents and special skills in handling the material	10
• Relevant past digitization experience with size and value (duly authenticated with supporting documents)	20
• Client profile (Central Government departments, PSUs/ State Governments, number of clients, testimonials and references)	10
• Capability to digitize in the specified formats including the quality of output that will be produced including infrastructure / equipments for digitization as indicated by supporting documents and Demonstration of the processes of digitization	35
• Staff profile indicating experience of the individual staff engaged for the Photographic Digitization	10
• Experience in Indexing and Digital Conversion	10
<b>Total</b>	<b>100</b>

### Financial Evaluation

The financial evaluation shall be based in accordance with the following criteria.

- The bidder quoting the lowest total cost (L1) in financial bid will be awarded 100% score.
- Scores of other bidders will be evaluated using the following formula. Score of a Bidder = { total cost of L1/ total cost of the bidder) X 100} (adjusted to 2 decimals)

### Joint Evaluation of Technical and Financial Bids

The following is the procedure for evaluation as applicable to technically qualified bids:

The technical and financial scores secured by each bidder will be added with weightages of 70:30 respectively and a Composite Bid Score arrived at. The bidder securing the highest Composite Bid Score will be adjudicated as the Best Value Bidder for award of the digitization contract. In the event the bid composite bid scores are 'tied', the bidder securing the highest technical score will be adjudicated as the Best Value Bidder for award of the Contract.

### Negotiations and Contract Finalization

BSI shall reserve the right to negotiate with the bidder whose proposal has been ranked first on the basis of Joint Evaluation of Technical and Commercial Bids. BSI reserves the right to award the contract to the bidder selected for negotiations.

**Award of Contract**

**Award Criteria**

BSI will award the Contract to the successful bidder based on the evaluation of technical and financial bids and to the one who is determined as the Best Value Bidder.

### Financial Bid

(Note: In the financial bid format, the rate shall be quoted in Indian Rupees in **figures and words**. In case of discrepancy between the rate quoted in **figures and words**, the **rate quoted in words will be taken as final** and shall be binding on the agency)

#### Form 1: Photographic Digitization of the Herbarium &Specimens

Sl. No.	Category	Amount per Image (in Rupees)
1.	<b>Photographic Digitization</b>	
	Preparation, Photographic Digitization charges for Herbarium/ Preserved Specimens (per sheet) (as per specification per image – Master Image (Original Digitized Image), Clean Master (Cleaned Image), Access Image (Derivative Image) and Thumbnail including customization of System Application for storing & retrieval of digitized data (which is compatible to Windows operating system) and creation of meta data & data entry .	