

Digitization RFQ response: Luna Imaging, Inc.



December, 2009
Minnesota Digital Library

Thank you for giving us the opportunity to respond to the Minnesota Digital Library Request for Qualifications (RFQ).

Luna Imaging Inc. was formed in 1993 with support from the J. Paul Getty Trust and Eastman Kodak Company to set the bar for imaging standards and has been a leading source for expertise and guidance for 16 years. Luna's mission is to serve the cultural heritage community through the creation and preservation of lasting digital archives.

We trust that the information provided in this RFQ will give you confidence in our competence and expertise in providing digitization services for the Minnesota Digital Library Coalition in support of the Minnesota Reflections online project. Luna Imaging, Inc. has the capacity to provide digitization services as specified for all of the materials proposed in the project except for Audio:

Photographs and Oversized Photographs	Yes
Maps and Plat Books	Yes
Textual Documents- Books, Magazines, Journals, etc.	Yes
Graphics	Yes
Artwork	Yes
Audio	No
Newspapers Scanned from Paper or Microfilm	Yes

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Introduction

Luna Imaging has the personnel, equipment, space and infrastructure to accommodate projects of any size. Luna employs a staff of experienced imaging professionals who move images through each focused stage of Luna's production process efficiently yet meticulously resulting in fast turn-around times at competitive rates.

Prices are fixed at a project's inception making your budget predictable. Once your content is digitized, Luna offers a full suite of optional services: derivative image creation, retouching, sharpening, image watermarking, media duplication, file conversion, data services, and more.

Business History

Luna is a privately held company with 15 fulltime employees and two part time employees. Luna has been providing digital conversion services for the past 16 years since its inception. Over that time, Luna has built a solid reputation working with some of the most prominent and demanding libraries, museums, and universities from around the world to create high quality digital image collections. Since operations began, Luna has completed projects for private and public organizations that range into the hundreds of thousands of images.

Security

Facilities

Luna Imaging's corporate headquarters and digitization production facilities are located within the Los Angeles Media Tech Center, which was built in 2000 and is a master planned business park. Luna is located within minutes of downtown Los Angeles and the Tri-City area of Glendale, Pasadena, and Burbank and convenient to the Burbank airport. Our offices are also conveniently located within one mile of a major FedEx shipping and distribution center, providing us with expanded hours for delivery of packages.

Our digitization production operations are housed in a two-story concrete building. The building complex is gated with security guards on site 24/7. The premises are secured at all times, and fire and security alarms and systems are connected to an off-site monitoring service. The building is also secured with redundant power backup. Many of our clients ship film and print materials to our Los Angeles facilities, and we have on-site operations at many client locations.

Materials Handling

We recognize that many of the materials that will be submitted for digitization are fragile and require great care in their handling at all stages in the Luna Process. Operators may wear gloves as necessitated by the materials (film, paper) being handled. See additional handling information in the Luna Process section of this response.

Specific Scanning Procedures

Scanning takes place in dedicated scanning rooms, enabling optimum environmental and lighting control. Strict handling guidelines are followed whenever our technicians come in contact with original materials. Methods for actual scanning vary depending on the material and the required results. All assets are scanned or captured manually by a technician and not with the use of automatic feeders. The scanned image files are then made available through our network to our editing technicians.

Quality Control

Warranty and Service Profile

Luna is committed to superior quality and stands 100 percent behind all of its work. Luna pledges to make any timely corrections to our work.

Processes and Procedures

The Luna Process

1) Inventory and receipt of deliverables

Luna begins with strict organizational policies and standards for all incoming projects. All client materials are carefully received and compared on an individual basis to electronic data delivered by the client to ensure accuracy of the shipment and to clear up any discrepancies between data and materials. All materials are logged into Luna's production tracking system which is used to create a detailed "Receive Log" that is sent to the client for resolution of any inconsistencies before work begins. This information serves as the basis for tracking the images throughout subsequent steps in the Luna Process.

2) Image Capture

Luna employs an array of high-end scanners to complete the largest of imaging projects. From small collections to collections with hundreds of thousands of images, Luna's consistency and quality remain. Scanning technicians maintain strict handling procedures to minimize stress to fragile originals.

3) Phase One Edit: Color Balance & Tone Adjustment

Professionally trained and Luna certified image technicians individually analyze images to determine proper color space and color balance. Images can be color matched to the original object or reproduction using targets within the scanned image or using the actual object. All images are brought into strict RGB and grayscale value ranges.

4) Phase Two Edit: Cropping / Sizing - Derivative Creation

Once the images are checked for proper orientation and quality control checked (QC'd) for color balance and dust removal, the images undergo cropping to client specifications (edge crop, crop to object, crop to content, or hairline crop). At this stage, images can undergo client specified sharpening to produce master archives with fine detail and clarity. The resulting images are stored on servers and used as a basis for any client specified derivative image creation.

5) Batch and Write to Media, Update Management Data, Initial QC

File naming, directory organization, and management data are updated at this stage and master images are batched out as TIFFs, into groups for writing to storage media. File names are checked against corresponding indexes for each batch. The unique identifier on each physical item and its corresponding file name in the batch are verified.

Luna is able to fulfill the required file naming specifications (Appendix B) for the Minnesota Digital Library project.

Images are checked for quality, cropping, and adherence to any special requirements. Images are checked one-by-one and across a group of material to assure consistency. Metadata for all images are created using the verified data from the online tracking system. Any production-recorded data is added to the client's original cataloging data. All metadata are then checked for accuracy.

Luna is able to fulfill the technical metadata guidelines (Appendix C) for the Minnesota Digital Library project.

6) Final QC - Shipping

All images undergo a final and comprehensive quality control check at this stage. Images are opened individually from the storage media and checked for proper orientation, naming, color balance, and cropping. Packing lists are created as well as a comprehensive file return log. Original materials and media are carefully packaged and returned to client as instructed.

Service Options

Custom Image Editing

Digitizing your images is only the first step in creating a digital archive. Once scanned or digitally photographed, images need to be edited for color, cleaned of any dust or anomalies, and cropped in order to accurately reflect the original source object. Luna offers all of these services and more.

- **Color Balancing** - Images are brought into strict brightness and contrast levels as well as color balanced to targets within the original image. For images without these targets, Luna's trained digital imaging staff adjusts color to accurately match the original source object. Individual colors can be adjusted to a near perfect match to the original.
- **Dusting** - Images of varying sizes are magnified to full resolution and systematically divided into a system of quadrants that are each dusted by hand in Adobe Photoshop. No filters or other image degrading techniques are used in this process.
- **Cropping** - Film edges and other nonessential information can be removed and images can be cropped to exact pixel dimensions or resolutions. Cropping is done to client specifications (edge crop, crop to object, crop to content, hairline crop)
- **Sharpening** - Images can be sharpened in varying degrees to filter out noise created in the scanning process or to reveal details not clearly seen in the digital archive

Derivative Creation

From your master archive image Luna can create derivative images for a variety of end uses. Derivative images are custom ordered to fit the needs of your specific project. Derivative images options may include a range of file sizes from thumbnail to screen-size (JPG), a compressed wavelet file (JPG2000) or a compiled document format (PDF). OCR services are also available.

File Conversion and Migration

Image formats and file types are continually evolving as new technologies emerge. At Luna, we help institutions maintain the currency of their collections by offering a range of file conversion services. Regardless of the age of your digital collections, Luna can convert existing collections into current file standards and maintain the currency of those collections as imaging standards change.

Data Services

At Luna we provide all of the services you need to convert your existing visual collections into digital form, including data services. Luna can not only digitize your source materials, but create the appropriate data record to accompany your digital content to ensure "searchability" and seamless integration with all of your database applications.

- Image metadata
- Creating text records from card catalogs, notes on back of object, etc.
- Editing image descriptions for vocabulary consistency

Appendix D – Scanning Services and Equipment Worksheets

All scanning services will be done in accordance with the specifications addressed in the RFQ.

Print Scanning – comprehensive

Standard Flatbed scanning (color & B/W) up to 11 x 17 inches
Oversized scanning (color & B/W) up to 48 x 96 inches
Color & B/W scanning of textual materials (bound) up to 15 x 23 inches
Color & B/W scanning of textual materials (unbound) up to 48 x 96 inches
Bitonal scanning of textual materials (bound) up to 15 x 23 inches
Bitonal scanning of textual materials (unbound) up to 48 x 96 inches

Film Scanning – comprehensive

35 mm slide transparencies – yes

Other film transparencies (negative and positive) up to 11 x 17 inches

Audio conversion – not available

Newspapers – on-site capture for source materials with outsourced capture for microfilm

On-site

Grayscale scanning of paper originals up to 15 x 23 inches

Outsourced

Grayscale scanning from 35 mm positive microfilm - yes

Grayscale scanning from 35 mm negative microfilm - yes

Grayscale scanning from 16 mm positive microfilm - yes

Grayscale scanning from 16 mm negative microfilm - yes

Deliverables

Gold CD – yes

Gold DVD – yes

External Hard Drive – yes

SFTP – yes

Scanning / Capture Equipment

- All scanning will take place at the Luna Imaging headquarters in Los Angeles.
- Luna employs many types of digital scanning equipment allowing image capture of a wide variety of original materials of various sizes.
- Luna uses Epson flatbed scanners for capturing prints, documents, and most other types of flat reflective material up to 11 x 17 inches.
- Film, prints and documents up to 13 x 18 inches are scanned on a Fuji Lanovia C-550 flatbed scanner.
- Film up to 2 1/4 inches is scanned on a Nikon film scanner.
- For prints, posters, and other documents that exceed 11 x 17 inches, Luna employs a Phase One PowerPhase FX+ digital back mounted on a Cambo 4x5 camera.

Hardware:

Representative list of hardware utilized at Luna Imaging, Inc.

Flat Print / Document and Film scanning up to 11x17

- Epson Expression 1640xl flatbed scanner
- Fuji Lanovia C-550
- Nikon Super Coolscan 9000ED

Flat Print / Document scanning over 11x17

- Phase One PowerPhase FX Digital Back

Software:

Adobe Photoshop CS2/3/4

Scanner specific software: Epson Scan v2.65a plug-in, Fuji C-Scan v5.2, Phase One Image Capture v.3.6, Nikon Scan 4.0

Dust and Scratch Removal: Digital ICE

Monitor Calibration

Eye One Match v.2.0.3.a

Gamma: 2.2

White Point: 5000 degrees Kelvin

Additional Peripherals:

System:

Macs with OS X, PCs with Windows XP

Production Monitors:

LACie Electron 22 Blue 20" color monitor

Mitsubishi Diamond Pro 2060v 20" color monitor

Lights (for use with Phase One and for Access Capture):

Tarsia Technical Industries (TTI) – 1200 Tungsten lights and Buhl HIDs.

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Device	Scanning Type	Max Document size	Optical Resolution	Pixel Dimensions	Dynamic Range
Fuji Lanovia C-550	Transmissive and Reflective	13.0" x 18.0"	5000 PPI		3.9
Epson Expression 1640xl	Reflective	12.2" x 17.2"	1600 PPI		3.6
Phase One PowerPhase FX Digital Back	Camera	Unlimited		10,500 x 12,600 per frame	4.5
Nikon 9000	Transmissive	2.25" x 3.25"	4000 PPI		4.8

Scanner Calibration:

Fuji Lanovia C-550: Calibration is performed at the time of start-up and at intervals during the equipment operation. Calibration is performed within the Fuji C-Scan software and utilizes manufacturer-supplied targets.

Calibration of our Epson flatbed scanners and the Phase One PowerPhase FX digital camera back is performed using ColorChecker targets and PictoColor inCamera 4.0.1 profile generation software.

Additional Notes:

- As an alternative to the Tiffen Color Separation Guide Luna recommends use of a Gretag-Macbeth target which is more geared towards digitization.
- Rather than specifying long-side dimensions (3000 to 4000 pixels across the long dimension) for prints and photographs, Luna recommends ppi specification.
- Luna recommends that the Minnesota Digital Library consider Access Capture as an alternative to Preservation Capture. Access Capture is increasingly accepted within the digital library community.

Access Capture Alternative

While we would be happy to follow the specifications delineated in your RFQ, we also want to point out that our Access Capture process might be an even better solution for your participating institutions. Essentially, the Access Capture methodologies we've mastered result in faster turnaround and lower costs and yet still produce high quality results. We generally recommend this approach when the importance of the "content" outweighs the importance of the "artifact" itself. There are many reasons to select one approach over the other and we'd be happy to discuss this in more detail at your convenience.

Standard Specifications

Access-oriented capture is ideal for all materials with handling characteristics that allow rapid capture through the use of faster area array cameras in contrast with the linear array devices – such as scanners – that we use for preservation scanning. The files are typically used for Web-based viewing, Web thumbnails, presentations, and reference prints up to 8"x10". The speed of area array capture enables museums to quickly digitize collections and satisfy audience demand for access. Because it is faster and much less expensive, area array capture often removes project barriers such as a time consuming selection process (digitize everything!) or whether to go with grayscale or RGB (the capture cost is the same).

- TIFF, JPEG, PDF, 24-bit RGB, 8-bit grayscale, or bitonal
- Reflective originals – 300 PPI
- Transmissive originals – about 3000 pixels in the long dimension
- Color managed workflows
- Bright/dark points set. Automated sharpening, dust removal, and color correction. Crop to image area
- Tested, calibrated, and characterized scanners and digital camera capture systems
- Sequential file naming
- Well documented production procedures
- Outstanding quality control procedures
- Standardized viewing environments
- Delivery via hard drive

Luna Imaging Company Profile

Basic Information

Legal Name: Luna Imaging, Inc.
Address: 2702 Media Center Drive
Los Angeles, CA 90065-1733
Telephone: (800) 452-LUNA (5862)
Fax: (323) 221-2846

Contact: Anna Miller, Account Manager
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Years in
Business: 16

Luna Imaging's Federal Tax ID is: **77-0338798**

Insurance: As Luna is frequently in possession of historic and valuable materials for digitization services for its clients, Luna carries a blanket liability policy that includes the rider that all materials in our care, custody, and control are covered by our policy up to the limits of the policy (\$1,000,000). Luna Imaging's insurance provider is the Farmers Insurance Company.