

**CONSULTING AND TECHNICAL SERVICES+ (CATS+)
TASK ORDER REQUEST FOR PROPOSALS (TORFP)**



**DEPARTMENT OF INFORMATION TECHNOLOGY (DOIT)
SOLICITATION NUMBER 060B8400047
DIGITAL HIGH RESOLUTION AERIAL PHOTOGRAPHY
(ORTHOPHOTOGRAPHY) FOR MARYLAND**

ISSUE DATE: MAY 3, 2018

**DEPARTMENT OF INFORMATION TECHNOLOGY (DOIT)
KEY INFORMATION SUMMARY SHEET**

Solicitation Title:	DIGITAL HIGH RESOLUTION AERIAL PHOTOGRAPHY (ORTHOPHOTOGRAPHY) FOR MARYLAND
Solicitation Number (TORFP#):	060B8400047
Functional Area:	FA 4 – Geographical Information Systems
TORFP Issue Date:	May 3, 2018
TORFP Issuing Office:	Department of Information Technology (DoIT or the "Department")
Department Location:	100 Community Place, Crownsville, MD 20132
TO Procurement Officer: e-mail: Office Phone:	Memory Jackson 100 Community Place, Crownsville, MD 21032 Memory.Jackson@maryland.gov 410-697-9678
TO Manager: e-mail: Office Phone:	Lisa Lowe 100 Community Place, Crownsville, MD 21032 lisa.lowe@maryland.gov 410-697-9424
TO Proposals are to be sent to:	Memory.Jackson@maryland.gov
TO Pre-proposal Conference:	May 10, 2018 at 2:00 PM to 3:30 PM Local Time See Attachment A for directions and instructions.
TO Proposals Due (Closing) Date and Time:	May 23, 2018 at 2:00 PM Local Time Offerors are reminded that a completed Feedback Form is requested if a no-bid decision is made (see Section 5).
MBE Subcontracting Goal:	FA1 - 0% FA2 - 0%
VSBE Subcontracting Goal:	0%
Task Order Type:	Fixed Price
Task Order Duration:	3 years base period with 3, one-year renewal options, commencing from the Effective Date
Primary Place of Performance:	TO Contractor Location

SBR Designation:	No
Federal Funding:	No
Questions Due Date and Time	May 14, 2018 at 2:00 PM Local Time

TABLE OF CONTENTS – TORFP

1	Minimum Qualifications	8
2	TO Contractor Requirements: Scope of Work	9
2.1	Summary Statement.....	9
2.2	Background and Purpose	10
2.3	FA1 Responsibilities and Tasks	10
2.4	Deliverables	25
2.5	Optional Products	36
2.6	Service Level Agreement (SLA)	49
2.7	FA2 QA/QC TO Contractor Requirements: Scope of Work.....	49
3	TO Contractor Requirements: General	56
3.1	Task Order Initiation Requirements	56
3.2	Reserved	56
3.3	Invoicing.....	56
3.4	Liquidated Damages	58
3.5	Disaster Recovery and Data	58
3.6	Insurance Requirements	60
3.7	Security Requirements.....	60
3.8	Reserved	65
3.9	SOC 2 Type 2 Audit Report	65
3.10	Performance and Personnel	65
3.11	Substitution of Personnel.....	69
3.12	Minority Business Enterprise (MBE) Reports.....	70
3.13	Veteran Small Business Enterprise (VSBE) Reports	71
3.14	Work Orders	71
3.15	Additional Clauses.....	71
3.16	Problem Escalation Procedure.....	72
3.17	Certification Regarding Discriminatory Boycotts of Israel	73
3.18	Project Status Reporting	73
3.19	Change Orders	74
4	TORFP Instructions	75
4.1	TO Pre-Proposal Conference.....	75

4.2	Questions	75
4.3	TO Proposal Due (Closing) Date and Time	75
4.4	Award Basis.....	76
4.5	Oral Presentation	76
4.6	Limitation of Liability	76
4.7	MBE Participation Goal	76
4.8	VSBE Goal	76
4.9	Living Wage Requirements	76
4.10	Federal Funding Acknowledgement.....	76
4.11	Conflict of Interest Affidavit and Disclosure	77
4.12	Non-Disclosure Agreement	77
4.13	HIPAA - Business Associate Agreement	77
4.14	Iranian Non-Investment.....	77
4.15	Mercury and Products That Contain Mercury	77
4.16	Location of the Performance of Services Disclosure	77
4.17	Department of Human Services (DHS) Hiring Agreement.....	78
4.18	Small Business Reserve (SBR) Set-Aside.....	78
4.19	Bonds.....	78
5	TO Proposal Format	79
5.1	Required Response	79
5.2	Two Part Submission.....	79
5.3	TO Proposal Packaging and Delivery.....	79
5.4	Volume I - TO Technical Proposal.....	81
5.5	Volume II – TO Financial Proposal	86
6	Evaluation and Selection Process.....	87
6.1	Evaluation Committee	87
6.2	TO Technical Proposal Evaluation Criteria.....	87
6.3	TO Financial Proposal Evaluation Criteria.....	88
6.4	Selection Procedures.....	88
6.5	Documents Required upon Notice of Recommendation for Task Order Award.....	88
7	TORFP ATTACHMENTS AND APPENDICES	90
	Attachment A. TO Pre-Proposal Conference Response Form	93

Attachment B.	TO Financial Proposal Instructions & Form.....	94
Attachment C.	RESERVED	95
Attachment D.	RESERVED	96
Attachment E.	Veteran-Owned Small Business Enterprise (VSBE) Forms	97
Attachment F.	Maryland Living Wage Affidavit of Agreement for Service Contracts	98
Attachment G.	Federal Funds Attachments.....	102
Attachment H.	Conflict of Interest Affidavit and Disclosure	103
Attachment I.	Non-Disclosure Agreement (TO Contractor).....	104
Attachment J.	HIPAA Business Associate Agreement.....	105
Attachment K.	Mercury Affidavit.....	106
Attachment L.	Location of the Performance of Services Disclosure	107
Attachment M.	Task Order	108
Attachment N.	RESERVED	112
Attachment O.	RESERVED	112
Attachment P.	Certification Regarding Investments in Iran	113
Appendix 1.	– Abbreviations and Definitions.....	114
Appendix 2.	– Offeror Information Sheet.....	117
Appendix 3.	- Labor Classification Personnel Resume Summary Form – CATS+ TORFP #060B8400047	119

1 Minimum Qualifications

There are no minimum qualifications for this TORFP, refer to Section 3.10.

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2 TO Contractor Requirements: Scope of Work

2.1 Summary Statement

- 2.1.1** The Department of Information Technology (DoIT) is issuing this CATS+ TORFP in order to obtain digital, high-resolution aerial imagery for Maryland. The requested products shall be suitable for use in 911 call taking systems and Computer Aided Dispatch (CAD) systems located in Emergency 911 centers, and for use within Geographic Information Systems (GIS).
- 2.1.2** Following TO award, DoIT anticipates issuing Work Orders for services in one or more of the following Functional Areas:
- A. Imagery Acquisition - Functional Area 1 (FA1)
 - B. Independent QA/QC - Functional Area 2 (FA2)
- 2.1.3** DoIT intends to award this TORFP to two (2) CATS+ Master Contractors as follows:
- A. FA1 will be awarded to the responsible Offeror with the TO Proposal determined to be the most advantageous to the State (refer to TORFP Section 6.4) for all tasks and deliverables not designated under FA2.
 - B. FA2 will be awarded to the responsible Offeror with the TO Proposal determined to be the most advantageous to the State (refer to TORFP Section 6.4) for those tasks and deliverables designated under FA2.
 - C. Offerors shall indicate in their TO Proposal which functional area(s) they are proposing: FA1, FA2, or both (see Section 5.4). If not selected for FA1, and proposing for both FA1 and FA2, the Offeror will automatically be considered for FA2 award. The State will not award both functional areas to the same Master Contractor.
- 2.1.4** Master Contractors are advised that, should a solicitation or other competitive award be initiated as a result of activity or recommendations arising from this Task Order, the Offeror awarded this Task Order may not be eligible to compete if such activity constitutes assisting in the drafting of specifications, requirements, or design thereof.
- 2.1.5** A Task Order award does not assure a TO Contractor that it will receive all State business under the Task Order.
- 2.1.6** While DoIT is the only State agency that will issue Work Orders under the resulting TO Agreement, the Work Orders may cover the requests/needs of other State agencies.
- 2.1.7** Local Maryland governmental entities may enter into contracts directly with the selected Master Contractor for products produced as a result of this TORFP.

2.2 Background and Purpose

- 2.2.1 Project Collection Background: The DoIT Geographic Information Office (GIO) has sponsored and managed the acquisition of statewide aerial imagery, on a cyclical basis, since 2007. The aerial imagery traditionally has been flown over a three-year period, with the collection area divided by the Chesapeake Bay. This imagery has served as a valuable framework dataset, critical in supporting many initiatives carried out across the state, including for use in public safety, 911 CAD systems for emergency response dispatch, and for other GIS-based applications. This data has been, and will continue to be, made available to the public for use.
- 2.2.2 Project Purpose: In addition to the emergency management and public safety sectors, the acquired aerial imagery is used by a wide variety of customers, including federal, state, local governments, private sector companies, non-governmental organizations, academic and research institutions, and the general public. Understanding the need for availability of imagery across the State, the GIO is sponsoring this TORFP.
- 2.2.3 Project Collection Cycle: Historically, the State of Maryland has collected statewide orthophotography on a regular three (3) year cycle. Though the State reserves the right to change the previously established schedule, it is the current expectation of the State to continue this collection cycle with this procurement. The collection cycle would consist of the Eastern Shore of Maryland being collected in 2019 and the Western Shore being collected in 2020. There will be no collection in 2021.
- 2.2.4 The State intends to award this TORFP to two (2) Offerors as follows:
- A. One award for the imagery program (FA1 TO Contractor)
 - B. One award for an independent Quality Assurance / Quality Control (QA/QC) program (FA2 TO Contractor)

The FA2 TO Contractor services shall not be provided by the FA1 TO Contractor or by a subcontractor to the FA1 TO Contractor. The State will use the Work Order process (refer to TORFP Section 3.14) to award all tasks issued on this procurement. Separate Work Orders will be issued for separate tasks assigned to the FA1 TO Contractor and the FA2 TO Contractor. Additionally, the State will establish an internal QA/QC team that will provide an opportunity for its State agency and local government partners to review the data products provided.

2.3 FA1 Responsibilities and Tasks

2.3.1 Project Area

- A. The project area is specific to the 23 counties of Maryland and Baltimore City and covers approximately 10,120.9 square miles of land area (refer to TORFP Section 2.3.3 Land Area by County below). The actual project area to be captured will be larger to take into account water and buffer areas. A buffer area of 1,000 feet shall be provided. Note that the Maryland border extends to the Virginia shoreline of the Potomac River. The buffer shall therefore extend 1,000 feet beyond the Virginia shoreline. The entire Chesapeake Bay shall be captured. The border of the Chesapeake Bay shall be buffered beyond the shoreline a minimum distance of 2,500 feet. The overlap distance is required to ensure sufficient imagery and elevation data exists so as to complete the entire project boundary without any

concerns about quality or accuracy fall-off at the boundary. Note that inland waterways (including but not limited to Patapsco River, Severn River, Patuxent River, Back River, South River, and other inland waterways) shall be covered in their entirety. Also note that the entire span of the Chesapeake Bay Bridge (US 50), Susquehanna Bridge (I-95), Potomac River Bridge (US 301), Francis Scott Key Bridge (I-695) and the Woodrow Wilson Bridge (I-495) shall be captured to include buffering beyond the roadside a minimum distance of 2,500 feet where buffering does not otherwise exist. The contractor shall ensure full coverage for both shorelines for the Potomac and Susquehanna Rivers are obtained.

- B. Full coverage for all islands in Maryland shall be provided to include buffering beyond the shoreline a minimum distance of 2,500 feet where buffering does not otherwise exist.
- C. Control for these island mapping efforts may rely exclusively on the airborne GPS and IMU data.
- D. The TO Contractor shall include full tiles that encompass and may extend beyond the entire county boundary. The State is also interested in obtaining a price for full coverage to the political boundary for each of the counties to be flown. This would include significant “water only” tiles in the Chesapeake Bay. This full coverage area beyond the required areas described above could be flown at a higher altitude (up to 20,000 feet AMT) to provide continuity of imagery. This area does not need to be flown in “leaf off” conditions. This applies to areas outside of Maryland and to buffer areas.

NOTE: See the MD iMAP map service

https://geodata.md.gov/imap/rest/services/Imagery/MD_ImageryAcquisitionFlightInformation/FeatureServer/1 for the extent of the project area.

2.3.2 Area of Maryland to be Flown

- A. West of the Chesapeake Bay (Western Shore)
- B. East of the Chesapeake Bay (Eastern Shore)



2.3.3 Land Area by County

County	Sq. Miles (land area)
Eastern Shore	
Caroline	320.1
Cecil	348.1
Dorchester	557.5
Kent	279.4
Queen Anne’s	372.2
Somerset	327.2
Talbot	269.1
Wicomico	377.2
Worcester	473.2
TOTAL	3,324

Western Shore	
Allegany	425.4
Anne Arundel	415.9
Baltimore City	80.0
Baltimore	598.6
Calvert	215.2
Carroll	449.1
Charles	461.0
Frederick	662.9
Garrett	648.0
Harford	440.4
Howard	252.0
Montgomery	495.5
Prince George's	485.4
St. Mary's	361.3
Washington	458.1
TOTAL	6,448.80
<u>GRAND TOTAL</u>	<u>9,772.80</u>

2.3.4 Project Management

- A. The TO Contractor(s) shall assign an experienced Project Manager to the project. The Project Manager shall work with the State's TO Manager to ensure the successful implementation and completion of the project. The TO Contractor shall follow the Project Management Institute (PMI) or equivalent methodology for managing projects. The State's expectations for project management include:

- 1) Attendance at required project meetings including, but not limited to, the following:

- a) Preflight Initiation Meeting (where the State and TO Contractor discuss flight specifications, flight restrictions, pilot areas, etc.)
- b) Pilot Review Meeting
- c) Production Meeting (as needed)
- 2) Weekly status reports and communication
- 3) Managing and updating of project schedule
- 4) Validation of project deliverables for completeness, accuracy and timeliness
- 5) Proactive identification of any issues affecting schedule, delays and/or quality
- 6) Responding to client emails and phone calls within one (1) business day
- 7) Ensuring that all work orders are completed on-time, within budget and that a quality project is delivered as defined in the Quality Assurance/Quality Control section of this TORFP (Section 2.3.23).

B. Changes of project manager resource after selection must be approved by the State.

2.3.5 Aerial Imagery Collection

The TO Contractor shall:

- A. Acquire all multi-spectral aerial photography using either a linear or large format area array CCD-based digital sensor.
- B. Secure all aerial photography:
 - 1) within a single flying season; and
 - 2) within the requirements outlined in this TORFP.

2.3.6 Aerial Camera

- A. As stated above, the TO Contractor is required to use a linear or large format area array CCD-based digital sensor designed specifically for large-scale photogrammetric mapping. Digital sensors proposed shall be capable of providing image data to support civil government mapping and orthophotography product development.
- B. Camera calibration reports for the specific sensors proposed for this project shall be provided by the TO Contractor as a digital file(s) upon award of the TO Agreement.
- C. The camera must capture simultaneous multi-spectral Red, Green, Blue (RGB) and Near Infrared (NIR) band information. The camera shall utilize Forward Motion Compensation and Airborne Global Positioning System/Inertial Navigation Unit (GPS/INS) system and must also be properly installed on a Gyro-Stabilized Mount.
- D. The digital aerial images shall be clear and sharp in detail and of high radiometric quality. The camera shall capture the images in an uncompressed “lossless” image format. The images shall also be free from image blurs, image artifacts, “cold” and “hot” pixels, color distortion, color balance or tonal problems, or any other type of digital blemish.
- E. If the TO Contractor is proposing to use multiple sensor platforms, it must specifically detail this use (as well as the approach’s advantages) in its proposal. For those cameras that now have multiple versions in the marketplace, it is required that compatible sensors be utilized for the entire mission to ensure that all interim and final products are the same and meet the requirements

outlined in this document. If the TO Contractor proposed multiple generations of the same sensor, the TO Contractor shall clearly address in their Work Order response compatibility issues and how those will be overcome in its technical production processes. This is especially true if subsequent iterations allow for a higher flying height or larger image footprint.

2.3.7 Flight Specifications

- A. The flying height for this project shall be chosen in accordance with the camera manufacturer's recommended flying height to produce digital orthophotography to the accuracy standards noted in this document.
- B. The TO Proposal shall contain a flight plan map with the chosen altitude for flight clearly labeled.
- C. At a minimum, the flight plan map shall also include the number of flight lines, number of exposures and number of flight line miles.

2.3.8 Re-Flights

- A. The TO Contractor shall correct, at no additional cost to the State, aerial imagery that does not meet defined specifications.
- B. All re-flights shall be centered on the plotted flight lines and shall be taken with the same camera system. If for any reason the TO Contractor fails to acquire the entire area, re-flights are required to complete full counties. Partial county deliverables split between multiple acquisition seasons is not acceptable.

2.3.9 Flight Restrictions

- A. The TO Contractor shall be aware of potential flight restrictions in and around Maryland. These include, but are not limited to the following locations:
 - 1) Washington, D.C. / lower Montgomery County airspace;
 - 2) Aberdeen Proving Grounds in Harford County;
 - 3) Camp David and Fort Detrick in Frederick County;
 - 4) BWI Airport; and
 - 5) Patuxent Naval Air Station.
- B. A detailed list of all restricted areas in and around the project area will be identified and discussed with the TO Contractor at the pre-flight initiation meeting. The State will work diligently to provide the necessary demarcations and Point of Contact (POC) information to the TO Contractor to ensure restrictions are minimized. The TO Proposal shall address the information and support that will be needed to obtain the appropriate flight clearances. Obtaining access to these areas shall be the responsibility of the TO Contractor.
- C. The TO Contractor shall arrange for inclusion of authorized personnel on board flights where required by restricted areas.
- D. The TO Contractor shall be prepared to employ special handling restrictions for the imagery and shall plan on extra coordination and pickup from any of the restricted areas.

2.3.10 Aircraft Commitments

- A. The State requires that this project be executed with multiple sensors dedicated to aerial photography acquisition. Each Offeror shall clearly state in the TO proposal its plan for acquisition to ensure the following objectives are met:
 - 1) Eastern Shore coverage to include the minimum number of aircraft throughout the flying season
 - 2) Western Shore coverage to include the minimum number of aircraft throughout the flying season
 - 3) Statewide coverage to include the minimum number of aircraft throughout the flying season
- B. Aircraft information (tail number) data shall be provided to the State one (1) business day prior to initiating flying so that the State can confirm and monitor aircraft assets using software such as Flight Aware or equivalent.

2.3.11 Forward Overlap

The forward overlap applied shall be 60% (+/- 3% allowance for deviation). In the case of linear array scanners, this requirement does not exist.

2.3.12 Sidelap

30% sidelap shall be applied except in those areas designated for Near True Orthos.

2.3.13 Environmental Conditions

- A. Aerial imagery shall be obtained when the sky is clear (cloud cover is not acceptable); the ground is free from snow, haze, smoke, dust, and cloud shadows; and deciduous trees are sufficiently barren to permit the intended uses of the imagery. Spectral reflectance from water shall be minimized and shall not obscure shoreline features. The solar angle shall be 30-degrees or more above the horizon at the time of exposure, except in those areas listed in B below.
- B. The following locations have been identified as areas that may be problematic. These areas shall be flown at a solar angle of 40-degrees.
 - 1) Baltimore City
 - 2) Frederick
 - 3) Gaithersburg
 - 4) Rockville
 - 5) Silver Spring
 - 6) Towson
- C. Allowance for 25-degree sun angles may be provided under certain conditions and is subject to State approval prior to any flight.

2.3.14 Crab

Crab shall not exceed five-degrees between any two consecutive flights, nor more than three degrees on any one flight line. At the earliest opportunity, new imagery shall be acquired to replace rejected photographs or flight lines.

2.3.15 Bridges and Overpasses

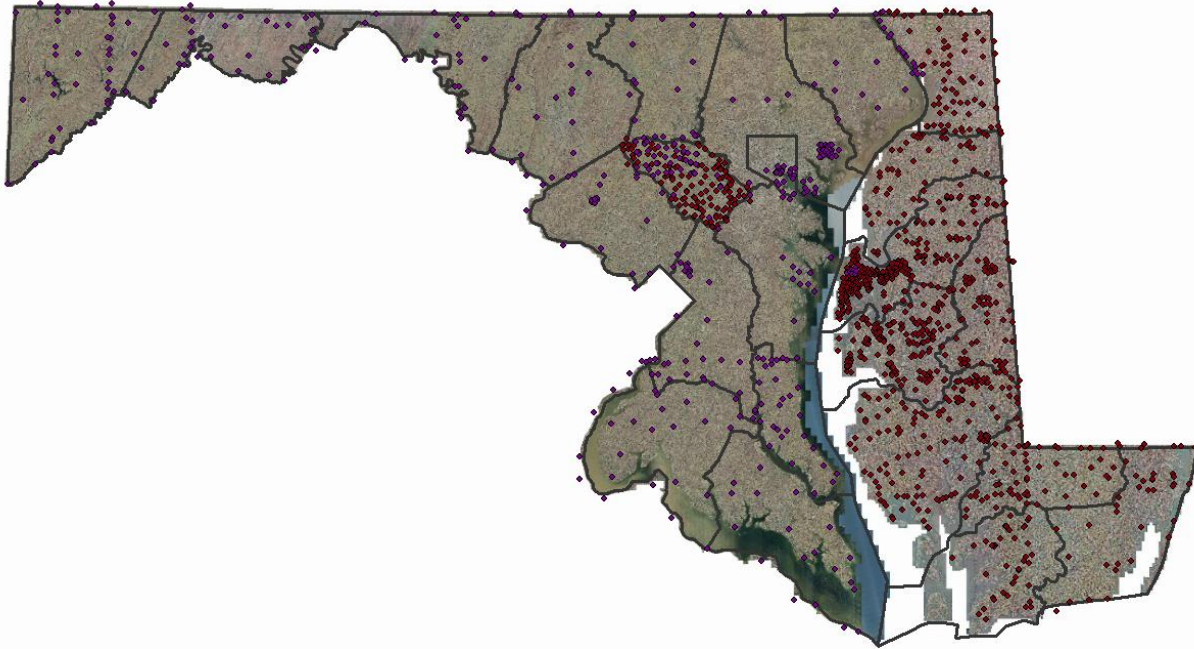
All bridges shall be free of distortion and shall be corrected to their true position in the final digital orthophotography products. To accommodate this, each Offeror shall prescribe their own methodology that could include spot shots, breaklines on bridges, photo correction using photo enhancement software or some combination thereof.

2.3.16 Project Coordinate System

For the purpose of responding to the TORFP, the coordinate system for all products produced shall be in Maryland State Plane NAD 1983 (2011). Final determination of project coordinate system will be made and documented in the Work Order issued prior to each acquisition. Deliverables will be in U.S. feet and meters. All data products must have a defined projection.

2.3.17 Ground Control

- A. In the TO Proposal, Offerors shall propose their approach for controlling the orthophotography including how, if applicable, existing control will be included. Each Offeror shall outline the number of control points required and shall show on the flight plan map the preliminary locations of the required control points. A minimum of ten (10) control points per county is required. If ten (10) points exceed the requirements for achieving the required accuracy of the orthophotography, the additional points shall be used for validation purposes.
- B. The TO Contractor shall be responsible for establishing ground control of sufficient density and accuracy to meet accuracy requirements of the deliverable orthophotography at the resolutions required. Existing control used for the 2016 Eastern Shore imagery and the 2017 Western Shore imagery will be made available by the State.
- C. The State's assumption is that the existing control will comprise the majority of the required control and minimal new control will be needed. The map below shows the density and location of control for the 2016 Eastern Shore and the 2017 Western Shore projects.



- D. The TO Contractor shall submit a control report containing the following items:
- 1) Number of control points surveyed and corresponding coordinates, elevation, point description, and datums used;
 - 2) Description of the procedures followed and equipment used;
 - 3) Accuracy standard for the control; and
 - 4) Identity of the licensed surveyor in charge.

The Control Report shall be in PDF format and the control data shall be in shapefile format.

- E. Unless stated otherwise, any new ground control established for this project shall be tied to the Maryland State Plane NAD 1983 (2011) coordinate system and established by a licensed surveyor in the State of Maryland. All ground control points shall be documented as such, in the Control Report, so that they are easily relocated by other surveyors throughout the duration of the project.

2.3.18 Digital Elevation Model (DEM)

- A. The TO Contractor shall develop a DEM that will be used to support orthorectification. This DEM development shall be based off of LiDAR bare earth data provided by the State (see Section 2.3.30). Additionally, existing LiDAR data is currently available for review as image services from MD iMAP (<https://lidar.geodata.md.gov/imap/rest/services>).

- B. The TO Contractor may supplement State-provided LIDAR data using USGS National Elevation Dataset (NED) data. Data can be provided as one (1) meter bare earth DEM products. LAS files are available for many of the more recent datasets if needed. Although breaklines may be available for some counties it should be assumed they will not be provided. LiDAR was generally acquired to support two (2) foot contours for FEMA floodplain mapping purposes. Table 1 below shows the availability of LiDAR data. Refer to Table 2 for LiDAR specifications.

Allegany	(2012)	Harford	(2013)
Anne Arundel	(2017)	Howard	(2011)
Baltimore	(2015)	Kent	(2015)
Baltimore City	(2015)	Montgomery	(2013)
Calvert	(2017)	Prince George's	(2014)
Carroll	(2015)	Queen Anne's	(2013)
Caroline	(2013)	Somerset	(2012)
Cecil	(2013)	St. Mary's	(2014)
Charles	(2014)	Talbot	(2015)
Dorchester	(2013)	Washington	(2012)
Frederick	(2012)	Wicomico	(2012)
Garrett	(2015)	Worcester	(2011)

Elevation Quality Level (QL)	Sources	Horizontal Resolution Terms		Vertical Accuracy Terms	
		Point Density	Nominal Pulse Spacing (NPS)	Vertical RMSEz	Equivalent Contour Accuracy
QL 1	LiDAR	8 pts/m2	0.35 m	10 cm	1-ft

QL 2	LiDAR	2 pts/m2	0.7 m	10 cm	1-ft
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- C. If full DEM coverage does not exist for the area requiring orthorectification (e.g., areas outside the county boundary and within the mapping limit area), the TO Contractor may ask the State to approve its use of USGS NED data. The TO Contractor shall indicate if a lower level of accuracy shall be assumed for these perimeter “fill in areas.” These areas are expected to be very small and would cover the areas outside the State boundary but within the overall mapping limits.
- D. The TO Contractor’s DEM:
 - 1) Is a deliverable;
 - 2) Shall be able to support orthorectification;
 - 3) Is not required to support contour modeling or other DTM applications within the State; and
 - 4) Shall be primarily based on the existing LiDAR data mentioned above.

2.3.19 Digital Orthophotography Production

- A. This section describes the specifications for the production of 1”=200’ digital orthophotography. All digital orthophotography shall be produced in accordance with the accuracy requirements outlined in this document.
 - 1) The TO Contractor shall provide tiles using a 4000’ by 6000’ tile layout. Note this tile layout reflects the overall grid and not the mapping limits.
 - 2) The previous tile grid is available for download at <https://geodata.md.gov/imap/rest/services/Imagery>. The TO Contractor shall use this tilegrid for all orthophotography provided under the TO Agreement. Partial tiles or “no data areas” are NOT acceptable. Border tiles around the State boundary line shall be based on ASPRS Class 2 standards as indicated in ASPRS Accuracy Standards for Large Scale Maps (1990).
 - 3) The primary product requested by the State is a statewide set of 4-band digital orthophotos with a 0.5’ ground pixel resolution.
 - 4) All image products are required to be 100% compliant with the size, position and naming conventions of the tiling schema that is developed for this project.
 - 5) Spatial reference for each TIFF shall be established to allow for re-projection in Esri ArcGIS software.
 - 6) At a minimum, orthophotos shall meet ASPRS Class I Accuracy Standards for 1”=200’ scale mapping as indicated in ASPRS Accuracy Standards for Large Scale Maps (1990). The table below interprets that requirement in terms of RMSE (Root Mean Square Error), CE90 (Circular Error at the 90% Confidence Level), $RMSE_r$ (Square Root of $RMSE_x + RMSE_y$) and Accuracy (horizontal radial accuracy at 95%

Confidence Level). These standards are subject to change as the standards may change over the life of this contract.

Map Scale	RMSE _{xy}	CE90	RMSE _r	Accuracy _r
1"=200'	2.000'	4.292'	2.828'	4.895'

7) The Offeror may propose a higher accuracy standard. Proposed higher standards shall be taken from ASPRS Positional Accuracy Standard for Digital Geospatial Data (Edition 1, Version 1.0, November 2014).

B. The TO Contractor's QA/QC team shall perform a quantitative analysis of the data and shall report the final RMSE_r and Accuracy errors. An independent evaluation of the results may also be performed by the State. Local governments may also provide an independent evaluation of the results.

2.3.20 Image Post-Processing

- A. Image post-processing shall be performed for both color and near Infrared (NIR) raw TIFF images
- B. Image post-processing shall be performed in accordance with the camera manufacturer's specifications.
- C. The TO Contractor shall provide samples, as determined by the State and Contractor, to the State for review prior to processing each production block. The State will review the samples and make recommendation on any changes, if necessary. Once the changes have been made, the TO Contractor shall resubmit the samples for approval. The approved samples shall provide a baseline for post-processing the remaining imagery.
- D. The TO Contractor shall provide georeferencing information for the processed unrectified imagery tfw files to the State (in U.S. feet and meters).

2.3.21 Aerial Triangulation (AT)

- A. Aerial triangulation shall be used to densify the control solution. Direct geo-referencing is not allowed as a substitute for a fully adjusted AT solution.
- B. In the TO Proposal, the TO Contractor shall detail its procedures for performing AT including the QA/QC steps employed during this process.
- C. It is recognized that AT blocks will not correspond to counties. The TO Contractor, as part of the Project Work Plan, shall identify AT blocks to be established and the criteria for their establishment.
- D. The final AT report and digital solution shall be delivered to the State for thorough review and analysis. The State will work with the TO Contractor to define a consistent format for the deliverable AT solutions.

- E. The AT reports shall be signed by a Certified Photogrammetrist ensuring compliance.
- F. The State and/or its independent QA/QC contractor will review the AT reports that are submitted by the TO Contractor and certify that the results support the specified accuracy standards.

2.3.22 Metadata

- A. Metadata shall be ISO 19115-1:2014 compliant
- B. Metadata shall be in extensible markup language (.xml) format
- C. The TO Contractor shall provide one (1) ISO compliant metadata record for each product, including the imagery, flight data, AT, DEM and other databases used and delivered to the State. The State does not require tile level metadata to be developed.
- D. Metadata shall include, at a minimum, the following:
 - 1) Identification information
 - 2) Data quality information
 - 3) Spatial representation information
 - 4) Reference information
 - 5) Metadata information

2.3.23 Media and Data Ownership

- A. The State is seeking to determine if cloud storage is a cost effective way to streamline delivery and long term access to data. The proposal should identify cloud platform hosting options and maintenance costs. In addition to cloud storage, the State is also requesting pricing for physical storage using external hard drives.
- B. All products delivered will become the property of the State. All media and data collected under this contract shall be the State's sole property and can be freely distributed by the State, its Federal, and local government partners. All media shall, at a minimum, be compatible with Microsoft Windows 7 and contain USB 2.0.
- C. All the delivered data is also to be unlicensed, and releasable to the public without cost or use restrictions. The TO Contractor shall not sell or distribute any data produced as part of this project without approval from the State.
- D. Media labeling shall include:
 - 1) Project Name
 - 2) Date of Delivery
 - 3) Product Delivered (imagery, DEM, etc.)
 - 4) File format

2.3.24 Technical Assistance

As part of the price proposal, the TO Contractor shall be prepared to provide up to 150 hours of ad-hoc technical assistance for orthophotography and related products (Attachment B). This will

be performed on a work order basis for specifically defined tasks related to this project. It can be used for supplemental data production or processing activities and/or activities related to integration/loading of data into MD iMAP, loading of data into local government systems, specialized mosaics, or additional hard drive distribution. It may also be used for other orthophotography-related technical assistance tasks at the State's discretion. The TO Contractor and the State will mutually agree on the tasks to be performed and the level of effort associated with each task.

2.3.25 Quality Assurance / Quality Control

- A. The TO Contractor selected for FA1 will perform a QA/QC on the acquired imagery. The State may facilitate an independent QA/QC through a Work Order to the TO Contractor selected for Functional Area 2.
- B. Until the imagery has been catalogued and reviewed for QA/QC purposes by the TO Contractor and approved by the State, the FA1 TO Contractor will not be authorized to begin digital orthophotography production.
- C. Each Offeror shall provide a detailed process workflow of its approach to QA/QC. Of specific interest is when each QA/QC step occurs in the production process.
- D. Additionally, the FA1 TO Contractor shall develop a web based QA/QC tool that will allow the State and its local government partners to review data for a given jurisdiction as part of the QA/QC process without multiple copies of the imagery needing to be distributed. These tools shall enable the QA/QC reporting to be performed in a consistent manner across jurisdictions. Delivery of media products shall not occur until after the web based QC is complete by the customers. The FA1 TO Contractor shall be responsible for creating the map services necessary to support the imagery review QA/QC process.
- E. The web based QA/QC application developed by the FA1 TO Contractor shall contain, at a minimum, the following functionality:
 - 1) Ability to pan, zoom, and navigate to tiles or areas of interest
 - 2) Ability to mark edit calls for areas or points using menu based tool for standardized error reporting
 - 3) Ability to include key reference features (e.g., seam lines, tile numbers, centerlines, tile layout) for orientation purposes
 - 4) Ability to track status or feedback regarding the user defined calls (e.g., fixed, not fixed, invalid edit)
 - 5) Ability to display RGB and NIR imagery
 - 6) Provide access through login/password profiles
- F. Macro and micro reviews are part of the QA/QC process and shall be performed by the TO Contractor. Macro reviews detect systematic issues immediately at the delivery block level. Micro level reviews are more detailed in nature and conducted at the tile level.
- G. A QA/QC report verifying the TO Contractor imagery QC process shall be provided with each processed image delivery.

2.3.26 Backup / Disaster Recovery

- A. The TO Contractor shall be responsible for assuring that all data is retained and available for processing up to and including delivery and acceptance testing. This may include performing backups of the raw, pre-processed, and delivery imagery on a regular basis. Backups may be retained at the TO Contractor's discretion once the final product has been accepted in writing by the State. The Contractor shall maintain storage for a backup set of final imagery products for a five (5) year period commencing after final acceptance.
- B. The TO Contractor shall provide on-demand support for the State's recovery of a backup set.

2.3.27 Hardware, Software, and Materials

The TO Contractor shall provide all hardware, software and materials at its own expense necessary to meet the deliverables and schedule identified in the TORFP.

2.3.28 Required Project Policies, Guidelines and Methodologies

- A. The TO Contractor shall be required to comply with all applicable laws, regulations, policies, standards and guidelines affecting Information Technology projects, which may be created or changed periodically. The Offeror is required to review all applicable links provided below and state compliance in its response.
- B. It is the responsibility of the TO Contractor to ensure adherence and to remain abreast of new or revised laws, regulations, policies, standards and guidelines affecting project execution. These include, but are not limited to:
 - 1) The State of Maryland System Development Life Cycle (SDLC) methodology at: www.DoIT.maryland.gov - keyword: SDLC;
 - 2) The State of Maryland Information Technology Security Policy and Standards at: www.DoIT.maryland.gov - keyword: Security Policy;
 - 3) The State of Maryland Information Technology Non-Visual Standards at: <http://doit.maryland.gov/policies/Pages/ContractPolicies.aspx>;
- C. The TO Contractor shall follow the Project Management Institute (PMI) or equivalent methodology for managing projects; and
- D. TO Contractor Personnel shall follow a consistent methodology for all Task Order or Work Order activities.

2.3.29 Product Requirements

No international processing for State Data: As described in **Section 3.7 Security Requirements**, Offerors are advised that any processing or storage of data outside of the continental U.S. is prohibited.

2.3.30 State Responsibilities

- A. The State will provide the following data for the purposes of pricing and project planning:
 - 1) Project boundary shapefiles – land area and political boundaries

https://geodata.md.gov/imap/rest/services/Boundaries/MD_PhysicalBoundaries/FeatureServer

https://geodata.md.gov/imap/rest/services/Boundaries/MD_PoliticalBoundaries/FeatureServer

- 2) LiDAR bare earth data
<http://imap.maryland.gov/Pages/lidar-download.aspx>
- 3) Boundaries of selected local buy-up project areas shall be provided at the Work Order level.
- 4) Existing tile layout with attributes shall be provided at the Work Order level.

2.4 Deliverables

The State required deliverables are defined below. Within each task, the TO Contractor may suggest other subtasks or deliverables to improve the quality and success of the project.

2.4.1 Deliverable Submission

- A. For every deliverable, the TO Contractor shall request the TO Manager confirm receipt of that deliverable by sending an e-mail identifying the deliverable name and date of receipt.
- B. Unless specified otherwise, written deliverables shall be compatible with Microsoft Office, Microsoft Project and/or Microsoft Visio within two (2) versions of the current version. At the TO Manager's discretion, the TO Manager may request one hard copy of a written deliverable.
- C. A standard deliverable review cycle will be elaborated and agreed-upon between the State and the TO Contractor. This review process is entered into when the TO Contractor completes a deliverable.
- D. For any written deliverable, the TO Manager may request a draft version of the deliverable, to comply with the minimum deliverable quality criteria listed in **Section 2.4.3 Minimum Deliverable Quality**. Drafts of each final deliverable, except status reports, are required at least two weeks in advance of when the final deliverables are due (with the exception of deliverables due at the beginning of the project where this lead time is not possible, or where draft delivery date is explicitly specified). Draft versions of a deliverable shall comply with the minimum deliverable quality criteria listed in **Section 2.4.3 Minimum Deliverable Quality**.

2.4.2 Deliverable Acceptance

- A. A final deliverable shall satisfy the scope and requirements of this TORFP for that deliverable, including the quality and acceptance criteria for a final deliverable as defined in **Section 2.4.4 Deliverable Descriptions/Acceptance Criteria**.
- B. The TO Manager shall review a final deliverable to determine compliance with the acceptance criteria as defined for that deliverable. The TO Manager is responsible for coordinating comments and input from various team members and stakeholders. The TO

Manager is responsible for providing clear guidance and direction to the TO Contractor in the event of divergent feedback from various team members.

- C. The TO Manager will issue to the TO Contractor a notice of acceptance or rejection of the deliverable in the DPAF (see online sample). Following the return of the DPAF indicating “Accepted” and signed by the TO Manager, the TO Contractor shall submit a proper invoice in accordance with the procedures in **Section 3.3**. The invoice must be accompanied by a copy of the executed DPAF or payment may be withheld.
- D. In the event of rejection, the TO Manager will formally communicate in writing any deliverable deficiencies or non-conformities to the TO Contractor, describing in those deficiencies what shall be corrected prior to acceptance of the deliverable in sufficient detail for the TO Contractor to address the deficiencies. The TO Contractor shall correct deficiencies and resubmit the corrected deliverable for acceptance within the agreed-upon time period for correction.

2.4.3 Minimum Deliverable Quality

- A. The TO Contractor shall subject each deliverable to its internal quality-control process prior to submitting the deliverable to the State.
- B. Each deliverable shall meet the following minimum acceptance criteria:
 - 1) Be presented in a format appropriate for the subject matter and depth of discussion.
 - 2) Be organized in a manner that presents a logical flow of the deliverable’s content.
 - 3) Represent factual information reasonably expected to have been known at the time of submittal.
 - 4) In each section of the deliverable, include only information relevant to that section of the deliverable.
 - 5) Contain content and presentation consistent with industry best practices in terms of deliverable completeness, clarity, and quality.
 - 6) Meets the acceptance criteria applicable to that deliverable, including any State policies, functional or non-functional requirements, or industry standards.
 - 7) Contains no structural errors such as poor grammar, misspellings, or incorrect punctuation.
 - 8) Must contain the date, author, and page numbers. When applicable for a deliverable, a revision table must be included.

2.4.4 Deliverable Descriptions/Acceptance Criteria

- A. In addition to the items identified in the table below, the TO Contractor may suggest other subtasks, artifacts, or deliverables to improve the quality and success of the assigned tasks.
- B. All deliverables will undergo a detailed review and acceptance testing process prior to acceptance. A complete list of deliverables is described within the document and included as a summary below.

C. Time frames for deliverables shall be proposed by Offerors in their Technical Proposals (See Section listing the deliverables below).

ID #	Deliverable Description	Acceptance Criteria
2.4.4.1	Camera Calibration Reports for the specified sensors proposed for the project	Delivered in PDF format
2.4.4.2	Project work plan	A MS Excel or MS Project file to include, but not limited to, the following: <ul style="list-style-type: none"> - Gantt chart - Task - Task estimates - Task start date and end date - Milestones - Person responsible - Status
2.4.4.3	QA/QC web mapping application	Web mapping application has, but is not limited to, the following features: <ul style="list-style-type: none"> - Ability to pan, zoom, navigate to tiles or areas of interest - Ability to mark edit calls for areas or points using menu based tool for standardized error reporting - Ability to include key reference features (e.g., seamlines, tile numbers, road centerlines, tile layout) for orientation purposes - Ability to track status or feedback regarding the user defined calls (e.g., fixed, not fixed, invalid edit) - Ability to display RGB and NIR imagery
2.4.4.4	Ground control used	Ground control points delivered in shapefile format and projected
2.4.4.5	Ground control report	<ul style="list-style-type: none"> - Report delivered in PDF format - Report contains the number of control points surveyed and corresponding coordinates, elevation, point description, and datums used - Report contains description of the procedures followed and equipment used - Report contains accuracy standard for the control - Report contains surveyor in charge with license certification
2.4.4.6	Planned photo centers	Planned photo centers delivered in shapefile format and projected

ID #	Deliverable Description	Acceptance Criteria
		<ul style="list-style-type: none"> - Attributes include corresponding line and frame (or line scanner equivalent) number
2.4.4.7	As flown photo centers	<ul style="list-style-type: none"> - As flown photo centers delivered in shapefile format and projected - Attributes include corresponding line and frame number that correlates to the final post-processed TIFF images - Attributes include date of the photography and a time stamp for acquisition to be used to verify the correct sun angle
2.4.4.8	Final processed airborne GPS and IMU orientation data	Delivered in CSV format
2.4.4.9	AT solution	Delivered in a format usable by the State and its local government partners for planimetric mapping purposes
2.4.4.10	AT final report	Delivered in PDF and Word format with associated data files and Excel tables
2.4.4.11	ISO Compliant metadata for all products (imagery and shapefiles) in extensible markup language (.xml) format – standard 19115-1:2014	<ul style="list-style-type: none"> - Metadata created on a project level for each product, including imagery, flight data, AT, DEM, all shapefiles - Metadata supplemented with project reports where the report conveys additional information not suitable for metadata
2.4.4.12	DEM file used for orthorectification by County	<p>Delivered by County and in Esri format as file geodatabase</p> <p>See Section 2.4.5 Quality Assurance Inspection of the Deliverables for additional acceptance criteria</p>
2.4.4.13	One (1) set of 4-band 1”=200’ digital orthophotos in GeoTIFF format per county in U.S. Survey Feet	<ul style="list-style-type: none"> - Orthophotos have a 0.5’ (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria
2.4.4.14	One (1) set of 4-band 1”=200’ digital orthophotos in GeoTIFF format per county in Meters	<ul style="list-style-type: none"> - Orthophotos have a 0.5’ (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria
2.4.4.15	One (1) set of 3-band (color RGB) 1”=200’ digital orthophotos in MrSID Generation 3 format – 1:20 compression per county in U.S. Survey Feet	<ul style="list-style-type: none"> - Orthophotos have a 0.5’ (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria

ID #	Deliverable Description	Acceptance Criteria
2.4.4.16	One (1) set of 3-band (color RGB) 1"=200' digital orthophotos in MrSID Generation 3 format – 1:20 compression per county in Meters	- Orthophotos have a 0.5' (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria
2.4.4.17	One (1) set of 5-band 1"=200' digital orthophotos in MrSID Generation 4 format – 1:20 compression per county in U.S. Survey Feet	- Orthophotos have a 0.5' (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria
2.4.4.18	One (1) set of 5-band 1"=200' digital orthophotos in MrSID Generation 4 format – 1:20 compression per county in Meters	- Orthophotos have a 0.5' (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria
2.4.4.19	One (1) complete set of 4-band (color RGB) 1"=200' digital orthophotos in JPEG2000 format – 1:20 compression in U.S. Survey Feet	- Orthophotos have a 0.5' (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria
2.4.4.20	One (1) complete set of 4-band (color RGB) 1"=200' digital orthophotos in JPEG2000 format – 1:20 compression in Meters	- Orthophotos have a 0.5' (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria
2.4.4.21	One (1) County-based 3-band (color RGB) 1"=200' digital orthophotos in MrSID Generation 3 format – 1:25 compression in U.S. Survey Feet.	- Orthophotos have a 0.5' (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria
2.4.4.22	One (1) County-based 3-band (color RGB) 1"=200' digital orthophotos in MrSID Generation 3 format – 1:25 compression in Meters.	- Orthophotos have a 0.5' (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria
2.4.4.23	One (1) County-based 5-band (color RGB) 1"=200' digital orthophotos in MrSID Generation 4 format – 1:25 compression in U.S. Survey Feet	- Orthophotos have a 0.5' (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria
2.4.4.24	One (1) County-based 5-band (color RGB) 1"=200' digital orthophotos in MrSID Generation 4 format – 1:25 compression in Meters	- Orthophotos have a 0.5' (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria

ID #	Deliverable Description	Acceptance Criteria
2.4.4.25	One (1) County-based 3-band (color RGB) 1"=200' digital orthophotos in ECW format – 1:25 compression in U.S. Survey Feet.	- Orthophotos have a 0.5' (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria
2.4.4.26	One (1) County-based 3-band (color RGB) 1"=200' digital orthophotos in ECW format – 1:25 compression in Meters.	- Orthophotos have a 0.5' (6 inch) ground pixel resolution - See Section 2.4.5 Quality Assurance Inspection of the Deliverables for acceptance criteria
2.4.4.27	One (1) seamline file	Seamline file delivered in shapefile format and projected.
2.4.4.28	One (1) tilegrid	Tilegrid delivered in shapefile format and projected.

2.4.5 Quality Assurance Inspection of the Deliverables

- A. This section provides the acceptance criteria that will be used by the TO Contractor to evaluate the final products produced for this program. These criteria will be finalized in consultation with the TO Contractor following TO Agreement award and prior to performing work.

Orthophotography Acceptance Criteria

	Tested Characteristic	Measure of Acceptability
Inventory / Spatial Domain / Metadata Criteria		
1.	Media determined in the Work Order	Data is readable, all files accessible, no files corrupted
2.	Media label	Conforms to Maryland specifications. Section 2.3.21
3.	File organization	Files written in tile sheet order Folder structure naming convention is consistent Jurisdiction/Product/Feet or Meters For example: Anne Arundel County/TIFFs/Feet
4.	File name	Conforms to required State tiling index nomenclature – Section 2.3.30.A.4- Has a consistent naming convention

	Tested Characteristic	Measure of Acceptability
Inventory / Spatial Domain / Metadata Criteria		
5.	GeoTIFF & .tfw format	File reads in Esri ArcGIS Desktop
6.	Geographic Coverage Assessment	Verify extents of GeoTIFF header and tfw file against tile index to ensure no overlap of tiles.
7.	Pixel definition	GeoTIFF reference will be the upper left corner of the upper left-most pixel World file must reference the center of the pixel located in the upper left hand corner of the tile as the point of origin.
8.	Georeferencing	World file has correct coordinates expressed to at least two (2) significant digits, and correct pixel size and pixel count
9.	Datum	As determined in the Pre-flight Initiation meeting
10.	Units	U.S. Survey Feet & Meters
11.	32 bit (8 per channel) 4 band stacked image	256 levels of value for each band, 0=black, 255=white
12.	Ground Resolution	0.5'
13.	Sheet size	Tiles conform to tile grid
14.	Image Compression	Ensure Header, JPEG Compression, Overviews, Tiling are complete
15.	Metadata	Conforms to ISO Metadata Standard 19115
Visual Inspection Criteria		
16.	Horizontal Displacement / Mis-Alignment	Horizontal displacement along an apparent seam line or along a tile boundary must be equal to or less than 2 pixels on well-defined ground features, such as roads, sidewalks, and curbs.

	Tested Characteristic	Measure of Acceptability
Inventory / Spatial Domain / Metadata Criteria		
17.	Tonal quality	Check entire block to ensure tonal balancing across and between delivery blocks as well as between deliverables with differing resolutions.
18.	Image blemishes and artifacts	<p>Generally acceptable within these limits: If 1 pixel wide, 100 pixels in length. If 2 pixels wide, 60 pixels in length. If 3 pixels wide, 20 pixels in length. If 4 - 12 pixels wide, 12 pixels in length. Artifacts exceeding these limits may be acceptable if ground feature detail is not obscured, or if the brightness value of the pixels in the artifact is fewer than 170. Artifacts within these limits may be rejected if critical ground features are significantly impacted. Critical features shall be defined as features having County, State or National significance (e.g., Courthouses, Capitol Buildings, etc.). Clusters of artifacts that do not individually meet these criteria may be considered unacceptable if more than 12 are visible within a viewing screen at 1:1 zoom (5 or more artifacts within a 200 pixel area preferred).</p>

	Tested Characteristic	Measure of Acceptability
Inventory / Spatial Domain / Metadata Criteria		
19.	Image Appearance /Smears	Image contains no extreme color, tone, or contrast variations from approved sample. Smears corrected by adding mass points or break lines to DEM as necessary to reflect actual elevation or by image processing where appropriate. Where DEM corrections or image processing will result in reduced horizontal accuracy or misrepresentation of the location or appearance of important features (buildings, roads, etc.), the smear will remain untreated.
20.	Wavy features	99% of distinct linear ground features (such as road markings, and curbs) shall be positionally correct and should not deviate from their apparent path by more than 5 pixels measured perpendicular to the feature within any 100-pixel distance measured along the feature length. On roads, measurements should be taken from centerline of road instead of road edges, shoulder and railings.

	Tested Characteristic	Measure of Acceptability
Inventory / Spatial Domain / Metadata Criteria		
21.	Mosaic lines	<p>Mosaic lines through buildings and above ground transportation structures shall be avoided to the greatest extent practical. Mosaic line placement shall not result in artificial clipping of features along tile boundaries or missing photo areas anywhere within the project area.</p> <p>As with buildings, other minor elevation structures such as pipelines, private footbridges or boardwalks, are not rectified as elevated roadways are. Distortion of these features is not grounds for rejection of the imagery.</p> <p>Seam lines should not be visible at the viewing scale for which the imagery is produced. Typically, they should not be visible at 1.5 times the map scale. Because seam lines are run around buildings and other structures, the orientation of shadows associated with trees, poles, and buildings may fall in different directions on the imagery, or may in some cases result in multiple shadows for a feature. Seam lines will not be edited to reflect shadow orientation.</p>

Orthophoto Horizontal Accuracy Criteria

1"=200'-scale (Standard Product)		
22.	<p>RMSE of known ground points measured on the image <i>See ASPRS Class I Standards Page 8, Table 16, and NSSDA part 3, Appendices 3-A and 3-D for explanation of formulas</i></p>	<p>$RMSE_x = RMSE_y = 2.000'$ and $RMSE_r = 2.828'$</p>

1"=200'-scale (Standard Product)		
23.	Absolute accuracy. Accuracy = horizontal (radial) accuracy at 95% confidence level = $RMSE_r \times 1.7308$	NSSDA accuracy (20+ points) such that 95% of the points tested shall meet the criteria of $\leq 5.000'$
24.	Mismatch of features along mosaic lines and production block boundaries of equal scale	Equal to or less than 2 pixels at 95 % on well-defined features (roads, sidewalk curbs) for mosaic lines

Digital Elevation Model QA Acceptance Criteria

	Tested Characteristic	Measure of Acceptability
25.	File organization	Esri File Geodatabase for the entire delivery area
26.	File name	Conforms to required convention
27.	Format	Esri File Geodatabase, all features have x, y, z values
28.	Breaklines & mass point locations	Sufficient to accurately build elevation to support orthophotography
29.	Continuity	No spikes or holes, no gaps of sufficient size to affect orthorectification, regardless of perspective center.
30.	Attributes	Conform to corresponding schema or structure as adopted in the design

Aerial Triangulation Acceptance Criteria

1"=200' (Standard Product)		
	Tested Characteristic All Scales	Measure of Acceptability
31.	Report Format	Conforms to required convention (to be determined with the State in pilot phase). Each block of triangulation shall have a separate report.
32.	Report Completeness	All information complete and readable
33.	Precision of Image Observations	Sigma (0) less than or equal to 5 microns is acceptable.
34.	Horizontal accuracy against ground control check points tested in accordance with 10+ points at NSSDA criteria	RMSE values are acceptable up to 1/9,000' for individual AT blocks in the X and Y direction. Higher RMSE values are subject to review.
35.	Vertical accuracy against ground control check points tested in accordance with 10+ points at NSSDA criteria	RMSE values are acceptable up to 1/7,500 of flying height for the 200 scale AT blocks. Higher RMSE values are subject to review.
36.	Accuracy against image coordinates	RMSE less than or equal to 5 microns is acceptable.
37.	Max. offsets [E, N] to any one blind QA point	3 * RMSE for that scale
38.	NSSDA analysis [E, N] of 40 QA points	95% within 1.73 * RMSE for that scale

2.5 Optional Products

The State is interested in understanding the Offeror’s methodology for providing the Optional Products listed below. Associated with these the Offeror shall provide Not-To-Exceed (NTE) pricing, on a per unit measurement, for each of the products listed.

1. Higher-resolution orthophotography
2. Near-true Orthos
3. LiDAR
4. Mobile LiDAR
5. Oblique Imagery

- 6. Planimetric Mapping
- 7. Land Cover/Land Use

More detailed information about the optional products is described as part of this TORFP. The State is not obligated to procure any of these optional products and the price for the optional products will not be included as part of the financial evaluation. However, all methodologies for all proposed products will be considered as part of the overall evaluation process.

2.5.1 Higher Resolution Orthophotography

A. Historically, the State has offered other State agencies and local governments the following buy-up option for the orthophotography products. This higher resolution orthophotography shall be included, with pricing, as an option in the proposal. Resolutions better than six (6) inch shall be provided. This buy-up option would change the map scale to better than 1”=200’ and would change the pixel resolution to better than 0.5’ (6 inches). All higher resolution products are also required to be a stacked 4-band product. All buy-up options for State agencies will be issued through a Work Order by DoIT.

1) Accuracy Standards

A partner that has elected to acquire higher resolution orthophotography will require an improved level of accuracy that accounts for its localized adjustment. See below-

Map Scale	RMSE _{xy}	CE90	RMSE _r	Accuracy _r
1”=100’	1.000’	2.146’	1.414’	2.448’

2) TO Contractor’s QA/QC

The team shall perform a quantitative analysis of the data and shall report the final RMSE_r and Accuracy errors. An independent evaluation of the results may also be performed by the State. Other State agencies and local jurisdictions may also provide an independent evaluation of the results.

B. Higher Resolution Orthophotography Deliverables

ID#	Deliverable Description	Acceptance Criteria
2.5.1.1	Project work plan	A MS Excel or MS Project file to include, but not limited to, the following: <ul style="list-style-type: none"> - Gantt chart - Tasks - Task start date and end date - Task estimates - Milestones - Person responsible

ID#	Deliverable Description	Acceptance Criteria
		- Status
2.5.1.2	Monthly Reports	An MS Word or PDF document to include, but not limited to, the following: <ul style="list-style-type: none"> - Tasks completed - Tasks in progress - Tasks on hold and why - Action items and owners - Project schedule and status Challenges
2.5.1.3	Metadata	Delivered in the format as determined in the work order
2.5.1.4	As Flown Photo Centers	Delivered in shapefile format with attributes including corresponding line and frame (or line scanner equivalent) number
2.5.1.5	Tilegrid	Delivered in shapefile format
2.5.1.6	One (1) set of 4-band digital orthophotos in GeoTIFF format	See item C below for the acceptance criteria
2.5.1.7	One (1) set of 3-band (color RGB) digital orthophotos in MrSID Generation 3 format	See item C below for the acceptance criteria
2.5.1.8	One (1) set 5-band digital orthophotos in MrSID Generation 4 format	See item C below for the acceptance criteria
2.5.1.9	One (1) set of 4-band (color RGB) digital orthophotos in JPEG2000 format	See item C below for the acceptance criteria

C. Acceptance Criteria

Below is an example of acceptance criteria for higher resolution orthophotography. These acceptance criteria are subject to change based on the requested resolution and shall be defined by the Work Order.

1"=100' (3" Resolution Accuracy) Horizontal Acceptance Criteria		
1.	Ground resolution	0.25' US Survey Feet
2.	RMSE of known ground points measured on the image <i>See ASPRS Class I Standards Page 8, Table 16, and NSSDA part 3, Appendices 3-A and 3-D for explanation of formulas</i>	RMSE _x = RMSE _y = 1.000' and RMSE _r = 1.414'

3.	Absolute accuracy. Accuracy = horizontal (radial) accuracy at 95% confidence level = $RMSE_r \times 1.7308$	NSSDA accuracy (20+ points) such that 95% of the points tested shall meet the criteria of $\leq 2.500'$
4.	Mismatch of features along mosaic lines and production block boundaries of equal scale	Equal to or less than 2 pixels at 95 % on well-defined features (roads, sidewalk curbs) for mosaic lines

1"=100' (3" Resolution Accuracy) Aerotriangulation Acceptance Criteria		
	Tested Characteristic All Scales	Measure of Acceptability
5.	Report Format	Conforms to required convention (to be determined with the State in pilot phase). Each block of triangulation shall have a separate report.
6.	Report Completeness	All information complete and readable
7.	Precision of Image Observations	Sigma (0) less than or equal to 5 microns is acceptable.
8.	Horizontal accuracy against ground control check points tested in accordance with 10+ points at NSSDA criteria	RMSE values are acceptable up to 1/10,000' for individual AT blocks in the X and Y direction. Higher RMSE values are subject to review.
9.	Vertical accuracy against ground control check points tested in accordance with 10+ points at NSSDA criteria	RMSE values are acceptable up to 1/9,000 of flying height for the 100 scale AT blocks. Higher RMSE values are subject to review.
10.	Accuracy against image coordinates	RMSE less than or equal to 5 microns is acceptable.
12.	Max. offsets [E, N] to any one blind QA point	3 * RMSE for that scale
13.	NSSDA analysis [E, N] of 40 QA points	95% within 1.73 * RMSE for that scale

2.5.2 Near True Orthophotos

A. Some local jurisdictions have business requirements that necessitate the acquisition of near true orthophotography in specifically identified portions of their locality. Several counties may also consider countywide acquisition of near true orthophotos to support in-house updates of planimetric features (specifically buildings and roads). For each of these project options, the TO Contractor will be required to adjust the forward overlap from 60% to 80% (not applicable for linear array based digital sensors) and to adjust the sidelap from 30% to 60%. However, each agency may elect for additional “spot shots” or mini-strips to be taken over buildings that have traditionally yielded less than desirable results using the adjusted forward overlap and sidelap approach. Alternative methods of producing near true orthophotos (such as building modeling) will also be considered.

B. Near True Orthophotos Deliverables

ID#	Deliverable Description	Acceptance Criteria
2.5.2.1	Project work plan	A MS Excel or MS Project file to include, but not limited to, the following: <ul style="list-style-type: none"> - Gantt chart - Tasks - Task start date and end date - Task estimates - Milestones - Person responsible - Status
2.5.2.2	Monthly Reports	An MS Word or PDF document to include, but not limited to, the following: <ul style="list-style-type: none"> - Tasks completed - Tasks in progress - Tasks on hold and why - Action items and owners - Project schedule and status - Challenges
2.5.2.3	Metadata	Delivered in the format as determined in the work order
2.5.2.4	One (1) set of 4-band digital orthophotos in GeoTIFF format per county in U.S. Survey Feet	<ul style="list-style-type: none"> - Delivered in resolution specified in work order - No building lean - See Section 2.4.5 for Quality Assurance Inspection of the Deliverables for additional acceptance criteria
2.5.2.5	One (1) set of 4-band digital orthophotos in GeoTIFF format per county in Meters	<ul style="list-style-type: none"> - Delivered in resolution specified in work order - No building lean - See Section 2.4.5 for Quality Assurance Inspection of the Deliverables for additional acceptance criteria
2.5.2.6	One (1) set of 3-band (color RGB) digital orthophotos in MrSID format – 1:20 compression per county in U.S. Survey Feet	<ul style="list-style-type: none"> - Delivered in resolution specified in work order - No building lean - See Section 2.4.5 for Quality Assurance Inspection of the Deliverables for additional acceptance criteria
2.5.2.7	One (1) set of 3-band (color RGB) digital orthophotos in MrSID format – 1:20 compression per county in Meters	<ul style="list-style-type: none"> - Delivered in resolution specified in work order - No building lean - See Section 2.4.5 for Quality Assurance Inspection of the Deliverables for additional acceptance criteria
2.5.2.8	One (1) set of 4-band (color RGB) digital orthophotos in JPEG2000 format – 1:20 compression in U.S. Survey Feet	<ul style="list-style-type: none"> - Delivered in resolution specified in work order - No building lean - See Section 2.4.5 for Quality Assurance Inspection of the Deliverables for additional acceptance criteria
2.5.2.9	One (1) set of 4-band (color RGB) digital orthophotos in JPEG2000 format – 1:20 compression in Meters	<ul style="list-style-type: none"> - Delivered in resolution specified in work order - No building lean - See Section 2.4.5 for Quality Assurance Inspection of the Deliverables for additional acceptance criteria
2.5.2.10	One (1) county-based 3-band (color RGB) digital orthophotos in MrSID	<ul style="list-style-type: none"> - Delivered in resolution specified in work order - No building lean

	format – 1:25 compression in U.S. Survey Feet	- See Section 2.4.5 for Quality Assurance Inspection of the Deliverables for additional acceptance criteria
2.5.2.11	One (1) county-based 3-band (color RGB) digital orthophotos in MrSID format – 1:25 compression in Meters	- Delivered in resolution specified in work order - No building lean - See Section 2.4.5 for Quality Assurance Inspection of the Deliverables for additional acceptance criteria
2.5.2.12	One (1) county-based 3-band (color RGB) digital orthophotos in ECW format – 1:25 compression in U.S. Survey Feet	- Delivered in resolution specified in work order - No building lean - See Section 2.4.5 for Quality Assurance Inspection of the Deliverables for additional acceptance criteria
2.5.2.13	One (1) county-based 3-band (color RGB) digital orthophotos in ECW format – 1:25 compression in Meters	- Delivered in resolution specified in work order - No building lean - See Section 2.4.5 for Quality Assurance Inspection of the Deliverables for additional acceptance criteria
2.5.2.14	One (1) seamline file	- Seamline file delivered in shapefile format
2.5.2.15	One (1) tilegrid	- Tilegrid delivered in shapefile format

2.5.3 LiDAR

- A. Maryland has statewide LiDAR coverage consisting of USGS-National Geospatial Program standard Quality Level 1 (8 pts/m²) and Quality Level 2 (2 pts/m²) data varying county by county. Reference for the USGS-NGP standards can be found at: <https://pubs.usgs.gov/tm/11b4/pdf/tm11-B4.pdf>. It is anticipated that future countywide LiDAR will be flown at this standard. The Offeror shall submit pricing for collection and processing of QL2 and QL1 data density.
- B. If requested, LiDAR shall be flown in leaf off conditions. The Contractor shall review and finalize the work plan for LiDAR collection and processing for each county to be collected and the final deliverable products would be produced on a countywide basis. The FA1 TO Contractor shall engage a subcontractor to perform independent QA/QC on the LiDAR data acquired (the QA/QC is not to be performed by the contractor that acquired and processed the data) and the QA/QC subcontractor shall certify in writing that it has reviewed the data for compliance with USGS specifications. The State reserves the right to perform its own QA/QC.
- C. Additional LiDAR products may include, but are not limited to:
 - 1) Near shore bathymetry
 - 2) Bathymetry
 - 3) Tide coordination
- D. LiDAR Deliverables

ID#	Deliverable Description	Acceptance Criteria
2.5.3.1	Project work plan	Work plan shall include but is not limited to: - Gantt chart - Tasks

		<ul style="list-style-type: none"> - Task start date and end date - Task estimates - Milestones - Person responsible - Status
2.5.3.2	Monthly Reports	<p>An MS Word or PDF document to include, but not limited to, the following:</p> <ul style="list-style-type: none"> - Tasks completed - Tasks in progress - Tasks on hold and why - Action items and owners - Project schedule and status <p>Challenges</p>
2.5.3.3	Metadata	Delivered in format as determined in the work order
2.5.3.4	LiDAR	Delivered as LAS version 1.3 point cloud
2.5.3.5	LiDAR – Bare Earth	Delivered as LAS version 1.3 point cloud
2.5.3.6	DTM (bare earth surface)	<ul style="list-style-type: none"> - Capable of generating 1 foot contour lines in all areas

2.5.4 Mobile LiDAR

- A. The State has an interest in receiving a cost to use a mobile vehicle to capture LiDAR data.
- B. At a minimum the mobile LiDAR unit must be capable of collecting engineering grade data at an accuracy meeting or exceeding a horizontal and vertical accuracy of 0.2’.
- C. It should be noted that the survey grade accuracy will require control panels to be set and positioned (RTK GPS or other and differential levels of horizontal and vertical coordinates) approximately 500 feet throughout the project limits for design grade mapping on hard surfaces.
- D. Collection requirements:
 - 1) LiDAR acquisition shall be collected with coupled IMU/GNSS data for trajectory processing.
 - 2) GPS GNSS data shall be RTK processed against a base station or CORS station
 - 3) The baseline length shall not exceed five (5) miles
 - 4) The resulting trajectory solution shall result from the combination of a forward and reverse processing solution.
 - 5) Multiple passes shall be employed in areas where obstructions occur due to traffic, if any.
 - 6) Collection shall be completed when pavement is dry and not obscured.
 - 7) Collection shall be completed at or near traffic speeds to avoid impeding traffic while ensuring adequate spacing from surrounding traffic to avoid obstructions.

E. Mobile LiDAR Deliverables

ID#	Deliverable Description	Acceptance Criteria
2.5.4.1	Mobile LiDAR data collection work plan	A MS Excel or MS Project file to include, but not limited to, the following: - Gantt charts - Tasks - Task start date and end date - Task estimates - Milestones - Person responsible - Status
2.5.4.2	Mobile LiDAR	Delivered as LAS version 1.3 point cloud
2.5.4.3	LiDAR – Bare Earth	Delivered as LAS version 1.3 point cloud
2.5.4.4	DTM (bare earth surface)	- Capable of generating 1 foot contour lines in all areas

2.5.5 Oblique Imagery

- A. The State requests technical and cost proposal information for oblique imagery solutions. Although the acquisition of oblique imagery is not planned at this time, the State and its local government partners may be interested in procuring oblique imagery as an additional product.
- B. Oblique imagery shall be acquired with a digital camera system optimized for acquisition and processing of oblique imagery. This shall be a separate flight and camera system than what is used for the orthophotography.
- C. Oblique imagery shall be acquired in leaf off conditions (spring or fall) on a city or county-wide basis.
- D. Imagery produced and procured under this contract:
 - 1) shall be unlicensed and provided to the State; and
 - 2) cannot be sold or licensed to other entities without permission from the State.

2.5.6 County-based Planimetric Data

- A. The Offeror shall provide a cost to update or produce new planimetric features. For the purpose of pricing, it is assumed updates or new mapping would be done on a countywide basis. Pricing shall include the delivery of Level 1 and Level 2 planimetric features as listed in the table below. The development of a detailed project work plan and database design, completion of a pilot project, delivery of data in geodatabase format, and independent QA/QC services (using a subcontractor) must be factored into the pricing.
- B. The Planimetric Features table below shows the breakdown of Level 1 and Level 2 features. The Level 1 features represent the primary impervious surface features and the Level 2 features represent secondary impervious surface features as well as some additional major reference features. Although the assumption is these features would be compiled (or

updated) photogrammetrically the State is also interested in semi-automated feature extraction approaches. Vendors may propose an alternative approach based on semi-automated feature extraction techniques in addition to the more standard photogrammetric approach to generate this data.

Planimetric Features	
Level 1 Planimetric Features	Paved Road Polygons Unpaved Road Polygons Alleys Buildings (over 100 square feet) Major Paved Parking Areas (Over 10 spaces) Major Unpaved Parking Areas (Over 10 spaces)
Level 2 Planimetric Features	Driveways Sidewalks (public – not private walkways to residences) Minor Paved Parking Areas Minor unpaved Parking Areas Other Paved surfaces over 200 square feet Hydrography (lakes, ponds, reservoirs, streams, rivers, stormwater drainage ponds) Major Transmission Towers Cross County Transmission Lines

- C. The specific features for a given project may include some or all of the features in the above chart.
- D. Listed in the table below is a summary of when existing planimetric data was last obtained. It must be noted that many of the counties do not have all of the Level 1 or Level 2 features listed above.

Existing Planimetric Data	
Allegany	2005/2006
Anne Arundel	2014
Baltimore	2014
Baltimore City	2010
Calvert	2017

Caroline	2003
Carroll	2006
Cecil	2006
Charles	2011
Dorchester	2009
Frederick	2005
Garrett	2005/2006
Harford	2013
Howard	2016
Kent	2005/2006
Montgomery	2014
Prince George's	2014
Queen Anne's	2005
Somerset	2004/2005
St. Mary's	2007
Talbot	2006/2010
Washington	2005/2006
Wicomico	2006
Worcester	2006

- E. All planimetric data creation or updates shall conform to the county requested or existing database schema.
- F. Any data over six (6) years old shall be replaced by the TO Contractor, and not updated.
- G. County-wide Planimetric Deliverables

ID#	Deliverable Description	Acceptance Criteria
2.5.6.1	Project work plan	A MS Excel or MS Project file to include, but not limited to, the following: - Gantt chart - Tasks

		<ul style="list-style-type: none"> - Task start date and end date - Task estimates - Milestones - Person responsible - Status
2.5.6.2	Monthly Reports	<p>An MS Word or PDF document to include, but not limited to, the following:</p> <ul style="list-style-type: none"> - Tasks completed - Tasks in progress - Tasks on hold and why - Action items and owners - Project schedule and status Challenges
2.5.6.3	Metadata	Delivered in the format as determined in the work order
2.5.6.4	Project wide planimetric data	<ul style="list-style-type: none"> - Features to be included will be established in a work order - Delivered as seamless file geodatabase feature classes

2.5.7 Land Use / Land Cover

- A. The Offeror shall submit cost information for an optional update to the State’s existing land use data. Land Use / Land Cover (LULC) data was last updated in 2010 based on 2007 imagery and can be found at https://geodata.md.gov/imap/rest/services/PlanningCadastre/MD_LandUseLandCover/MapServer. Information on mapping standards, classification scheme, and a web application to review the data is also available at this link: <http://planning.maryland.gov/OurWork/landuse.shtml>.
- B. The LULC mapping standard currently employed by Maryland is based upon 2007 NAIP Aerial photography with a 1-meter resolution. Maryland's LULC system includes both land use and land cover categories: the way humans use the land is land use (LU), while land cover (LC) refers to the physical surface of the land. LULC classification evaluates features on the land within the context of the surrounding landscape. Therefore, a grassy or forested area surrounded by residential lots would be classified and mapped as low density residential type using the LULC system; whereas a similar grassy or forested parcel in a Land Cover only system (LC) would be classified grassland or forest.
- C. There are two primary options under consideration for completing the land use updates. The first involves performing an update of the existing data using the latest NAIP imagery. The second is to perform a more comprehensive remap based on the latest 6” resolution imagery. Both approaches shall involve delivery of ArcGIS polygon based data using the current classification scheme.
- D. Irrespective of the approach, production shall start with a preliminary analysis of a small Test Area, to establish rules for use of source data. Once these rules are established, they

shall be applied to two larger Pilot Areas covering about 10 square miles each and a variety of land use types. The approach to be used shall involve manual interpretation or semi-automated procedures. Fully automated approaches are not acceptable.

- E. In addition to the imagery the Maryland Department of Planning (MDP) would provide its statewide parcel data point and polygon data that could be used to help identify areas of change by analyzing the assessments data associated with each parcel. MDP would also be able to provide definitions of specific queries that were used for the 2010 update to help support this process. High resolution (6”) 4 band imagery (the 2016 Eastern Shore imagery and the 2017 Western Shore imagery) and NAIP imagery (2017) would both be available to support this analysis. The polygon data provided by MDP shall not be disclosed to the public as it is not public information, Therefore, MDP may ask the vendor to enter into a confidentiality agreement prior to providing the polygon data.
- F. Level 1: Update the existing statewide data using new imagery. This option would be a manual photo-interpreted update of the 2010 Maryland Land Use dataset, facilitated by queries of statewide parcel data. It would follow the same protocols as the previous updates. Generally, existing line work would only be changed where land cover or use changed based on an interpretation of the 2016 and 2017 6-inch imagery. However, any significant inaccuracies discovered in the 2010 dataset (e.g. incorrectly classified areas or sizable delineation errors) should be corrected in both the 2010 and new datasets. This product would be designed for use and display at a 1:10,000 display level. No minimum mapping unit is defined for the existing data – instead the capture rules define the area definitions.
- G. Summary data showing land use classification acreages at the state and county levels would be provided for both the revised 2010 data (if applicable) and new product.
- H. Level 2: Produce new high resolution LULC map using new imagery. This option shall include either manual or semi-automated interpretation of Land Use / Land Cover using the existing classification scheme. Under this approach the minimum mapping unit would be one (1) acre in size. In urban areas, the minimum mapping unit for forest and vegetation areas would be ¼ acre in size. All polygons would be reviewed or recompiled in accordance with the new imagery. This product would be designed for use and display at a 1:2400 display level which is consistent with the large scale imagery.
- I. Land Use / Land Cover Deliverables

ID#	Deliverable Description	Acceptance Criteria
2.5.7.1	Project work plan	A MS Excel or MS Project file to include, but not limited to, the following: <ul style="list-style-type: none"> - Tasks - Task start date and end date - Milestones - Person responsible - Status
2.5.7.2	Land Use / Land Cover Polygon Dataset for the entire project area and summary data	<ul style="list-style-type: none"> - Delivered in ArcGIS file geodatabase format (ArcGIS 10.4 or above) - Delivered in the projection as determined in the work order

2.5.7.3	Metadata	- Delivered in the format as determined in the work order
2.5.7.4	Monthly Reports	An MS Word or PDF document to include, but not limited to, the following: <ul style="list-style-type: none"> - Tasks completed - Tasks in progress - Tasks on hold and why - Action items and owners - Project schedule and status - Challenges

2.6 Service Level Agreement (SLA)

THIS SECTION IS NOT APPLICABLE TO THIS TORFP.

2.7 FA2 QA/QC TO Contractor Requirements: Scope of Work

2.7.1 Quality Assurance / Quality Control

- A. The TO Contractor selected for FA1 will perform a QA/QC on the acquired imagery. The State may facilitate an independent QA/QC through a Work Order to the TO Contractor selected for FA2.
- B. In the TO Proposal, each Offeror shall provide a detailed process workflow of its approach to QA/QC. Of specific interest is when each QA/QC step occurs in the production process.
- C. Macro and micro reviews are part of the QA/QC process and shall be performed. Macro reviews detect systematic issues immediately at the delivery block level. Micro level reviews are more detailed in nature and conducted at the tile level.
- D. A QA/QC report verifying the TO Contractor imagery QC process shall be provided to the State in response to the Work Order.

2.7.2 Quality Assurance Inspection of the Deliverables

- A. This section provides the acceptance criteria that will be used by the TO Contractor to evaluate the final products produced for this program. These criteria will be finalized in consultation with the TO Contractor as part of the project initiation phase.

Orthophotography Acceptance Criteria

	Tested Characteristic	Measure of Acceptability
Inventory / Spatial Domain / Metadata Criteria		

1.	Media determined in the Work Order	Media is readable, all files accessible, no files corrupted
2.	Media label	Conforms to Maryland specifications. Section 2.6.11
3.	File organization	Files written in tile sheet order Folder structure naming convention is consistent Jurisdiction/Product/Feet or Meters For example: Anne Arundel County/TIFFs/Feet
4.	File name	Conforms to required State tiling index nomenclature – Section 2.3.30.A.4- Has a consistent naming convention
5.	GeoTIFF & .tfw format	File reads in Esri ArcGIS Desktop
6.	Geographic Coverage Assessment	Verify extents of GeoTIFF header and tfw file against tile index to ensure no overlap of tiles.
7.	Pixel definition	GeoTIFF reference will be the upper left corner of the upper left-most pixel World file must reference the center of the pixel located in the upper left hand corner of the tile as the point of origin.
8.	Georeferencing	World file has correct coordinates expressed to at least two (2) significant digits, and correct pixel size and pixel count
9.	Datum	As determined in the pre-planning meeting
10.	Units	U.S. Survey Feet & Meters
11.	32 bit (8 per channel) 4 band stacked image	256 levels of value for each band, 0=black, 255=white

12.	Ground Resolution	0.5'
13.	Sheet size	Tiles conform to tile grid
14.	Image Compression	Verify GeoTIFF header for evidence of image compression (JPEG Compression, Overviews, Tiling, etc...)
15.	Metadata	Conforms to ISO Metadata Standard 19115
Visual Inspection Criteria		
16.	Horizontal Displacement / Mis-Alignment	Horizontal displacement along an apparent seam line or along a tile boundary must be equal to or less than 2 pixels on well-defined ground features, such as roads, sidewalks, and curbs.
17.	Tonal quality	Check entire block to ensure tonal balancing across and between delivery blocks as well as between deliverables with differing resolutions.

18.	Image blemishes and artifacts	<p>Generally acceptable within these limits: If 1 pixel wide, 100 pixels in length. If 2 pixels wide, 60 pixels in length. If 3 pixels wide, 20 pixels in length. If 4 - 12 pixels wide, 12 pixels in length. Artifacts exceeding these limits may be acceptable if ground feature detail is not obscured, or if the brightness value of the pixels in the artifact is fewer than 170. Artifacts within these limits may be rejected if critical ground features are significantly impacted. Critical features shall be defined as features having County, State or National significance (e.g., Courthouses, Capitol Buildings, etc.). Clusters of artifacts that do not individually meet these criteria may be considered unacceptable if more than 12 are visible within a viewing screen at 1:1 zoom (5 or more artifacts within a 200 pixel area preferred).</p>
19.	Image Appearance /Smears	<p>Image contains no extreme color, tone, or contrast variations from approved sample. Smears corrected by adding mass points or break lines to DEM as necessary to reflect actual elevation or by image processing where appropriate. Where DEM corrections or image processing will result in reduced horizontal accuracy or misrepresentation of the location or appearance of important features (buildings, roads, etc.), the smear will remain untreated.</p>
20.	Wavy features	<p>99% of distinct linear ground features (such as road markings, and curbs) shall be positionally correct and should not deviate from their apparent path by more than 5 pixels measured perpendicular to the feature within any 100-pixel distance measured along the feature length. On roads, measurements should be taken from centerline of road instead of road edges, shoulder and railings.</p>

21.	Mosaic lines	<p>Mosaic lines through buildings and above ground transportation structures shall be avoided through the greatest extent practical. Mosaic line placement should not result in artificial clipping of features along tile boundaries or missing photo areas anywhere within the project area.</p> <p>As with buildings, other minor elevation structures such as pipelines, private footbridges or boardwalks, are not rectified as elevated roadways are.</p> <p>Distortion of these features is not grounds for rejection of the imagery.</p> <p>Seam lines should not be visible at the viewing scale for which the imagery is produced. Typically, they should not be visible at 1.5 times the map scale.</p> <p>Because seam lines are run around buildings and other structures, the orientation of shadows associated with trees, poles, and buildings may fall in different directions on the imagery, or may in some cases result in multiple shadows for a feature. Seam lines will not be edited to reflect shadow orientation.</p>
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Orthophoto Horizontal Accuracy Criteria

1"=200'-scale (Standard Product)		
22.	RMSE of known ground points measured on the image <i>See ASPRS Class I Standards Page 8, Table 16, and NSSDA part 3, Appendices 3-A and 3-D for explanation of formulas</i>	$RMSE_x = RMSE_y = 2.000'$ and $RMSE_r = 2.828'$
23.	Absolute accuracy. Accuracy = horizontal (radial) accuracy at 95% confidence level = $RMSE_r \times 1.7308$	NSSDA accuracy (20+ points) such that 95% of the points tested shall meet the criteria of $\leq 5.000'$

24.	Mismatch of features along mosaic lines and production block boundaries of equal scale	Equal to or less than 2 pixels at 95 % on well-defined features (roads, sidewalk curbs) for mosaic lines
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Digital Elevation Model QA Acceptance Criteria

	Tested Characteristic	Measure of Acceptability
24.	File organization	Esri File Geodatabase for the entire delivery area
26.	File name	Conforms to required convention
27.	Format	Esri File Geodatabase, all features have x, y, z values
28.	Breaklines & mass point locations	Sufficient to accurately build elevation to support orthophotography
29.	Continuity	No spikes or holes, no gaps of sufficient size to affect orthorectification, regardless of perspective center.
30.	Attributes	Conform to DEM standard

Aerial Triangulation Acceptance Criteria

1"=200' (Standard Product)		
	Tested Characteristic All Scales	Measure of Acceptability
31.	Report Format	Conforms to required convention (to be determined with the State in pilot phase). Each block of triangulation shall have a separate report.

32.	Report Completeness	All information complete and readable
33.	Precision of Image Observations	Sigma (0) less than or equal to 5 microns is acceptable.
34.	Horizontal accuracy against ground control check points tested in accordance with 10+ points at NSSDA criteria	RMSE values are acceptable up to 1/9,000' for individual AT blocks in the X and Y direction. Higher RMSE values are subject to review.
35.	Vertical accuracy against ground control check points tested in accordance with 10+ points at NSSDA criteria	RMSE values are acceptable up to 1/7,500 of flying height for the 200 scale AT blocks. Higher RMSE values are subject to review.
36.	Accuracy against image coordinates	RMSE less than or equal to 5 microns is acceptable.
37.	Max. offsets [E, N] to any one blind QA point	3 * RMSE for that scale
38.	NSSDA analysis [E, N] of 40 QA points	95% within 1.73 * RMSE for that scale

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3 TO Contractor Requirements: General

3.1 Task Order Initiation Requirements

The State shall schedule and hold a kickoff meeting after TO Agreement award. At the kickoff meeting, the TO Contractor shall furnish a preliminary Project Schedule describing the activities for the TO Contractor and the State.

3.2 Reserved

3.3 Invoicing

3.3.1 Definitions

- A. "Proper Invoice" means a bill, written document, or electronic transmission, readable by the agency, provided by a vendor requesting an amount that is due and payable by law under a written procurement contract for property received or services rendered that meets the requirements of COMAR 21.06.09.02.
- B. "Late Payment" means any amount that is due and payable by law under a written procurement contract, without deferral, delay, or set-off under COMAR 21.02.07.03, and remains unpaid more than 45 days after an agency receives a Proper Invoice.
- C. "Payment" includes all required processing and authorization by the Comptroller of the Treasury, as provided under COMAR 21.02.07, and may be deferred, delayed, or set-off as applicable under COMAR 21.02.07.03.

3.3.2 General

- A. Invoice payments to the TO Contractor shall be governed by the terms and conditions defined in the CATS+ Master Contract.
- B. The TO Contractor shall e-mail the original of each invoice and signed authorization to invoice to the TO Manager at e-mail address: lisa.lowe@maryland.gov.
- C. All invoices for services shall be verified by the TO Contractor as accurate at the time of submission.
- D. Invoices submitted without the required information cannot be processed for payment. A Proper Invoice, required as Payment documentation, must include the following information, without error:
 - 1) TO Contractor name and address;
 - 2) Remittance address;
 - 3) Federal taxpayer identification (FEIN) number, social security number, as appropriate;
 - 4) Invoice period (i.e. time period during which services covered by invoice were performed);
 - 5) Invoice date;
 - 6) Invoice number;

- 7) State assigned TO Agreement number;
 - 8) State assigned (Blanket) Purchase Order number(s);
 - 9) Goods or services provided;
 - 10) Amount due; and
 - 11) Any additional documentation required by regulation or the Task Order.
- E. Invoices that contain both fixed price and time and material items shall clearly identify the items as either fixed price or time and material billing.
- F. The Department reserves the right to reduce or withhold Task Order payment in the event the TO Contractor does not provide the Department with all required deliverables within the time frame specified in the Task Order or otherwise breaches the terms and conditions of the Task Order until such time as the TO Contractor brings itself into full compliance with the Task Order.
- G. Any action on the part of the Department, or dispute of action by the TO Contractor, shall be in accordance with the provisions of Md. Code Ann., State Finance and Procurement Article §§ 15-215 through 15-223 and with COMAR 21.10.04.
- H. The State is generally exempt from federal excise taxes, Maryland sales and use taxes, District of Columbia sales taxes and transportation taxes. The TO Contractor, however, is not exempt from such sales and use taxes and may be liable for the same.
- I. Invoices for final payment shall be clearly marked as “FINAL” and submitted when all work requirements have been completed and no further charges are to be incurred under the TO Agreement. In no event shall any invoice be submitted later than 60 calendar days from the TO Agreement termination date.
- J. TO Contractor shall invoice monthly, per Work Order, for the percentage of work completed during the previous month (based on the TO Contractor’s Weekly Reports).

3.3.3 Invoice Submission Schedule

The TO Contractor shall submit invoices in accordance with the following schedule:

The TO Contractor shall submit invoices for payment upon acceptance of separately priced deliverables, on or before the 15th day of the month following the month in which services were performed.

- A. For items of work for which there is one-time pricing (see **Attachment B** – TO Financial Proposal Form) those items shall be billed in the month following the acceptance of the work by the Department.
- B. Invoices shall be submitted monthly and within 30 days of delivery of goods and services unless otherwise accepted in the TO Proposal or Work Order response.

3.3.4 For the purposes of this Task Order an amount will not be deemed due and payable if:

- A. The amount invoiced is inconsistent with the Task Order.
- B. The proper invoice has not been received by the party or office specified in the Task Order.

- C. The invoice or performance is in dispute or the TO Contractor has failed to otherwise comply with the provisions of the Task Order.
- D. The item or services have not been accepted.
- E. The quantity of items delivered is less than the quantity ordered.
- F. The items or services do not meet the quality requirements of the Task Order
- G. If the Task Order provides for progress payments, the proper invoice for the progress payment has not been submitted pursuant to the schedule.
- H. If the Task Order provides for withholding a retainage and the invoice is for the retainage, all stipulated conditions for release of the retainage have not been met.
- I. The TO Contractor has not submitted satisfactory documentation or other evidence reasonably required by the TO Procurement Officer or by the contract concerning performance under the contract and compliance with its provisions.

3.3.5 Travel Reimbursement

Travel will not be reimbursed under this TORFP.

3.3.6 Retainage

This solicitation does not require retainage.

3.4 Liquidated Damages

This solicitation does not require additional liquidated damages.

3.5 Disaster Recovery and Data

The following requirements apply to the TO Agreement:

3.5.1 Redundancy, Data Backup and Disaster Recovery

- A. Unless specified otherwise in the TORFP, TO Contractor shall maintain or cause to be maintained disaster avoidance procedures designed to safeguard State data and other confidential information, TO Contractor's processing capability and the availability of hosted services, in each case throughout the TO Agreement term. Any force majeure provisions of this Task Order do not limit the TO Contractor's obligations under this provision.
- B. The TO Contractor shall have robust contingency and DR plans in place to ensure that the services provided under this TO Agreement will be maintained in the event of disruption to the TO Contractor/subcontractor's operations (including, but not limited to, disruption to information technology systems), however caused.
- C. The contingency and DR plans must be designed to ensure that services under this TO Agreement are restored after a disruption within twenty-four (24) hours from notification and a recovery point objective of one (1) hour or less prior to the outage in order to avoid unacceptable consequences due to the unavailability of services.

- D. The TO Contractor shall test the contingency/DR plans at least twice annually to identify any changes that need to be made to the plan(s) to ensure a minimum interruption of service. Coordination shall be made with the State to ensure limited system downtime when testing is conducted. At least one (1) annual test shall include backup media restoration and failover / fallback operations at the DR location. The TO Contractor shall send TO Manager a notice of completion following completion of DR testing.
- E. Such contingency and DR plans shall be available for the Department to inspect and practically test at any reasonable time, and subject to regular updating, revising, and testing throughout the term of the TO Agreement.

3.5.2 Data Export/Import

- A. The TO Contractor shall, at no additional cost or charge to the State, in an industry standard/non-proprietary format:
 - 1) perform a full or partial import/export of State data within 24 hours of a request; or
 - 2) provide to the State the ability to import/export data at will and provide the State with any access and instructions which are needed for the State to import or export data.
- B. Any import or export shall be in a secure format per the Security Requirements.

3.5.3 Data Ownership and Access

- A. Data, databases and derived data products created, collected, manipulated, or directly purchased as part of a TORFP shall become the property of the State. The purchasing State agency is considered the custodian of the data and shall determine the use, access, distribution and other conditions based on appropriate State statutes and regulations.
- B. Public jurisdiction user accounts and public jurisdiction data shall not be accessed, except (1) in the course of data center operations, (2) in response to service or technical issues, (3) as required by the express terms of the Task Order, including as necessary to perform the services hereunder or (4) at the State's written request.
- C. The TO Contractor shall limit access to and possession of State data to only TO Contractor Personnel whose responsibilities reasonably require such access or possession and shall train such TO Contractor Personnel on the confidentiality obligations set forth herein.
- D. At no time shall any data or processes – that either belong to or are intended for the use of the State or its officers, agents or employees – be copied, disclosed or retained by the Contractor or any party related to the Contractor for subsequent use in any transaction that does not include the State.
- E. The Contractor shall not use any information collected in connection with the services furnished under this Contract for any purpose other than fulfilling such services.

3.5.4 Provisions in Sections 3.5.1 – 3.5.3 shall survive expiration or termination of the TO Agreement. Additionally, the TO Contractor shall flow down the provisions of Sections 3.5.1-3.5.3 (or the substance thereof) in all subcontracts.

3.6 Insurance Requirements

3.6.1 Offeror shall confirm that, as of the date of its proposal, the insurance policies incorporated into its Master Contract are still current and effective at the required levels (See Master Contract Section 2.7).

3.6.2 CYBER SECURITY / DATA BREACH INSURANCE

THIS SECTION IS NOT APPLICABLE TO THIS TORFP

3.7 Security Requirements

3.7.1 Employee Identification

THIS SECTION IS NOT APPLICABLE TO THIS TORFP.

3.7.2 Security Clearance / Criminal Background Checks

THIS SECTION IS NOT APPLICABLE TO THIS TORFP.

3.7.3 On-Site Security Requirement(s)

- A. For the conditions noted below, TO Contractor Personnel may be barred from entrance or leaving any site until such time that the State's conditions and queries are satisfied.
 - 1) TO Contractor Personnel may be subject to random security checks when entering and leaving State secured areas. The State reserves the right to require TO Contractor Personnel to be accompanied while in secured premises.
 - 2) Some State sites, especially those premises of the Department of Public Safety and Correctional Services, require each person entering the premises to document and inventory items (such as tools and equipment) being brought onto the site, and to submit to a physical search of his or her person. Therefore, TO Contractor Personnel shall always have available an inventory list of tools being brought onto a site and be prepared to present the inventory list to the State staff or an officer upon arrival for review, as well as present the tools or equipment for inspection. Before leaving the site, the TO Contractor Personnel will again present the inventory list and the tools or equipment for inspection. Upon both entering the site and leaving the site, State staff or a correctional or police officer may search TO Contractor Personnel. Depending upon facility rules, specific tools or personal items may be prohibited from being brought into the facility.
- B. Any TO Contractor Personnel who enters the premises of a facility under the jurisdiction of the Department may be searched, fingerprinted (for the purpose of a criminal history background check), photographed and required to wear an identification card issued by the Department.
- C. Further, TO Contractor Personnel shall not violate Md. Code Ann., Criminal Law Art. Section 9-410 through 9-417 and such other security policies of the agency that controls the facility to which the TO Contractor Personnel seeks access. The failure of any of the TO Contractor Personnel to comply with any provision of the TO Agreement is sufficient grounds for the State to immediately terminate the TO Agreement for default.

3.7.4 Information Technology

The TO Contractor shall:

- A. Implement Administrative, physical, and technical safeguards to protect State data that are no less rigorous than accepted industry best practices for information security such as those listed below (see **Section 3.7.5**);
- B. Ensure that all such safeguards, including the manner in which State data is collected, accessed, used, stored, processed, disposed of and disclosed, comply with applicable data protection and privacy laws as well as the terms and conditions of the TO Agreement; and
- C. The TO Contractor, and TO Contractor Personnel, shall (i) abide by all applicable federal, State and local laws, rules and regulations concerning security of Information Systems and Information Technology and (ii) comply with and adhere to the State IT Security Policy and Standards as each may be amended or revised from time to time. Updated and revised versions of the State IT Policy and Standards are available online at: www.doit.maryland.gov – keyword: Security Policy.

3.7.5 Data Protection and Controls

- A. TO Contractor shall ensure a secure environment for all State data and any hardware and software (including but not limited to servers, network and data components) to be provided or used in connection with the performance of the TO Agreement and shall apply or cause application of appropriate controls so as to maintain such a secure environment (“Security Best Practices”). Such Security Best Practices shall comply with an accepted industry standard, such as the NIST cybersecurity framework.
- B. To ensure appropriate data protection safeguards are in place, the TO Contractor shall implement and maintain the following controls at all times throughout the term of the TO Agreement (the TO Contractor may augment this list with additional controls):
 - 1) The TO Contractor shall ensure the appropriate separation of production and non-production environments by applying the data protection and control requirements listed in **Section 3.7.5**.
 - 2) Apply industry best practices to reduce the TO Contractor/subcontractor’s systems’ surface of vulnerability, eliminating as many security risks as possible and documenting what is not feasible and/or not performed according to best practices. These procedures may include but are not limited to removal of unnecessary software, disabling or removing unnecessary services, removal of unnecessary usernames or logins, and the deactivation of unneeded features in the TO Contractor/subcontractor’s system configuration files.
 - 3) Ensure that State data is not comingled with non-State data through the proper application of compartmentalization security measures.
 - 4) Apply data encryption to protect Sensitive Data at all times, including in transit, at rest, and also when archived for backup purposes. Unless otherwise directed, the TO Contractor is responsible for the encryption of all Sensitive Data.

- 5) For all State data the TO Contractor manages or controls, data encryption shall be applied to such data in transit over untrusted networks. Encryption algorithms which are utilized for encrypting data shall comply with current Federal Information Processing Standards (FIPS), “Security Requirements for Cryptographic Modules”, FIPS PUB 140-2:
<http://csrc.nist.gov/publications/fips/fips140-2/fips1402.pdf>
<http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/1401vend.htm>
- 6) Enable appropriate logging parameters to monitor user access activities, authorized and failed access attempts, system exceptions, and critical information security events as recommended by the operating system and application manufacturers and information security standards, including Maryland Department of Information Technology’s Information Security Policy.
- 7) Retain the aforementioned logs and review them if required. The Department shall have the right to inspect these policies and procedures and the TO Contractor or subcontractor’s performance to confirm the effectiveness of these measures for the services being provided under this TO Agreement.
- 8) Ensure system and network environments are separated by properly configured and updated firewalls.
- 9) Restrict network connections between trusted and untrusted networks by physically and/or logically isolating systems from unsolicited and unauthenticated network traffic.
- 10) By default, “deny all” and only allow access by exception.
- 11) Review at least annually the aforementioned network connections, documenting and confirming the business justification for the use of all service, protocols, and ports allowed, including the rationale or compensating controls implemented for those protocols considered insecure but necessary.
- 12) Perform regular vulnerability testing of operating system, application, and network devices. Such testing is expected to identify outdated software versions; missing software patches; device or software misconfigurations; and to validate compliance with or deviations from the security policies applicable to this TO Agreement. TO Contractor shall evaluate all identified vulnerabilities for potential adverse effect on security and integrity and remediate the vulnerability no later than 30 days following the earlier of vulnerability’s identification or public disclosure, or document why remediation action is unnecessary or unsuitable. The Department shall have the right to inspect the TO Contractor’s policies and procedures and the results of vulnerability testing to confirm the effectiveness of these measures for the services being provided under this TO Agreement.
- 13) Enforce strong user authentication and password control measures to minimize the opportunity for unauthorized access through compromise of the user access controls. At a minimum, the implemented measures should be consistent with the most current Maryland Department of Information Technology’s Information Security Policy

(<http://doit.maryland.gov/support/Pages/SecurityPolicies.aspx>), including specific requirements for password length, complexity, history, and account lockout.

- 14) Ensure State Data is not processed, transferred, or stored outside of the United States (“U.S.”). The TO Contractor shall provide its services to the State and the State’s end users solely from data centers in the U.S. Unless granted an exception in writing by the State, the TO Contractor shall not allow TO Contractor Personnel to store State data on portable devices, including personal computers, except for devices that are used and kept only at its U.S. data centers. The TO Contractor shall permit its TO Contractor Personnel to access State data remotely only as required to provide technical support.
- 15) Ensure TO Contractor’s Personnel shall not connect any of its own equipment to a State LAN/WAN without prior written approval by the State, which may be revoked at any time for any reason. The TO Contractor/subcontractor shall complete any necessary paperwork as directed and coordinated with the TO Manager to obtain approval by the State to connect TO Contractor/subcontractor-owned equipment to a State LAN/WAN.
- 16) Ensure that anti-virus and anti-malware software is installed and maintained on all systems supporting the services provided under this TO Agreement; that the anti-virus and anti-malware software is automatically updated; and that the software is configured to actively scan and detect threats to the system for remediation. The TO Contractor shall perform routine vulnerability scans and take corrective actions for any findings.

3.7.6 Access to Security Logs and Reports

THIS SECTION IS NOT APPLICABLE TO THIS TORFP

3.7.7 Security Plan

- A. The TO Contractor shall protect State data according to a written security policy (“Security Plan”) no less rigorous than that of the State, and shall supply a copy of such policy to the State for validation, with any appropriate updates, on an annual basis.
- B. The Security Plan shall detail the steps and processes employed by the TO Contractor as well as the features and characteristics which will ensure compliance with the security requirements of the TO Agreement.

3.7.8 PCI Compliance

THIS SECTION IS NOT APPLICABLE TO THIS TORFP

3.7.9 Security Incident Response

- A. The TO Contractor shall notify the Department in accordance with **Section 3.7.9A-D** when any TO Contractor system that may access, process, or store State data or State systems experiences a Security Incident or a Data Breach as follows:
 - 1) notify the Department within twenty-four (24) hours of the discovery of a Security Incident by providing notice via written or electronic correspondence to the TO

Manager, Department chief information officer and Department chief information security officer;

- 2) notify the Department within two (2) hours if there is a threat to TO Contractor's Solution as it pertains to the use, disclosure, and security of State data; and
 - 3) provide written notice to the Department within one (1) Business Day after TO Contractor's discovery of unauthorized use or disclosure of State data and thereafter all information the State (or Department) requests concerning such unauthorized use or disclosure.
- B. TO Contractor's notice shall identify:
- 1) the nature of the unauthorized use or disclosure;
 - 2) the State data used or disclosed,
 - 3) who made the unauthorized use or received the unauthorized disclosure;
 - 4) what the TO Contractor has done or shall do to mitigate any deleterious effect of the unauthorized use or disclosure; and
 - 5) what corrective action the TO Contractor has taken or shall take to prevent future similar unauthorized use or disclosure.
 - 6) The TO Contractor shall provide such other information, including a written report, as reasonably requested by the State.
- C. The TO Contractor may need to communicate with outside parties regarding a Security Incident, which may include contacting law enforcement, fielding media inquiries and seeking external expertise as mutually agreed upon, defined by law or contained in the TO Agreement. Discussing Security Incidents with the State should be handled on an urgent as-needed basis, as part of TO Contractor communication and mitigation processes as mutually agreed upon, defined by law or contained in the TO Agreement.
- D. The Contractor shall comply with all applicable laws that require the notification of individuals in the event of unauthorized release of State data or other event requiring notification, and, where notification is required, assume responsibility for informing all such individuals in accordance with applicable law and to indemnify and hold harmless the State (or Department) and its officials and employees from and against any claims, damages, and actions related to the event requiring notification.

3.7.10 Data Breach Responsibilities

- A. If the TO Contractor reasonably believes or has actual knowledge of a Data Breach, the TO Contractor shall, unless otherwise directed:
- 1) Notify the appropriate State-identified contact within 24 hours by telephone in accordance with the agreed upon security plan or security procedures unless a shorter time is required by applicable law;
 - 2) Cooperate with the State to investigate and resolve the data breach;

- 3) Promptly implement commercially reasonable remedial measures to remedy the Data Breach; and
 - 4) Document responsive actions taken related to the Data Breach, including any post-incident review of events and actions taken to make changes in business practices in providing the services.
- B. If a Data Breach is a direct result of the TO Contractor's breach of its TO Agreement obligation to encrypt State data or otherwise prevent its release, the TO Contractor shall bear the costs associated with (1) the investigation and resolution of the data breach; (2) notifications to individuals, regulators or others required by State law; (3) complete all corrective actions as reasonably determined by TO Contractor based on root cause; all [(1) through (3)] subject to the TO Agreement's limitation of liability.
- 3.7.11** Additional security requirements may be established in a Task Order and/or a Work Order.
- 3.7.12** The State shall, at its discretion, have the right to review and assess the Contractor's compliance to the security requirements and standards defined in the TO Agreement.
- 3.7.13** **Provisions in Sections 3.7.1 – 3.7.10 shall survive expiration or termination of the TO Agreement. Additionally, the TO Contractor and shall flow down the provisions of Sections 3.7.4-3.7.12 (or the substance thereof) in all subcontracts.**

3.8 Reserved

3.9 SOC 2 Type 2 Audit Report

A SOC 2 Type 2 Report is not a TO Contractor requirement for this Task Order.

3.10 Performance and Personnel

3.10.1 ROLES AND RESPONSIBILITIES

Personnel roles and responsibilities under the Task Order:

- A. **TO Procurement Officer** – The TO Procurement Officer has the primary responsibility for the management of the TORFP process, for the resolution of TO Agreement scope issues, and for authorizing any changes to the TO Agreement.
- B. **TO Manager** - The TO Manager has the primary responsibility for the management of the work performed under the TO Agreement, administrative functions, including issuing written directions, and for ensuring compliance with the terms and conditions of the CATS+ Master Contract.

The TO Manager will assign tasks to the personnel provided under this TORFP and will track and monitor the work being performed through the monthly accounting of hours' deliverable for work types; actual work produced will be reconciled with the hours reported.

- C. **TO Contractor** – The TO Contractor is the CATS+ Master Contractor awarded this Task Order. The TO Contractor shall provide human resources as necessary to perform the services described in this TORFP Scope of Work.

- D. **TO Contractor Manager** – The TO Contractor Manager will serve as primary point of contact with the TO Manager to regularly discuss progress of tasks, upcoming tasking, historical performance, and resolution of any issues that may arise pertaining to the TO Contractor Personnel. The TO Contractor Manager will serve as liaison between the TO Manager and the senior TO Contractor management.
- E. **TO Contractor Personnel** – Any official, employee, agent, Subcontractor, or Subcontractor agents of the TO Contractor who is involved with the Task Order over the course of the Task Order period of performance.
- F. **Key Personnel** – A subset of TO Contractor Personnel whose departure during the performance period, will, in the State’s opinion, have a substantial negative impact on Task Order performance. Key Personnel proposed as part of the TO Proposal shall start as of TO Agreement issuance unless specified otherwise in this TORFP or the Offeror’s TO Technical Proposal. Additional Key Personnel may be identified after Task Order award.

3.10.2 Offeror Experience

- A. FA1 Offeror Experience
 - 1) The TO Contractor shall be capable of furnishing all necessary services required to successfully complete all tasks and work requirements and produce high quality deliverables described in this document. The Master Contractor shall demonstrate, in its proposal, that it possesses such expertise in-house or has fostered strategic alliances with other firms for providing such services.
 - 2) The following experience is expected and will be evaluated as part of the Technical Proposal (see the Offeror experience, capability and references evaluation factor from **Section 6.2**). The TO Contractor shall demonstrate experience in each of the following areas, as demonstrated by a minimum of two (2) examples of similarly-sized projects completed successfully within the last three (3) calendar years:
 - a) Digital orthophotography data collection, processing, and delivery;
 - b) Project management of digital orthophotography data collection, processing, and delivery;
 - c) Deploying, operating and managing the safe operation of the fixed-wing aircraft;
 - d) Obtaining any necessary flight clearances required to access the operational area;
 - e) Managing the large amount of digital data associated with digital orthophotography collection and processing;
 - f) Acquiring, processing and validating the ground survey, digital surface model, the Inertial Measurement Unit (IMU) and the Differential Global Positioning System (DGPS);
 - g) Color balancing image tiles; and
 - h) Generating digital orthophotography.

- 3) The TO Contractor shall demonstrate experience in the following areas, as determined by a minimum of one (1) example demonstrating the successful execution of similarly-sized projects completed successfully within the last three (3) calendar years. Success is defined as full lifecycle implementation of the Offeror's proposed Quality Assurance and Quality Control processes:
 - a) Provide one or more examples of Quality Assurance and Quality Control processes, including use of web based tools completed successfully within the last three (3) calendar years. Success is considered to be satisfactory performance of the offeror's process.
 - b) Demonstrated experience in providing each of the services listed below as described in at least one example:
 - i) Higher Resolution Orthophotography (See Section 2.5.1)
 - ii) Near True Orthophotos (See Section 2.5.2)
 - iii) LiDAR (See Section 2.5.3)
 - iv) Mobile LiDAR (See Section 2.5.4)
 - v) Oblique Imagery (See Section 2.5.5)
 - vi) County-based Planimetric Data (See Section 2.5.6)
 - vii) Land Use / Land Cover (See Section 2.5.7)

B. FA2 Offeror Experience

- 1) The TO Contractor shall be capable of furnishing all necessary services required to successfully complete all tasks and work requirements and produce high quality deliverables described in this document. The Master Contractor shall demonstrate, in its proposal, that it possesses such expertise in-house or has fostered strategic alliances with other firms for providing such services.
- 2) The TO Contractor shall demonstrate experience in the following areas, as determined by a minimum of one (1) example demonstrating the successful execution of similarly-sized projects completed successfully within the last three (3) calendar years. Success is defined as full lifecycle implementation of the Offeror's proposed Quality Assurance and Quality Control processes:
 - a) Provide one or more examples of Quality Assurance and Quality Control processes, including use of web based tools completed successfully within the last three (3) calendar years. The State is interested in understanding the QA/QC methodology and how it was successfully carried out by the Offeror. The example does not necessarily need to have included orthophotography; however, the methods must relate to the approach for this project.
 - b) Provide one or more examples of successful projects on a scale similar to the scope of work completed within the last three (3) calendar years. Success is considered to be satisfactory performance of the Offeror's approach.

3.10.3 Offeror Key Personnel Experience

As part of the TO Proposal evaluation, Offerors shall propose exactly four (4) personnel who are expected to be available as of the start date specified in the Notice to Proceed (NTP Date).

The following experience is expected and will be evaluated as part of the Technical Proposal (see the capability of proposed resources evaluation factor from **Section 6.2**). Only those Offerors supplying key proposed personnel that fully meet all minimum qualification criteria in **Section 3.10.4** shall be eligible for TORFP proposal evaluation.

For the Task Order, the following positions to be identified in the TO Technical Proposal will be considered Key Personnel

- A. Project Manager – FA 1 and FA2
 - 1) A at least five (5) years of experience managing projects of a similar scope (orthophotography, LiDAR, etc.) and size (in square miles Assigned Quality Control Manager
 - 2) experience working with multiple prime contractors and subcontractors on those projects experience managing quality control for similar projects.
- B. Lead Field Surveyor – FA 1 only
 - 1) Certification/licensure by the Maryland Department of Labor, Licensing, and Regulation as a Professional Land Surveyor.
- C. Assigned Quality Control Manager FA 1 and FA2
 - 1) A minimum of five (5) years of experience managing quality control for similar projects
- D. Certified Photogrammetrist – FA1 only
 - 1) Experience as required for certification

3.10.4 Labor Categories

- A. Offerors must use the Labor Classification Resume Summary (Appendix 3) to propose appropriate CATS+ labor categories from Section 2.10 of the CATS+ TORFP for each of the roles described in Section 1 of this TORFP.
<http://doit.maryland.gov/contracts/Documents/CATSPPlus2016/060B2490023-2016CATSPPlus2016RFP.pdf>.
- B. Offeror shall be capable of providing and meeting the minimum qualifications for all the labor categories proposed. Offerors need not indicate in the TO Financial Proposal Form (Attachment B) labor rates as this is a fixed price proposal. Resumes for resources provided later shall be coordinated by the TO Manager per the TO Technical Proposal and, if requested in a Work Order, shall be governed by the Work Order process.
- C. Education and experience described in **Section 3.10.5** constitute the minimum qualifications for candidates proposed in response to a TORFP. All experience required must have occurred within the most recent ten (10) years.

3.10.5 Substitution of Education for Experience

A Bachelor's Degree or higher may be substituted for the general and specialized experience for those labor categories requiring a High School Diploma. A Master's Degree may be substituted for two years of the general and specialized experience for those labor categories requiring a Bachelor's Degree. Substitution shall be reviewed and approved by the State at its discretion.

3.10.6 Substitution of Experience for Education

A. Substitution of experience for education may be permitted at the discretion of the State.

B. Substitution of Professional Certificates for Experience:

Professional certification (e.g., Microsoft Certified Solutions Expert, SQL Certified Database Administrator) may be substituted for up to two (2) years for general and specialized experience at the discretion of the State.

3.10.7 TO Contractor Personnel Maintain Certifications

Any TO Contractor Personnel provided under this TORFP shall maintain in good standing any required professional certifications for the duration of the TO Agreement.

3.11 Substitution of Personnel

3.11.1 Directed Personnel Replacement

- A. The TO Manager may direct the TO Contractor to replace any TO Contractor Personnel who, in the sole discretion of the TO Manager, are perceived as being unqualified, non-productive, unable to fully perform the job duties, disruptive, or known, or reasonably believed, to have committed a major infraction(s) of law or Department, Contract, or Task Order requirement.
- B. If deemed appropriate in the discretion of the TO Manager, the TO Manager shall give written notice of any TO Contractor Personnel performance issues to the TO Contractor, describing the problem and delineating the remediation requirement(s). The TO Contractor shall provide a written Remediation Plan within three (3) days of the date of the notice. If the TO Manager rejects the Remediation Plan, the TO Contractor shall revise and resubmit the plan to the TO Manager within five (5) days of the rejection, or in the timeframe set forth by the TO Manager in writing. Once a Remediation Plan has been accepted in writing by the TO Manager, the TO Contractor shall immediately implement the Remediation Plan.
- C. Should performance issues persist despite the approved Remediation Plan, the TO Manager will give written notice of the continuing performance issues and either request a new Remediation Plan within a specified time limit or direct the removal and replacement of the TO Contractor Personnel whose performance is at issue. A request for a new Remediation Plan will follow the procedure described in **Section 3.11.1.B**.
- D. In circumstances of directed removal, the TO Contractor shall provide a suitable replacement for TO Manager approval within fifteen (15) days of the date of the notification of directed removal, or the actual removal, whichever occurs first, or such earlier time as directed by the TO Manager in the event of a removal on less than fifteen days' notice

- E. Normally, a directed personnel replacement will occur only after prior notification of problems with requested remediation, as described above. However, the TO Manager reserves the right to direct immediate personnel replacement without utilizing the remediation procedure described above.
- F. Replacement or substitution of TO Contractor Personnel under this section shall be in addition to, and not in lieu of, the State's remedies under the Task Order or which otherwise may be available at law or in equity.

3.11.2 Substitution Prior to and 30 Days After Task Order Execution

- A. Prior to Task Order Execution or within thirty (30) days after Task Order Execution, the Offeror may substitute proposed Key Personnel only under the following circumstances: vacancy occurs due to the sudden termination, resignation, or approved leave of absence due to an *Extraordinary Personnel Event*, or death of such personnel. To qualify for such substitution, the Offeror must describe to the State's satisfaction the event necessitating substitution and must demonstrate that the originally proposed personnel are actual full-time direct employees with the Offeror (subcontractors, temporary staff or 1099 contractors do not qualify). Proposed substitutions shall be of equal caliber or higher, in the State's sole discretion. Proposed substitutes deemed by the State to be less qualified than the originally proposed individual may be grounds for pre-award disqualification or post-award termination.
- B. An *Extraordinary Personnel Event* – means Leave under the Family Medical Leave Act; an incapacitating injury or incapacitating illness; or other circumstances that in the sole discretion of the State warrant an extended leave of absence, such as extended jury duty or extended military service.

3.11.3 Substitution More Than 30 Days After Task Order Execution

The procedure for substituting personnel after Task Order execution is as follows:

- A. The TO Contractor may not substitute personnel without the prior approval of the TO Manager.
- B. To replace any personnel, the TO Contractor shall submit resumes of the proposed individual specifying the intended approved labor category. Any proposed substitute personnel shall have qualifications equal to or better than those of the replaced personnel.
- C. Proposed substitute individual shall be approved by the TO Manager. The TO Manager shall have the option to interview the proposed substitute personnel and may require that such interviews be in person. After the interview, the TO Manager shall notify the TO Contractor of acceptance or denial of the requested substitution. If no acceptable substitute personnel is proposed within the time frame established by the TO Manager, the TO Agreement may be cancelled.

3.12 Minority Business Enterprise (MBE) Reports

There is no MBE Goal for this Task Order.

3.13 Veteran Small Business Enterprise (VSBE) Reports

There is no VSBE Goal for this Task Order.

3.14 Work Orders

- A. Additional services and resources will be provided via a Work Order process. Work shall not begin in advance of a fully executed Work Order. Work Orders will be issued for fixed price.
- B. The TO Manager shall e-mail a Work Order Request (See sample at <http://doit.maryland.gov/contracts/Documents/CATSPPlus/CATS+WorkOrderSample.pdf>) to the TO Contractor to provide services or resources that are within the scope of this TORFP. The Work Order Request will include:
 - 1) Technical requirements and description of the service or resources needed;
 - 2) Performance objectives and/or deliverables, as applicable; and
 - 3) Due date and time for submitting a response to the request.
- C. The TO Contractor shall e-mail a response to the TO Manager within the specified time and include at a minimum:
 - 1) A response that details the TO Contractor's understanding of the work;
 - 2) A price to complete the Work Order Request using the format provided.
 - 3) State-furnished information, work site, and/or access to equipment, facilities, or personnel.
- D. The TO Manager will review the response and will confirm the proposed prices are acceptable.
- E. The TO Manager may contact the TO Contractor to obtain additional information, clarification or revision to the Work Order, and will provide the Work Order to the TO Procurement Officer for a determination of compliance with the TO Agreement and a determination whether a change order is appropriate. Written TO Procurement Officer approval is required before Work Order execution by the State.
- F. Performance of services under a Work Order shall commence consistent with an NTP issued by the TO Manager for such Work Order.

3.15 Additional Clauses

The TO Contractor shall be subject to the requirements in this section and shall flow down the provisions of **Sections 3.15.1 – 3.15.5** (or the substance thereof) in all subcontracts.

3.15.1 TORFP Subject to CATS+ Master Contract

In addition to the requirements of this TORFP, the Master Contractors are subject to all terms and conditions contained in the CATS+ RFP issued by the Maryland Department of Information Technology (DoIT) and subsequent Master Contract Project Number 060B2490023.

3.15.2 All times specified in this document are local time, defined as Eastern Standard Time or Eastern Daylight Time, whichever is in effect.

3.15.3 Contract Management Oversight Activities

- A. DoIT is responsible for contract management oversight on the CATS+ Master Contract. As part of that oversight, DoIT has implemented a process for self-reporting contract management activities of Task Orders under CATS+. This process typically applies to active TOs for operations and maintenance services valued at \$1 million or greater, but all CATS+ Task Orders are subject to review.
- B. A sample of the TO Contractor Self-Reporting Checklist is available on the CATS+ website at <http://doit.maryland.gov/contracts/Documents/CATSPPlus/CATS+Self-ReportingChecklistSample.pdf>. DoIT may send initial checklists out to applicable/selected TO Contractors approximately three months after the award date for a Task Orders. The TO Contractor shall complete and return the checklist as instructed on the form. Subsequently, at six month intervals from the due date on the initial checklist, the TO Contractor shall update and resend the checklist to DoIT.

3.15.4 No-Cost Extensions

In the event there are unspent funds remaining on the TO Agreement, prior to the TO's expiration date the TO Procurement Officer may modify the TO Agreement to extend the TO Agreement beyond its expiration date for the performance of work within the TO's scope of work. Notwithstanding anything to the contrary, no funds may be added to the TO Agreement in connection with any such extension.

3.16 Problem Escalation Procedure

- 3.16.1** The Contractor must provide and maintain a Problem Escalation Procedure (PEP) for both routine and emergency situations. The PEP must state how the Contractor will address problem situations as they occur during the performance of the Contract, especially problems that are not resolved to the satisfaction of the State within appropriate timeframes.
- 3.16.2** The Contractor shall provide contact information to the TO Manager, as well as to other State personnel as directed should the TO Manager not be available.
- 3.16.3** The Contractor must provide the PEP no later than ten (10) Business Days after notice of recommended award. The PEP, including any revisions thereto, must also be provided within ten (10) Business Days after the start of each Contract year and within ten (10) Business Days after any change in circumstance which changes the PEP. The PEP shall detail how problems with work under the Contract will be escalated in order to resolve any issues in a timely manner. The PEP shall include:
 - A. The process for establishing the existence of a problem;
 - B. Names, titles, and contact information for progressively higher levels of personnel in the Contractor's organization who would become involved in resolving a problem;
 - C. For each individual listed in the Contractor's PEP, the maximum amount of time a problem will remain unresolved with that individual before the problem escalates to the next contact person listed in the Contractor's PEP;

- D. Expedited escalation procedures and any circumstances that would trigger them;
- E. The method of providing feedback on resolution progress, including the frequency of feedback to be provided to the State;
- F. Contact information for persons responsible for resolving issues after normal business hours (e.g., evenings, weekends, holidays) and on an emergency basis; and
- G. A process for updating and notifying the TO Manager of any changes to the PEP.

Nothing in this section shall be construed to limit any rights of the TO Manager or the State which may be allowed by the Contract or applicable law.

3.17 Certification Regarding Discriminatory Boycotts of Israel

Executive Order 01.01.2017.25 (issued October 23, 2017) provides, at regulation .25C, that: “All requests for bids or proposals issued for contracts with Executive agencies shall include the text of the following certification to be completed by the bidder: ‘The undersigned bidder hereby certifies and agrees that the following information is correct: In preparing its bid on this project, the bidder has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not, in the solicitation, selection, or commercial treatment of any subcontractor, vendor, or supplier, refused to transact or terminated business activities, or taken other actions intended to limit commercial relations, with a person or entity on the basis of Israeli national origin, or residence or incorporation in Israel and its territories. The bidder also has not retaliated against any person or other entity for reporting such refusal, termination, or commercially limiting actions. Without limiting any other provision of the solicitation for bids for this project, it is understood and agreed that, if this certification is false, such false certification will constitute grounds for the State to reject the bid submitted by the bidder on this project, and terminate any contract awarded based on the bid.’”

Pursuant to Executive Order 01.01.2017.25B: “Executive agencies may not execute a procurement contract with a business entity unless it certifies, in writing when the bid is submitted or the contract is renewed, that: (1) it is not engaging in a boycott of Israel; and (2) it will, for the duration of its contractual obligations, refrain from a boycott of Israel.” Therefore, the TO Contractor shall indicate in its proposal whether: 1) It is engaging in a boycott of Israel; and 2) whether it will, for the duration of its contractual obligations, refrain from a boycott of Israel.

3.18 Project Status Reporting

The TO Contractor shall provide, in Word or PDF format, weekly status reports to include, but not limited to, the following:

- A. Tasks completed
- B. Tasks in progress
- C. Tasks on hold and why
- D. Action items and owners
- E. Acquisition status
- F. Production status

G. Project schedule and status

H. Challenges

3.19 Change Orders

- A. If the TO Contractor is required to perform work beyond the scope of this TORFP, or there is a work reduction due to unforeseen scope changes, a TO Change Order is required. The TO Contractor and TO Manager shall negotiate a mutually acceptable price modification based on the TO Contractor's proposed rates in the Master Contract and scope of the work change.
- B. No scope of work changes shall be performed until a change order is approved by DoIT and executed by the TO Procurement Officer.

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4 TORFP Instructions

4.1 TO Pre-Proposal Conference

- 4.1.1 A TO pre-proposal conference (Conference) will be held at the date, time, and location indicated on the Key Information Summary Sheet.
- 4.1.2 Attendance at the Conference is not mandatory, but all interested parties are encouraged to attend in order to facilitate better preparation of their proposals.
- 4.1.3 Following the Conference, the attendance record and summary of the Conference will be distributed via e-mail to all Master Contractors known to have received a copy of this TORFP.
- 4.1.4 Attendees should bring a copy of the solicitation and a business card to help facilitate the sign-in process.
- 4.1.5 In order to assure adequate seating and other accommodations at the Conference, please e-mail the Pre-Proposal Conference Response Form (**Attachment A**) no later than the time and date indicated on the form. In addition, if there is a need for sign language interpretation and/or other special accommodations due to a disability, please notify the TO Procurement Officer at least five (5) business days prior to the Conference date. The Department will make a reasonable effort to provide such special accommodation.

4.2 Questions

- 4.2.1 All questions shall identify in the subject line the Solicitation Number and Title (060B8400047 - DIGITAL HIGH RESOLUTION AERIAL PHOTOGRAPHY (ORTHOPHOTOGRAPHY) FOR MARYLAND), and shall be submitted in writing via e-mail to the TO Procurement Officer no later than the date and time specified the Key Information Summary Sheet.
- 4.2.2 Answers to all questions that are not clearly specific only to the requestor will be provided to all Master Contractors who are known to have received a copy of the TORFP.
- 4.2.3 The statements and interpretations contained in responses to any questions, whether responded to verbally or in writing, are not binding on the Department unless it issues an amendment in writing.

4.3 TO Proposal Due (Closing) Date and Time

- 4.3.1 TO Proposals, in the number and form set forth in **Section 5 TO Proposal Format**, must be received by the TO Procurement Officer no later than the TO Proposal due date and time indicated on the Key Information Summary Sheet in order to be considered.
- 4.3.2 Requests for extension of this date or time shall not be granted.
- 4.3.3 Offerors submitting TO Proposals should allow sufficient delivery time to ensure timely receipt by the TO Procurement Officer. Except as provided in COMAR 21.05.03.02.F and 21.05.02.10, TO Proposals received after the due date and time listed in the Key Information Summary Sheet will not be considered.

4.3.4 The date and time of an e-mail submission is determined by the date and time of arrival in the e-mail address indicated on the Key Information Summary Sheet.

4.3.5 TO Proposals may be modified or withdrawn by written notice received by the TO Procurement Officer before the time and date set forth in the Key Information Summary Sheet for receipt of TO Proposals.

4.4 Award Basis

Based upon an evaluation of TO Proposal responses as provided in **Section 6.4**, below, a Master Contractor will be selected to conduct the work defined in **Sections 2** and **3**. A specific TO Agreement, **Attachment M**, will then be entered into between the State and the selected Master Contractor, which will bind the selected Master Contractor (TO Contractor) to the contents of its TO Proposal, including the TO Financial Proposal.

4.5 Oral Presentation

4.5.1 Offerors and proposed TO Contractor Personnel will be required to make an oral presentation to State representatives. Offerors must confirm in writing any substantive oral clarification of, or change in, their Proposals made in the course of discussions. Any such written clarifications or changes then become part of the Master Contractor's TO Proposal. The TO Procurement Officer will notify Offerors of the time and place of oral presentations and interviews, should interviews be scheduled separately.

4.6 Limitation of Liability

The TO Contractor's liability is limited in accordance with the Limitations of Liability section of the CATS+ Master Contract. TO Contractor's liability for this TORFP is limited to one (1) times the total TO Agreement amount.

4.7 MBE Participation Goal

There is no MBE goal for this procurement.

4.8 VSBE Goal

There is no VSBE participation goal for this procurement.

4.9 Living Wage Requirements

The Master Contractor shall abide by the Living Wage requirements under Title 18, State Finance and Procurement Article, Annotated Code of Maryland and the regulations proposed by the Commissioner of Labor and Industry.

All TO Proposals shall be accompanied by a completed Living Wage Affidavit of Agreement, **Attachment F** of this TORFP.

4.10 Federal Funding Acknowledgement

This Task Order does not contain federal funds.

4.11 Conflict of Interest Affidavit and Disclosure

- 4.11.1** Offerors shall complete and sign the Conflict of Interest Affidavit and Disclosure (**Attachment H**) and submit it with their Proposals. All Offerors are advised that if a TO Agreement is awarded as a result of this solicitation, the TO Contractor's Personnel who perform or control work under this TO Agreement and each of the participating subcontractor personnel who perform or control work under this TO Agreement shall be required to complete agreements substantially similar to **Attachment H**, conflict of interest Affidavit and Disclosure.
- 4.11.2** If the TO Procurement Officer makes a determination that facts or circumstances exist that give rise to or could in the future give rise to a conflict of interest within the meaning of COMAR 21.05.08.08A, the TO Procurement Officer may reject an Offeror's TO Proposal under COMAR 21.06.02.03B.
- 4.11.3** Master Contractors should be aware that the State Ethics Law, Md. Code Ann., General Provisions Article, Title 5, might limit the selected Master Contractor's ability to participate in future related procurements, depending upon specific circumstances.
- 4.11.4** By submitting a Conflict of Interest Affidavit and Disclosure, the Offeror shall be construed as certifying all TO Contractor Personnel and Subcontractors are also without a conflict of interest as defined in COMAR 21.05.08.08A.

4.12 Non-Disclosure Agreement

4.12.1 Non-Disclosure Agreement (Offeror)

A Non-Disclosure Agreement (Offeror) is not required for this solicitation.

4.12.2 Non-Disclosure Agreement (TO Contractor)

A Non-Disclosure Agreement (TO Contractor) is not required for this solicitation.

4.13 HIPAA - Business Associate Agreement

A HIPAA Business Associate Agreement is not required for this procurement.

4.14 Iranian Non-Investment

All TO Proposals shall be accompanied by a completed Certification Regarding Investments in Iran, **Attachment P** of this TORFP.

4.15 Mercury and Products That Contain Mercury

This solicitation does not include the procurement of products known to likely include mercury as a component.

4.16 Location of the Performance of Services Disclosure

This solicitation does not require a Location of the Performance of Services Disclosure.

4.17 Department of Human Services (DHS) Hiring Agreement

This solicitation does not require a DHS Hiring Agreement.

4.18 Small Business Reserve (SBR) Set-Aside

This solicitation is not designated as a Small Business Reserve (SBR) set-aside solicitation.

4.19 Bonds

This solicitation does not require bonds.

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5 TO Proposal Format

5.1 Required Response

Each Master Contractor receiving this CATS+ TORFP shall respond no later than the submission due date and time designated in the Key Information Summary Sheet. Each Master Contractor is required to submit one of two possible responses: 1) a TO Proposal; or 2) a completed Master Contractor Feedback Form (available online within the Master Contractor Admin System). The feedback form helps the State understand for future contract development why Master Contractors did not submit proposals. The form is accessible via the CATS+ Master Contractor login screen and clicking on TORFP Feedback Response Form from the menu.

A TO Proposal shall conform to the requirements of this CATS+ TORFP.

5.2 Two Part Submission

Offerors shall submit TO Proposals in two (2) separate volumes for either FA1 or FA2 or Both:

- Volume I-FA1 – TO TECHNICAL PROPOSAL (Indicate FA1 or FA1-ONLY (see Section 5.4.2))
- Volume II-FA1 – TO FINANCIAL PROPOSAL (Indicate FA1 or FA1-ONLY (see Section 5.4.2))
- Volume I-FA2 – TO TECHNICAL PROPOSAL
- Volume II-FA2 – TO FINANCIAL PROPOSAL

5.3 TO Proposal Packaging and Delivery

5.3.1 TO Proposals delivered by facsimile shall not be considered.

5.3.2 Provide no pricing information in the TO Technical Proposal. Provide no pricing information on the media submitted in the TO Technical Proposal.

5.3.3 Offerors may submit TO Proposals by electronic means.

- A. Electronic means includes e-mail to the TO Procurement Officer address listed on the Key Information Summary Sheet.
- B. An Offeror wishing to deliver a hard copy (paper or other non-volatile digital media) TO Proposal shall contact the TO Procurement Officer for instructions.

5.3.4 E-mail submissions

- A. All TO Proposal e-mails shall be sent with password protection applied to the attached documents.
- B. The TO Procurement Officer will not accept submissions after the date and exact time stated in the Key Information Summary Sheet. The date and time of submission is determined by the date and time of arrival in the TO Procurement Officer's e-mail box. Time stamps on outgoing email from Master TO Contractors shall not be accepted. Requests for extension of this date or time will not be granted. Except as provided in COMAR 21.05.03.02F, TO Proposals received by the TO Procurement Officer after the due date will not be considered.

- C. The State has established the following procedure to restrict access to TO Proposals received electronically: all Technical and TO Financial Proposals must be password protected, and the password for the TO Proposal must be different from the password for the TO Financial Proposal. Offerors will provide these two passwords to DoIT upon request or their TO Proposal will be deemed not susceptible for award. Subsequent submissions of TO Proposal content will not be allowed.
- D. The TO Procurement Officer will only contact those Offerors with TO Proposals that are reasonably susceptible for award.
- E. TO Proposals submitted via e-mail must not exceed 25 MB. If a submission exceeds this size, split the submission into two or more parts and include the appropriate part number in the subject (e.g., part 1 of 2) after the subject line information below.
- F. The two (2) e-mail submission subject lines for the Technical and Financial volumes shall each state the TORFP 060B8400047 followed by one (1) of the three (3) options indicating Offeror's submission intent as follows:
 - 1) "060B8400047 Technical-FA1" and "060B8400047 Financial-FA1" respectively (if Offeror wishes to be evaluated for FA1 and, should Offeror not be awarded FA1, Offeror wishes to be further evaluated for FA2 award).
 - 2) "060B8400047 Technical-FA1-ONLY" and "060B8400047 Financial-FA1-ONLY." respectively (if Offeror wishes to be evaluated for FA1 but, should Offeror *NOT* be selected for FA1, Offeror wishes to *NOT* remain in the evaluation process for FA2 award).
 - 3) "060B8400047 Technical-FA2" and "060B8400047 Financial-FA2" (if Offeror does *NOT* wish to be evaluated for FA1 award).

5.3.5 Two Part Submission:

- A. TO Technical Proposal consisting of:
 - 1) TO Technical Proposal and all supporting material in Microsoft Word format, version 2007 or greater,
 - 2) the TO Technical Proposal in searchable Adobe PDF format,
 - 3) a second searchable Adobe copy of the TO Technical Proposal, redacted in accordance with confidential and/or proprietary information removed (see **Section 5.4.5.K**), and
- B. TO Financial Proposal consisting of:
 - 1) TO Financial Proposal and all supporting material in Excel format,
 - 2) the TO Financial Proposal in searchable Adobe PDF format,
 - 3) a second searchable Adobe copy of the TO Financial Proposal, redacted in accordance with confidential and/or proprietary information removed (see **Section 5.4.5.K**).

5.3.6 Offerors may submit TO Proposals by hand or by mail by contacting the Procurement Officer identified in the Key Information Summary Sheet and making special arrangements to do so.

5.4 Volume I - TO Technical Proposal

NOTE: Provide **no pricing information** in the TO Technical Proposal (Volume I). Include pricing information only in the TO Financial Proposal (Volume II).

5.4.1 In addition to the instructions below, responses in the Offeror’s TO Technical Proposal shall reference the organization and numbering of Sections in the TORFP (e.g., “Section 2.2.1 Response . . .; “Section 2.2.2 Response . . .”). All pages of both TO Proposal volumes shall be consecutively numbered from beginning (Page 1) to end (Page “x”).

5.4.2 There are three types of evaluations for this TORFP as follows:

- A. FA1 Offeror – Appending “*FA1*” to the Solicitation Number in the subject line, the FA1 TO Proposal will be evaluated for FA1 TO Award. The FA1 TO Proposal chosen for FA1 TO Award will be *immediately* removed from the FA2 evaluation. Any FA1 TO Proposal *not* chosen will automatically be evaluated for FA2.
- B. FA1-ONLY – Appending “*FA1-ONLY*” to the Solicitation Number in the subject line, The FA1-ONLY TO Proposal will be evaluated for only FA1 TO Award. If not chosen for FA1 TO Award, the FA1-ONLY Offeror Proposal will be immediately removed from any further evaluation.
- C. FA2 Offeror – Appending “*FA2*” to the Solicitation Number in the subject line, the FA2 TO Proposals will be evaluated for only FA2 TO Award. FA2 evaluation will begin after FA1 TO Award.

If proposing for:	FA1 only	Both FA1 and FA2	FA2 only
Indicate in the subject line:	FA1-ONLY	FA1	FA2

5.4.3 The FA1 and the FA1-only Offeror shall acknowledge and/or respond appropriately to all relevant sections of the TORFP **except** for subsections 2.7.

5.4.4 The FA2 Offeror shall acknowledge and/or respond appropriately to all relevant sections of the TORFP but not all of Section 2 nor all of Section 5:

- A. In Section 2 the FA2 Offeror shall respond only to subsection 2.1, 2.2 & 2.7.
- B. In Section 5, the FA2 Offeror shall skip subsection 5.4.5B.

Pertains to Functional Area	FA1	FA2
All of Section 1	X	X
All of Section 2 except 2.7	X	
None of Section 2 except 2.1, 2.2 & 2.7		X
All of Section 3	X	X
All of Section 4	X	X

All of Section 5	X	
All of Section 5 except 5.4.5B		X
All of Section 6	X	X
All of Section 7	X	X

5.4.5 The TO Technical Proposal shall include the following documents and information in the order specified as follows:

A. Proposed Services:

- 1) **Executive Summary:** A one-page summary describing the Offeror’s understanding of the TORFP scope of work (**Sections 2 and 3**) and proposed solution.
- 2) **Proposed Solution:** A more detailed description of the Offeror’s understanding of the TORFP scope of work, proposed methodology and solution. The proposed solution shall be organized to exactly match the requirements outlined in Sections 2-3.
- 3) **Draft Work Breakdown Structure (WBS):** A matrix or table that shows a breakdown of the tasks required to complete the requirements and deliverables in Sections 2-3. The WBS should reflect the chronology of tasks without assigning specific time frames or start / completion dates. The WBS may include tasks to be performed by the State or third parties, for example, independent quality assurance tasks. If the WBS appears as a deliverable in Sections 2-3, the deliverable version will be a final version. Any subsequent versions shall be approved through a formal configuration or change management process.
- 4) **Draft Project or Work Schedule:** A Gantt or similar chart containing tasks and estimated time frames for completing the requirements and deliverables in Sections 2-3. The final schedule should come later as a deliverable under the TO after the TO Contractor has had an opportunity to develop realistic estimates. The Project or Work Schedule may include tasks to be performed by the State or third parties.
- 5) **Assumptions:** A description of any assumptions formed by the Offeror in developing the TO Technical Proposal.
- 6) **Tools the Master Contractor owns and proposes for use to meet any requirements in Sections 2-3.**

B. Production Approach

This section is not limited in length and is intended to be the focus of the TO Proposals. Please address all primary and secondary options. At a minimum, the following information must be supplied:

- 1) Type of Digital Sensor(s) proposed for this project
- 2) Proposed Flight Plan (Including Height, # of Flight Lines, # of Frames (or strip equivalent) and # of Flight Line Miles)
- 3) Number of aircraft available and number to be dedicated during the flying season
- 4) Number of ground control points required and proposed

- 5) Preference for Targeted or Photo-Identifiable Control
- 6) Image Post-Processing Techniques
- 7) Aerial Triangulation Software and Techniques
- 8) Method of DEM development to support orthorectification
- 9) Digital Orthophotography Software and Techniques
- 10) Techniques for Near True Ortho production
- 11) General Approach for each of the optional products

C. QA/QC Approach

The State requires each Offeror to provide a process workflow of its approach to QA/QC. Of specific interest is when each QA/QC step occurs in the production process. In addition to the process map, each Offeror shall discuss its procedures to ensure data conformance to the requirements outlined herein.

Offerors proposing for FA1 shall also discuss their approach to creating a web-based QA/QC tool and that tool's functionality.

D. Proposer Information Sheet and Transmittal Letter

The Offeror Information Sheet (see **Appendix 2**) and a Transmittal Letter shall accompany the TO Technical Proposal. The purpose of the Transmittal Letter is to transmit the TO Proposal and acknowledge the receipt of any addenda to this TORFP issued before the TO Proposal due date and time. Transmittal Letter should be brief, be signed by an individual who is authorized to commit the Offeror to its TO Proposal and the requirements as stated in this TORFP, and contain acknowledgement of all addenda to this TORFP issued before the TO Proposal due date.

E. Minimum Qualifications Documentation (If applicable)

The Offeror shall submit any Minimum Qualifications documentation that may be required, as set forth in TORFP **Section 1**.

F. Proposed Personnel and TORFP Staffing

Offeror shall:

- 1) Identify the qualifications and types of staff proposed to be utilized under the Task Order. The Offeror shall describe in detail how the proposed staff's experience and qualifications relate to their specific responsibilities, including any staff of proposed subcontractor(s), as detailed in the Work Plan.
- 2) Complete and provide for each proposed resource **Appendix 3 – Labor Classification Resume Summary Form**.
- 3) Provide evidence proposed personnel possess the required certifications in accordance with **Section 3.10.4 Labor Categories**. Also provide an image of any required certifications.

- 4) Provide three (3) references per proposed Key Personnel containing the information listed in the Labor Classification Resume Summary Form - **Appendix 3**.
- 5) Provide a Staffing Management Plan that demonstrates how the Offeror will provide resources in addition to the personnel requested in this TORFP, and how the TO Contractor Personnel shall be managed. Include:
 - a) Planned team composition by role (**Important! Identify specific names and provide history only for the proposed resources required for evaluation of this TORFP**).
 - b) Process and proposed lead time for locating and bringing on board resources that meet the Task Order needs.
 - c) Supporting descriptions for all labor categories proposed in response to this TORFP.
 - d) Description of approach for quickly substituting qualified personnel after start of the Task Order.
- 6) Provide the names and titles of the Offeror's management staff who will supervise the personnel and quality of services rendered under this TO Agreement.

G. Subcontractors

Identify all proposed Subcontractors, including MBEs, and their roles in the performance of the scope of work hereunder.

H. Overall Offeror team organizational chart

Provide an overall team organizational chart with all team resources available to fulfill the Task Order scope of work.

I. Master Contractor and Subcontractor Experience and Capabilities

- 1) Provide up to three examples of engagements or contracts the Master Contractor or Subcontractor, if applicable, has completed that were similar to the requested scope of work (additional information is available at 3.10.2 and 3.10.3). Include contact information for each client organization complete with the following:
 - a) Name of organization.
 - b) Project Name or task order name
 - c) Location
 - d) Role on Project (prime, sub, etc.)
 - e) Project Description
 - f) Point of contact name, title, e-mail and telephone number (point of contact shall be accessible and knowledgeable regarding experience)
 - g) Services provided as they relate to the scope of work.
 - h) Start and end dates for each example engagement or contract.

- i) Current Master Contractor team personnel who participated on the engagement.
 - j) If the Master Contractor is no longer providing the services, explain why not.
- 2) State of Maryland Experience: If applicable, the Master Contractor shall submit a list of all contracts it currently holds or has held within the past five (5) years with any entity of the State of Maryland.

For each identified contract, the Master Contractor shall provide the following (if not already provided in sub paragraph A above):

- a) Contract or task order name
- b) Name of organization.
- c) Point of contact name, title, e-mail, and telephone number (point of contact shall be accessible and knowledgeable regarding experience)
- d) Start and end dates for each engagement or contract. If the Master Contractor is no longer providing the services, explain why not.
- e) Dollar value of the contract.
- f) Indicate if the contract was terminated before the original expiration date.
- g) Indicate if any renewal options were not exercised.

Note - State of Maryland experience can be included as part of **I.1** above as engagement or contract experience. State of Maryland experience is neither required nor given more weight in proposal evaluations.

J. State Assistance

Provide an estimate of expectation concerning participation by State personnel.

K. Confidentiality

A Master Contractor should give specific attention to the identification of those portions of its proposal that it considers confidential, proprietary commercial information or trade secrets, and provide justification why such materials, upon request, should not be disclosed by the State under the Public Information Act, Title 4, of the General Provisions Article of the Annotated Code of Maryland. Master Contractors are advised that, upon request for this information from a third party, the TO Procurement Officer will be required to make an independent determination regarding whether the information may be disclosed.

Offeror shall furnish a list that identifies each section of the TO Technical Proposal where, in the Offeror's opinion, the Offeror's response should not be disclosed by the State under the Public Information Act.

L. Additional Submissions:

- 1) Attachments and Exhibits;
 - a) All forms required for the TO Technical Proposal are identified in **Table 1 of Section 7** – Exhibits and Attachments. Unless directed otherwise by

instructions within an individual form, complete, sign, and include all required forms in the TO Technical Proposal.

- b) No attachment forms shall be altered. Signatures shall be clearly visible.
- 2) Offerors shall furnish with their Technical TO Proposal any and all agreements the Offeror expects the State to sign or to be subject to in connection with or in order to use the Offeror's services under this Task Order Agreement, including but not limited to software license agreement(s), end user license agreement(s), AUP. This includes the complete text of all agreements referenced or incorporated in primary documents (i.e., links to the relevant agreements are not allowed).
- 3) Any services furnished from third party entities, e.g., resold services, shall include current Letters of Authorization or such other documentation demonstrating the authorization for such services.
- 4) A Letter of Authorization shall be on the authorizing entity's letterhead or through the authorizing entity's e-mail. Further, each Letter of Authorization shall be less than twelve (12) months old. Each Letter of Authorization or e-mail must provide the following information:
 - a) Authorizing entity POC name and alternate for verification
 - b) Authorizing entity POC mailing address
 - c) Authorizing entity POC telephone number
 - d) Authorizing entity POC email address
 - e) If available, a Reseller Identifier

5.5 Volume II – TO Financial Proposal

- 5.5.1 The TO Financial Proposal shall contain all price information in the format specified in **Attachment B** - Financial Proposal Form. The Offeror shall complete the Financial Proposal Form only as provided in the Financial Proposal Form Instructions and the Financial Proposal Form itself. Offerors submitting to Imagery Acquisition – Functional Area 1 shall submit pricing on Attachment B1, Offerors submitting pricing for Independent QA/QC – Functional Area shall submit pricing on Attachment B2.
- 5.5.2 The TO Financial Proposal shall contain a description of any assumptions on which the Master Contractor's TO Financial Proposal is based (Assumptions shall not constitute conditions, contingencies, or exceptions to the Financial Proposal Form).
- 5.5.3 Prices shall be valid for 120 days.

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6 Evaluation and Selection Process

The TO Contractor will be selected from among all eligible Master Contractors within the appropriate Functional Area responding to the CATS+ TORFP. In making the TO Agreement award determination, the Department will consider all information submitted in accordance with Section 5.

6.1 Evaluation Committee

Evaluation of TO Proposals will be performed in accordance with COMAR 21.05.03 by a committee established for that purpose and based on the evaluation criteria set forth below. The Evaluation Committee will review TO Proposals, participate in Offeror oral presentations and discussions, and provide input to the TO Procurement Officer. The Department reserves the right to utilize the services of individuals outside of the established Evaluation Committee for advice and assistance, as deemed appropriate.

During the evaluation process, the TO Procurement Officer may determine at any time that a particular Offeror is not susceptible for award.

6.2 TO Technical Proposal Evaluation Criteria

The criteria to be used to evaluate each TO Technical Proposal are listed below in descending order of importance. Unless stated otherwise, any sub-criteria within each criterion have equal weight.

6.2.1 Offeror's Technical Response to TORFP Requirements (See TORFP § 5.4.5)

The State prefers an Offeror's response to work requirements in the TORFP that illustrates a comprehensive understanding of work requirements and mastery of the subject matter, including an explanation of how the work will be performed. TO Proposals which include limited responses to work requirements such as "concur" or "will comply" will receive a lower ranking than those TO proposals that demonstrate an understanding of the work requirements and include plans to meet or exceed them.

- A. Technical Approach to Project including Sensor Utilized and Production Techniques for aerial photography, ground control, aerial triangulation, and orthophotography production phases of the project. This applies to FA1 only.
- B. Quality Assurance and Quality Control Plans and Approach to this Project. This applies to both FA1 and specifically to Offerors responding to FA2.
- C. Proposed Schedule. This applies to both FA1 and FA2.

6.2.2 Experience and Qualifications of Proposed Staff (See TORFP § 5.4.5.F_

The capability of the proposed resources to perform the required tasks and produce the required deliverables in the TORFP **Sections 2-3**. Capability will be determined from each proposed individual's resume, reference checks, and oral presentation (See **Section 4.5** Oral Presentation).

6.2.3 Offeror Qualifications and Capabilities, including proposed subcontractors (See TORFP § 5.4.2.I). This applies to FA1 and FA2.

6.3 TO Financial Proposal Evaluation Criteria

All qualified Offerors (see **Section 6.4**) will be ranked from the lowest (most advantageous) to the highest (least advantageous) price based on the Total Proposal Price within the stated guidelines set forth in this TORFP and as submitted on **Attachment B** - TO Financial Proposal Form.

6.4 Selection Procedures

TO Technical Proposals shall be evaluated based on the criteria set forth above in **Section 6.2**. TO Technical Proposals and TO Financial Proposals will be evaluated independently of each other.

- A. TO Proposals will be assessed throughout the evaluation process for compliance with the minimum qualifications listed in Section 1 of this TORFP, and quality of responses to **Section 5.4** TO Technical Proposal. Failure to meet the minimum qualifications shall render a TO Proposal not reasonably susceptible for award. The TO Procurement Officer will notify those Offerors who have not been selected to perform the work.
- B. TO Technical Proposals will be evaluated for technical merit and ranked. Oral presentations and discussions may be held to assure full understanding of the State's requirements and of the qualified Offeror's proposals and abilities to perform, and to facilitate arrival at a TO Agreement that is most advantageous to the State.
- C. The Procurement Officer will only open the TO Financial Proposals where the associated TO Technical Proposals have been classified as reasonably susceptible for award.
- D. After review of TO Financial Proposals, TO Financial Proposals for qualified Offerors will be reviewed and ranked from lowest to highest price proposed.
- E. When in the best interest of the State, the TO Procurement Officer may permit Qualified Offerors to revise their initial Proposals and submit, in writing, Best and Final Offers (BAFOs). The State may make an award without issuing a request for a BAFO.
- F. The Procurement Officer shall make a determination recommending award of the TO to the responsible Offeror who has the TO Proposal determined to be the most advantageous to the State, considering price and the evaluation criteria set forth above. In making this selection, the TO Technical Proposal will be given more weight than the TO Financial Proposal.

All Master Contractors submitting a TO Proposal shall receive written notice from the TO Procurement Officer identifying the awardee.

6.5 Documents Required upon Notice of Recommendation for Task Order Award

Upon receipt of a Notification of Recommendation for Task Order award, the apparent awardee shall complete and furnish the documents and attestations as directed in Table 1 of **Section 7 – TORFP Attachments and Appendices**.

Commencement of work in response to a TO Agreement shall be initiated only upon the completed documents and attestations, plus:

- A. Issuance of a fully executed TO Agreement,
- B. Purchase Order, and

- C. by a Notice to Proceed authorized by the TO Procurement Officer. See (see online example at <http://doit.maryland.gov/contracts/Documents/CATSPlus/CATS+NoticeToProceedSample.pdf>).

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7 TORFP ATTACHMENTS AND APPENDICES

Instructions Page

A TO Proposal submitted by an Offeror must be accompanied by the completed forms and/or affidavits identified as “with proposal” in the “When to Submit” column in Table 1 below. All forms and affidavits applicable to this TORFP, including any applicable instructions and/or terms, are identified in the “Applies” and “Label” columns in Table 1.

For documents required as part of the proposal:

- A. For e-mail submissions, submit one (1) copy of each with signatures.
- B. For paper submissions, submit two (2) copies of each with original signatures. All signatures must be clearly visible.

All Offerors are advised that if a Task Order is awarded as a result of this solicitation, the successful Offeror will be required to complete certain forms and affidavits after notification of recommended award. The list of forms and affidavits that must be provided is described in Table 1 below in the “When to Submit” column.

For documents required after award, submit three (3) copies of each document within the appropriate number of days after notification of recommended award, as listed in Table 1 below in the “When to Submit” column.

Table 1: TORFP ATTACHMENTS AND APPENDICES

Applies?	When to Submit	Label	Attachment Name
Y	Before TO Proposal	A	Pre-Proposal Conference Response Form
Y	With TO Proposal	B	TO Financial Proposal Instructions and Form
N	n/a	C	RESERVED
N	10 Business Days after recommended award	D	MBE Forms D-2, D-3A, D-3B Important: Attachment D-1C, if a waiver has been requested, is also required within 10 days of recommended award.
N	As directed in forms	D	MBE Forms D-4A, D-4B, D-5
N	With TO Proposal	E	Veteran-Owned Small Business Enterprise (VSBE) Form E-1
N	5 Business Days after recommended award	E	VSBE Forms E-2, E-3
Y	With TO Proposal	F	Maryland Living Wage Requirements for Service Task Orders and Affidavit of Agreement

Applies?	When to Submit	Label	Attachment Name
N	With TO Proposal	G	Federal Funds Attachments
Y	With TO Proposal	H	Conflict of Interest Affidavit and Disclosure
Y	5 Business Days after recommended award	I	Non-Disclosure Agreement (TO Contractor)
N	5 Business Days after recommended award	J	HIPAA Business Associate Agreement
N	With TO Proposal	K	Mercury Affidavit
N	With TO Proposal	L	Location of the Performance of Services Disclosure
Y	5 Business Days after recommended award	M	Task Order Agreement
N	n/a	N	RESERVED
N	n/a	O	RESERVED
Y	With Proposal	P	Certification Regarding Investment in Iran
Appendices			
Applies?	When to Submit	Label	Attachment Name
Y	n/a	1	Abbreviations and Definitions
Y	With TO Proposal	2	Offeror Information Sheet
Y	With TO Proposal	3	Labor Classification Resume Summary (Appendix 3)
Additional Submissions			
Applies?	When to Submit	Label	Attachment Name
Y	5 Business Days after recommended award	--	Evidence of meeting insurance requirements (see Section 3.6); 1 copy

Applies?	When to Submit	Label	Attachment Name
Y	With deliverables	--	Deliverable Product Acceptance Form (DPAF) (see online at http://doit.maryland.gov/contracts/Documents/CATSPlu s/CATS+DPAFSample.pdf)

Attachment A. TO Pre-Proposal Conference Response Form

Solicitation Number 060B8400047

DIGITAL HIGH RESOLUTION AERIAL PHOTOGRAPHY (ORTHOPHOTOGRAPHY) FOR
MARYLAND

A TO Pre-proposal conference will be held on Thursday, May 10, 2018, at 100 Community Place, Crownsville, Maryland 21032 in conference room B.

Please return this form by Tuesday, May 8, 2018, advising whether or not you plan to attend. The completed form should be returned via e-mail or fax to the TO Procurement Officer at the contact information below:

Memory Jackson
DoIT
E-mail: Memory.Jackson@maryland.gov

Please indicate:

- _____ Yes, the following representatives will be in attendance.
Attendees (Check the TORFP for limits to the number of attendees allowed):
- 1.
 - 2.
 - 3.
- _____ No, we will not be in attendance.

Please specify whether any reasonable accommodations are requested (see TORFP § 4.1 "TO Pre-proposal conference"):

Offeror: _____
Offeror Name (please print or type)

By: _____
Signature/Seal

Printed Name: _____
Printed Name

Title: _____
Title

Date: _____
Date

Directions to the TO Pre-Proposal Conference

Attachment B. TO Financial Proposal Instructions & Form

See separate Excel TO Financial Proposal Form labeled ATTACHMENT B-Financial Proposal Form.xls.

Attachment C. RESERVED

Attachment D. RESERVED

Attachment E. Veteran-Owned Small Business Enterprise (VSBE) Forms

This solicitation does not include a Veteran-Owned Small Business Enterprise goal.

**Attachment F. Maryland Living Wage Affidavit of Agreement for
Service Contracts**

- A. This contract is subject to the Living Wage requirements under Md. Code Ann., State Finance and Procurement Article, Title 18, and the regulations proposed by the Commissioner of Labor and Industry (Commissioner). The Living Wage generally applies to a Contractor or subcontractor who performs work on a State contract for services that is valued at \$100,000 or more. An employee is subject to the Living Wage if he/she is at least 18 years old or will turn 18 during the duration of the contract; works at least 13 consecutive weeks on the State Contract and spends at least one-half of the employee's time during any work week on the State Contract.
- B. The Living Wage Law does not apply to:
- (1) A Contractor who:
 - (a) Has a State contract for services valued at less than \$100,000, or
 - (b) Employs 10 or fewer employees and has a State contract for services valued at less than \$500,000.
 - (2) A subcontractor who:
 - (a) Performs work on a State contract for services valued at less than \$100,000,
 - (b) Employs 10 or fewer employees and performs work on a State contract for services valued at less than \$500,000, or
 - (c) Performs work for a Contractor not covered by the Living Wage Law as defined in B(1)(b) above, or B (3) or C below.
 - (3) Service contracts for the following:
 - (a) Services with a Public Service Company;
 - (b) Services with a nonprofit organization;
 - (c) Services with an officer or other entity that is in the Executive Branch of the State government and is authorized by law to enter into a procurement ("Unit"); or
 - (d) Services between a Unit and a County or Baltimore City.
- C. If the Unit responsible for the State contract for services determines that application of the Living Wage would conflict with any applicable Federal program, the Living Wage does not apply to the contract or program.
- D. A Contractor must not split or subdivide a State contract for services, pay an employee through a third party, or treat an employee as an independent Contractor or assign work to employees to avoid the imposition of any of the requirements of Md. Code Ann., State Finance and Procurement Article, Title 18.
- E. Each Contractor/subcontractor, subject to the Living Wage Law, shall post in a prominent and easily accessible place at the work site(s) of covered employees a notice of the Living Wage Rates, employee rights under the law, and the name, address, and telephone number of the Commissioner.

- F. The Commissioner shall adjust the wage rates by the annual average increase or decrease, if any, in the Consumer Price Index for all urban consumers for the Washington/Baltimore metropolitan area, or any successor index, for the previous calendar year, not later than 90 days after the start of each fiscal year. The Commissioner shall publish any adjustments to the wage rates on the Division of Labor and Industry's website. An employer subject to the Living Wage Law must comply with the rate requirements during the initial term of the contract and all subsequent renewal periods, including any increases in the wage rate, required by the Commissioner, automatically upon the effective date of the revised wage rate.
- G. A Contractor/subcontractor who reduces the wages paid to an employee based on the employer's share of the health insurance premium, as provided in Md. Code Ann., State Finance and Procurement Article, §18-103(c), shall not lower an employee's wage rate below the minimum wage as set in Md. Code Ann., Labor and Employment Article, §3-413. A Contractor/subcontractor who reduces the wages paid to an employee based on the employer's share of health insurance premium shall comply with any record reporting requirements established by the Commissioner.
- H. A Contractor/subcontractor may reduce the wage rates paid under Md. Code Ann., State Finance and Procurement Article, §18-103(a), by no more than 50 cents of the hourly cost of the employer's contribution to an employee's deferred compensation plan. A Contractor/subcontractor who reduces the wages paid to an employee based on the employer's contribution to an employee's deferred compensation plan shall not lower the employee's wage rate below the minimum wage as set in Md. Code Ann., Labor and Employment Article, §3-413.
- I. Under Md. Code Ann., State Finance and Procurement Article, Title 18, if the Commissioner determines that the Contractor/subcontractor violated a provision of this title or regulations of the Commissioner, the Contractor/subcontractor shall pay restitution to each affected employee, and the State may assess liquidated damages of \$20 per day for each employee paid less than the Living Wage.
- J. Information pertaining to reporting obligations may be found by going to the Division of Labor and Industry website <http://www.dllr.state.md.us/labor/prev/livingwage.shmtl> and clicking on Living Wage for State Service Contracts.

F-1 Maryland Living Wage Requirements Affidavit of Agreement

Contract No. 060B8400047

Name of Contractor:

Address:

If the Contract Is Exempt from the Living Wage Law

The Undersigned, being an authorized representative of the above named Contractor, hereby affirms that the Contract is exempt from Maryland's Living Wage Law for the following reasons (check all that apply):

- Offeror is a nonprofit organization
- Offeror is a public service company
- Offeror employs 10 or fewer employees and the proposed contract value is less than \$500,000
- Offeror employs more than 10 employees and the proposed contract value is less than \$100,000

If the Contract Is a Living Wage Contract

- A. The Undersigned, being an authorized representative of the above-named Contractor, hereby affirms its commitment to comply with Title 18, State Finance and Procurement Article, Annotated Code of Maryland and, if required, submit all payroll reports to the Commissioner of Labor and Industry with regard to the above stated contract. The Offeror agrees to pay covered employees who are subject to living wage at least the living wage rate in effect at the time service is provided for hours spent on State contract activities, and ensure that its subcontractors who are not exempt also pay the required living wage rate to their covered employees who are subject to the living wage for hours spent on a State contract for services. The Contractor agrees to comply with, and ensure its subcontractors comply with, the rate requirements during the initial term of the contract and all subsequent renewal periods, including any increases in the wage rate established by the Commissioner of Labor and Industry, automatically upon the effective date of the revised wage rate.
- B. _____ (initial here if applicable) The Offeror affirms it has no covered employees for the following reasons: (check all that apply):
 - The employee(s) proposed to work on the contract will spend less than one-half of the employee's time during any work week on the contract
 - The employee(s) proposed to work on the contract is 17 years of age or younger during the duration of the contract; or
 - The employee(s) proposed to work on the contract will work less than 13 consecutive weeks on the State contract.

The Commissioner of Labor and Industry reserves the right to request payroll records and other data that the Commissioner deems sufficient to confirm these affirmations at any time.

Name of Authorized Representative:

Signature of Authorized Representative : _____ Date: _____

Title:

Witness Name (Typed or Printed) _____

Witness Signature: _____ Date: _____

SUBMIT THIS AFFIDAVIT WITH PROPOSAL

Attachment G. Federal Funds Attachments

This solicitation does not include a Federal Funds Attachment.

Attachment H. Conflict of Interest Affidavit and Disclosure

Reference COMAR 21.05.08.08

A. “Conflict of interest” means that because of other activities or relationships with other persons, a person is unable or potentially unable to render impartial assistance or advice to the State, or the person’s objectivity in performing the contract work is or might be otherwise impaired, or a person has an unfair competitive advantage.

B. “Person” has the meaning stated in COMAR 21.01.02.01B (64) and includes a Offeror, TO Contractor, consultant, or subcontractor or sub-consultant at any tier, and also includes an employee or agent of any of them if the employee or agent has or will have the authority to control or supervise all or a portion of the work for which a Proposal is made.

C. The Offeror warrants that, except as disclosed in §D, below, there are no relevant facts or circumstances now giving rise or which could, in the future, give rise to a conflict of interest.

D. The following facts or circumstances give rise or could in the future give rise to a conflict of interest (explain in detail — attach additional sheets if necessary):

E. The Offeror agrees that if an actual or potential conflict of interest arises after the date of this affidavit, the Offeror shall immediately make a full disclosure in writing to the TO Procurement Officer of all relevant facts and circumstances. This disclosure shall include a description of actions which the Offeror has taken and proposes to take to avoid, mitigate, or neutralize the actual or potential conflict of interest. If the contract has been awarded and performance of the contract has begun, the TO Contractor shall continue performance until notified by the TO Procurement Officer of any contrary action to be taken.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF.

Date: _____ By: _____

(Authorized Representative and Affiant)

SUBMIT THIS AFFIDAVIT WITH Bid/PROPOSAL

Attachment I. Non-Disclosure Agreement (TO Contractor)

This solicitation does not require a Non-Disclosure Agreement.

Attachment J. HIPAA Business Associate Agreement

This solicitation does not require a HIPAA Business Associate Agreement.

Attachment K. Mercury Affidavit

This solicitation does not include the procurement of products known to likely include mercury as a component.

Attachment L. Location of the Performance of Services Disclosure

This solicitation does not require a Location of the Performance of Services Disclosure.

Attachment M. Task Order

CATS+ TORFP# 060B8400047 OF
MASTER CONTRACT #060B2490023

This Task Order Agreement (“TO Agreement”) is made this day of Month, 20XX by and between _____(TO Contractor) and the STATE OF MARYLAND, Department of Information Technology (DoIT or the “Department”).

IN CONSIDERATION of the mutual promises and the covenants herein contained and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Definitions. In this TO Agreement, the following words have the meanings indicated:
 - a. “Agency” means Department of Information Technology, as identified in the CATS+ TORFP # 060B8400047.
 - b. “CATS+ TORFP” means the Task Order Request for Proposals # 060B8400047, dated MONTH DAY, YEAR, including any addenda and amendments.
 - c. “Master Contract” means the CATS+ Master Contract between the Maryland Department of Information Technology and TO Contractor.
 - d. “TO Procurement Officer” means Memory Jackson. The Department may change the TO Procurement Officer at any time by written notice.
 - e. “TO Agreement” means this signed TO Agreement between DoIT and TO Contractor.
 - f. “TO Contractor” means the CATS+ Master Contractor awarded this TO Agreement, whose principal business address is _____.
 - g. “TO Manager” means Lisa Lowe. The Department may change the TO Manager at any time by written notice to the TO Contractor.
 - h. “TO Technical Proposal” means the TO Contractor’s technical response to the CATS+ TORFP dated date of TO Technical Proposal.
 - i. “TO Financial Proposal” means the TO Contractor’s financial response to the CATS+ TORFP dated date of TO Financial Proposal.
 - j. “TO Proposal” collectively refers to the TO Technical Proposal and TO Financial Proposal.
2. Scope of Work
 - 2.1 This TO Agreement incorporates all of the terms and conditions of the Master Contract and shall not in any way amend, conflict with or supersede the Master Contract.
 - 2.2 The TO Contractor shall, in full satisfaction of the specific requirements of this TO Agreement, provide the services set forth in Section 3 of the CATS+ TORFP. These services shall be provided in accordance with the Master Contract, this TO Agreement, and the following Exhibits, which are attached and incorporated herein by reference. If there is any conflict among the Master Contract, this TO Agreement, and these Exhibits, the terms of the Master Contract shall govern. If there is

any conflict between this TO Agreement and any of these Exhibits, the following order of precedence shall determine the prevailing provision:

- The TO Agreement,
- Exhibit A – CATS+ TORFP
- Exhibit B – TO Technical Proposal
- Exhibit C – TO Financial Proposal

2.3 The TO Procurement Officer may, at any time, by written order, make changes in the work within the general scope of the TO Agreement. No other order, statement or conduct of the TO Procurement Officer or any other person shall be treated as a change or entitle the TO Contractor to an equitable adjustment under this Section. Except as otherwise provided in this TO Agreement, if any change under this Section causes an increase or decrease in the TO Contractor's cost of, or the time required for, the performance of any part of the work, whether or not changed by the order, an equitable adjustment in the TO Agreement price shall be made and the TO Agreement modified in writing accordingly. The TO Contractor must assert in writing its right to an adjustment under this Section within thirty (30) days of receipt of written change order and shall include a written statement setting forth the nature and cost of such claim. No claim by the TO Contractor shall be allowed if asserted after final payment under this TO Agreement. Failure to agree to an adjustment under this Section shall be a dispute under the Disputes clause of the Master Contract. Nothing in this Section shall excuse the TO Contractor from proceeding with the TO Agreement as changed.

3. Time for Performance

Unless terminated earlier as provided in the Master Contract, the term of this TO Agreement shall commence as of the "Effective Date" and expire on the <<xxth (xxth) >>anniversary thereof. ****if option periods exist add: **** At the sole option of the State, this TO Agreement may be extended for <<optionPeriods>> periods for a total TO Agreement period ending on Month, Day, Year.

4. Consideration and Payment

4.1 The consideration to be paid the TO Contractor shall be done so in accordance with the CATS+ TORFP and shall not exceed \$_____. Any work performed by the TO Contractor in excess of the not-to-exceed ceiling amount of the TO Agreement without the prior written approval of the TO Manager is at the TO Contractor's risk of non-payment.

4.2 Payments to the TO Contractor shall be made as outlined Section 3 of the CATS+ TORFP, but no later than thirty (30) days after the Department's receipt of a proper invoice for services provided by the TO Contractor, acceptance by the Department of services provided by the TO Contractor, and pursuant to the conditions outlined in Section 4 of this Agreement.

4.3 Each invoice for services rendered must include the TO Contractor's Federal Tax Identification Number which is _____. Charges for late payment of invoices other than as prescribed by Title 15, Subtitle 1, of the State Finance and Procurement Article, Annotated Code of Maryland, as from time-to-time amended, are prohibited. Invoices must be submitted to the Department TO Manager unless otherwise specified herein.

4.4 In addition to any other available remedies, if, in the opinion of the TO Procurement Officer, the TO Contractor fails to perform in a satisfactory and timely manner, the TO Procurement Officer may

refuse or limit approval of any invoice for payment, and may cause payments to the TO Contractor to be reduced or withheld until such time as the TO Contractor meets performance standards as established by the TO Procurement Officer.

SIGNATURES ON NEXT PAGE

IN WITNESS THEREOF, the parties have executed this TO Agreement as of the date hereinabove set forth.

TO Contractor Name

By: Type or Print TO Contractor POC

Date

Witness: _____

STATE OF MARYLAND, DoIT

By: <<procurementOfficerName>>, TO Procurement Officer

Date

Witness: _____

Approved for form and legal sufficiency this _____ day of _____ 20____.

Assistant Attorney General

Attachment N. RESERVED

Attachment O. RESERVED

Attachment P. Certification Regarding Investments in Iran

Authority: State Finance & Procurement, §§17-701 – 17-707, Annotated Code of Maryland [Chapter 447, Laws of 2012.]

List: The Investment Activities in Iran list identifies companies that the Board of Public Works has found to engage in investment activities in Iran; those companies may not participate in procurements with a public body in the State. “Engaging in investment activities in Iran” means:

- A. Providing goods or services of at least \$20 million in the energy sector of Iran; or
- B. For financial institutions, extending credit of at least \$20 million to another person for at least 45 days if the person is on the Investment Activities In Iran list and will use the credit to provide goods or services in the energy of Iran.

The Investment Activities in Iran list is located at: www.bpw.state.md.us

Rule: A company listed on the Investment Activities In Iran list is ineligible to bid on, submit a proposal for, or renew a contract for goods and services with a State Agency or any public body of the State. Also ineligible are any parent, successor, subunit, direct or indirect subsidiary of, or any entity under common ownership or control of, any listed company.

NOTE: This law applies only to new contracts and to contract renewals. The law does not require an Agency to terminate an existing contract with a listed company.

CERTIFICATION REGARDING INVESTMENTS IN IRAN

The undersigned certifies that, in accordance with State Finance & Procurement Article, §17-705:

- (i) it is not identified on the list created by the Board of Public Works as a person engaging in investment activities in Iran as described in §17-702 of State Finance & Procurement; and
- (ii) it is not engaging in investment activities in Iran as described in State Finance & Procurement Article, §17-702.

The undersigned is unable make the above certification regarding its investment activities in Iran due to the following activities:

Name of Authorized Representative: _____

Signature of Authorized Representative: _____

Date: _____ Title: _____

Witness Name (Typed or Printed): _____

Witness Signature and Date: _____

Appendix 1. – Abbreviations and Definitions

For purposes of this TORFP, the following abbreviations or terms have the meanings indicated below:

- A. Acceptable Use Policy (AUP) - A written policy documenting constraints and practices that a user must agree to in order to access a private network or the Internet
- B. Access - The ability or the means necessary to read, write, modify, or communicate data/information or otherwise use any information system resource
- C. Business Day(s) – The official working days of the week to include Monday through Friday. Official working days excluding State Holidays (see definition of “Normal State Business Hours” below).
- D. CCD – Charged-Coupled Device
- E. COMAR – Code of Maryland Regulations available on-line at <http://www.dsd.state.md.us/COMAR/ComarHome.html>.
- F. Customers – Customers are defined as the State and local governments.
- G. Data Breach – The unauthorized acquisition, use, modification or disclosure of State data, or other Sensitive Data
- H. Department of Information Technology or (DoIT or the “Department”)
- I. Effective Date - The date of mutual TO Agreement execution by the parties
- J. Enterprise License Agreement (ELA) – An agreement to license the entire population of an entity (employees, on-site contractors, off-site contractors) accessing a software or service for a specified period of time for a specified value.
- K. Information Technology (IT) – All electronic information-processing hardware and software, including: (a) maintenance; (b) telecommunications; and (c) associated consulting services
- L. ISO – International Organization for Standardization
- M. Key Personnel – All TO Contractor Personnel identified in the solicitation as such that are essential to the work being performed under the Task Order. See TORFP **Section 3.10**.
- N. Local Governments – This consists of county governments or municipalities
- O. Local Time – Time in the Eastern Time Zone as observed by the State of Maryland. Unless otherwise specified, all stated times shall be Local Time, even if not expressly designated as such.
- P. Minority Business Enterprise (MBE) – Any legal entity certified as defined at COMAR 21.01.02.01B (54) which is certified by the Maryland Department of Transportation under COMAR 21.11.03.
- Q. NIR – Near Infrared
- R. Normal State Business Hours - Normal State business hours are 8:00 a.m. – 5:00 p.m. Monday through Friday except State Holidays, which can be found at: www.dbm.maryland.gov – keyword: State Holidays.
- S. Notice to Proceed (NTP) – A written notice from the TO Procurement Officer that work under the Task Order, project or Work Order (as applicable) is to begin as of a specified date. The NTP Date is the start date of work under the Task Order, project or

Work Order. Additional NTPs may be issued by either the TO Procurement Officer or the TO Manager regarding the start date for any service included within this solicitation with a delayed or non-specified implementation date.

- T. NTP Date – The date specified in a NTP for work on Task Order, project or Work Order to begin.
- U. Offeror – A Master Contractor that submits a Proposal in response to this TORFP.
- V. Partner – any state or local entity, includes counties or municipalities.
- W. Security Incident – A violation or imminent threat of violation of computer security policies, Security Measures, acceptable use policies, or standard security practices. “Imminent threat of violation” is a situation in which the organization has a factual basis for believing that a specific incident is about to occur.
- X. Security or Security Measures – The technology, policy and procedures that a) protects and b) controls access to networks, systems, and data
- Y. Sensitive Data - Means PII;PHI; other proprietary or confidential data as defined by the State, including but not limited to “personal information” under Md. Code Ann., Commercial Law § 14-3501(d) and Md. Code Ann., St. Govt. § 10-1301(c) and information not subject to disclosure under the Public Information Act, Title 4 of the General Provisions Article; and .information about an individual that (1) can be used to distinguish or trace an individual’s identity, such as name, social security number, date and place of birth, mother’s maiden name, or biometric records; (2) is linked or linkable to an individual, such as medical, educational, financial, and employment information
- Z. Software - The object code version of computer programs licensed pursuant to this TO Agreement. Embedded code, firmware, internal code, microcode, and any other term referring to software that is necessary for proper operation is included in this definition of Software. Software includes all prior, current, and future versions of the Software and all maintenance updates and error corrections. Software also includes any upgrades, updates, bug fixes or modified versions or backup copies of the Software licensed to the State by TO Contractor or an authorized distributor.
- AA. State – The State of Maryland.
- BB. Task Order (TO) – The scope of work described in this TORFP.
- CC. TO Agreement - The contract awarded to the successful Offeror pursuant to this Task Order Request for Proposals, the form of which is attached to this TORFP as **Attachment M.**
- DD. TO Contractor Personnel - Employees and agents and subcontractor employees and agents performing work at the direction of the TO Contractor under the terms of the Task Order awarded from this TORFP.
- EE. TO Proposal – As appropriate, either or both of an Offeror’s TO Technical or TO Financial Proposal.
- FF. Technical Safeguards – The technology and the policy and procedures for its use that protect State Data and control access to it.

- GG. Total Proposal Price - The Offeror's total proposed price for services in response to this solicitation, included in the TO Financial Proposal with **Attachment B** – TO Financial Proposal Form, and used in the financial evaluation of Proposals (see **TORFP Section 5.5**).
- HH. Veteran-owned Small Business Enterprise (VSBE) – A business that is verified by the Center for Verification and Evaluation (CVE) of the United States Department of Veterans Affairs as a veteran-owned small business. See Code of Maryland Regulations (COMAR) 21.11.13.
- II. Work Order – A subset of work authorized by the TO Manager performed under the general scope of this TORFP, which is defined in advance of TO Contractor fulfillment, and which may not require a TO Agreement modification. Except as otherwise provided, any reference to the Task Order shall be deemed to include reference to a Work Order.

Appendix 2. – Offeror Information Sheet

Offeror	
Company Name	
Street Address	
City, State, Zip Code	
TO Contractor Federal Employer Identification Number (FEIN)	
TO Contractor eMM ID number	As of the date of Proposal submission, are you registered to do business with the state of Maryland?
SBE / MBE/ VSBE Certification	
SBE	Number: Expiration Date:
VSBE	Number: Expiration Date:
MBE	Number: Expiration Date: Categories to be applied to this solicitation (dual certified firms must choose only one category).
Offeror Primary Contact	
Name	
Title	
Office Telephone number (with area code)	
Cell Telephone number (with area code)	
e-mail address	
Authorized Offer Signatory	
Name	
Title	
Office Telephone number (with area code)	
Cell Telephone number (with area code)	
e-mail address	

**Appendix 3. - Labor Classification Personnel Resume Summary Form – CATS+ TORFP
#060B8400047**

Proposed Key Personnel:	Master Contractor:			CATS+ Labor Category:
Education: (Insert the education requirements for the proposed labor category from Section 2.10 of the CATS+ RFP)	Institution/Address:		Degree or Certification:	Year Completed:
			Field of Study:	
Generalized Experience: (Insert the generalized experience description for the proposed labor category from Section 2.10 of the CATS+ RFP)	Start	End	Company/Job Title	Relevant Work Experience
Specialized Experience: (Insert the specialized experience description for the proposed labor category from Section 2.10 of the CATS+ RFP)	Start	End	Company/Job Title	Relevant Work Experience
TORFP Additional Requirements (Insert, if applicable, the additional requirements from Section 3.10.4 of the TORFP)				

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The information provided on this form for this labor category is true and correct to the best of my knowledge:

Master Contractor
Representative:

Proposed Key Personnel:

Signature

Signature

Printed Name:

Printed Name

Date

Date

CANDIDATE REFERENCES (List persons the State may contact as employment references)

Reference Name	Job Title or Position	Organization Name	Telephone / Email

