

Air Route Details

**Michigan Economic Development Corporation RFP-CASE-418566
Systems Engineering and Integration Services for the
Michigan Beyond Visual Line of Sight (BVLOS) Operations System
Q&A**

Question:		Answer:																																			
1	What is the time zone for the submission deadline?	Eastern Time (ET)																																			
2	Are there any font size, page limitations, or file size restrictions?	File Size: Proposals must be received by the MEDC via email. The MEDC utilizes Outlook, which limits all attachments per email to approximately 20 MB, collectively. There are no restrictions on font size or page limitations, so long as the content is clear and legible.																																			
3	How many past performance examples are required for the prime and subcontractors?	There is no minimum or maximum for past performance examples. Include as many as you deem necessary to convey your expertise and capability to best fulfil the contract requirements.																																			
4	What is the anticipated award date?	Anticipated award announcement date is October 7, 2024																																			
5	Page 2 notes that MEDC will be providing information about the area's existing assets and infrastructure that is deemed useful and appropriate for installing hardware, however it was not attached to the RFP. Similarly, will specific assets or areas that cannot accommodate hardware installation be identified?	<p>Sites may be available to stage or “park” equipment during the route (ie tracking sensors, antennae etc.); as it relates to hardware on a tower site, it would depend on the type, weight, height, etc. of the equipment. Any new loading on a tower site would need external verification and analyzation.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Site #</th> <th style="text-align: left;">Address</th> <th style="text-align: left;">Height</th> <th style="text-align: left;">Commercial Power</th> <th style="text-align: left;">Tower Type</th> </tr> </thead> <tbody> <tr> <td>7307 - Mio</td> <td>2255 Mt. Tom Road</td> <td>475 AGL</td> <td>Yes</td> <td>Self Support</td> </tr> <tr> <td>7308 – Atlanta</td> <td>Hillside Trail</td> <td>475 AGL</td> <td>Yes</td> <td>Guy with 6 anchors</td> </tr> <tr> <td>7402 – Alpena</td> <td>13700 Park Rd</td> <td>330 AGL</td> <td>Yes</td> <td>Self Support</td> </tr> <tr> <td>7405 – Curran</td> <td>10575 M-65</td> <td>475 AGL</td> <td>Yes</td> <td>Guy with 6 anchors</td> </tr> <tr> <td>7504 – Lovells</td> <td>Co Rd 608</td> <td>430 AGL</td> <td>Yes</td> <td>Guy with 6 anchors</td> </tr> <tr> <td>7502 - Waters</td> <td>Marlette Road</td> <td>475 AGL</td> <td>Yes</td> <td></td> </tr> </tbody> </table>	Site #	Address	Height	Commercial Power	Tower Type	7307 - Mio	2255 Mt. Tom Road	475 AGL	Yes	Self Support	7308 – Atlanta	Hillside Trail	475 AGL	Yes	Guy with 6 anchors	7402 – Alpena	13700 Park Rd	330 AGL	Yes	Self Support	7405 – Curran	10575 M-65	475 AGL	Yes	Guy with 6 anchors	7504 – Lovells	Co Rd 608	430 AGL	Yes	Guy with 6 anchors	7502 - Waters	Marlette Road	475 AGL	Yes	
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6	Does the five nautical mile area refer to the Detection Volume of the radar network or is it for the operation volume in which aircraft will be operating?	Operation volume in which aircraft will be operating. Detection volume needs to be sufficient size to meet DAA requirements for uncrewed flight per FAA guidelines. The current proposed route is depicted in the attached images. The route may need to change slightly to accommodate FAA and other regulatory considerations regarding altitudes, proximity to obstacles such as towers and airports, and populated areas.
7	How critical is low-altitude weather sensor abilities as part of this solution?	Micro-climate situation awareness is not an FAA requirement. Micro-climate data is preferred to complete gaps in low altitude weather conditions along the air route for UAS safety of flight.
8	Is the staff needed to man the system required to be on-site?	No, however onsite manning will be required during designated dates with advance notice.
9	Is the State open to alternative financing options for Task Orders 1 & 2?	The funding is typically disbursed on a reimbursement basis. If a different funding schedule is needed, please describe the preferred funding arrangement and why it is needed.
10	Does the state have a DOT or other government agency communications backbone that can be leveraged or does the vendor need to use commercial / private networks for communication?	The State of Michigan does not have communications backbone that is available for the BVLOS system. Contractor will provide commercial solution. There may be opportunities based on bandwidth requirements to utilize a narrow segment of the MPSCS backhaul over a portion of the route as an alternate or backup communication path for BVLOS system, but it will not be the primary backbone.
11	Page 6 Task Order 2 costs -- section D states " Identify if the system will be integrated on a common framework and if that system is already in place. Describe how the system will integrate into future infrastructure systems and possible systems interoperability." Can you please elaborate on what integration is envisioned?	System generated data will be sharable with future BVLOS system replication in Michigan through use of non-proprietary data standards for air space management, weather, and unmanned traffic management data.

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12	Page 11, D...Is there a requirement to be registered as a Michigan company	The contractor does not need to be incorporated or organized in Michigan, but it must be authorized to do business in Michigan and listed as such in the Michigan Department of Licensing and Regulatory Affairs database.
13	Section IV, A1. Is this a fixed contract period between Nov 15, 2024, to Nov 2025 or are there extensions that will be offered? Please clarify the period of performance.	At this time, this is a fixed contract period, as timely performance is essential and specific funding has been secured.
14	Will bidders be able to take exceptions to the Section IV Contractual Terms?	No exceptions to the Section IV Contract Terms are acceptable.
15	What altitude(s) are the UAS expected to be operating at during the 'Air' portion of the Triple Challenge?	DMVA: 0'-4000' AGL, ultimately dependent on FAA approval for operation.
16	Will the contractor be responsible for site accessibility, constructions permits, and/or leasing of necessary space for installing infrastructure?	Michigan will assist for access and shared use for State/Federal owned infrastructure. Access and leasing any private land or infrastructure is the responsibility of the contractor. The contractor will be responsible for all licensing and permitting for any construction or other activities.
17	Can we assume that all services (e.g., power, network connectivity) at the installation sites will be provided by the customer?	Power and network connectivity will be provided at the MNOC location on Camp Grayling. Only power will be available at State of Michigan infrastructure sites.
18	Att. B Strategic Focus Points - Can they be claimed if applicable by subcontractors on a team (e.g., sub is a veteran-owned biz or located in a geographically disadvantaged area)?	No. The Strategic Focus Points can only be applied to the direct contractor/bidder.

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19	Is there a preferred altitude for the aerial corridor?	DMVA: 0'-4000' AGL, ultimately dependent on FAA approval for operation.
20	What is the expected density of operations within the aerial corridor?	Current maximum planned density is 30 UAS (traffic both directions with 5-mile separation same way and a 1-mile separation between directions)
21	What is the accessibility for non-military operations through the restricted military airspace and MOA?	There will not be BVLOS operations within the restricted airspace while the airspace is active unless approved through the airspace owner (Michigan National Guard). BVLOS flights will need to be deconflicted with MOA and restricted airspace activity.
22	What are the vertical dimensions of the MOA and military restricted airspace?	DMVA: Information on the MOAs and Restricted airspace comes from the FAA Air Traffic Organization Policy SUBJ: Special Use Airspace (JO 7400.10F) published annually. The publication and other information on special use airspace (SUA) can be found on the FAA's SUA website (https://sua.faa.gov/).
23	Does the Grayling Airport have radar capabilities? If so, to what detail are those capabilities? Is the radar available for use during this contract?	Grayling Army Airfield does not have permanent radar.
24	Do we need to detect all different aircraft types (uncooperative vs. military vs. GA vs Drone)?	Yes.

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25	Is there a preferred frequency band for communications?	<p>DMVA/DTMB: The State of Michigan has no specific frequency requirements. However below is a list of frequency ranges used by the MPSCS supporting public safety communications in Michigan. These frequencies are provided for reference only and bidders should avoid frequencies that could interfere with public safety communications.</p> <table border="0" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">Band #</th> <th style="text-align: left;">Frequency Range</th> </tr> </thead> <tbody> <tr> <td>700 MHz</td> <td>769-755 & 799-805 MHz</td> </tr> <tr> <td>800 MHz</td> <td>806-824 & 851-869 MHz</td> </tr> <tr> <td>4.9 GHz</td> <td>4.940-4.990 GHz</td> </tr> <tr> <td>6 GHz</td> <td>5.925-7.125 GHz</td> </tr> <tr> <td>10 GHz</td> <td>10.550-10.680 GHz</td> </tr> <tr> <td>11 GHz</td> <td>10.700-11.700 GHz</td> </tr> </tbody> </table> <p>The use of unlicensed and/or popular communications bands should be considered as a potentially lower cost of implementation and for ease of adoption by UAS operating in the BVLOS airspace. The ability to dynamically add radio systems and additional frequency capabilities would allow the system to be more adaptable to future requirements and changes in technology. Proposals should specifically address this capacity if it is included in the proposed design.</p>	Band #	Frequency Range	700 MHz	769-755 & 799-805 MHz	800 MHz	806-824 & 851-869 MHz	4.9 GHz	4.940-4.990 GHz	6 GHz	5.925-7.125 GHz	10 GHz	10.550-10.680 GHz	11 GHz	10.700-11.700 GHz
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26	What is the expected altitude in AGL that you need covered?	DMVA: 0'-4000' AGL, ultimately dependent on FAA approval for operation.														
27	What MI entity will be the holder of the Certificate of Waiver or Authorization?	A State of Michigan Department will be the holder of the Certificate of Authorization for BVLOS system testing and validation.														

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28	<p>There are C2 requirements listed, is it expected that we are providing a mesh network capability for the UAS systems? The costs and details here are highly dependent upon each OEM's C2 system.</p> <ul style="list-style-type: none"> • Additionally, if this effort is highly centered around military UAS, the licensed bands will create significant regulatory hurdles from the FCC if it is expected we are providing the mesh networking capability. • It would be more advantageous to put the onus on the OEM's themselves or the DoD to get the FCC approvals for this corridor. 	This is not a requirement
29	<p>Typically, underneath a CoW/CoA, the entity (State of MI) can be the holder from the FAA, but each individual OEM would need to get "approved" or added to the CoW/CoA. There is a significant FAA regulatory hurdle that is being overlooked given the timeline for fully operational with unknown OEM's.</p>	Comment received.
30	<p>Can you provide a list of the OEM's who will be using this corridor?</p>	The intent for the BVLOS System is to support military, government, commercial, academic, and public users of various designs and capabilities. Anticipated initial users include but are not limited to group 3 systems competing in the UTC, medium altitude long endurance systems, and military group 3 and 4 UAS.
31	<p>Detailed specifications on each OEM's aircraft, CONOP, flight characteristics, C2, etc.. is going to be required from each OEM to receive approval from the FAA, has this been communicated to the OEM's and are they willing to provide this information?</p>	System users during the UTC are required to provided UAS system performance and technical characteristics for the development of the Certificate of Authorization as specified in the UTC Competition Rules.

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VFR Sectional Depiction:



Current planned Uncrewed Triple Challenge Air Course Boundary waypoints:

Air Course Boundary	
Latitude	Longitude
45.0593174	-083.4225773
44.9604084	-083.4045126
44.6978551	-084.6431139
44.7117300	-084.6489007
44.9694727	-083.4245473
45.0572114	-083.4428346