

USACE and UAS Technology

June 6, 2019

Q&A Session

This webinar provided background information on Unmanned Aerial System (UAS) technology, and applications of UAS in the Corps as a force multiplier for various mission sets. The webinar was presented by Mr. Victor Wilhelm, UAS Program Manager at the Jacksonville District. Mr. Wilhelm also discussed USACE efforts to reorganize its UAS formations into an Enterprise Aviation Program and associated regulation



challenges. More information on UAS can be found in the Institute for Water Resources report, [Unmanned Aircraft System Considerations within the U.S. Army Corps of Engineers Civil Works](#), as well as from various Engineer Research and Development Center publications. In addition, Mr. Wilhelm can be contacted regarding specific questions or to request a UAS briefing or training.

This summary of the Question / Answer session of the webinar is not a transcription; questions and responses have been edited and reordered for clarity.

Planning studies are typically limited in both time and money that can be expended gathering data.

What are some recommendations for taking advantage of UAS technology in a time and cost-efficient manner?

For something like a Continuing Authorities Project where there is little to no budget for any kind of field collection, one option is to take advantage of the free satellite imagery you can access through the [Army Geospatial Center](#), which can be done through your local GIS coordinator or local geospatial specialist. This is a good place to start the data requirements for a study are more remote sensing in nature. UAV data collection can become very expensive depending on the type of sensor and platform needed, and is therefore better for smaller sites with high temporal resolution; it is generally best not to use it for sites larger than 10,000 to 20,000 acres in size.

How do the requirements discussed in the presentation affect the use of UAS through contractors?

Currently, there are two Army Executive Orders that create challenges for contractors to fly UAVs due to security requirements. For now, the UAS Community of Practice is working to maintain and build its own organic assets and capability. Once there is more certainty regarding UAVs policy-wise, the goal is to be able to contract out UAV work.

Is there a cadre in existence that can fly UAVs during emergency operations?

There is an ad hoc cadre made up of a "coalition of the willing," with the goal that eventually a formal UAS Planning and Response Team (PRT) will be established. Mr. Wilhelm and his team maintain a list of all qualified personnel and monitor their status and ability to help on a regular basis. There is a web-based interface currently being built that will manage this contact list, which should help to more efficiently provide emergency management support in the future.

Can we partner with other agencies (federal or state) under MOAs or the Economy Act to conduct UAS work?

This type of partnership would have to be decided on a case by case basis. If the area in question is not a military facility or USACE property, there shouldn't be a reason for it to be prohibited.

Is there a medical certificate requirement for manning UAS technology?

The only medical requirement is a self-certification, which is an Army form modeled after the IMSAFE checklist developed by the FAA.

What are the pros and cons of using UAV technology in archaeology field applications?

At smaller archeological sites, the advantage of UAV is the ability to get snapshots of the site that show the exact condition at the time of artifact discovery. This allows for forensic analysis after the fact. In addition, UAV allows field personnel to determine when and where data is collected, as well as how frequently. If this type of imagery is needed with recurring frequency, it may be cost effective for a District to invest in UAV capacity vs. having to contract it out.

What are the potential cost savings of using UAS vs. more traditional surveys?

The cost savings would have to be calculated on a case by case basis. However, Department of the Interior has a mature UAS program (three to five years ahead of USACE), and their Office of Aviation Services has stated that their fully mature program has generally seen a 90% reduction in time for data collection activities, along with a 70% reduction in cost. However, in cases where the data collection site is large, UAV will likely cost more than traditional surveys depending on the specific need.

Who should we contact to learn about UAV applications currently being used in our District?

The District GIS coordinator is a good place to start. In addition, those interested can reach out to Mr. Wilhelm or Jenny Laird (ERDC UAS Coordinator). It's possible that there could be ongoing UAS operations by a park ranger or lock operator that the GIS coordinator would be unaware of.

Does every District qualify to get access to the UAV program or get funding for it?

There is no specific funding source for UAV technology in the Corps. There is a distribution plan, through which Districts that do not have individual UAS capability can have a system allocated to them at a cost of between \$600 and \$1,200, depending on the system type and complexity.

If the Corps doesn't have an agency-wide funding mechanism for UAV use, and isn't actively looking to set one up, would you still recommend that those of us interested sign up for the ERDC UAS training? How do we sell getting trained up when Districts may be unaware of the applications, don't see UAV as a priority, and don't have funding for such a program?

The ERDC training is highly recommended for anyone who wants to use UAVs. It has a 100% pass rate for those who have participated. It is a boot camp style training, so some may prefer a self-study type training instead, which is also available.

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The funding part is always a challenge, particularly given that Districts always have more training needs than funding and time allow. One option is to put the UAS training in your individual development plan for the year and then advocate for it to your leadership. For example, it may be helpful to provide examples of cases in which UAS imagery would have been beneficial for a specific study in order to convince leadership that it's a good investment.

Lastly, Mr. Wilhelm and his team are funded to educate both on the ground personnel as well as District and MSC leadership about the UAS program and how it can be stood up. If there is a District or MSC that has not yet been visited by the UAS, feel free to reach out to Mr. Wilhelm to schedule a time for a briefing.