

Testimony to Interim Economic Development Committee by Thomas Swoyer,
President, Grand Sky Development Company

September 14, 2016

Good Morning Madame Chair and members of the committee. My name is Thomas Swoyer and I am President of the Grand Sky Development Company. I am here this morning to provide testimony requesting investment by the State of North Dakota to support the creation of a Data Enhancement Center.

Since we began engaging with this committee, we have been working with a number of private and public partners to better refine our request by providing more detail for the committee's consideration and to solidify the alliance of organizations that we need to convene in order to be successful.

Team North Dakota's UAS efforts, and many of those team members are here with us today, have put the state in a leadership position in the United States. Investment by the State has been a critical catalyst to the growth of the UAS industry here. Research North Dakota grants, grants for Grand Sky's development and funding the Northern Plains Test Site have created the foundation for a UAS industry that is poised to grow even more.

With the investments made to date, the team has created a world-class test site that supports multiple companies and a wide array of testing and training opportunities. We have created Grand Sky, the nation's first unmanned systems airport which allows the largest UAS to operate from North Dakota and cover all of North America from here. The Team has spawned numerous small businesses that are growing and making significant headway in a variety of UAS applications from 3D printing of parts to sensor development and small UAS flights. The Team has succeeded in attracting Northrop Grumman and General Atomics to the state to develop and enhance their UAS businesses. More companies are on track to establish operations here.

There are two last challenges that Team North Dakota UAS needs to address. Those challenges are to fly commercial aircraft beyond visual line of sight on a consistent basis and to develop a capability to manage all the data that comes from UAS flight. Beyond line of sight flights will be possible by next spring, a plan is in place to make it a reality. Managing data is the last step we need to take. Data processing is the bottleneck that will halt the growth of this industry. Unlocking the industry by creating a data processing capability will allow Team North Dakota to maintain its national leadership and continue to bring more jobs to the State.

To refresh the committee's memory about our request, we are working to establish a capability in the state where UAS companies can send the data they collect to be processed very quickly and put into a "actionable" format for the ultimate end-user

of that data. As we have discussed, the numbers of UAS that will be flying in the state and across the country is growing rapidly. The data they are collecting is also growing rapidly and has already become a bottleneck to the growth of the industry.

When we began proving information to the committee, we were calling the data processing capability a distributed ground station, fusion center or a bunch of other names. WE recommend that we use the simple name of Data Enhancement Center. The name Data Enhancement Center is appropriate as we are looking to establish a capability to receive data, process it, combine it with other data derived from other sources and output it in a format that makes it immediately useful to an end user whether that end user is an emergency responder that needs geographic data in real time, or a farmer that wants to know what the nitrogen levels are in her fields.

It is important to distinguish the concept of the data enhancement center and how it is different from a normal data center. A data center is a facility that houses numerous computer systems and associated components for the purpose of warehousing information and making it available for retrieval by users. The purpose of a data center is to house information, keep it secure and make it available to authorized users. There is traditionally very little manipulation or changing of the data. I am generalizing to be sure but this is essentially what a data center does.

Our request is to create a data enhancement center where information from a variety of data centers and raw data from UAS flights can be uploaded for the specific purpose of manipulating the data and transforming it into actionable information that a farmer, wind turbine, emergency responder, or other user can make a decision from that will create positive impact for their business or operation. Our goal is not to warehouse data but to process data with the intent of acting on it. To work, we need to invest in processing capability with high performance computing systems and equally important, we need to invest in the people that can develop the applications and algorithms necessary to deliver the actionable information.

Over the course of the past year, we have been working with public and private sector organizations and we believe we have a solid approach and team. Specifically, we propose to create a public / private partnership with the North Dakota University System and private sector entities that will reduce costs, improve effectiveness and shorten the time to market for this critical capability.

Some of the specifics include:

- A private sector led effort that leverages public resources in the University System so that we don't buy equipment or facilities that already exist. It is important that it be private sector led so that it focuses on delivering data solutions to industry and to create jobs.

- The university system should absolutely be a partner in the effort so that we can leverage the existing systems, facilities and capabilities that exist and not replicate any systems. We also need to leverage the locations and people that are part of the system. Our goal is to invest in people and processes to possibly include high performance computing equipment and not invest in facilities. We have enough buildings, we need to bring the people in to do the job.
- After preparing some initial budget estimates, the team determined that developing a data enhancement center from scratch would cost roughly \$40M or more. We considered that to be an irresponsible request so we looked for ways to radically reduce that cost while still achieving the results we desire. Our first choice was to recommend that we work through a public / private partnership that easily allows the University system to participate with private sector companies while creating the proper framework for Intellectual Property, privacy, and security. Our second choice will be to bring in industry partners that are already here like Microsoft, Northrop Grumman, General Atomics and industry partners that want to come here like Raytheon and Harris Communications and create partnerships with them to help deliver cost-effective data solutions.

We request that the committee recommend an appropriation of roughly \$10M for the creation of a private sector led data enhancement center through a public private partnership for the delivery of the services. If the committee determines that such a capability is in the State's best interest, the team, including Dept of Commerce, NDUS and private sector partners will develop an organizational approach, governance structure and recommended legislative language for the committee's final review.

Thank you all very much for your time and allowing me to present this information today. I am able to answer any questions that you may have.