

Minutes of the  
**CENTERS OF EXCELLENCE COMMISSION**

June 14, 2016  
Dakota Carrier Network Building  
Bismarck, ND

## **CALL TO ORDER**

Mark N, Chairman, called the meeting to order at 4:00 PM

**Commissioners Present:** Mark Nisbet, Mike Ness, Jim Traynor (via conference call), and Greg Stemen (via conference call)

**Commissioners Absent:** Tim Hennessy, Kevin Melicher

**Others Present:** Al Anderson, Justin Dever Brian Opp and Christopher Kalash of the Department of Commerce, Josh Reidy, Mike Moore Travis Dessell and Doug Olsen of UND, Lauren McCarten, Eileen Lockhart, Troy Brown and Judy Paukert of Xcel Energy, Bruce Gjovig of Center for Innovation, Terry Sando of Grand Forks EDC, Don Moen Mayor of Mayville, David Dvorak of Field of View, Matt Dunleavy of Sky Skopes, Trevor Woods of NP UAS Test Site, Opher Nevo and Yuval Chapin of Elbit Systems of America

## **COMMISSION BUSINESS**

### **Presentations from Applicants**

**Application of Unmanned Aerial Systems (UAS) to Electric Distribution Infrastructure Damage Assessment and Restoration – Bruce Gjovig and Josh Riedy - Research ND, UND (with Lauren McCarten and Troy Brown of Xcel, Travis Dessell of UND, Opher Nevo of Elbit-via conference call)**

McCarten gave background on Xcel Energy and how it feels that this project can help them to provide better service to its customers

Gjovig stated the Center for Innovation (CI) and UND are a good fit for this project. CI has currently has 23 UAS companies in its incubator. This project will use \$300,000 for the UAS portion of the project and \$200,000 for the data portion of the project

Nevo gave background on Elbit Systems of America and shared its interest in the use of their Hermes 450, a large UAS, and its sensors in research projects.

Gjovig introduced Trevor Woods of the NPUAS Test Site, Don Moen the mayor of Mayville North Dakota.

Riedy described the many partners and the fact that bringing the different players together will make this a strong project. Data will be collected from different sources to assist in making informed decisions.

Brown described the number and cost of outages that Xcel experienced between 1990 and 2014. Excel has received awards for its disaster recovery capabilities, but the idea of using UAS to assess damage could make them even more efficient. The faster that the assessment is done, the faster the work to restore power can begin. This saves money, and keeps customers happy and safe. The ability to use data collected quickly

Riedy discussed the difference between inspection and damage assessment and how this project will focus on collecting data that will increase the efficiency of damage assessment. This will be done using data from both high and low altitudes along with traditional methods of collecting data on the ground. Objectives of the project are: 1)Assess high / low altitude UAS capabilities to enhance post-event damage and restoration efforts 2)Apply UAS capabilities to support reconnaissance/ restoration functions for electric distribution infrastructure 3)Development

a UAS Natural Disaster strategy in collaboration with emergency management stakeholders 4) Identify a process to utilize UAS for post-event reconnaissance and restoration activities.

Dessell introduced himself and described his experience working with imagery using computer algorithms to analyze the data.

Nevo stated the Elbit Hermes 450 can cover large areas of ground with its sensors from high altitudes. The images from the sensors will provide resolution within an inch or two.

Gjovig described the relationship with the Northern Plains UAS Test Site. Woods added that the NPUAS Test Site is happy to be part of the project.

Riedy gave an overview of the tasks 1) Refine concept of employment and define requirements 2) Develop UAS capabilities for disaster reconnaissance, assessment and recovery 3) Initiate and develop framework for collaboration with emergency management agencies 4) Final evaluation: Conduct gap analysis

Brown said the metric they hope to hit is 95%. This means 95% of the customers impacted by this disaster will be back online on this date and this time. This project will help Xcel come up with this number accurately and more quickly than they can today. The benefits of this project are enhanced worker and public safety, reduction of outage restoration time, provide the ability to limit disruptions and costs to customers and communities when disaster strikes, improvement of the damage assessment process, enhancement of new industry clusters in North Dakota, and the strengthening of Xcel's UAS expertise which will drive innovation.

Gjovig covered the budget.

**In response to a question from Traynor, Brown said that success will be that Xcel will be able to see exactly what the damage is, even at night.**

**In response to a question from Traynor, Brown said he sees this as a partnership defining who will own what. Gjovig said that there are commercial opportunities for each of the partners, Riedy said by working together everyone will be bringing data to the project and make it into actionable data. Dessell said that valuable IP will be generated.**

**In response to a question from Ness, Riedy said that the research and development people at Elbit are in Israel. If it is necessary, it will be used. Gjovig said that it will only be used if it is needed.**

**In response to a question from Greg, Woods said that the Hermes 450 will require a chase plane at this point in time.**

**In response to a question for Sando (of GFEDC) from Nisbet, Sando said there are similarities in this project to the work he did in the military. In that work they collected baseline images and then compare them to images taken after a disaster.**

**In response to a question from Nisbet, Gjovig said that the early work was done by Waypoint. Xcel, Elbit, Gjovig will be involved in future meetings and communication. Moen said that up to this point, Mayville has been very happy with the communication.**

## **Commission Business**

Dever collected the scores, totaled and shared that the average score was 57.

**It was moved by Stemen and seconded by Traynor to approve Application of Unmanned Aerial Systems (UAS) to Electric Distribution Infrastructure Damage Assessment and Restoration. Traynor, Stemen, Ness voted "aye" Nisbet abstained. Motion carried on a voice vote.** It was noted by Traynor that a business plan should be part of the project to assure that the IP and business opportunities that come from this project are carefully considered and discussed among the partners as the project progresses.

## Approval of draft minutes from April 21, 2016

**It was moved by Traynor and seconded by Ness to approve the April 21, 2016 draft minutes as submitted.**

Motion carried on a voice vote.

## Consent Agenda

Kalash provided an overview of the consent agenda

**It was moved by Ness and seconded by Traynor to approve the Consent Agenda.** Motion carried on a voice vote.

## Commission Business

**Research ND - Powerline Component Failure Identification – UAS**– Change Request to timeline, budget, PI, scope of project – Doug Olsen provided an overview of the proposed changes, which include working with North Dakota companies and the ability to conduct more flights than originally proposed.

**It was moved by Ness and seconded by Stemen to approve the change request as submitted. The motion carried on a voice vote.**

**Research ND- Using UAS Imagery to Identify Weed Infestations in Cropland** – Change Request for budget modification and timeline extension until December 31, 2016

**It was moved by Traynor and seconded by Stemen to approve the change request as submitted. The motion carried on a voice vote.**

**Research ND - Valuation of Optical Sensors for Detection and Remediation of Crop Stress in North Dakota Precision Agriculture** - Change Request for budget modification and timeline extension until April 30, 2018.

**It was moved by Ness and seconded by Stemen approve the change request as submitted. The motion carried on a voice vote.**

**Research ND - Unmanned Aerial Systems for Building Assessment** - Change Request for timeline extension until May 15, 2017

Kalash gave an explanation of the progress of the project answering questions raised in the May 27, 2016 meeting.

**It was moved by Traynor and seconded by Ness to approve the change request as submitted. The motion carried on a voice vote.**

**Phase 1 Venture grant – Removal and Recovery of Phosphate from Eutrophic Lakes and Wastewater and Use of Recovered Phosphate as a Fertilizer** - Change Request for timeline extension until May 15, 2017

**It was moved by Traynor and seconded by Ness to approve the change request as submitted. The motion carried on a voice vote.**

## Administratively Approved Changes and Reports

Kalash updated the commission on administratively approved items including

Large-scale UAS Data Collection, Processing and Management for Field Crop Management (Research ND) – first disbursement

Assessing the feasibility of a startup business centered on high performance spider silk production (Phase 1 Venture grant) – Minor Budget Change

## Other information

Kalash updated the commission on the receipt of the following reports

Quarterly reports for Center for Advanced Technology Development and Commercialization (CATCOM), Center for Life Sciences Research and Applications (CLS)

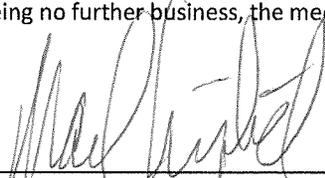
Interim reports from Research ND grants Electrochemical Gas-to-Liquid Technology Development, Design and Development of Accelerated Degradation Test Methodology for Hydro-Static System

Interim report from Phase 1 Venture grant Push Button Adhesion Control

Kalash reported that he is working with staff at UND and NDSU to get an idea of how many Phase 1 Venture grants that will expire before the end of the biennium are likely to apply for Phase 2 Venture grants. This information will help the COE Commission to decide if it would like to move some of the funding in the Phase 2 line to Phase 1.

**ADJOURNMENT**

There being no further business, the meeting adjourned at 5:53 p.m.

  
\_\_\_\_\_  
Mark Nisbet, Chairman

  
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Date

  
\_\_\_\_\_  
Christopher Kalash, Recording Secretary

Date of approval by COE Commission  
8/10/2016  
\_\_\_\_\_  
Date