ALABAMA REMOTE SENSING CONSORTIUM (ARSC) MEMORANDUM OF UNDERSTANDING

I. PURPOSE

The field of remote sensing is rapidly evolving as new space platforms, advanced optics, and cross-disciplinary questions create a new suite of economic and research opportunities globally, something which is especially true for the state of Alabama. Unique partnerships between industry and higher education in the state, such as the one outlined here, enable our researchers to be at the cutting edge of science applications for society. From fields as diverse as precision agriculture, emergency management, geointelligence, and weather modeling, the availability of new datasets such as those through Teledyne Brown Engineering's MUSES platform can change the way we view and understand the world and how we take advantage of new opportunities in the future. To leverage the research expertise from our state's research and educational institutions, and to provide critical mission feedback, Teledyne Brown Engineering intends to deliver a portion of the available MUSES tasking time and imagery to certain organizations at no cost or obligation. To facilitate this unique transfer of data and knowledge, Alabama A&M University, Auburn University, and the University of Alabama in Huntsville herein agree to establish the Alabama Remote Sensing Consortium (ARSC) and partner, collaborate, and manage projects that expand the scope and reputation of our educational institutions and promote the economic development inherent in this growing industry. By working jointly with Teledyne Brown Engineering, the state's research universities will be able to position themselves for increasing success in attracting research and workforce development funds to the state of Alabama.

II. OBJECTIVES

Therefore, this Agreement is made among Alabama A&M University, Auburn University, and the University of Alabama in Huntsville, hereafter designed as the Parties. The purpose of this Agreement is to indicate the intention of the above-named universities to work together to develop the Alabama Remote Sensing Consortium (ARSC), to provide a mechanism to collaborate with Teledyne Brown Engineering for data sharing, and to foster cooperation and link the programs of the named institutions to pursue collaborative opportunities relating to education, research and outreach to include, but not limited to, the following areas of expertise and knowledge:

1. Hyperspectral and multispectral image processing
2. Earth remote sensing theory and technology
3. Emerging opportunities in space
4. Algorithm and remote sensing product development
5. Applied science areas (including but not limited to, agriculture, forestry, water resources, human health, weather, ecology, climate) relevant to the field of remote sensing
6. Atmospheric correction and vicarious calibration

The Consortium itself will focus primarily on linking researchers and PIs at Alabama research and educational institutions with data and resources being made available through Teledyne Brown Engineering, to also include outreach and coordination of funding opportunities that stand to benefit the state of Alabama.

To the extent feasible, collaborative programs will take advantage of existing research facilities and capabilities at each university and, in addition to the primary and applied research associated with this opportunity, will leverage these data to engage and retain both undergraduate and graduate students in STEM disciplines in the state of Alabama.

III. Strategies for Implementation

An Executive Committee will be established for the purpose of advising on the coordination and administration of the overall deliberations, outreach, and data requests associated with the Consortium. The Executive Committee will be a multi-member body comprised of a Consortium Director and Executive Committee members, positions which are established at the time of this signing by UAH, AU, and AAMU respectively. The Executive Committee will have the responsibility of calling and scheduling meetings of the Consortium as required, approving and coordinating data requests, coordinating multi-institution external funding proposals when appropriate, and interacting with Teledyne Brown Engineering and the public for matters related to Consortium affairs.

IV. Authority and Obligations

This Agreement shall not be used to obligate or commit funds of any Party nor function as the sole basis for the transfer of funds to or from the Parties. Separate and supplemental agreements specifically addressing funding may be developed by the Parties for specific activities, as appropriate. The details of the scope of work and the level of funding support to be furnished by the Parties shall be developed in other agreements. Specific work projects or activities that involve the transfer of funds, services, or property shall require the execution of separate written agreements, and shall be contingent upon the availability of funds. Negotiation, execution and administration of each such separate agreement must comply with all applicable statutes and regulations.

The governing body of each Party to this MOU shall have exclusive control of policies, management, assets, and affairs of its own institution. No Party shall assume any liability by virtue of this MOU for any debts or other obligations incurred by any other Party to this MOU. No Party by this MOU shall assume any liability for the quality of care rendered in the other institution.

V. Intellectual Property and Protection of Information

Any inventions or intellectual property by any of the signing Parties will be governed by the specific agreements between the inventors and their respective employers, or between those organizations. The conduct of research, development, testing and evaluation activities that would predictably generate intellectual property rights will be agreed to by the Parties in agreements separate from this MOU. In the event that propriety information is to be exchanged between the Parties or between members of each Party, the Parties and/or the involved members will enter into separate Propriety Information Agreements as may be necessary.

Furthermore, each Party and PI will be individually responsible for matters related to appropriate use of data per a negotiated End User License Agreement (EULA) under which Teledyne Brown Engineering

operates with respect to MUSES data. The EULA will be negotiated at the time in which data is requested from each Party / PI. The Agreement will not prevent each of the parties from pursuing its own opportunities regarding research in this technology arena, although all parties agree that requests for data sharing under the terms specified by Teledyne Brown Engineering, must be made through the URSC. The parties will address how to seek appropriate protection of any intellectual property arising out of the collaboration as and when such intellectual property arises. Institutions will execute appropriate Non-disclosure Agreement(s) to cover confidential information specific to this Agreement on an as needed basis.

The successful performance of this Memorandum may require either (i) that pertinent technical data and computer software subject to proprietary claims of Teledyne Brown Engineering be made available to one or several Parties or (ii) that pertinent technical data and computer software subject to the proprietary claims of one or several Parties be made available to Teledyne Brown Engineering. Accordingly, Teledyne Brown Engineering may provide any of the Parties with access to Teledyne Brown Engineering's proprietary technical information and computer software and any Party may provide the Teledyne Brown Engineering with access to that Party's proprietary technical information and computer software as necessary for the successful performance of the scope of work of this Agreement, in accordance with the following terms and conditions:

(a) Each Party will designate in writing one (1) person as its authorized representative for the exchange of proprietary information. Each Party reserves the right to change its designation of authorized representative, should circumstances so require and to notify the other Party in writing of any such change.

(b) Any information which is received in writing and which is identified in writing as proprietary and is addressed to the individuals designated pursuant to Section III will be protected in accordance with this Memorandum. The writing identifying the particular information considered proprietary shall be sufficiently particular to enable the recipient to identify written, graphic, or physical embodiments of such information. The recipient agrees to use its reasonable efforts to hold such information in confidence for a period of three (3) years from the date of its receipt and to not use such information for any purposes other than the work called for by this Memorandum.

VI. TERMS OF THE MOU

The effective period of this Agreement is five (5) years from the date of last signature of this Agreement. During this period, any party has the right to terminate this Agreement in part or in total by giving the other Parties written notice of its intent to terminate at ninety (90) days prior to the effective date of termination. Other research and educational institutions within the State may also join the Consortium by coordinating with the Consortium Director or members of the Executive Committee and having their Vice President for Research and Economic Development (or equivalent) sign an addendum Statement of Acknowledgement which will subsequently be included with this Memorandum. Such institutions would thereafter be considered Parties to this Consortium.

Any dispute arising from or relating to this Agreement which cannot be resolved by good faith discussion and negotiation between the Parties shall be resolved through non-binding mediation.

This instrument contains the entire agreement between Parties. The term and conditions set forth in this Agreement are subject to amendment by the written agreement of the Parties, including any subsequently-added Parties.

VII. Statement of Acknowledgement

The following Statement of Acknowledgment is intended to outline the general agreements between the Parties signing here.

The undersigned signatories and ARSC Parties acknowledge Teledyne Brown Engineering's offer to:

1) Provide up to 450,000 square kilometers of tasked and/or archived imagery as an in-kind contribution at no cost to research universities in Alabama through an organizational structure to be set up by designated UAH, AU, and AAMU representatives (the Consortium Director, herein designated by UAH as Dr. Robert Griffin, and Executive Committee members, herein designated by AU and AAMU as Mr. Mike Ogles and Dr. Wubishet Tadesse, respectively).
2) Make reasonable efforts to distribute tasking appropriately throughout each year in accordance with PI tasking requests, while accounting for task prioritization from a range of customers.
3) Provide additional imagery to support, and allow current and future ARSC Party PIs to participate in, mutually-beneficial and periodic vicarious instrument calibration activities.

The undersigned Parties recognize Teledyne Brown Engineering's ability to provide this imagery is based on the successful commercial operation of MUSES and the associated instruments, and that images will not be available until after deployment and commissioning in 2016-2017. ARSC Parties would be able to use the data provided at its sole discretion, for scientific research and humanitarian purposes, and consistent with Teledyne Brown Engineering's EULA.

Signatures are on the following page.

ALABAMA A&M UNIVERSITY

Daniel Wims, PhD
Provost and Vice President of Academic Affairs

Date: 2/4/16

AUBURN UNIVERSITY

John M. Mason, PhD
Vice President for Research and Economic Development

Date: 1.29.2016

THE UNIVERSITY OF ALABAMA in HUNTSVILLE

Rayford Vaughn, PhD
Vice President for Research and Economic Development

Date: 2/17/16

TELEDYNE BROWN ENGINEERING, INC.

CURENTON.ANNA.MARIE.1408137582

Digitally signed by CURENTON.ANNA.MARIE.1408137582
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Anna M. Curenton
Sr. Director, Contract Administration

Date: 12 February 2016