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Florida Job Growth Grant Fund
Workforce Training Grant Proposal

Proposal Instructions: The Florida Job Growth Grant Fund Proposal (this document) must be completed and signed by an authorized representative of the entity applying for the grant. Please read the proposal carefully as some questions may require a separate narrative to be completed.

Entity Information

Name of Entity: South Florida State College

Federal Employer Identification Number (if applicable): ███████

Contact Information:
        Primary Contact Name: Dr. Lindsay Lynch
        Title: Director of Grants Development and Federal Relations
        Mailing Address: 600 West College Dr.
                                        Avon Park, FL 33825
        Phone Number: (863) 784-7345
        Email: lindsay.lynch@southflorida.edu

Workforce Training Grant Eligibility

Pursuant to 288.101, F.S., The Florida Job Growth Grant Fund was created to promote economic opportunity by improving public infrastructure and enhancing workforce training. This includes workforce training grants to support programs offered at state colleges and state technical centers.

Eligible entities must submit proposals that:

- Support programs and associated equipment at state colleges and state technical centers.
- Provide participants with transferable and sustainable workforce skills applicable to more than a single employer.
- Are offered to the public.
- Are based on criteria established by the state colleges and state technical centers.
- Prohibit the exclusion of applicants who are unemployed or underemployed.

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1. Program Requirements:

Each proposal must include the following information describing how the program satisfies the eligibility requirements listed on page 1.

A. Provide the title and a detailed description of the proposed workforce training.

Project e-DEFENSE will establish the first Electronic Warfare Technician training program in the nation. Please refer to attached narrative document.

B. Describe how this proposal supports programs at state colleges or state technical centers.

Project e-DEFENSE will establish both a short-term training certificate and an Associate degree with an emphasis in Electronic Warfare.

C. Describe how this proposal provides participants transferable, sustainable workforce skills applicable to more than a single employer.

The EW certificate and degree will provide trainees with credentials to position them for entry and mid-level technician jobs with defense contractors such as Lockheed Martin, Northrup Grummon, BAE, and Craig Technologies. ⊞

D. Does this proposal support a program(s) that is offered to the public?

☑ Yes ☐ No

E. Describe how this proposal is based on criteria established by the state colleges and state technical centers.

The e-DEFENSE curricula has been developed by leading experts and aligns with standards established by both the Fla. Department of Education and the Commission on Colleges of the Southern Association of Colleges and Schools. ⊞

F. Does this proposal support a program(s) that will not exclude unemployed or underemployed individuals?

☑ Yes ☐ No

G. Describe how this proposal will promote economic opportunity by enhancing workforce training. Please include the number of jobs anticipated to be created from the proposed training. Further, please include the economic impact on the community, region, or state and the associated metrics used to measure the success of the proposed training.

e-DEFENSE will train individuals to fill currently vacant jobs advertised by Florida's 28 defense companies. As of September, 2017, 73 positions were advertised. Furthermore, with the nation's only EW Technician workforce, Florida will be positioned to attract more defense contractors and production facilities to the state, potentially creating hundreds, if not thousands, of jobs statewide.

2. Additional Information:

A. Is this an expansion of an existing training program? ☐ Yes ☑ No

If yes, please provide an explanation for how the funds from this grant will be used to enhance the existing program.

e-DEFENSE is a new program.

B. Does the proposal align with Florida's Targeted Industries? (View Florida's Targeted Industries here.)

☑ Yes ☐ No

If yes, please indicate the targeted industries with which the proposal aligns.

If no, with which industries does the proposal align?

1) Homeland Security/Defense and 2)Aviation/Aerospace

C. Does the proposal align with an occupation(s) on the Statewide Demand Occupations List and/or the Regional Demand Occupations List? (View Florida's Demand Occupation Lists here.)

☑ Yes ☐ No

If yes, please indicate the occupation(s) with which the proposal aligns.

If no, with which occupation does the proposal align?

Information Security Analysts (SOC151122) and Operating Engineers (SOC 472073) ⊞

D. Indicate how the training will be delivered (e.g., classroom-based, computer-based, other).

> If in-person, identify the location(s) (e.g., city, campus, etc.) where the training will be available.

> If computer-based, identify the targeted location(s) (e.g. city, county, statewide) where the training will be available.

Training will be delivered through a hybrid format, including a combination of flexible face-to-face sessions and web-based content. ⊞

E. Indicate the number of anticipated enrolled students and completers.

During the first year of the program, we expect to enroll a minimum of 30 students. Through targeted recruitment and student onboarding, enrollment may reach 100.

F. Indicate the length of program (e.g., quarters, semesters, weeks, etc.), including anticipated beginning and ending dates.

Begin Date: August, 2018   End Date: July, 2019

G. Describe the plan to support the sustainability of the proposal.

Funds requested through this application will cover primarily start-up expenses. Once e-DEFENSE is established, it will be sustained through student tuition and fee revenue.

H. Identify any certifications, degrees, etc. that will result from the completion of the program. Please include the Classification of Instructional Programs (CIP) code if applicable.

College Credit Certificate & AS Degree - Electronic Warfare Technician
College Credit Cert. & AS Degree - Electronic Warfare Test and Evaluation Technician

I. Does this project have a local match amount?

☑ Yes ☐ No

If yes, please describe the entity providing the match and the amount.

$250,000 through a U.S. Department of Education Title V Hispanic-Serving Institution STEM grant.

J. Provide any additional information or attachments to be considered for the proposal.

Please see attached Appendices.

3. Program Budget

Estimated Costs and Sources of Funding: Include all applicable workforce training costs and other funding sources available to support the proposal.

A. Workforce Training Project Costs:

Equipment	$ 825,000.00	
Personnel	$ 205,000.00	
Facilities	$ 0.00	
Tuition	$ 0.00	
Training Materials	$ 480,000.00	
Other	$ 531,010.00	Please Specify:
Total Project Costs	$ 2,041,010.00	

B. Other Workforce Training Project Funding Sources:

City/County	$		
Private Sources	$		HSI-
Other (grants, etc.)	$ 250,000.00	Please Specify:	STEM
Total Other Funding	$ 250,000.00		

Total Amount Requested	$ 1,791,010.00

Note: The total amount requested must equal the difference between the workforce training project costs in 3.A. and the other workforce training project funding sources in 3.B.

C. Provide a detailed budget narrative, including the timing and steps necessary to obtain the funding, how equipment purchases will be associated with the training program, if applicable, and any other pertinent budget-related information.

Equipment funds are requested to create a Threat Systems Laboratory with 20 student workstations. Funds are also requested to expand the Mechanical and Electrical Systems Laboratories to accommodate 10 additional students each. Additional equipment funds are needed to upgrade the network infrastructure Building Y on the SFSC Highlands Campus where e-DEFENSE will be housed. These upgrades are necessary to handle the sensitive training content and connection requirements. Please refer to the attached budget detail.

4. Approvals and Authority

A. If entity is awarded grant funds based on this proposal, what approvals must be obtained before it can execute a grant agreement with the Florida Department of Economic Opportunity (e.g., approval of a board, commission or council)?

All grants received by South Florida State College must be approved by the college's District Board of Trustees.

B. If approval of a board, commission, council or other group is needed prior to execution of an agreement between the entity and the Florida Department of Economic Opportunity:

i. Provide the schedule of upcoming meetings for the group for a period of at least six months.

10/25/2017, 12/6/2017, 1/24/2018, 2/21/2018, 3/21/2018, and 4/25/2018

ii. State whether that group can hold special meetings, and if so, upon how many days' notice.

Yes, with 10 days of public notice.

C. Attach evidence that the undersigned has all necessary authority to execute this proposal on behalf of the entity. This evidence may take a variety of forms, including but not limited to: a delegation of authority, citation to relevant laws or codes, policy documents, etc.

I, the undersigned, do hereby certify that I have express authority to sign this proposal on behalf of the above-described entity.

South Florida State College
Name of Entity: _____

Dr. Thomas C. Leitzel
Name and Title of Authorized Representative: _____

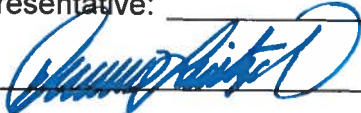Representative Signature: _____

Signature Date: _____

I, the undersigned, do hereby certify that I have express authority to sign this proposal on behalf of the above-described entity.

Name of Entity: South Florida State College

Name and Title of Authorized Representative: Dr. Thomas C. Leitzel

Representative Signature: _____

Signature Date: *10-10-17*

October 10, 2017

Ms. Cissy Proctor, Executive Director
Florida Job Growth Grant Fund
c/o Florida Department of Economic Opportunity
107 East Madison Street
Tallahassee, Florida 32399-4120

Dear Ms. Proctor:

South Florida State College requests $1,791,010 in funding through the Florida Job Growth Grant Initiative to expand an innovative training initiative designed to create jobs in the defense industry.

Project e-DEFENSE holds the potential to completely change the economic footprint for both the Heartland region and the entire State of Florida. As home to the Avon Park Air Force Range and MacDill Air Force Base Auxiliary Field, Highlands County is uniquely positioned to emerge as the epicenter of our nation's Electronic Warfare (EW) industry. Despite regional resources such as an available workforce and vast areas of unspoiled real property, Florida's historically agricultural Heartland region has struggled to establish its identity with high-growth, 21st Century industry sectors. **e-DEFENSE** will redefine this region as THE national leader in electronic warfare advancement. **Job growth opportunities for EW Technicians abound, with some estimates exceeding 800 currently available positions nationwide.**

Electronic Warfare technology and progress has reached a tipping point within the U.S. defense sector – without continued EW growth and advancement, it will become increasingly more difficult for the United States to maintain its elite military status. Efforts to expand EW applications have made the workforce gap painfully apparent to defense contractors. Through collaboration with Orlando-based 2 Circle, Inc. and other Florida defense contractors, SFSC has developed a training platform to fill this growing gap and draw more operations and new defense companies to the Sunshine State. Education, however, is only the first step in establishing this industry sector within Florida's Heartland. As the education and training platform grows, our region will also become the site for research and development efforts to validate new EW systems. From there, the potential to secure new production and manufacturing operations is limitless. **We believe this initiative could create more than 150 jobs in the first year alone, with many more in subsequent years.**

I request your supportive consideration of our vision to expand Florida's footprint in the **Defense and Homeland Security Industry Sector.** This proposal represents an opportunity to invest in a training platform that will catapult Florida to the forefront of defense sector education and training innovation. With the Pentagon's newly-formed Cyber and Electronic Warfare Directorate predicting exponential growth of EW support positions at all levels, it is critical to act now, before another state, such as California, Arizona, or Colorado, beats us to the finish line. **e-DEFENSE** will not only provide Florida with valuable assets to recruit companies to relocate or expand their operations, it will also help us recruit and retain veterans and transitioning military personnel through a value-added career pathway. We hope that you are inspired by the opportunities presented in our proposal. I welcome the opportunity to discuss this proposal with you in greater detail.

Sincerely,

Thomas Leitzel, Ph.D.
President

![Project e-DEFENSE logo]

An Initiative that will Position Florida as the Epicenter of America's Electronic Warfare Industry

Section I: *Each proposal must include the following information describing how the program satisfies the eligibility requirements.*

A: Detailed Description of Proposed Workforce Training

What is e-DEFENSE?

South Florida State College (SFSC) respectfully requests $1,791,010 through the *Florida Job Growth Grant Fund* to expedite completion of the e-DEFENSE training initiative. e-DEFENSE is a unique Electronic Warfare (EW) education and training program with potential to substantially grow Florida's footprint in the *Homeland Security/Defense* and *Aviation/Aerospace* targeted industry sectors.[1] Electronic Warfare is a rapidly growing area of expertise that reaches into almost every aspect of national defense, including simulation and training, weapons systems, tactical operations, and preventive strategies. Given the lack of military personnel to fill these jobs, EW positions at most military installations are frequently outsourced to defense contractors who desperately need access to a pool of qualified technicians. Project e-DEFENSE will establish the nation's first formal EW education and training platform, positioning Florida to <u>draw major defense contractors, billions of dollars in annual revenue, and thousands of jobs to the Sunshine State</u>.

> **Why should Florida develop an EW workforce?**
>
> Electronic Warfare is estimated to total **$373.3 billion** in revenue over the next 10 years (Keller, 2014). With no technician level training program located anywhere in the United States, the <u>defense industry will follow the workforce</u>.
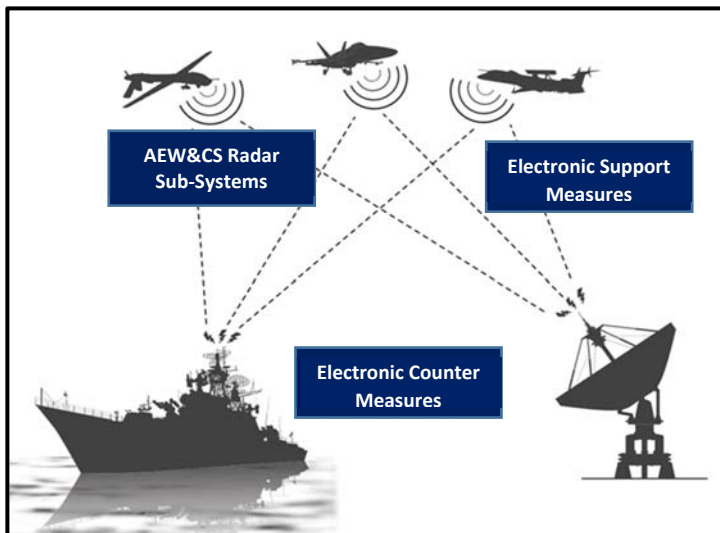

Image 1. EW includes land, sea, and air-based electronic attack, support, and countermeasures.

Technological advances have allowed the United States to develop state-of-the art vehicles, aircraft, and weapons systems. But those assets require a 21st Century workforce prepared to operate, maintain, and troubleshoot highly complicated defense systems designed to effectively engage in Electronic Attack (EA), Electronic Support (ES), and Electronic Protection (EP) operations in training and in combat. Electronic Warfare technologies impact air, land, and sea operations – all of which are developed and supported in Florida year-round.

e-DEFENSE will provide Florida with the **nation's only workforce** prepared to operate, support, troubleshoot, and repair

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[1] Enterprise Florida's "Qualified Targeted Industries for Incentives" (www.enterpriseflorida.com)

![South Florida State College logo]

critical EW technologies, including analog, digital, InfraRed, Fiber Optic, and Electrical-Optical EW system components. Graduates from this program will be trained to fill the more than 70 vacant EW positions currently open throughout Florida.[2] **e-DEFENSE** will provide Florida's veteran population and unemployed/underemployed residents with the opportunity to enter a high-value career path with significant earning potential.

Why Does the United States Have a Shortage of Electronic Warfare Personnel?

U.S. investment in EW training declined dramatically during the decade following the Cold War. The United States is now in a precarious position because the future of American safety and security hinges on a clear mission – *Seize the Electromagnetic Spectrum* (EMS). EW is not a new field in our nation's defense. The use of electronic gamesmanship as a defensive strategy was born in 1904 when a Russian telegraph operator used a simple spark-gap transmitter to effectively disrupt a Japanese naval fleet attack (Koerner, 2014). Technicians with the skills to cloak aerial attacks through various methods of "electronic bamboozlement" became a critical line of defense for both Axis and Allied nations during WWII (Koerner, 2014). U.S. Strategic Air Command relied on a cadre of Electromagnetic Countermeasures Officers (ECMOs) to lead their EW efforts (Association of Old Crows, 2014). Operating under the code name "Raven," ECMOs were charged with strategically disrupting enemy communications and radar systems. In the years following WWII, Electronic Warfare emerged as a specialized tactical area that involved use of radio, InfraRed, and radar signals in the EMS to sense, protect, and communicate, as well as the ability to disrupt adversaries from interfering with use of those signals (Lockheed Martin, 2016). But decades later, as the Cold War came to a close, the U.S. failed to stay ahead of the curve in EW advancements. The EW workforce established during the Cold War supported other national needs for decades because of declining U.S. investment in EW. The combination of reduced Department of Defense (DoD) spending in EW, reduced DoD threat research, and consolidations and mergers within the defense industrial community resulted in a 40% decline in U.S. EW workforce after 1990 (Association of Old Crows, 2014). Within the U.S., EW was no longer viewed as the next frontier of defense.

That all changed dramatically with the wireless revolution, and it would be a transformation that reached far beyond the battlefield. Why has EW technology become so attractive to adversarial groups? Insurgents and rogue nations cannot hope to match the United States in expenditures for weapons and fleet technologies, but they can acquire rather inexpensive devices and capabilities for EMS control to create an asymmetrical advantage that makes those multibillion dollar weapons vulnerable, and sometimes, ineffective (Koerner, 2014). Deployment of combat EW technologies includes the use of communication jammers to force radio silence, interfering signals designed to confuse smart bomb guidance systems, and GPS "spoofers" that make drones lose their navigation systems. Despite its combat applications, EW technologies possibly pose an ever bigger threat to national infrastructure with their potential to disrupt electrical power grids, public works, telecommunications, banking, and manufacturing.

SFSC's e-DEFENSE program will rapidly train and deploy qualified technicians with a background in electronics and EW principles to fill this critical workforce shortage.

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[2] Job openings are based upon actual advertised positions posted by Florida defense contractors between July and September, 2017.

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B: Proposal Supports State Colleges and Technical Centers

These funds will be used to expand and enhance the e-DEFENSE training initiative at South Florida State College, which is the Florida College System institution established to serve Florida's rural Heartland region. **e-DEFENSE** will prepare technicians to enter Electronic Warfare positions at military installations and private sector businesses throughout Florida. These training programs will include the following academic credentials:

- ✓ Electronic Warfare Technician College Credit Certificate
- ✓ Electronic Warfare Test and Evaluation College Credit Certificate
- ✓ Associate's Degree in Engineering Technology with an emphasis in Electronic Warfare Systems

All academic programs will be developed in accordance with standards established by the Florida Department of Education. The basis of EW in its entirety is centered on the fundamental concepts of electricity, electronics, and mechanical systems. It also involves computer programming as it pertains to Programmable Logic Controllers (PLCs) or Field Programmable Gate Arrays (FPGAs). SFSC will utilize the learning outcomes already established by the Florida Department of Education for each of these content areas.[3] These learning outcomes will be used in design of both the degree/certificate programs, as well as each course, to ensure that the academic programs align with state frameworks and employer needs.

As SFSC will be establishing the state's first Electronic Warfare Technology courses, the college would work with FLDOE to establish standardized prefixes and course numbers for each course that would establish them within Florida's common course numbering system. The assigned credit hours align with standard contact hour equivalencies (1 credit hour for 15 hours of direct instruction). All courses developed through this project will be transferrable to any public college or university in Florida.

A critical component of this training program will be inclusion of credit conversion for previous military training and experience. SFSC will use a competency-based educational approach to align program courses with previous military training and experience to shorten the transition time between military and civilian work. This process will also shorten degree completion time, resulting in faster job placement for program completers. The same competency-based credit process will also be applicable for trainees with private sector experience.

C: Transferrable, Sustainable Workforce Skills Applicable to Employer Needs

The proposed academic programs will provide the **first college credit Electronic Warfare Technician training program in the United States**. The three programs will prepare individuals to fill a number of entry- and mid-level support positions at military installations throughout Florida. There are currently more than 70 such positions open in Florida.

e-DEFENSE will provide trainees with robust knowledge of the electrical, mechanical, and software competencies critical for maintaining, producing, and operating electronic protection, attack, and threat systems. Table 1 outlines the necessary skill-sets for defense electronics technicians.

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[3] Academic criteria for the Mechatronics foundational core has already been established in Florida. Currently, 10 state colleges offer some version of Mechatronics training.

Table 1. Sample Job Description – Defense Electronics Technician	
Works from schematics, diagrams, written and verbal descriptions, layouts or defined plans to perform routine testing, checkout, troubleshooting, prototype building, environmental testing, and simple developmental engineering tasks. Applications include analog, digital, fiber optic, and RF circuits that meet program requirements. Conducts defined engineering tests and collects data as assigned. Utilizes routine development or diagnostic equipment including oscilloscope, VOM, DVM, signal generators, network analyzer, noise figure meter, and similar test apparatus. Performs quarterly safety inspections. Ships test equipment for project demonstrations. U.S. citizen with ability to obtain and maintain DoD Secret security clearance.	
Required Qualifications	**Preferred Qualifications**
Ability to troubleshoot and repair analog, RF, digital and fiber optic circuits, which includes the ability to use soldering and de-soldering equipment	Knowledge of LabView, MatLab, and link budget
Ability to set up and test RF, digital, and fiber optic test equipment*	Knowledge of integrating test equipment in small aircraft
Works independently to maintain project laboratory and lab safety	Ham radio license
Maintains test equipment calibration as a calibration area property controller (CAPC)	Hazmat experience
Ability to perform quarterly safety inspections	
Minimum Education and Training	**Desired Education and Training**
Associate's Degree in Electronic Technician with 2 years of experience or High School Diploma and 5 years of experience.	Engineering Technology Associate's Degree and 10 years of experience
Demonstrated ability to troubleshoot and repair analog, RF, digital, and fiber optic circuits	Active DoD Top Secret security clearance
Demonstrated ability to set-up and use analog, digital, computer, and fiber optic test equipment	

* Indicates competencies included in the e-DEFENSE program that are not currently covered in Florida's existing Engineering Technology and Electronic Technician degree programs.

e-DEFENSE will prepare trainees for a career pathway in defense electronics. Enrollees will have the option to complete a college credit certificate, a terminal two-year degree, or a Baccalaureate transfer degree in Engineering Technology. These options will provide students with multiple exit points, allowing trainees to enroll in an academic pathway customized to their workforce goals and industry needs.

South Florida State College is one of 10 state colleges with a Mechatronics training program,[4] but to date, the **ONLY** institution developing a Siemens-certified training program. SFSC Applied Sciences and Technologies Dean and Engineering Faculty, Erik Christensen, spent July, 2017, studying at the Siemens Institute in Berlin, Germany to align the SFSC Mechatronics program with Siemens' pedagogical approach and international standards. By working with Siemens to establish a certified training program, graduates will have the opportunity to secure international industry certifications as follows:

Table 2. Siemens Student Certifications
Certified Mechatronic Systems Assistant – This certification is reflects a trainee's ability to efficiently operate equipment and machines in a mechatronics systems environment with minimal down time.
Certified Mechatronic Systems Associate – This certification is recognized internationally as a qualified mechanical systems technician with the ability to engage in systems management, investigation, repair, and troubleshooting.

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[4] The following Florida College System institutions have established Mechatronics training programs: Florida Gateway College, Florida State College at Jacksonville, Gulf Coast State College, Hillsborough Community College, Miami Dade College, Polk State College, St. Petersburg College, Tallahassee Community College, and Valencia Community College.

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> Certified Mechatronic Systems Associate – This certification is recognized internationally as a qualified mechanical systems technician with the ability to engage in systems management, investigation, repair, and troubleshooting.

D. e-DEFENSE will be offered to the Public

While e-DEFENSE has been developed in collaboration with key defense contractors, enrolment is not restricted to employees or potential employees of those companies. Admissions and enrollment processes for e-DEFENSE will mirror those in place for other SFSC programs. The open-access program will also operate under the college's uniform academic, financial aid and student services processes, policies, and procedures. Successful students will have the opportunity to qualify for high-value internships and job-based learning experiences with partner companies.

E. Aligns with Florida College System Education and Training Standards

The Florida College System institutions must comply with course and program processes established by the Florida Department of Education. SFSC uses standardized program approval process that involves key review and approval steps at the academic, institution, and state levels. Figure 2 below outlines the SFSC curriculum approval process.

Academic Level
- Dean of Applied Sciences and Technologies submits course and degree program descriptions to the SFSC Curriculum Committee
- Curriculum Committee reviews the academic content submitted
- Learning and Student Success Committee reviews the recommended courses/program

Institution Level
- Learning and Student Success Committee reviews the recommended courses/program
- College President
- District Board of Trustees reviews and approves the program

FLDOE
- Review and approval by Florida Department of Education Articulation Coordinating Committee
- Assignment of Course Prefix and Number
- Courses become part of Florida's Common Course Numbering System

Figure 2. South Florida State College curriculum development and approval process.

e-DEFENSE, like all academic programs offered by SFSC, must adhere to accreditation standards established by the Commission on Colleges of the Southern Association of Colleges and Schools (SACS). As part of SFSC's Mechatronics Engineering Technology program, e-DEFENSE will provide trainees with a regionally-accredited academic credential. In addition to this endorsement, SFSC is also working with key defense industry stakeholders to secure an endorsement from the Association of Old Crows (AOC), the national industry association for EW professionals. EW is currently an unregulated industry, with most professional acquiring their specialized skills through years of real-world experience. With an endorsement by AOC, e-DEFENSE will become THE nationally-recognized industry certification for EW professionals. Table 3 outlines the six Electronic Warfare Technology Certificate courses currently in development by SFSC.

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SFSC has designed the EW certificate programs to address core competencies critical for EW professionals. The EW Technology course sequence will acclimate trainees to the central technologies

Table 3. Electronic Warfare Technology Certificate Program	
Course #1: Principles of EW I (4 credit hours/60 contact hours)	Course includes an overview of modern analog and digital EW systems, including an introduction to Electronic Attack, Support, and Protection.
Course #2: Principles of EW II (4 credit hours/60 contact hours)	Course introduces students to a more detailed investigation of EW systems, including application of EO and IR technologies.
Course #3: Intro. to Radar and RF Tech (3 credit hours/45 contact hours)	Course includes a basic overview of RF-based systems
Course #4: Intro. to Threat Systems w/Lab (4 credit hours/60 contact hours)	Course will provide students with a basic overview of how threat systems operate independently and in an integrated environment.
Course #5: EW System Integration (3 credit hours/45 contact hours)	Application and synthesis course where students will build upon their knowledge of systems engineering and EW principals to develop a functional understanding of how EW technologies operate in a System of Systems (SoS) environment.
Electronic Warfare Qualifying Exam – Required for Co-op Placement [5]	
Course #6: Introduction to Signals Intelligence (SIGINT) with Defense Industry Co-op[6] (3 credit hours/45 contact hours)	Students will apply their foundational knowledge to better understand and operate defense electronics systems in a Signals Intelligence (SIGINT) environment. Co-op placements will be paid placements with one of the identified defense industry partners.

used throughout EW systems, such as

South Florida State College has committed $250,000 to development of the EW Technology College Credit Certificate, which includes five foundational courses and a capstone course with a job-based learning component. Students will have the option to complete this certificate as a stand-alone program, or as part of a two-year Engineering Technology degree program, which would provide them with a specialization in EW systems. Veterans entering the two-year degree program will be eligible to receive credit for applicable military training and coursework, allowing them to shorten their required plan of study at SFSC. Funds are requested through the **Florida Job Growth Grant Fund** to build a second certificate in **Electronic Warfare Test and Evaluation**. This additional EW certificate will specifically prepare technicians for the specialized tasks related to evaluating EW systems for operational success and vulnerabilities and providing engineers with necessary technical reports to address design issues. This advanced certificate will include the following courses: 1) Test and Evaluation Processes; 2) RF Threat Systems; 3) Test Plan and Evaluation Methodologies; 4) Data Analysis Methodologies; and 5) Application of Statistical Methodologies and Test Reporting. After completing this second EW certificate, trainees would be prepared to provide high-level support to engineers designing state-of-the-art EW systems at defense installations throughout Florida.

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[5] Through endorsement by the Association of Old Crows, the SFSC EW Qualifying Exam will become a nationally-recognized EW industry credential.

[6] Training programs that alternate between academic study and work experience. Work experience is paid and should include a minimum of 12 weeks or 420 hours. (Canadian Association for Cooperative Education, 2017)

F. Program will be open to unemployed and underemployed individuals

e-DEFENSE will provide **employed, unemployed, and underemployed** individuals with access to a unique training platform designed to fill critical defense and security positions throughout Florida. Students will have to complete an application process to gain admission to the program. This screening process will ensure that students who enter the program will be positioned for successful completion and entrance into the targeted industry sector. Admissions requirements will include successfully passing a criminal background screening[7] and demonstration of satisfactory academic skills. SFSC has also established **e-DEFENSE** to meet federal financial aid requirements, which will allow unemployed individuals to secure PELL funding and other federal student aid resources.

G. Potential Economic Impact of e-DEFENSE

Describe how this proposal will promote economic opportunity by enhancing workforce training. Further, please include the economic impact on the community, region, or state and the associated metrics used.

Florida is currently home to 28 private sector defense companies (see Table 4), comprised of contractors and manufacturers, including international corporations such as Lockheed-Martin and Boeing, as well as smaller businesses such as Craig Technologies and Chesapeake Technology International. These companies are responsible for filling Electronic Warfare personnel at the state's 11 military installations.

Electronic Warfare positions, recognized as the fastest-growing and most critical of the defense support technicians, include a wide range of support, maintenance, and operational

Table 4. Florida's Defense Industry Companies	
2 Circle, Inc.	Lightning Defense
Aar	Leidos
Adv. Concepts Enterprises	Lockheed-Martin
Alakai Defense Systems	MacAulay Brown
BAE	Northrup Grumman
Boeing	OnPoint Defense Technologies
Chemring Ordnance	Osprey Defense
Chesapeake Technologies Int.	Pratt & Whitney
Craig Technologies	Qualis Corporation
Cubic Defense Systems	Reliance Test & Tech
CVG Strategy	Saab Ab
General Dynamics Ordnance & tactical Systems	Shutts & Bowen LLP
Harris Corporation	Streamline Defense
InDyne	Textron

personnel. Defense electronics contracts are estimated to total **$373.3 billion by 2023**, with eleven major contractors expected to secure the majority of those contracts. Of those companies, 10 already have established operations in Florida, including defense industry leaders such as Lockheed Martin Corporation, Raytheon Company, Northrup Grumman Corporation, BAE Systems, General Dynamics Corporation, and Boeing Company. Table 5 on the following page outlines Florida's EW contract leaders.

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[7] Graduates will be required to pass criminal background screening in order to be eligible for the targeted jobs within the defense industry.

Table 5. EW Contract Leaders with Florida Operations	
Company	**Florida Locations**
Lockheed Martin Corporation	Eglin AFB, Orlando, Hurlburt Field, Dade City, Lakeland, Oldsmar, & Pinellas Park
Raytheon Corporation	Jacksonville, Panama City, Gainesville, Seminole, St. Petersburg, Fort Walton Beach, Shalimar, & Orlando
Northrup Grumman Corporation	Orlando, Gainesville, Orlando, Apopka, & St. Cloud
BAE Systems	Miami, Tampa, Panama City, & Fort Walton Beach
General Dynamics Corporation	Coral Gables, Panama City, Defuniak Springs, Jacksonville, Ft. Lauderdale, Tallahasee, & Atlantic Beach
L-3 Communications	Cape Canaveral
Exelis Incorporated	Panama City, Melbourne, Palm Harbor, & Enterprise
Boeing Company	Miami
DRC Technologies	Largo & Melbourne
FLIR Systems	Orlando & Niceville
Keller (October 16, 2014)	

These six companies represent major, international businesses with research, development, production, and support footprints that span multiple states. With Florida as the home to the nation's only dedicated EW Technician workforce, these companies will have even greater incentive to expand their Florida operations, further increasing statewide revenue and job creation. As evidenced by the locations presented in Table 5, Florida's EW contract leaders have operations that span the entire state, from Miami to the farthest reaches of the Florida panhandle. SFSC's **e-DEFENSE** program will be conveniently situated in the heart of the state, making it accessible to trainees located at military installations throughout Florida (see Figure 3). Courses are also being designed for delivery through a flexible, hybrid format, which will accommodate transitioning military personnel, as well as currently employed individuals. With starting salaries upwards of $50,000 annually, these positions will provide Floridians, especially Florida's veteran population, with a direct pathway to high-paying careers.
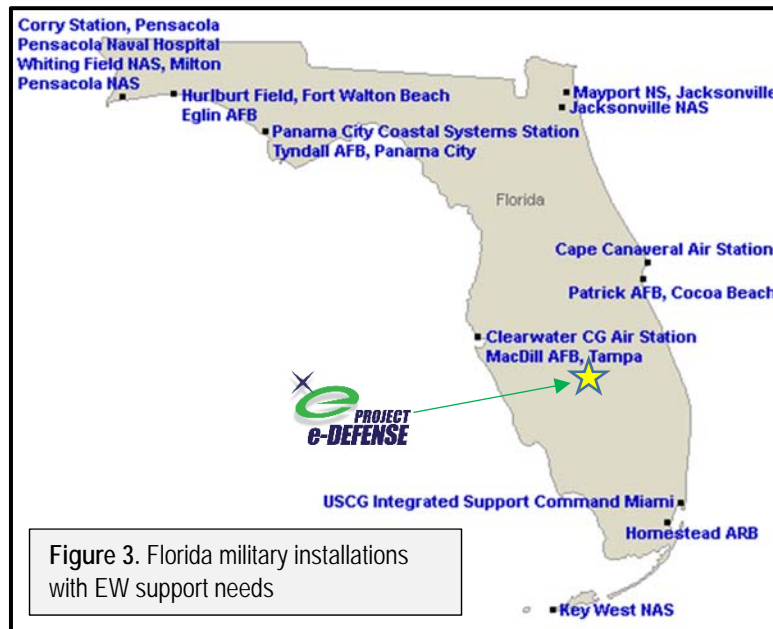

Figure 3. Florida military installations with EW support needs

As of August, 2017, Florida's defense industry contractors had a combined **73 vacant EW technician positions** at military bases throughout Florida. Table 6 on the following page lists these vacancies. Some positions have been vacant for more than 9 months.[8] As Florida builds a solid workforce pool to fill this critical industry gap, the entire state will be positioned to recruit more defense companies to establish or expand their Florida operations, potentially increasing Florida's share of the expected $373.3 Billion in EW contract revenue.

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[8] Several Technician positions in Fort Walton Beach have been advertised since June 28, 2016.

Table 6. Sampling of Vacant Entry-Level Electronic Warfare Support Positions in Florida			
Contractor	Location	Position	Date Posted
BAE Systems	Fort Walton	Electronics Technician Maintenance II	Until Filled
Exelis	Palm Bay	Engineering Technician (SATCOM)	August 10, 2017
Exelis	Palm Bay	Engineering Technician B	July, 2017
Exelis	Palm Bay	Engineering Technician	August, 2017
General Dynamics	Niceville	Ordnance & Tactical Systems Engineer	Until filled
General Dynamics	Niceville	Ordnance & Tactical Systems Assistant	Until filled
General Dynamics	Orlando	Mission Systems Test Engineer	Until filled
Harris Corporation	Palm Bay	Engineering Technician	Until filled
InDyne	Cape Canaveral	O&M Engineer Technician	April 7, 2017
InDyne	Cape Canaveral	Engineering Technician IV	March 23, 2017
InDyne	Cape Canaveral	Maintenance Mechanic	July 17, 2017
InDyne	Fort Walton Beach	Security Systems Technician II	June 28, 2016
InDyne	Fort Walton Beach	Security Systems Technician III	June 28, 2016
InDyne	Multiple Locations	Mission Systems Specialist	Oct 18, 2016
Lockheed Martin	Orlando	Electrical Mechanical Optical Tester (4)	Until filled
Lockheed Martin	Multiple Locations	Technicians (multiple levels – 9 positions)	Until filled
Lockheed Martin	Hurlburt Field	Electronics Maintenance Technicians (4)	Until filled
Lockheed Martin	Ocala	Electronics Senior Tester (2)	Until filled
Lockheed Martin	Orlando	Microelectronics Operators (2)	Until filled
Lockheed Martin	Orlando	Electronics Technician (3)	Until filled
Lockheed Martin	Orlando	Sr. Optical Operator (4)	Until filled
Lockheed Martin	Ocala	Electro/Mech Repair Specialist	Until filled
Northrup Grumman	Melbourne	Electronics Technician III	June 27, 2017
Northrup Grumman	Melbourne	EMI/EMC Engineer III	July 12, 2017
Northrup Grumman	Melbourne	Electronic Systems Safety Engineer	May 30, 2017
Northrup Grumman	MacDill AFB	USCENTCOM Operations Security	June 22, 2017
Northrup Grumman	Multiple Sites	Field Representative (Electronic Technologies)	April 13, 2017
Northrup Grumman	MacDill AFB	USCENTCOM Information Operations	April 7, 2017
Northrup Grumman	Melbourne	Systems Safety Engineer (Electronics)	April 3, 2017
Reliance Test & Technology	Eglin AFB	Journeyman Field Engineer (EO/IR/Laser/RF/GPS)	May 25, 2017
Reliance Test & Technology	Eglin AFB	Electronics Technician II (9 positions)	Until filled
Reliance Test & Technology	Eglin AFB	Electronics Technician III (4 positions)	March 13, 2017
Reliance Test & Technology	Eglin AFB	Electronics Technician IV	
Reliance Test & Technology	Eglin AFB	Engineering Technician (3 positions)	May 30, 2017
Reliance Test & Technology	Eglin AFB	Senior Information Assurance Specialist	June 1, 2017
Qualis Corporation	Fort Walton/Eglin	Gulf Range Enhancement Systems	Until filled
Qualis Corporation	Fort Walton/Eglin	Weapons Systems Integration	Until filled
Qualis Corporation	Fort Walton/Eglin	Modeling & Simulation Engineer	Until filled
Qualis Corporation	Fort Walton/Eglin	Guidance Navigation & Control	Until filled

Florida's vacant Defense Electronics Technician positions often require a degree in Electronics or Engineering Technology along with 5-10 years of industry experience. The additional industry experience is necessary to secure individuals with an appropriate knowledge of Radio Frequency (RF), Electrical-Optical (EO), InfraRed (IR), radar, and Global Positioning System (GPS) technologies. Operating, supporting, and trouble-shooting systems built upon these technologies involves a very specialized skill-set that is not

SOUTH FLORIDA State College

included in standard Electronics and Engineering Technology degree programs. In fact, these technologies often fall outside of the scope of traditional Engineering Baccalaureate and Master degree programs, which is why Georgia Tech Research Institute developed the Electronic Warfare graduate certificate program. Most of the nation's defense contractors have become accustomed to utilizing on-the-job training to bring their workforce up to speed; however, such an approach is not sufficient to fill the rapidly growing workforce gap. Through e-DEFENSE, Florida will set the national standard for Electronic Warfare training.

e-DEFENSE will also assist Florida's rural Heartland region with economic recovery in the wake of Hurricane Irma. South Florida State College serves a rural tri-county region that suffered devastating impacts from the storm. An estimated 40% of small businesses are not expected to re-open (America's Small Business Development Center, 2017). By establishing this cutting-edge training program in such a hard-hit region of the state, Florida will support expedited economic recovery while establishing the foundation for long-term economic growth throughout the region.

Section II: *Additional Information*

A. Is this an expansion of an existing training program?

e-DEFENSE is a new training program being developed by SFSC. The college has invested $250,000 to develop the first 6-course certificate. Funds are being requested to build upon the college's existing commitment in an effort to expedite program development and expand it to include a second certificate in EW Test and Evaluation.

B. Does the proposal align with Florida's Targeted Industries?

Yes, e-DEFENSE aligns with the following Targeted Industries:

- ➢ Homeland Security/Defense
- ➢ Aviation/Aerospace

C. Alignment with Statewide Demand Occupations List

Yes, e-DEFENSE aligns with the following occupations included on the Statewide Demand Occupations List:
- ➢ Information Security Analysts (SOC 151122)
- ➢ Operating Engineers (SOC 472073)

D. Program Delivery Method

e-DEFENSE will delivered through a hybrid platform. Classroom instruction will be facilitated at South Florida State College with integrated threat systems and signals intelligence laboratory experiences hosted at the **Avon Park Air Force Range**. Supplementary web-hosted content will also be used to provide a flexible instructional environment. Face-to-face sessions and application labs will be offered through a combination of evenings and weekends to accommodate transitioning military personnel, veterans and working adults.

E. Number of Anticipated Enrolled Students and Completers

During the first year of the program, SFSC expects to enroll a minimum of 30 students. Through targeted recruitment and student onboarding services, enrollment may be as high as 100 trainees in year one.

F. Program Length and Timeline

Given the substantial work already conducted by SFSC to establish **e-DEFENSE**, the college will be ready to begin enrolling the first cohort of students in Fall, 2018. Table 7 below outlines a detailed project timeline.

Table 7. Proposed Project Timeline	
September, 2017	Curriculum development with 2 Circle, Inc. – Electronic Warfare Technology sequence
October, 2017	Curriculum development with 2 Circle, Inc. – Electronic Warfare Technology sequence
November, 2017	Partnership with Lockheed Martin Talent Management Finalized (Meeting currently scheduled for the week of November 13-17, 2017)
December, 2017	Curriculum development with 2 Circle, Inc. – EW Test & Evaluation Certificate
January, 2018	Technology/Lab Plans Finalized
February, 2018	Training Arrangement with Avon Park AF Range Updated Program Promotion and Marketing Begins EW Technology Courses Approved by the SFSC Trustees
March, 2018	Building Y Facility Upgrades Started Recruitment of Military Personnel/Transitioning Veterans Begins
April, 2018	Recruitment of Military Personnel/Transitioning Veterans continues
July, 2018	EW Technology Certificate Courses Finalized EW Test & Evaluation Courses Finalized
August, 2018	First Cohort of Students Enrolled
August, 2019	First cohort of trainees ready for Employment
January, 2020	***Florida will be ready to formally recruit additional defense contractors to relocate***

South Florida State College is already hard at work to implement **e-DEFENSE** as quickly as possible; however, the process is currently hindered by lack of dedicated funding. Funds have been secured to develop the courses. Additional funding is necessary to **expedite lab development, facility upgrades, program promotion, and course offerings**. The following expedited timeline will be possible if this proposal is successfully funded.

Project Outcomes

Over the course of the one-year project period, Project **e-DEFENSE** will 1) train unemployed and underemployed individuals for high-wage Electronic Warfare support positions within the defense industry; 2) Develop a veteran-friendly training path that will allow transitioning military personnel to leverage their previous military training to expedite program completion and high-wage job placement; 3) Establish a statewide veteran recruitment and enrollment process that will include ALL Florida military installations; and 4) Expand Florida's defense industry sector through increased workforce capacity. South Florida State College has invested considerable time and resources to-date in development of this exciting initiative. It is because of this substantial body of work that SFSC will be able to execute the activities outlined in this scope of work, which will generate an Electronic Warfare Technician workforce by 2019.

Measurable Outcomes and Impacts of e-DEFENSE

Individuals Trained
- e-DEFENSE courses will be offered by August, 2018
- 30 trainees will complete the entire **e-DEFENSE** program by June, 2019
- 100 trainees will be enrolled in the **e-DEFENSE** program

Veterans Served
- 75% of initial program enrollees are expected to be transitioning military personnel
- Formal credit articulation for prior military training will be in place by June, 2018
- 23 veterans will be fully-prepared to enter high-wage defense electronics positions by June, 2019

Statewide Veteran Recruitment and Enrollment Process
- Recruitment schedule will include all Florida military installations
- Tailored services and onboarding for transitioning military personnel
- Seamless transfer and expedited completion pathways will put veterans in high-wage jobs

Expand Florida's Defense Industry
- State-of-the-art Electronic Warfare Technology training facility will be created
- Florida will be able to marketing its new Electronic Warfare Technician workforce by December, 2018
- Florida would be ready to formally recruit new defense companies by August, 2020
- An estimated 500 jobs could be created by 2022

Strong Industry-Education Partnership

e-**DEFENSE** was developed through direct collaboration between South Florida State College and 2 Circle, Inc. Additional defense industry stakeholders have been involved over the last 18 months in development of this training initiative, including Craig Technologies, Lockheed-Martin, and Chesapeake Technologies International. In order to maintain a strong Industry-Education partnership throughout the design and implementation phases of this effort, SFSC has established an Industry Steering Panel comprised of leading experts in EW technologies and systems. These industry stakeholders have committed to providing guidance on the targeted course content, feedback on effectiveness of the program, and insight into the dynamic nature of their field. They will also assist the college in establishing strong industry placement opportunities for trainees to complete the coop/internship component of the Signals Intelligence (SIGINT) capstone course.

PROJECT e-DEFENSE
Steering Committee
Facilitator: David Lowe

- Lockheed Martin Talent Management
- Chris Moore **DARPA SETA Contractor**
- Carol Craig **Craig Technologies**
- Pentagon Office of EW & Countermeasures
- Chesapeake Technology International
- Dr. Gisele Bennett, Georgia Tech

Figure 4. e-DEFENSE Steering Committee

In addition to the defense industry partners, South Florida State College has collaborated with key regional partners in the design and development of this proposal, including Highlands County Economic

SOUTH FLORIDA State College

Development Council, Hardee County Industrial Development Authority, and the Sebring Regional Airport Authority. The e-DEFENSE training initiative has been embraced by critical stakeholders throughout the region as a rare opportunity to cultivate a new niche industry sector within rural central Florida.

Florida Cannot Afford to Delay Investing in e-DEFENSE

e-DEFENSE is a unique opportunity for Florida to establish itself as a national leader in an emerging industry with massive near-term growth potential. Florida is positioned to leverage a rare combination of valuable resources, such as its temperate climate, significant military installations, one of the East Coast's largest military training ranges, and a substantial number of Electronic Warfare industry leaders with Florida-based operations. The potential return on investment for this request is something Florida cannot afford to ignore. South Florida State College has brought together an impressive and powerful group of defense industry stakeholders to launch e-DEFENSE. With support from the Job Growth Grant program, SFSC will have access to the necessary resources to expedite this initiative, putting veterans and unemployed/under-employed rural Floridians to work in high-wage, high-skills jobs.

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Project e-DEFENSE Budget Detail

	Requested Budget	Description
PERSONNEL		
Project Manager	$ 75,000.00	
Faculty Position	$ 85,000.00	Full-time, 10-month faculty position
Adjunct Instructors	$ 45,000.00	$125/contact hour; Specialists in EMS technologies, RF, Optics, and Threat Systems
Total All Personnel	**$205,000.00**	
FRINGE BENEFITS		
32% estimate	$ 65,600.00	
Total Fringe Benefits	**$ 65,600.00**	
EQUIPMENT ($5,000 + per item)		
Threat Systems laboratory technology	$ 150,000.00	20 student workstations @ $7500 each with jammers, emitters, mock screen, radar/RF, IO, & GPS technology
Mechanical and Electrical Systems	$ 500,000.00	Expand mechatronics lab to accommodate 10 additional students; 10 stations at $50,000 each
Network Infrastructure	$ 175,000.00	Firewall, routers, & switches - $100,000; Building Y fiber - $30,000; Network storage - $20,000; Security Cameras/Storage - $25,000
Total Equipment	**$ 825,000.00**	
TRAVEL		
Local Travel	$ 500.00	Travel between campuses and the AF Range
In State Travel	$ 2,000.00	Industry partner meetings
Out of State Travel	$5,000.00	Potential travel to meet with out-of-state defense companies about relocation to central Florida
Total Travel	**$ 7,500.00**	
OTHER DIRECT COSTS		
Instructional Materials and Supplies	$ 30,000.00	consumable materials and supplies for project team
Instructional Technology (Minor Equipment)	$ 91,800.00	laptops, SMART podiums & boards, projectors
Software	$ 17,500.00	
Contracted/Consultant Services	$ -	
Security Assessment for Defense Training Site	$ 50,000.00	System analysis for hosting restricted content
2 Circle, Incorporated	$ 200,000.00	Instructional design - EW Test and Evaluation
Transition Recruitment	$ 65,000.00	4-6 base visits per month to recruit transitioning personnel
Total Other Direct Costs	**$ 454,300.00**	
Total Direct Costs	**$ 1,557,400.00**	
INDIRECT COSTS		
15%	$ 233,610.00	Reduced indirect cost rate;
Total Budget Request	**$ 1,791,010.00**	
COMMITTED MATCHING FUNDS		
Curriculum Development Expenses	$ 250,000.00	SFSC has secured $250,000 in federal funding to develop the first 6 Electronic Warfare courses
Unrecovered Indirect	$ 471,892.00	SFSC will waive 30.3% of its negotiated Federal Indirect Cost Rate.
Total Budget (Request and Matching Funds)	**$2,512,902.00**	

Instructional Team

Mr. John C. Moore – Mr. Moore is a private business owner and experienced Electronic Warfare industry leader. He holds a M.S. in Systems Engineering from George Washington University, M.S. in Global Leadership from the University of San Diego, and B.S. in Professional Aeronautics from Embry-Riddle University. His twenty-year military career included experience as a Naval Aviation weapons training officer and research appointments with DARPA. He currently holds Top Secret/SCI SSBI security clearance and serves as a DARPA SETA.

Mr. David Lowe – Mr. Lowe is a veteran of the U.S. Navy currently working as a private sector defense program analyst in Orlando, Florida. He holds an M.A. in National Security and Strategic Studies from the U.S. Navy War College, a B.S. in Engineering from the U.S. Naval Academy, and Navy Fighter Weapons School (TOPGUN) certification. After leaving the U.S. Navy, he served as the Navy Program lead and Patuxant River Field Office Manager for Georgia Tech Research Institute.

Mr. Alejandro Gomez – Mr. Gomez is a retired U.S. Air Force combat aviator, Weapons School Instructor, and Electronic Warfare Officer. He holds Master's degree in Aeronautical Science from Embry-Riddle University. He is currently serving as the B-1 Integration Lead for the joint DARPA, U.S. Navy, and U.S. Air Force rapid acquisition program office.

Mr. Randall Biggs – Mr. Biggs is a retired U.S. Navy aviation operations, tactics, and training subject matter expert. He holds a M.A. in Strategic Studies from the Marine Corps War College and U.S. Navy Weapons and Tactics Instructor certification from Rotary Wing Weapons School.

Mr. Robert Krumplar – Mr. Krumplar is a retired Pentagon Electromagnetic Countermeasures Officer with specialized knowledge of nation's Electronic Warfare training needs. He holds a M.A. in National Security Studies from the Naval War College.

Designated e-DEFENSE Instructional Space
6 offices
5 classrooms/instructional labs

BLDG Y
1st Floor

e-DEFENSE

e-DEFENSE
112

e-DEFENSE

e-DEFENSE

e-DEFENSE
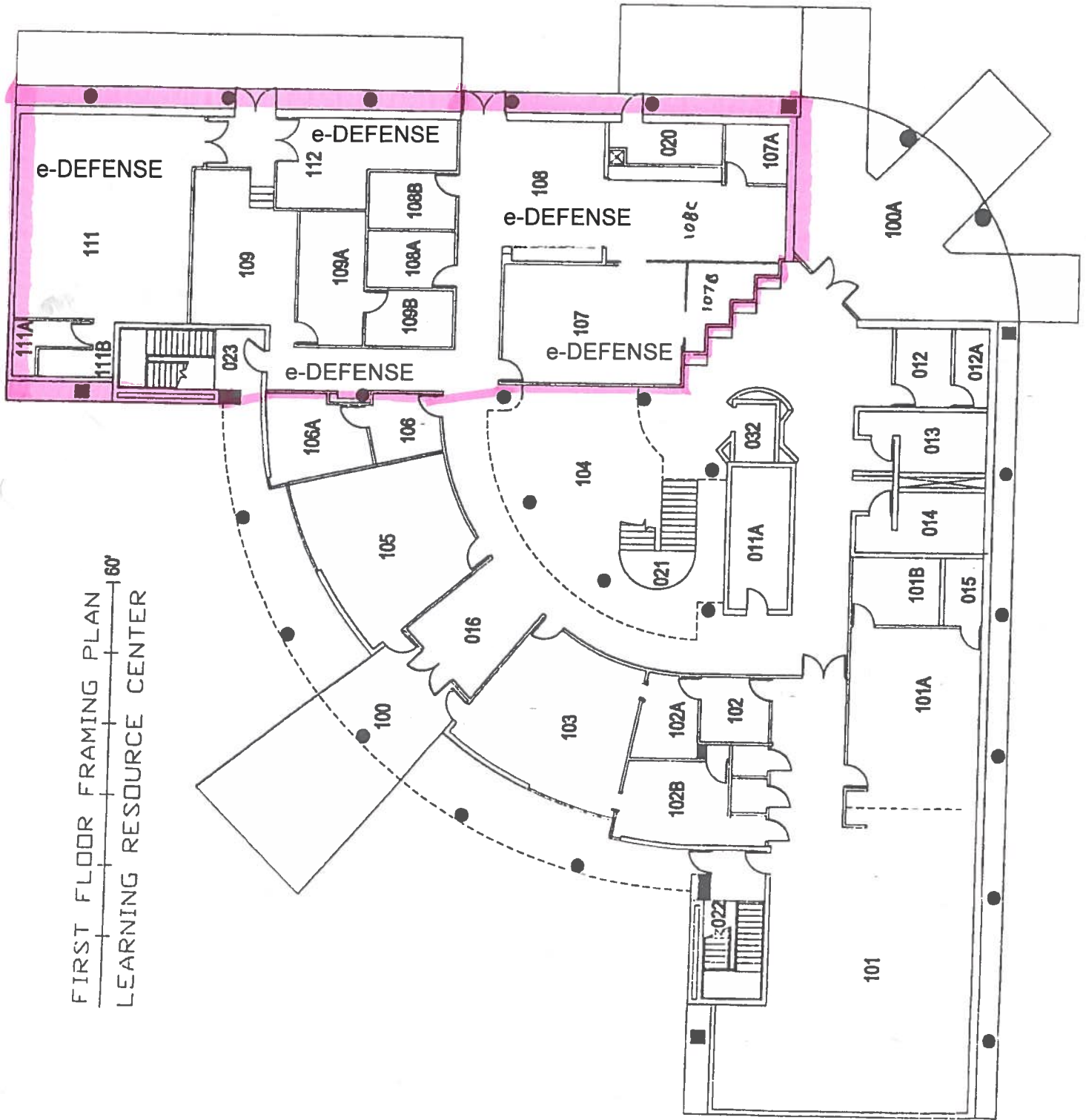
FIRST FLOOR FRAMING PLAN
LEARNING RESOURCE CENTER
60'

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108C
107A
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101B
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022

Pete Antonacci   September 5, 2017

President & CEO
Enterprise Florida
101 North Monroe Street, Suite 1000
Tallahassee, Florida 32301

Dear Mr. Antonacci:

This letter is to inform you, Enterprise Florida, the Department of Economic Opportunity, CareerSource Florida, and Governor Rick Scott that Highlands County Economic Development fully supports South Florida State College's Florida Job Growth Grand Fund e-DEFENSE proposal.

South Florida State College is one of our strongest local assets, and a dedicated partner for workforce development in the county and the surrounding region. The college works closely with Highlands County Economic Development and CareerSource Heartland to provide customized and innovative training solutions for our local businesses, as well as new business prospects.

One such example Highlands County and many of our local businesses are excited about is the new advanced manufacturing mechatronics training program coming available early next year. In a similar vein, South Florida State College has identified a need for training in electronic warfare to fill numerous open positions across the state of Florida. e-DEFENSE will also provide transferrable skills that can be used in other capacities such as telecommunications and other information technologies; an area of growth potential for Highlands County.

We are enthusiastic about the potential that e-DEFENSE can bring to the community. It will bring awareness to the Highlands County and the State as a resource for this type of specialized training and talent pipeline – both of which are not readily available elsewhere. The program can also catch the attention of large global defense contractors in need of these positions. In fact, the College is already receiving very positive reception from several of these companies. Looking ahead, being known for one of the few locations for electronic warfare training could inspire one or a few of these companies to consider our community for an inland facility to be near the talent pipeline. This also brings potential for new sophisticated industry in our rural community as we work to further diversify our local economy.

Highlands County Economic Development is a strong supporter of South Florida State College and their dedication to innovative education and workforce development solutions. We are confident that this will bring great value to our local economy and Florida and further strengthen Florida's robust aviation, aerospace, defense and technology sectors.
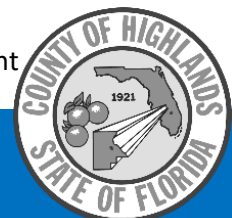
Sincerely,

Meghan DiGiacomo
Business Development Manager
Highlands County Economic Development

Taylor Benson
Economic Development Manager
Highlands County Economic Development

Additional Letters of Partnership

       South Florida State College began collaborating with key partners to develop the e-DEFENSE training program in 2016. The original team of project partners included Craig Technologies, Chesapeake Technology International, Lockheed Martin, and the Avon Park Air Force Range. The following pages include copies of those partnership letters collected at the beginning of the curriculum development process.

05 October 2016

Dr. V. Celeste Carter
Lead Program Director
Advanced Technological Education
National Science Foundation
4201 Wilson Blvd.
Arlington, VA 22230

Dear Dr. Carter,
I am submitting this letter as evidence of support from Lockheed Martin for Project e-DEFENSE by South Florida State College and its partner institutions. The proposed technician-level training programs in Electronic Warfare Technology and Test and Evaluation Protocol are value-added training programs that will prepare technicians to enter highly-specialized jobs in advanced technology-driven fields that are crucial to national security.

Lockheed Martin is a global security and aerospace company with 98,000 employees engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. With 590 facilities located in 50 states and 70 countries, we are acutely aware of the need to maintain a pipeline of engineers and technicians prepared to enter support positions in Electronic Warfare systems and Test and Evaluation Protocol.

Project e-DEFENSE will provide our facilities located in the southeast region of the U.S. with access to a skilled workforce prepared for highly-technical work in hardware and software systems integration, Electronic Warfare Test and Evaluation protocol, and SCADA system security. These are crucial technician competencies; however, given the lack of relative technician-level training, we are currently limited to individuals with degrees in Engineering or advanced STEM fields. Through the e-DEFENSE project's proposed technician training partnership, our regional workforce and transitioning military personnel will have flexible training options that will provide us with access to much more robust training opportunities. To our knowledge, this proposed program is the only civilian training program designed to target entry-level technician positions in EW and SCADA system security. As the complexity of integrated system platforms continues to grow, the need for such skilled technicians will only continue to expand.

We are sincerely looking forward to working with Dr. Valentine and his colleagues to launch such an innovative and collaborative training program. Please do not hesitate to call me if you should need any further information regarding our support for this project.

Sincerely,

David Hunn, Ph.D., P.E.
Director, Technology and Innovation
Lockheed Martin Senior Fellow Emeritus
Lockheed Martin Missiles and Fire Control
PO Box 650003, EM-10
Dallas, TX 75265-0003
972-603-1842

Dr. V. Celeste Carter
Lead Program Director
Advanced Technological Education
National Science Foundation
4201 Wilson Blvd.
Arlington, VA 22230

Dear Dr. Carter,

I am submitting this letter as evidence of support for **Project e-DEFENSE** by South Florida State College and its partner organizations. The proposed technician-level training programs in Electronic Warfare Technology and Test and Evaluation Protocol are value-added training programs that will prepare technicians to enter highly-specialized jobs in advanced technology-driven fields that are crucial to national security.

Through my long tenure in research that supports DoD efforts, I have become acutely aware of the need for a robust national preparation system in EW competencies. Project e-DEFENSE will meet a national security training need by providing military and civilian technicians with access to specialized training programs designed to fill jobs in EW Technology, EW Test and Evaluation protocol, and SCADA system security. These are critical education and training competencies for national security; however, given the lack of relative technician-level training, both military and defense contractors are currently limited to individuals with degrees in Engineering or advanced STEM fields. Through the Project e-DEFENSE proposed technician training partnership, our regional workforce and transitioning military personnel will have flexible training options that will provide them with access to an EW education pathway. To my knowledge, this proposed program is the only civilian training program designed to target entry-level technician positions in EW and intelligent system operation and maintenance. As the complexity of integrated system platforms continues to grow, the need for such skilled technicians will only continue to expand.

I can personally attest to the quality of the design for Project e-DEFENSE, and its strong connection to workforce needs. It is truly an industry-informed training effort. I was consulted on the conceptual design efforts for this initiative over the last 8 months. Please do not hesitate to call me if you should need any further information regarding my support for this project or its potential impact on EW workforce training needs.

Sincerely,

Gisele Bennett, PhD
Associate Vice President Research, Faculty Interaction
Regents' Researcher and Glenn Robinson Chair in Electro-Optics
Georgia Institute of Technology | Atlanta GA 30332-0834
P: +1.404.407.6155 | F: +1.404.407.9155 | E: gbennett@gatech.edu

21 September 2016
Ser. 1918

Dr. V. Celeste Carter
Lead Program Director
Advanced Technological Education
National Science Foundation
4201 Wilson Blvd.
Arlington, VA 22230

Dear Dr. Carter,

On behalf of Chesapeake Technology International Corporation, I am pleased to provide this letter of support for the e-DEFENSE ATE project by South Florida State College and its partner institutions.

CTI is a high-tech software, system engineering, and operational support corporation dedicated to providing advanced, operator-focused technologies for military and other security applications including Electronic Warfare, RF-delivered Cyber, Tactical & Unmanned Systems, C4ISR, and Electronic Attack training & simulation capabilities. Operational since April, 2000, we are a rapidly growing company that is proud to provide high-end engineering and systems development in a collaborative environment that is product and customer focused. We hire top-notch engineers to work with operational personnel developing and delivering the best solutions for the war fighter and other security-related customers.

With main offices in California, Maryland, Virginia, and Colorado, and support engineers in several other states we hire technicians and engineers across the country. As an employer of engineers and technicians engaged in such highly-specialized programs, we recognize the need to enhance our region's pool of technicians prepared for careers in Electronic Warfare, Test and Evaluation Protocol, Systems Integration, and SCADA system security. While these competencies are crucial to national security and defense systems, they are quickly becoming critical knowledge points for many other industries, including advanced manufacturing, logistics, telecommunications, and others that rely upon distributed electrical system controls.

We are sincerely looking forward to working with Dr. Valentine and his colleagues to launch such an innovative and collaborative undergraduate training program. Please do not hesitate to call me if you should need any further information regarding our support for this project. I may be reached at 301-862-2726 ext226 or 240-925-7683 (mobile).

Sincerely,

Mike Kepferle
President
Chesapeake Technology International Corporation

Dr. V. Celeste Carter
Lead Program Director
Advanced Technological Education
National Science Foundation
4201 Wilson Blvd.
Arlington, VA 22230

September 27, 2016

Dear Dr. Carter,

On behalf of Craig Technologies, I am pleased to provide this letter of support for the e-DEFENSE ATE project by South Florida State College and its partner institutions.

Craig Technologies supports projects from concept to real-world application with end-users in mind. We engineer, design, prototype, manufacture and test a wide variety of mission-critical systems for a diverse range of customers. We achieve stability through diversity and offer a wide scope of award-winning engineering and technical solutions to include Software Design and Development, Systems Engineering and Integration, Multidisciplinary Engineering, Training and Courseware Development, Modeling & Simulation, Information Technology Support, and Integrated Logistics Support.

Our nationally-recognized Aerospace & Defense Manufacturing Center (ADMC) in Cape Canaveral, FL offers a unique end-to-end design-to-production capability that includes specialty manufacturing, custom avionics, precision machining and fabrication, and test and evaluation services. As an employer of engineers and technicians engaged in highly-specialized projects, we recognize the need to enhance our region's pool of technicians prepared for careers in Electronic Warfare, Test and Evaluation Protocol, Systems Integration, and SCADA system security. While these competencies are crucial to national security and defense systems, they are quickly becoming critical knowledge points for many of other industries, including advanced manufacturing, logistics, telecommunications, and other industries that rely upon distributed electrical system controls.

We are sincerely looking forward to working with Dr. Valentine and his colleagues to launch such an innovative and collaborative training program. Please do not hesitate to call me if you should need any further information regarding our support for this project.

Best Regards,

Carol M. Craig
Founder and CEO

11 October 2016

Dr. V. Celeste Carter
Lead Program Director
Advanced Technological Education
National Science Foundation
4201 Wilson Blvd.
Arlington, VA 22230

Dear Dr. Carter,

I am submitting this letter as evidence of my support for the Project e-DEFENSE by South Florida State College and its partner institutions. It's my belief that the proposed technician-level training programs in Electronic Warfare Technology and Test and Evaluation Protocol are value-added training programs that will help prepare technicians to enter highly-specialized jobs in advanced technology-driven fields, many of which play important roles in national security.

Located in Avon Park, Florida, the Avon Park Air Force Range is a sustainable, world-class training complex focused on advanced, realistic and relevant training for joint, interagency, and multinational partners and excelling in air-ground integration. In the course of hosting training exercises, I've had the opportunity to work with thousands of military personnel annually and have seen first-hand, the importance of properly trained and skilled personnel.

In my opinion, Project e-DEFENSE could provide specialized education and training for highly-technical work in hardware and software systems integration, Electronic Warfare Test and Evaluation protocol, and SCADA system security. Graduates would represent a highly-skilled workforce available to military and civilian defense installations located in the southeast region of the U.S. and across the country. As I understand it, many military and defense contractors are currently limited to individuals with degrees in Engineering or advanced STEM fields who lack technician-level training in crucial competencies for national security. Through the e-DEFENSE project's proposed technician training partnership, a regional workforce, including transitioning military personnel, would be provided flexible training options that enable access to much more robust training opportunities. To my knowledge, this proposed program is the only civilian training program designed to target entry-level technician positions in EW and intelligent system operation and maintenance. As the complexity of integrated system platforms continues to grow, I believe the need for such skilled technicians will only continue to expand.

I am sincerely looking forward to assisting Dr. Valentine and his colleagues in any way possible as they launch such an innovative and collaborative training program. Please do not hesitate to call me if you should need any further information regarding my support for this project.

Sincerely,

CHARLES MACLAUGHLIN, GS-12
Operations Officer

Global Power for America