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Paper Title: F/A 18 Radome Repair - 2nd Source Alternative to OEM

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Abstract:

F/A 18 Radome Repair – 2nd Source Alternative to Single Source/OEM

Applied Composites Engineering, Inc. (ACE) is a small (~ 100 employees) aerospace advanced composites engineering, manufacturing, tooling and repair company located in Indianapolis, IN. ACE has been in business for over 32 years. ACE's composites work is diversified with a large concentrated effort on commercial, regional, and business jet radome repair. ACE has been repairing radomes of various sizes and for various end users. (Lear 45 to Boeing 747 to C130) ACE recently began exploring the same capability with both Navair and the US Air Force. ACE has identified a tremendous need for an alternative qualified repair source, other than the single OEM who currently provides all the repair and replacement without competition. ACE's discussions with Navair have confirmed our ability to meet the technical requirements of repair and testing with a significant reduction in cost and turn time that the DOD is currently receiving.

Typical damage to a radome is in-flight hail damage, lightning/static pops or burns @ ~ 1" Ø. Radomes are constructed of approximately ¼" thick solid laminate fiberglass manufactured in a hoop wound configuration. Transmissivity requirements are at three basic Rf frequencies (F1-low through F3-high) with checks for beam deflection, side lobe, reflectivity and basic dB loss.

ACE is an aerospace advanced composites company that designs, tools, and manufactures composite structures. ACE has material testing, reverse engineering, tool design/build, and part manufacturing capabilities that when combined with our FAA 145 Repair Station that has extensive radome repair and transmissivity testing capabilities/anechoic chamber, make ACE an ideal candidate to develop repairs to F/A 18 Radomes as an alternative to the OEM.

ACE has the experience, equipment, and key strategic suppliers required to do this work and are proposing a program that will support a demonstration on several Navy and Air Force airframe models, starting with the F/A 18. The F/A 18 seems to have the greatest need with reported OEM repair cycle times at 14 months. ACE estimates a significant reduction in repair costs (ACE estimates a repair cost of approximately \$50K) with a standard 21 days turn after an initial demonstration. ACE estimates the initial demonstration/repair development will take a maximum of 6 months after receipt of a damaged radome and data, and would cost \$150K. This Navy would save \$2M per month for this aircraft model alone. The return on investment or NRE would be accomplished on the first radome repaired.