



SMALL BUSINESS INNOVATION PROGRAMS
EXPLORED INNOVATIONS

SECURING RESOURCES FOR US DEFENSE & COMMERCIAL INDUSTRIES

TOPIC NUMBER:
DLA182-001

TOPIC TITLE:
Rotorcraft Fuel
Bladder Weight and
Total Ownership
Cost Reduction

**CONTRACT
NUMBER:**
SP4701-18-P-0125

SBIP COMPANY:
Response
Technologies
West Warwick, RI

**TECHNICAL
PROJECT
OFFICE:**
DLA Aviation

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**FORCE READINESS AND LETHALITY & SUPPLY CHAIN
INNOVATION**

Response Technologies Redesigns the Flexible Fuel Cell

Response Technologies is redesigning a decades-old technology used daily by the United States military – the flexible fuel cell. Current manufacturers use the same WWII-era subtractive production process, which does not capitalize on advanced manufacturing techniques, capabilities or efficiencies. Response Technologies incorporated innovative, forward-thinking manufacturing methods, including additive manufacturing and materials engineering. The result is a seamless, crashworthy, ballistically-tolerant and self-sealing fuel cell that is universally fuel compatible. The prototype will be tested on the Sikorsky H60 Blackhawk and the Bell UH-1Y Venom helicopters.

The design improvements are potentially lifesaving, cost effective and reduce procurement lead time – all benefits that have a direct impact on warfighter and weapons system readiness.

In addition to the operational advantages, this design dramatically reduces the likelihood of supply chain obsolescence due a number of key features. The redesigned cell:

1. Extends service utility by 50 percent;
2. Reduces total weight by 20 percent;
3. Reduces total ownership costs by 40 percent;
4. Reduces manufacturing lead time by 4 times;
6. Reduces future procurement costs by 20 percent;
7. Meets or exceeds the ASTM D471 test for Fuel Resistance due to its compatibility with bio and synthetic fuels;
8. The technologies derived reduce new product design lead times by 8xs.

The fuel cell, will be the first to meet or exceed all criteria for qualification under MIL-DTL-27422F.



Flexible Fuel Bladder. Image provided by Response Technologies, 2018

Made in the USA

