Conformal Body Antennas for Unmanned Aircraft Systems and Traditionally Piloted Vehicles

The University of North Dakota is actively seeking companies to commercialize a system that integrates relatively large antennas into an Unmanned Aircraft System (UAS) without compromising the UAS’s aerodynamic design features.

Applications
- Can be used on aircraft (manned, unmanned, or man-in-the-loop) as well as other vehicular systems that require long communications ranges and high data rates

Advantages
- Enables the collection and transmission of data via radio frequency using very small vehicle structures as a replacement to historical antenna arrays previously unsuitable for operation

The Technology
This invention features an apparatus and a method for enhancing the communications range and data rate of a system such as an Unmanned Aircraft System (UAS) or other vehicle system by utilizing a body or rotating component of the vehicle as an antenna, and a system for interfacing with the antenna system to produce a phased array, beam steering or high directionality antenna capability. A whole-body antenna will allow for the viable use of RF-dependent technology when using low-power sensors and will provide greater range, longer endurance and enhance reliability by reducing overall power consumption. Integrating the antenna into the body of the UAS will preserve its aerodynamic design features.

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