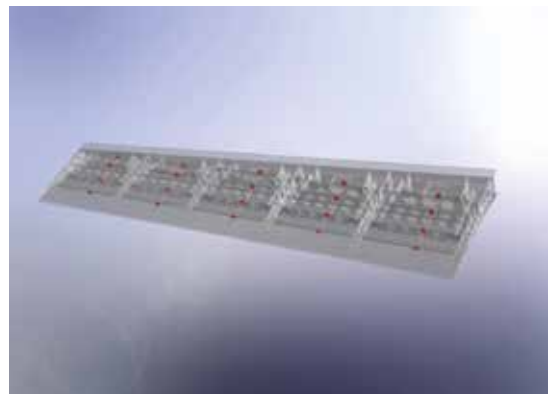




SHAPE SENSING ON MORPHING WINGS

Conformal morphing technology is a new area to the aircraft industry. The ability of an aircraft to change the shape of its wings during flight allows it to perform a flight mission more efficiently than a fixed-wing aircraft (due to drag reduction and improved lift-to-drag ratios) and thus attracts much interest from both the military/government and the private aircraft industries.



Shape sensing is one of the versatile applications in a wide market spread, made practical with Fiber Optic sensors for strain sensing. In the SARISTU project, a fiber optic based sensing approach for chord-wise shape reconstruction of an adaptive trailing edge device (ATED) is realized with the extrinsic implementation of fiber FBG sensors. With this implementation, the capability is provided for a closed-loop control of the morphing mechanism for a given set of the target shapes.

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