

REPAIR OF STRUCTURES USING UNMANNED AERIAL VEHICLES

ABSTRACT

Methods and apparatus for performing repair operations using an unmanned aerial vehicle (2). The methods are enabled by equipping the UAV with tools for rapidly repairing a large structure or object (e.g., an aircraft or a wind turbine blade) that is not easily accessible to maintenance personnel. In accordance with various
5 embodiments disclosed below, the unmanned aerial vehicle may be equipped with an easily attachable/removable module (20, 90) that includes an additive repair tool. The additive repair tool is configured to add material to a body of material. For example, the additive repair tool may be configured to apply a sealant or other coating material in liquid
10 form to a damage site on a surface (9) of a structure or object (e.g., by spraying liquid or launching liquid-filled capsules onto the surface). In alternative embodiments, the additive repair tool (70a-c, 72) is configured to adhere a tape (11) to the damage site.

Figs. 1A-1B