

1.10.3. ULTRA-FAST ULTRASONIC INSPECTION FOR AERONAUTICAL COMPOSITES USING PAINTBRUSH ACQUISITIONS AND DATA PROCESSING ON GPU

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The increase in surfaces to be inspected in aeronautical manufacturing augmented by the use of more and more complex parts and materials such as composites lead to a considerable increase of NDT costs in the manufacturing bill. New in-plant inspection scenarios have to be imagined to avoid throughputs slowing. This paper presents development in that direction which allow for optimal use of parallel ultrasonic devices for high speed scanning of large surfaces using the so-called paintbrush acquisition mode. The counterpart resolution loss is compensated by implementation of reconstruction algorithms which are compatible with composite materials applications. Implementation on GPU dramatically speeds up the reconstruction operation, opening doors for application in industrial contexts.