ReliaBlade – A new project and a new vision for blade reliability

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ReliaBlade – A new project and a new vision for blade reliability

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DTU Wind Energy (DK) and Fraunhofer IWES (DE) have initiated a strategic collaboration to strengthen research collaboration and to offer new innovative services to European industrial partners individually and together. A first step in this direction is the joint development of the greater vision for using Digital Twins to improve blade reliability. This vision is the back bone for the new ReliaBlade project, which had kick-off in January 2019 and combine two national projects, which have been funded by EUDP in Denmark and BMWi in Germany.

The long-term vision of this project is to develop a methodology for design, operation and maintenance of wind turbine rotor blades by using a Digital Twin of every blade manufactured. As showed in Figure 1 the Digital Twin follows the current state and predicts the future state of each blade individually during its entire life cycle based on automated condition monitoring, multiscale modelling and virtual testing. The project will deliver a cross-sectoral link of industry and academia by combining commercial and in-house modules into one digital platform using a fully interdisciplinary approach.

To achieve this ambitious vision, development of several methodologies and advanced tools are required. Wind turbine blade Digital Twin development and demonstration requires combined effort of the specialized scientific and industrial teams supported by provision of world class research infrastructure which are not exclusively available at national level. The presentation will present the vision, project and partner in more details.

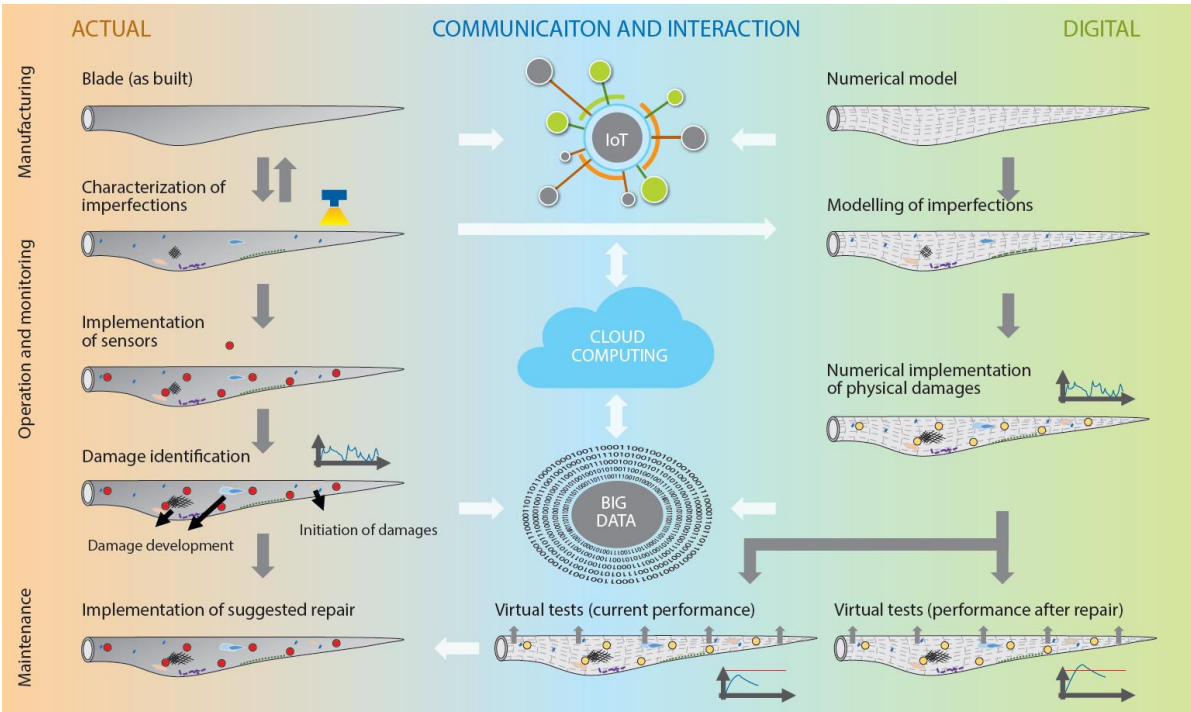

Figure 1: Digital Blade Twin Technologies to be developed and demonstrated.

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