NASA Has Joined America True's Design Mission for 2000

The agreement between Lewis and America True calls for detailed analysis of different sail and mast designs.

Engineers at the NASA Lewis Research Center will support the America True design team led by America's Cup innovator Phil Kaiko. The America's Cup is an international sailing competition, and its trophy is the oldest in professional sports. America True is the San Francisco Yacht Club's challenger for the America's Cup race in the year 2000. The joint effort between NASA and America True is encouraged by Mission HOME, the official public awareness campaign of the U.S. space community.

NASA Lewis and America True have entered into a Space Act Agreement to focus on the interaction between the airfoil and the large deformation of the pretensioned sails and rigs along with the dynamic motions related to the boat motions. This work will require a coupled fluid and structural simulation. Included in the simulation will be both a steady-state capability, to capture the quasi-state interactions between the air loads and sail geometry and the lift and drag on the boat, and a transient capability, to capture the sail/mast pumping effects resulting from hull motions.

This agreement is segmented into two phases of a fluid structure interaction (FSI) simulation. FSI simulations will enable validation and improvements of the boat design, with higher fidelity, more reliable predictions of what will happen during testing, and will reduce the number of design iterations. Phase I is the generation of an FSI simulation template. This template will provide America True with a baseline simulation that can be used in generating subsequent models. Phase II consists of production FSI simulations. In this phase, the templates will be used to simulate potential and final boat designs.

Find out more http://www.americatrue.org/.

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