softinway, Inc: Holistic Digital Engineering for Propulsion and Auxiliary Systems with AxSTREAM.SPACE - Part 1

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# ABSTRACT

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|  | Solving multiphysics challenges has never been an easy task. This is only made more complex once you start looking at how components and subsystems work together to ensure safety and reliability. Add in the unique conditions associated with rocket engines, and you’ve got quite the challenge on your hands.   Through a range of specialized solvers (0-3D), AxSTREAM.SPACE empowers engineers to develop innovative technology in space propulsion. Using AxSTREAM.SPACE, engineers can perform detailed design of the turbomachinery components (see part 2 of the presentation), evaluate propulsion systems, model thermal-fluid networks (heat exchangers, insulation, nozzle cooling, propellant pipelines, environmental control systems, bearing lubrication, leakages, etc.) and more with the ability to combine them all in a holistic co-simulation environment to ensure their compatibility.  This software demonstration will introduce the AxSTREAM.SPACE software solution with an emphasis on our versatile thermal-fluid network tool (AxSTREAM NET). This solver allows for various levels of model complexity in 1D to provide flexibility, customization, accuracy and speed, with both steady-state and transient analyses. |