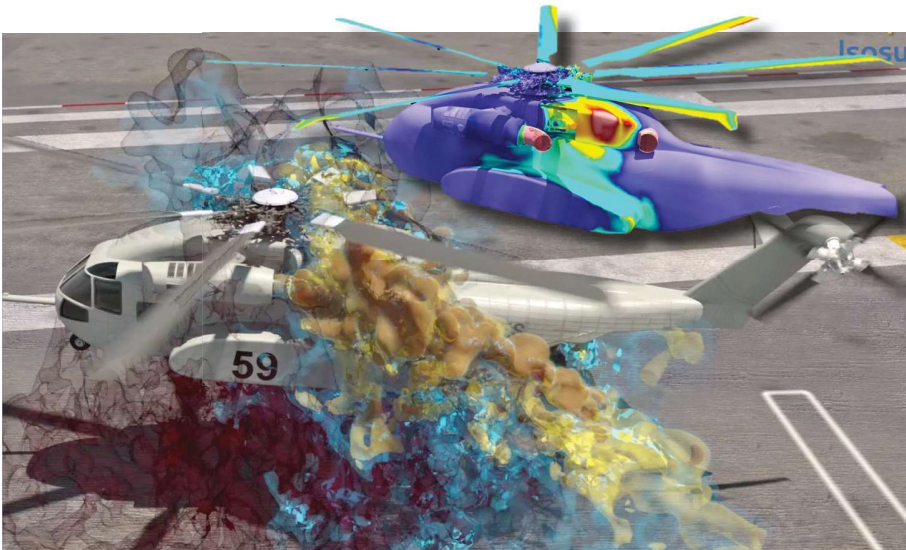# CH-53K EXHAUST GAS RE-INGESTION

Success Story - Navy

Navy/Sikorsky use of HPCMP CREATE-AV Helios Software to assess CH-53K EGR and proposed remedial actions.   Visualization by PCMP/DAAC.

⚠ PROBLEM

The CH-53K program has identified exhaust gas re-ingestion (EGR) as a significant concern for performance, safety, and engine life. EGR can cause compressor stalls and leads to reduced engine life and higher lifecycle costs. Computation is challenging due to problem onset being substantially influenced by wind direction and height above ground. Additionally it takes time for problem to build up in compressor.

💡 SOLUTION

At Navy's request, 30M CPU hours specially allocated to allow for critical path testing by end of JUN 2019. The program is now relying solely on HPCMP CREATE-AV Helio for a proposed design.

☑ IMPACT

Based on the physics-based virtual testing with Helios and HPCMP computers, EGR fix validated with flight test and program on track.

HPC modeling saved months of flight test costs and allowed reprogramming of more than $100M to other priorities. Digital modeling kept the test program on schedule.