Information complexity in flight deck systems is increasing exponentially, and flight deck designers need tools to understand, manage, and estimate the performance and safety characteristics of these systems early in the design process. This is particularly true due to the multi-disciplinary nature of flight deck systems. NASA seeks innovative design methods and tools for representing the complex human-automation interactions that will be part of future adaptive flight deck systems. In addition, NASA seeks tools and methods for estimating, measuring, and/or evaluating the performance of these designs throughout the lifecycle from preliminary design to operational use. Specific areas of interest include the following:

- Computational approaches to support determining appropriate human-automation function allocations with respect to safety and performance;
- Design tools and methods that improve the application of human-centered design principles to the design and certification of mixed human-automated systems;
- Tools and methods for modeling the complex information management systems required for future flight deck systems;
- Methods of data uncertainty estimation during the flight deck system design phase particularly with respect to overall system integrity;
- Design and analysis methods or tools to better predict and assess human and system performance in relevant operational eniroinments;
- Tools to extract information from analog information flows and transform to usable information content.

All proposals should include a means for verification and validation of proposed methods and tools in operationally valid, or end-user, contexts.