

# **NESC Assessment – Recommendations on Use of Commercial-Off-The-Shelf (COTS) Electrical, Electronic, and Electromechanical (EEE) Parts for NASA Missions**

Yuan Chen & Dr. Robert F. Hodson

NASA

[yuan.chen@nasa.gov](mailto:yuan.chen@nasa.gov)

There have been rapidly evolving parts technologies available in commercial industry. As demands for improved performance in spaceflight programs increase, and budget and schedules remain constrained, there is a continuously desire to infuse some of COTS parts in NASA missions. NASA Engineering and Safety Center (NESC) Assessment on “Recommendations on Use of Commercial-Off-The-Shelf (COTS) Electrical, Electronic, and Electromechanical (EEE) Parts for NASA Missions” has two phases. Phase I was completed while Phase II is currently ongoing. The scope of the Phase I of the assessment was to capture the NASA Centers’ current practices, best practices, lessons learned and Center recommendations on using COTS EEE parts in spaceflight systems from NASA Ames Research Center, Glenn Research Center, Goddard Space Flight Center, Jet Propulsion Laboratory, Johnson Space Center, Langley Research Center and Marshall Space Flight Center, and on using COTS EEE parts and assemblies in Ground Support Equipment (GSE) from Kennedy Space Center. Phase I also provided NESC recommendations on using COTS for spaceflight systems and GSE, including a set of best practices based on the Centers’ current and best practices. The presentation focuses on the Phase I of the assessment and touches upon the scope of Phase II, including additional participation from DoD and FAA, criteria of Industrial Leading Parts Manufacturers as defined in Phase I, and updated NESC recommendations including part-level verification guidance.