

Future Directions of INCOSE

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President-Elect of INCOSE

Abstract: INCOSE is evolving to meet future membership needs and advancement in systems engineering. This evolution involves the addition of an Executive Director and updates to the INCOSE staff structure to support our international membership more effectively. The INCOSE Board of Directors is taking a more strategic view of INCOSE and has released a Strategic Plan to chart the course for future INCOSE directions. The INCOSE President-Elect will present the progress on these topics and close with some thoughts specific to Digital Engineering application in Systems Engineering.



Speaker Bio:

Michael D. Watson is the International Council on Systems Engineering (INCOSE) President-Elect and the Systems Engineering and Integration Branch Manager at Leidos Dynetics Space Division. He served as the Lead Systems Engineer (LSE) for the Leidos Dynetics Human Landing System and serves as LSE or advisor for other defense projects. He previously served as INCOSE Chair of the Complex Systems Working Group. He retired from the National Aeronautics and Space Administration (NASA) Marshall Space Flight Center (MSFC) as the Advanced Concepts Office Technical Advisor responsible for systems level assessments. He led the NASA Systems Engineering Research Consortium defining advanced systems engineering approaches and basis and served as the NASA Systems Engineering Technical Discipline Team Research and Technology lead. His work included definition of integrated system physics modeling and analysis of launch vehicles, Environmental Control and Life Support Systems (ECLSS), aircraft, and lunar surface power systems. He led the development of systems engineering principles indicating the engineering, mathematical, and social basis of systems engineering. He chaired the INCOSE Systems Engineering Principles Action Team that updated the systems engineering principles and released them as an INCOSE publication in August 2022. He has served as the Space Launch System (SLS) Lead Discipline Engineer for Operations Engineering. He served as Chief of the Integrated Systems Health Management (ISHM) and Sensors Branch and led a NASA team defining Vehicle Management System capabilities for human missions to Mars. His branch work included the definition of ISHM capabilities for the Ares family of launch vehicles. Prior to this, he

served as Chief of the Optics Branch responsible for the fabrication of large x-ray telescope mirrors, diffractive optics, and telescope systems. He started his career with NASA developing International Space Station (ISS) operations capabilities. He also worked to develop remote operations support capabilities for the Spacelab Program in Europe, Japan, and the United States. He previously served as the Joint Army Navy NASA Air Force (JANNAF) Modeling and Simulation Subcommittee (MSS) chair. He graduated with a BSEE from the University of Kentucky in 1987 and obtained his MSE in Electrical and Computer Engineering (1996) and Ph.D. in Electrical and Computer Engineering (2005) from the University of Alabama in Huntsville.