

Advanced Manufacturing and iSCM is a key piece of the framework for America's space technology investments as the NASA the aerospace industry, and international partners embark on a bold new vision of human and robotic space exploration beyond Low-Earth-Orbit (LEO). This type of investment is driven by the Agency's need for cost efficient operational support associated with, processing and operating space vehicles and address many of the biggest operational challenges including extremely tight funding profiles, seamless Government-to-Commercial program inter-activities and the reduction of the time gap with human spaceflight capabilities in the post-Shuttle era. An

investment of this magnitude is a multiyear task and must include new patterns of thought within the engineering community to expand on the importance of PLM, iSCM and advanced manufacturing, in particular understanding the physics, information flow and modeling needs of remote in-space 3D printing. Proven history within the Department of Defense and commercial sectors has shown that logistics cost reductions and or cost avoidances of upwards to 35% over business as usual are achievable. It is iSCM, advanced manufacturing modeling and in-space 3D printing that will ultimately bring the solar system within the economic sphere of our society.

¹ M. Galluzzi, O. de Weck, E. Zapata, M. Steele, (2006) "*Foundations of Supply Chain Management for Space Application*," AIAA 2006-7234 Space 2006, 19-21 September, San Jose, California URL: http://strategic.mit.edu/docs/3_84-AIAA-2006-7234.pdf