

## SPACE ACTIVITY AND SOCIETY (E5)

## Space and Society (4)

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## MANAGING THE UTILIZATION OF SOFTWARE

**Abstract**

As the birthplace for many new technologies, including software, NASA has a tremendous pool of innovative resources. NASA's chartered mission is to provide for the widest practicable and appropriate dissemination of its information. The Innovative Partnership Program (IPP) Office at NASA's Goddard Space Flight Center (GSFC) protects NASA proprietary software to assure prevention of its inappropriate release, safeguarding of the future commercial and partnership value of the software. NASA GSFC's software release process accomplishes this by (1) reporting developed software, (2) determining the appropriate release level/category, (3) processing requests for software release, and (4) leveraging the software for NASA benefit, as well as commercial and partnership opportunities. This presentation will discuss why NASA develops software; how NASA utilizes software across its missions; how NASA releases software in a controlled manner; and how the controlled release lends opportunity for commercial products. Specific examples will be presented, showcasing the broad application of software technology resulting in significant benefit within NASA and to the public. The intent is to demonstrate what the public may not know about the benefits of a specific technical discipline within NASA—software. A case study of NASA's Hierarchical Image Segmentation (HSEG) software, used initially for NASA's Earth Sciences Mission to produce a set of hierarchically related segmentations of imagery data for image analysis, was successfully licensed for medical devices following an industry outreach event. Development of an online web-based download site enabled the dissemination of Hilbert-Huang Transform (HHT) technology for testing and use by hundreds of organizations, as well as being licensed for commercial applications and freely applied in other government laboratories. Established as a commercial standard and product, Spacewire, has been very beneficial to NASA by integrating NASA standards into commercially available products. These examples demonstrate the diverse mechanisms by which NASA's software assets are bringing value back to NASA through infusion, as well as benefitting the public.