The National Aeronautics and Space Administration (NASA) was established on 1st October, 1958, with the goal of furthering man's understanding of the universe.

Since then, NASA, although an agency of the United States government, has found its way into space to make key discoveries and has won the hearts of peoples around the world. The entire world delights in NASA's successes, such as putting man on the moon or the more recent rovers on the surface of Mars; the world is disappointed in its failures, and mourns its tragedies.

For nearly half a century, NASA technology has not only improved its ability to explore the frontiers of space, it has found valuable applications in the everyday lives of people on Earth ranging from the invaluable solar heaters for the rural communities to the most advanced forms of satellite communications in use today. NASA sets for itself high goals for exploration and science data collection and analysis, all of which feeds back to giving a greater understanding of the universe and improving human life.

Almost everything that NASA does relies heavily on continuing innovations in Systems and Software Engineering. During its lifetime, NASA has seen both hardware and software failures, resulting in necessary changes to missions, failure to achieve the science goals of the mission, or even loss of a spacecraft. However, the advances made have enabled more forward-reaching goals resulting in more valuable insights that today govern our understanding of Earth's place in the universe. Through innovations in Systems and Software Engineering, the engineering process has become more predictable and measurable, resulting in fewer errors that can endanger missions and precious life. These innovations have enabled mankind to reach further into space for new scientific discoveries that provide the basis for betterment of the human condition.

NASA realizes that continual investment in Systems and Software Engineering research is paramount for future mission successes. Large investments are currently being made in research that will support the Exploration Initiative, the return to the moon, and future human and robotic explorations of Mars.

Innovations in Systems and Software Engineering: A NASA Journal will address research and development issues that will be important to NASA in attaining its exploration goals. The journal will report on prior research and contemplate how it may be practically applied in future missions. It will provide feedback to the community on issues of concern to NASA and on work that NASA and its collaborators are performing to address these issues. It will also provide a forum for researchers to highlight topics that either are, or should be, of interest to NASA.

The selection of papers in this our inaugural issue includes some work that has been funded by NASA in the past, and which has already been directly applied to NASA projects and missions, as well as research in areas that NASA has interest in, although the work reported has not been funded by NASA.

The final paper of each issue of the journal will be a "State-of-the-Art" paper. That is, in each issue, we will have an overview of a particular subject, written by an expert in the field, which provides a comprehensive overview of the topic, the main issues for current and future research, and pointers to further reading. In this issue we are pleased to have a very insightful overview of *Autonomic Computing*. Future issues will include overviews of subjects of great and growing interest to NASA.

This first issue of the journal was *launched* at a reception as part of SEW 29, the 29th Annual NASA/IEEE Software Engineering Workshop and the first Systems and Software Week.

We are most grateful to the Office of the NASA Chief Engineer, NASA Headquarters, for its considerable support. This journal would also not be possible without support from the Information Systems Division (Code 580), the Applied Engineering and Technology Directorate (Code 500), the Systems Integration and Engineering Branch (Code 581) and the NASA Software Engineering Laboratory at Goddard Space Flight Center. In particular, we would like to thank John Kelly, Paul Curto, and Margaret Caulfield for their personal and professional support of this venture.

We are pleased to undertake publication of this journal in collaboration with Springer. We would like to acknowledge the outstanding work that they have performed in bringing this idea to fruition quickly, and we thank Christiane Notarmarco, Beverley Ford, and all the staff at Springer, for their patience and commitment.

We are lucky to have an outstanding editorial board and advisory board. We would like to thank everyone for their contributions to date, and to express how pleased we are to be having the opportunity to work with them in the future.

Volume 1 Issue 2 of *Innovations in Systems and Software Engineering: A NASA Journal* will be published in September 2005, and will contain another outstanding collection of papers written by world class researchers. Future issues will also contain periodic updates on NASA events and activities, as well as calls for papers and participation in NASA-sponsored events, workshops, and conferences. We will also have occasional special issues entirely devoted to a particular theme or topic.

We hope that this journal will be of great value to the NASA community, and the Systems and Software Engineering communities as a whole. We look forward to continued innovations in these fields, and to reporting on them in this forum.

Mike Hinchey
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6th April, 2005