



## Ralf Hartmann

**Ralf Hartmann** was until recently the Head of Airbus Group Systems Engineering Governance and VP Technical Advisor for “Digital Design, Manufacturing and Service” (DDMS) within the Digital Transformation Office (DTO) at Airbus Defense & Space. He will now retire from Airbus in December 2021.

The mission of the Systems Engineering Governance is to ensure maximum harmonization and full consistency at strategic, process, methodology and competency level across the Airbus group and to ensure application to key projects. The scope of DDMS is to ensure the overall multidisciplinary digital integration of all domains along the full lifecycle.

Ralf joined the DTO office of Airbus Defense and Space in July 2017 where he created and led the DDMS organization until March 2019. Before he worked in Space Systems for 30 years in the area of robotics, automatic control, simulation, S/W development and primarily Systems Engineering. In this period, he held various positions as Director and Manager of international engineering organizations. 2013-2014 he served as member of the supervisory board of Astrium GmbH.

Highlights in Ralf’s Systems Engineering related career include the implementation of a comprehensive Systems Engineering Qualification Program and the Satellite Design Office, a concurrent engineering design centre, which he was leading for some years. Furthermore, Ralf was one of the key authors of the European Space Systems Engineering Standard (ECSS-E10). Along his whole career he was an engaged evangelist and promoter of Systems Engineering, the digital transformation and especially its combination.

Ralf received a Diploma in Electrical Engineering from the University of Karlsruhe and he is a certified project management professional (GPM/IPMA).

Ralf Hartmann is an active and engaged INCOSE member since 1996 and a founding member of GfSE, the German Chapter of INCOSE. Selected milestones of his engagement within INCOSE include:

- President of GfSE (German Chapter) in 2000
- Chair of the 2nd European SE Conference in 2000
- Co-Chair of the Standards Technical Committee from 1998 until 2000
- Co-chair of the 14th INCOSE International Symposium in 2004.
- Co-chair of the Modeling and Tools Technical Committee from 2000 until 2005
- Selected as an INCOSE Fellow in 2005
- INCOSE Head of Delegation in the Intergovernmental Group on Earth Observations (GEO) from 2005 until 2008
- Recipient of the prestigious INCOSE Founders Award in 2008
- INCOSE Director for Strategy from 2008 until 2014. Sponsorship of the actual SE Vision 2025 in this period.
- Recognized as full member of the Omega Alpha Honor Society for Systems Engineering in 2019
- Since 1998 until 2020 continuous member of the CAB as representative for Airbus Defense and Space and its predecessor companies.

## Vision for INCOSE in its 4<sup>th</sup> Decade

After more than thirty years of existence, INCOSE has done a major step forward in the past five to ten years concerning the definition, evolution, and promotion of the SE discipline. It has transformed into a recognized global thought leader attracting public, academic and industrial organizations, and their members to join forces through INCOSE communities and events for mutual benefit. This was and is specifically true in the area of digital transformation incl. MBSE. The Systems Engineering Vision, which will be published next year in its third edition as Vision 2035, is a flagship product along with the roadmap developed by the Future of Systems Engineering Initiative (FuSE).

INCOSE has established a strong set of products and assets, which are continuously maintained and evolved to define the state of the discipline. This has led to a global presence in nearly seventy countries approaching twenty thousand members supported by hundred and twenty corporate members. Recalling the fact that INCOSE is a volunteer-based organization, this is really amazing. At this stage the principle to rely on voluntary contributions is very powerful and unique in comparison with other professional organizations of similar size. In order to be able not only to keep the pace but also to accelerate, it needs to be urgently complemented in the future by more permanent staff.

The pandemic threat of the COVID-19 virus has hit the world last year and nobody can predict today how long it will continue to impact everybody's life. Suddenly travels and physical meetings weren't possible anymore. Home office and virtual meetings have become the standard. In many public, private and industrial domains the lack of mature digital means and capabilities has become evident. Also, INCOSE has a track record of struggling with its IT infrastructure.

Since some years now special attention has been put by the leadership on this topic and reasonable improvements could be observed. However, the global pandemic threat, which appeared last year, represented a major risk to the **operational** concept of INCOSE. Thus, a step change was necessary, which, from my perspective, has been excellently managed by the INCOSE leadership and community. As a result, two fantastic International Symposia have been executed last year and this year as fully virtual events with great success. Even the International Workshop, a traditional intensive face to face event, has been performed this year fully virtual with the highest participation ever! System exchange cafes, virtual board meetings and online certification testing are other fantastic examples.

Today it looks like INCOSE has been able to turn the recent threat into an opportunity which has been made use of. We are now prepared to ensure significantly increased participation of individuals, members, partners and stakeholder organization in future hybrid and virtual events. In a situation where financial, social, political, and now health constraints were hindering travel and physical on-site participation, this can now be used for a new level of global growth and outreach through an increased operational efficiency. The organization is in a very good stage for this, and the way ahead is pointed.

As passionate and active INCOSE member since more than two decades, including six years as Director Strategy on the board, I am very enthusiastic about the opportunity to run right now for becoming INCOSE's next president-elect. I am looking forward to serving INCOSE in this key role for the next four years with ambition and dedication.

In summary my vision for the upcoming years comprises:

- Maintain and evolve the SE related **Thought Leadership** especially through the SE Vision 2035 and the associated roadmap (FuSE) as orientation for the global community
- Recognize early **Global Trends** and prioritize its inclusion in roadmaps, relevant working groups, SE research and partner selection (e.g., smart cities, artificial intelligence, system of systems, digital transformation of systems and processes)
- Maintain, evolve, and complement our **Body of Knowledge** and related products as core assets, such as SE Handbook, SEBoK, SETDB, Insight Magazine, SE Journal and high value working group products

- Evolve our **Education and Training** support to ensure the recognition and efficient application of our discipline in day-to-day business practice comprising among others: SE Certification, Professional Development Portal (PDP), Institute for Technical Leadership and Systems Engineering Education System (SEEE)
- Increase of **Operational Robustness** including reduced financial dependency on membership fees, more paid staff and membership growth; supported by the evolution of our digital infrastructure in an exemplary manner
- Strengthen and grow our **Relationships** to partner organizations, especially to public and governmental bodies; from opportunity based to strategic relationships management
- Accelerate on the path to state-of-the-art **Communication** using a rich set of digital channels and means (e.g., social media, webinars, videos) for information spreading and marketing (e.g., publications, presentations, news, discussions)
- Evolve and leverage **Virtual Communities & Hybrid Events** to support a step function in global outreach and collaboration efficiency
- Appreciate the value of the **Federalism & Voluntary Contributions** in the global INCOSE ecosystem; strengthen and leverage collaboration and exchange between its constituents
- Appreciate, embrace, and foster the value of **Diversity** (cultural, geographical, gender, application domains, ...)