Biography

Joachim Biermann is Senior Scientist and Deputy Department Head in the department Sensor Data and Information Fusion (SDF) of the Fraunhofer Institute for Communication, Information Processing and Ergonomics (FKIE).

In 1982 he received his degree (Dipl. Math.) in numerical mathematics from the Department of Mathematics of the University of Cologne. From 1982 to 1987 he was assistant professor with the same department.

Since 1988 Joachim has been with FKIE, mainly focusing on knowledge-based information exploitation and information fusion in the context of intelligence processing and decision support for defence and security. Since 1992 he has participated in a large number of NATO activities on information fusion in intelligence, particularly in the series of NATO RTO /STO IST Task Groups on Information Fusion. In addition, he has been actively promoting information fusion by organising and conducting NATO RTO Symposia, Cooperative Demonstrations of Technologies, and Specialists Meetings on this topic. He is currently an IEEE member, a member of the Armed Forces Communications and Electronics Association (AFCEA) and was a member of the Advisory Board of the "InfoFusion" research programme of the University of Skövde, Sweden, from 2011 to 2014.

Joachim Biermann has been an active member of ISIF since 2004. In 2008 he was Administration Chair of the 11th International Conference on Information Fusion in Cologne. In 2009 he became a member of the ISIF BoD and was elected as president in 2011.

Position Statement

Since joining the Sensor Data and Information Fusion department at FKIE, where research has been focussed on "low" and "high" level fusion, one of my major objectives has been to bring together fusion of human-generated ("soft") semantic information with multi-sensor ("hard") data fusion. The as yet unsolved challenges in bridging the gap between natural language-based information and sensor-generated data is increasingly important for the future, as not just the application domains of defence and security, but also such diverse areas as medicine and healthcare, criminal justice, energy supply, and transportation are experiencing increasing digitization of tools and communication, thereby producing a vast amount of data and information. Additionally, particularly in the intelligence arena, the dominance of non-traditional, asynchronous warfare and terrorism means that there are many geographical areas which are insufficiently covered by sensors to provide the information needed for decision-making; in such cases, we must rely very heavily on human information to fill in the gaps. This human information may come from trained observers or from ordinary civilians who are caught up in the crisis or fighting, communicating using a variety of languages and a variety of means, including various electronic means including social media like Facebook and Twitter. The ability to model and combine information derived from both devices and human sources, expanding along the dimensions of time, space and complexity would increase decision-making capabilities on all sides. A holistic approach for the integrated exploitation of human-generated and sensor-provided information and data will support improved situation awareness and decision-making in such areas.

Therefore, as an ISIF board member and active participant in the data and information fusion community since 1992, I would focus on the following issues:

- Promote research on soft and hard data fusion overcoming the traditional separation in high and low level fusion, including deeper discussion on overcoming the traditional separation in between the levels with a focus on better understanding and defining the roles of high and low level fusion as well as the relationships and interactions between them in complex models
- Promote research on fusion for civilian application areas and widen the scope of applications represented in the conference.
- Promote research on fusion of 'imperfect' data and information, in particular on the side of human-generated information, where direct observation is often difficult.
- Promote a balanced focus of research within the community such that both soft and hard data fusion are viewed as being equally important to the fusion process
- Strengthen the role of ISIF as "the" society in the whole information fusion community ("soft" as well as "hard", "high" as well as "low"), thereby creating a more welcoming inclusive environment for research focused all these areas, with the goal of retaining the full spectrum of researchers within ISIF
- Strengthen the role of the annual International Fusion Conference as the most recognised and prominent activity of ISIF

I would be very happy to continue to serve a third term on the Board of Directors of ISIF, and welcome your support and confidence.