

Short description written by each ESR and ER

Project acronym: **ELSA**
Project ID (6 digits): **033481**
Project Participant: **Astronomisches-Rechen Institut, Heidelberg University.**

You			Your stay in the network				
NAME, first name	Nationality	Previous place of work/education	Start date	Duration (months)	Category ESR/ER	Place	Country
Bombrun Alex	French	INRIA France	1.09.2007	24	ER	ARI	Germany

Graduated in 2007 with a doctoral degree in real-time computing, robotic and control theory from Ecole des Mines de Paris, France, I joined the ELSA network in order to participate in the development of a real space project, the Gaia mission. I was hired to work on the possibility of a direct solution to the global astrometric least squares problem. It turned out rapidly that it was an unrealistic approach, but it gave me time to have a deeper understanding about global space astrometry, a field from which I have previously never heard about. I should say that the various training opportunities offered by the ELSA network have been very useful allowing me to discuss about Gaia with a wide range of European scientists working for many years on it.

Since then, I have helped the DPAC team at ARI to redesign the one day astrometric solution software used to monitor on a daily basis the quality of the observations. I have been working with the ELSA node at Lund (Lennart Lindegren, professor, and Berry Holl, PhD student) to investigate the structure of the global astrometric least-squares problem and the algorithm on which AGIS has been designed to solve this problem. With additional support from David Hobbs (also working in Lund), we have made tremendous progress in this direction. We aim to have soon valuable publications about how a conjugate gradient algorithm can effectively be used to solve the global astrometric least square problem.

My main concern now is about my future. These months abroad have not been easy for me despite a very interesting job in a charming city. I should say that for personal reason I would like now to find a permanent position in France. Whether my experience with ELSA improves my chance enough to obtain such permanent position is not clear to me.