Gaia is the new mission of the European Space Agency (ESA). The launch is scheduled for December 2011 and the main objective is the generation of the most complete and accurate map of our Galaxy. Gaia will orbit around the L2 point, where the gravities of the Earth and the Sun are balanced. The amount of data that Gaia will manage gives us an idea of the importance of the mission: the observation of about one billion of stars, ten thousand planetary systems, half a million quasars…

n order to accomplish this task, Gaia will include the latest technology. The satellite will have 3 telescopes able to measure the positions, radial velocity and colour of the stars. With this information, we will be able to know the chemical composition and the formation of our Galaxy, the Milky Way.

The mission is now in a conceptual design stage. My contribution to the design of the mission has been the elaboration of a set of software tools that are able to process the information generated by the Astro instrument. This software operates before the compression stage, and it will make possible the creation of source packets based on “Time Slots” and the adaptation of their size to the stellar density. In the elaboration of this software it has been implemented a new way to establish the size of these TS, optimizing the resources of the satellite and saving a significant percentage in the amount of data that Gaia will have to transmit.