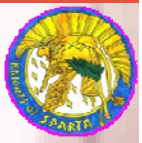


SPARTA

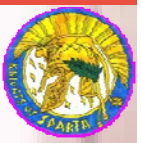
Standard Platform for Adaptive Optics Real Time Applications

SPARTA and SPARTA2: review and perspectives

Enrico Fedrigo

Abstract

European Organisation
for Astronomical
Research in the
Southern Hemisphere



SPARTA, the ESO Standard Platform for Adaptive optics Real Time Applications, provides a generic decomposition in functional blocks that can be applied, unchanged, to a variety of different AO systems, ranging from very small single conjugate AO with less than 100 actuators to much bigger and faster systems. For AO systems under development, SPARTA provides an implementation for all those functional blocks that are mapped to currently available technologies. The E-ELT with its instruments poses new challenges in terms of cost and computational complexity. Simply scaling the current SPARTA implementation to the size of E-ELT AO system would be unnecessary expensive and in some cases not even feasible. So, even if the general architecture is still valid, some degree of re-implementation and use of new technologies will be needed.

We start from the analysis of the development efforts done for SPARTA and we review the status of the project. We then proceed with the new general requirements that the E-ELT and its instruments will pose and we will present promising technologies and solutions that could replace the current ones and show how the SPARTA architecture could evolve to address those new requirements.