The MEGARA Fiber MOS Positioning Tool

The MEGARA Fiber MOS Positioning Tool (FMPT) is a software suite designed to ensure that the MEGARA Robotic Positioners (RPs) will move to or from any configuration with no risk of collision.

It is composed by a FMPT library containing a series of functionalities to be used on-line by the MEGARA Control System (MCS), and by the Stand Alone Application (FMPT SAA) which will be used by the GRANTECAN staff and will make use of the dynamic library libfmpt.

The FMPT will run on linux and Solaris.

The FMPT SAA will be used only by the GRANTECAN staff and will have the following functionalities:
- Validate a Configuration Block (CB) previously generated by the astronomer with the Fiber MOS Assignment Tool (FMAT).
- Generate the Positioning and Depositioning sequences for a CB previously generated by the FMAT. These sequences will be used by the MEGARA Control System (MCS) to move the RPs to the observing position and back to their initial position.

The FMPT on-line will make use of the libfmpt library and will be called by the MCS in case of unexpected problems. It will have the following functionalities:
- Generate a Depositioning Program: if for some reason the Fiber MOS is stopped during a motion sequence, the MCS will move the RPs to their initial (and safe) position.
- Regenerate the Positioning and Depositioning sequences in a limited way: if for some reason any of the RPs is disabled, the MCS will try to reproduce the observing block using the remaining enabled RPs.

The layout of the MEGARA focal plane. The hexagons (right panel) correspond to the patrol area of each of the Robotic Positioners (RPs).

Top panel: Partial view of the MOS with the RPs in place. Bottom panel: Sketch of an individual RP.

Snapshot of the MEGARA focal plane with the RPs placed at an observing position defined by an arbitrary Configuration Block. The large circles indicate the length of the arm controled by rotor R1 for each RP. The small circles represent the position of the seven-fiber mini-bundle corresponding of each individual RP. Grey RPs are not assigned to any source.

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