Req 5.2.4

Title:

Electromagnetic compatibility

Objective:

Verify whether any external source (e.g. dome drives, control systems) is not interfering in the CCD overall detector system, leading to additional, mostly non-white noise.

Technical specifications require less than 20% effect on read-out noise, for external interference and less than 10% effect on read-noise for internal **OmegaCAM** interference.

If electronic interference occurs then this will put constraints on the operation of the instrument. For example, if interference occurs during movement of the telescope, one cannot read the CCDs and move the telescope at the same time,.

Interference is detected by measuring the read noise (**req.**521) under operational conditions. This means doing bias measurements while the telescope and/or dome are moving.

Fulfilling or fulfilled by:

repetition of CCD read noise calibrations **req.**521.

When performed/frequency:

Day time; Commissioning; once a year; every time a major system change has been made; To be determined by experience

Sources, observations, instrument configurations:

Raw bias frames obtained while the telescope/dome are moving.

Inputs:

raw bias frames, obtained when telescope/dome were moving.

CalFile– 521 *CCD read noise*

Outputs:

OK/non-conformance flag.

Required accuracy, constraints:

Difference between read noise under operational conditions and the standard read noise measurement should be smaller than 20% for external and 10% for internal causes of interference.

Estimated time needed:

Observations: 4 hours. Reduction: 1 min./CCD.

Priority:

essential

TSF:

Mode– Stare N=2
(**TSF– OCAM_img_cal_bias**, N=2)
= **TSF– OCAM_img_cal_readnoise** while telescope and/or dome are moving.

Needed functionality:

image arithmetic; image statistics

CA:

Run recipe read noise and compare output of read noise recipe **CalFile– 521** *read-out noise* (see **req.**521 for implementation details). The difference should be measured with an accuracy of 5%.

CAP:

(see **req.**521 for implementation details)