1.4.13. DIGITAL CAMERA USAGE IN X-RAY REAL TIME CONTROL OF EUROPEAN LAUNCHER'S BOOSTER SEGMENTS

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X-Ray real time control of solid propellant booster segments for the European launcher is used since 1988. At the beginning of this application only analogue cameras where available and the required sensitivity needed the development of a customized camera. After 20 year of almost continuous usage the camera has to be replaced due to the deterioration from X-Ray exposure extreme conditions. The new generation camera has been selected by considering two main requirements being actually possible by the state of art technology with respect the eighties: commercially available device and digital type sensor based device. Due to the extreme usage of the camera, tests have been performed in order to define if there was commercially available a such product or if again a customized camera was necessary for substitution of the old one. An high sensitivity EM-CCD camera developed for low level emission with high spatial resolution and high frame rate has been considered how a potential substitute of the outdated and damaged camera. The comparison between results obtained from tests using the analogue camera and the new digital camera shows that the new camera can replace the previous camera with all the advantages in terms of better performance coming from the digital sensor used and commercial availability of the device.