

DEVICE FOR GENERATING A TIMESTAMP IN REAL-TIME IMAGES

Description:

Sometimes it is relevant or necessary to issue (and assign) a timestamp with high precision in images captured by photographic or recording means (photographs, frames, videos). Thus, in the field of astronomy and astrophysics, it is very important to be able to obtain a precise timestamp that provides the instant time the camera, installed in the telescope, started the exposure. At present, regardless of the device used, the time stamp problem largely depends on the operating system, the software and hardware, being mandatory to do a calibration every time there is a modification in the software and / or hardware. The present invention provides an innovative device for generating a timestamp in real time images, which solves existing technical problems, by being embedded and determining the timestamp precisely in real time. Since it receives a signal from the camera or image acquisition device at the instant in which the exposure begins, the precise timestamp is generated and transmitted to the external processor (Computer) through a communication interface. In contrast, existing devices use the external processor (computer) clock to provide the timestamp to the image.

Keywords:

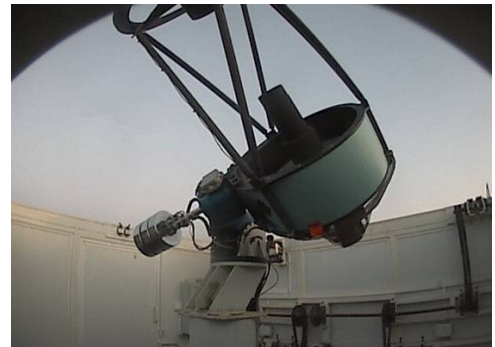
[Timestamp](#), [Sst](#), [Ssa](#), [Astronomy](#), [Astrophysics](#), [Real-Time Images](#)

Sectors:

[ICT](#), [Engineering](#)

Areas:

[Hardware / Devices / Components](#), [Software / Procedures](#), [Industrial](#), [Communications](#), [Technological Improvements](#)



Advantages:

It is an unprecedented device, with great precision, reliability and low cost in the generation of the time stamp that allows: 1. Achieve greater precision in the time stamp, which will depend mainly on the precision of the internal real time clock and the programmed sampling period, reaching ± 1 ms of error. 2. Avoid dependency on the software and hardware of the external processor, which performs the timestamp.

Uses and Applications:

The application of the invention in the field of astronomy and astrophysics is very important, since it allows solving two important problems. The first one is related to the generation of light curves in fast astronomical events. When several telescopes make observations of these events and perform measurements related to the photometry of the event, at a low time scale, the precision of the moment in which that image was taken becomes more important when it comes to adjusting that light curve. On the other hand, at present, the observation of artificial satellites or even space debris is gaining more and more importance. Because these artifacts move at high speed, their location depends to a large extent on the instant in which the image was taken, since their position in space and the instant in which that position was taken are what allow calculate the orbit these objects follow. The present invention solves these technical problems, since it allows to provide an independent time stamp from the main computer of the telescope itself or external processor that is used in the acquisition of images in general, thus avoiding this dependence on the operating system used.

Patent Number: ES1266409Y

Applicants: Universidad De Málaga, España. Csic. Consejo Superior De Investigaciones Científicas

Inventors: Carlos Jesus Perez Del Pulgar Mancebo, Emilio Fernández García, Alberto Castro Tirado

Filing Date: 26/02/2021

Protection Level: National (Spain)

Processing Status: Spanish utility model