

CMOS sensor technology for UAVs and others: where are we today ?

To talk about latest technology changes based on new applications it is important to take a look back in history of photogrammetry sensors and use. The old traditional analog format is today in most cases replaced by digital cameras. Around 10 years ago the first digital cameras went to market and all the technology at this time were based on CCD sensors with a 8 to 16 bit digitalization. But over the last ten years the CCD technology grows and higher resolution sensors found their way into airborne cameras. Today the resolution of large format airborne cameras expanded even over the size of an analog image scanned with a 20 micron.

The latest approach in new sensor technology which found its way into airborne cameras is the CMOS technology. CMOS sensors reach in 2014 a resolution of 50MP and offer several advantages especially in medium format airborne cameras. The CMOS sensors can work with a much higher ISO up to 6400ISO and still have a much lower noise grade.

In the following paper the difference in sensor technology and latest camera design will be spotted and the different sensor technology based on applications will be discussed to get a picture about today's camera development, use and advantages. As different cameras, functionality and sensors can be found it is for customers a wide range of section available but today the focus should be more on applications and the right tools for them. This paper will cover these questions; outline today's possibilities and tomorrow's challenges. Beside it will give an inside into the process of today's camera development and the challenges with it.