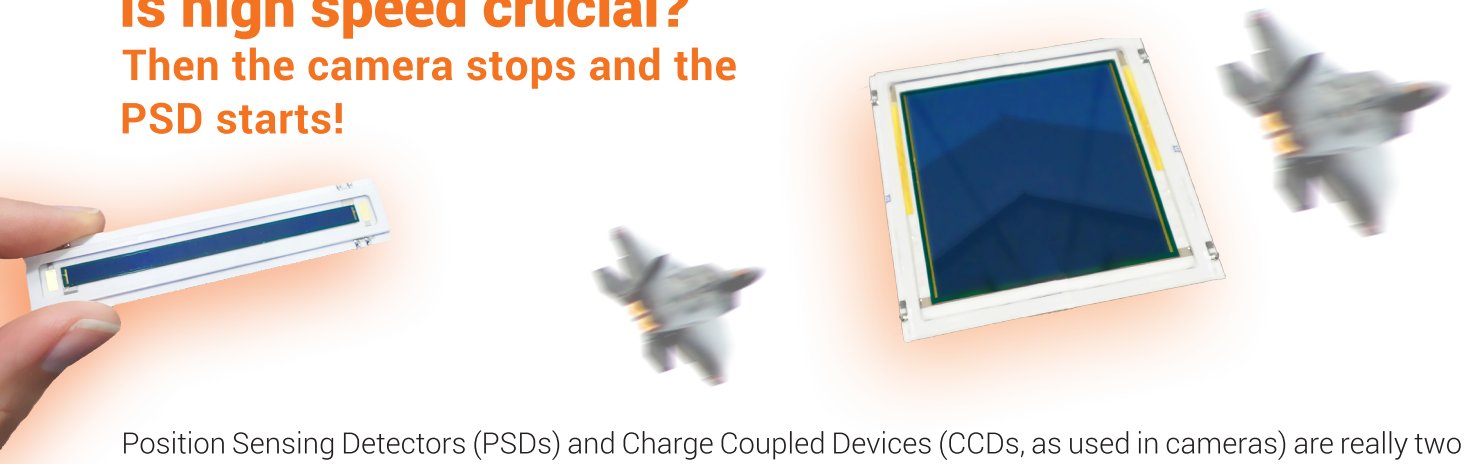
Is high speed crucial?

Then the camera stops and the PSD starts!



Position Sensing Detectors (PSDs) and Charge Coupled Devices (CCDs, as used in cameras) are really two birds of another feather. Both have the ability to detect light but they do it in a different way:

- the analogue based 1 or 2 dimensional **PSD** gives a direct output as a function of the central gravity point of the total light quantity distribution on the active area
- the **CCD** detects the peak value of the light quantity distribution over the active area for each pixel and the values are sampled and processed sequentially

Added value of the PSD

The most important characteristic of a PSD is direct position determination of the center of gravity of a light spot. The PSD contains 1 or 2 pixels (1 or 2 dimensional) and processes light in **ns** with **nm** resolution. The deviation of about 0.1% is achievable thanks to a high dynamic light range. This makes the PSD very suitable for:

- vibration measurements
- high speed production line applications
- high speed profile measurements (triangulation)

Comparison with a CCD solution

The CCD is naturally suitable for imaging purposes. The pixels have a mask-defined position so that high accuracy is possible. To achieve high accuracy and resolution, interpolation between neighboring pixels is necessary and this slows down the entire process. In addition, a CCD can not measure a center of gravity of a light spot without additional digital signal processing. The high speed position measurement of the PSD is therefore not easily available: sampling and digitally processing the pixels takes time. This makes the CCD **> 10,000 times slower than the PSD** (> MHz vs. <kHz).

Analog is ± infinite digital: the advantages evident!

An analogue-based PSD solution is much faster than a CCD digital camera solution.

SiTek Seepos: Plug & Play with the PSD!

The PSD signal processing and optimization tool SEEPOS, is a complete and easy to use positioning solution. High speed PSD electronics combined with digital signal processing and high speed USB data transfer results in a powerful measuring system.

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