of the red, green, or blue color primaries. In a single-chip design, the sensor contains separate R, G, and B camera. The remainder of the signal processing chain reformat data from RGB (dual-link HD-SDI) after which camera compression is applied.

Each of the signal processing stages may be controlled. Which stage is controlled may be stored and recalled at a later point. Where controlled to the sensors "look" is determined in post, corrections are applied on top of those already applied in-camera.

Bayer-Pattern Imaging Sensor

Digital cinema camera designs based on single-chip "Bayer"-pattern sensors are emerging as likely replacements for 35mm film cameras. There are numerous books and articles that discuss the technology and characteristics of Bayer Pattern sensors that we don't intend to repeat in this text other than in summary form. In this primer we'll instead focus on the effects of Bayer sensor as used in the Silicon Imaging SI-2K camera has 2048x1152 available cell sites of which half are green (1024x1152), and one-quarter each are red and blue (1024x576).

The direct optical path for a single-sensor design is relatively simpler, and also reduces optical distortion compared to the prism design used in 3-chip cameras. Difficulties with optical alignment in 3-chip camera designs practically limits the existing 16mm and 35mm film lenses.

The simple optical path in single-sensor design allows it to be applied to technologies. There are some interesting characteristics about images resulting from Bayer sensors. First of all, each color site is not "pure" because the color filters themselves are not pure. The visual result of this is that images observed from a Bayer sensor in an existing 16mm or 35mm film camera will require a "look" applied to them. There are a number of parameter controls may be selected:

- Bilateral demosaic which produces a full-resolution output (fastest at full resolution)

- "Quadlet" decode displayed at half-horizontal and half-vertical resolution of the image sensor (fastest), or

- Bilinear demosaic which produces full-horizontal and half-vertical resolution of the image sensor (fastest)

In the case of CineForm RAW, a light visually lossless Wavelet compression is applied to the acquired sensor data in real time during acquisition.

CineForm RAW Playback

Several popular professional NLE rendering tools that can render CineForm RAW decoder subsystems that separate the CineForm RAW compressed stream from natively uncompressed streams. After CineForm RAW decompression, a second set of active metadata to be applied, but it is always possible to return to the metadata defined at record time.

CineForm RAW™ Technology Overview

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