[0564] A new stand-alone application or plug-in module is proposed wherein a desired color or intensity value is selected and the lighting provides color correction. Such a module could be used as a Photoshop plug-in or with other post-production software for image editing. In this case, however, instead of merely using the editing software after the image has been captured and imported, the image could be imported, examined and the photo-editing program could be used to control the 'live' setting via the communication to the lighting system to a desired outcome of color and brightness. Plug-in architectures allow control of external devices such as scanners and so this can be seen as a very different functionality but with a similar principle of communication.

[0565] In general, with any lighting system **100** used with imaging software such as Photoshop, all neutral colors in the image should have a balanced set of RGB components (white surfaces for example). One sequence is to indicate a neutral area of the image and, instead of correcting the image, as is commonly done, correct the lighting in the scene. The RGB components can then be aligned to produce the correct neutral color in the un-retouched image. This can be a calculation based on the fixture output and the image data to produce an offset or change in the lighting to produce the desired outcome. This same area can be checked again and arrive at a desired level in a one or more steps. Thus direct calculation or an iterative process can be used to reach the desired outcome.

[0566] In embodiments, image information can also be annotated automatically or manually with exact settings of the lighting for the particular shot or sequence and provide useful information for future work, regardless of the type of lighting system used (i.e., including non-LED-based sources). The lighting information can be communicated to the camera **10252** and the information appended to or incorporated into the image file directly through meta-tags or a special format. The format can be as follows.

[0567] <image data encoded><date><time><open data field for lighting and other external devices>

[0568] This recording of lighting information in addition to such information as camera settings can be very useful to photographers and cinematographers. In general then, the annotation is an image of parameter values to store image information and external information such as lighting. External devices, in general, could connect to the camera **10252** to annotate and record specific settings for imaging in a wide variety of environments where microscopes, telescopes, computers, and other digital devices are used. In this way sensor and image readings can provide far more information than visual information. This can also include environmental information (climate, temperature, humidity, sensor readings and the like). In embodiments meta-tags or similar data can also be directly incorporated as a watermark within the image data directly, so it is not perceptible to the eye but is available to programs that can decode the watermark information.

[0569] Traditional photography flash units are either integrated with power supplies and triggers (called mono-bloc units) or provided as separate components with capacitor banks, etc. to provide the energy required to power the flash unit. A typical setup involves the use of master and slave units where the master triggers the slave units during the shot. An LED lighting unit can be similarly configured with either integral power supplies, allowing wall plug-in capability or configurations of a power supply that powers several fixtures. Data sources and communication can be provided separately or integrally to these power supply and fixture systems.

[0570] Such master/slave systems can have power through a variety of means including wall-plug capability, battery packs and recharging systems, fuel cells, large capacitors and more. Synchronization methods between units can be done with IR, RF, wired systems, or any other electromagnetic means of communication.

[0571] Flash units are often specified in Ws (watt-second or Joule) ratings, which is a measure of the energy input to the flash. For portraiture, adjustable 500 Ws units are often used. LED lighting systems **100**, whose performance and light output are improving at rapid rates, are able to provide sufficient light levels if an appropriate number of them are used, and this number will decrease over time, affording smaller and lighter units **102**. Flash control with cameras is often automatic and triggers only when the light level falls below a specific level. Similarly, flash control can extend to exposure control (duration and shape of the flash) as well as red-eye reduction (typically a series of flashes to mitigate reflections from the eye). Flash use is often power limited (the amount of light), and results in unsightly shadows due to the close proximity of the flash source and the imaging device. This is why separate or adjustable flash units are preferred for most commercial photography. One embodiment is an LED lighting unit **102** that can be attached and provided with a coupling and adjustment so that they can be attached but aimed through a standard mounting means or separated entirely to provide the most flexibility in aiming and adjustment. A tilt-swivel head is one means to aim and control the direction of the flash unit.

[0572] Variable strobe times can also be used to insure sufficient lighting for a scene, especially in low light situations. Where there is little movement or where the time is still short enough to mitigate movement effects (blur) this can be used to provide sufficient lighting.

[0573] Digital cameras can automatically correct for non-neutral colors produced by incandescent sources by using white balance or white point correction features. This gives digital photography and filming a big advantage over traditional film-based photography. LED lighting systems **100**, as with many light sources, can be shaped and controlled to provide particular characteristics. Spots can be used for highlighting particular areas; similarly, honeycombs can be used in front of the light sources to provide directionality (used in portraiture). Small sources can be hidden and used as key lights, they can also provide in-view lighting, and the light can be bounced off surfaces or directed through translucent materials to provide diffuse lighting or soft fill-lighting. Soft-boxes are often large translucent materials with interior light sources and fill lights are often directed at umbrella-shaped bowls to provide a diffuse indirect source of light.

[0574] Traditional light sources for photography include Tungsten Halide which although it has high output produces a lot of heat and has a hard lighting quality. HMI produces high output at a lower temperature but is costly and complicated. Fluorescent is also used and provides a diffused