**CLAIMS:**

1. A mixed reality system, comprising:

a data acquisition device configured to acquire real-world data;

an output device for providing the real-world data to a user; and

a processing circuitry configured to:

obtain (a) the real-world data acquired by the data acquisition device, and (b) information of one or more virtual entities having properties enabling determination of simulated effects of the virtual entities on the real-world data;

determine the simulated effects of the virtual entities on the data utilizing the properties and one or more parameters of the data acquisition device, wherein the one or more parameters of the data acquisition device defining effects of the virtual entities on a behavior of the data acquisition device, and wherein the one or more parameters of the data acquisition device include one or more of: (a) noise model characterizing readings of the data acquisition device, (b) spectral sensitivity of the data acquisition device, (c) spectral response of the data acquisition device, (d) saturation of the data acquisition device, (e) dynamic range of the data acquisition device, (f) dark noise of the data acquisition device, (g) signal-to-noise ratio of the data acquisition device, (h) detection limit of the data acquisition device, (i) photo response non uniformity of the data acquisition device, (j) penetration depth of the data acquisition device, (k) lens distortion of the data acquisition device, (l) optical deformation model of the data acquisition device, (m) vignetting model of the data acquisition device, (n) response to different exposure levels of the data acquisition device, or (o) resolution map of the readings acquired by the data acquisition device; and

provide the user with output on the output device being a manipulation of the real-world data reflecting the simulated effects.

2. The mixed reality system of claim 1, wherein the data acquisition device is a sensor or a radio receiver.

3. The mixed reality system of claim 2, wherein the sensor is one of the following: a camera, a radar, Night Vision Goggles (NVG), a proximity sensor, temperature sensor,

an infrared sensor, pressure sensor, light sensor, touch sensor, ultrasonic sensor, color sensor, humidity sensor, tilt sensor, accelerometer, or an acoustic sensor.

4. The mixed reality system of claim 1, wherein the real-world data is acquired from a training environment, and wherein the virtual entities are designed to simulate training scenarios.

5. The mixed reality system of claim 1, wherein the simulated effect is one or more of: virtual heat, virtual light, virtual touch, virtual shade, virtual sound, virtual topography, virtual smoke, virtual hit, or virtual ice.

6. A method comprising:

obtaining, by a processing resource, (a) real-world data acquired by a data acquisition device configured to acquire real-world data, and (b) information of one or more virtual entities having properties enabling determination of simulated effects of the virtual entities on the real-world data;

determining, by the processing resource, the simulated effects of the virtual entities on the real-world data utilizing the properties and one or more parameters of the data acquisition device, wherein the one or more parameters of the data acquisition device defining effects of the virtual entities on a behavior of the data acquisition device, and wherein the one or more parameters of the data acquisition device include one or more of: (a) noise model characterizing readings of the data acquisition device, (b) spectral sensitivity of the data acquisition device, (c) spectral response of the data acquisition device, (d) saturation of the data acquisition device, (e) dynamic range of the data acquisition device, (f) dark noise of the data acquisition device, (g) signal-to-noise ratio of the data acquisition device, (h) detection limit of the data acquisition device, (i) photo response non uniformity of the data acquisition device, (j) penetration depth of the data acquisition device, (k) lens distortion of the data acquisition device, (l) optical deformation model of the data acquisition device, (m) vignetting model of the data acquisition device, (n) response to different exposure levels of the data acquisition device, or (o) resolution map of the readings acquired by the data acquisition device; and

providing, by the processing resource, a user of an output device, used for providing the real-world data to the user, with output on the output device being a manipulation of the real-world data reflecting the simulated effects.

7. The method of claim 6, wherein the data acquisition device is a sensor or a radio receiver.

8. The method of claim 7, wherein the sensor is one of the following: a camera, a radar, Night Vision Goggles (NVG), a proximity sensor, temperature sensor, an infrared sensor, pressure sensor, light sensor, touch sensor, ultrasonic sensor, color sensor, humidity sensor, tilt sensor, accelerometer, or an acoustic sensor.

9. The method of claim 6, wherein the real-world data is acquired from a training environment, and wherein the virtual entities are designed to simulate training scenarios.

10. The method of claim 6, wherein the simulated effect is one or more of: virtual heat, virtual light, virtual touch, virtual shade, virtual sound, virtual topography, virtual smoke, virtual hit, or virtual ice.

11. A non-transitory computer readable storage medium having computer readable program code embodied therewith, the computer readable program code, executable by at least one processor of a computer to perform a method comprising:

obtaining, by a processing resource, (a) real-world data acquired by a data acquisition device configured to acquire real-world data, and (b) information of one or more virtual entities having properties enabling determination of simulated effects of the virtual entities on the real-world data;

determining, by the processing resource, the simulated effects of the virtual entities on the real-world data utilizing the properties and one or more parameters of the data acquisition device, wherein the one or more parameters of the data acquisition device defining effects of the virtual entities on a behavior of the data acquisition device, and wherein the one or more parameters of the data acquisition device include one or more of: (a) noise model characterizing readings of the data acquisition device,

(b) spectral sensitivity of the data acquisition device, (c) spectral response of the data acquisition device, (d) saturation of the data acquisition device, (e) dynamic range of the data acquisition device, (f) dark noise of the data acquisition device, (g) signal-to-noise ratio of the data acquisition device, (h) detection limit of the data acquisition device, (i) photo response non uniformity of the data acquisition device, (j) penetration depth of the data acquisition device, (k) lens distortion of the data acquisition device, (l) optical deformation model of the data acquisition device, (m) vignetting model of the data acquisition device, (n) response to different exposure levels of the data acquisition device, or (o) resolution map of the readings acquired by the data acquisition device; and

providing, by the processing resource, a user of an output device, used for providing the real-world data to the user, with output on the output device being a manipulation of the real-world data reflecting the simulated effects.