CLAIMS

What is claimed is:

1. A method comprising:
capturing an image of an environment comprising a first measurement device by an image capture device;
detecting a target region included in the image, the target region comprising at least a portion of the first measurement device, wherein detecting the target region comprises:
providing the image to a machine learning network; and
receiving an output from the machine learning network in response to the machine learning network processing the image based at least in part on a detection model, the output comprising the target region;
identifying the first measurement device from among a set of measurement devices based on detecting the target region;
extracting measurement information associated with the first measurement device based at least in part on detecting the target region; and
adjusting a parameter associated with a patrol of a transport instrument based on one or more characteristics of the image.

2. The method of claim 1, further comprising:
determining a center point associated with an object included in the image, a radius associated with the object, or both, based at least in part on one or more dimensions of the image.

3. The method of claim 1, further comprising at least one of:
modifying a brightness level of the image based at least in part on a brightness threshold; and
modifying a contrast level of the image based at least in part on a contrast threshold.

4. The method of claim 1, further comprising:
comparing at least one feature included in the image to at least one feature included in one or more registered images of the set of measurement devices; and
outputting a result of the comparison.

5. The method of claim 1, further comprising:
detecting a set of linear features included in the target region, wherein the set of linear features are of the same type;
identifying coordinate values respectively associated with the set of linear features; and
determining, based at least in part on the coordinate values, at least one of:
a first coordinate value associated at least one linear feature of the set of features and a first reference axis; and
a second coordinate value associated with the at least one linear feature and a second reference axis,
wherein extracting the measurement information associated with the first measurement device is based at least in part on the first coordinate value, the second coordinate value, or both.

6. The method of claim 1, wherein:
the target region comprises an identification tag associated with the measurement device, the identification tag comprising the identification information associated with the measurement device; and
determining the identification information associated with the measurement device is based at least in part on the identification tag.

7. The method of claim , further comprising:
processing textual information included on an identification tag corresponding to the first measurement device using one or more optical character recognition operations, and
identifying the first measurement device based on the processing of the textual information.

8. The method of claim 1, wherein:
the target region comprises a measurement indicator associated with the first measurement device; and
extracting the measurement information associated with the first measurement device is based at least in part on the measurement indicator.
9. The method of claim 1, wherein:
the image is captured by an image capture device; and
the method further comprises:

obtaining location information associated with the measurement device based at least in part on at least one of:
location information associated with the image capture device; and
orientation information associated with the image capture device.

10. The method of claim 1, further comprising:
comparing location information associated with the measurement device to location information associated with a set of measurement devices; and
determining the identification information associated with the measurement device is based at least in part on a result of the comparison.

11. A system comprising:
a transport instrument for patrolling an environment comprising a plurality of measurement devices;
an image capture device located on the transport instrument and that supports capture of images of the environment;
a processor that processes an image captured by the image capture device, the image including a first measurement device of the plurality of measurement devices; and
a memory coupled with the processor, wherein the memory stores data that, when executed by the processor, enables the processor to detect a target region included in the image, the target region comprising at least a portion of the first measurement device, wherein detecting the target region comprises:
providing the image to a machine learning network; and
receiving an output from the machine learning network in response to the machine learning network processing the image based at least in part on a detection model, the output comprising the target region;
identify the first measurement device from among the plurality of measurement devices based on detecting the target region; extract measurement information associated with the identified first measurement device based at least in part on detecting the target region; and
adjust a parameter associated with a patrol of the transport instrument based on one or more characteristics of the image.

12. A system comprising:
a machine learning network;

a processor; and

a memory coupled with the processor, wherein the memory stores data that, when executed by the processor, enables the processor to:

receive an image of an environment comprising a measurement device of a plurality of measurement devices, wherein the image is captured by an image capture device;

detect a target region included in the image, the target region comprising at least a portion of the measurement device, wherein detecting the target region comprises:

providing the image to the machine learning network; and

receiving an output from the machine learning network in response to the machine learning network processing the image based at least in part on a detection model, the output comprising the target region, wherein the detection model comprises an object detection model trained based at least in part on a set of reference images associated with a set of measurement devices, and wherein the set of measurement devices comprises at least the measurement device;

identify the measurement device from among the set of measurement devices based on detecting the target region;;

extract measurement information from the target region of the image based on the identified measurement device; and

adjust a parameter associated with a patrol of a transport instrument based on one or more characteristics of the image.

13. The system of claim 12, wherein the parameter being adjusted includes a patrol route of the transport instrument.

14. The system of claim 12, wherein the parameter being adjusted includes a patrol schedule of the transport instrument.

15. The system of claim 12, wherein the one or more characteristics of the image comprises image quality.

16. The system of claim 12, wherein the processor is configured to

access configuration information associated with the environment, and

process the image based on the configuration information.

17. The system of claim 16, wherein the configuration information includes
a configuration profile for the plurality of measurement devices,
a configuration profile for equipment associated with the plurality of measurement devices,
a configuration profile for the transport instrument, or any combination thereof.

18. The system of claim 12, wherein the measurement information is indicative of a measurement value of the measurement device, and wherein the processor is configured to compare the measurement value to a range of expected values and determine whether to generate an alert based on the comparison.

19. The system of claim 12, wherein the processor is configured to communicate with at least one other transport instrument in the environment to share data associated with processing the image.

20. The system of claim 13, wherein adjusting one or more characteristics of the image to yield a modified image includes adjusting one of a brightness level of the image, a contrast level of the image, and an orientation of the image.