IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION

CANON INC.,	))	
Plaintiff,	))	Civil Action No. ___3:17-cv-2733___
v.	))	
AVIGILON USA CORPORATION, INC., and AVIGILON CORPORATION	)))	**JURY TRIAL DEMANDED**
Defendants.	))	

CANON INC.'S COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Canon, Inc. ("Canon"), for its Complaint against Defendants Avigilon USA Corporation, Inc. and Avigilon Corporation (collectively, "Defendants"), alleges as follows:

THE PARTIES

1.   Canon is a corporation duly organized and existing under the laws of Japan. Its principal place of business is 30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501, Japan.

2.   On information and belief, Defendant Avigilon USA Corporation, Inc. is a Delaware corporation having a principal place of business at 1717 McKinney Avenue, Suite 1590, Dallas, Texas 75202, located within this district.

3.   On information and belief, Defendant Avigilon Corporation is a Canadian corporation having a principal place of business at 3rd Floor, 555 Robson Street, Vancouver, British Columbia, V6B 3K9, Canada.

JURISDICTION AND VENUE

4.   This is a patent infringement action arising under the patent laws of the United States, Title 35 of the United States Code. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5.	This Court has personal jurisdiction over Defendants because Defendants regularly and continuously engage in substantial sales and other business transactions in this District, and have sold infringing products and/or committed infringing acts in this District. Further, Defendant Avigilon USA Corporation, Inc. is headquartered in this District. *See, e.g.*, http://avigilon.com/press-tools/press-releases/avigilon-opens-u-s-headquarters-in-dallas-texas/; http://avigilon.com/contact-us/.

6.	Venue is proper under 28 U.S.C. §§ 1391(b)-(c) and 1400.

7.	Defendants have committed acts of patent infringement in this District, as explained below.

8.	Defendants have a regular and established place of business in this District because, *inter alia*, Defendant Avigilon USA Corporation, Inc. is headquartered in this District.

9.	Defendants do business in this District through a permanent and continuous presence here.

10.	On information and belief, the infringing products Defendants have sold in this District, including those sold through Intelli-Tec, InTeleMed, and Sabre, include: the Avigilon Control Center software, HD Pro Cameras, HD Bullet Cameras, HD Cameras, HD Domes, H4 Edge Solution Cameras, H4 SL Cameras, H4 Fisheye Cameras, HD PTZ, HD LPR, HD Micro Dome, HD Multisensor, HD Panoramic, ACC ES Analytics Appliance, ACC ES HD Recorder, HD NVR Premium, HD NVR Standard, HD NVR Value, HD NVR Server, HD NVR Workstation, HD Video Appliance Series, 2 and 4 Monitor Professional High Performance Monitoring Workstations.

THE CANON PATENTS

11.	On June 17, 2003, the United States Patent and Trademark Office ("USPTO") duly and legally issued United States Patent No. 6,580,451 (the "'451 patent"), titled

"Communication Apparatus, Image Processing Apparatus, Communication Method, and Image Processing Method" and attached as Exhibit A to this Complaint.

12. On June 28, 2005, the USPTO duly and legally issued United States Patent No. 6,911,999 (the "'999 patent"), titled "Camera Control System" and attached as Exhibit B to this Complaint.

13. On April 25, 2006, the USPTO duly and legally issued United States Patent No. 7,034,864 (the "'864 patent"), titled "Image Display Apparatus, Image Display System, and Image Display Method" and attached as Exhibit C to this Complaint.

14. On January 22, 2008, the USPTO duly and legally issued United States Patent No. 7,321,453 (the "'453 patent"), titled "Image Input System" and attached as Exhibit D to this Complaint.

15. On November 17, 2015, the USPTO duly and legally issued United States Patent No. 9,191,630 (the "'630 patent"), titled "Dynamic Layouts" and attached as Exhibit E to this Complaint.

16. Canon is the owner of the entire right, title, and interest in the '451, '999, '864, '453, and '630 patents (hereinafter, the "Canon patents"), including the right to recover for infringement thereof.

DEFENDANTS' INFRINGING ACTIVITIES

17. On information and belief, Defendants are engaged in the business of selling and/or offering to sell within the United States and/or importing into the United States video surveillance systems, including cameras, the Avigilon Control Center software, and the Avigilon web interface, that are covered by one or more claims of each of the Canon patents.

18. Non-limiting examples of infringing products imported and/or sold by Defendants include: the Avigilon Control Center software, HD Pro Cameras, HD Bullet Cameras, HD

Cameras, HD Domes, H4 Edge Solution Cameras, H4 SL Cameras, H4 Fisheye Cameras, HD PTZ, HD LPR, HD Micro Dome, HD Multisensor, HD Panoramic, ACC ES Analytics Appliance, ACC ES HD Recorder, HD NVR Premium, HD NVR Standard, HD NVR Value, HD NVR Server, HD NVR Workstation, HD Video Appliance Series, 2 and 4 Monitor Professional High Performance Monitoring Workstations. Hereafter, "Accused Systems" shall refer to the combination of any one or more of the preceding cameras, NVRs, workstations, appliances, the Avigilon Control Center software and/or the Avigilon web interface.

19.   On information and belief, Defendants purposefully direct sales, offers for sale, and the importation of their surveillance systems, including those involving the cameras specifically identified above, toward the State of Texas, including this District.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 6,580,451

20.   Canon hereby incorporates by reference paragraphs 1 through 19 of this Complaint, as though set forth here in their entirety.

21.   Canon is the sole owner of the entire right, title and interest in the '451 patent, including the right to recover for infringement thereof.

22.   Defendants have directly infringed at least, for example, claim 1 of the '451 patent by using, selling, and/or offering to sell within the United States and/or importing into the United States the Accused Systems.

23.   Claim 1 of the '451 patent recites: "An image processing apparatus comprising: means for supplying a video signal to a monitor so as to display a map window indicating a layout of a place; means for effecting display of a symbol indicating a location of at least one image signal generating means on said map window; and control means for effecting display of

an image signal from said at least one image signal generating means on the monitor in accordance with drag and drop of the symbol on the map window."

24. As shown below, Defendants' cameras included in the Accused Systems can be controlled using the Avigilon Control Center ("ACC") software.
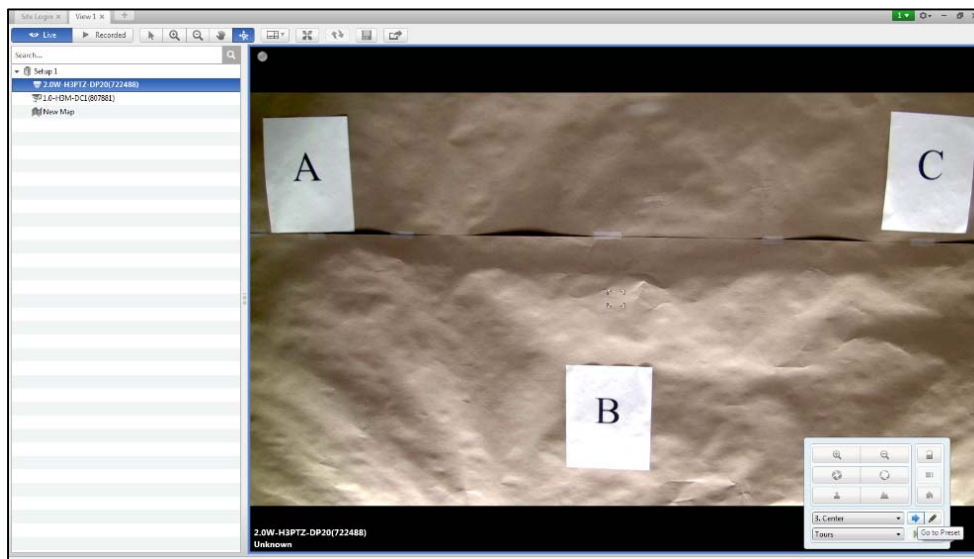
25. The ACC is an image processing apparatus.

What is the Avigilon Control Center™ Client?

The Avigilon Control Center Client software works with the Avigilon Control Center Server software to give you access and control of your High Definition Stream Management (HDSM)™ surveillance system.

The Client software allows you to view live and recorded video, monitor events, and control user access to the Avigilon Control Center. The Client software also gives you the ability to configure your surveillance system.

The Client software can run on the same computer as the Server software, or run on a remote computer that connects to the site through a local area network (LAN) or a wide area network (WAN).

What you can do in the Client software depends on the Server software edition. There are three editions of the Server software available: Core, Standard and Enterprise. Visit the Avigilon website for an overview of the features available in each edition: http://avigilon.com/products/video-surveillance/avigilon-control-center/editions/.

(ACC User Guide Version 5.8.2 ("User Guide"), p. 1)

26.   The ACC supplies a video signal to a computer monitor to display a map window showing the layout of a place.

Working with Maps

A map is a graphical reference of your surveillance site. You can create a map out of any image of your location, then add cameras, encoders, saved Views, and other maps to the image to help you quickly navigate through your surveillance site.

(User Guide, p. 100)

27.   The ACC includes a plurality of preset and user customizable views that allow the addition of a map of a location. As shown below, the ACC can include a view with four equal display windows, the upper left window showing a map.
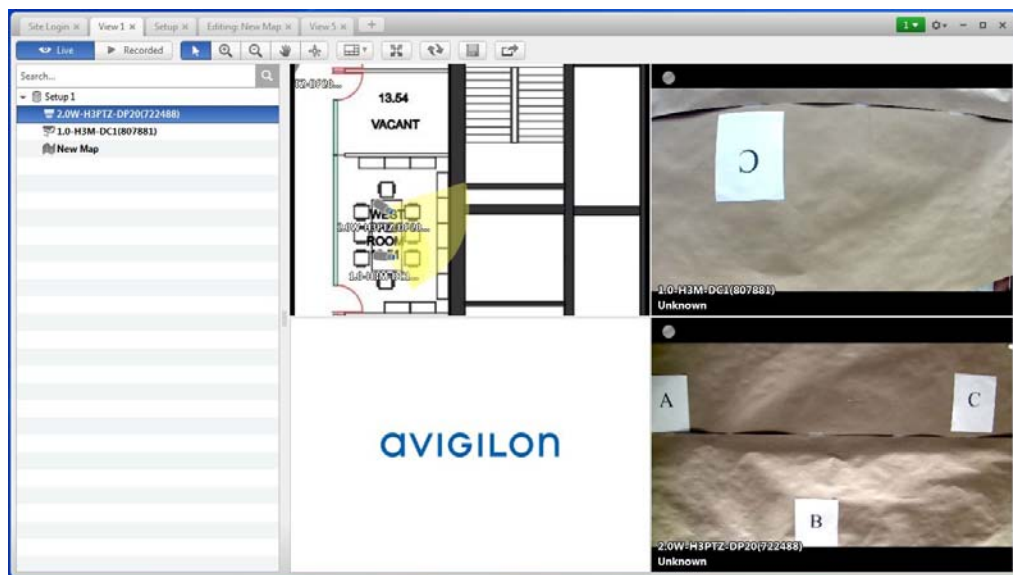
28.   The ACC allows the creation of a symbol to indicate the location of one or more image signal generating cameras on the map window. As shown below, the map view shows cameras at the surveillance site in a schematic map format.

6. Drag and place cameras from the System Explorer onto the map.
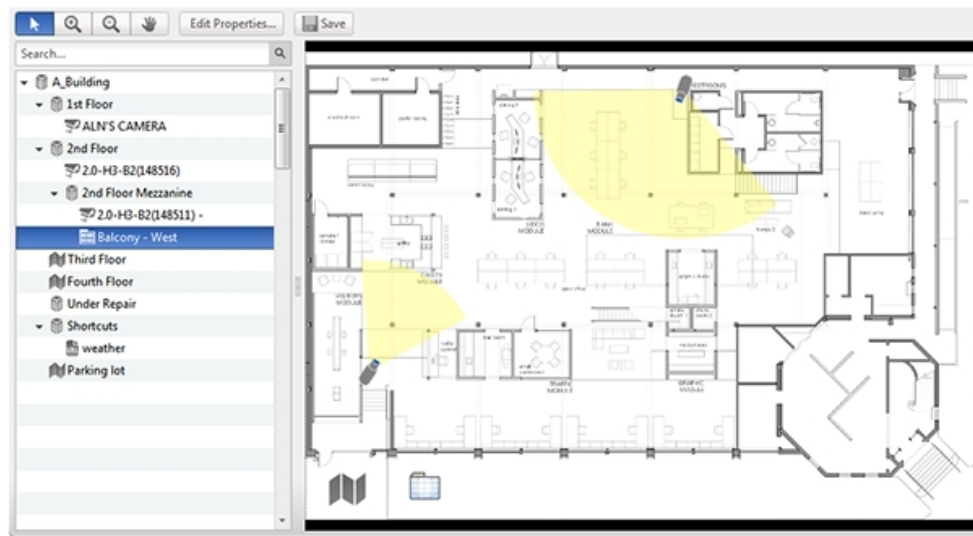
Figure 14: The Editing: Map tab

(User Guide, p. 100)

29.   The ACC operates as a control for controlling the video signal supply pursuant to a drag and drop of the camera icon symbol from a map window to an image panel, which results in the image panel displaying a video generated by the camera represented by the camera icon. All of this is shown on the computer's video monitor.

To...	Do this...
Review an alarm	When a camera flashes in red, an alarm linked to the camera has been triggered. • Click the camera to monitor the live alarm video.
Display video from a camera on the map	• Drag a camera from the map to a different image panel, or • Click the camera on the map.
Open a linked map	• Click the map icon on the map. You can use the **Forward** and **Back** buttons to move between maps.
Open a linked View	• Click the saved View on the map.

(User Guide, p.102)

30.   Defendants have indirectly infringed the '451 patent by inducing their customers to directly infringe the '451 patent. For example, Defendants' User Guide specifically instructs

their customers to use the Accused Systems in a manner that infringes claim 1 of the '451 patent, as discussed in paragraphs 24 through 29 of this Complaint. Defendants had knowledge of the '451 patent and their infringement thereof no later than June 30, 2016, when Avigilon Corporation received a letter from Kenichi Nagasawa to Alexander Fernandes advising of such infringement. Defendants were provided additional notice of the '451 patent and their infringement thereof on September 14, 2016, when Avigilon Corporation received confidential claim charts from Canon explaining the details of such infringement.

31.   On information and belief, by no later than their receipt of the aforementioned June 30, 2016 letter from Kenichi Nagasawa to Alexander Fernandes, Defendants knew or should have known of the objectively high likelihood that their actions constituted infringement of the '451 patent, but nonetheless continued their infringing activities. On information and belief, Defendants' continued infringement is subjectively reckless.

32.   On information and belief, from the time they received notice of their infringement of the '451 patent, Defendants have not had any good faith basis to believe they do not infringe or that the '451 patent is invalid. Defendants' infringement, therefore, has been willful.

33.   By reason of Defendants' infringement of the '451 patent, Canon has suffered substantial damages.

34.   Canon is entitled to damages in accordance with 35 U.S.C. §§ 271, 281, and 284.

COUNT II – INFRINGEMENT OF U.S. PATENT NO. 6,911,999

35.   Canon hereby incorporates by reference paragraphs 1 through 34 of this Complaint.

36.   Canon is the sole owner of the entire right, title and interest in the '999 patent, including the right to recover for infringement thereof.

37.   Defendants have directly infringed at least, for example, claim 1 of the '999 patent by using, selling, and/or offering to sell within the United States and/or importing into the United States the Accused Systems.

38.   Claim 1 of the '999 patent recites: "A camera control system comprising: an image reception terminal apparatus comprising, a determination device constructed to receive information from an image transmission terminal apparatus of a selected camera, the information indicating whether or not the selected camera is controllable, said determination device further being constructed to determine whether or not the selected camera is controllable on the basis of the received information, and a display controller that displays a camera operation interface that has functions to input a control command to control the selected camera, and that changes a display state of the camera operation interface between a first display state for the selected camera corresponding to a determination that the selected camera is controllable and a second display state for the selected camera, the second display state being different from the first and corresponding to a determination that the selected camera is not controllable, and wherein the image transmission terminal apparatus comprises a camera and a transmission device that transmits information as to whether or not the camera is controllable."

39.   The cameras that are included in the Accused Systems can be controlled using a computer running the Avigilon Control Center ("ACC") software. As page 91 of the Avigilon Control Center Enterprise Client User Guide Version 5.8.2 ("User Guide") states, "PTZ cameras can be controlled through the image panel on-screen controls or by using the tools in the PTZ Controls pane."

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40.   A shown below, the computer running ACC receives images from connected
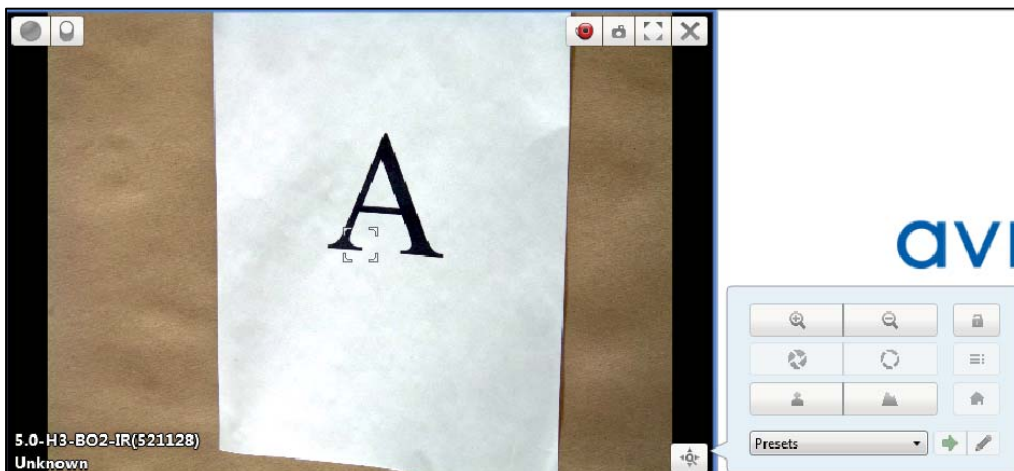
cameras.
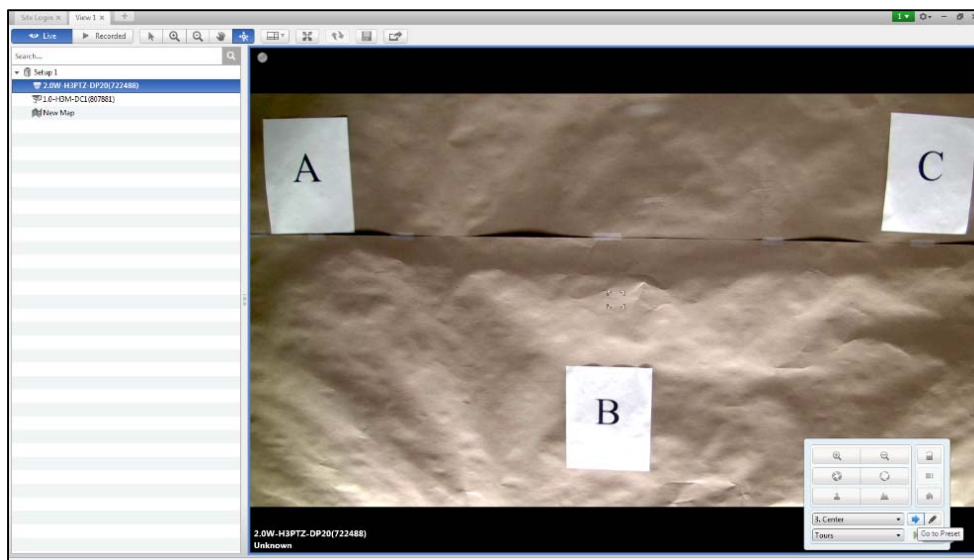
41.   The computer running ACC determines whether or not each camera is

controllable or not based on information received from the cameras. As page 92 of the User

Guide states: "The PTZ Controls are displayed in a floating pane immediately beside the image

panel. NOTE: The controls may appear differently depending on the camera. Some options are

disabled or hidden if they are not supported by the camera."

42.   The computer running ACC displays a control interface for the cameras that

changes based on the controllability of each camera. As shown in the following paragraphs,

there are different control interfaces in the View window and in the Setup window for different

cameras.

43.   As shown in the View window below, for PTZ cameras, ACC displays controls

for zoom, aperture, focus, Tour programs, and more. Further, when the mouse pointer is moved

over the video image, the pointer changes to a crosshair to reflect that the camera can be panned

and tilted using the Click to Center function.
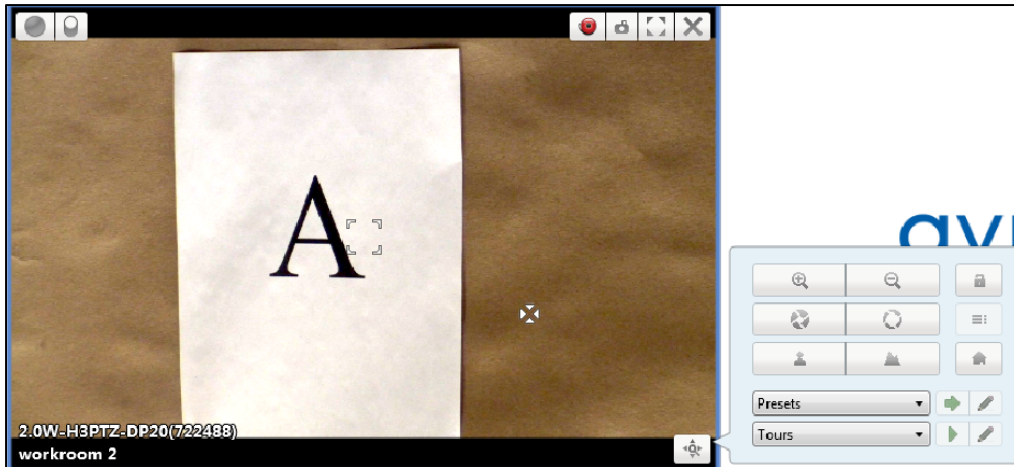
44.   As shown in the View window below, for zoom-only cameras, the controls have the aperture buttons disabled and the "Tours" pulldown menu is hidden. Further, the mouse pointer has a standard arrow appearance, which is not captured in screenshots.

45.   As shown in the View window below, for fixed cameras, ACC does not display a control panel or non-standard mouse pointer.

46. As shown in the Setup window below, for PTZ cameras, ACC displays controls categorized under "General," "Video," and "Links." The Links category has controls for configuring any digital inputs/outputs, microphones, and speakers connected to the cameras. (Image for the zoom-only camera not replicated.)
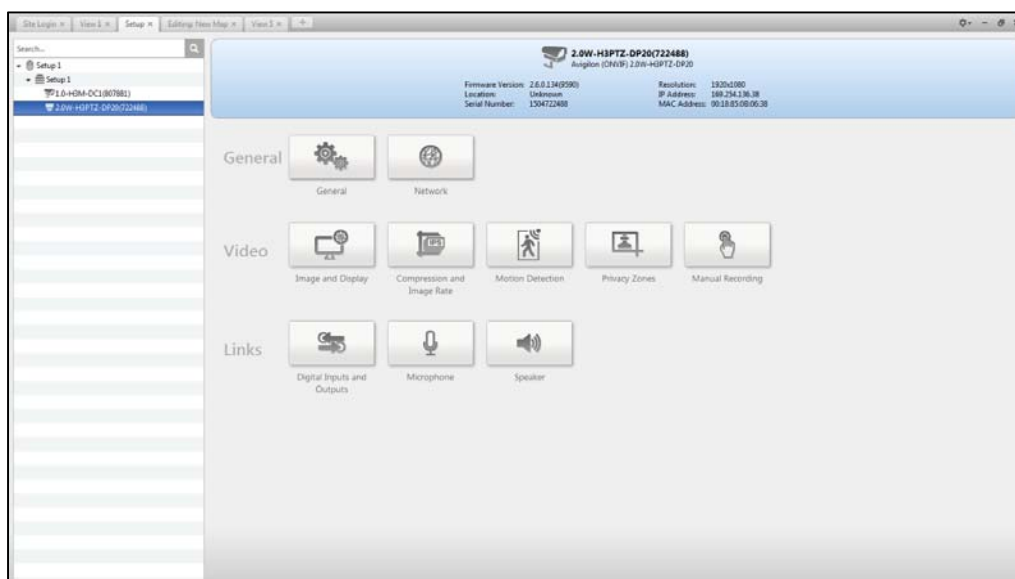
47. For zoom-only cameras, ACC displays similar controls as PTZ cameras.

48. As shown in the Setup window below, for fixed cameras, ACC adjusts the control interface so that no controls are displayed for the features these cameras lack: digital inputs/outputs, microphones, and speakers.
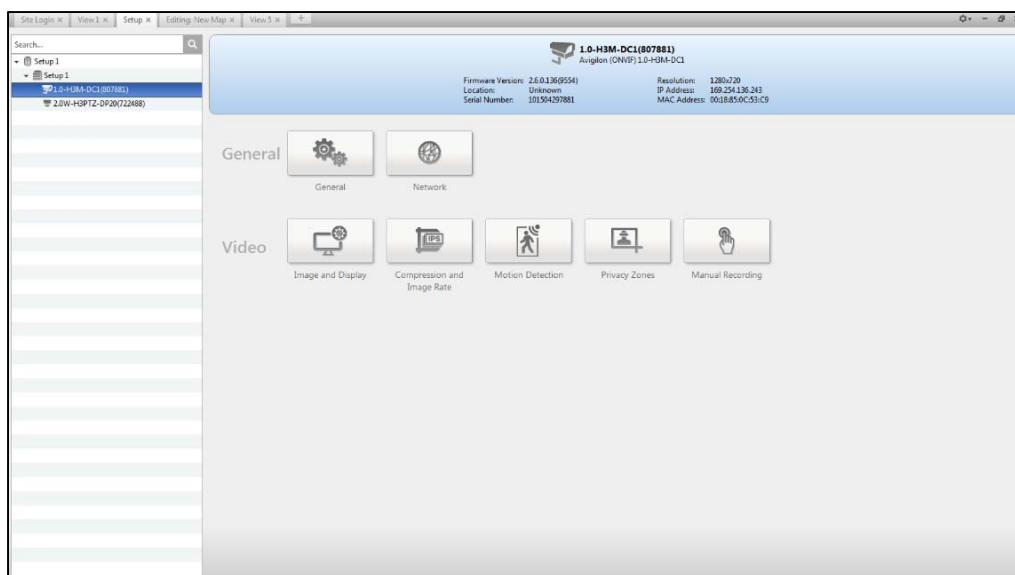
49.   The Avigilon cameras included in the Accused Systems transmit data concerning their controllability. For example, according to Defendants' website, its cameras use ONVIF communication protocols, including the Profile S Specification.

What is in the ONVIF Standard?

The ONVIF Specifications covers things like IP configuration; device discovery; device management; PTZ camera control; and video analytics.

Working in parallel are ONVIF Profiles. Profile C is for IP-based access control; Profile G is for edge storage and retrieval; and Profile S is for IP-based video systems.

The Avigilon HD Camera, Bullet, Dome, Micro Dome, and PTZ camera series all rely on ONVIF communication protocols, including Profile S, to communicate with the Avigilon Control Center system.

Avigilon Control Center uses ONVIF Profile S specifications to support a wide range of 3rd party cameras with features such as video streaming in H.264, MJPEG, and MPEG4 when supported; configuration of the video stream and the device IP; support for audio input; support for digital outputs; record on motion (as defined in ONVIF 2.2 and later specifications, but not part of Profile S); and control of PTZ.

(http://avigilon.com/news/IT/7-faqs-about-the-onvif-standard/)

50.   Page 24 of the ONVIF Profile S Specification Version 1.1.1 ("Profile S Specification") states that cameras transmit information concerning their capabilities in response to a GetCapabilities query sent by the client.

8.3.1 Device requirements (if supported)

- **Device shall return PTZ capabilities in GetCapabilities response.**

(Profile S Specification, p. 24)

51.   Page 24 of the Profile S Specification states that the cameras are required to support the GetConfigurations query.

52.   At least the GetConfigurations query causes Avigilon cameras to transmit information concerning whether or not the cameras are controllable.

53.   The ONVIF PTZ Service Specification Version 2.6.1 ("PTZ Service Specification") states the following:

5.2.1 GetConfigurations

A PTZ-capable device shall return all available PTZConfigurations through the GetConfigurations operation.

Table 4: GetConfigurations command

GetConfigurations	Access Class: READ_MEDIA
Message name	**Description**
GetConfigurations	This is an empty message.

GetConfigurationsResponse	The response contains all existing PTZConfigurations on the device. tt:PTZConfiguration **PTZConfiguration** [0][unbounded]
Fault codes	**Description**
env: Receiver ter:ActionNotSupported ter:PTZNotSupported	PTZ is not supported.

(PTZ Service Specification, pp. 9-10)

5.11.4 PTZConfiguration

```xml
<xs:complexType name="PTZConfiguration">
   <xs:complexContent>
     <xs:extension base="tt:ConfigurationEntity">
            <xs:sequence>
            <xs:element name="NodeToken" type="tt:ReferenceToken"/>
            <xs:element name="DefaultAbsolutePantTiltPositionSpace"
            type="xs:anyURI" minOccurs="0"/>
            <xs:element name="DefaultAbsoluteZoomPositionSpace"
            type="xs:anyURI" minOccurs="0"/>
            <xs:element name="DefaultRelativePanTiltTranslationSpace"
            type="xs:anyURI" minOccurs="0"/>
            <xs:element name="DefaultRelativeZoomTranslationSpace"
            type="xs:anyURI" minOccurs="0"/>
            <xs:element name="DefaultContinuousPanTiltVelocitySpace"
            type="xs:anyURI" minOccurs="0"/>
            <xs:element name="DefaultContinuousZoomVelocitySpace"
            type="xs:anyURI" minOccurs="0"/>
            <xs:element name="DefaultPTZSpeed" type="tt:PTZSpeed"
            minOccurs="0"/>
            <xs:element name="DefaultPTZTimeout" type="xs:duration"
            minOccurs="0"/>
            <xs:element name="PanTiltLimits" type="tt:PanTiltLimits"
            minOccurs="0"/>
            <xs:element name="ZoomLimits" type="tt:ZoomLimits"
            minOccurs="0"/>
            <xs:element name="Extension" type="
            tt:PTZConfigurationExtension" minOccurs="0"/>
         </xs:sequence>
         <xs:attribute name="MoveRamp" type="xs:int"/>


         <xs:attribute name="PresetRamp" type="xs:int"/>
         <xs:attribute name="PresetTourRamp" type="xs:int"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

- **NodeToken**
  A mandatory reference to the PTZ node that the PTZ configuration belongs to.

- **DefaultAbsolutePantTiltPositionSpace**
  If the PTZ node supports absolute Pan/Tilt movements, it shall specify one absolute Pan/Tilt position space as default.

- **DefaultAbsoluteZoomPositionSpace**
  If the PTZ node supports absolute zoom movements, it shall specify one absolute zoom position space as default.

- **DefaultRelativePanTiltTranslationSpace**
  If the PTZ node supports relative Pan/Tilt movements, it shall specify one relative Pan/Tilt translation space as default.

- **DefaultRelativeZoomTranslationSpace**
  If the PTZ node supports relative zoom movements, it shall specify one relative zoom translation space as default.

- **DefaultContinuousPanTiltVelocitySpace**
  If the PTZ node supports continuous Pan/Tilt movements, it shall specify one continuous Pan/Tilt velocity space as default.

- **DefaultContinuousZoomVelocitySpace**
  If the PTZ node supports continuous zoom movements, it shall specify one continuous zoom velocity space as default.

- **DefaultPTZSpeed**
  If the PTZ node supports absolute or relative PTZ movements, it shall specify corresponding default Pan/Tilt and Zoom speeds.

- **DefaultPTZTimeout**
  If the PTZ node supports continuous movements, it shall specify a default timeout, after which the movement stops.

- **PanTiltLimits**
  The Pan/Tilt limits element should be present for a PTZ node that supports an absolute Pan/Tilt. If the element is present it signals the support for configurable Pan/Tilt limits. If limits are enabled, the Pan/Tilt movements shall always stay within the specified range. The Pan/Tilt limits are disabled by setting the limits to –INF or +INF.

- **ZoomLimits**
  The Zoom limits element should be present for a PTZ node that supports absolute zoom. If the element is present it signals the supports for configurable zoom limits. If limits are enabled the zoom movements shall always stay within the specified range. The zoom limits are disabled by settings the limits to –INF and +INF.

- **MoveRamp**
  The optional acceleration ramp used by the device when moving..

- **PresetRamp**
  The optional acceleration ramp used by the device when recalling presets.

- **PresetTourRamp**
  The optional acceleration ramp used by the device when executing PresetTours.

(PTZ Service Specification, pp. 36-37)

54.   Defendants have indirectly infringed the '999 patent by inducing their customers

to directly infringe the '999 patent. For example, Defendants' User Guide specifically instructs

their customers to use the Accused Systems in a manner that infringes claim 1 of the '999 patent, as discussed in paragraphs 39 through 53 of this Complaint. Defendants had knowledge of the '999 patent and their infringement thereof no later than June 30, 2016, when Avigilon Corporation received a letter from Kenichi Nagasawa to Alexander Fernandes advising of such infringement. Defendants were provided additional notice of the '999 patent and their infringement thereof on September 14, 2016, when Avigilon Corporation received confidential claim charts from Canon explaining the details of such infringement.

55.   On information and belief, by no later than their receipt of the aforementioned June 30, 2016 letter from Kenichi Nagasawa to Alexander Fernandes, Defendants knew or should have known of the objectively high likelihood that their actions constituted infringement of the '999 patent, but nonetheless continued their infringing activities. On information and belief, Defendants' continued infringement is subjectively reckless.

56.   On information and belief, from the time they received notice of their infringement of the '999 patent, Defendants have not had any good faith basis to believe they do not infringe or that the '999 patent is invalid. Defendants' infringement, therefore, has been willful.

57.   By reason of Defendants' infringement of the '999 patent, Canon has suffered substantial damages.

58.   Canon is entitled to damages in accordance with 35 U.S.C. §§ 271, 281, and 284.

COUNT III – INFRINGEMENT OF U.S. PATENT NO. 7,034,864

59.   Canon hereby incorporates by reference paragraphs 1 through 58 of this Complaint.

60.   Canon is the sole owner of the entire right, title and interest in the '864 patent, including the right to recover for infringement thereof.

61.   Defendants are directly infringing and have directly infringed at least, for example, claim 1 of the '864 patent by using, selling, and/or offering to sell within the United States and/or importing into the United States the Accused Systems.

62.   Claim 1 of the '864 patent recites: "An image display apparatus for selecting an arbitrary image sensing device from one or more image sensing devices connected, and displaying a video obtained from the selected image sensing device, comprising: first memory for holding management data which contains at least a name, identification number, and connection information of each image sensing device, and is described in a data description language; second memory for holding a display style of the management data, which is described in a style designation language; and data description means for describing management data in the data description language, and storing the data in said first memory."

63.   The Avigilon Control Center ("ACC") software, when installed in an Accused System as intended to serve its intended function, is an apparatus for selecting and displaying the video of a connected camera.

What is the Avigilon Control Center™ Client?

The Avigilon Control Center Client software works with the Avigilon Control Center Server software to give you access and control of your High Definition Stream Management (HDSM)™ surveillance system.

The Client software allows you to view live and recorded video, monitor events, and control user access to the Avigilon Control Center. The Client software also gives you the ability to configure your surveillance system.

The Client software can run on the same computer as the Server software, or run on a remote computer that connects to the site through a local area network (LAN) or a wide area network (WAN).

What you can do in the Client software depends on the Server software edition. There are three editions of the Server software available: Core, Standard and Enterprise. Visit the Avigilon website for an overview of the features available in each edition: http://avigilon.com/products/video-surveillance/avigilon-control-center/editions/.

(ACC Enterprise Client User Guide Version 5.8.2 ("User Guide"), p. 1)

64.   Defendants' Accused Systems have memory that stores management data, including the camera name, serial number, and IP address. As shown below, the different views provided by the ACC and the Avigilon web interface ("Web UI") show that the information is stored independent of the viewing style.

2.0W-H3PTZ-DP20(722488)
Avigilon (ONVIF) 2.0W-H3PTZ-DP20

|	
Firmware Version: 2.6.0.134(9590)	Resolution: 1920x1080
Location: Unknown	IP Address: 169.254.136.38
Serial Number: 1504722488	MAC Address: 00:18:85:0B:06:38

(ACC)

(Web UI)

65.   The system running ACC has a second memory that stores the display style of the

management data. The View mode in ACC shows live and recorded images from one or more

selected cameras. As shown below, ACC includes a variety of display styles, which are

selectable.
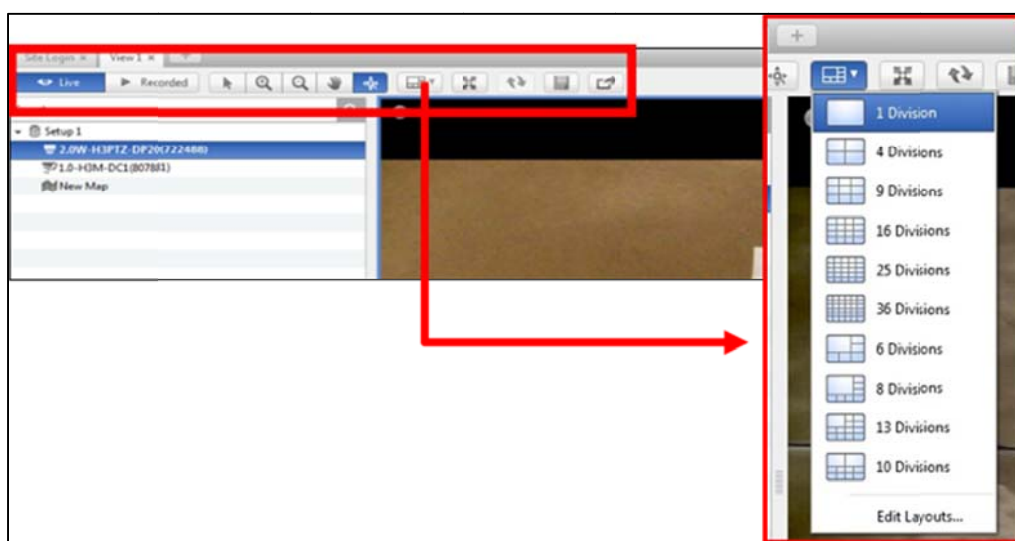
66.   The system running ACC describes and stores management data into memory.

Certain management data, such as the camera name, can be edited in ACC by the user and then

stored in the first memory. As shown below, when the management data is edited in ACC, the

revised data is stored, and the revised data can later be displayed using the Web UI.
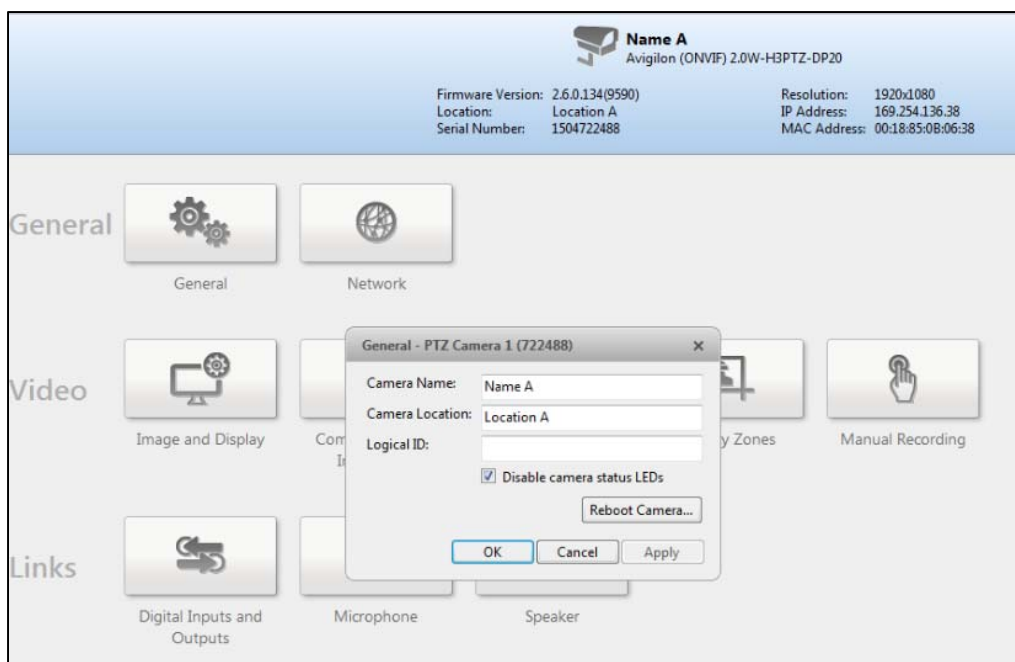
(ACC)
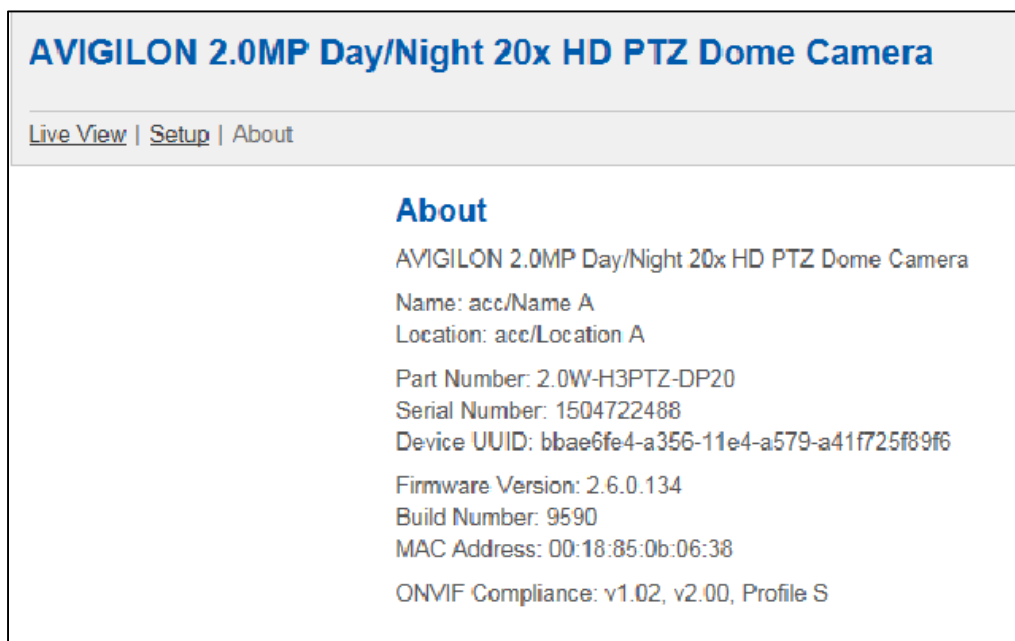
(Web UI)

67.   Defendants are indirectly infringing and have indirectly infringed the '864 patent by inducing their customers to directly infringe the '864 patent. For example, Defendants' User Guide specifically instructs their customers to use the Accused Systems in a manner that

infringes claim 1 of the '864 patent, as discussed in paragraphs 63 through 66 of this Complaint. Defendants had knowledge of the '864 patent and their infringement thereof no later than June 30, 2016, when Avigilon Corporation received a letter from Kenichi Nagasawa to Alexander Fernandes advising of such infringement. Defendants were provided additional notice of the '864 patent and their infringement thereof on September 14, 2016, when Avigilon Corporation received confidential claim charts from Canon explaining the details of such infringement.

68.   On information and belief, by no later than their receipt of the aforementioned June 30, 2016 letter from Kenichi Nagasawa to Alexander Fernandes, Defendants knew or should have known of the objectively high likelihood that their actions constituted infringement of the '864 patent, but nonetheless continued their infringing activities. On information and belief, Defendants' continued infringement is subjectively reckless.

69.   On information and belief, from the time they received notice of their infringement of the '864 patent, Defendants have not had any good faith basis to believe they do not infringe or that the '864 patent is invalid. Defendants' infringement, therefore, has been willful.

70.   Defendants' infringement of the '864 patent has caused and is causing damage and irreparable injury to Canon and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

71.   Canon is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283 and 284.

COUNT IV – INFRINGEMENT OF U.S. PATENT NO. 7,321,453

72.　　Canon hereby incorporates by reference paragraphs 1 through 71 of this Complaint.

73.　　Canon is the sole owner of the entire right, title and interest in the '453 patent, including the right to recover for infringement thereof.

74.　　Defendants are directly infringing and have directly infringed at least, for example, claim 1 of the '453 patent by using, selling, and/or offering to sell within the United States and/or importing into the United States the Accused Systems.

75.　　Claim 1 of the '453 patent recites: "A camera control apparatus, comprising: a designating device which designates a first position corresponding to a sensing direction of a camera on a control screen displayed on a display device; and a control device which (i), when the first position designated by said designating device is in a moveable area of the camera, outputs control information to move the camera to the first position of the camera and (ii), when the first position designated by said designating device is not in the movable area of the camera, sets a second position in the movable area neighboring to the first position as a position corresponding to a new sensing direction and outputs a control information for the camera to move the camera to the second position of the camera instead of the control information to move the camera to the first position."

76.　　The Avigilon Control Center ("ACC") software, when installed in an Accused System as intended to serve its intended function, is a designating device and a control device.

What is the Avigilon Control Center™ Client?

The Avigilon Control Center Client software works with the Avigilon Control Center Server software to give you access and control of your High Definition Stream Management (HDSM)™ surveillance system.

The Client software allows you to view live and recorded video, monitor events, and control user access to the Avigilon Control Center. The Client software also gives you the ability to configure your surveillance system.

The Client software can run on the same computer as the Server software, or run on a remote computer that connects to the site through a local area network (LAN) or a wide area network (WAN).

What you can do in the Client software depends on the Server software edition. There are three editions of the Server software available: Core, Standard and Enterprise. Visit the Avigilon website for an overview of the features available in each edition: http://avigilon.com/products/video-surveillance/avigilon-control-center/editions/.

(ACC Enterprise Client User Guide Version 5.8.2 ("User Guide"), p. 1)

NOTE: For video analytics devices, classified object detection only works when the camera is in its Home position.

1. In the toolbar, click ⬚. PTZ controls are now enabled in image panels that are displaying PTZ video.

2. In the image panel, click ⬚.

   The PTZ Controls are displayed in a floating pane immediately beside the image panel.

   NOTE: The controls may appear differently depending on the camera. Some options are disabled or hidden if they are not supported by the camera.

3. To pan or tilt, do one of the following:

   - In the image panel, drag your mouse from the center to move the camera in that direction. The farther the cursor is from the center of the image panel, the faster the camera will move.

   - If the camera supports Click to Center, click anywhere on the image panel to center the camera to that point.
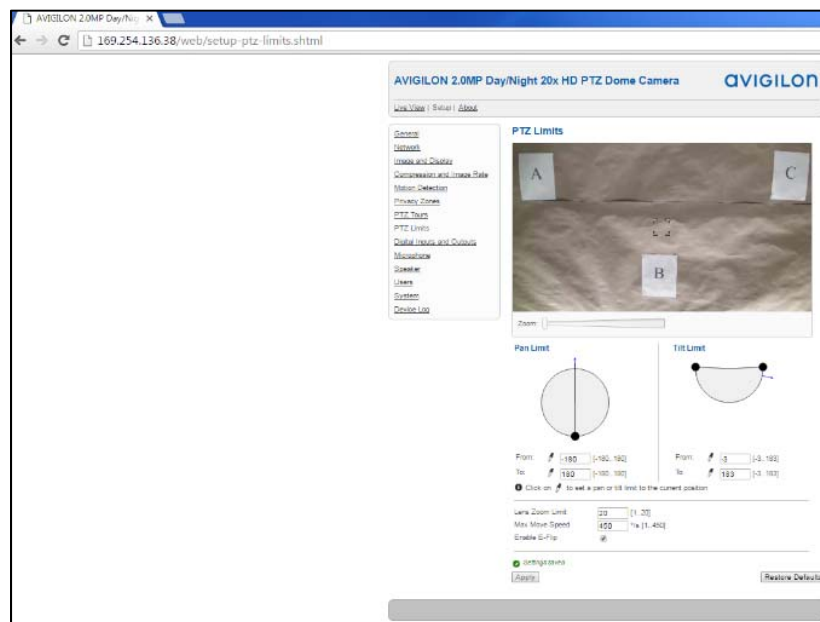
Figure 12: PTZ On-screen controls

(User Guide, p. 92)

77.   As shown below, Defendants' cameras included in the Accused Systems can be controlled using the ACC software and/or the Avigilon web interface ("Web UI").
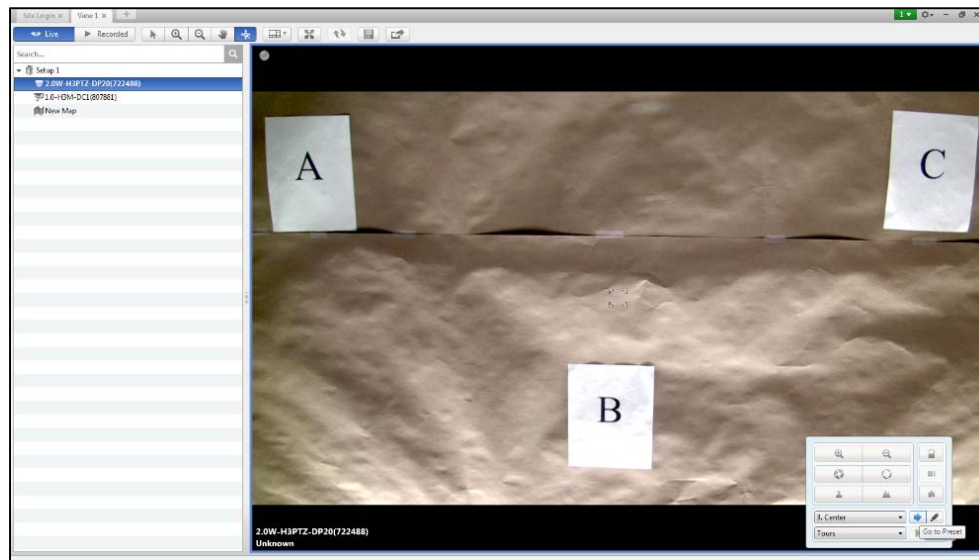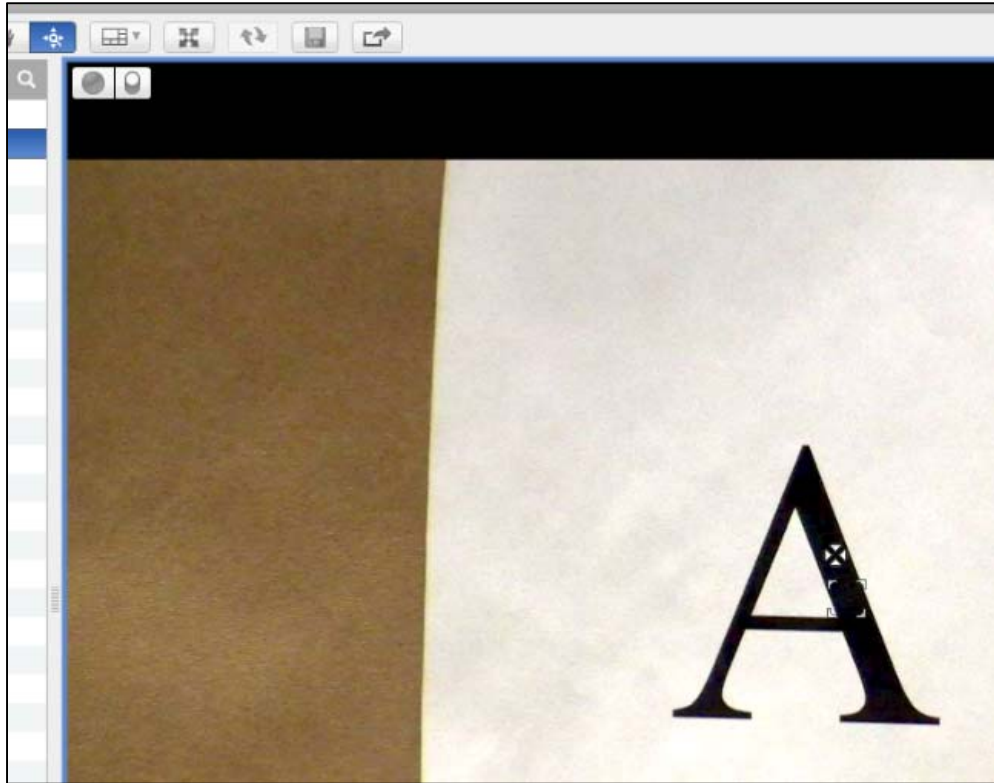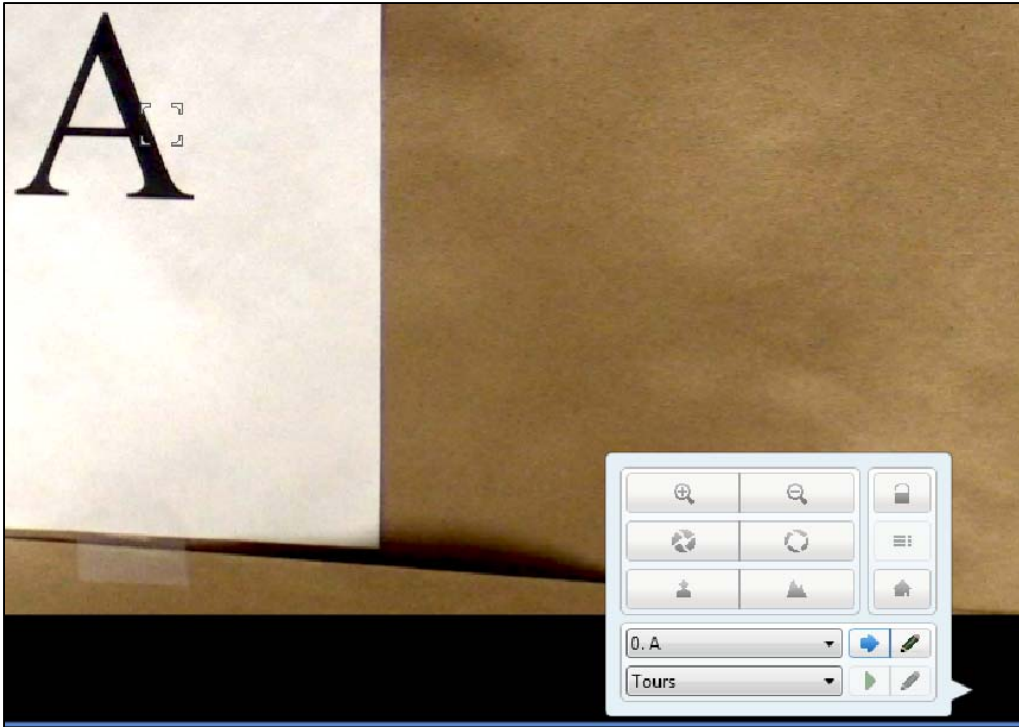

(ACC)

(Web UI)

78.   ACC and Web UI designate a first position in at least three different ways.

79.   First, as shown below, a user of ACC can designate a first position using the Click

to Center function.

80.   Second, as shown below, a user of ACC can designate a first position by selecting

a stored Preset position.

81.   Third, as shown below, when the Tour function of ACC is activated, it designates

a first position, which is one of a number of pre-programmed Preset positions.
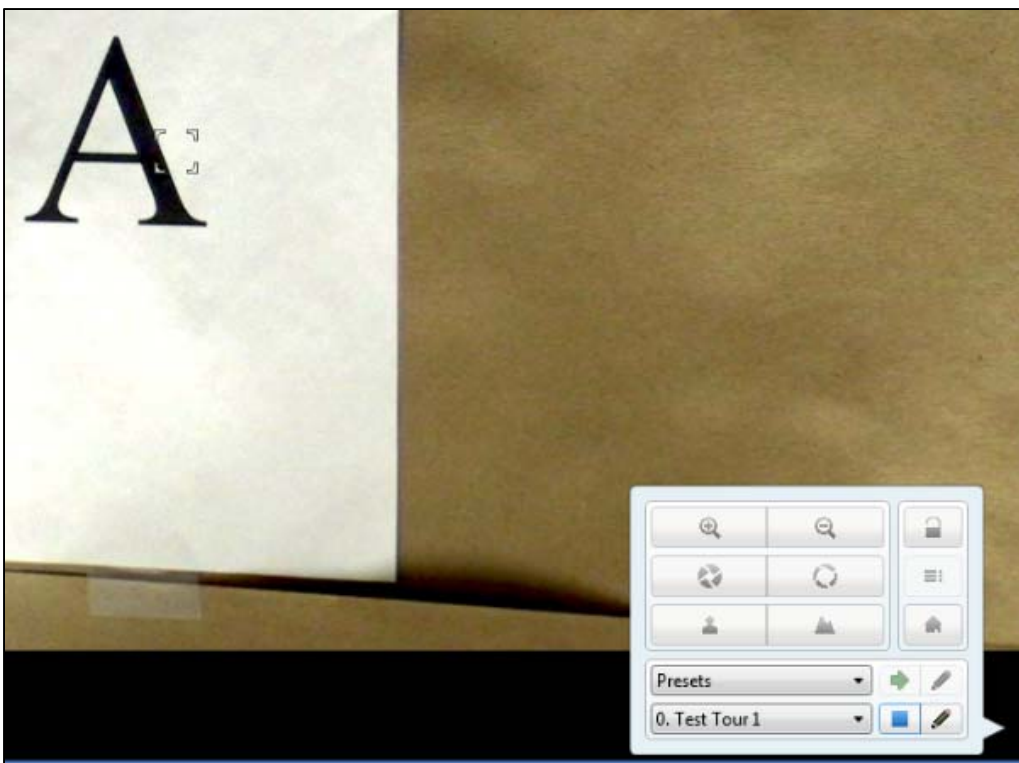
82.   As shown in the preceding three paragraphs, when a first position within the movable area is designated, ACC and Web UI output control information that moves the camera to the first position.

83.   The user can define the moveable area of the camera by setting Pan and Tilt Limits using Web UI. Once set, the limits are active when using both Web UI and ACC in all designating modes (Click to Center, Preset, and Tour). In the below, the moveable area is shown in gray and the non-moveable area is shown in red.
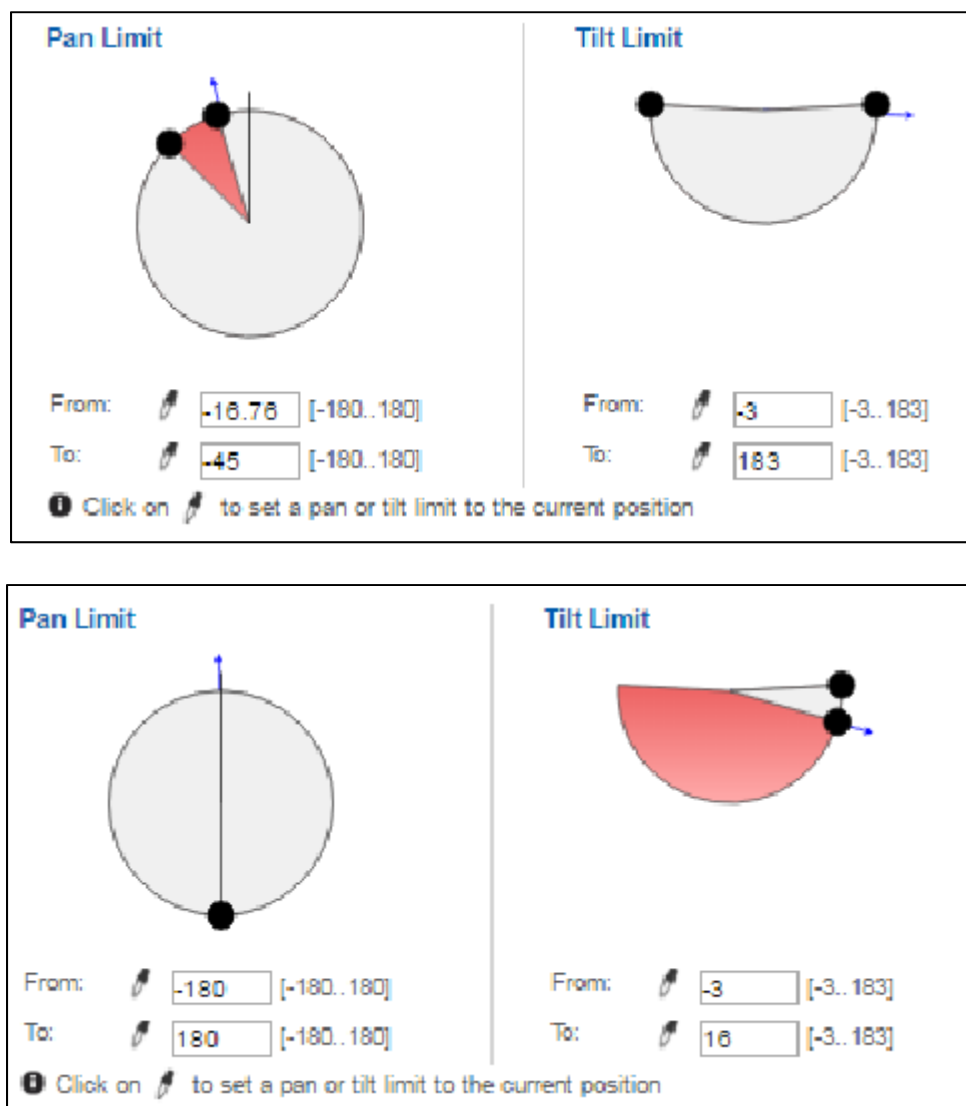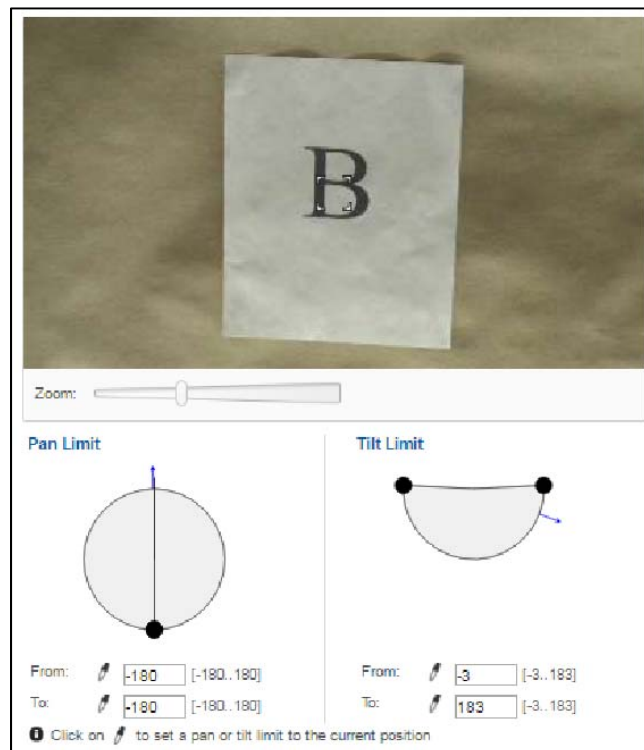
84.   As shown below, when the first position is not within the moveable area of the camera, Web UI and ACC output control information for the camera to move to a neighboring second position that is within the moveable area.
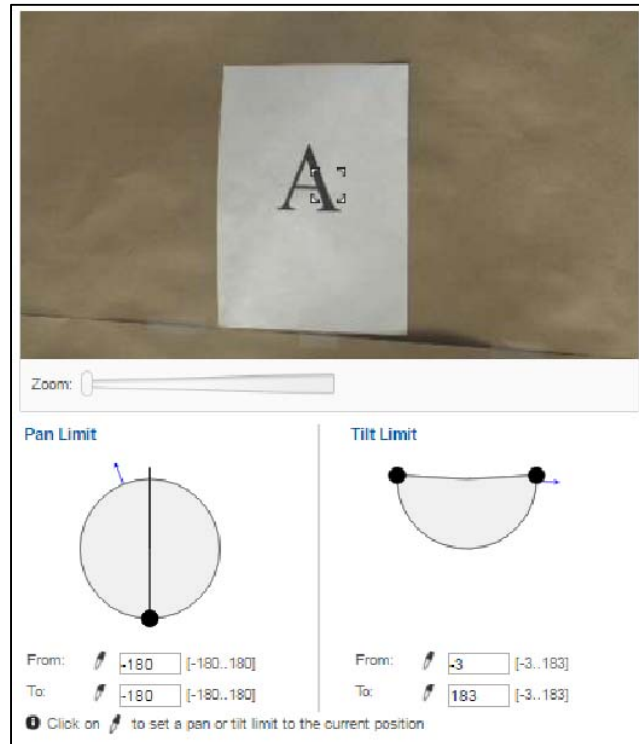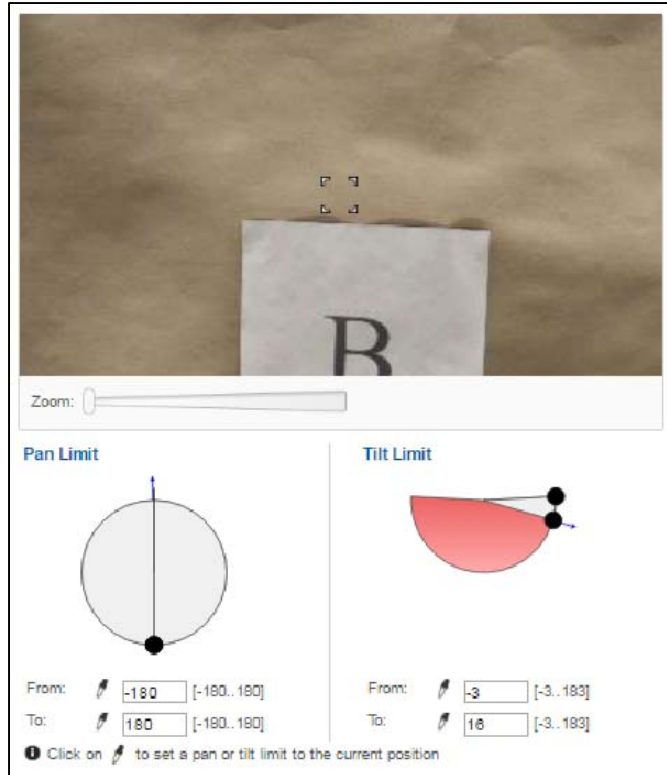

(Point A – Pan Not Limited)
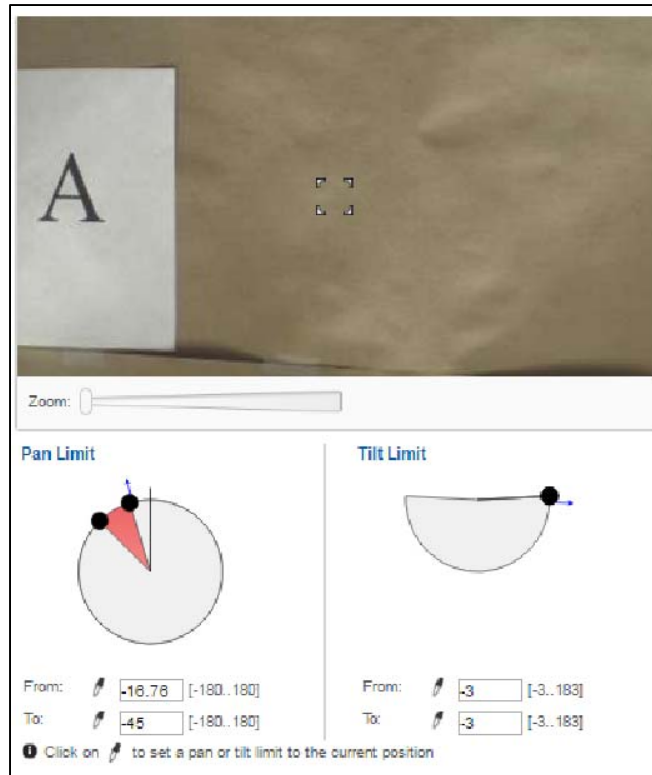
(Point A – Pan Limited)

(Point B – Tilt Not Limited)

(Point B – Tilt Limited)

85.   Defendants are indirectly infringing and have indirectly infringed the '453 patent by inducing their customers to directly infringe the '453 patent. For example, Defendants' User Guide specifically instructs their customers to use the Accused Systems in a manner that infringes claim 1 of the '453 patent, as discussed in paragraphs 76 through 84 of this Complaint. Defendants had knowledge of the '453 patent and their infringement thereof no later than June 30, 2016, when Avigilon Corporation received a letter from Kenichi Nagasawa to Alexander Fernandes advising of such infringement. Defendants were provided additional notice of the '453 patent and their infringement thereof on September 14, 2016, when Avigilon Corporation received confidential claim charts from Canon explaining the details of such infringement.

86. On information and belief, by no later than their receipt of the aforementioned June 30, 2016 letter from Kenichi Nagasawa to Alexander Fernandes, Defendants knew or should have known of the objectively high likelihood that their actions constituted infringement of the '453 patent, but nonetheless continued their infringing activities. On information and belief, Defendants' continued infringement is subjectively reckless.

87. On information and belief, from the time they received notice of their infringement of the '453 patent, Defendants have not had any good faith basis to believe they do not infringe or that the '453 patent is invalid. Defendants' infringement, therefore, has been willful.

88. Defendants' infringement of the '453 patent has caused and is causing damage and irreparable injury to Canon and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

89. Canon is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283 and 284.

COUNT V – INFRINGEMENT OF U.S. PATENT NO. 9,191,630

90. Canon hereby incorporates by reference paragraphs 1 through 89 of this Complaint.

91. Canon is the sole owner of the entire right, title and interest in the '630 patent, including the right to recover for infringement thereof.

92. Defendants are directly infringing and have directly infringed at least, for example, claim 15 of the '630 patent by using, selling, and/or offering to sell within the United States and/or importing into the United States the Accused Systems.

93.   Claim 15 of the '630 patent recites: "A non-transitory computer readable medium, having a program retrievably stored thereon, where the program is configured to make a computer execute a method of displaying live video data on a viewer, the live video data being captured by a plurality of cameras, the program comprising: code for selecting one of a plurality of queries, wherein the plurality of queries includes a query for motion detection; code for receiving metadata for the plurality of cameras, the metadata for each such camera including an event notification signifying detection or non-detection of motion, wherein the event notification is generated by analyzing the live video data captured by each such camera; code for, if the selected query is a query for motion detection, matching the query for motion detection with the event notification signifying detection of motion in the metadata for one of said plurality of cameras; code for displaying live video data captured by said one camera in a window of a layout displayed on the viewer, responsive to a match of the query for motion detection with the event notification signifying detection of motion in the metadata for said one camera; code for receiving new metadata for said one camera; code for updating the received metadata with the new metadata if the received metadata for said one camera has been changed to the new metadata during the display of the live video data; code for re-evaluating whether there is still a match of the query for motion detection with the event notification signifying detection of motion in the updated metadata for said one camera; and code responsive to a failed match of the query for motion detection with the event notification signifying detection of motion in the updated metadata for said one camera, for preventing a display of the window for the displayed live video data of said one camera, from the layout displayed on the viewer."

94.   The Avigilon Control Center ("ACC") software, when installed in an Accused System as intended to serve its intended function, contains a program that is stored on a

computer readable medium, *i.e.*, a computer hard drive, that when executed by the computer displays live video data on a viewer, the live video data being captured by a plurality of cameras. As shown below, the Avigilon manual states that the program needs 500MB of non-transitory disk space to work as intended.

What is the Avigilon Control Center™ Client?

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The Client software allows you to view live and recorded video, monitor events, and control user access to the Avigilon Control Center. The Client software also gives you the ability to configure your surveillance system.

The Client software can run on the same computer as the Server software, or run on a remote computer that connects to the site through a local area network (LAN) or a wide area network (WAN).

What you can do in the Client software depends on the Server software edition. There are three editions of the Server software available: Core, Standard and Enterprise. Visit the Avigilon website for an overview of the features available in each edition: http://avigilon.com/products/video-surveillance/avigilon-control-center/editions/.

System Requirements

	Minimum requirements	Recommended requirements
Monitor resolution	1280 x 1024	1280 x 1024
OS*	Windows Vista, Windows 7 (32-bit or 64-bit), Windows 8, Windows 8.1 or Windows 10	Windows 7 (64-bit)
CPU	Intel Dual Core 2.0 GHz processor	Quad Core 2.0 GHz
System RAM	2 GB	2 GB
Video card	PCI Express, DirectX 10.0 compliant with 256 MB RAM	PCI Express, DirectX 10.0 compliant with 256 MB RAM
Network card	1 Gbps	1 Gbps
Hard disk space	500 MB	500 MB

* For all Windows versions, it is recommended that the latest Microsoft service pack be deployed.

(ACC Enterprise Client User Guide Version 5.8.2 ("User Guide"), p. 1)

95. As shown below, Defendants' cameras included in the Accused Systems can be controlled using the ACC software.
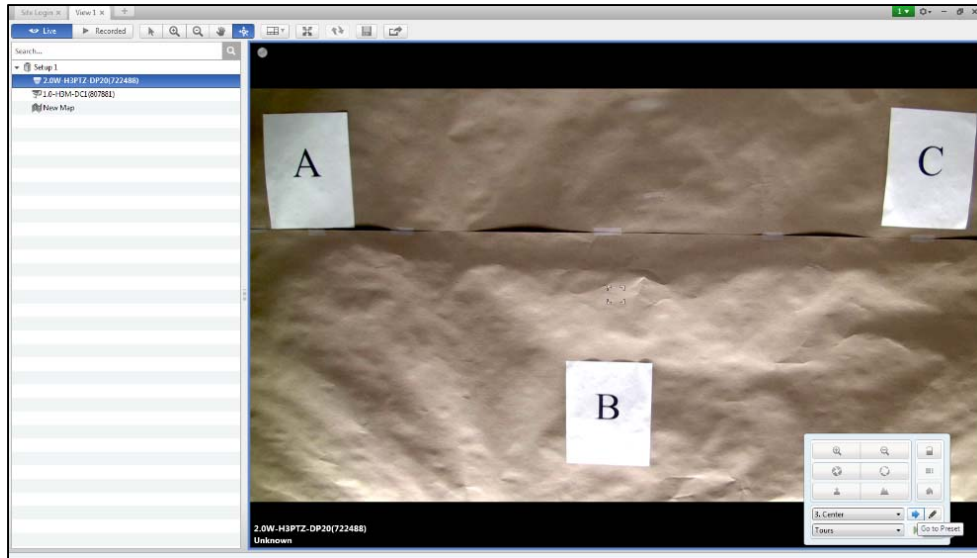
96.   The ACC contains code for selecting one of a plurality of queries, including a query for motion detection. In particular, the product allows setting of a number of different alarm types, which query the system for detection of different events, including Motion Detection. The different available alarms are shown below.

3. On the Select Alarm Trigger Source page, select an **Alarm Trigger Source:** then choose the trigger requirements for this alarm. Click ➡ to continue.

The alarm trigger options are:

- **Motion Detection** — the alarm is triggered when movement is detected in the selected camera's field of view.

- **Video Analytics Event** — the alarm is triggered when a video analytics event is detected in the selected camera's field of view.

  NOTE: You must select a video analytics camera or appliance camera channel to use this alarm trigger.

- **Digital Input Activation** — the alarm is triggered when the selected digital input is activated.

- **License Plate Watchlist Match** — the alarm is triggered when a license plate on the Watch List has been detected.

  For more information about setting up a license plate Watch List, see *Configuring the Watch List* on page 49.

- **POS Transaction Exception** — the alarm is triggered when a transaction exception is detected from the selected POS transaction source.

  For more information about configuring a transaction exception, see *Adding a Transaction Exception* on page 48.

- **Camera Error** — the alarm is triggered when an error occurs in the selected camera.

- **System Error** -— the alarm is triggered when a system error occurs.

- **External Software Event** — the alarm is triggered by an event generated by a third-party integration software.

(User Guide, p. 33)

97.   The screen shot below shows a portion of the user interface involving the
selection of one of a plurality of query types, including Motion Detection.
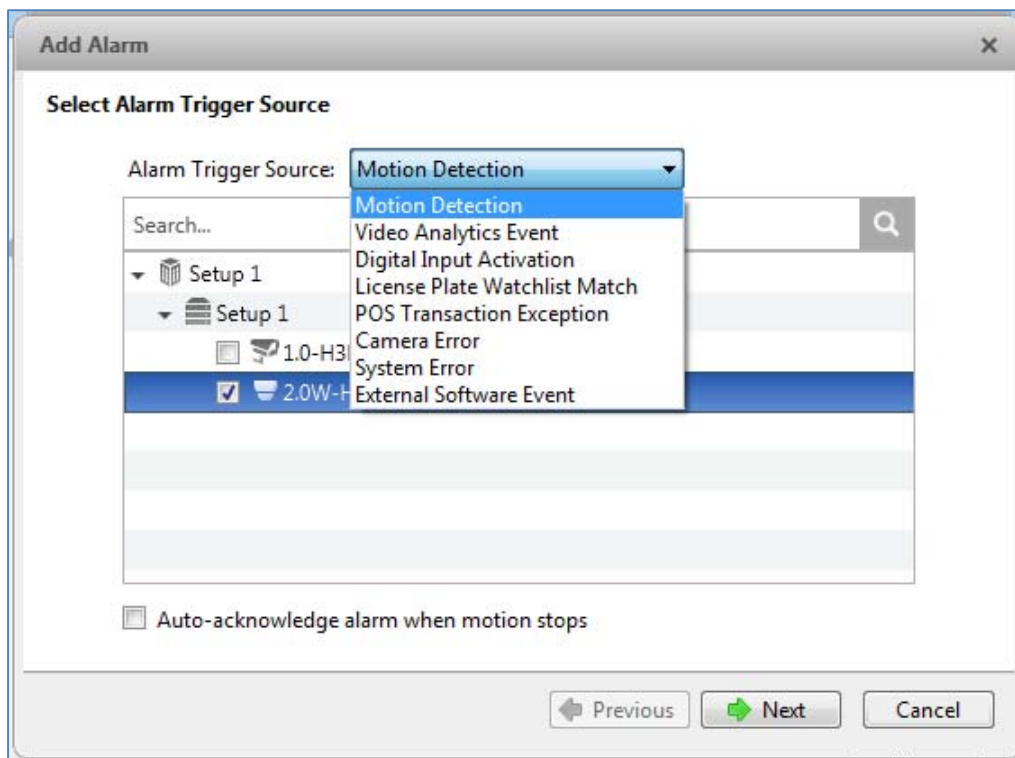
98.   The ACC contains code for receiving metadata from the plurality of cameras,
which includes an event notification signifying detection or non-detection of motion, which is
generated by analyzing live video data captured by the cameras. In particular, as shown below,
the system includes an interface that allows alarms to be generated by a motion in a subset of the
video image. This demonstrates that the motion is detected based on the live video signal rather
than some other mechanism.
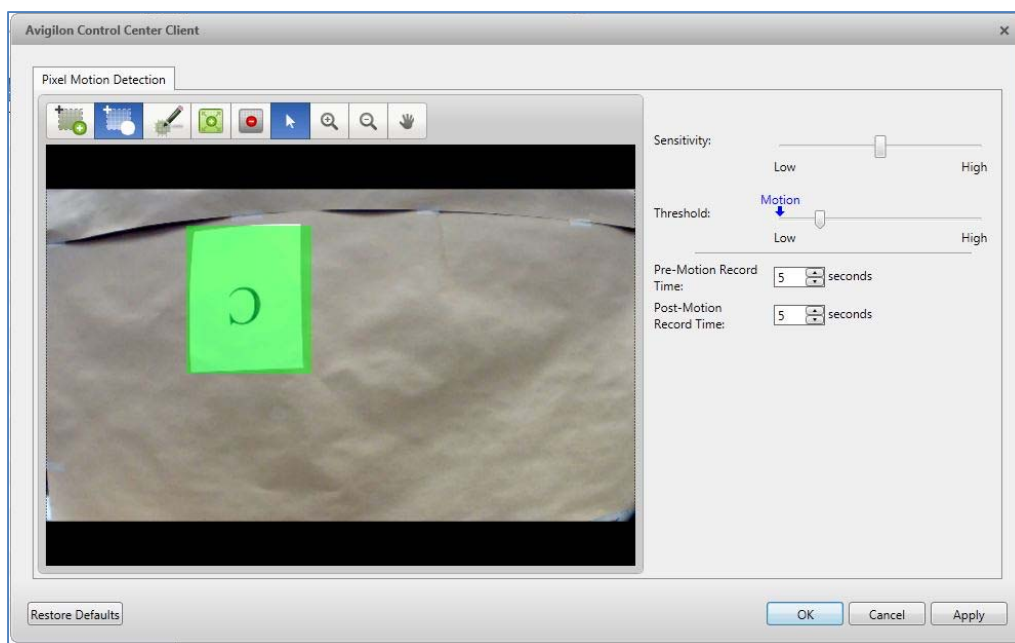
99.   On information and belief, the motion detection generation and data is stored in the camera itself rather than being a function of the control or server software. The camera provides a web interface that connects directly to the camera without requiring use of the ACC. As shown below, that camera web software allows the user to set and save alarm triggers. The camera thus includes internal data about the alarm setting and transmits the metadata indicating alarm states, which is received by the ACC.
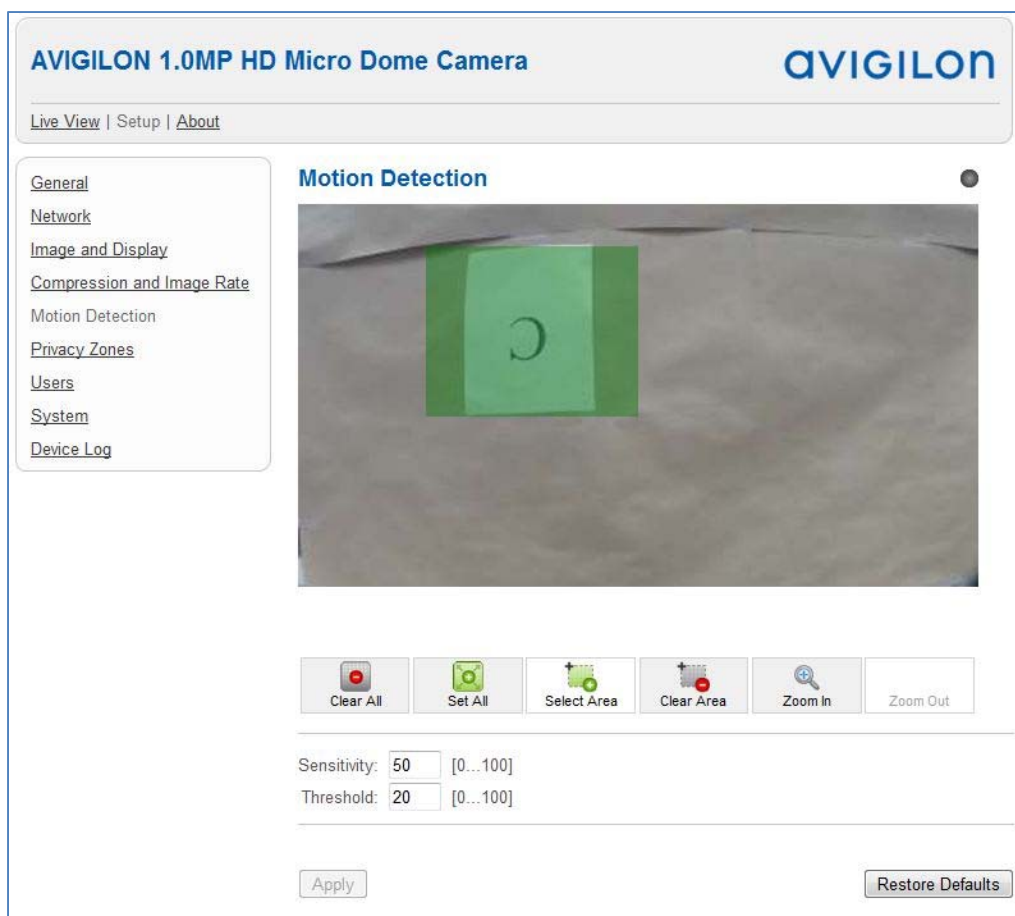
100.   As stated on Defendants' website, ACC and Defendants' cameras included in the

Accused Systems use ONVIF communication protocols to communicate with one another.

What is in the ONVIF Standard?

The ONVIF Specifications covers things like IP configuration; device discovery; device management; PTZ camera control; and video analytics.

Working in parallel are ONVIF Profiles. Profile C is for IP-based access control; Profile G is for edge storage and retrieval; and Profile S is for IP-based video systems.

The Avigilon HD Camera, Bullet, Dome, Micro Dome, and PTZ camera series all rely on ONVIF communication protocols, including Profile S, to communicate with the Avigilon Control Center system.

Avigilon Control Center uses ONVIF Profile S specifications to support a wide range of 3rd party cameras with features such as video streaming in H.264, MJPEG, and MPEG4 when supported; configuration of the video stream and the device IP; support for audio input; support for digital outputs; record on motion (as defined in ONVIF 2.2 and later specifications, but not part of Profile S); and control of PTZ.

(http://avigilon.com/news/IT/7-faqs-about-the-onvif-standard/)

101. The ONVIF standard specifically allows cameras that support motion detection to send a "motion alarm event" to a client when the camera detects motion.

5.3.2 MotionAlarm

When a device detects motion (e.g by an Analytics Service) it can inform a client using this event. This event is a basic motion alarm event that should be supported by all devices that support motion detection. If a device has a more complex algorithm running it is free to provide a vendor specific motion alarm event. If the device supports motion detection it should provide the following event.

tns1:VideoSource/MotionAlarm

(ONVIF Imaging Service Specification Version 2.6.1, p. 32)

102. The ACC contains code for detecting when a query matching an event signifying motion detection is received from one or more of the plurality of cameras. In particular, an event signifying motion detection results in an alarm being triggered.

3. On the Select Alarm Trigger Source page, select an **Alarm Trigger Source:** then choose the trigger requirements for this alarm. Click ➡ to continue.

The alarm trigger options are:

- **Motion Detection** — the alarm is triggered when movement is detected in the selected camera's field of view.
- **Video Analytics Event** — the alarm is triggered when a video analytics event is detected in the selected camera's field of view.

(User Guide, p. 33)

103.   The ACC contains code for displaying live video captured by a camera in a window on the viewer when a match is made for the motion detection alarm query indicating that a motion detection event notification has been received in the metadata. In particular, the Avigilon user interface element shown below includes the check box "View linked cameras when the alarm is triggered," which is used to cause this behavior.

104.   As shown below, video signals are displayed when a motion detection alarm is triggered. In particular, the ptz Alarm view in the lower left window appears when motion is detected by a PTZ camera.
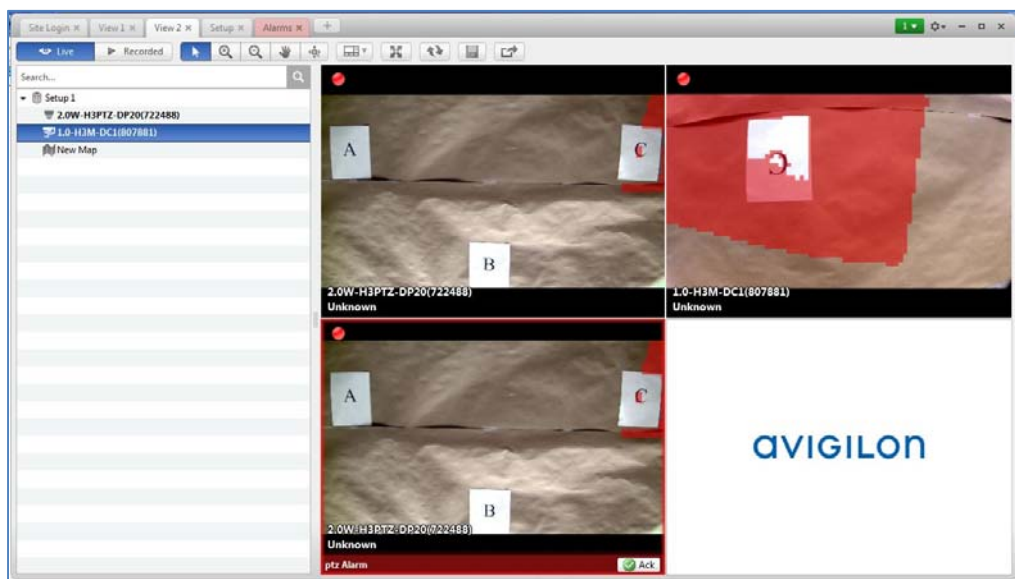

105.   After an alarm, the ACC contains code for continuing to receive metadata information from the cameras, which is demonstrated by the fact that the camera stops displaying the alarm video when it receives an event showing that motion has stopped.

106.   After an alarm, the ACC contains code for updating the received metadata information from the cameras when it changes, which is demonstrated by the fact that the camera stops displaying the alarm video when it receives an event showing that motion has stopped.

107.   After an alarm, the ACC contains code for re-evaluating the query alarm state to determine if motion is still being detected, which is demonstrated by the fact that the camera stops displaying the alarm video when it receives an event showing that motion has stopped.

108.   The ACC contains code for preventing display of the live video window when the query match, i.e., alarm, no longer signifies that there is detected motion. This results in the video stopping on the viewer. This feature is enabled by a user interface element, shown below,

which auto acknowledges the alarm once the alarm condition has stopped. Acknowledgement

ends the alarm condition and removes the alarm window.
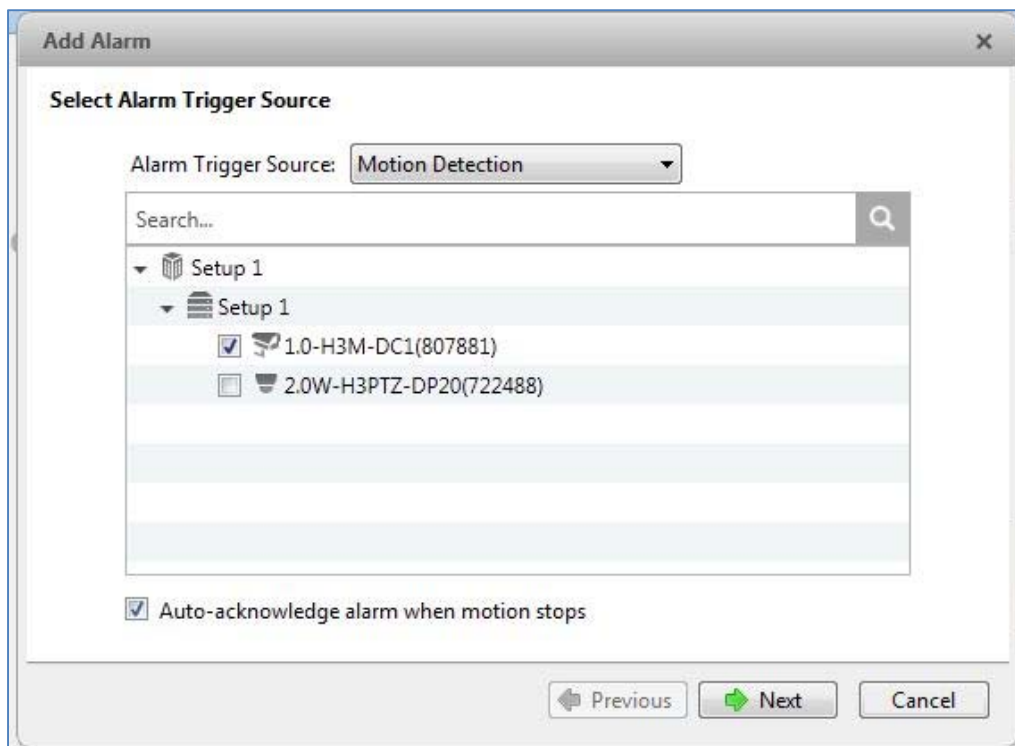
109. Defendants are indirectly infringing and have indirectly infringed the '630 patent

by inducing their customers to directly infringe the '630 patent. For example, Defendants' User

Guide specifically instructs their customers to use the Accused Systems in a manner that

infringes claim 15 of the '630 patent, as discussed in paragraphs 94 through 108 of this

Complaint. Defendants had knowledge of the '630 patent and their infringement thereof no later

than June 30, 2016, when Avigilon Corporation received a letter from Kenichi Nagasawa to

Alexander Fernandes advising of such infringement. Defendants were provided additional notice

of the '451 patent and their infringement thereof on September 14, 2016, when Avigilon

Corporation received confidential claim charts from Canon explaining the details of such

infringement.

110. On information and belief, by no later than their receipt of the aforementioned June 30, 2016 letter from Kenichi Nagasawa to Alexander Fernandes, Defendants knew or should have known of the objectively high likelihood that their actions constituted infringement of the '630 patent, but nonetheless continued their infringing activities. On information and belief, Defendants' continued infringement is subjectively reckless.

111. On information and belief, from the time they received notice of their infringement of the '630 patent, Defendants have not had any good faith basis to believe they do not infringe or that the '630 patent is invalid. Defendants' infringement, therefore, has been willful.

112. Defendants' infringement of the '630 patent has caused and is causing damage and irreparable injury to Canon and Canon will continue to suffer irreparable injury unless and until such infringement is enjoined by this Court.

113. Canon is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283 and 284.

PRAYER FOR RELIEF

WHEREFORE, Canon respectfully requests that this Court enter judgment:

a) Declaring that Defendants have infringed the claims of the '451, '999, '864, '453, and '630 patents;

b) Declaring that such infringement has been willful;

c) Ordering Defendants to pay damages adequate to compensate Canon for their infringement of the '451, '999, '864, '453, and '630 patents, together with prejudgment interest and costs, including without limitation lost profits and/or a reasonable royalty, and increasing those damages to three times the amount found or assessed as provided by 35 U.S.C. § 284;

d)   Issuing a permanent injunction enjoining Defendants and their affiliates, employees, agents, officers, directors, attorneys, successors, and assigns and all those acting on behalf of or in concert with any of them from infringing the '864, '453, and '630 patents;

e)   Declaring that this is an exceptional case and awarding Canon its reasonable attorneys' fees and costs under 35 U.S.C. § 285 and all other applicable statutes, rules, and common law; and

f)   Awarding Canon all other and further relief as this Court deems just and proper.

DEMAND FOR JURY TRIAL

Canon requests a trial by jury as to all issues so triable.

JACKSON WALKER, LLP

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