

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

MONUMENT PEAK VENTURES, LLC,

Plaintiff,

v.

HMD GLOBAL OY,

Defendant.

Civil Action no. 2:18-cv-521

JURY DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Monument Peak Ventures, LLC (“MPV”), by and through the undersigned counsel, hereby brings this action and makes the following allegations of patent infringement relating to U.S. Patent Nos. 7,683,962 (“the ’962 patent”), 7,187,858 (“the ’858 patent”) and 7,859,588 (“the ’588 patent”) against HMD Global Oy (“HMD”), and alleges as follows upon actual knowledge with respect to itself and its own acts, and upon information and belief as to all other matters:

NATURE OF THE ACTION

1. This is an action for patent infringement. MPV alleges that HMD infringes one or more of the ’962 patent, the ’858 patent and the ’588 patent, copies of which are attached as Exhibits A-C, respectively (collectively “the Asserted Patents”).

2. On or about April 17, 2017, MPV, a technology licensing company, approached HMD to offer a license to MPV’s Kodak portfolio. Since MPV acquired the Kodak portfolio it has successfully licensed several companies without resorting to litigation. Consistent with MPV’s overall strategy to use litigation only as a last resort, MPV expressed on several occasions its desire to consummate a license with HMD outside of litigation.

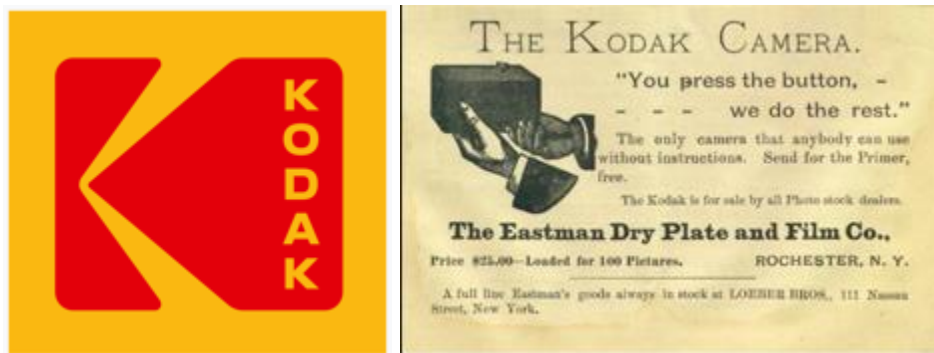
3. On or about May 17, 2017, MPV informed HMD of its infringement through a data room that included a full list of all patents owned by MPV and evidence of use presentations detailing HMD's infringement. MPV and HMD had ongoing discussions between May 17, 2017 and early 2018 when HMD went silent.

4. HMD invited MPV to visit its headquarters in Finland in early 2018 to conduct in-person licensing negotiations. HMD and MPV later agreed on a March 22, 2018 meeting at HMD headquarters in Finland. On March 19, 2018, HMD informed MPV that HMD would no longer honor the originally scheduled meeting. Relying on HMD's invitation, MPV was left with nonrefundable travel accommodations to and from Finland for which it had no other use.

5. MPV alleges that HMD directly and indirectly infringes the Asserted Patents by making, using, offering for sale, selling, and/or importing smartphones including one or more cameras, such as the Nokia 6 and Nokia 7.1 smartphones. MPV seeks damages and other relief for HMD's infringement of the Asserted Patents.

The Asserted Patents Come From the Iconic Kodak Patent Portfolio

6. The Asserted Patents claim inventions born from the ingenuity of the Eastman Kodak Company ("Kodak"), an iconic American imaging technology company that dates back to the late 1800s. The first model of a Kodak camera was released in 1888.



7. In 1935 Kodak introduced "Kodachrome," a color reversal stock for movie and

slide film. In 1963 Kodak introduced the Instamatic camera; an easy-to-load point-and-shoot camera.



8. By 1976 Kodak was responsible for 90% of the photographic film and 85% of the cameras sold in the United States.

9. At the peak of its domination of the camera industry, Kodak invented the first self-contained digital camera in 1975.



10. By 1986 Kodak had created the first megapixel sensor that was capable of recording 1,400,000 pixels. While innovating in the digital imaging space Kodak developed an immense patent portfolio and extensively licensed its technology in the space. For example, in 2010, Kodak received \$838,000,000 in patent licensing. As part of a reorganization of its

business, Kodak sold many of its patents to some of the biggest names in technology that included Google, Facebook, Amazon, Microsoft, Samsung, Adobe Systems, HTC and others for \$525,000,000.

11. While scores of digital imaging companies have paid to license the Kodak patent portfolio owned by MPV, HMD has refused to do so without justification.

THE PARTIES

12. Plaintiff MPV is a Texas limited liability company with its principal place of business in Plano, Texas.

13. Upon information and belief, HMD is a Finish corporation with places of business at Karaportti 2, FIN-02610, Espoo, Finland and Level 4, 4 Kingdom Street, Paddington Central, London W26BD. Upon information and belief, HMD sells and offers to sell products and services throughout Texas, including in this judicial district, and introduces products and services that perform infringing processes into the stream of commerce knowing that they would be sold in Texas and this judicial district.

JURISDICTION AND VENUE

14. This action for patent infringement arises under the Patent Laws of the United States, 35 U.S.C. § 1 et. seq. This Court has original jurisdiction under 28 U.S.C. §§ 1331 and 1338.

15. This Court has both general and specific personal jurisdiction over HMD because HMD has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over HMD would not offend traditional notions of fair play and substantial justice. HMD, directly and through subsidiaries and intermediaries (including distributors, retailers, franchisees and others),

has committed and continues to commit acts of infringement in this District by, among other things, making, using, testing, selling, importing, and/or offering for sale products that infringe the Asserted Patents.

16. Venue is proper in this district and division under 28 U.S.C. §§ 1391(b)-(d) and 1400(b) because HMD has committed acts of infringement in the Eastern District of Texas and is a foreign based entity.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 7,683,962

17. The allegations of paragraphs 1-16 of this Complaint are incorporated by reference as though fully set forth herein.

18. MPV owns by assignment the entire right, title, and interest in the '962 patent.

19. The '962 patent was issued by the United States Patent and Trademark Office on March 23, 2010, and is titled "Camera Using Multiple Lenses and Image Sensors in a Rangefinder Configuration to Provide a Range Map." A true and correct copy of the '962 patent is attached as Exhibit A.

20. Upon information and belief, HMD has infringed at least claim 9 of the '962 patent by making, using, testing, selling, offering for sale, importing and/or licensing in the United States mobile phones using dual lens cameras, including the Nokia 7.1 (collectively the "Accused Infringing Devices") in an exemplary manner as described below.

21. The Accused Infringing Devices have dual rear cameras to capture image signals and a processor which generates an output image and range map of a scene using a captured image signal.

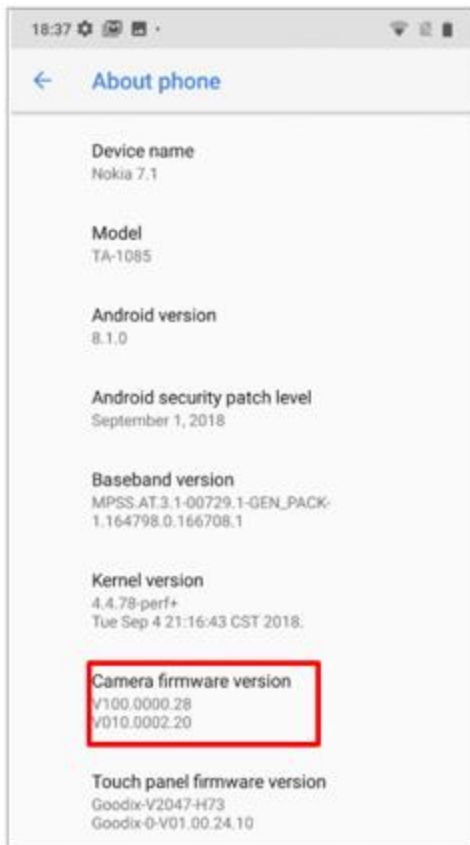


- 12 MP/5 MP dual sensor rear camera with ZEISS Optics
- AI and depth-based imaging
Qualcomm® Snapdragon™ 636
mobile platform

https://www.nokia.com/en_us/phones/nokia-7#buy

Nokia 7.1 is all about capturing photos that look so good, you just have to share them. The dual rear cameras with ZEISS optics deliver stunning shots, while the AI technology lets you add an artistic touch to every photo with 3D personas, masks and filters.

https://www.nokia.com/phones/en_us/nokia-7



Screenshot from Nokia 7.1 Settings Menu

22. The Accused Infringing Devices form a first image scene from a sensor output of a first image sensor located in a first imaging stage (e.g., Dual Main).

Camera

- Primary camera Dual Main: 12 MP
2PD/AF/f1.8/1.28um, Dual
second: 5 MP, BW/FF/f2.4/1.12um

Qualcomm® Snapdragon™ 636
mobile platform

https://www.nokia.com/en_us/phones/nokia-7

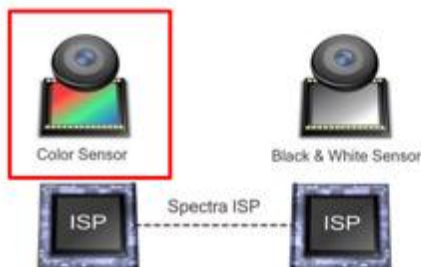
The Snapdragon processors in these phones use information from both cameras to unleash new, creative options for your photography. Using dual video streams, the processors can translate the multiple pictures they take into depth information, much like the way your brain perceives depth as it receives slightly different information from your two eyes. And once you have depth information, new features become available:

- ReFocus: Snapdragon processors can assign each of the cameras different focal points, so they fire at the same time but capture varying focus and depth information. That way, you can change what's in focus after you capture your photo.

<https://www.qualcomm.com/news/onq/2015/10/30/snapdragon-dual-cameras-capture-photos-first-adjust-focus-later>

Camera

- Primary camera Dual Main: 12 MP 2PD/AF/f1.8/1.28um, Dual second: 5 MP, BW/FF/f2.4/1.12um



https://www.nokia.com/en_us/phones/nokia-7#buy

Qualcomm® Snapdragon™ 636 mobile platform

Clear Sight features two cameras, each with its own lens and image sensor. Like your eyes, the lenses have identical focal length (meaning they see the same distance). But each camera has a different image sensor: one color image sensor (to mimic cones), and a separate black and white image sensor (which can absorb more light, to mimic rods).

<https://www.qualcomm.com/news/onq/2016/09/14/take-amazing-photos-qualcomm-clear-sight-dual-camera-tech>

23. The Accused Infringing Devices form a second image of the scene from a second image sensor output located in a second imaging stage (e.g., Dual second). The first and second images have different angles of view.

Camera

- Primary camera Dual Main: 12 MP
2PD/AF/f1.8/1.28um, Dual
second: 5 MP, BW/FF/f2.4/1.12um
Qualcomm® Snapdragon™ 636
mobile platform
https://www.nokia.com/en_us/phones/nokia-7

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- ReFocus: Snapdragon processors can assign each of the cameras different focal points, so they fire at the same time but capture varying focus and depth information. That way, you can change what's in focus after you capture your photo.

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- Primary camera Dual Main: 12 MP
2PD/AF/f1.8/1.28um, Dual
second: 5 MP, BW/FF/f2.4/1.12um



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<https://www.qualcomm.com/news/onq/2016/09/14/take-amazing-photos-qualcomm-clear-sight-dual-camera-tech>

24. The Accused Infringing Devices select a sensor output from one of the imaging stages, e.g., the primary 12MP sensor, as the captured image signal.

Camera

- Primary camera Dual Main: 12 MP
2PD/AF/f1.8/1.28um, Dual
second: 5 MP, BW/FF/f2.4/1.12um

https://www.nokia.com/en_us/phones/nokia-7#buy



Without the color filter, these black and white photos have much better contrast, and in low light have less noise and improved sharpness. When color information from the other photo is merged, you can get a fantastic image. This is Clear Sight.

<https://www.qualcomm.com/news/onq/2016/09/14/take-amazing-photos-qualcomm-clear-sight-dual-camera-tech>

<https://www.qualcomm.com/media/documents/files/advancements-in-mobile-visual-processing-with-qualcomm-snapdragon-mobile-platforms.pdf>

25. The Accused Infringing Devices use images from both sensors to generate a range map identifying distances to different portions of the scene. The Accused Infringing Devices use the range map to enable dynamic depth of field images (e.g., Bokeh effect).

Outside

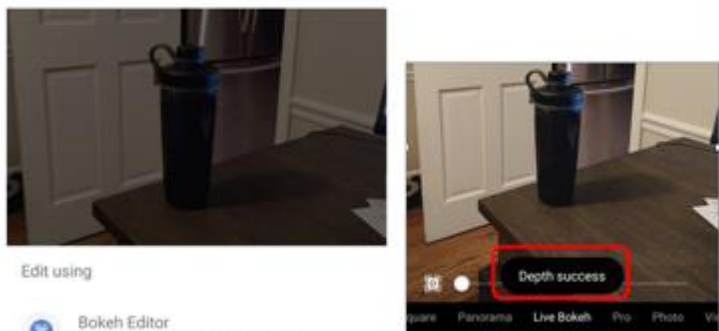
- Full HD+ 5.84" PureDisplay with 19:9 screen ratio and Corning® Gorilla® Glass (front)
- 12 MP/5 MP dual sensor rear camera with ZEISS Optics
- 8 MP front camera
- Ergonomic rear fingerprint sensor



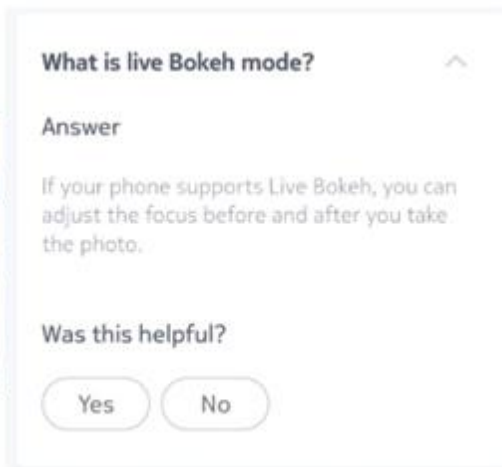
Inside

- AI and depth-based imaging
- HDR photography
- Pure, Secure and Up-to-Date Android Oreo
- Qualcomm® Snapdragon™ 636 mobile platform
- 3 / 4 GB RAM with 32 / 64 GB³ storage
- Up to 400 GB MicroSD card support

https://www.nokia.com/en_us/phones/nokia-7



Screenshots from Nokia 7.1 Camera App



Screenshot from Nokia 7.1 Support App

The Snapdragon processors in these phones use information from both cameras to unleash new, creative options for your photography. Using dual video streams, the processors can translate the multiple pictures they take into depth information, much like the way your brain perceives depth as it receives slightly different information from your two eyes. And once you have depth information, new features become available:

- o **ReFocus:** Snapdragon processors can assign each of the cameras different focal points, so they fire at the same time but capture varying focus and depth information. That way, you can change what's in focus after you capture your photo.



<https://www.qualcomm.com/news/onq/2015/10/30/snapdragon-dual-cameras-capture-photos-first-adjust-focus-later>

https://3gltesummit.qualcomm.com/sites/default/files/pdf/3GLTE2015_Qualcomm-SJha_AdvancedTechnologies.pdf

- o **ReFocus:** Snapdragon processors can assign each of the cameras different focal points, so they fire at the same time but capture varying focus and depth information. That way, you can change what's in focus after you capture your photo.



Use Bokeh mode

If you want to be able to change the focus area of your photo after you have taken it, use Bokeh mode when taking a photo.

1. Tap Camera > Bokeh .
2. Take aim and focus, and tap .
3. Select the photo you just took, you can see it in the bottom right corner.
4. Tap  > Bokeh Editor to edit your photo.

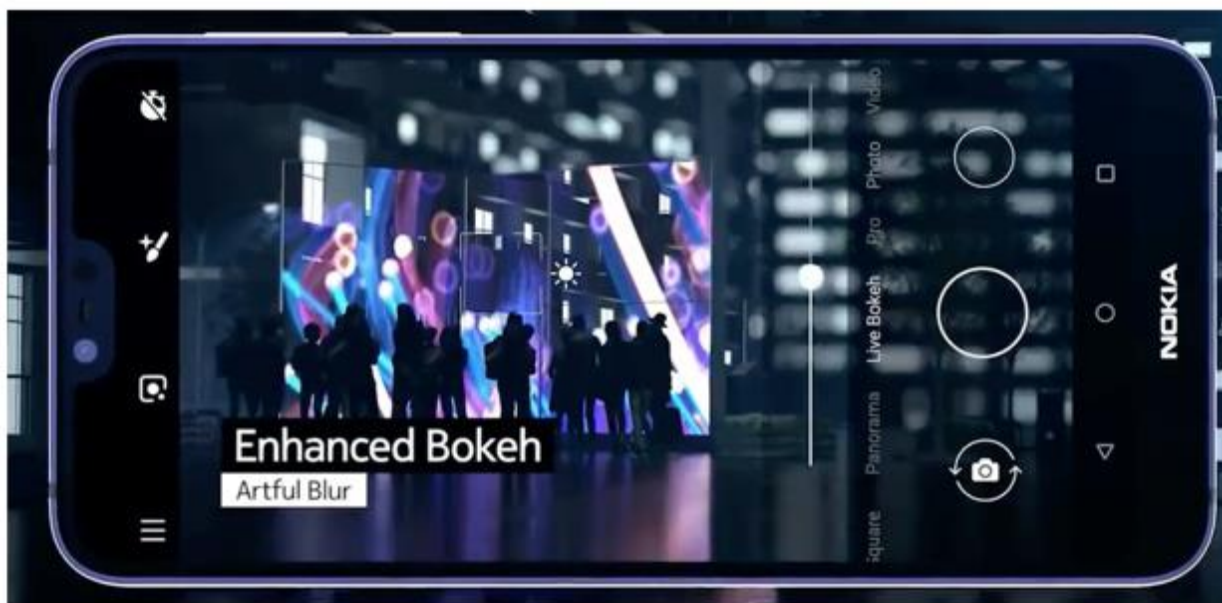
https://www.nokia.com/en_us/phones/support/nokia-7-1-user-guide/use-your-camera-like-a-pro

https://3gltesummit.qualcomm.com/sites/default/files/pdf/3GLTE2015_Qualcomm-SJha_AdvancedTechnologies.pdf

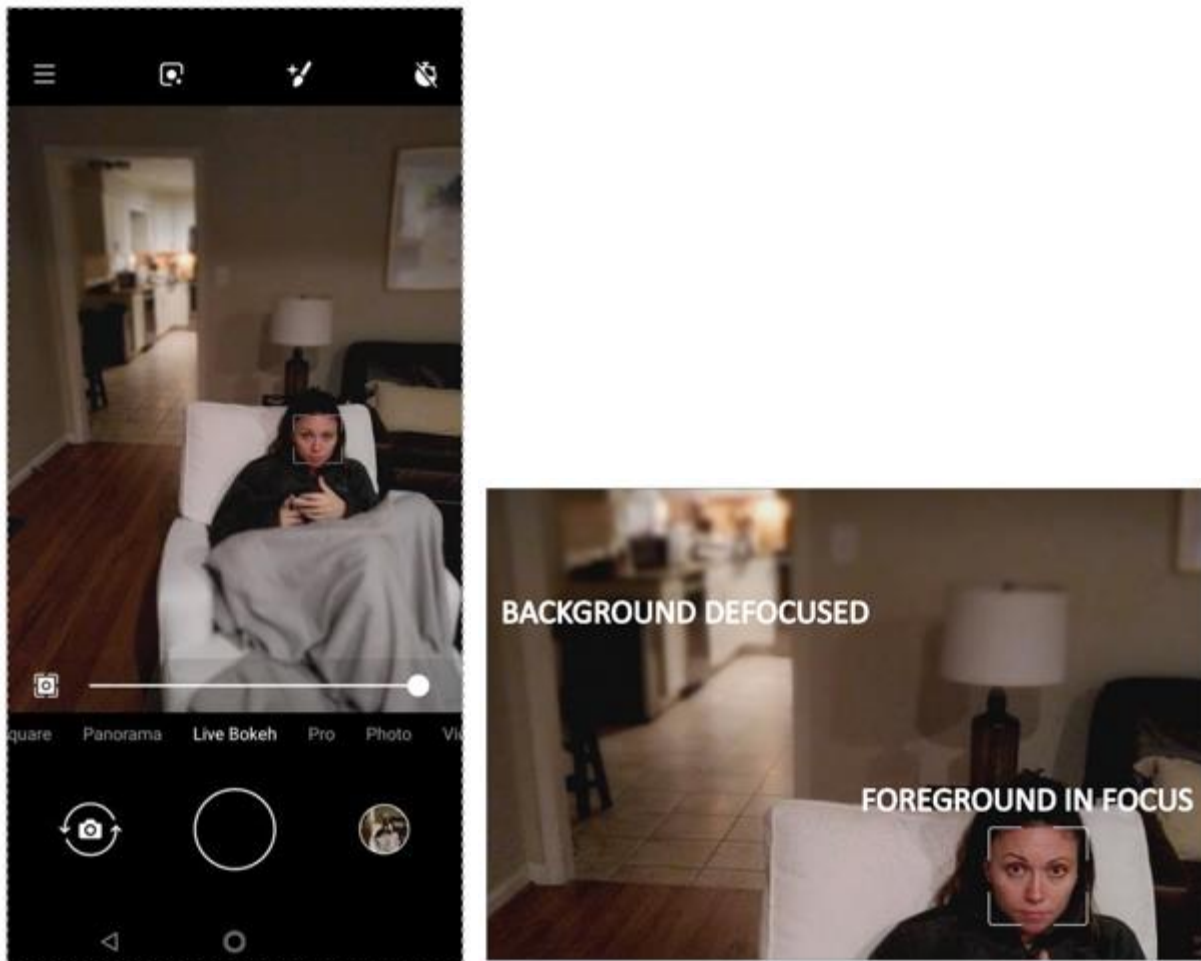
26. The Accused Infringing Devices use images captured by both images sensors to generate a range map for identifying the position of the camera relative to various points in the scene. The range map is used to enable dynamic depth of field images (e.g., bokeh mode) by blurring portions of the output image corresponding to areas of the scene that lie outside a desired depth of field (e.g., background areas a user wants to defocus).

Calculating the distance of various points in the scene relative to the position of the camera is one of the important tasks of CV. Depth information can be used for fast focus, object segmentation, refocus, and distance measurement. Acquiring multiple images at different focal points is required to extract depth information. Although a single camera can generate multiple images at different focal points sequentially, a dual-camera can take two images at different focal points simultaneously to eliminate time-based movement in the scene.

<https://www.qualcomm.com/media/documents/files/whitepaper-breakthrough-mobile-imaging-experiences.pdf>



https://www.youtube.com/watch?v=U44R_UuWv5U



Screenshot from Nokia 7.1 Camera Application – Live Bokeh Mode.

27. HMD has thus infringed and continues to infringe at least claim 9 of the '962 patent by making, using, testing, selling, offering for sale, importing and/or licensing the Accused Infringing Devices.

28. HMD also has infringed, and continues to infringe, at least claim 9 of the '962 patent by actively inducing others to use the Accused Infringing Devices. HMD's users, customers, agents or other third parties who use the Accused Infringing Devices in accordance with HMD's instructions infringe claim 9 of the '962 patent, in violation of 35 U.S.C. § 271(a). HMD intentionally instructs its customers to infringe through training videos, demonstrations, brochures and user guides, such as those located at: www.nokia.com;

https://www.nokia.com/phones/en_au/support/nokia-7-1-user-guide;

https://www.nokia.com/phones/en_us/nokia-7?gclid=EAIaIQobChMI3L2O-

rHS3gIVBttkCh0jogpyEAAYASAAEgL4v_D_BwE&gclsrc=aw.ds;

<https://www.nokia.com/support/>. HMD is thereby liable for infringement of the '962 patent under 35 U.S.C. § 271(b).

29. HMD also has infringed, and continues to infringe, at least claim 9 of the '962 patent by offering to commercially distribute, commercially distributing, or operating the Accused Infringing Devices which are used in practicing the processes, or using the systems, of the '962 patent, and constitute a material part of the invention. HMD knows portions of the Accused Infringing Devices to be especially made or especially adapted for use in infringement of the '962 patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. HMD is thereby liable for infringement of the '962 patent under 35 U.S.C. § 271(c).

30. HMD is on notice of its it infringement based on the data room MPV sent to HMD. HMD is also on notice by no later than the filing of this Complaint and/or service of this Complaint. HMD's acts of infringement of the '962 patent have been willful and intentional under the standard of *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016). Since at least receipt of the data room, HMD has willfully infringed the '962 patent by refusing to take a license and continuing the foregoing infringement. Instead of taking a license to the '962 patent, HMD has made the business decision to "efficiently infringe" the '962 patent. In doing so, HMD willfully infringed the '962 patent.

31. HMD's acts of direct, indirect, and willful infringement have caused and continue to cause damage to MPV and MPV is entitled to recover damages sustained as a result of HMD's

wrongful acts in an amount subject to proof at trial.

COUNT II – INFRINGEMENT OF U.S. PATENT NO. 7,187,858

32. The allegations of paragraphs 1-16 of this Complaint are incorporated by reference as though fully set forth herein.

33. MPV owns by assignment the entire right, title, and interest in the '858 patent.

34. The '858 patent was issued by the United States Patent and Trademark Office on March 6, 2007, and is titled "Camera and Method for Operating a Camera Based Upon Available Power in a Supply." A true and correct copy of the '858 patent is attached as Exhibit B.

35. Upon information and belief, HMD has infringed at least claim 7 of the '858 patent by making, using, testing, selling, offering for sale, importing and/or licensing in the United States mobile phones with cameras with power supplies, including the Nokia 6 and 7.1 (collectively the "Accused Infringing Devices") in an exemplary manner as described below.

36. The Accused Infringing Devices include cameras with power supplies.

Camera

Document your life with the 16
MP camera

Snapping photos of your favorite moments is easy with the camera app on Nokia 6. There's a 16 MP phase detection autofocus camera on the back, and an 8 MP camera on the front. Plus the dual-tone flash on the main camera helps you take natural-looking photos, even in low light.

Camera

Primary camera 16MP PDAF, 1.0um, f/2, dual tone flash

Front-facing camera 8MP AF, 1.12um, f/2, FOV 84 degrees

Battery life

Battery type Integrated 3000 mAh battery⁴

https://www.nokia.com/en_int/phones/nokia-6

37. The Accused Infringing Devices include a voltage detecting circuit adapted to detect a voltage level at the power supply and to generate a voltage level to communicate power status to a user.

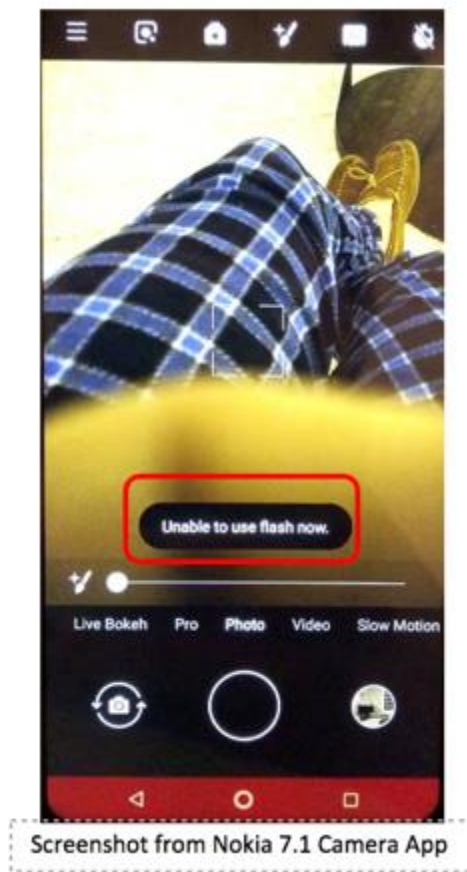


https://www.nokia.com/en_int/phones/nokia-6

38. The Accused Infringing Devices include an image capture system for performing a set of power-consuming image capture operations.



39. The Accused Infringing Devices include a controller that prevents the image capture system from performing all of the operations in the set of image capture operations (e.g., flash disabled) when the voltage level signal indicates that there is power available in the power supply to perform only some of the operations from the full set of the image capture operations available when there is sufficient power.



40. The Accused Infringing Devices include power management controllers which, in a low power mode, allows for some ongoing image capture operations (e.g., shutter release, sensor exposure) but disables some others (e.g., flash fire operation).

41. HMD has thus infringed and continues to infringe at least claim 7 of the '858 patent by making, using, testing, selling, offering for sale, importing and/or licensing the Accused Infringing Devices.

42. HMD also has infringed, and continues to infringe, at least claim 12 of the '858 patent by actively inducing others to use the Accused Infringing Devices. HMD's users, customers, agents or other third parties who use the Accused Infringing Devices in accordance with the HMD's instructions infringe claim 12 of the '858 patent, in violation of 35 U.S.C. § 271(a). HMD intentionally instructs its customers to infringe through training videos,

demonstrations, brochures and user guides, such as those located at www.nokia.com;
https://www.nokia.com/phones/en_au/support/nokia-7-1-user-guide;
https://www.nokia.com/phones/en_us/nokia-7?gclid=EAIAIQobChMI3L2O-rHS3gIVBttkCh0jogpyEAAYASAAEgL4v_D_BwE&gclsrc=aw.ds;
<https://www.nokia.com/support/>. HMD is thereby liable for infringement of the '858 patent under 35 U.S.C. § 271(b).

43. HMD also has infringed, and continues to infringe, at least claim 12 of the '858 patent by offering to commercially distribute, commercially distributing, or operating the Accused Infringing Devices which are used in practicing the processes, or using the systems, of the '858 patent, and constitute a material part of the invention. HMD knows portions of the Accused Infringing Devices to be especially made or especially adapted for use in infringement of the '858 patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. HMD is thereby liable for infringement of the '858 patent under 35 U.S.C. § 271(c).

44. HMD is on notice of its it infringement based on the data room MPV sent to HMD. HMD is also on notice by no later than the filing of this Complaint and/or service of this Complaint. HMD's acts of infringement of the '858 patent have been willful and intentional under the standard of *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016). Since at least receipt of the data room, HMD has willfully infringed the '858 patent by refusing to take a license and continuing the foregoing infringement. Instead of taking a license to the '858 patent, HMD has made the business decision to "efficiently infringe" the '858 patent. In doing so, HMD willfully infringed the '858 patent.

45. HMD's acts of direct and willful infringement have caused and continue to cause

damage to MPV and MPV is entitled to recover damages sustained as a result of HMD's wrongful acts in an amount subject to proof at trial.

COUNT III – INFRINGEMENT OF U.S. PATENT NO. 7,859,588

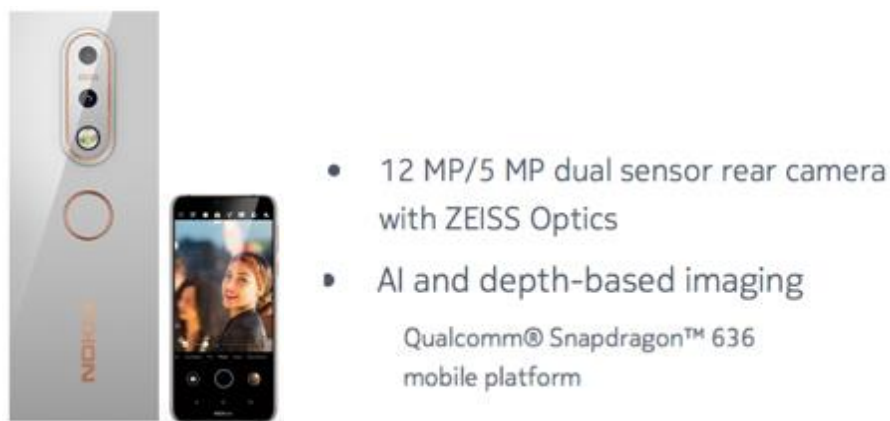
46. The allegations of paragraphs 1-16 of this Complaint are incorporated by reference as though fully set forth herein.

47. MPV owns by assignment the entire right, title, and interest in the '588 patent.

48. The '588 patent was issued by the United States Patent and Trademark Office on December 28, 2010, and is titled "Method and Apparatus for Operating a Dual Lens Camera to Augment an Image." A true and correct copy of the '588 patent is attached as Exhibit C.

49. Upon information and belief, HMD has infringed at least claim 1 of the '588 patent by making, using, testing, selling, offering for sale, importing and/or licensing in the United States mobile phones that process digital images, including the Nokia 7.1 (collectively the "Accused Infringing Devices") in an exemplary manner as described below.

50. The Accused Infringing Devices include cameras for producing an output image of a scene from a captured image signal.





https://www.nokia.com/en_us/phones/nokia-7#buy

51. The Accused Infringing Devices include a first imaging stage comprising a first

lens for capturing a first image of the scene on a first image sensor.

Camera

- Primary camera Dual Main: 12 MP
2PD/AF/f1.8/1.28um, Dual
second: 5 MP, BW/FF/f2.4/1.12um



Qualcomm® Snapdragon™ 636
mobile platform

Clear Sight features two cameras, each with its own lens and image sensor. Like your eyes, the lenses have identical focal length (meaning they see the same distance). But each camera has a different image sensor: one color image sensor (to mimic cones), and a separate black and white image sensor (which can absorb more light, to mimic rods).

https://www.nokia.com/en_us/phones/nokia-7#buy

<https://www.qualcomm.com/news/onq/2016/09/14/take-amazing-photos-qualcomm-clear-sight-dual-camera-tech>

52. The Accused Infringing Devices include a first imaging stage (e.g., Dual Main) comprising a first lens for capturing a first image of the scene on a first image sensor. The Accused Infringing Devices use dual video streams to capture preview images which allows for a determination of depth information in the scene. This requires two image sensors—a first and a second imaging stage.

Camera

- Primary camera Dual Main: 12 MP
2PD/AF/f1.8/1.28um, Dual
second: 5 MP, BW/FF/f2.4/1.12um

Qualcomm® Snapdragon™ 636
mobile platform

https://www.nokia.com/en_us/phones/nokia-7

The Snapdragon processors in these phones use information from both cameras to unleash new, creative options for your photography. Using dual video streams, the processors can translate the multiple pictures they take into depth information, much like the way your brain perceives depth as it receives slightly different information from your two eyes. And once you have depth information, new features become available:

<https://www.qualcomm.com/news/onq/2015/10/30/snapdragon-dual-cameras-capture-photos-first-adjust-focus-later>

53. The Accused Infringing Devices include a second imaging stage comprising a second lens for capturing a second image of the scene on a second image sensor.



https://www.nokia.com/en_us/phones/nokia-7#buy

Qualcomm® Snapdragon™ 636 mobile platform

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- Primary camera Dual Main: 12 MP
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Qualcomm® Snapdragon™ 636
mobile platform

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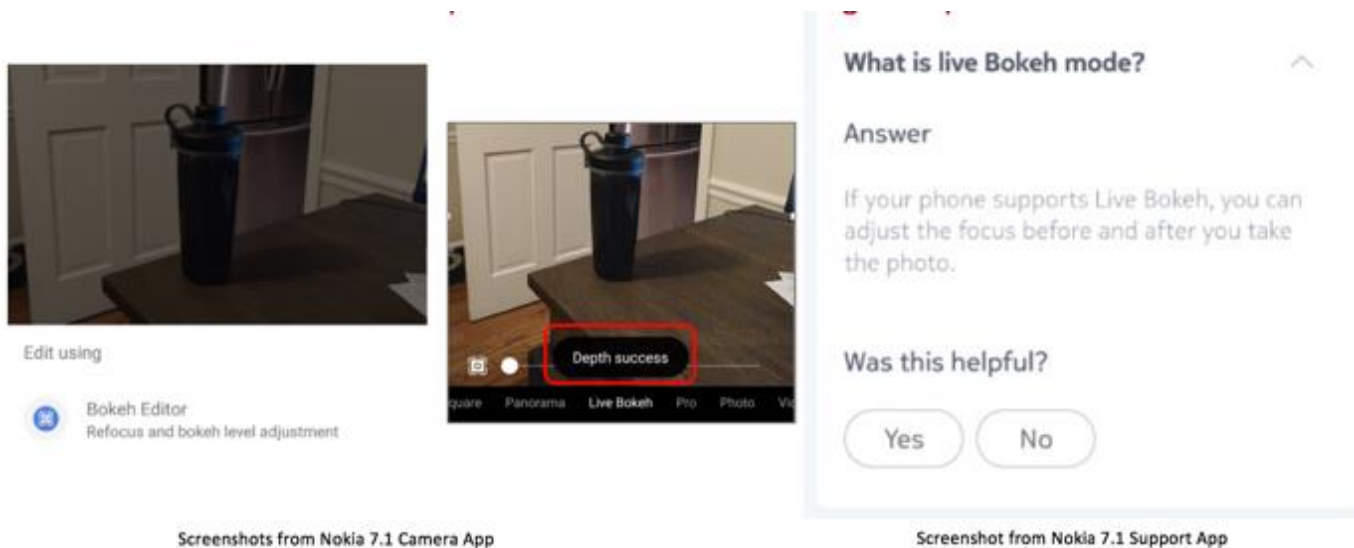
54. The Accused Infringing Devices use information from both cameras (first and second images) to unleash new, create options such as refocus. Refocus (i.e., Bokeh) adjustments are available as a result of the processing stage, during which the two preview images are analyzed to determine different focal points for each camera.

The Snapdragon processors in these phones use information from both cameras to unleash new, creative options for your photography. Using dual video streams, the processors can translate the multiple pictures they take into depth information, much like the way your brain perceives depth as it receives slightly different information from your two eyes. And once you have depth information, new features become available:

- o ReFocus: Snapdragon processors can assign each of the cameras different focal points, so they fire at the same time but capture varying focus and depth information. That way, you can change what's in focus after you capture your photo.

<https://www.qualcomm.com/news/onq/2015/10/30/snapdragon-dual-cameras-capture-photos-first-adjust-focus-later>

55. The Accused Infringing Devices refocus (or Bokeh) analyzes the two sensors' preview images to determine one or more image capture parameters (e.g., appropriate focal positions) for the image sensors to enable bokeh editor to refocus operations after the final image is captured.



56. The Accused Infringing Devices first image sensor uses a first setting of a capture parameter (e.g., focal point unchanged) to capture a third image and the second image sensor

uses a second, different setting of the capture parameter (e.g., focal point changed) to capture a fourth image substantially simultaneously with the third image. The Accused Infringing Devices Snapdragon processor produces an augmented image from at least a portion of both the third and fourth images.

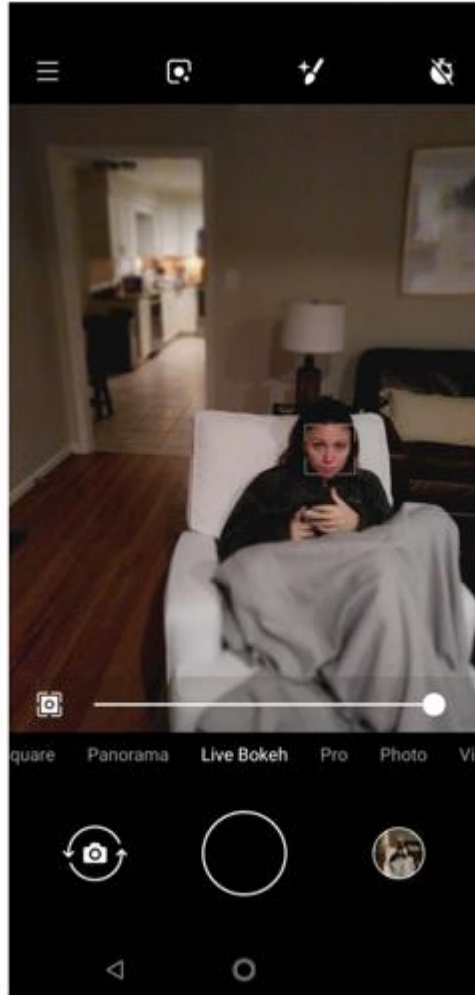


- ReFocus: Snapdragon processors can assign each of the cameras different focal points, so they fire at the same time but capture varying focus and depth information. That way, you can change what's in focus after you capture your photo.

<https://www.qualcomm.com/news/onq/2015/10/30/snapdragon-dual-cameras-capture-photos-first-adjust-focus-later>
https://3gptesummit.qualcomm.com/sites/default/files/pdf/3G1TE2015_Qualcomm-5Jha_AdvancedTechnologies.pdf



https://www.youtube.com/watch?v=U44R_UuWv5U



Screenshot from Nokia 7.1 Camera Application – Live Bokeh Mode



Screenshot from Nokia 7.1 Camera Application – Live Bokeh Mode

57. Unlike a single sensor camera which sequentially generates multiple images at different focal points, the Accused Infringing Devices can take two images (i.e., third and fourth image) at different focal points simultaneously.

Calculating the distance of various points in the scene relative to the position of the camera is one of the important tasks of CV. Depth information can be used for fast focus, object segmentation, refocus, and distance measurement. Acquiring multiple images at different focal points is required to extract depth information. Although a single camera can generate multiple images at different focal points sequentially, a dual-camera can take two images at different focal points simultaneously to eliminate time-based movement in the scene.

<https://www.qualcomm.com/media/documents/files/whitepaper-breakthrough-mobile-imaging-experiences.pdf>


58. The Accused Infringing Devices can change focal position post capture in Bokeh mode as Bokeh mode allows the processor to assign each of the cameras different focal points to capture a third and fourth image to capture varying focus and depth information and change what is in focus after a photo is captured to produce an augmented scene from at least a portion of the outputs of the first sensor and the second sensor.

- ReFocus: Snapdragon processors can assign each of the cameras different focal points, so they fire at the same time but capture varying focus and depth information. That way, you can change what's in focus after you capture your photo.



Use Bokeh mode

If you want to be able to change the focus area of your photo after you have taken it, use Bokeh mode when taking a photo.

1. Tap Camera > Bokeh .
2. Take aim and focus, and tap .
3. Select the photo you just took, you can see it in the bottom right corner.
4. Tap  > Bokeh Editor to edit your photo.

https://www.nokia.com/en_us/phones/support/nokia-7-1-user-guide/use-your-camera-like-a-pro
https://3gltesummit.qualcomm.com/sites/default/files/pdf/3GLTE2015_Qualcomm-SJha_AdvancedTechnologies.pdf

59. HMD has thus infringed and continues to infringe at least claim 1 of the '588 patent by making, using, testing, selling, offering for sale, importing and/or licensing the Accused Infringing Devices.

60. HMD also has infringed, and continues to infringe, at least claim 12 of the '588 patent by actively inducing others to use the Accused Infringing Devices. HMD's users, customers, agents or other third parties who use the Accused Infringing Devices in accordance with the HMD's instructions infringe claim 12 of the '588 patent, in violation of 35 U.S.C. § 271(a). HMD intentionally instructs its customers to infringe through training videos, demonstrations, brochures and user guides, such as those located at: www.nokia.com;
https://www.nokia.com/phones/en_au/support/nokia-7-1-user-guide;
https://www.nokia.com/phones/en_us/nokia-7?gclid=EAIaIQobChMI3L2O-rHS3gIVBttkCh0jogpyEAAYASAAEgL4v_D_BwE&gclsrc=aw.ds;
<https://www.nokia.com/support/>. HMD is thereby liable for infringement of the '588 patent under 35 U.S.C. § 271(b).

61. HMD also has infringed, and continues to infringe, at least claim 12 of the '588

patent by offering to commercially distribute, commercially distributing, or operating the Accused Infringing Devices which are used in practicing the processes, or using the systems, of the '588 patent, and constitute a material part of the invention. HMD knows portions of the Accused Infringing Devices to be especially made or especially adapted for use in infringement of the '588 patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. HMD is thereby liable for infringement of the '588 patent under 35 U.S.C. § 271(c).

62. HMD is on notice of its it infringement based on the data room MPV sent to HMD. HMD is also on notice by no later than the filing of this Complaint and/or service of this Complaint. HMD's acts of infringement of the '588 patent have been willful and intentional under the standard of *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016). Since at least receipt of the data room, HMD has willfully infringed the '588 patent by refusing to take a license and continuing the foregoing infringement. Instead of taking a license to the '588 patent, HMD has made the business decision to "efficiently infringe" the '588 patent. In doing so, HMD willfully infringed the '588 patent.

63. HMD's acts of direct, indirect, and willful infringement have caused and continue to cause damage to MPV and MPV is entitled to recover damages sustained as a result of HMD's wrongful acts in an amount subject to proof at trial.

PRAYER FOR RELIEF

WHEREFORE, MPV, respectfully prays that the Court enter judgment in its favor and against HMD as follows:

a. A judgment that HMD has infringed and willfully infringed the '962 patent;

- b. A judgment that HMD has infringed and willfully infringed the '858 patent;
- c. A judgment that HMD has infringed and willfully infringed the '588 patent;
- d. A judgment that MPV be awarded damages adequate to compensate it for HMD's past infringement and any continuing or future infringement, including pre-judgment and post-judgment interest costs and disbursements as justified under 35 U.S.C. § 284 and an accounting;
- e. That this be determined to be an exceptional case under 35 U.S.C. § 285 and that MPV be awarded enhanced damages up to treble damages for willful infringement as provided by 35 U.S.C. § 284;
- f. That MPV be granted its reasonable attorneys' fees in this action;
- g. That this Court award MPV its costs; and
- h. That this Court award MPV such other and further relief as the Court deems proper.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, MPV demands a trial by jury for all issues so triable.

DATED: November 28, 2018

/s/ L. Charles van Cleef
L. Charles van Cleef TX SB #00786305

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