

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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**SAMSARA, INC.**

**Petitioner**

**v.**

**MOTIVE TECHNOLOGIES, INC.,**

**Patent Owner.**

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**Case IPR2025-00574**

**U.S. Patent No. 11,875,580**

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**PATENT OWNER'S OJECTIONS TO PETITIONER'S**  
**DEMONSTRATIVES**

## **TABLE OF EXHIBITS**

| <b>Ex. No.</b> | <b>Description</b>                                                                                                                                                                                   |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2001           | U.S. Patent No. 11,798,187, “Lane detection and distance estimation using single-view geometry” (Oct. 24, 2023)                                                                                      |
| 2002           | Provisional Application No. 62/975,360, filed on Feb. 12, 2020                                                                                                                                       |
| 2003           | Declaration of Scott Andrews (Revised)                                                                                                                                                               |
| 2004           | Declaration of Hector Ribera                                                                                                                                                                         |
| 2005           | Declaration of Ryan J. Marton                                                                                                                                                                        |
| 2006           | Declaration of Carolyn Chang                                                                                                                                                                         |
| 2007           | Joint Claim Construction and Prehearing Statement under P.L.R. 4-3 in <i>Motive Technologies, Inc. v. Samsara, Inc.</i> , Case No. 24-cv-00902-JD, Appx A, Dkt. 157-1, (N.D. Cal., January 15, 2026) |
| 2008           | Patent Owner’s Demonstrative Exhibit for Oral Hearing (NOT EVIDENCE)                                                                                                                                 |

Pursuant to the Setting Oral Argument of April 29, 2026 (Paper 29), Patent Owner objects to the propriety of Petitioner’s demonstrative submissions of May 21, 2026 (Ex 1088). As outlined in more detail below, demonstrative slides 6, 9, 10, 11, 13, 14, 23, and 24 are improper because having failed to explain its inconsistent claim construction positions between this proceeding and the District Court, Petitioner is using its demonstrative exhibits and the Oral Argument to present new arguments on these issues. The objections below identify with particularity which portions of the demonstratives are subject to objection, including a copy of the objected-to demonstrative slide indicating with a red box the objected-to portion where applicable and provide for each demonstrative slide objected to a statement of the reason for each objection.

1. Demonstrative Slide No. 6

| District Court Claim Constructions |                                                                                                                                                                                                                                                                                     |                                                                            |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Term                               | Samsara's Construction                                                                                                                                                                                                                                                              | Motive's Construction                                                      |
| predictive model                   | plain and ordinary meaning – a model that makes predictions                                                                                                                                                                                                                         | model that predicts values using non-geometric calculation                 |
| camera parameter                   | property of the camera itself                                                                                                                                                                                                                                                       | value(s) associated with one or more operating characteristics of a camera |
| order of steps                     | Step [b] must be performed after step [a]<br>Step [c] must be performed after step [b]<br>Step [d] must be performed after step [b]<br>Step [e] must be performed after step [d]<br>Step [f] must be performed after step [e]<br>Step [g] must be performed after steps [c] and [f] | plain and ordinary meaning                                                 |

EX1086, 9, 12, 15; EX1087, 2, 10, 14.

Petitioner's Demonstrative Exhibit – Not Evidence

Demonstrative slide no. 6 is improper in its entirety because it cites to and includes information from Exhibits 1086 and 1087 regarding Petitioner’s

inconsistent claim constructions positions in District Court proceedings, including “District Court Claim Constructions,” which have not been previously discussed in any paper of record in this proceeding and are therefore “new evidence” as set forth in the Oral Argument Order.

## 2. Demonstrative Slide No. 9

**“predictive model”**

| Samsara's Construction                                                                            | Motive's Construction                                                                      |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Plain and Ordinary Meaning – a model that makes predictions<br><small>Pet. 8, EX1087, 10.</small> | a model that predicts values using non-geometric calculation<br><small>EX1086, 12.</small> |

- The '580 Patent does not define “predictive model.”
- The '580 Patent does not disavow geometric calculations from the scope of the claims.
- The prosecution history does not support Motive's disavowal argument.

Pet. Reply, 3-5; Paper 26.      Petitioner's Demonstrative Exhibit – Not Evidence      9

Demonstrative slide no. 9 is improper to the extent it cites to and includes information from Exhibits 1086 and 1087 regarding Petitioner’s inconsistent claim constructions positions in District Court proceedings which have not been previously discussed in any paper of record in this proceeding.

### 3. Demonstrative Slide No. 10

**The '580 Patent does not disavow geometric calculations.**

 "To constitute disclaimer, there must be a clear and unmistakable disclaimer."  
Thomson v. Sony Computer Entertainment Am. LLC, 669 F.3d 1362, 1366-67 (Fed. Cir. 2012).

➤ **Statements in the '580 patent do not clearly and unmistakably exclude geometric calculations.**

In an embodiment, the neural network is trained to predict lane and horizon key points 308. During testing, image frames are fitted with lane lines and horizon lines based on estimated key points. As described, in some embodiments, human annotators can be used to perform this fitting, as described in the description of FIG. 2. **In other embodiments, a geometric process can be performed to identify lane and horizon lines.** As discussed in previous figures, once the horizon line is determined, downstream processes can use the horizon line to determine the height of a camera and its viewing angle (i.e., road plane normal) with respect to the ground. Further, from these, downstream processes can determine the road-plane normal vector.

EX1001, 8:6-19.

requests and process the request body (i.e., the video). **In an embodiment, the camera initialization service 232 detects lane and horizon lines in the video using a predictive model, such as a deep learning or other AI model.** In an embodiment, process 206 can comprise inputting the video into a predictive model, **such as a CNN or other type of deep learning model to identify lane and horizon markers in a given video file automatically.** Details of this type of predictive model are provided in the description of FIG. 6 and are not repeated herein. Additionally, examples of such models are provided in FIGS. 3A and 3B. In general, **the model can output a set of lane and horizon lines identified by key points or markers.**

EX1001, 5:22-37.

Pet. 3, POR, 3, Sur-Reply, 2. Petitioner's Demonstrative Exhibit – Not Evidence. 10

Demonstrative slide no. 10 is improper to the extent it include citations to claim construction related case law never before cited or discussed by Petitioner in any paper of record and therefore constitute new or additional briefing raised in the demonstratives for the first time. Further, demonstrative slide no. 10 includes a citation to Exhibit 1001, 5:22-37, to support arguments about disclaimer of claim scope never presented before in any paper of record.

### 4. Demonstrative Slide No. 11

**The '580 Patent does not disavow geometric calculations.**

➤ **Relaxing requirements of having three lane lines ≠ disavowing geometric calculations altogether.**

For example, the use of the neural network can **relax constraints that the vehicle needs to be driving on a highway having three or more lane lines.** Indeed, just two lane-lines with a known lane-width would be sufficient for camera initialization. That is, since the model is capable of predicting the horizon line directly, **previous requirements of having three lane lines in frame (e.g., to geometrically calculate a horizon line) can be relaxed.**

EX1001, 8:39-46.

➤ **The '580 Patent's title of the invention uses geometry.**

(54) CAMERA INITIALIZATION FOR LANE DETECTION AND DISTANCE ESTIMATION USING SINGLE-VIEW GEOMETRY  
EX1001, (54).

 "We have used the title of a patent to aid in claim construction."  
Ruckus Wireless, Inc. v. Innovative Wireless Solutions, LLC, 824 F.3d 999, 1003 n.2 (Fed. Cir. 2016).

Pet. Reply, 3-4. Petitioner's Demonstrative Exhibit – Not Evidence. 11

Demonstrative slide no. 11 is improper to the extent it includes citations to claim construction related case law never before cited or discussed by Petitioner in any paper of record and therefore constitute new or additional briefing raised in the demonstratives for the first time.

## 5. Demonstrative Slide No. 13

**The prosecution history does not support Motive's construction.**

**REASONS FOR ALLOWANCE**

Prior art was found for the claims as follows:

Re. Claim 1, *Kwantl et al.*, [US Pub. No.: 2019/0034740 A1] discloses:

... .

identifying one or more lines in the video using a predictive model (the output of a lane feature detection process include lane models representing the detected lanes or features, and associated prediction confidence values indicating a probability that the processed features of the input image are predictive of the detected lane features) 0046), the one or more lines including a horizon line (determining a horizontal line in the image at which a maximum number of the one or more extended road lanes crosses over a minimum horizontal extent of the horizontal line (Abstract)).

Whereas the Examiner maintained the rejection for Step 1B, the Examiner did not maintain the rejection for:

- Steps 1C and 1G
- Step 1D
- Step 1E

**No Disclaimer**

"[I]t is not clear from the record that allowance was based on this understanding, or that the patentee disclaimed this claim scope."

Convolve, Inc. v. Compaq Computer Corp.  
812 F.3d 1213, 1322 (Fed. Cir. 2016)

EX1002, 0169-70, Pet. Reply, 4-5.  
Petitioner's Demonstrative Exhibit – Not Evidence

Demonstrative slide no. 13 is improper to the extent it includes citations to claim construction related case law never before cited or discussed by Petitioner in any paper of record and therefore constitute new or additional briefing raised in the demonstratives for the first time.

## 6. Demonstrative Slide No. 14

**The Petition argued only that step [1C] does not need to occur before step [1F].**

**Sur-Reply**

Similarly, with respect to the order of the steps in claim 1, while in the Petition Samsung argued that “neither the claims themselves, nor the specifications require a specific order for this element [1C]” (Pet., p.26), in district court Samsung argues that “[t]he steps of the claim must be performed in the following order ... Step [c] must be performed after step [b].” EX\_2007, p.4-5. These positions are diametrically opposed.

... .

downstream. Reply, pp.18-19. Further, in the Petition Samsung argued that the claimed steps did not need to be performed in any order. Pet., p.26. Thus, this too is contrary to Samsung’s positions on Reply.

Sur-Reply, 5, 22.

**Petition**

4. [1C] “computing at least one camera parameter based on the one or more lines.”

Choe discloses this element. EX1003, ¶98.

Choe computes camera parameters (e.g., calibration factors or parameters for calibrating the camera’s pitch, yaw, and roll) based on the horizon line and/or the lane lines. EX1003, ¶98. Choe states: “[a] first calibration factor or first correction value is determined for calibrating a pitch angle of the camera based on a difference between the initial horizon line and the updated horizon line.” EX1005, ¶[0015]. Choe also computes other parameters based on the lane lines. EX1005, ¶[0014] (“A user can calibrate any of the sensors such as a pitch angle, a yaw angle, and/or a roll angle...”), [0049], [0052]-[0053], [0057], [0059], FIG. 7.

PO may allege that Choe computes these camera parameters after the manual calibration. Even if true, Choe still satisfies [1C] because the computation is nonetheless “based on the one or more line lines.” EX1003, ¶98. And neither the claims themselves, nor the specification require a specific order for this element.

Pet., 26.

Demonstrative slide no. 14 is improper in its entirety because it includes arguments regarding Petitioner’s inconsistent positions with respect to the order of the steps of claim 1 which have never been made before in any paper of record.

## 7. Demonstrative Slide No. 23

**Choe discloses Step 1C:  
“computing at least one camera parameter based on the one or more lines;”**

**Choe**

In response to a first input signal (e.g., an up or down arrow key) received from an input device (e.g., keyboard, joystick, voice interactive command), a position of the horizon line is updated based on the first input signal and a position of at least one of the lane lines is updated based on the updated horizon line. The input signal may represent an incremental adjustment for adjusting the position of the horizon line. A first calibration factor or first correction value is determined for calibrating a pitch angle of the camera based on a difference between the initial horizon line and the updated horizon line.

[0017] According to one embodiment, in response to a second input signal received from the input device (e.g., left or right arrow key), the position of at least one of the lane lines is modified based on the second input signal. The positions of the lane lines are updated on the second image displayed on the second display area. A second calibration factor for calibrating a yaw angle of the camera is determined based on the modification of the positions of the lane lines. Similarly, in response to a third signal received from the input device (e.g., shift-left or shift-right arrow key), the lane lines are modified and a third calibration factor for calibrating a roll angle of the camera is determined.

EX1005, [0015], [0017]; Pet., 26; Pet. Reply, 10.

**Dr. Darrell**

43. Based on determining the lines, Choe then predicts camera parameters, such as the pitch angle of the camera. Choe, [0015]. For example, “[a] first calibration factor or first correction value is determined for calibrating a pitch angle of the camera based on a difference between the initial horizon line and the updated horizon line.” Choe, [0015]. Choe also specifies that the system uses the visualizer to manually calibrate other camera parameters, including the camera’s “yaw angle, and/or a roll angle.” Choe, [0014].

EX1003, [0043]; Pet., 10; Pet. Reply, 11-12.

**Mr. Andrews**

Q Do you agree that pitch, yaw, and roll are examples of camera parameters?

A They’re some examples, yes.

EX1061, 10-13; Pet. Reply, 11-12.

**Neither party alleges that Step 1C must occur before Steps 1D, 1E, 1F.**

Petitioner’s Demonstrative Exhibit – Not Evidence Pet., 26-29; EX1086, 15-17; EX1087, 14-18; Paper 26.

Demonstrative slides 23 is improper to the extent it includes cites to Exhibits 1086 and 1087 and includes arguments about the construction of the order of the

steps that are neither in the Petition nor previously addressed by Petitioner in any paper of record.

## 8. Demonstrative Slide No. 24

**Choe discloses Step 1C:**  
"computing at least one camera parameter based on the one or more lines;"

| Samsara's Construction        | Motive's Construction                                                      |
|-------------------------------|----------------------------------------------------------------------------|
| property of the camera itself | value(s) associated with one or more operating characteristics of a camera |

EX1087, 2. EX1086, 9.

**Prosecution History**

Applicant notes that the specification is clear that: **a camera parameter is a property of the camera itself** ("e.g., height, viewing angle, road plane normal, etc."), ¶ 5, and 6-7) and not a property of a lane line.

EX1002, 0146; Pet. Reply, 4.

**Dr. Darrell**

60. Motive argues that Choe does not compute a "camera parameter" because Choe only computes "calibration factors." POR, 18. Motive's argument is flawed because Choe's "calibration factors" are camera parameters. **Choe's calibration factors are camera parameters because they relate to the camera itself and are associated with one or more operating characteristics of the camera.**

61. After Choe computes calibration factors, **Choe then uses the calibration factors to compute the camera's pitch, yaw, and roll.**

EX1085, [0060]-[0061]; Pet. Reply, 11.

Paper 26. Petitioner's Demonstrative Exhibit - Not Evidence. 24

Demonstrative slides 24 is improper to the extent it includes cites to Exhibits 1086 and 1087 and includes arguments about the construction of the term "camera parameters" that are neither in the Petition nor previously addressed by Petitioner in any paper of record.

The parties have met and conferred regarding these objections but were unable to reach agreement. Patent Owner respectfully requests ruling on these objections.

Respectfully submitted,

Date: May 21, 2026

By: Hector Ribera/

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## **CERTIFICATE OF SERVICE**

The undersigned certifies that on May 21, 2026, a complete and entire copy of this PATENT OWNER'S OJECTIONS TO PETITIONER'S DEMONSTRATIVES was provided via electronic mail (by consent) to the Patent Owner by serving the correspondence address identified in the Mandatory Notices:

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