

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.

Petitioner,

v.

INTELLECTUAL VENTURES II LLC

Patent Owner.

Case No. IPR2025-00340

U.S. Patent No. 6,894,639

**PATENT OWNER'S AUTHORIZED SUR-REPLY TO PETIONER'S
PREINSTITUTION REPLY**

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I. Petitioner’s Overly Broad Reading Ignores the Claim Language and the Specification’s Definition of “Target Specific Feature Information”

The disputed claim language provides in pertinent part:

calculating data statistics from said data and using said data statistics to select *target specific feature information to distinguish specific targets from background clutter ...*

Petitioner mischaracterizes Patent Owner’s position, and overlooks both the grammatical structure of the claim and the specification’s teaching that the *target specific* feature information is learned for a particular target class.

A. The Claim Language Requires That Feature Information Be Specific to a Target Class, Not Merely Used Generically in a Target-Clutter Distinction

Independent claim 1 requires the system to use data statistics “to select *target specific* feature information,” then to “generate,” “extract,” and ultimately “use” that *target specific* information to distinguish *specific targets* from clutter. The disputed claim language uses the term “*specific*” two times: initially, the claim language uses “*target specific*” as an adjective that modifies “feature information,” and a few words later, uses the term “*specific*” a second time as an adjective that modifies “*targets*.” This claim language as a whole requires that the *feature information itself be specific to a target* (or target class), and that such *target specific feature information* serve to distinguish *specific targets* from the background. Patent Owner’s position is not that “target specific” feature information in claim 1 is used to distinguish one type of target from another type of target, but rather that the *target*

specific feature information is used to distinguish *specific targets* (i.e., the ones associated with the *target specific* feature information) from the background.

B. The Specification Defines “Target Specific” as Features Learned from Target-Class Statistics, Not Generic Filters

The Summary of the Invention states that the system “uses said data statistics to select target specific feature information ... (e.g., contrast-based and texture-based) ... using ... one-class, two-class, or multi-class classification procedures.” EX1001, 5:19-30. The Detailed Description then explains that the “feature selection module ... uses target statistics ... to select and generate features specific to a given target class.” EX1001, 7:22-26. These passages describe a learning process (e.g., Generalized Hebbian Analysis) that tailors background filters to “the characteristics of a specific target or target class.” Nowhere does the patent equate “*target specific*” information to *untailored information generic to all targets*, such as that supplied by off-the-shelf edge or variance filters.

C. “Contrast-Based or Texture-Based” Features Must Still Be Tailored to a Target Class to Satisfy the “Target Specific” Limitation

Petitioner’s reliance on the statement that feature information “may be contrast-based or texture-based” is unavailing. Reply, 1. The patent uses those terms only as illustrative categories; it then immediately reiterates that the system tailors whatever filters it chooses to the target class via Hebbian learning. A generic filter unchanged across all objects (i.e., those in Barnard) may be “contrast-based,” but it

is not “target specific” as required by the claims.

While the Reply criticizes (albeit incorrectly) Patent Owner’s construction, neither the Petition nor the Reply articulates how Petitioner proposes to interpret the claim language. Specifically, Petitioner nowhere explains how the plain meaning of the claim language -- which requires selection of “*target specific feature information to distinguish specific targets from background clutter*” -- is met by selection of a *generic feature set* that is applied across all targets to distinguish them from the background. The inability of Petitioner to articulate how the plain meaning of the claim language aligns with the mappings in the Petition underscores the weakness of Petitioner’s position.

Petitioner’s claim differentiation argument is similarly unavailing. Once the “target specific” feature information is selected, claim 1 requires that such target-specific feature information be used to distinguish specific targets (i.e., the ones associated with the target specific feature information) from background. Claim 7 adds an additional requirement that the same target specific feature information be used to distinguish different target classes from each other. Nothing about Patent Owner’s reading of the claims violates the doctrine of claim differentiation.

II. The One-Class Embodiment Fully Supports—and Is Fully Consistent With—Patent Owner’s Construction of “Target Specific Feature Information”

Petitioner maintains that requiring “target specific feature information” to be

statistically derived from examples of the target class would exclude the patent's one-class embodiment. Reply, 1-2. Petitioner is mistaken, because the one-class embodiment explicitly relies on filters that are learned from target-only data and are therefore “target-specific.”

The '639 patent twice explains that its learning module “uses target statistics ... to select and generate features specific to a given target class,” and that those features may then be employed in “one-class, two-class, or multi-class classification procedures.” EX1001, 5:26-31, 48-50; 10:26-30 (module 10 “uses target statistics ... to select and generate features specific to a given target class”). In the one-class scenario, the system trains on image patches that contain the target (for example, sea-skimming missiles) and computes principal components of those patches. During deployment, the classifier applies those missile-specific filters to every candidate window in the scene and decides whether the window contains a missile or clutter. Nothing in that workflow conflicts with Patent Owner's position; indeed, it exemplifies it. The feature information is derived solely from missiles, making it “target-specific,” and it is then used to distinguish specific targets (missiles) from clutter—precisely what claim 1 requires.

III. Petitioner Mischaracterizes Barnard's Disclosure and Fails to Show That It Teaches Target-Specific Feature Information as Claimed

Petitioner's assertion that Barnard teaches “target specific feature information to distinguish specific targets from background clutter” does not

withstand scrutiny. Barnard does not select features that are specific to a target or target class, nor does it use such target specific information to discriminate between specific targets and background clutter. Instead, Barnard applies fixed, generic filters—such as band-pass and matched filters—to analog signals that have already undergone background suppression. The remaining signal is then digitized and subjected to a uniform threshold. At no point does Barnard describe the selection of feature information associated with a specific target (or target class)—such as missiles—as required by claim 1.

Petitioner cites Barnard’s statement that “a selection of features can usually be found in which it is possible to effectively separate target objects from background objects.” (EX1005 at 5:13–17). Missing from this statement is any disclosure that the selected features are “target specific.” Rather, this statement is consistent with Barnard’s use of features generic to all targets to separate target objects from background clutter. In any event, Barnard does not explain what those “features” are, how they are derived, or how they are “target specific.” Such a general aspiration cannot substitute for the target specific feature selection process described and claimed in the ‘639 patent. As the Federal Circuit has made clear, high-level statements of capability do not satisfy specific claim limitations. See *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1360–61 (Fed. Cir. 2019).

Moreover, Barnard’s architecture precludes it from meeting the claim’s

requirement to distinguish targets from background clutter using “target specific feature information.” Barnard applies analog filtering that suppresses background frequencies before digitization, meaning the background is no longer present by the time any feature-based processing could occur.

Petitioner’s reliance on Barnard’s Figure 2 also misses the mark. Reply, 3-4. While the figure shows some bright spots (such as a missile or point source) exceeding a detection threshold and others (such as a seagull or wave crest) not, all are subjected to the same static filtering and thresholding. The fact that some signals pass and others fail does not mean the system uses target-specific features; it simply reflects variation in signal intensity. There is no disclosure in Barnard of tailoring features to specific targets. Petitioner’s argument, if accepted, would reduce “target specific” to mere happenstance. Interpreting “target specific feature information” as any generic filter that sometimes separates a target from background would effectively read the term “target specific” out of the claims.

IV. Petitioner’s Inconsistent Claim Construction Positions Undermine the Credibility of Its Arguments and Expert Testimony

Petitioner’s contention that it “explicitly explained” that it was taking inconsistent claim construction positions in the Petition staggers the imagination.

The Petition stated:

Petitioner submits that, for the purposes of this proceeding and the grounds presented herein, no claim term requires express construction. Petition, 10.

This statement does not expressly (or even implicitly) explain that Petitioner is taking inconsistent claim construction positions. Nor do the Petition's footnotes stating that "Petitioner reserves the right to raise challenges under 35 U.S.C. § 112 in other forums" (Petition, 23, n. 3 and 36, n. 4) "explicitly explain" that Petitioner is taking inconsistent positions. Reserving the right to take inconsistent positions is not equivalent to actually taking inconsistent positions. What happened here is plain: Petitioner tried to "pull a fast one" and got caught doing so. Although Petitioner notes that § 112 issues cannot be raised in an IPR, that procedural limitation does not excuse the underlying inconsistency, or the Petition's failure to identify or explain it.

The PTAB has made clear in cases such as *Cambridge v. Sfara* (IPR2024-00952) (informative) that petitioners asserting different claim constructions across proceedings must acknowledge and justify the divergence. Petitioner does neither. It simply inserts a footnote reserving the right to raise § 112 arguments elsewhere while offering no explanation for how or why its plain-meaning interpretation here can be squared with its indefiniteness theory in court. The Board should take this inconsistency into account when assessing Petitioner's arguments and the weight to afford its supporting evidence, particularly in view of 37 C.F.R. § 42.104(b)(3) and the principle that a party may not strategically shift its claim interpretation to suit its forum.

Respectfully submitted,

Dated: July 25, 2025

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CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a copy of the foregoing **PATENT OWNER'S AUTHORIZED SUR-REPLY TO PETITIONER'S PREINSTITUTION REPLY** was served via email (as consented to by counsel) on July 25, 2025 to lead and backup counsel of record for Petitioner as follows:

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