

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PALO ALTO NETWORKS, INC.,

Petitioner,

v.

QOMPLX LLC,

Patent Owner.

Case No. IPR2026-00364

U.S. Patent No. 12,301,627

**PETITIONER'S REPLY TO PATENT OWNER'S PRELIMINARY
RESPONSE**

I. THE POPR RESTS ON THE FALSE PREMISE THAT THE PETITION'S MAPPING DEPENDS ON EQUATING STOKES'S DISCLOSED EVENTS WITH THE CLAIMED RELATIONSHIPS

The Petition explains the role of, and distinction between, events, event data, and relationships in the Stokes system. While Stokes's graph edges are generated from event data and represent events, they also correspond to relationships between the involved entities. Stokes's event data identifies source/destination entities and connection or logon event timestamps, and its network graph construction module uses that data to generate graph edges connecting entity-nodes. Pet., 21–25; EX1004, [0025–26], [0037–38]. Thus, Stokes uses event data to identify entities connected by connection or logon events and represents those event-derived relationships as edges, consistent with the express description of edges as “connection relationships.” EX1004, [0026].

That mapping matches the '627 patent, where “the relationship between two nodes makes up an edge” (EX1001, 7:45–49); event data is used to “[p]roduce a visualization of physical and logical relationships” (id., Fig. 11; see also id., 24:2 14); and the graph visualization represents “physical or logical connections between [nodes] as edges” (id., 28:15–19). See also id., 23:34–54; POPR, 11 (“The claims ... contemplate using event data to identify relationships.”).

II. THE POPR ATTEMPTS TO IMPROPERLY NARROW THE CLAIMED “RELATIONSHIP”

The claims require no relationship label, identification of a relationship type, or particular duration. Nor are “event” and “relationship” mutually exclusive: event data describing an interaction may identify a relationship without every relationship reflecting an event. Stokes’s event data reflects interactions such as a computer connection or user logon. EX1004, [0037–38]. The ’627 patent confirms that a connection may identify a relationship: it updates a CPG “[w]hen a new connection is detected,” and Figure 22 depicts a “HasSession” relationship as an edge reflecting that one device “has connected” to another. EX1001, 25:26–30, 28:51–58, Figs. 16, 22. PO’s cited dictionary aligns with this mapping because Stokes’s edges reflect entities’ “state of being related or interrelated.” EX2004, 1.

III. THE POPR WRONGLY LIMITS THE CLAIMED ATTACK PATHS TO WHOLLY PROSPECTIVE ATTACKS

The POPR argues that claim 1’s attack path analysis exclusively identifies “potential exposure.” POPR, 26–31. The intrinsic evidence refutes that categorical restriction. The dependent claims confirm that the attack path analysis need not be prospective, reciting event flows containing an “anomalous event” (claim 2) and identifying a “point of origin” (claim 3). The specification likewise describes traversal of a graph backward from an “identified anomaly” to determine its event dependencies, starting conditions, and point of origin. EX1001, Figs. 31–32; *id.*, 22:5-7 (“potential (or actual) attach [sic] paths”), 22:19-42 (traversing to “determine

a point of origin” “for an identified event anomaly”). And claim 18 lacks the “could be involved in an attack” language on which PO relies. EX1001, cl. 18.

The prosecution history further undercuts PO's attempts to limit the claimed attack paths to only “potential” attacks. An Examiner's amendment removed “potentially” from claim 1 “to avoid ambiguity” and removed “possible” from claims 2–3. EX1002, 246/290; *id.*, 274–77/290 (replacing “can potentially be accessed” with “can be reached”). And reference-specific remarks did not broadly disclaim attack path analysis merely because such analysis begins with evidence of compromise or a compromised node. POPR, 27–30. Applicant instead distinguished Neil and Altman based on how they purportedly identify attacks: Neil statistically analyzes the union of anomalous edges created during an attack, while Altman uses temporal ordering to reconstruct message propagation. EX1002, 237–38/290.

Regardless, Stokes meets the claims even under PO's narrow construction because its traversal identifies “potential malicious lateral movement paths” and “possible lateral movement” into or out of a compromised node by evaluating multiple inbound and outbound graph paths. EX1004, [0020] (emphasis added), [0028] (emphasis added), [0047]; Pet., 30–33. Rather than merely reconstructing a single path known to have been traversed, Stokes evaluates candidate paths, assigns path-rate scores, and identifies rare paths “more likely to correspond to malicious lateral movement.” *Id.*, [0044], [0047], [0058]; Pet., 10, 13, 36–38.

Petitioner's Preliminary Reply
U.S. Patent No. 12,301,627

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Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on September 9, 2026, true and correct copies of the foregoing document and supporting materials were served in its entirety at the following email addresses:

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