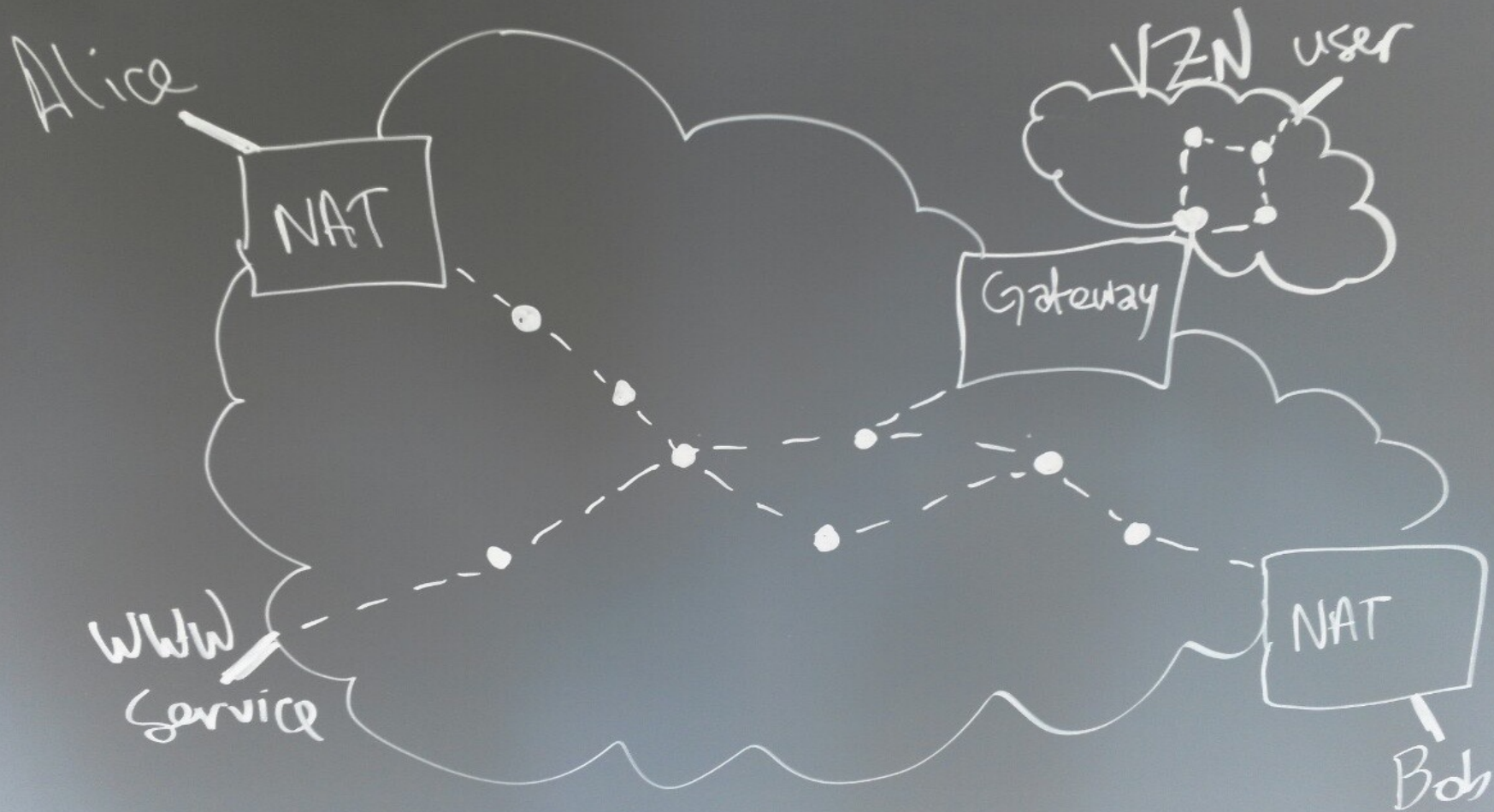Collaborative Research Proposal: an In-Band Traceroute Service

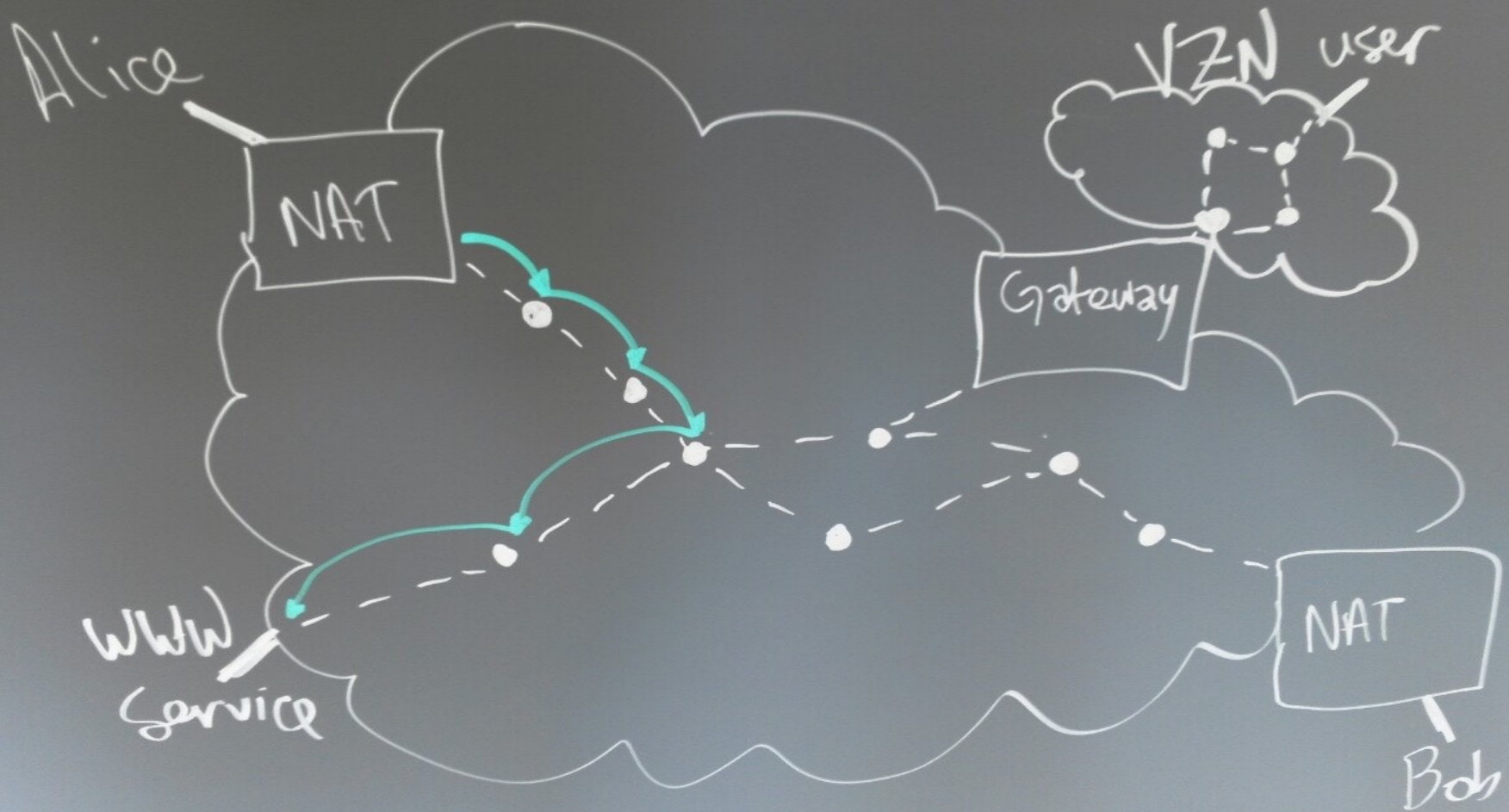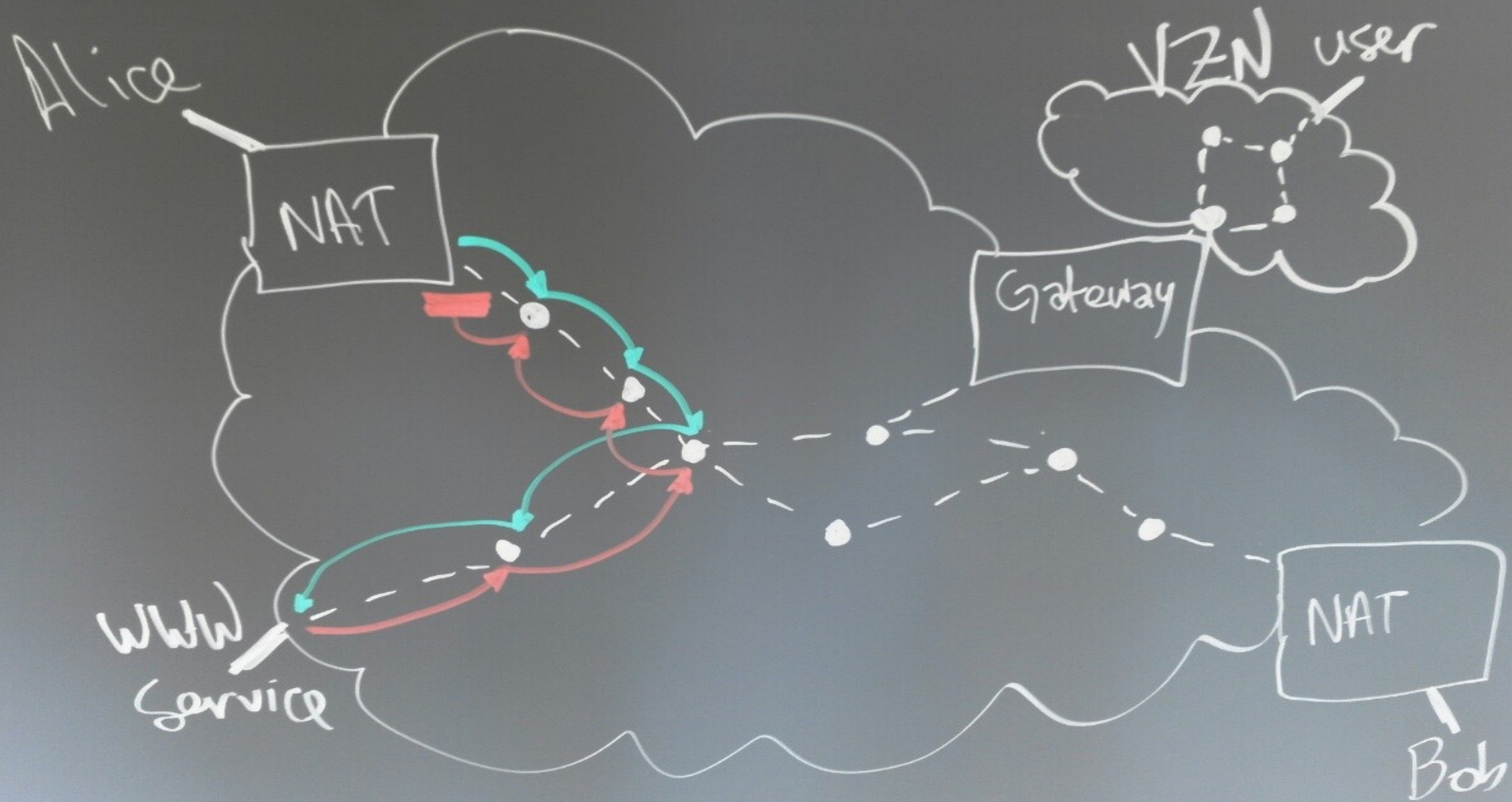Dave Plonka plonka@akamai.com

Inband Traceroute

The challenge: Middleboxes often block traceroute probes or response to them, leaving some routers and paths undiscovered.

Alice

NAT

WWW
Service

VZN user

Gateway

NAT

Bob

Inband Traceroute: Technique

Experimental technique: Perform an "inband traceroute" in which the traceroute probes masquerade as typical packets in an existing or dedicated session "connected" to a service.

Initially, we propose implementing an "inband traceroute" service on dedicated or cloud web server(s) for on-demand testing from arbitrary networks and clients, *e.g.,* broadband hosts and mobile user equipment.

Evaluation: Perform a concurrent traceroute (or tracebox? trace) in parallel, between the same hosts as a basis to compare reachability and discovered routers and path characteristics.
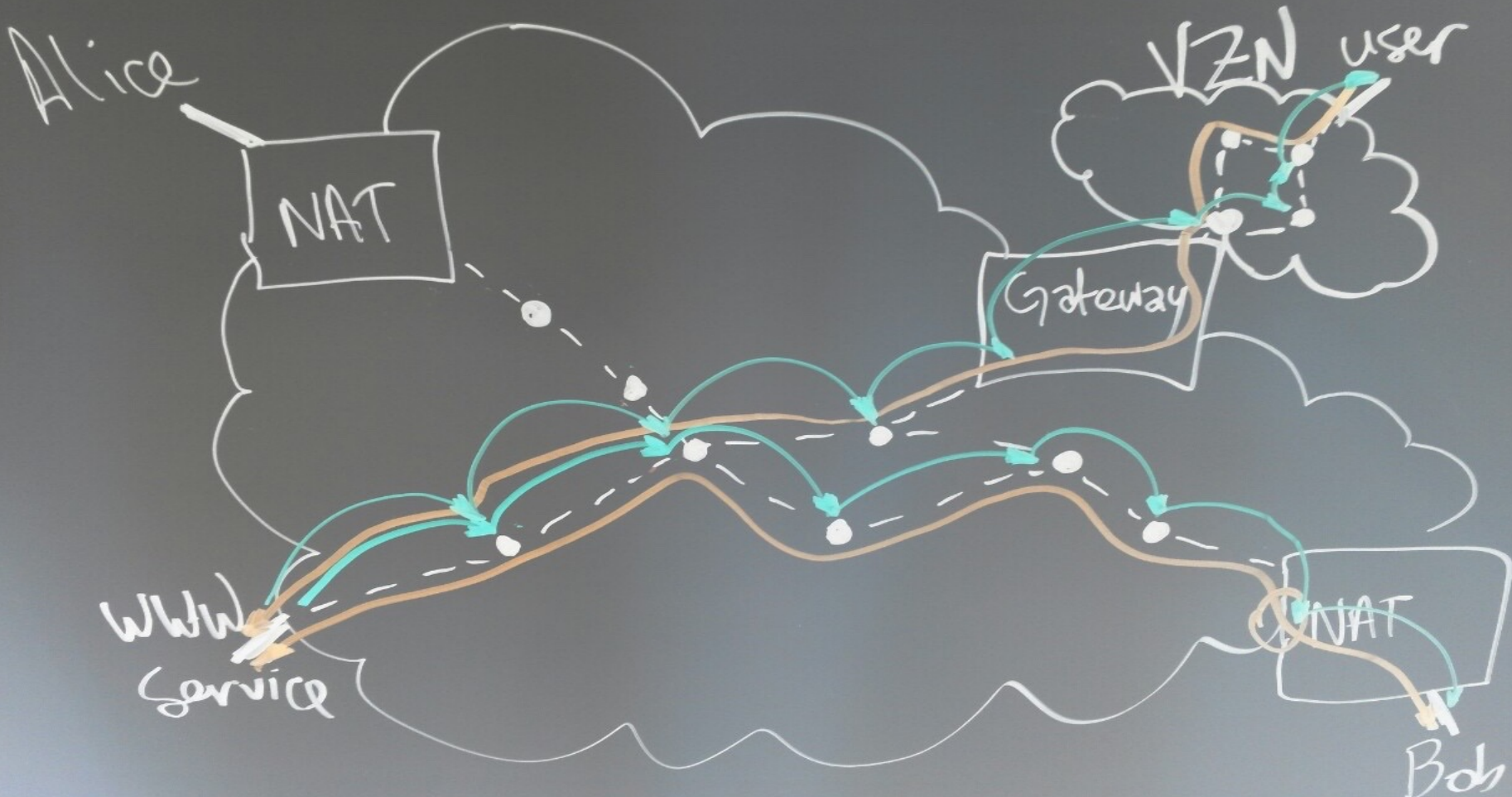
Inband Traceroute: Proposal

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Inband Traceroute: Evaluation

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Inband Traceroute: Strawman

One conception is that the service, e.g., https://intrace.example.org, would display the in-band and any other traceroute while it's executing to the user. Perhaps the result will be available there in some machine-friendly format, e.g., JSON.

The service will operate the inband traceroute component, e.g., perhaps a modified version of https://github.com/robertswiecki/intrace, and collect the results. Subsequent analysis results will be delivered to the community.

The service's main index page would load a javascript document from a common where we (Akamai and/or the HOPS community) would maintain it, so that additional servers could be deployed by community participants.

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Inband Traceroute: Questions? Comments?

How best to attract clients?

Can this be done with an online ad campaign?

Interested potential collaborators?