

Enhancing LEO Internet Providers Telemetry with User-Initiated Active Measurements

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How can user-initiated active measurements enhance LEO internet telemetry?

Motivation

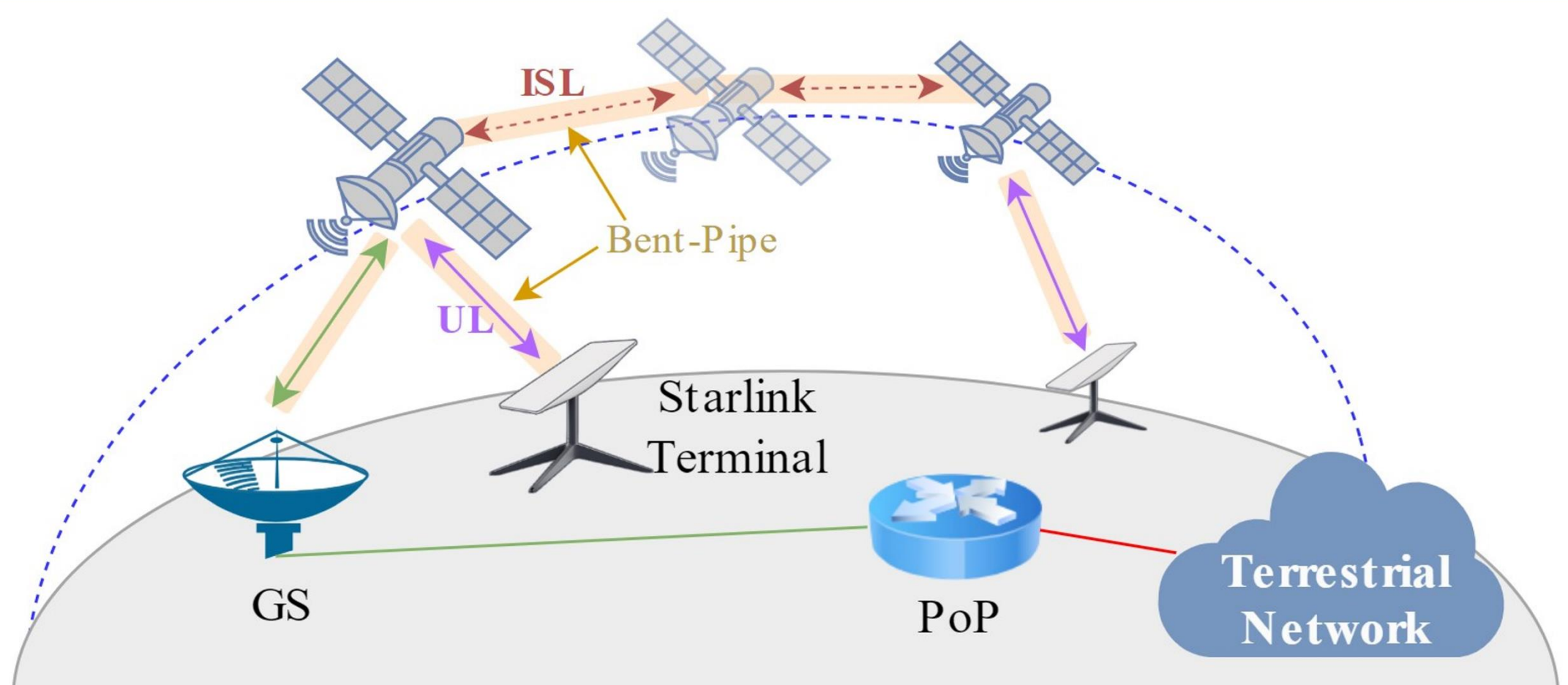
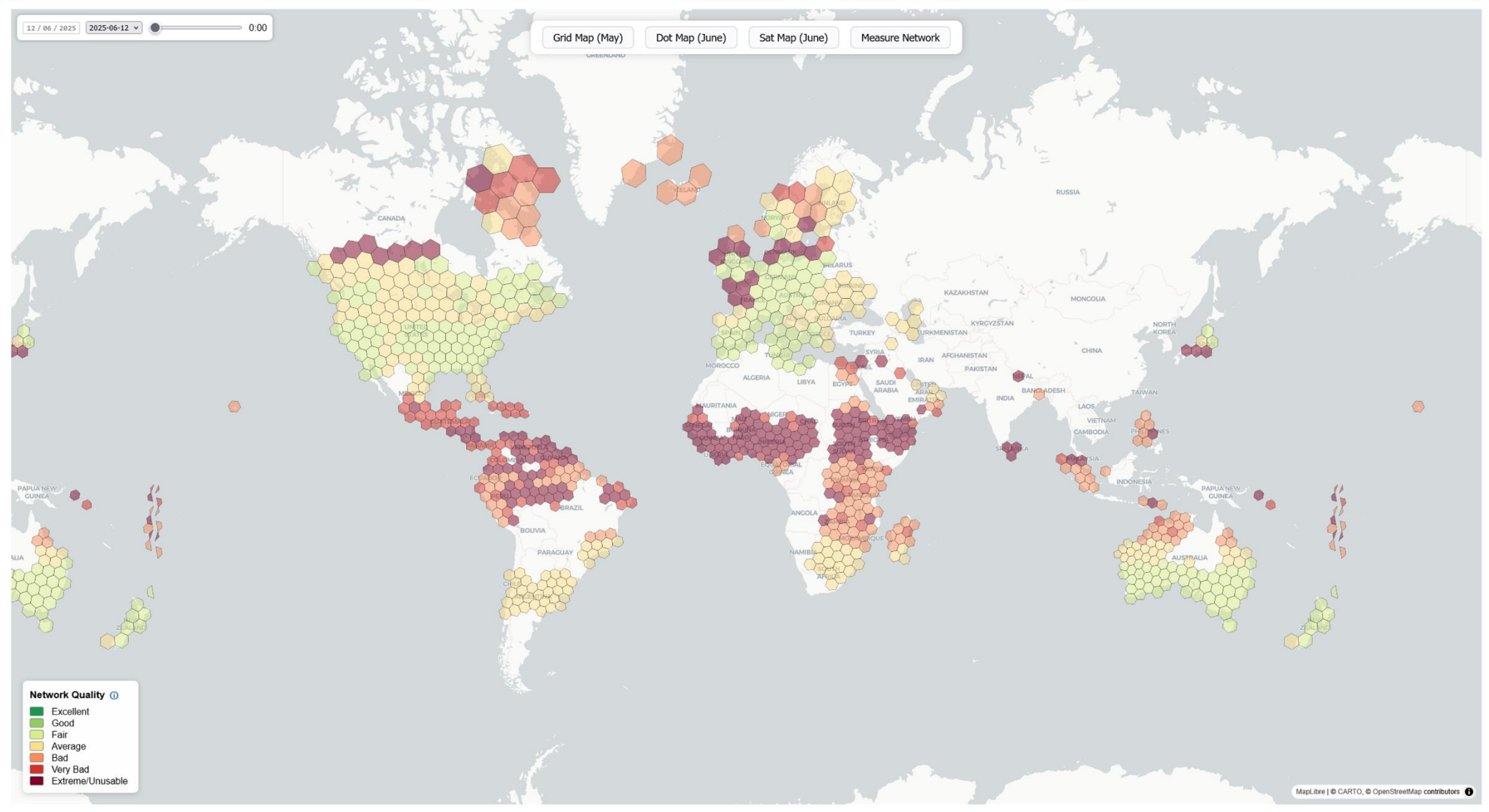


Figure 1. Starlink architecture. Reproduced from Nitinder Mohan et al., "A Multifaceted Look at Starlink Performance," in Proceedings of the 2024 Web Conference (WWW'24), ACM, 2024. <https://doi.org/10.1145/3589334.3645328>. © 2024 Copyright held by the owner/author(s). Licensed to ACM.

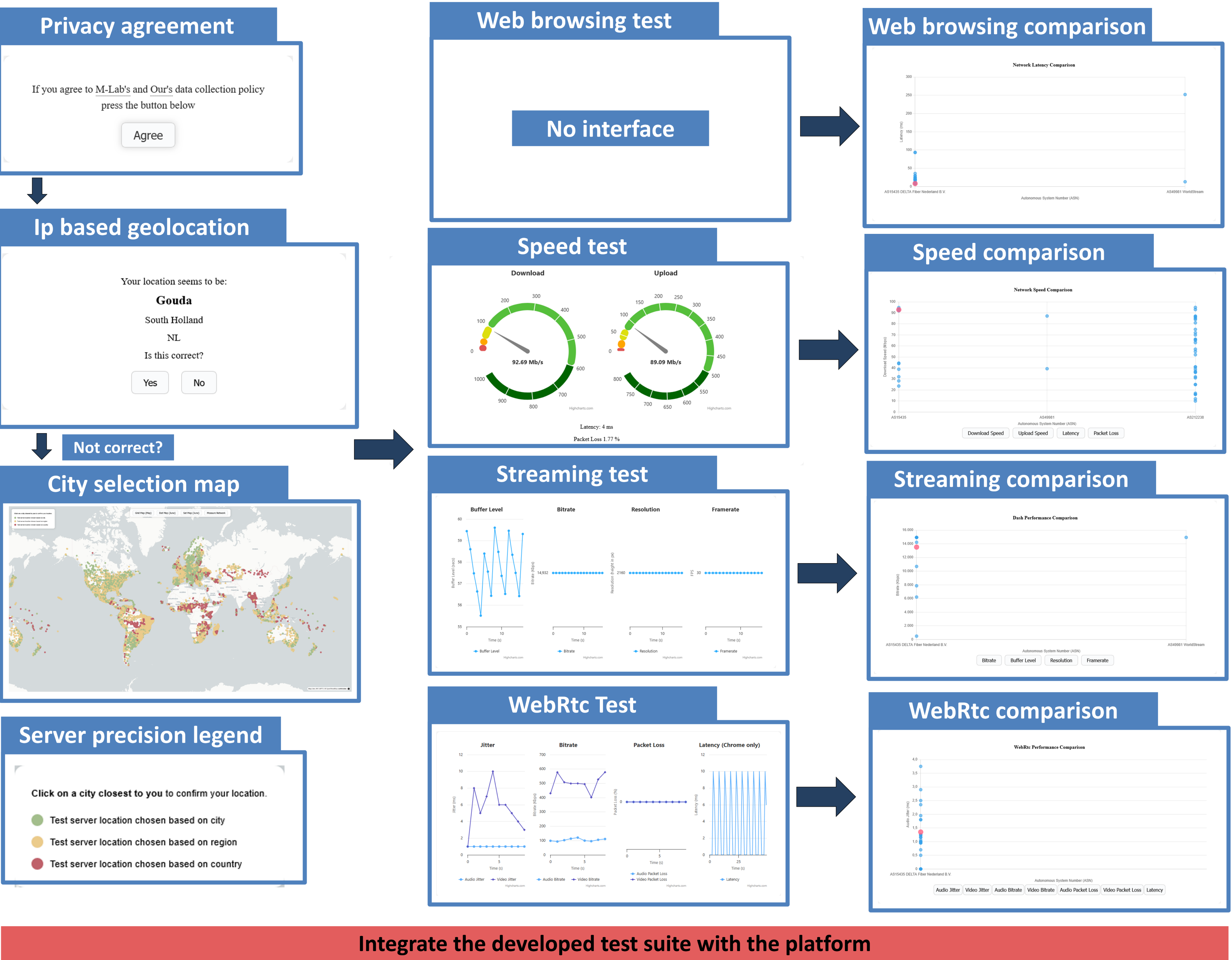
Goal: Enable multi-layered comparison between networks

Integration goal

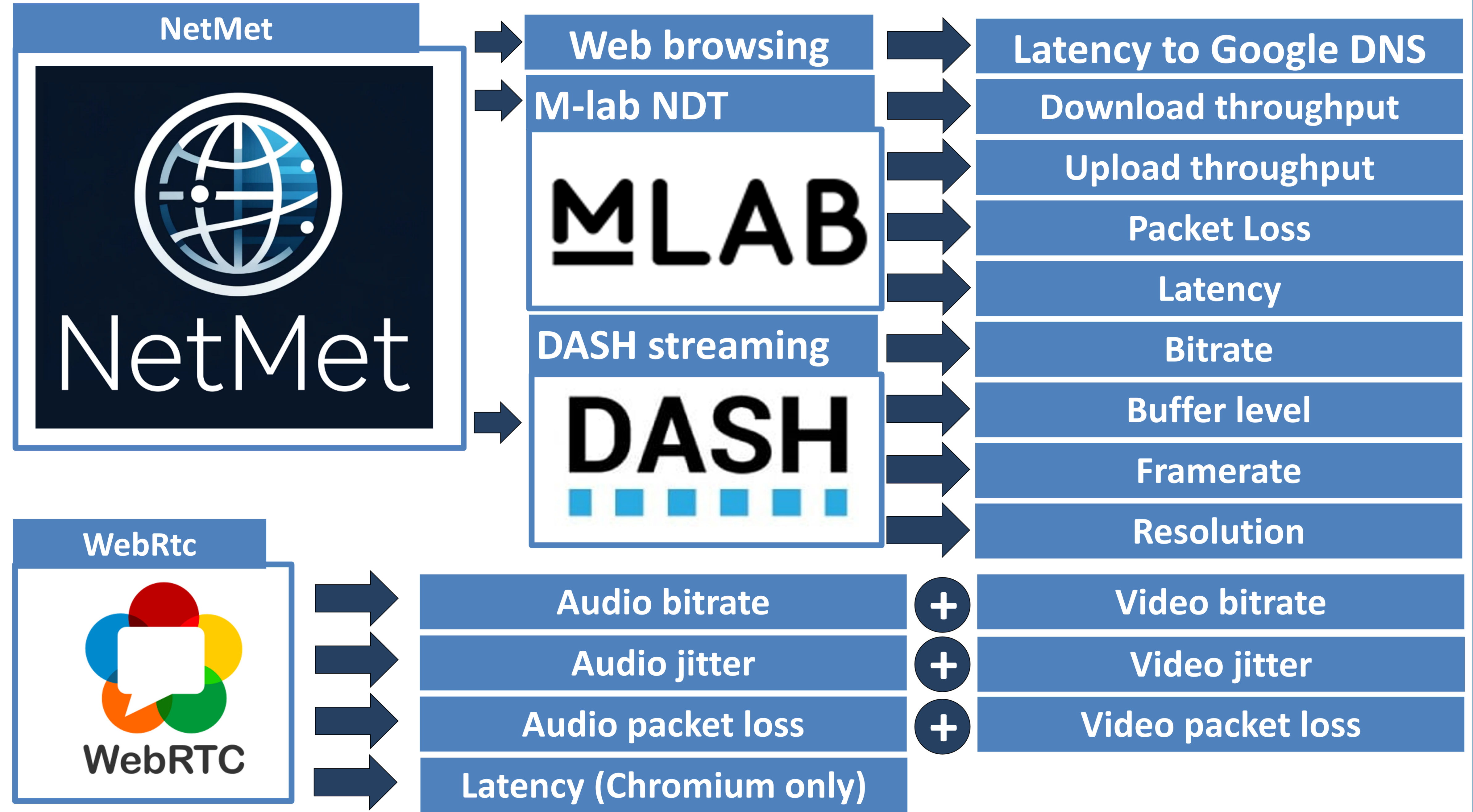


Unified platform for Starlink performance information

Integration and results



Methodology



Code



Conclusions

- Cross-Origin Resource Sharing (CORS) policies reduce the viability of using a website as a measurement platform
- This issue is reduced when measuring DASH and WebRTC
- WebRTC interaction with Starlink should be further studied

Future work

- Perform extensive testing of the platform
- Replace free datasets with higher-quality paid alternatives
- Introduce new comparison methods and visualizations

References

Mohan, N., Ferguson, A. E., Cech, H., Bose, R., Renatin, P. R., Marina, M. K., & Ott, J. (2024). A Multifaceted Look at Starlink Performance. In Proceedings of the 2024 Web Conference (WWW'24). ACM. <https://doi.org/10.1145/3589334.3645328>

Rohan Bose. NetMet: A Measurement Framework for Starlink and Other Networks. GitHub. <https://github.com/boserohan/netmet>. Accessed June 23, 2025.

Measurement Lab (M-Lab). Open Internet Measurement Platform. <https://www.measurementlab.net/>. Accessed June 23, 2025.

Google. WebRTC. <https://webrtc.org/>. Accessed June 23, 2025.