



Refraction Networking

TECHNOLOGY NUMBER: 2024-046

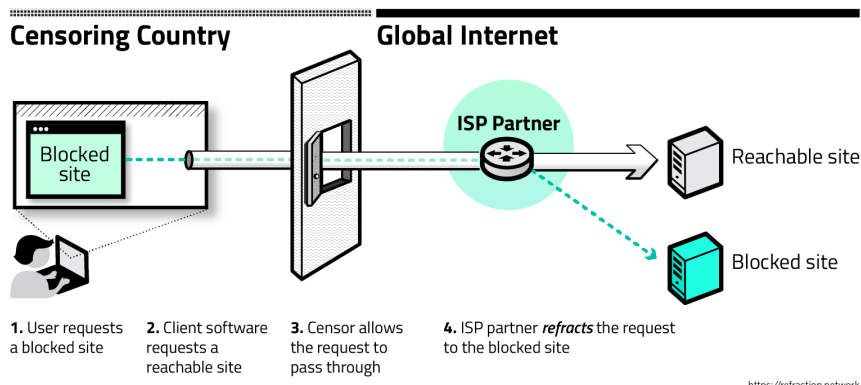
Technology ID

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Category

MOSS - Michigan Open Source
Software

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OVERVIEW

Refraction networking for robust censorship circumvention.

- Integrates proxy functionality within network core, making censorship prohibitively costly
- Applies to internet freedom, bypassing censorship, secure global communication

INNOVATION

Refraction networking offers a groundbreaking solution to the limitations of traditional censorship circumvention tools. Developed through research at the University of Michigan, and supported by the U.S. State Department, this approach integrates proxy functionality directly into the core of the network by partnering with ISPs and network operators. By dispersing the proxy service across entire networks, refraction networking makes it exponentially harder for censors to selectively block access points. Notable implementations, like Telex and TapDance, have already demonstrated their effectiveness, with a production deployment serving over a million global users since 2019. The technology's potential applications are vast, ranging from safeguarding Internet freedom in oppressive regimes to ensuring secure, uncensored communication for activists and journalists worldwide. Refraction networking shifts the balance, making censorship not just challenging, but economically and technically unsustainable.

Project Links	<ul style="list-style-type: none"> • Refraction Networking project website • TapDance code repository
Department/lab	Electrical Engineering and Computer Science
Target audience	Network providers, network security and privacy researchers
Seeking	<ul style="list-style-type: none"> • Users • Industry partners
License	TapDance: Apache-2.0