

Siddharth “Sid” Mathur

02 October, 2025

siddharth@getfastah.com

Fastah Inc. (<https://getfastah.com>)

IMPROVEMENTS IDEAS FROM AN IP GEOLOCATION API PROVIDER

Fastah Inc. provides IP geolocation API services to developers worldwide. We ingest and process geolocation feeds from IP owners, and we also help developers build their use cases with personalized support and reliable, high-performance API operations. Fastah is a strong adopter of RFC 8805 and RFC 9632, and is rated highly on GeolocateMuch.com.

PROBLEM AREAS AND IMPROVEMENT OPPORTUNITIES

IP address geolocation supports many daily workflows for application developers, systems engineers, and security practitioners. It is not the right tool for every geolocation need, yet it remains widely used despite the ubiquity of GPS. We outline below several areas to strengthen both practice and standardization across geofeed publication, aggregation, and consumption.

1. Publication and Distribution of Geofeeds

- a. **Adoption:** Only ~4,000 geofeeds are published worldwide across all RIR WHOIS databases, an extremely small number.
- b. **Trustworthy publication:** Cryptographic signing of published geofeeds is neither well understood nor widely practiced, leaving RIR records as the only practical trust anchor for authorship. Geofeeds not registered in IP WHOIS are difficult to verify for both authorship and authenticity.

- c. **RPKI authentication:** The [RPKI approach in RFC 9632](#) has minimal adoption.
- d. **Distribution integrity:** There are no checksum-based integrity mechanisms (akin to [Subresource Integrity](#) on the web) to detect unexpected manipulation in transit or at rest.

2. “Fitness of Purpose” of Geolocation

A residential broadband ISP with static customer endpoints may be comfortable with geolocation informing diverse use cases (e.g., geo-routing, data-sovereignty controls, storage decisions, and website localization). By contrast, a Starlink- or Amazon Kuiper-style ISP, with terminals on aircraft or ships that can cross many IP-advertised country boundaries in a single journey, may wish to signal that some use cases (e.g., geo-routing/PoP selection) are appropriate, while others (e.g., country-residency checks for statutory data sovereignty) are not.

3. Aggregation of Geofeeds

Publishers currently lack a way to signal to aggregators:

- a. **Change notifications.** Proactive updates via webhook or email callbacks when a feed changes.
- b. **Rescan guidance.** A suggested “re-scan after duration X,” analogous to the [changefreq attribute in sitemaps.xml](#), to guide polling behavior.

4. Consumption of IP address Geolocation

For developers, architects, and security practitioners who pay for and consume IP data, there is no standardized guidance on:

- a. **Certified provenance.** *Where does this data come from, and how can that be verified?*
- b. **Sufficient freshness.** *What is the “use-by” date or freshness indicator for this dataset?*

CONCLUSION

Fastah Inc. sees immense opportunity in strengthening the “3 Ts”:

- **Trust** - *Do we know who published this?*
- **Transience** - *What’s the freshness indicator on this data?*
- **FiTness for Purpose** - *Is the geolocation appropriate for my use case?*

APPENDIX: USE CASES

Area	Use Case	Sufficient Accuracy
Financial services	Implement national regulator identity/KYC/AML/anti-fraud checks	Country ▾
Financial services	Banking & insurance fraud-mitigation triggers	Country ▾
Data Sovereignty	Store Country-X user data within Country-X data centers	Country ▾
Online commerce	Currency, sub-site, and language L10n	Country ▾
Online commerce	Landing page optimization	State ▾
Content Delivery	Route to the nearest application instance or edge node	State ▾