



Information Centric Networking for Disaster Information Sharing Service

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Disaster and Emergency Information Service

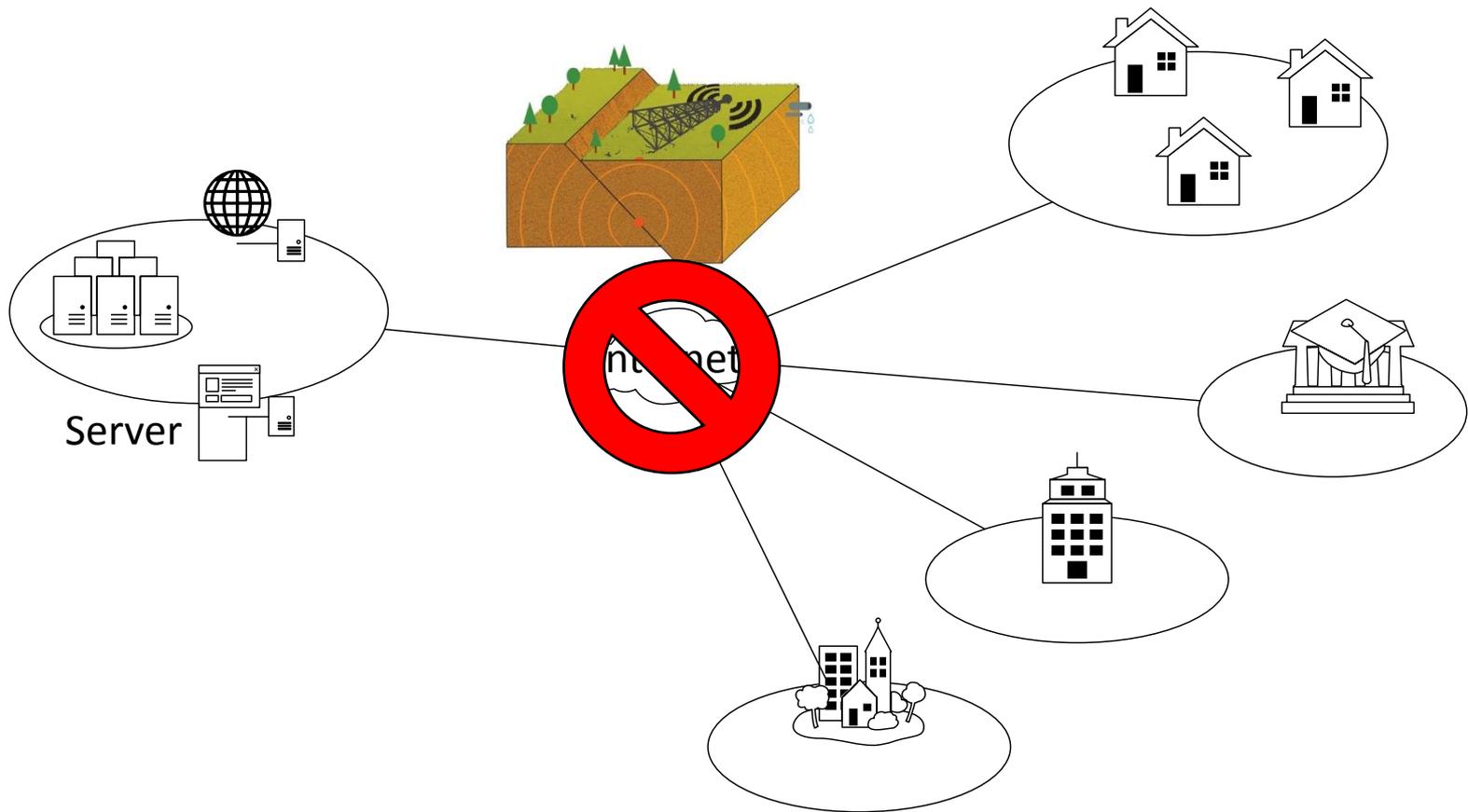
- AMBER Alert
- Google Person Finder
- Emergency Alerts
 - Earthquake Early Warning
 - Tsunami Warning





Disaster and Communication

How to keep information alive during disaster?



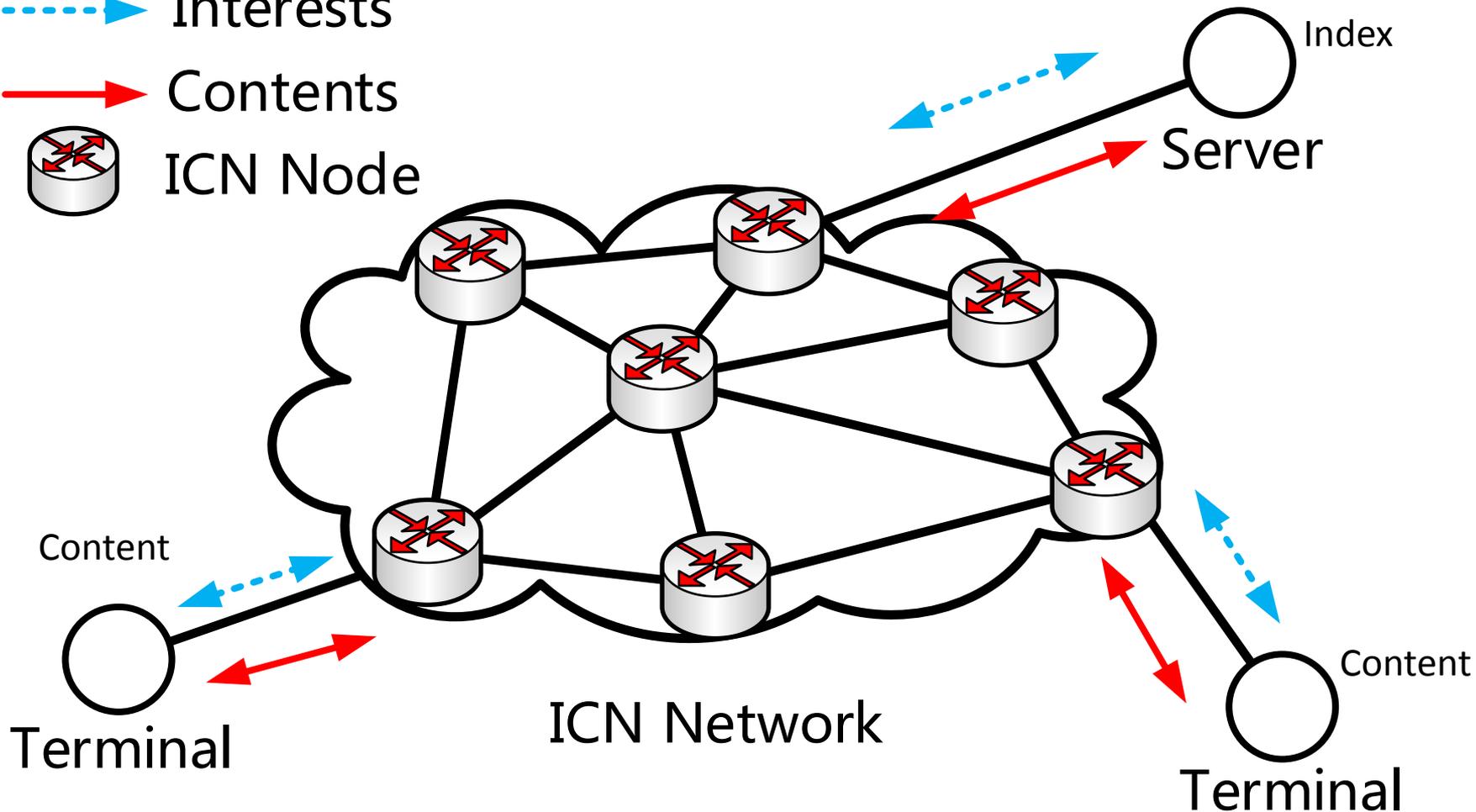


Dissemination of Disaster Information in ICN

.....> Interests

→ Contents

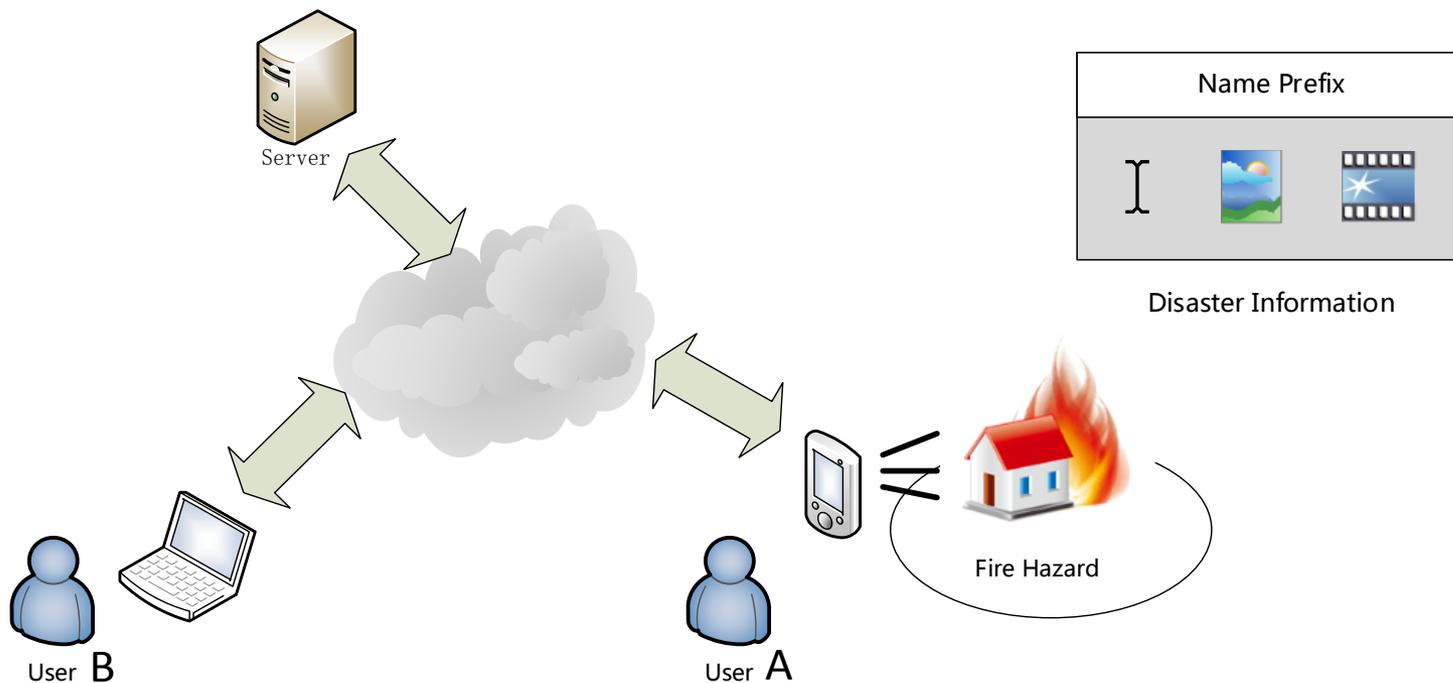
 ICN Node





ICN based Disaster Information Sharing Service

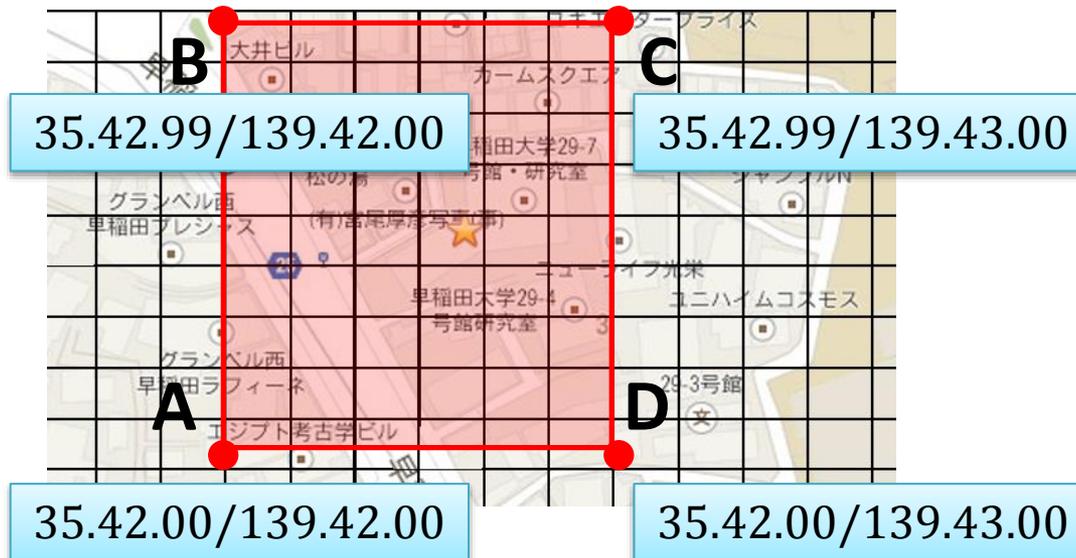
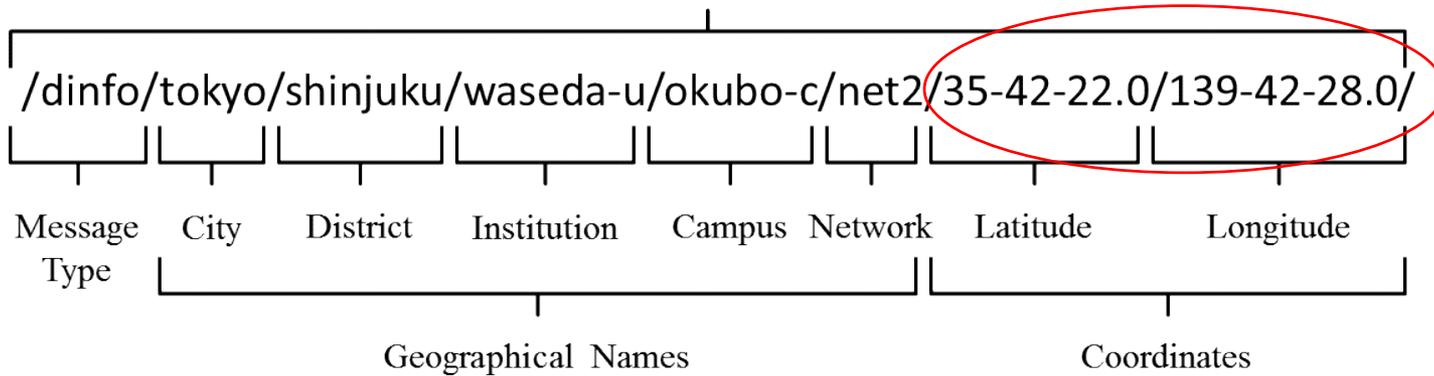
- Publish Disaster (Emergency) Information as Content to ICN
- GPS coordinates based geographic Namespace





Naming Strategy of Disaster Information

Disaster Information Name Prefix





Publish Disaster Information

7



Retrieve Disaster Information

The screenshot shows the wOsm application interface. The main map displays a street view of Shinjuku, Japan, with various buildings and landmarks labeled in Japanese. A sidebar on the left contains the following fields:

- Latitude and Longitude:** 35.707121, 139.708624
- Image File:** Browse
- Title:**
- Upload:** [Button]
- max Latitude and Longitude:** 35.709261045166016, 139.71124851171874
- min Latitude and Longitude:** 35.704980954833985, 139.70599948828124
- Manually Download:** [Button]

At the bottom of the application, a terminal window displays the following log output:

```

shutdown client fd=10 id=266
releasing face id 266 (slot 266)
accepted client fd=9 id=267
accepted client fd=10 id=268
shutdown client fd=9 id=267
releasing face id 267 (slot 267)
shutdown client fd=10 id=268
releasing face id 268 (slot 268)
accepted client fd=9 id=269
accepted client fd=10 id=270

```



Summary

- Advantages
 - Reduce traffic
 - Decentralized ICN service
 - Robustness
- Issues and Future works
 - Interests flooding
 - Same Name
 - Security and Privacy
 - Push
 - Implementation

References:

- [1] Wen, Z., Zhang, D., Yu, K., & Sato, T. (2015). Information centric networking for disaster information sharing services. *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, E98A(8), 1610-1617. DOI: 10.1587/transfun.E98.A.1610
- [2] Open Street Map
- [3] CCNx 0.8.2



Q&A

Thanks!

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