

“Using ICN in Disaster Scenarios”

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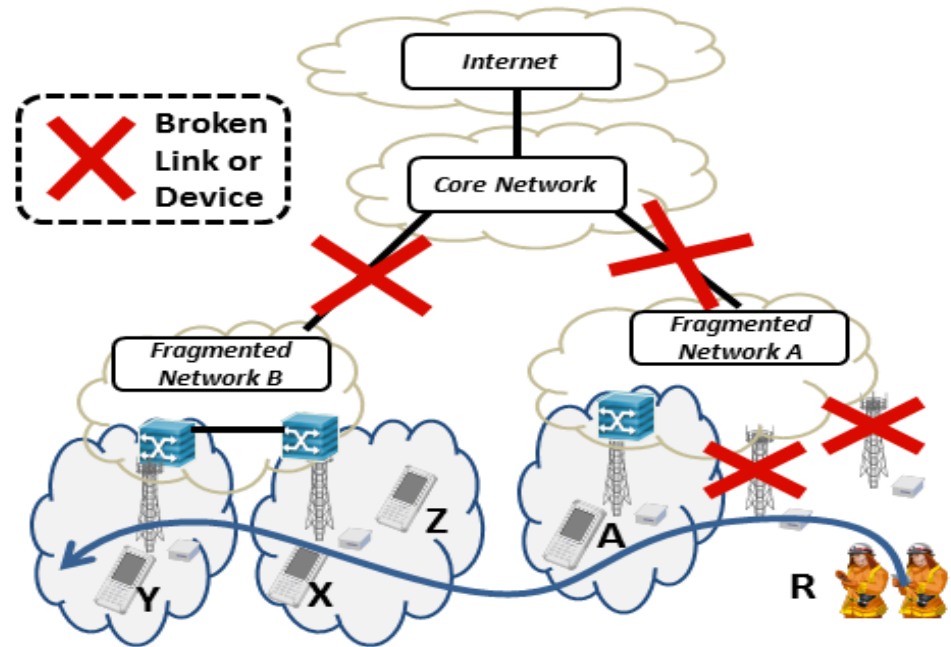
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Scenario and Use Cases

Disaster Scenario

- The aftermath of a disaster, e.g. hurricane, earthquake, tsunami, or a human-generated network breakdown
- E.g. the enormous earthquake which hit Northeastern Japan on March 11, 2011 (causing extensive damages including blackouts, fires, tsunamis and a nuclear crisis)



Key Use Cases (High-Level)

- Authorities would like to inform the citizens of possible shelters, food, or even of impending danger
- Relatives would like to communicate with each other and be informed about their wellbeing
- Affected citizens would like to make enquiries of food distribution centres, shelters or report trapped, missing people to the authorities

Research Gap

- Quite some work in the DTN community, however most DTN work lacks key features which are needed in the disaster scenarios we consider, such as:
 - publish/subscribe (pub/sub) capabilities, caching, multicast delivery, message prioritisation based on content types, ...
 - Could enhance existing DTN approaches with these features – we argue that ICN makes a better starting point for building a communication architecture that works well before & after a disaster
 - See presentation at last IETF / ICNRG meeting for details
- Our rationale: start with existing ICN approaches and extend them with the necessary features needed in disaster scenarios**

Contents of the Document

- Disaster Scenarios
- Research Challenges and Benefits of ICN
- High-Level Research Challenges
- How ICN can be Beneficial
- Use Cases and Requirements
- Solution Design

How to proceed with this document?

Status Quo

- Presented multiple times at ICNRG meetings
- Current draft quite mature
- Presented ongoing research and some results from the GreenICN at last IETF

How to proceed?

- Goal: Informational RFC that outlines the use of ICN techniques for disaster aftermath communication
- We think this could be a good output from the RG
- What about adopting this document as RG item?

Acknowledgements

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Background: GreenICN Project

GreenICN: Architecture and Applications of Green Information Centric Networking

Duration: 3 years (1 Apr 2013 – 31 Mar 2016)

Website: <http://www.greenicn.org>

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