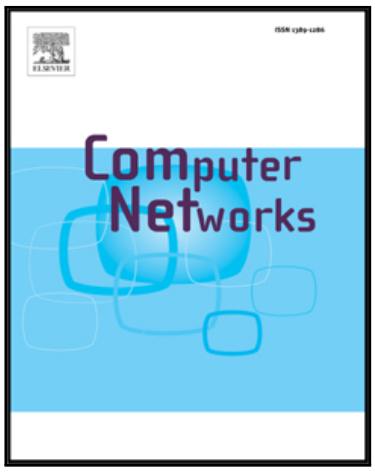

Content Sharing with Mobility in an Infrastructure-less Environment

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Content Sharing with Mobility in an Infrastructure-less Environment

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Abstract

Current networking technologies are ill-suited for content sharing in emerging military and first-responder networks where fixed infrastructures and stable connectivity cannot be assumed. New paradigms, in particular content-based networking, is proving to be a viable solution for operation in mobile infrastructure-less environments where intermittent and disrupted connectivity is normal. This paper presents CASCADE, a content-centric networking architecture that facilitates generation and dissemination of content in challenging "edge" environments. CASCADE is implemented in Android and has been subjected to thorough performance evaluation using both ad hoc Wi-Fi technology as well as military tactical radios. This paper discusses architectural approaches and decisions, and offers insights and lessons learned over the course of the project.

Keywords: Ad Hoc Networks; Mobile Communication; Information-Centric Networking; Content-Based Networking; Disruption Tolerant Networking;

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