Emergency Communication over IP

Matt Lepinski

mlepinski@bbn.com

Outline

- What is Emergency Communication (EC)?
  - Citizen-to-Authority Communication
  - Authority-to-Citizen Communication
- Why EC over IP?
- How might EC over IP work?
  - Examples
- What is required to do EC over IP?
  - Location
  - Standardized Interfaces to Location
- Who’s working on EC over IP?
- How can you learn more about EC over IP?

What is Emergency Communication?

- Citizen-to-Authority
  - Calls routed to the nearest police/fire/medical dispatcher
  - 1-1-2 on GSM phones and in Europe
  - 1-1-1 in New Zealand
  - 9-1-1 in North America

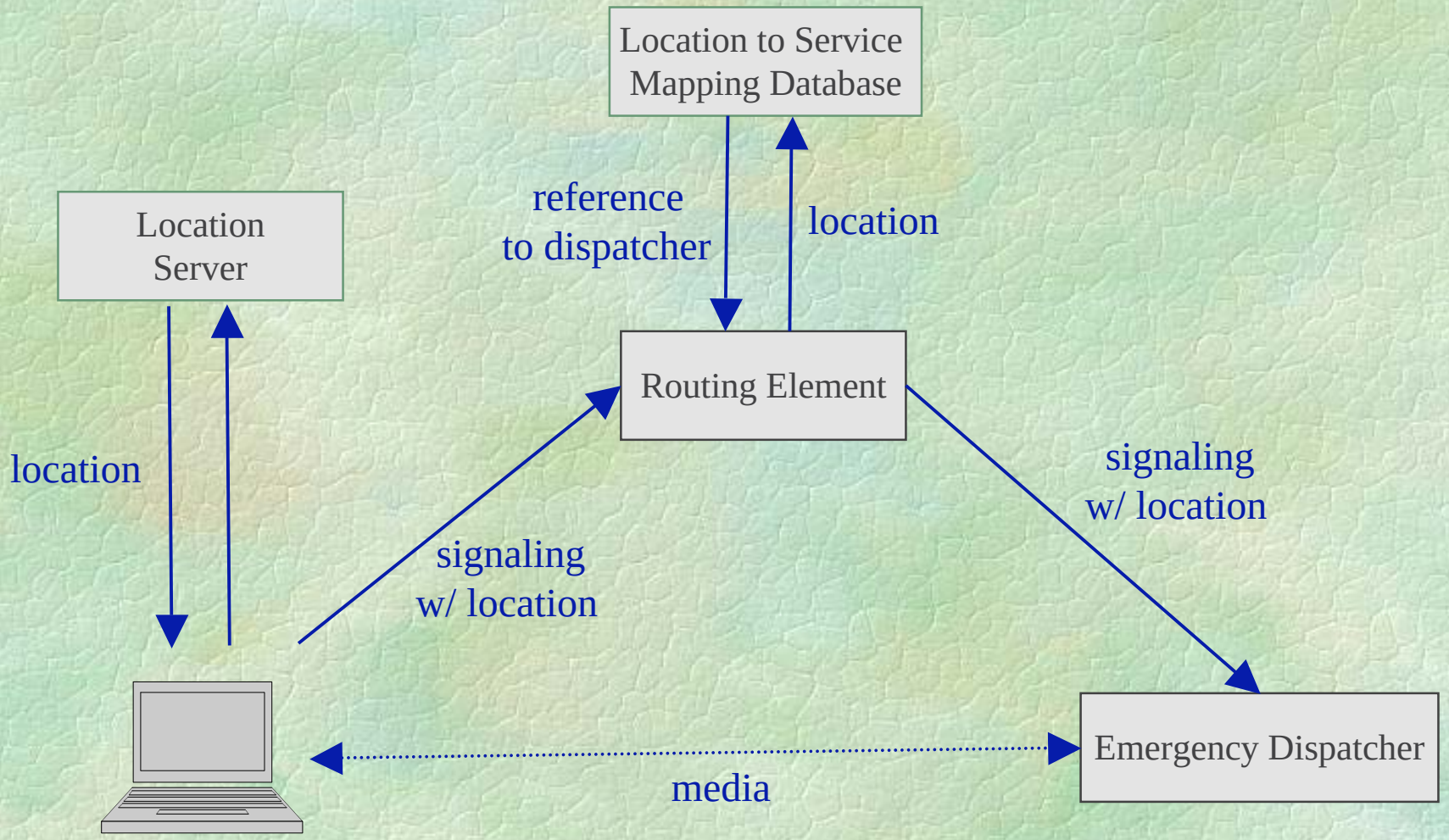
- Authority-to-Citizen
  - Geographically targeted disaster warnings
  - Earthquake, Tsunami, Hurricane, etc

Why EC over IP?

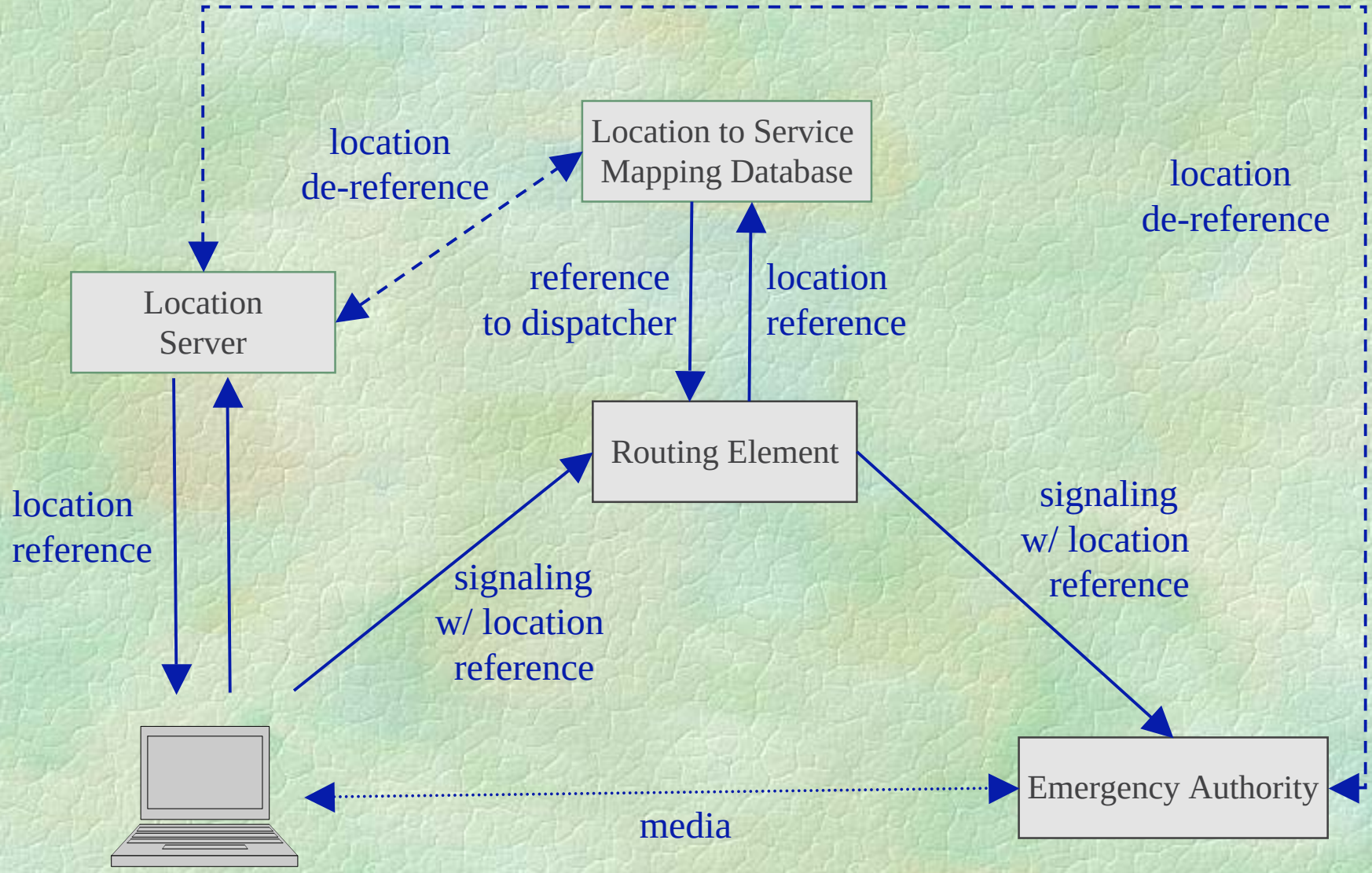
- A growing number of mobile devices support IP
  - iPhone, 3GPP, Blackberry, etc
- People are using Laptops in more and more places
  - Hotels, coffee shops, convention centers, etc
- VoIP and Real-Time Text Messaging are growing
  - Skype, Google Talk, Vonage, etc

- Goal: Any IP-device on any network can request help or receive warnings anywhere in the world

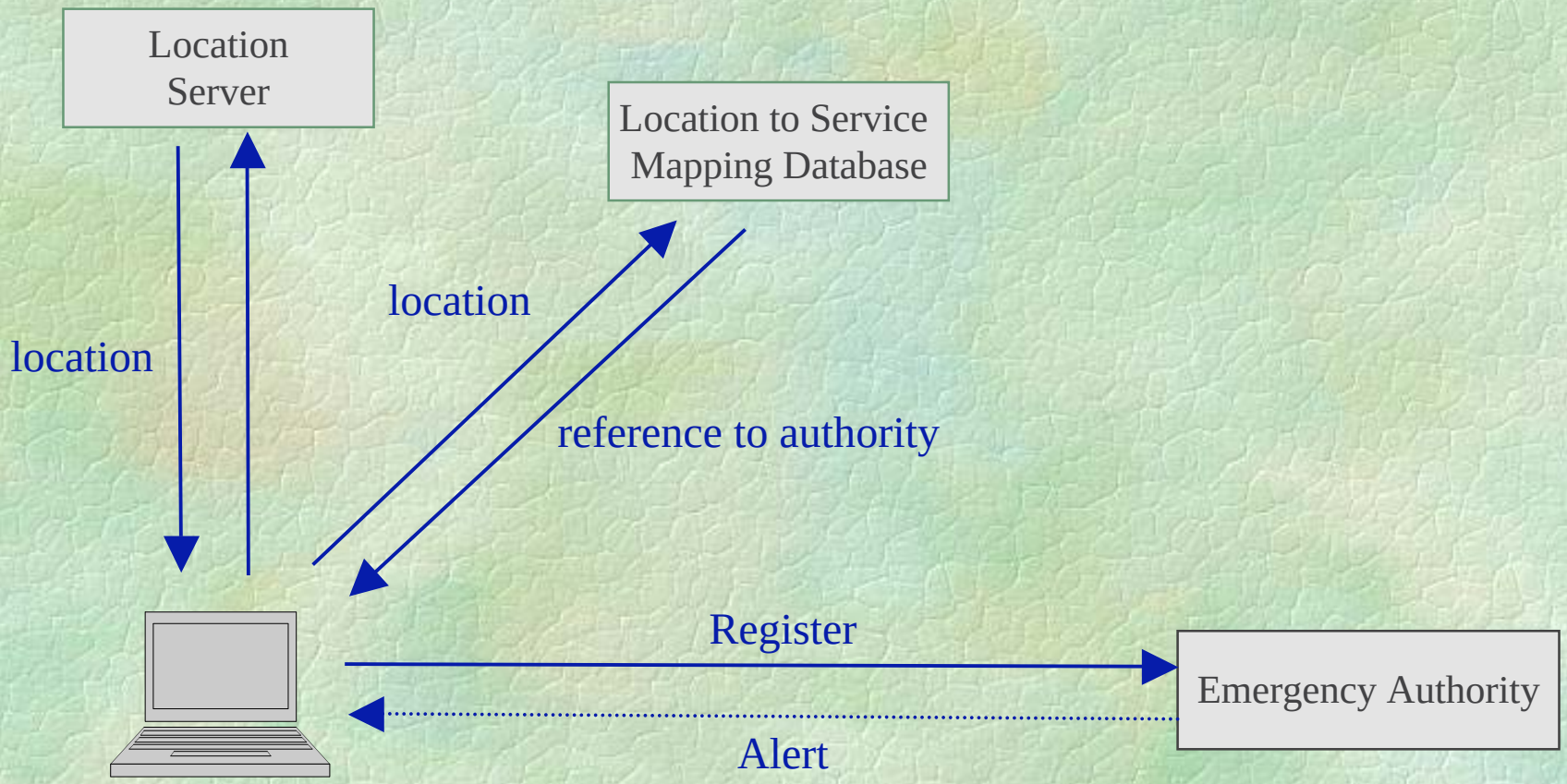
Citizen-to-Authority Example



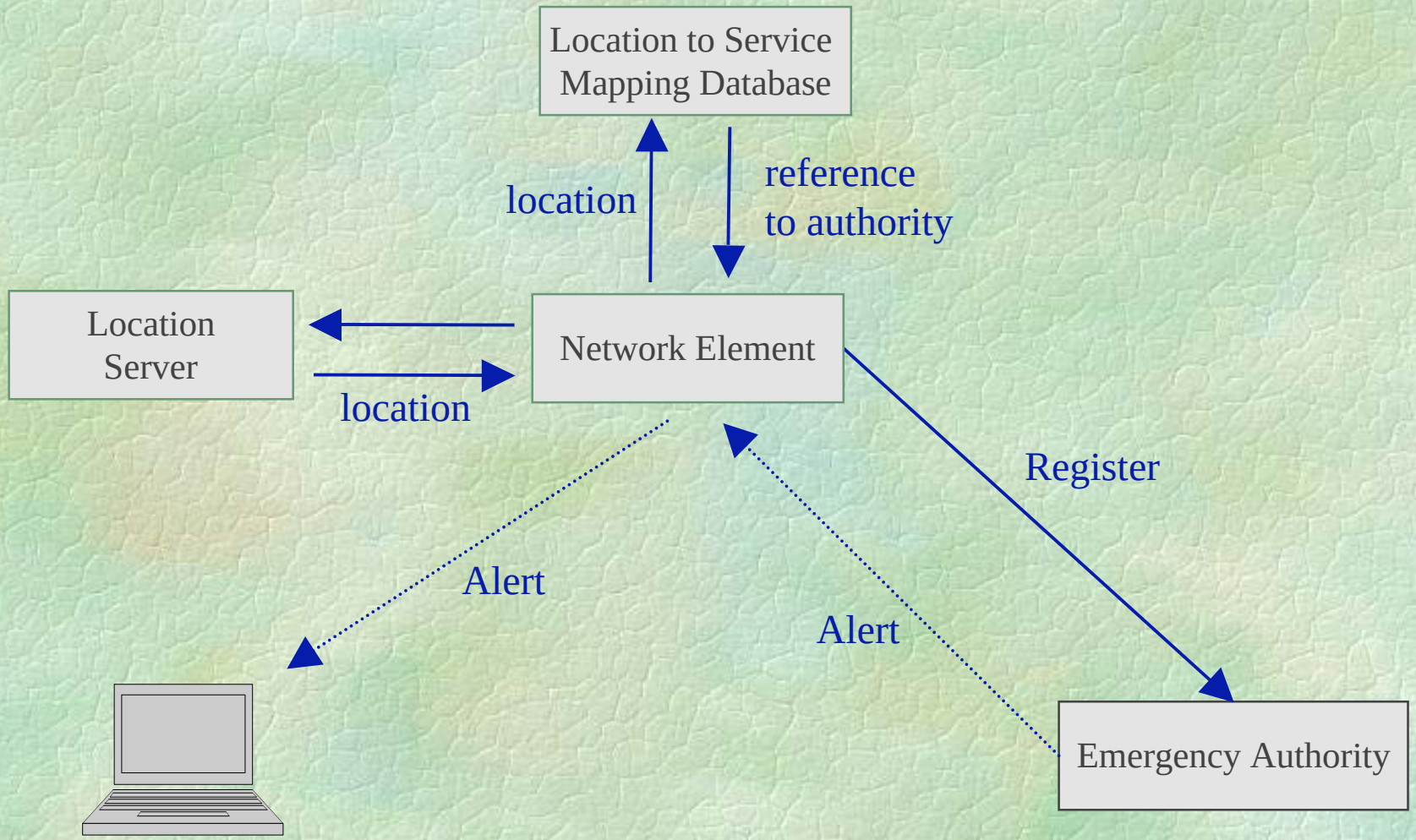
Citizen-to-Authority Example



Authority-to-Citizen Example



Authority-to-Citizen Example



What's required to do EC over IP?

- Location
  - Location is required to route emergency requests, and to determine which alerts to deliver
  - Access network has a key role in locating a device
    - E.g. Network topology data to locate wired devices
    - E.g. GPS-assist or Wi-Fi triangulation data to locate wireless devices
  - Good News: Other non-emergency services are also driving location
    - Location-based advertising
    - "How do I get to the nearest grocery store?"
    - "Which of my buddies are nearby?"

What's required to do EC over IP?

- Standardized Interfaces to Location
  - A device needs a small number of mechanisms to obtain either its location (or a reference to its location)
    - E.g. DHCP, HELD, SUPL, etc
  - An access network needs to provide location (or location references) via one of these mechanisms
  - Applications need to an API that provides location
  - Emergency Authorities need a standardized format for location

Who's working on EC over IP?

- Standards Bodies
  - IETF (ECRIT and GEOPRIV)
  - 3GPP, 3GPP2
  - OMA (Open Mobile Alliance)
  - OGC (Open Geospatial Consortium)
  - Wi-Max Forum
  - ETSI TISPAN
  - OASIS

Who's working on EC over IP?

- Emergency Services Workshop Series
  - Every 6 months since October 2006
    - Next workshop is October in Vienna, Austria
  - Broad participation from Europe and North America
    - Standards Developers
    - Regulators
    - Network Operators
    - Emergency Services Operators
  - Seeking participation from the Asia-Pacific Region
    - Trying for 2009 workshop in this region
  - Goals:
    - Standards alignment between standards bodies
    - Standards that meet the needs of all stake-holders

How can you learn more?

- Contact me:
  mlepinski@bbn.com
- ESW website:
  http://www.emergency-services-coordination.info/
- ESW mailing list:
  es-coordination@lists.cs.columbia.edu

Thank You

Matt Lepinski

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