International Telecommunication Union

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Current Trends and Issues in Public Warning

Activities in the Private Sector

Tony Rutkowski, VeriSign

VP Regulatory Affairs and Infrastructure Standards

mailto:trutkowski@verisign.com

OASIS

Key Activities Today

o Development of large-scale, high availability messaging capabilities for the commercial marketplace

o New USA legislation, requirements, and R&D

- FCC's Commercial Mobile Service Alert Advisory Committee
- International implications

o Innovative implementations of OASIS Common Alerting Protocol (CAP) are appearing

o IP-Enabled Next Generation Network developments

- Provide support for Emergency Alerting Services
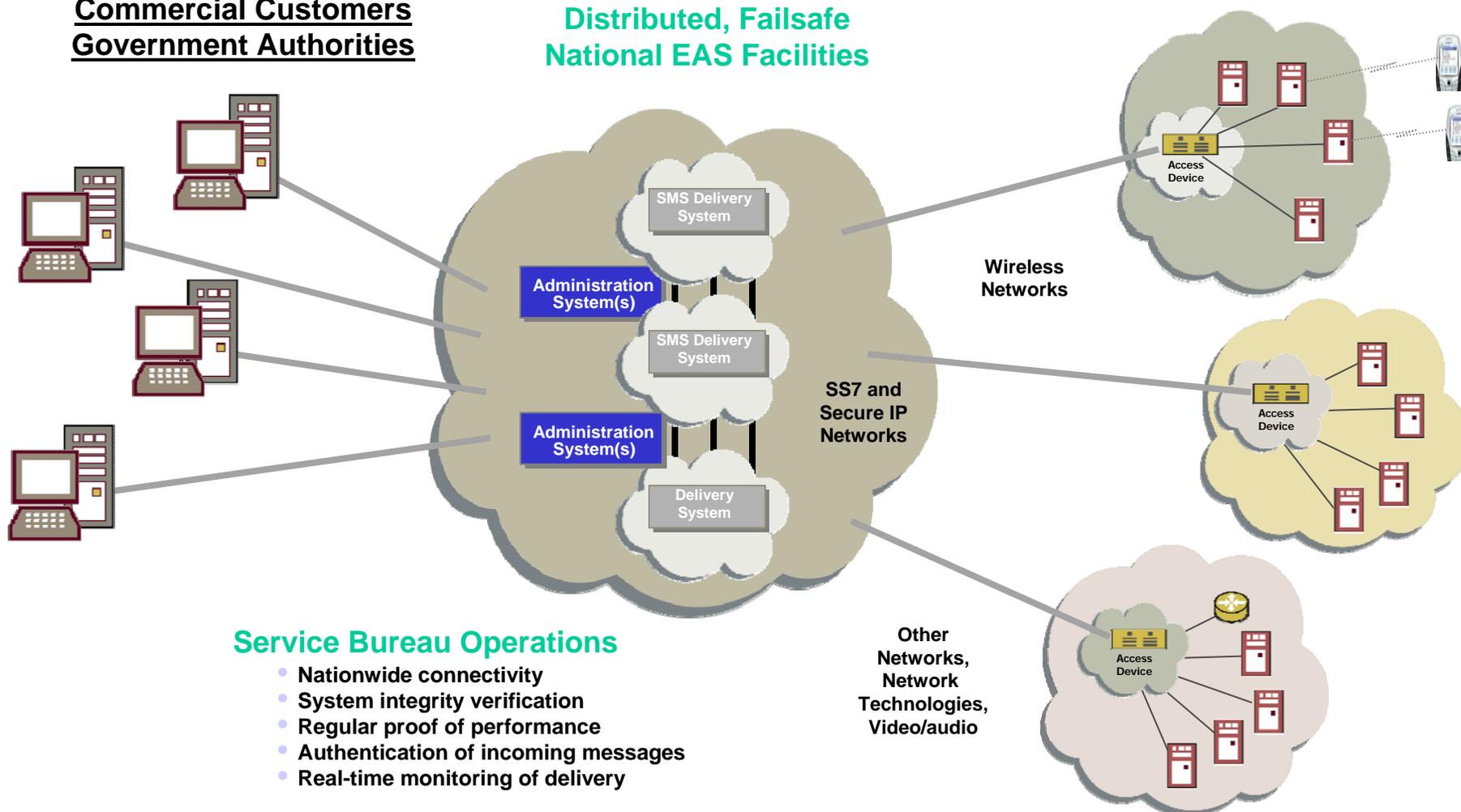- Identity Management is critical enabler

High Availability, Robust, Short Message Service (SMS) Service Bureau Platforms

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Messaging Providers

Commercial Customers Government Authorities

Third Party Service Bureau Distributed, Failsafe National EAS Facilities

SMS Delivery System

Administration System(s)

SMS Delivery System

Administration System(s)

Delivery System

SS7 and Secure IP Networks

Access Device

Wireless Networks

Access Device

Access Device

Other Networks, Network Technologies, Video/audio

Service Bureau Operations

- Nationwide connectivity
- System integrity verification
- Regular proof of performance
- Authentication of incoming messages
- Real-time monitoring of delivery

SMS Service Bureau Messaging State-of-the-Art

o Delivery to provider facilities
  - Today
    – Norm: 8,000 messages per second (500,000 per minute)
    – Current maximum: 15,000 messages per second (1 million per minute)
  - 3-6 month timeframe
    – could be increased 10 times (to 10 million per minute) with significant additional resources
  - Principal challenge is congestion in SMS Gateways (SMSGs) and cell sites
    – Alternative routing through SS7 to switches may relieve SMSG bottlenecks
    – Cell site congestion solutions lie with cell broadcast platforms

o Geographic targeting
  - Today
    – geographic approximations based on area codes and switching center locations
  - 6 month timeframe
    – granularity could be enhanced using additional integrated, new high performance ENUM/E.115v2 resolution capabilities

o Architecture
  - Distributed redundant, secure, high-availability "engine" sites

Advantages of third-party service bureau solutions

o Implements substantial messaging capabilities immediately

o Leverages existing national intelligent infrastructure and operational agreements

- Basic capabilities were implemented to support rapidly growing SMS, SMS-IM, SMS-IM, MMS, commerce and content marketplace
- Capabilities regularly tested for prime-time TV shows

o Minimal effect on existing carrier networks and installed handset base

o Cost effective

- Sensitive to concerns of rural and underserved area providers

o Neutrality among all providers and platforms

o Highly robust – substantial survivability and "availability"

o Readily scaleable and extensible

o **Warning, Alert, and Response Network (WARN) Act**

- Signed into law last Friday, 13 Oct 2006
- Provides for national system and international cooperation
- FCC-driven industry collaborative process

o Executive Order 13407

- signed 26 June 2006
- Establishes requirement for a national Emergency Alert System
- Dept of Homeland Security (DHS) driven report
- DHS expressed interest in array of emergency messaging systems capabilities

o FCC creates the Committee in Dec 2006

o Broad representation

o Develops recommendations within one year to enable electing commercial mobile service providers to transmit emergency alerts to subscribers

- protocols, technical capabilities, and technical procedures to receive, verify, and transmit; also including
  - priority transmission
  - devices and equipment
  - international languages
  - preventing receipt of alerts
  - use of non-compliant equipment or service areas

- consults with NIST (USGOV standards institute)

FCC Duties

a) Adopts emergency alerts standards based on Advisory Committee, consulting with NIST

b) Implements service through commercial providers (next slide)

c) FCC shall provide for an interface standard between educational broadcast stations and commercial mobile providers

d) FCC may enforce compliance with EAS rules

e) Broad liability protection for providers

f) Regular testing required for provider services and equipment/devices

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o FCC to develop rules and administration of an "elective process"

- For commercial mobile service providers offering emergency alerts to subscribers

- For notice to customers if the provider does not support the capabilities

- Providers cannot charge an additional fee for the emergency alert service nor penalize customers for terminating service

- Providers may offer subscribers the capability of preventing the subscriber's device from receiving alerts
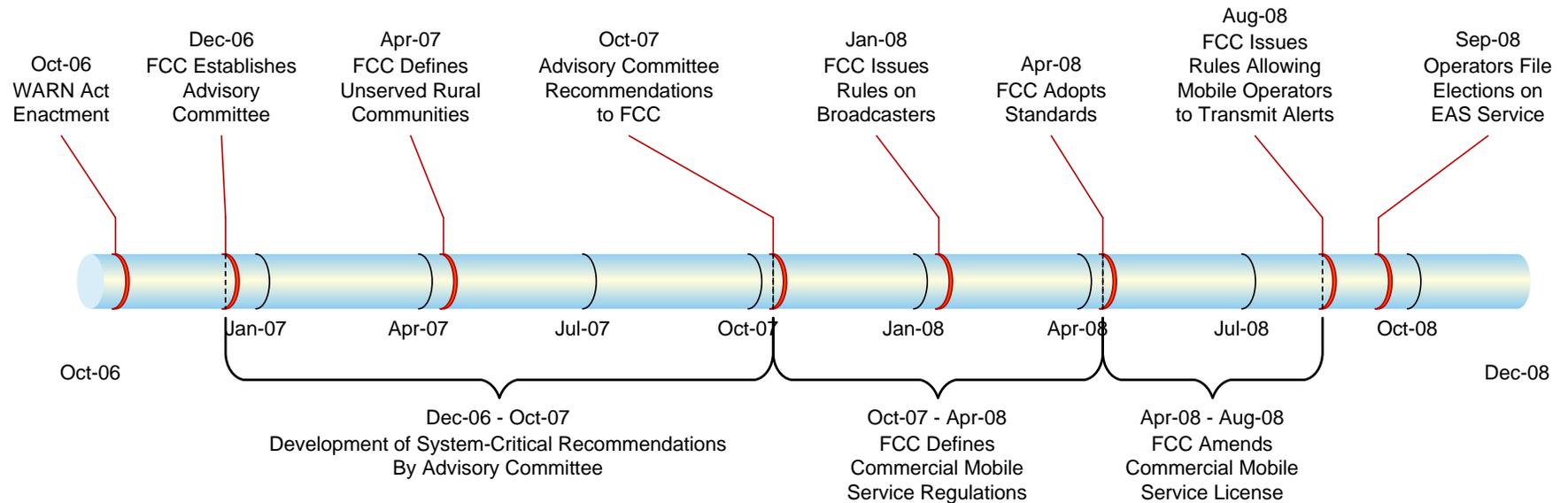 - other than Presidential alert

WARN Act Timeline

Oct-06
WARN Act
Enactment

Dec-06
FCC Establishes
Advisory
Committee

Apr-07
FCC Defines
Unserved Rural
Communities

Oct-07
Advisory Committee
Recommendations
to FCC

Jan-08
FCC Issues
Rules on
Broadcasters

Apr-08
FCC Adopts
Standards

Aug-08
FCC Issues
Rules Allowing
Mobile Operators
to Transmit Alerts

Sep-08
Operators File
Elections on
EAS Service

Oct-06

Jan-07   Apr-07   Jul-07   Oct-07   Jan-08   Apr-08   Jul-08   Oct-08

Dec-08

Dec-06 - Oct-07
Development of System-Critical Recommendations
By Advisory Committee

Oct-07 - Apr-08
FCC Defines
Commercial Mobile
Service Regulations

Apr-08 - Aug-08
FCC Amends
Commercial Mobile
Service License

Diagram courtesy of Cingular Wireless

ITU-T/OASIS Workshop and Demonstration of Advances in ICT Standards for Public Warning
Geneva, 19-20 October 2006

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o Homeland Security S&T with NIST and FCC establishes a research, development, testing and evaluation program based on Advisory Committee actions

o Basic purpose

- support the development of technologies to increase the number of commercial mobile service devices that can receive emergency alerts

o R&D projects

- Substantial funds available
- Emphasis on
  - Innovative technologies for geographically targeted emergency alerts to the public
  - Improving public response to warnings

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- o WARN Act inherently necessitates substantial international cooperation
    - The emergency alert needs are global
        - Every national body and intergovernmental organization that supports health and safety has similar needs
        - International nomadicity is pervasive today
    - Industry and customers want interoperable global solutions
    - Global solutions reduce costs
- o Existing emergency alert international cooperation can be enhanced
- o The Commercial Mobile Service Alert Advisory Committee should pro-actively
    - Establish an international scope and activities
    - Identify relevant emergency alert bodies worldwide and maintain on-going liaison mechanisms

o Support for emergency alert and messaging capabilities in ongoing global NGN standards activities is essential

o Identity Management (IdM) is key

- Authentication of users and providers

- Managing and resolving communication identifiers

- Providing for end user attributes (e.g., location, privileges, emergency roles, presence, and availability) are all critical

- Most of these needs are also significant for many other commercial offerings