

Intrado TXT29-1-1®

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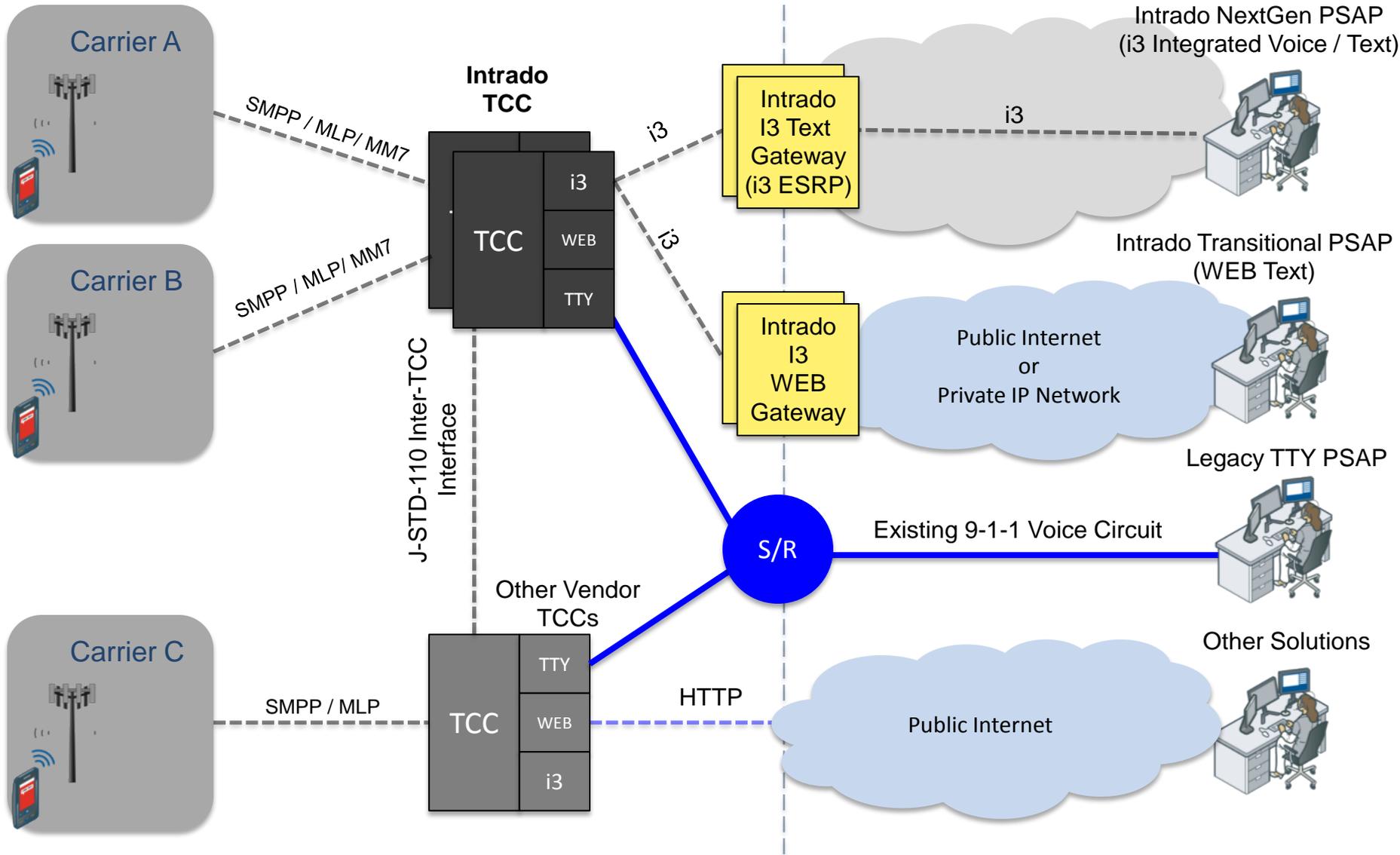
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The Evolution of Text-to-9-1-1

- Text-to-9-1-1 System Overview
- Intrado Text solution
- PSAP Text Display Options
- Services Beyond SMS
- PSAP Deployment Process



Intrado TXT29-1-1[®] Carrier Aggregation

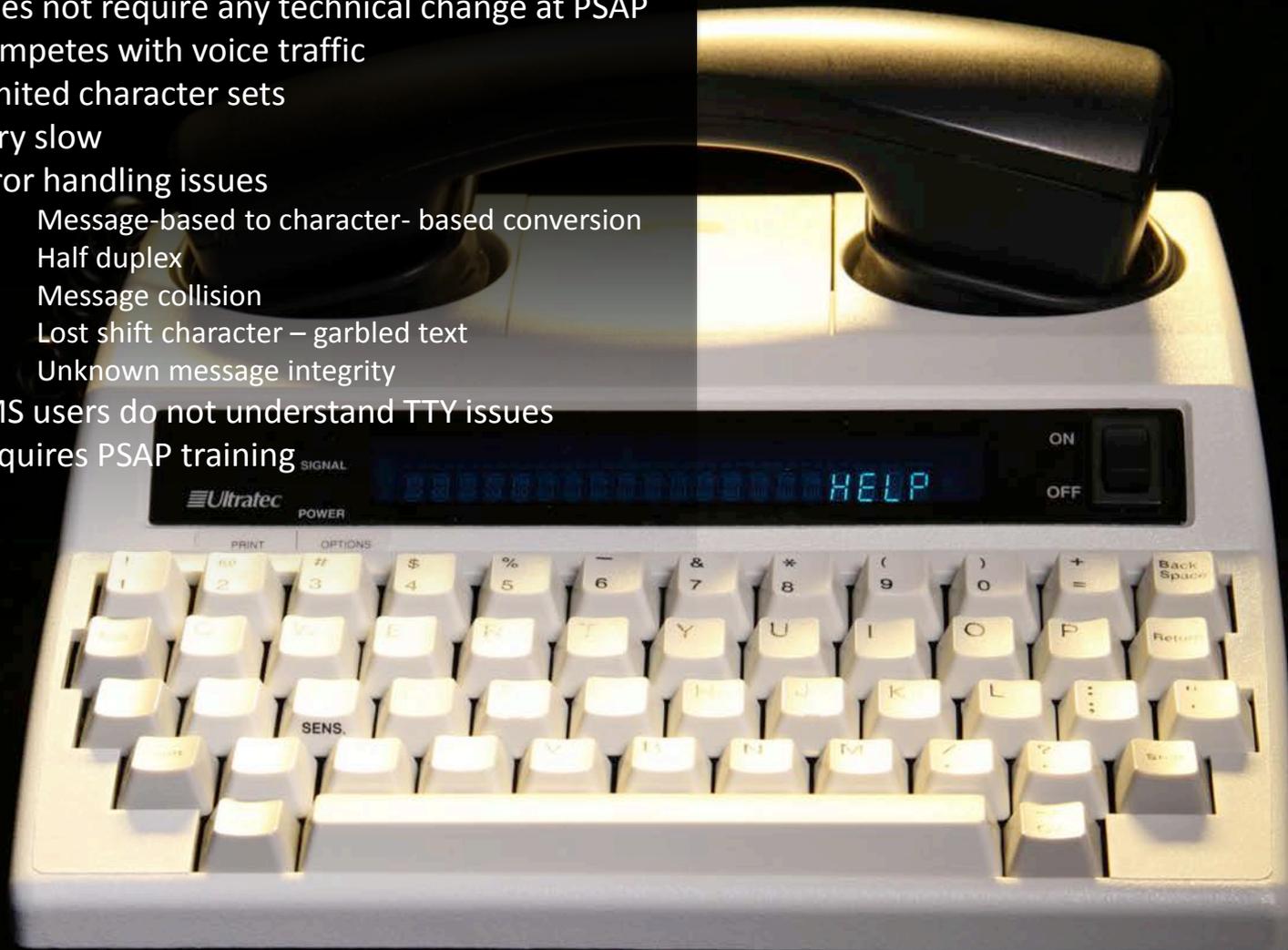


Intrado TXT29-1-1® Solution

- Fully J-STD-110 and NENA i3 compliant
- Fully developed new J-STD-110 TCC-TCC interface
- Been in production for over 4 1/2 years
- Developed technology that was adopted by industry
- Chosen TCC provider for a majority of wireless carriers
- Fully committed to standards to allow interoperability between different vendor solutions
- Fully committed to i3 and J-STD-110 delivering solutions for
 - TTY
 - I3-based Web delivery
 - I3-based integrated direct IP delivery
- Actively working with other major CPE vendors to deliver i3 text into their systems
- Actively working with major CAD vendors to integrate text into CAD
- Deploying vendor independent i3 transfer in 2Q2014
- Many local i3 aggregation POPs deployed around country

SMS Delivery Over TTY

- Developed in early 1960's
- Does not require any technical change at PSAP
- Competes with voice traffic
- Limited character sets
- Very slow
- Error handling issues
 - Message-based to character-based conversion
 - Half duplex
 - Message collision
 - Lost shift character – garbled text
 - Unknown message integrity
- SMS users do not understand TTY issues
- Requires PSAP training



Intrado Web Viewer

- i3 Implementation vs carrier-based TCC
- Allows rapid implementation
- No cost to PSAP with internet option
- Supports multiple carriers
- i3 interface will allow i3 transfer capability
- Built in transcripts
- High security / 2 factor authentication
- I3 interface supports public internet and ESInet connectivity
- Transitional approach
- Separate reports for voice and text
- New screen for Text calls
- New training

The screenshot displays the 'TXT29-1-1 VIEWER' interface. At the top, it shows 'Web Viewer Test PSAP - Status: Online' and 'Alerting: 0'. The main content area shows a text message conversation with the following messages:

- I need police. There is an intruder in my house.** (Mon Feb 17 10:27:49 MST 2014)
- Can you get to a safe place?** (Mon Feb 17 10:28:07 MST 2014)
- I am hiding in my closet** (Mon Feb 17 10:28:47 MST 2014)
- What is your address?** (Mon Feb 17 10:29:02 MST 2014)
- 456 main street** (Mon Feb 17 10:29:38 MST 2014)
- Police are on there way. Do not leave the closet until they are on the scene.** (Mon Feb 17 10:30:04 MST 2014)

Below the messages, the interface shows 'Latitude: 40.000000' and 'Longitude: -105.000000'. There is a 'Select Message' dropdown, an 'Enter Message ...' text input, and a 'Characters remaining: 160' indicator. At the bottom of the message area are 'Release', 'Clear', and 'Send (F8)' buttons.

At the bottom of the screen, there is a table with the following columns: 'Alerting', 'My Active', 'All Active', 'My Released', and 'All Released'. Below these columns is a table with the following headers: 'Action', 'Telephone #', 'Time Waiting', 'Time Received', and 'Last Message P'.

Action	Telephone #	Time Waiting	Time Received	Last Message P

Integrated (CPE and/or CAD)

- Ultimate NextGen 9-1-1 i3 Solution
- User interface similar to TTY
- Simple PSAP training / low transition effort
- Integrated work flow with voice calls
- Integrated reports and record management
- CAD integration being developed by major CAD vendors
- Dedicated, Secure NextGen Network
- Does not impact voice trunk capacity
- i3 interface
- Currently supports Intrado Viper / power 9-1-1. Actively working with other CPE vendors for i3 delivery.



ILI **CPI** ALI ALIX RTX TTY

TEL # NAME

ADDRESS CLASS

P-ANI

EXACT MAIN #

X Y ESN

PROVIDER CONF UNCERT

AGENCIES

Val

Redial

9-1-1 CALL WAIT 241-1711

STOP S/U

PLAY

STOP GRT

MON EXT

ADMIN EXT TEXT

1 - 0:26

Release CONF Transf HOLD

SMS / Text Conversation X

I need the police. A man just broke into my house. I am in a closet

Carrier: Hawaii Cellular
 Cell Address: 123 Main Street, Kauai
 Cell X/Y: 22.08N 159.5W
 Cell Uncertainty: 1609
 PSAP: Kauai Police

This is 9-1-1 What is your exact location

332 Emi road, Koloa

I am hiding in the master closet. Please hurry

The Police are on the way. Stay hidden

Send

PSAPS HAWAII CNTY UTILITES TOW TAXI'S

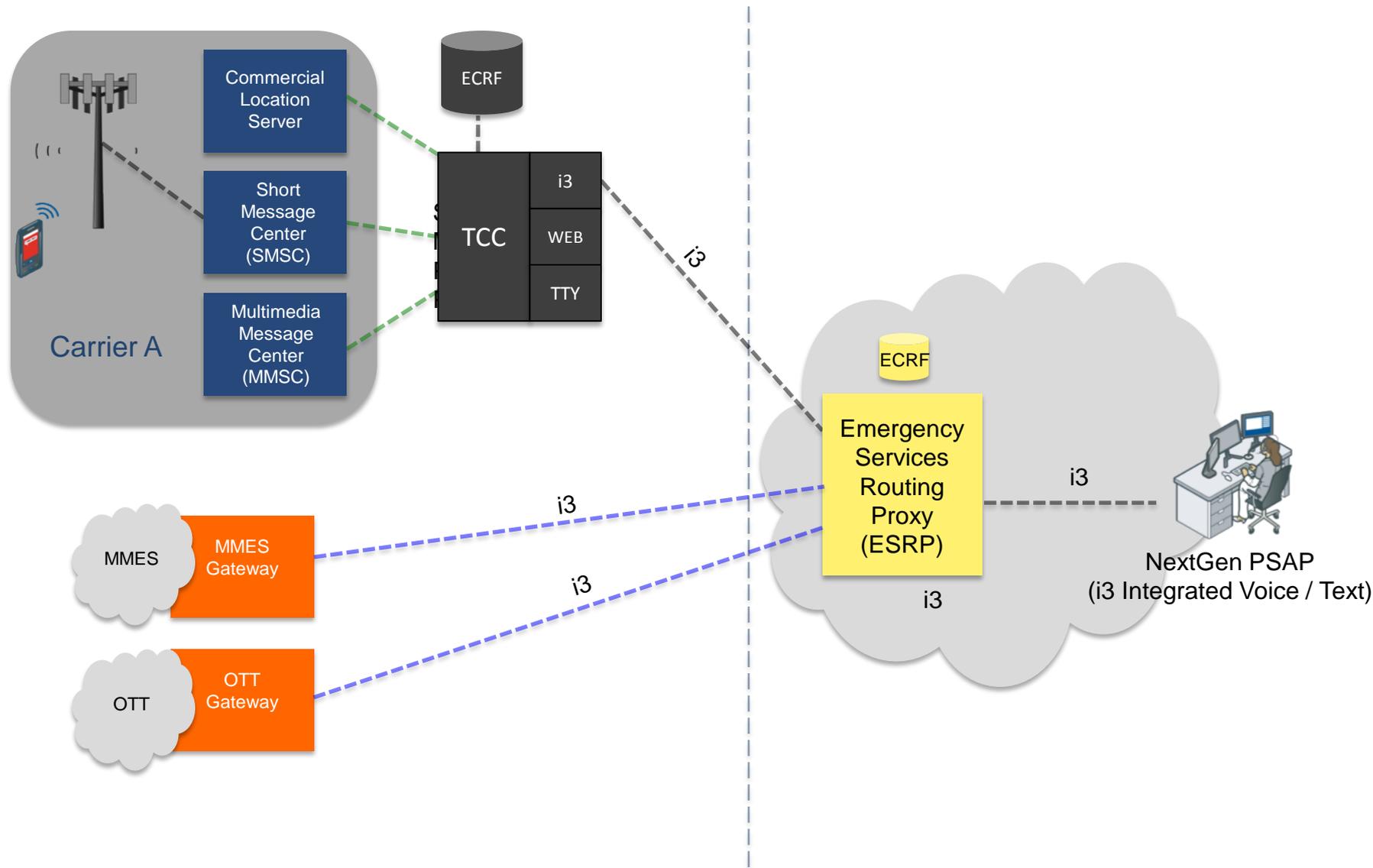
GOVERNMENT CONSOLES KAUAI POLICE POLICE DEPTS FIRE STNS

Roadmap to the Future

- SMS will be around for many years (>5 years)
- SMS creates a foundation for future non voice services
- MMES (Multimedia Messaging Emergency Services) in standards development for future non voice communications with 9-1-1 (3+ years away for first device)
- OTT (Over The Top) Applications communications with 9-1-1. (iMessage. Pinger, Blackberry Messenger, etc.) (1+ years)



Non Voice Services Beyond SMS



Experience with TXT29-1-1®

- Launched initial trial in Blackhawk County, Iowa with iWireless – July 2009
 - Live 9-1-1 text traffic
 - Integrated with 9-1-1 call handling equipment
 - Intrado architecture was adopted by ATIS J-STD-110 as standard
- Launched live trials with Verizon Wireless using automatic Location
 - Durham, NC – Summer 2011
 - State of Vermont – Spring 2012
- Trialed carrier aggregation into Vermont with Sprint and Verizon Wireless – Fall, 2012
- Launched live trial with AT&T as third carrier in Vermont – Fall 2013
- Deployed Hamilton County, OH with Verizon – Winter 2013

TXT29-1-1® Current Deployment Activities

- Over 19 wireless carriers have chosen Intrado as their sole TCC provider. A majority of wireless 9-1-1 text calls will route through Intrado's TCC
- A TCC to TCC link is in the testing phase between the Intrado TCC and TCS TCC to aggregate any traffic from any carriers not connected to Intrado TCC
- Current additional Intrado PSAP deployments are underway in:
 - New York
 - Florida
 - Louisiana
 - Illinois
 - Ohio
 - Virginia
 - Nevada
 - Colorado
 - North Dakota
 - North Dakota
 - Hawaii
 - Texas
 - New Mexico
 - South Carolina
 - Washington
 - Puerto Rico
 - North Carolina

TXT29-1-1® Lessons Learned From Trials

- Integrated solution was easy to integrate into PSAP operations
- Traffic has not overwhelmed the PSAPs or carriers
- Fraudulent traffic has not been a problem
- Delayed or out of sequence messages have not been a problem
- Current use cases show situational value of text
 - When a voice call would be dangerous
 - For young people where text is the preferred mode of communications
 - When anonymity of text makes a caller choose it over voice



TXT29-1-1® Deployment Process

Decide on a deployment timeline

1. Deploy now as carriers come online and announce to public
2. Soft launch/slow ramp – deploy now, but announce when all carriers are online
3. Wait for all carriers to come online in May 2014



Choose initial technology

1. Integrated with CPE
2. I3-based web
3. TCC-based web
4. SMS-to-TTY

PSAP data collection form:

<http://www.intrado.com/webform/txt29-1-1-psap-profile-questionnaire>



Requesting Wireless Carrier Service

Request service from Wireless Carriers

Sample Template-

Director
<PSAP Name>
<PSAP Address>

<Date>

<WSP Contact>
<WSP Company Name>
<WSP Address>

Dear <WSP Contact>,

<PSAP Name> has implemented the necessary upgrades to our E911 system to allow the receipt of 9-1-1 SMS text messages from the public. We wish to formally request that your company begin sending live SMS short code 9-1-1 text traffic to our PSAP via our 9-1-1 text service provider, <911 Text Service Provider Name>.

<PSAP Name> is requesting that <WSP Company Name> schedule a planning meeting or conference call within the next 30 days to kick off the deployment process.

We look forward to working with you.

Regards,

<Director>
<PSAP Name>
CC: State 9-1-1 Coordinator or State Board



Questions

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