Commetrex Corporation

“FoIP In Carrier Networks”

SIPNOC

FoIP Task Group 8:15 4/27/2011

Mike Coffee
Commetrex
SIP Forum FoIP Task Group
mcoffee@commetrex.com

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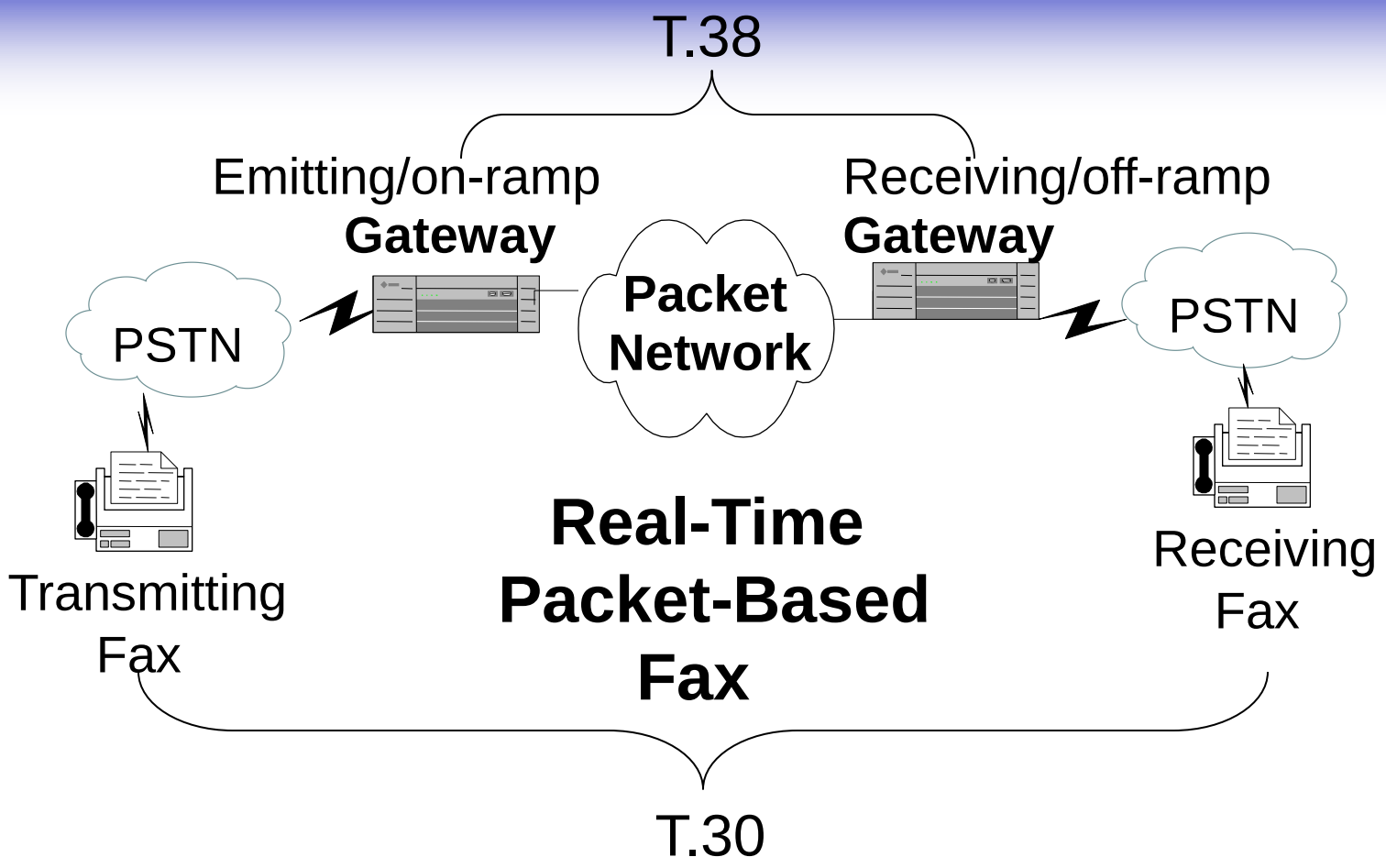
A Marriage of Necessity

Carriers

Vendors

Fax Relay


T.38
Emitting/on-ramp
Gateway
Receiving/off-ramp
Gateway
PSTN
Packet
Network
PSTN
Transmitting
Fax
Real-Time
Packet-Based
Fax
Receiving
Fax
T.30

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T.38 Deployment Phases:

- Phase I: 1998-2008
- Phase II: 2007-2018

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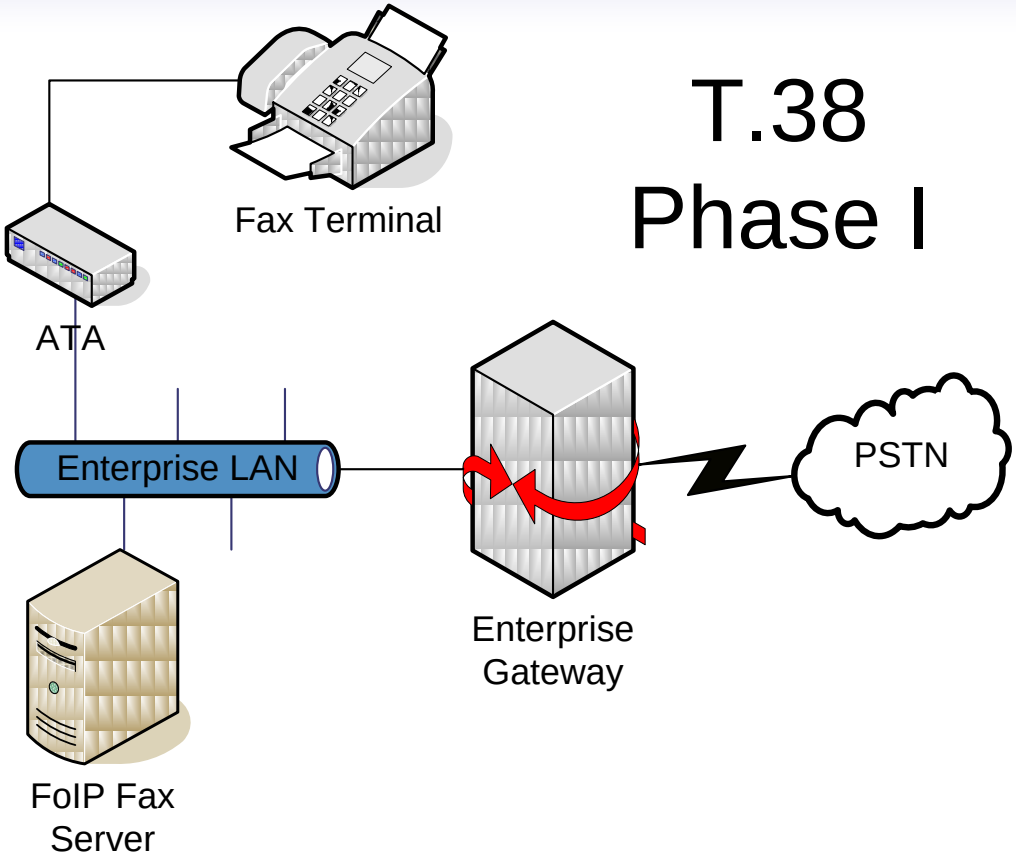
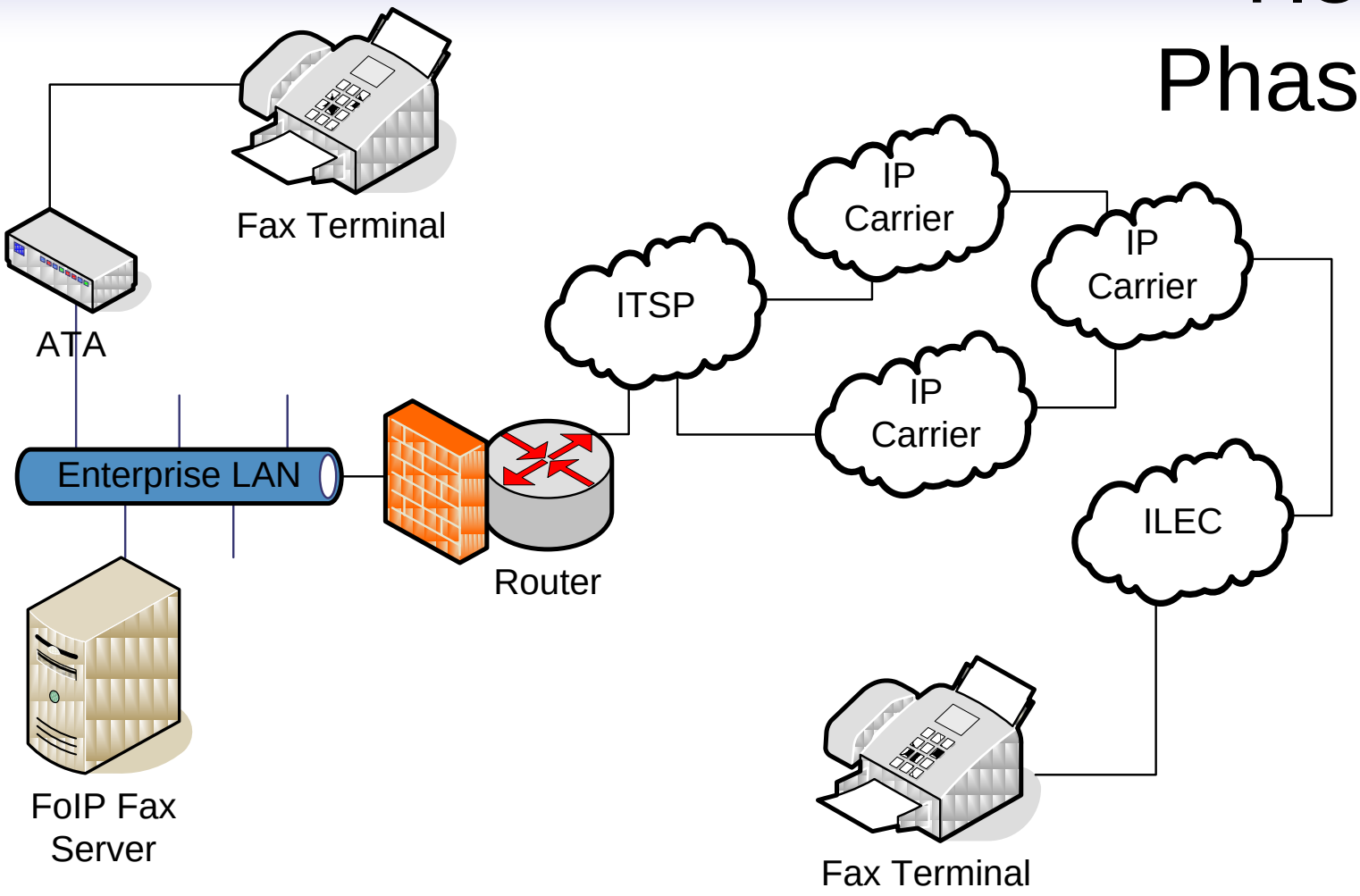
Intra-Enterprise



T.38
Phase I

And Now…Bring on The Carriers!

T.38
Phase II



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Voice Is Easy!

- Voice is generally the default
- Agree on a codec
- Enable the media stream
- Take care of jitter-buffer management
- Get rid of echo
- You’re done!
- Call set-up timing not critical.

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But in Fax…

Timing is everything.

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FoIP…It's About Time

- Computer-to-computer protocol (T.30)
- Synchronous modems
- Media stream, which begins in G.711, must be renegotiated and switched to T.38
- Timing is everything!

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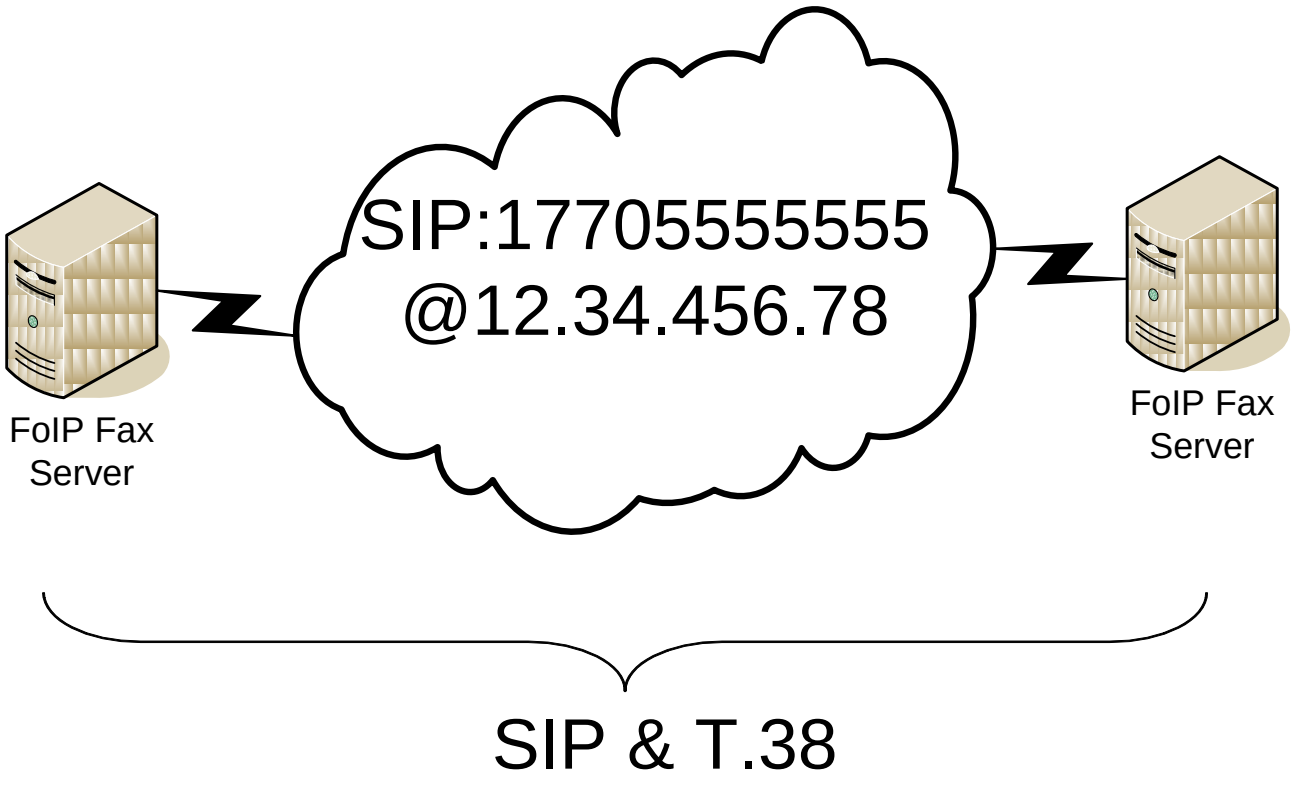
Separating the Issues



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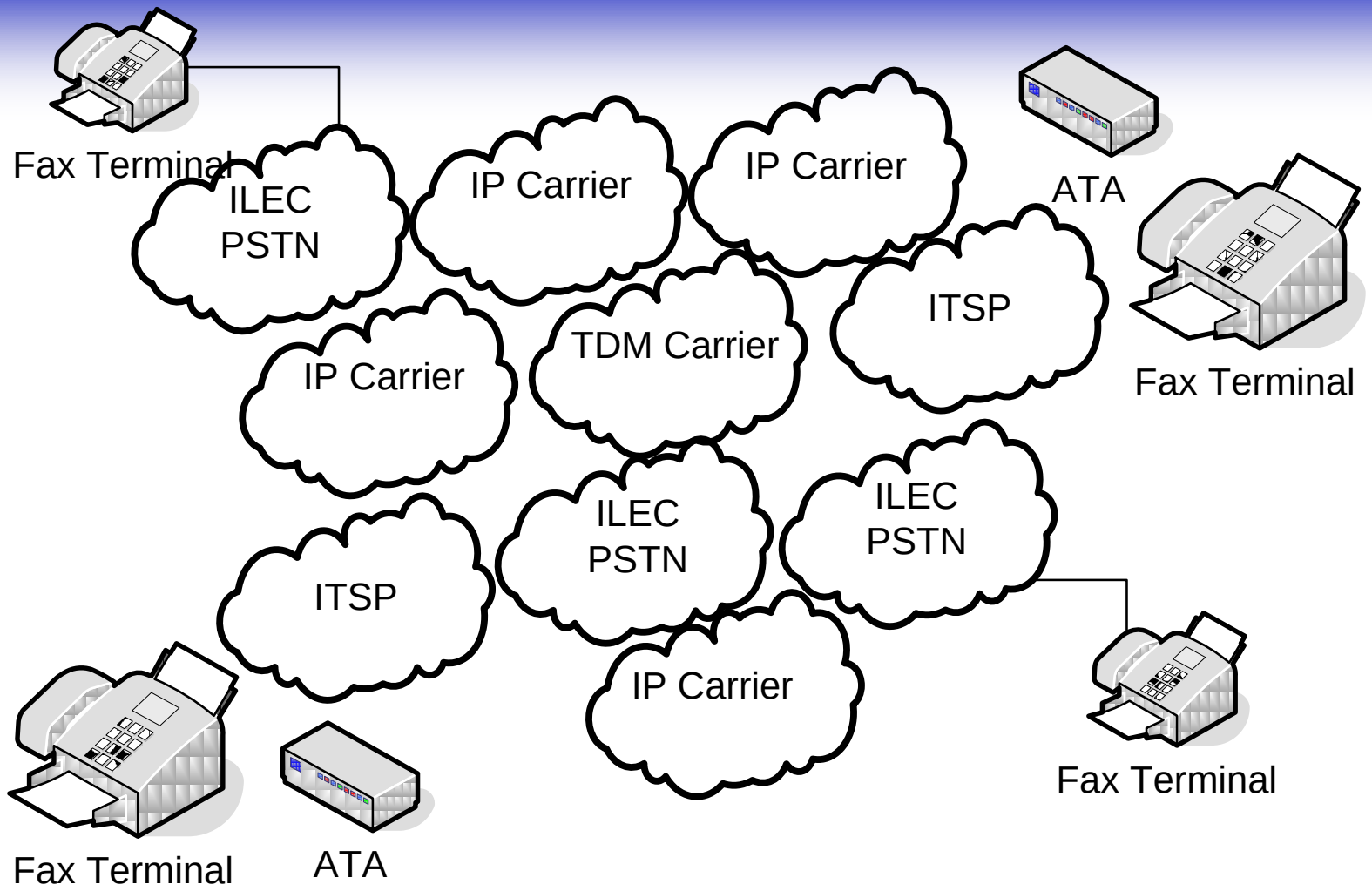
Carrier-Based Fax



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So…What about testing?

- Many networks are untested for FoIP.
- Many firewalls and other network elements are not correctly configured.
- Excessive signaling delay remains undiagnosed

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Plan Your FoIP Trip

Dahlonega, GA

Roswell, GA

Add Destination - Show options

Get Directions

Driving directions to Roswell, GA

Suggested routes

1. GA-400 S/US-19 S **47.2 mi**	**55 mins**
2. GA-9 S and US-19 S 52.8 mi	1 hour 12 mins

Dahlonega, GA

1. Head **southwest** on **Public Square N** toward **S Chestatee St**

148 ft

2. Turn left at **S Chestatee St**

5.5 mi

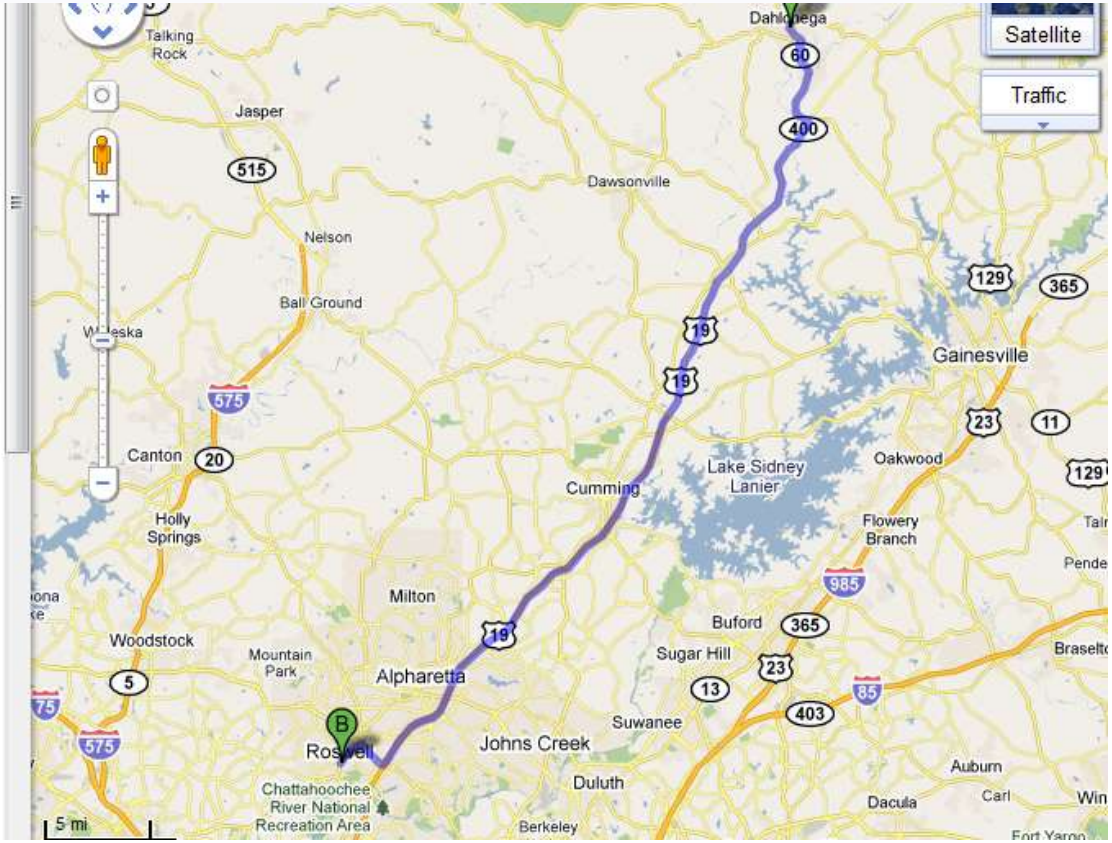
3. Turn right at **GA-400 S/US-19 S**

38.5 mi

4. Take exit **7** for **GA-140 W** toward **Roswell**

0.2 mi

5. Turn right at **GA-140 W/Holcomb Bridge**



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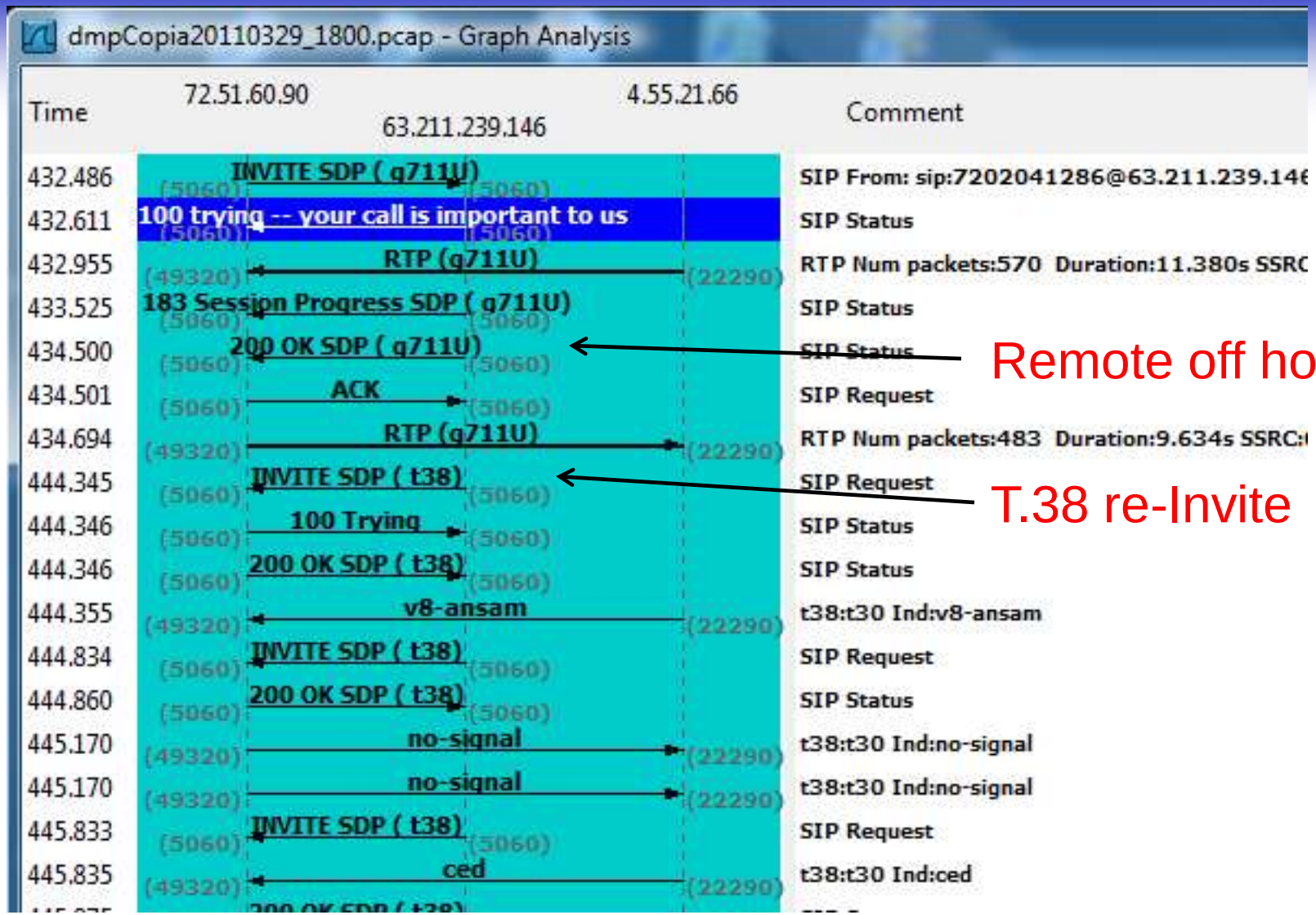
Some Results:

In a Recent Broadcast Test
200 out of 2000 calls
had late-arriving T.38 re-Invites
leading to fax failures.

Outbound to ITSP



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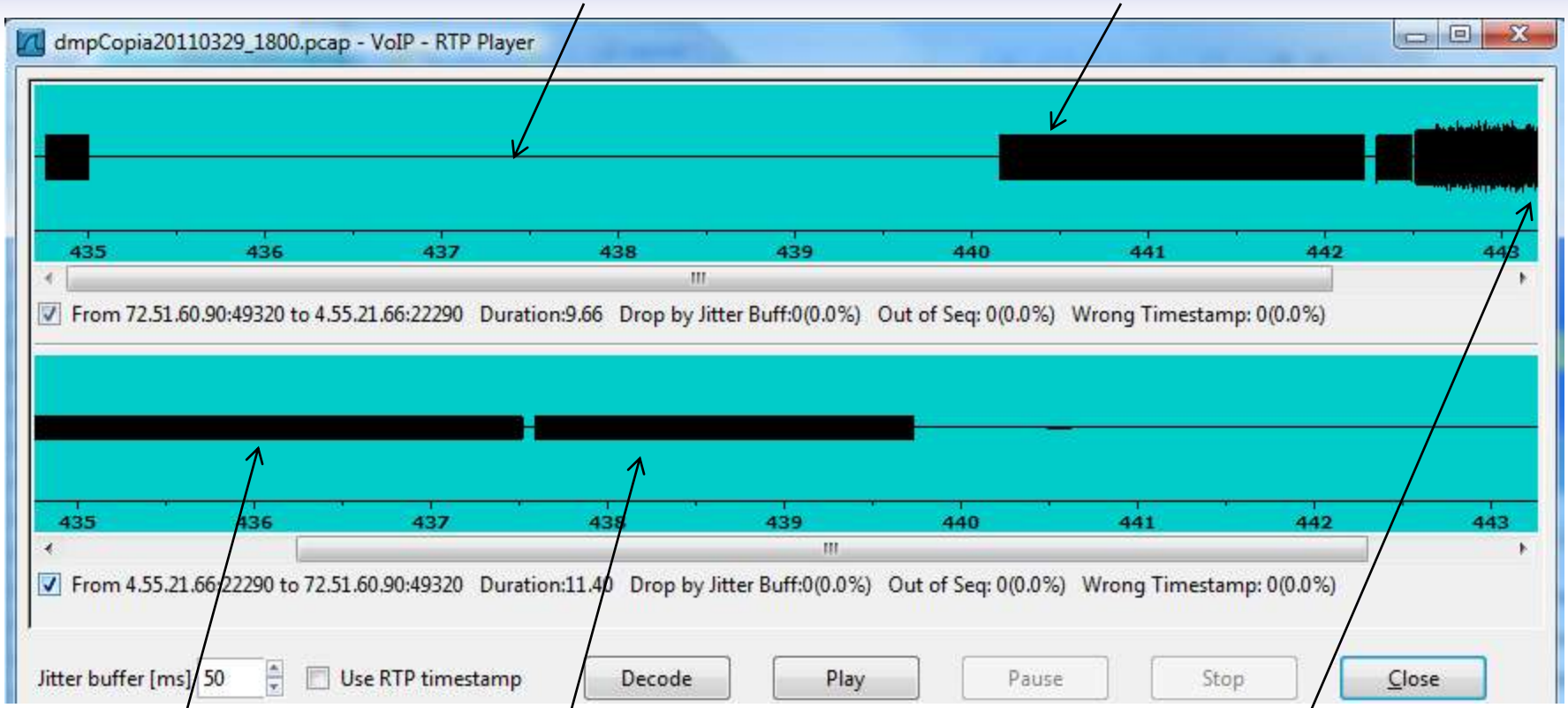
G.711 Audio



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So…

Can our industry respond effectively to these problems?

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Yes!

- Deutsche Telekom
- iBasis
- SFT
- OTEGLOBE
- TATA
- Telkom SA
- WIS
- Telekom Italia Sparkle
- Telecom Poland
- Telefonica
- Reach
- FSB
- Telenor

SIP Forum FoIP Task Group Goal:

Develop and publish the guidelines (recommended practices) that will reduce the implementation problems that are today hindering IP-based fax deployments in carrier-based applications.

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Problems Solved & To Be Solved

- T.38 needed to be clearer about some parms. (see T.38 10/2010, D.2.3.5)
- V.34-SIP integration is complex

  (see T.38 10/2010, D.2.2.5)
- Tandem connections do not appear to have been adequately tested. (on-going)

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But…

Reliable IP-based real-time fax can only be achieved with effective cooperation between vendors (SIP Forum) and carriers (i3 Forum).

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What the Industry Needs

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i3 forum

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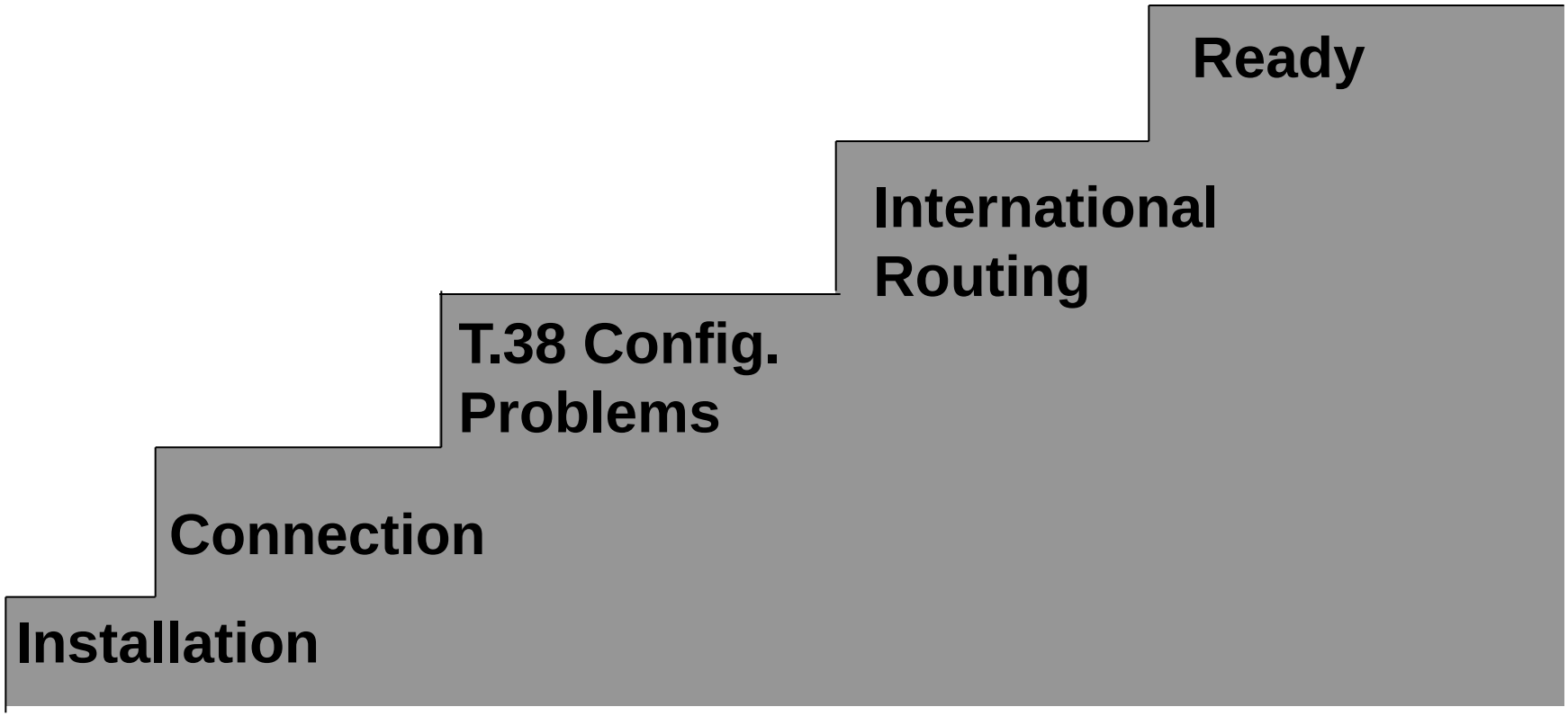
Test Plan



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Schedule:

- Installation: Oct.-Feb.
- Testing: 1H2011
- Collection/analysis: Q2
- Recommendations: Q3
- Follow-up testing: Q4
- Final report: Q4/1Q12

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SIP Forum & i3 Forum FoIP Task Groups… Will We Solve the Phase II problems?

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