SIP.edu Working Group Meeting

Internet2 Fall Member Meeting

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Draft Agenda

- SIP.edu goals and overview

- Working Group update

  - Implementation status

  - Cookbook status

  - SIP.edu workshops

  - Vendor support

- Presentations

  - SIP.edu by numbers

  - ENUM in Australia

  - UA registration

- Expanding the charter

SIP.edu Goals and Overview
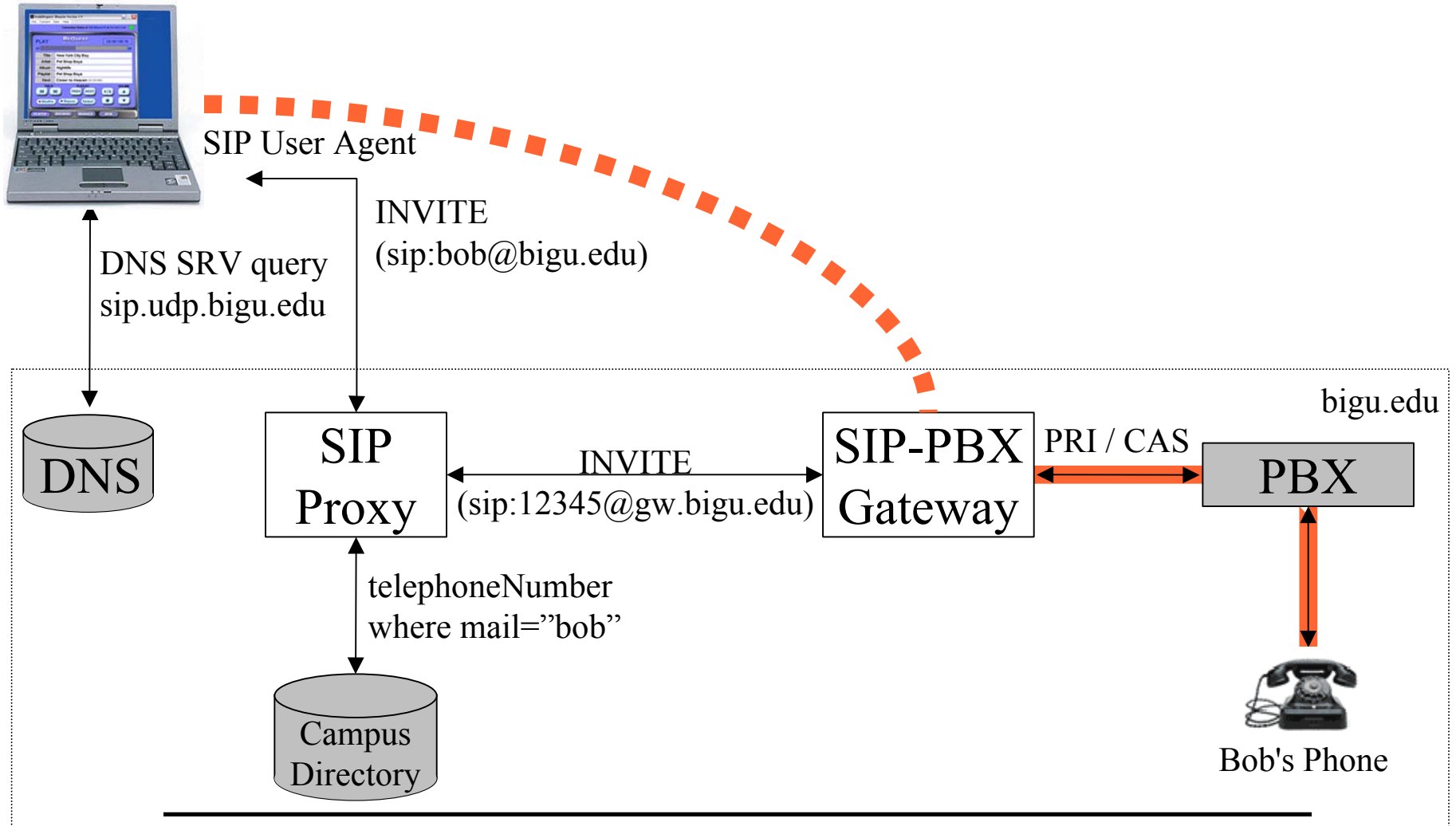
SIP.edu Goals

- ## SIP Connectivity

  Build a large base of SIP-reachable Internet2 users by making existing campus PBX, Centrex, and VoIP systems reachable via SIP
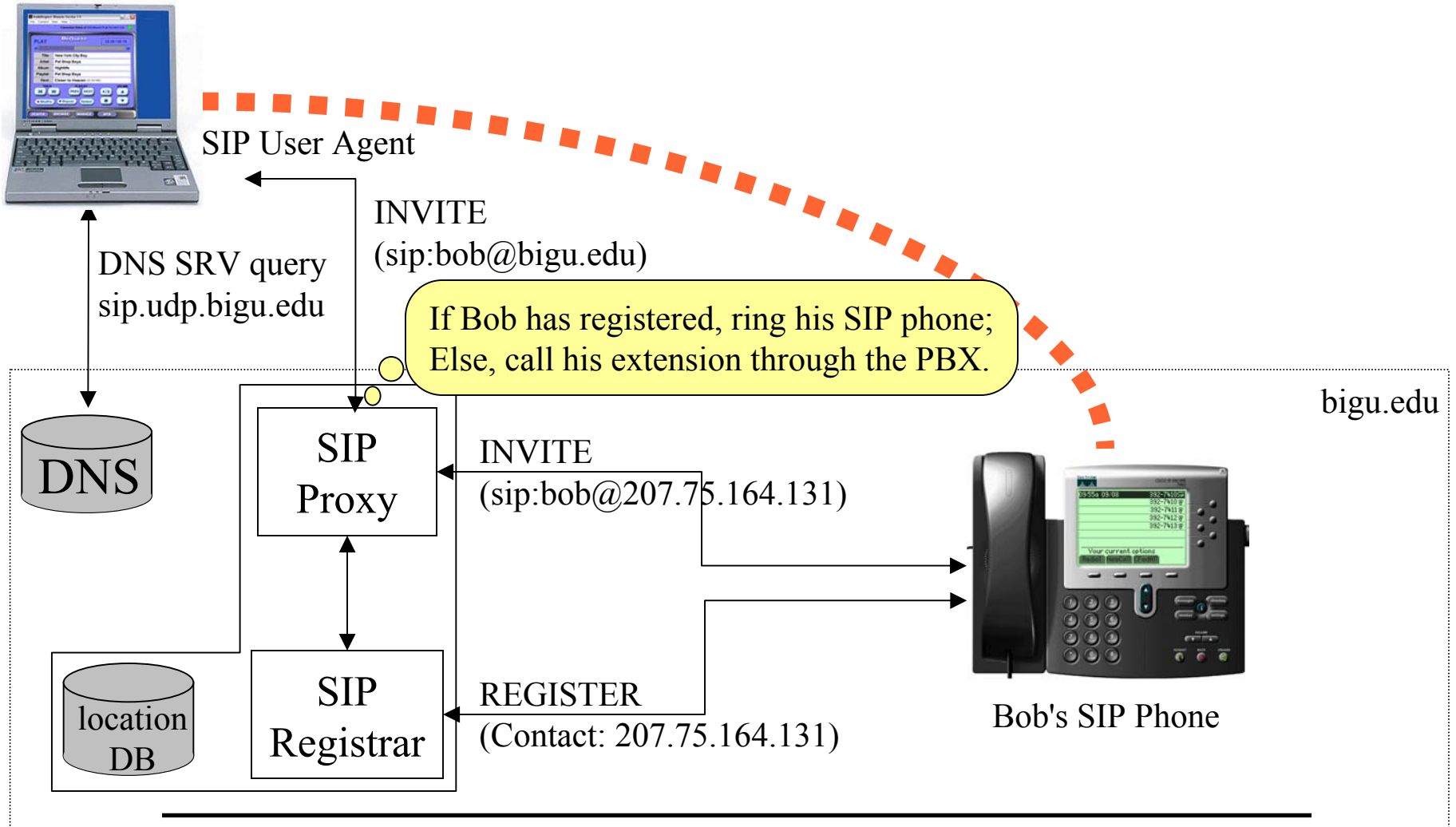
- ## SIP Addressing

  Facilitate the convergence of communications identities by promoting the use of email addresses for voice and multimedia communications

SIP.edu Architecture (Phase 1)

SIP User Agent

INVITE
(sip:bob@bigu.edu)

DNS SRV query
sip.udp.bigu.edu

DNS

SIP
Proxy

INVITE
(sip:12345@gw.bigu.edu)

SIP-PBX
Gateway

PRI / CAS

PBX

bigu.edu

telephoneNumber
where mail="bob"

Campus
Directory

Bob's Phone

SIP.edu Architecture (Phase 2)

SIP User Agent

INVITE
(sip:bob@bigu.edu)

DNS SRV query
sip.udp.bigu.edu

If Bob has registered, ring his SIP phone;
Else, call his extension through the PBX.

bigu.edu

DNS

SIP
Proxy

INVITE
(sip:bob@207.75.164.131)

location
DB

SIP
Registrar

REGISTER
(Contact: 207.75.164.131)

Bob's SIP Phone

Why Phone NUMBERS?

- Users should not be burdened with device addresses, when it's <u>people</u> they really care about

- Addresses should be mnemonic and empower enterprises to manage the identities of their users

  sip:dbaron@mit.edu

- It's time to put E.164 phone numbers behind us!
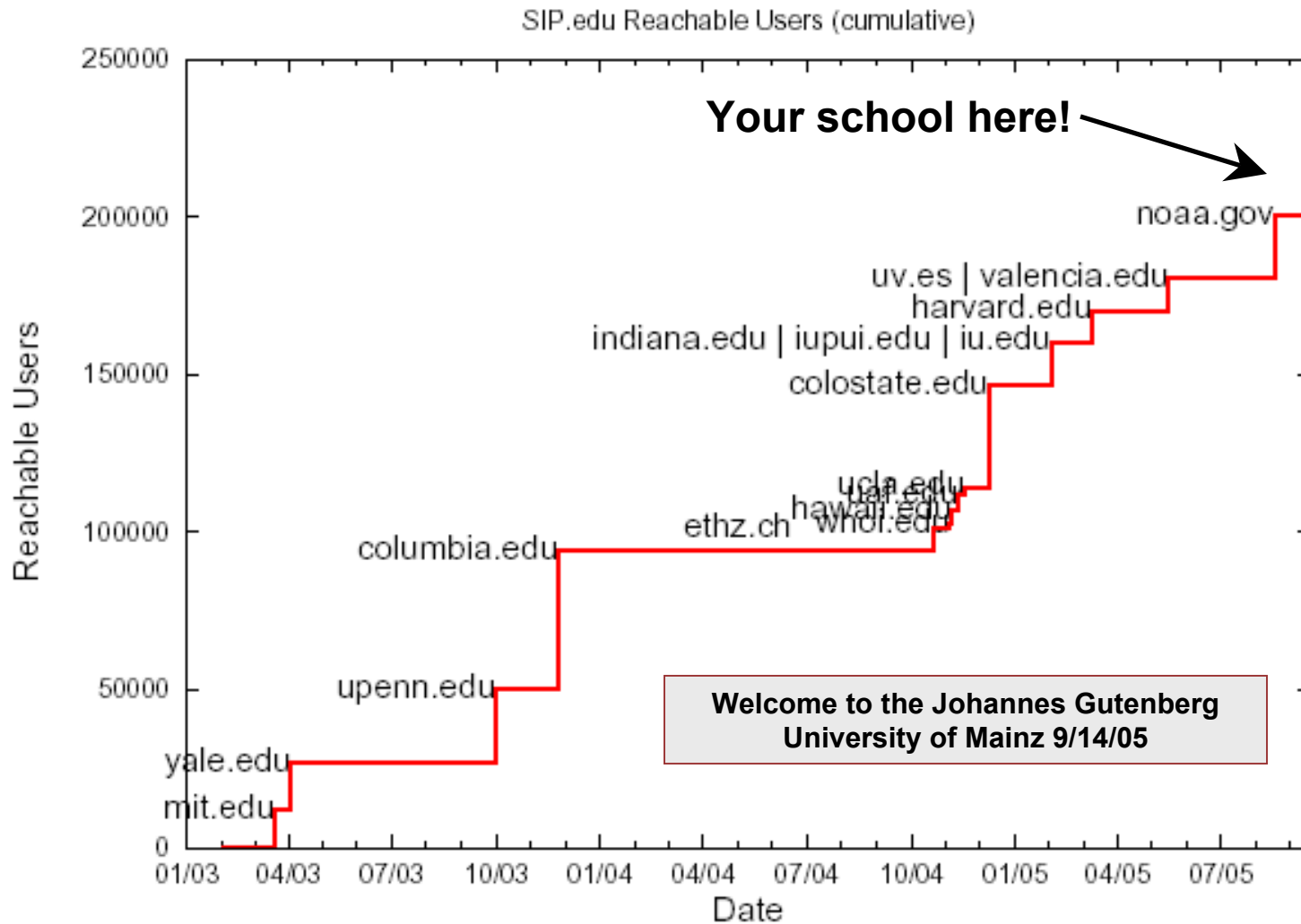
- A.G. Bell did <u>not</u> say:

  "+1-617-252-1232, come here. I need you!"

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SIP.edu "gaps"

- SIP is more than voice
  - Video and IM are important too
  - Presence services change the user experience

- Chickens without eggs only gets you half way
  - We've made everybody SIP reachable, now who's going to call them?

- The 12-digit keypad problem will be with us for awhile
  - What do we do until the devices have a 21st century user interface?

Implementation Status

SIP.edu Reachable Users (cumulative)

Your school here!

noaa.gov

uv.es | valencia.edu
harvard.edu
indiana.edu | iupui.edu | iu.edu
colostate.edu

ucla.edu
uaf.edu
hawaii.edu
ethz.ch   whoi.edu

columbia.edu

upenn.edu

Welcome to the Johannes Gutenberg University of Mainz 9/14/05

yale.edu

mit.edu

Reachable Users: 250000 / 200000 / 150000 / 100000 / 50000 / 0

Date: 01/03 04/03 07/03 10/03 01/04 04/04 07/04 10/04 01/05 04/05 07/05

Implementation Status (cont.)

- SIP Proxies
  - Avaya
  - Cisco
  - Interactive Intelligence
  - Iptel.org SER (11)
  - Pingtel
- Gateways
  - Asterisk (4)
  - Avaya
  - Cisco (7)
  - Interactive Intelligence

Implementation Status (cont.)

- PBXs
  - Ericsson
  - Lucent (2)
  - Mitel
  - Nortel (6)
  - Siemens (3)

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Cookbook Status

See **http://mit.edu/sip/sip.edu/**

- Sections have been added
  - Cisco SIP Proxy Server (CSPS)
  - Cisco Gateways
- Missing pieces
  - Asterisk gateway
- Some information is over two years old now
  - Proxy and gateway sections could be updated for current releases
  - User agent section is also dated

Vendor Support

- Avaya
  - Developed LDAP plug-in for directory integration
  - Sponsored first SIP.edu hands-on workshop

- Cisco
  - Discount package for CSPS

- Comcast
  - Sponsored first SIP.edu implementers workshop

- Pulver.com
  - Developed BlueLava package for SER/Asterisk
  - Workshop support – software and instruction

SIP.edu Workshops

- Implementers workshop (1)

    – Dealt with technical and policy issues surrounding deployments

- Hands-on workshops (2.5)

    – Provided hands on experience with proxies and user agents

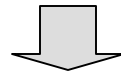   – Servers and hard phones provided by Texas A&M ITEC

Presentations

ENUM

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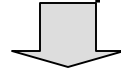
ENUM Quickie

- E.164 number   +1-617-252-1232

- Strip and reverse   23212527161

- Dot it   2.3.2.1.2.5.2.7.1.6.1

- Add root   2.3.2.1.2.5.2.7.1.6.1.e164.arpa

DNS query

Get list of URLs

1) **sip:dbaron@mit.edu**

2) **mailto:dbaron@mit.edu**

A few words about ENUM

from AARNet -

- Australian Trial running since June 2005 (Governed by ACMA and AusRegistry)

- AARNet is a Tier 2 Registrar and provides this service to its members and associates

  – Two commercial Registrars provide the service to the public

- In stage 1 a dedicated number range is used 05900xxxxx ($\rightarrow$x.x.x.x.x.0.0.9.5.1.6.e164.arpa)

- ~ 40 ENUMs registered so far (by AARNet)

- Developed our own Admin-system

ENUM Issues

- Worldwide deployment has been slow

  – Especially in North America – country code 1 has not yet been assigned

- Who "owns" the numbers anyway?

  – Even if your number is included in e164.arpa does it get assigned to you – or your carrier?

  – Do you get control over the responses?

- Results – private roots

  – But which one(s) do you use?

  – What if they give you different answers?

ENUM Testing in SIP.edu

So is the answer just another root for .edu?

- Test ENUM server at SipEduEnum.pulver.com

- Test SIP redirect server too

  sip:+<countrycode><number>@redirect.SipEduEnum.pulver.com:5062

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UA Registration

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UA Registration Thoughts

Some early thoughts on an MIT solution…

- Allow open registration for any one in the campus community
  - Reuse X.509 client certificates for authentication
  - Or mail a secret to a campus email address

- Users would be able to manage their own SIP account via the web
  - Change SIP password
  - Change SIP service options
  - Default would be to forward to their listed PBX number
  - Or maybe just record a message and email it

UA Registration Thoughts (cont.)

- Users should be able to manage their call routing
  - Send calls to their PBX number
  - Or any other SIP URI that they choose
  - Or maybe to any "local" number
  - Allow for temporary registration of a SIP contact
  - Allow for recording a message and forwarding to email
  - Maybe allow for forking

- Custom call handling options
  - Routing based on From: field
  - Routing based on To: field
  - Time of day routing; calendar based routing; etc.
  - Special routing for unauthenticated calls

UA Registration Thoughts (cont.)

- Users should be able to manage their identities
  - Allow activation of aliases
    - Email aliases
    - Mailing lists the control
    - PBX numbers that they publish
    - Other unique numbers they "own"
  - Allow setting of their PSTN identity
    - Their published PBX number
    - Maybe any other number that they publish
    - Or some authentication method

UA Registration Thoughts (cont.)

- Users should be able to see their current SIP registrations

- Users should have access to their call histories
    - Outgoing calls
    - Incoming calls
    - Missed calls

- Call details should be available for advanced debugging and abuse analysis

- Third party call control for originating calls and changing identities

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Expanding the Charter

Expanding the Charter

- Options for "raising the bar" for SIP.edu

    – Should we just continue down the current path of increasing SIP reachability?

    – Or what might be the next "level" of deployment?

    – Or is there a set of "add-on" features that we might put forth as options for campuses to implement?

- Soliciting input from the Working Group membership

Expanding the Charter (cont.)

- Preliminary thoughts include

  - Expanded peering and connectivity

  - Policies for federated identities and peering

  - Models and best practices for UA registration services

  - Multimedia and presence alternatives

    - Promote SIMPLE based IM

    - Document sharing and whiteboarding

  - Integration with other app's – eg. calendars

  - Service procurement – a "voice Quilt"

  - Best practices for marketing SIP services on campus

SIP.edu

– Web page:

http://www.internet2.edu/sip.edu/

– Mailing list:

mailto:sip.edu@internet2.edu

– Conference calls:

Thursdays – 2:00 – 3:00pm Eastern US