



WELCOME

to the first

Workshop on H.350
Directory services for multimedia
networks



Why H.350?

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Origins Of H.350



- ViDe and Internet2 exploring ‘video and voice over IP to every person on Earth.’
- ViDeNet testbed providing ‘video and voice Internet’ for several hundred universities and research networks worldwide (<https://videnet.unc.edu>)
- ViDeNet scalability issues
 - Interoperability
 - Call signaling
 - Security
 - Network Management
- Operational need for directory enabled video/voice led to Video Middleware working group
- Architecture proposed to ITU-T, accepted and ratified as H.350





What Operational Needs?



- Universities are building central, authoritative user directories – Use this identity management system, don't replicate into vendor's (often proprietary) directory



- Standardize storage of protocol-specific data to ease updates and migrations; one central data store for multiple protocols



- Leverage identity management for reliable USER (not device) authentication



Other drivers



- COTS - We wanted solution to be something you could go to the store and purchase; therefore, adoption as a standard was necessary



- Use existing H.323/SIP protocols and require no protocol modifications



- Be useful for non-standards based conferencing (MPEG2/AG/VRVS)



What Is H.350 ?

- H.350 is
 - An LDAP schema
 - Standardized way to store information
 - Simple – includes basic elements
 - Extensible – can include proprietary ‘fancy’ elements
 - Multi - protocol
- H.350 is not
 - A protocol
 - Just for H series protocols



H.350 Series Recommendations

- **H.350** - Directory services architecture for multimedia conferencing
 - Base architecture
- **H.350.1** - Directory services architecture for H.323
- **H.350.2** - Directory services architecture for H.235
- **H.350.3** - Directory services architecture for H.320
- **H.350.4** - Directory services architecture for SIP
- **H.350.5** - Directory services architecture for non-standard protocols
- **H.350.6** – Directory services architecture for call forwarding and preferences
- **H.350 Implementers Guide**



A Peek Inside H.350

Enterprise Directory

inetOrgPerson

name (dn)

address

telephone

email

organization

organizational unit

commURI

RFC 1274

userPassword

H.350 commObject

commUniqueId

commOwner

commPrivate

h323Identity

h323IdentityGKDomain

h323Identityh323-ID

h323IdentitydialedDigits

h323Identityemail-ID

.....

h323IdentityEndPointTyper

h323IdentityServiceLevel

h235Identity

h235IdentityUid

h323IdentityPassword

userCertificate

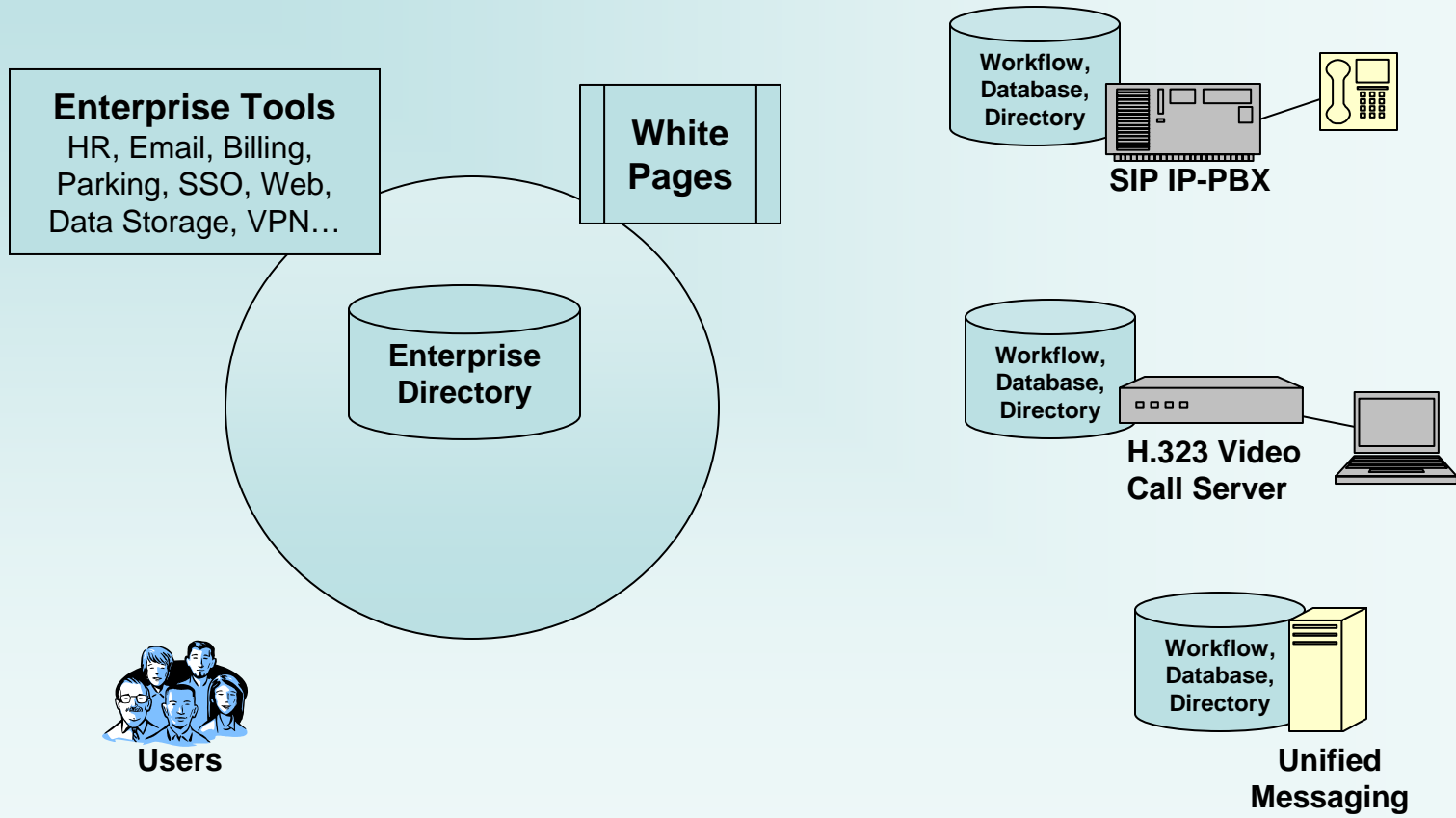


The Hardest and Most Expensive Part of Video / VoIP

- Not the protocols – they work pretty well
- Not calls servers and endpoints – they work well and are reasonably priced.
- Managing Users and Workflow becomes the biggest issue once deployment scales up.
 - Requesting gatekeeper/proxy server entry
 - Requesting white pages listing for dialing info
 - How to do reliable billing
 - How to implement classes of service
 - Getting configuration information right in endpoints



Redundant Processes





Problems Facing the Service Provider



- How do I manage full scale video / VoIP?
- How do I manage workflow?



- How do I manage multiple protocols?
- How do I keep from getting locked into a single vendor?



- How do I chose components from several vendors?
- I manage voice and video. You mean I have to manage users, too ?



Users...



- Get married and change their names
- Move to a different address
- Get promoted and get a new title
- Change service plans
- Graduate
- Get fired
- Owe library fines



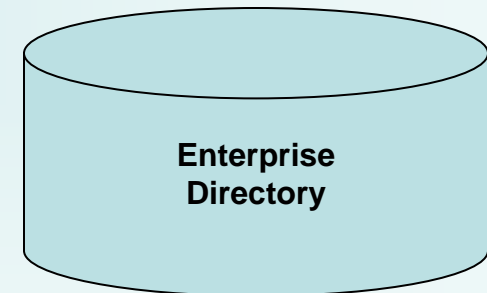
- Forget their passwords
- Need help configuring their endpoints
- Need to find other users





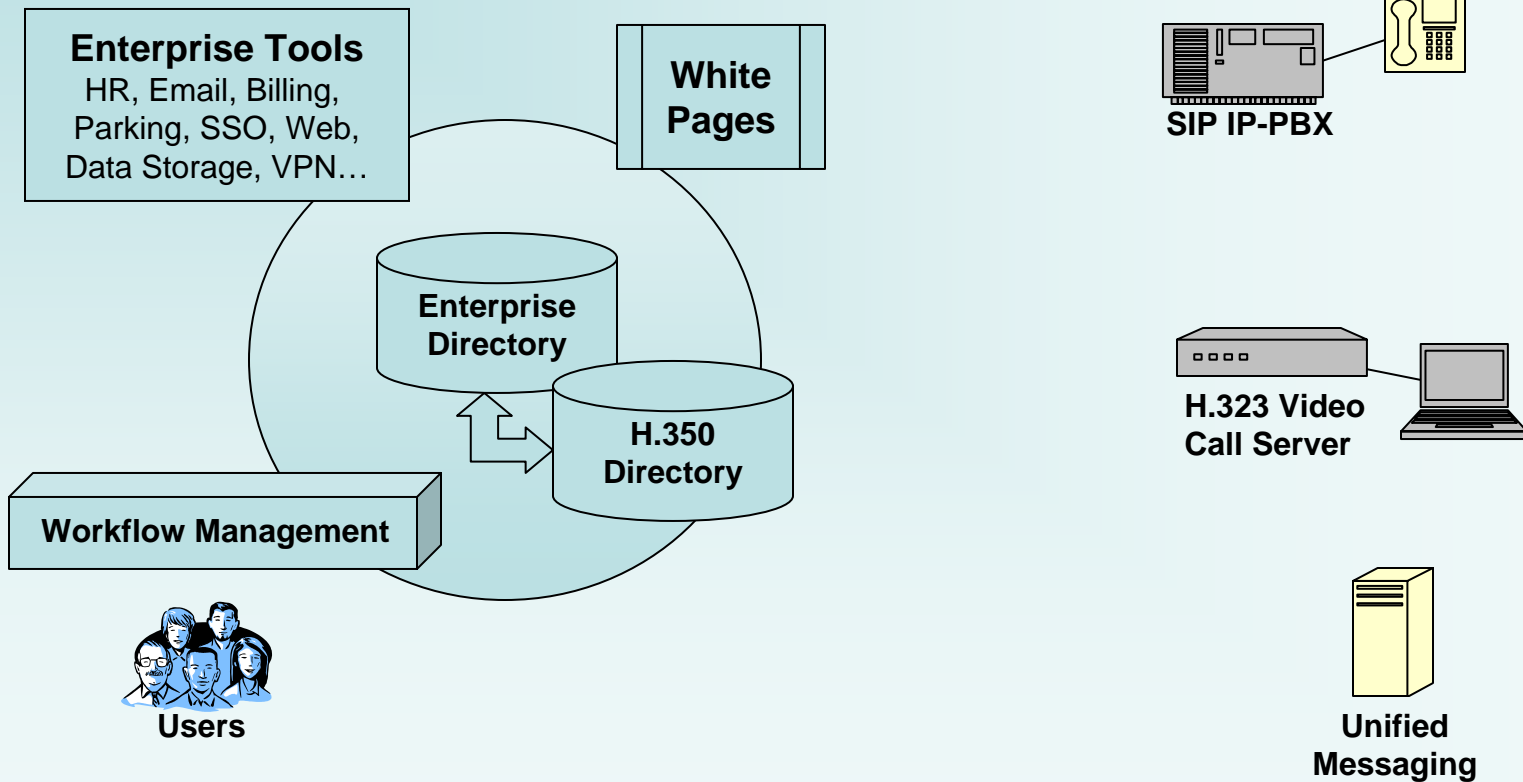
Enterprise Directory

- Central stores of information about people associated with an institution
- Authoritative (eg: Human Resources, Registrar; Telecommunications)
- ONE consolidated list – identities resolved (SSN!)
- Benefits:
 - Correct and current
 - Single location to disable account
 - Single location to reset password
- Video/VoIP manager – reinvent this wheel?





Directory Enabled Video / VoIP





Benefits To Standardized Identity Management for Video / VoIP

- Without re-working business process, you can
 - Change vendor platforms
 - Have multi vendor services
 - Integrate more than just video/voice (e.g. email, web)
- Leverage existing identity management tools
 - Most call server manufacturers not expert at identity management
 - LDAP tools are mature, secure, flexible, open



Opportunities provided by H.350

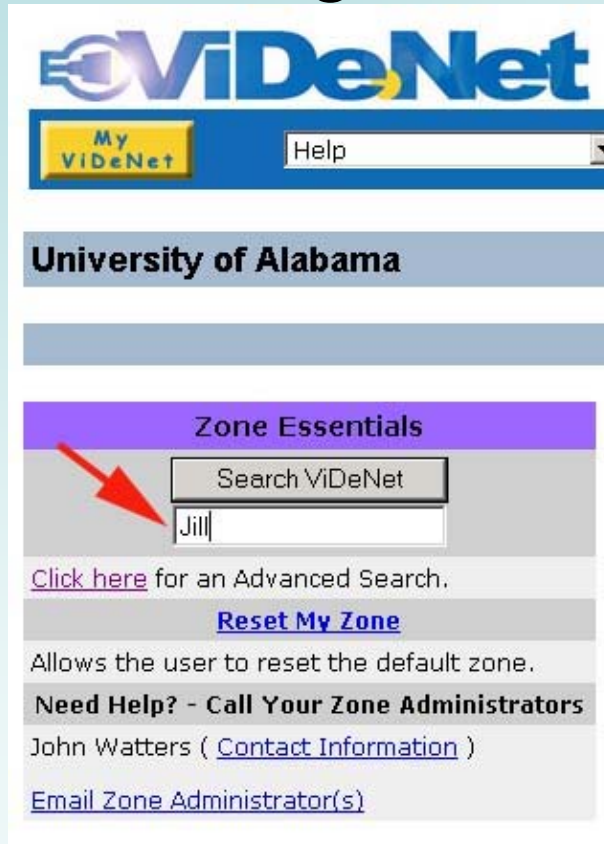


- OK, you're convinced that H.350 provides some significant management advantages – what else do you get by supporting H.350?





Prototype/Testbed H.350 directory <https://videnet.unc.edu> White Pages



ViDeNet
My ViDeNet Help

University of Alabama

Zone Essentials

Search ViDeNet
Jill

[Click here](#) for an Advanced Search.

[Reset My Zone](#)

Allows the user to reset the default zone.

Need Help? - Call Your Zone Administrators
John Watters ([Contact Information](#))

[Email Zone Administrator\(s\)](#)

(1) Search by Name

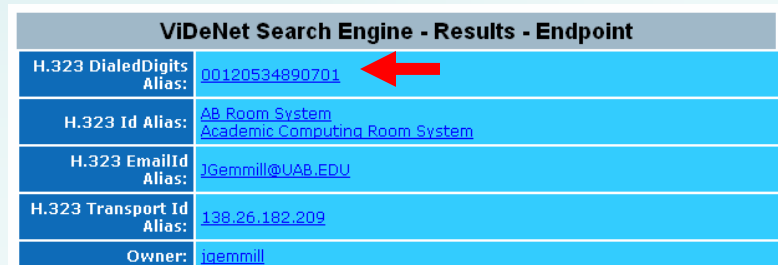


ViDeNet Search Engine - Results - List
Your search returned the following from 2 unique user(s).

You searched for:	Endpoint Name	Name/Owner	Institution	Department
jill	My Desktop	Jill Gemmill	University of Alabama at Birmingham (UAB)	Academic Computing
jill	AB 7th Floor Room Unit	Jill Gemmill	University of Alabama at Birmingham (UAB)	Academic Computing
jill	No Endpoint Defined Yet	Jill Gemmill	University of Alabama at Birmingham (UAB)	Computer and Information Sciences

New Search! Back

(2) Result: Associated with multiple endpoints



ViDeNet Search Engine - Results - Endpoint

H.323 DialedDigits Alias:	00120534890701
H.323 Id Alias:	AB Room System Academic Computing Room System
H.323 EmailId Alias:	jgemmill@UAB.EDU
H.323 Transport Id Alias:	138.26.182.209
Owner:	jgemmill

(3) Click to Dial?



Many Other Searches Are Possible

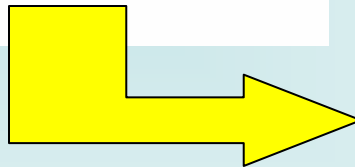


ViDeNet Search Engine

Word or Phrase for Search:

Select Field to Search:

From the Following Location:



ViDeNet Search Engine - Results - List
Your search returned the following from 1 unique user(s).

You searched for: 'alaska'	Endpoint Name	Name/Owner	Institution	Department
Alaska	No Endpoint Defined Yet	Craig Mollerstuen	GCI Communication Corp.	Megaconference V



ViDeNet Search Engine

Word or Phrase for Search:

Select Field to Search:

From the Following Location:



ViDeNet Search Engine - Results - List
Your search returned the following from 5 unique user(s).

You searched for: ***	Endpoint Name	Name/Owner	Institution	Department
Hebrew University of Jerusalem	Hebrew University #1	Abraham Agay	Hebrew University of Jerusalem	Authority for Computation
Hebrew University of Jerusalem	Hebrew University - HUCA confroom	Abraham Agay	Hebrew University of Jerusalem	Authority for Computation
RADVISION	Endpoint Number 1	Lior Mishan	RADVISION	Marketing
VCON Ltd.	No Endpoint Defined Yet	Lita Zukerman	VCON Ltd.	Megaconference
vcon	No Endpoint Defined Yet	Ran Bar-Shua	vcon	technical support
RADVISION	No Endpoint Defined Yet	Roy Muchtar	RADVISION	Development



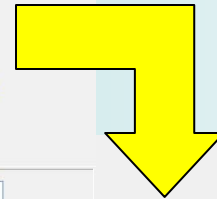
You decide how to format the standardized content; you could do this from an application's address book

UAB Electronic Phonebook



Search for with name(s) which

Tip: to search for a part of a name, use the asterisk as a wildcard. For example, * will match Joseph, John, Joey, Joanna, etc. Click on the i-ball for [more hints and tips](#)



Jill B Gemmill

< alias: **JGemmill**

Address: JGemmill@uab.edu

University department: **Academic Computing**

University job title: **Asst Dir Academic Computing**

Physical location of office: [Administration Building](#)

Paper mail address of office: **AB 719, zip 0107**

Office telephone number: **(205) 975-2850**

Office hours: **9-6**

Current project(s): **Internet2, Secure Internet videoconferencing, ViDe**

Other colleges attended: **Antioch College**

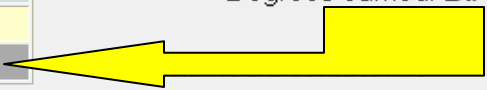
URL for WWW use: <http://www.dpo.uab.edu/~jgemmill/>

Fraternity or sorority: **never have liked them much**

Degrees earned: **B.A.; M.S.; MSEE**

[H323] My Desktop

Attribute	Value
commOwner	jgemmill
h323IdentitydialedDigits	00115490000
h323IdentityEndpointType	Terminal
h323IdentityServiceLevel	Default



- [\[H323\] My Desktop](#)
- [\[H323\] AB 7th Floor Room Unit](#)



Endpoints Implementing H.350 can...

- Lookup correct configuration information and load it. Solves big user support issue!
- No matter what protocol or brand, necessary data can be managed in an organized way.
- Do white pages search via LDAP protocol – receive answers; ‘click to dial’ if supported.



Endpoints supporting H.235 can...

- Do enterprise authentication (via LDAP)
- Obtain videoconferencing credentials
- Use VC credentials to obtain CORRECT configuration
- Logging now suitable for usage tracking/billing





Call Servers Implementing H.350 can...

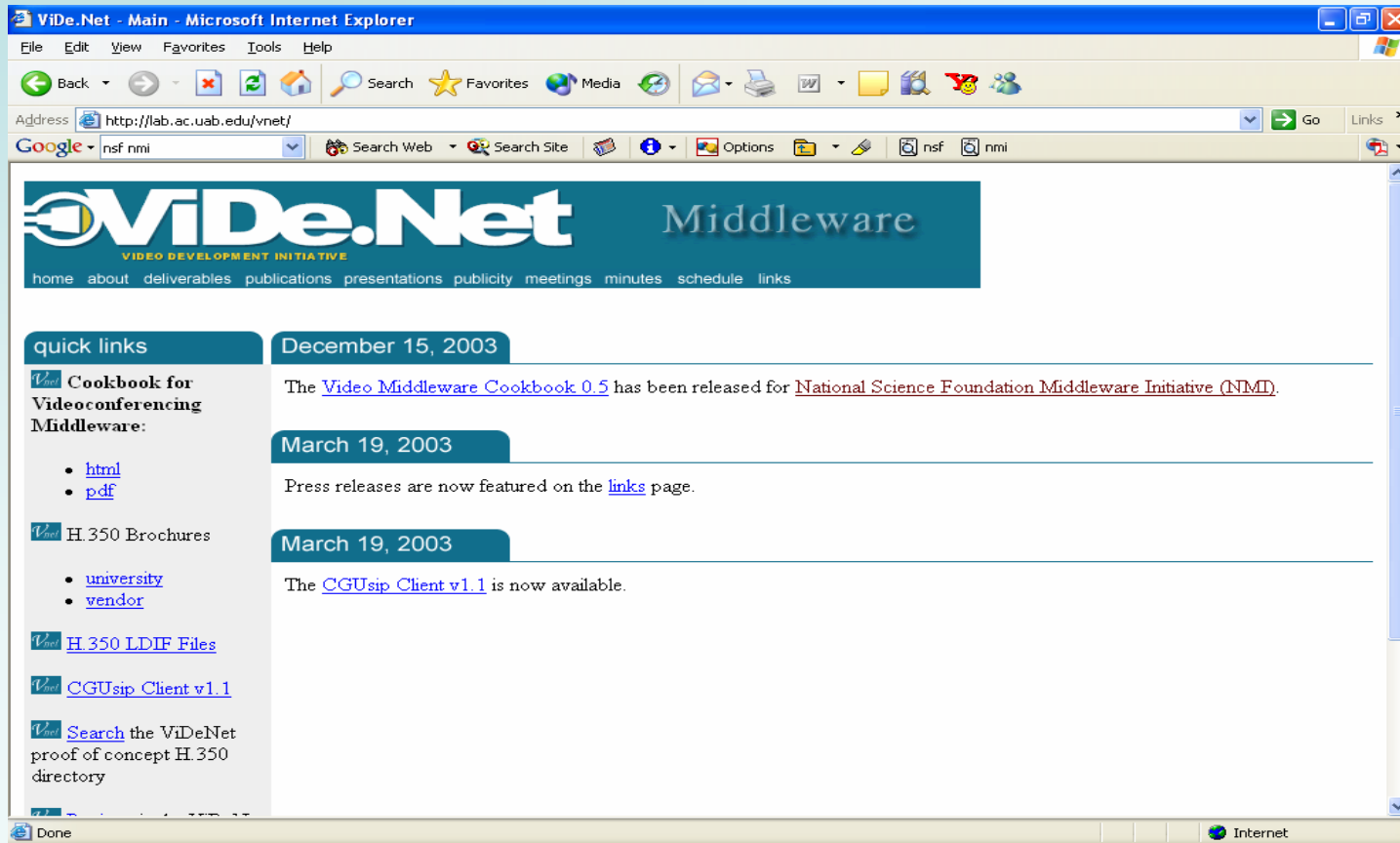


- Pull information from canonical store
 - Solves manual data entry problems
 - Can convert canonical to proprietary if needed on the fly
- Use *XIdentityServiceLevel* attribute to provide levels of authorization
- Scale up video/voip operations





Video Middleware Cookbook <http://lab.ac.uab.edu/vnet/>



ViDe.Net - Main - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://lab.ac.uab.edu/vnet/>

Google nsf nmi Search Web Search Site Options nsf nmi

ViDe.Net

VIDEO DEVELOPMENT INITIATIVE

Middleware

home about deliverables publications presentations publicity meetings minutes schedule links

quick links

[Cookbook for Videoconferencing Middleware:](#)

- [html](#)
- [pdf](#)

[H.350 Brochures](#)

- [university](#)
- [vendor](#)

[H.350 LDIF Files](#)

[CGUsip Client v1.1](#)

[Search](#) the ViDeNet proof of concept H.350 directory

December 15, 2003

The [Video Middleware Cookbook 0.5](#) has been released for [National Science Foundation Middleware Initiative \(NMI\)](#).

March 19, 2003

Press releases are now featured on the [links](#) page.

March 19, 2003

The [CGUsip Client v1.1](#) is now available.

Done Internet



Roadmap for today

- **Plenary**
 - Description of H.350 standard and demonstration of its use in pilot ViDeNet directory
 - New Services And Business Opportunities
 - Deployment Choices
- **Breakout Sessions**
 - “LDAP Configuration Choices” (System Administrator, Directory Manager)
 - “For Developers - interaction of H.350 with client and server or services” (Software/Product Developers)
 - “Brainstorm: Killer Implementations and Deadly Roadblocks” (Product Developers and Marketers; CTO’s)
- **Report from Breakouts and Moderated discussion of breakout subject matter**



Acknowledgments:

Internet2 Middleware Architects (MACE) and Video Middleware (VidMid) Working Groups

SURA Southeastern Universities Research Association

RADVISION, Cisco

NSF ANI-022710 “*ViDe.Net: Middleware for Scalable Video Services for Research and Higher Education*” (Gemmill (PI), Chatterjee, Johnson)

NSF ANI-0123937 “*NSF Middleware Initiative*” **via SURA-2002-103** “*UAB Middleware Testbed Program: Integrated Directory Services, PKI, Video, and Parallel Computing*”, Subcontract (Shealy, Gemmill (Technical Lead))

NSF EPS-0091853 via UA-01-016 “*Alabama Internet2 Middleware Initiative*”, NSF EPSCoR (Shealy, Gemmill (co-PI))

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