



RTC-AG

Real Time Communications Advisory Group *TAMU Implementation*

Walt Magnussen,
Texas A&M University

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RTC-AG

Executive Summary

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Background of RTC-AG

- Chartered in 2005 by Application Strategy Council to examine Internet2 strategy around:
 - The primary purpose of the RTC-AG is to develop, monitor and evolve an Internet2 Real Time Communications (RTC) strategic agenda.
 - The RTC strategic agenda shall encompass principles, architecture(s), roadmaps for development, guidance to Internet2 members on selecting and deploying tools for real time collaboration.
 - The RTC-AG shall also provide guidance to the ASC and Internet2 on existing and needed working groups and activities in the RTC arena.

Requested Deliverables

- A technology/application architecture with a roadmap.. including identification of key standards that are necessary for interoperability
- Recommendations for production, Internet2-wide and beyond, implementations of RTC tools and applications
- A guide to RTC applications
- A recommendation on how best to align the production service, research and development activities now going on within Internet2



RTC-AG

Deliverables

Can be found at:

www.Internet2.edu/rtc

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Executive Summary

- A high level view of the RTC-AG tools and how they can be used.
- Targeted at CIOs and high level managers. Includes:
 - Definition of RTC
 - Articulation of why RTC is of strategic importance to campuses
 - Benefits of the Internet2 RTC Reference Architecture (why campuses should participate)
 - Use case scenarios
 - Suggested timeline for action

Reference Architecture

- Call Signaling
- Middleware
- Addressing
- Authentication and Authorization
- Directory Services and Identity Management
- Security: Encryption and Privacy
- Security: DoS and SPAM Prevention
- Disaster Recovery and Business Continuity
- Multipoint Conferencing
- Data Collaboration Tools
- Presence
- Location Services and Mobility
- Accounting
- Firewall/NAT Traversal
- Finding People and Services
- Staffing and Operational Planning
- Application Cluster
- Emergency and Regulatory

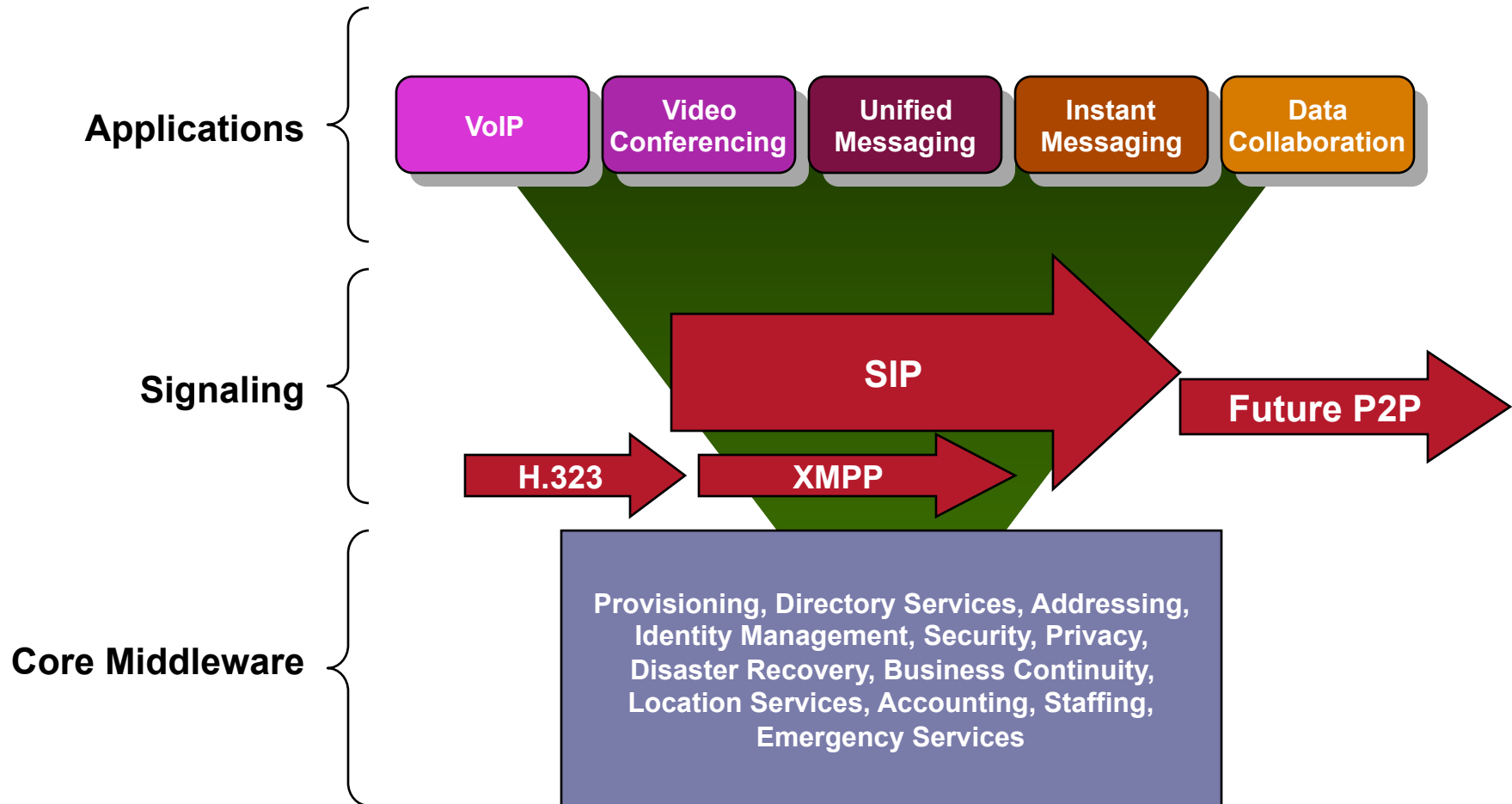
Architectural Checklist

- The Real Time Communications Architectural Checklist is a tool that can help campuses assess how closely their systems and services comply with the recommendations of Internet2's Real Time Communications Reference Architecture.
- Who should use the tool?
 - Campus CIOs
 - IT Managers
 - Vendors
 - RTC Technical Professionals
 - Internet2 Management

- Sharing of deployment experiences related to the reference architecture
- Promoting deployment of reference architectures
 - Enabling very large scale RTC network availability
 - Facilitating campus interoperability
 - Creating a market for Corporate Member Work Products
- Publishing and Outreach

- Security and Identity Management
- Location Services
- Disaster Recovery
- Next Generation Protocols
- Mobility

Whither the Path?





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RTCAG implementation at TAMU

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■ Drivers

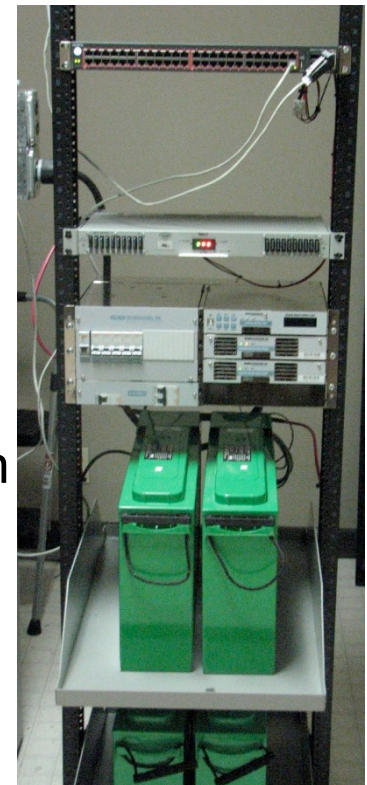
- Desire to discontinue use of 50 year old copper cable plant
- End of life of OLD TDM key systems (needed for multiple line appearances)
- New construction – currently turning up \$550,000,000 in new construction

TAMU VoIP deployment

- Following RFP, selected Aastra Clearspan (based upon Broadsoft carrier grade SIP softswitch)
- Migrate over 2,000 lines in 2009
- Anticipate 3,000 additional lines per year for next 7 years
- 10% to 15% will always remain Centrex
- Customer advisory committee selects Polycom as the SIP user agents

Reference Architecture

- Call Signaling – Standards based SIP with only SIP extensions that are based upon an RFC
- Addressing – Standard E.164
- Authentication and Authorization – Standard SIP
- Directory Services and Identity Management – LDAP integration of Directory services
- Security: Encryption and Privacy – None at this time, evaluating SRTP
- Security: DoS and SPAM Prevention – Use of Session Border Controller. This is a back to back user agent that is commonly used by all carriers. Use separate RTC VLAN for VoIP
- Disaster Recovery and Business Continuity-
 - Geographic Separation of Core SIP proxies(2 with initial implementation)
 - Zone distribution of TFTP boot servers
 - Take advantage of 10 Gigabit ethernet mesh network (2 paths to each Zone)
 - Access switches backed up with DC power plant (10 hours of uptime for each IDF)



- Multipoint Conferencing – Lower cost SIP based conference servers (2.2 cents per minute per port)
- Presence – Not addressing at this time
- Location Services and Mobility – evaluating dual mode (GSM/Wifi SIP gateway this Spring)
- Accounting – Standard CDR records
- Firewall/NAT Traversal – SBC meets all SIP NAT RFCs
- Staffing and Operational Planning
 - Increase in staffing
 - Additional training
 - Closer relationship between traditional voice and traditional data (sharing cable management data base, internal monitoring tools and installation standards documents)
- Emergency and Regulatory – currently locking telephone MAC address to switch port. Will migrate to NG 9-1-1 as soon as it is available (based upon LLDP med location with LoST routing)
- Network Monitoring – Going to use AppCritical with a monitoring point in each VoIP building (Packet Loss, Latency and Jitter thresholds set)

Questions ?