



- **IEEE 802.21 MEDIA INDEPENDENT HANDOVER**
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- Abstract: This is the abstract text. Replace this text with a short statement of the contents and purpose of the presentation. Communicate well, you only have a few lines or so to convey the essence of the slides.

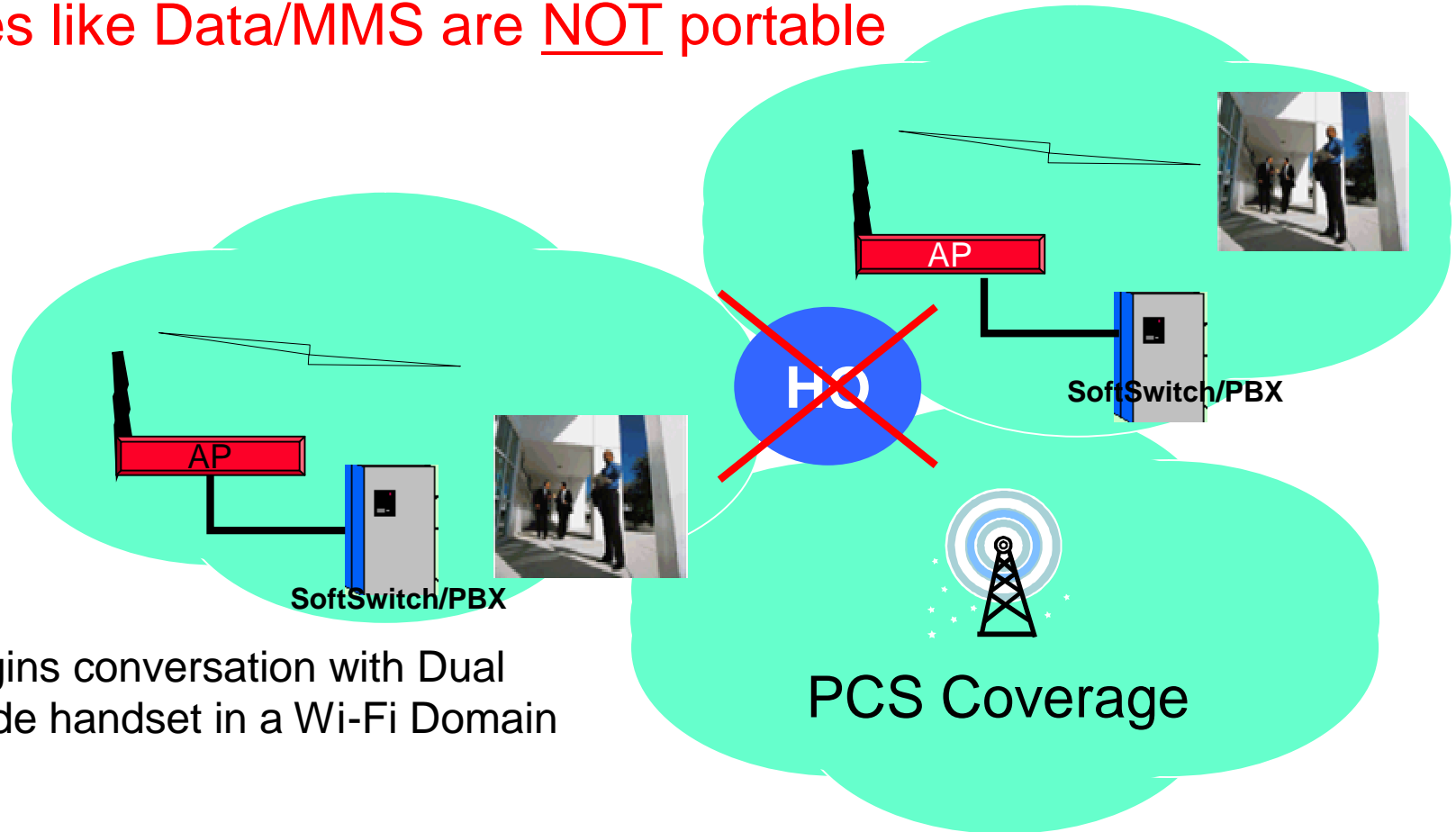


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Convergence is Needed

Connection drops upon changing networks & Subnetworks
Services like Data/MMS are NOT portable



Begins conversation with Dual mode handset in a Wi-Fi Domain

Seamless Services Requirement

- Service availability independent of network/transport
 - GSM GPRS/802.xx/CDMA 1xRTT
 - Non intrusive alerting on cost changes
- Seamless Transition
 - HO Management
- User experience
 - Familiar MMI for existing services
 - Gradual introduction of new services

Easy to use services with no additional training

Requirements

- Must maintain ease of deployment
 - Home, Enterprise, Service Provider (Wireless, Wired, ...)
 - Scalability
 - Centralized, Clustered, or Distributed
 - Independent deployment
 - Network accessibility and Network connectivity
 - Media translation and Device capability
 - Work within existing network infrastructure
- Security and trust associations must exist
 - Authentication (User, Device, or both)
 - Authorization (Access and Service networks)
 - Privacy (Bearer voice and data)
 - Authenticated and authorized access versus mobility
 - Trusted network and password privacy

Requirements

- Must support Mobility of
 - Data, voice, and multimedia domains
 - Roaming (back office integration)
 - Handover (Homogeneous Packet domain)
 - Handover (Heterogeneous packet to circuit domain)
 - Wi-Fi to GSM and Wi-Fi to CDMA
- Ease of use
 - Access network detection
 - Automated sign-on
 - Seamless HO
 - Converged services
 - VMS, VM Notification...
- Back office integration
 - Accounting information collection
 - Accounting information reporting
 - Network should maintain its own billing

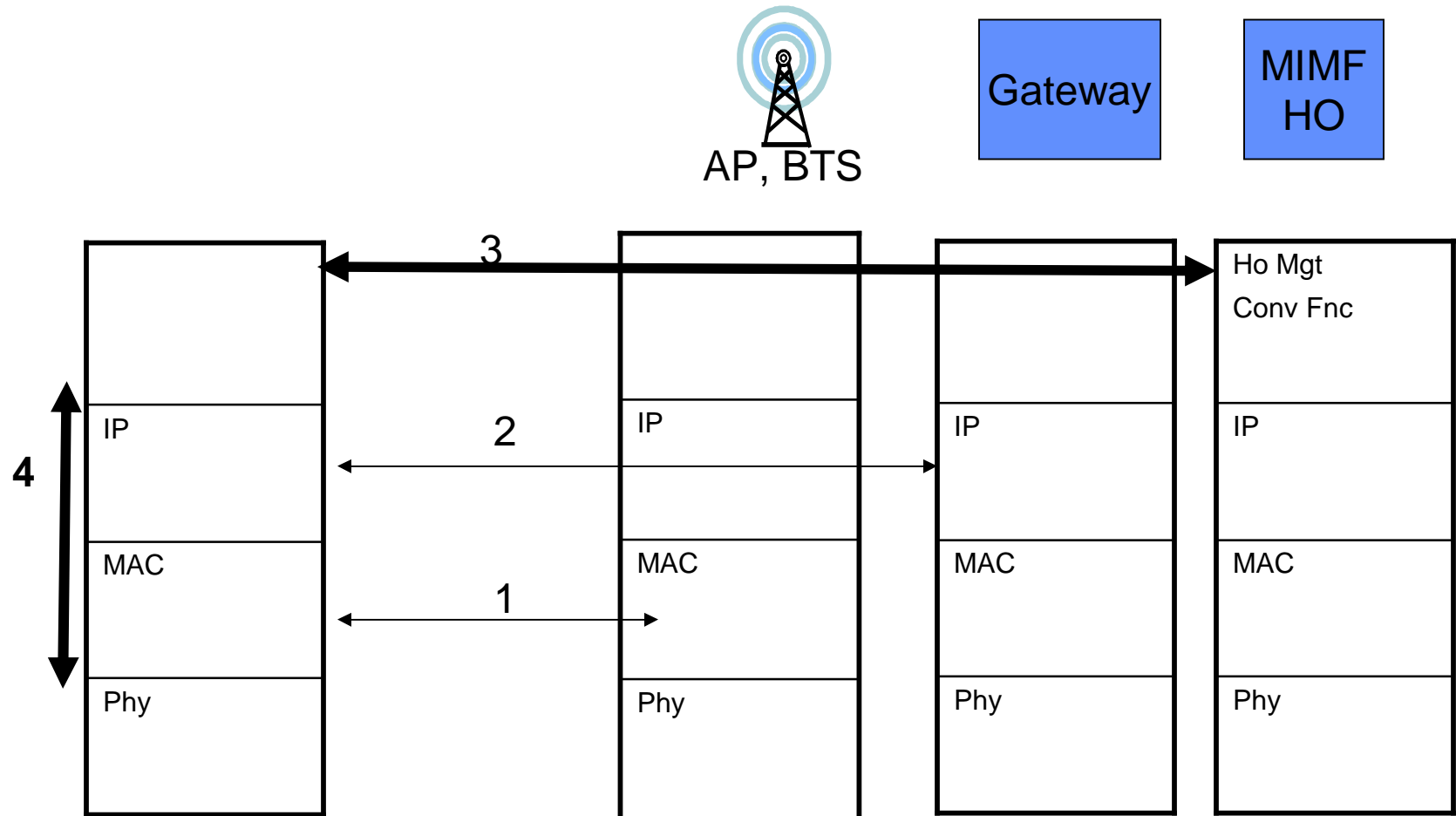
Primitives (Terminal & NW)

- Resource Management
 - Discovery
 - Availability, Reservation, Algorithmic (e.g. Power, neighbors)
 - Native, Collaborative or Integrated
- Policy
 - Security, QoS, Access, Accounting
 - Enforced at network, or End-to-end collaboration
- Mobility
 - Session, User, Terminal, Packet or PDU
 - Procedures
 - Mobile initiated
 - Network initiated
 - Network initiated, mobile assisted
- Network Support
 - Native
 - IP (IPv4, IPv6, ATM, MPLS, GSM/UMTS, CDMA)
- Services
 - Location
 - IMS
 - Content
 - VHE

Required Handoff Categories

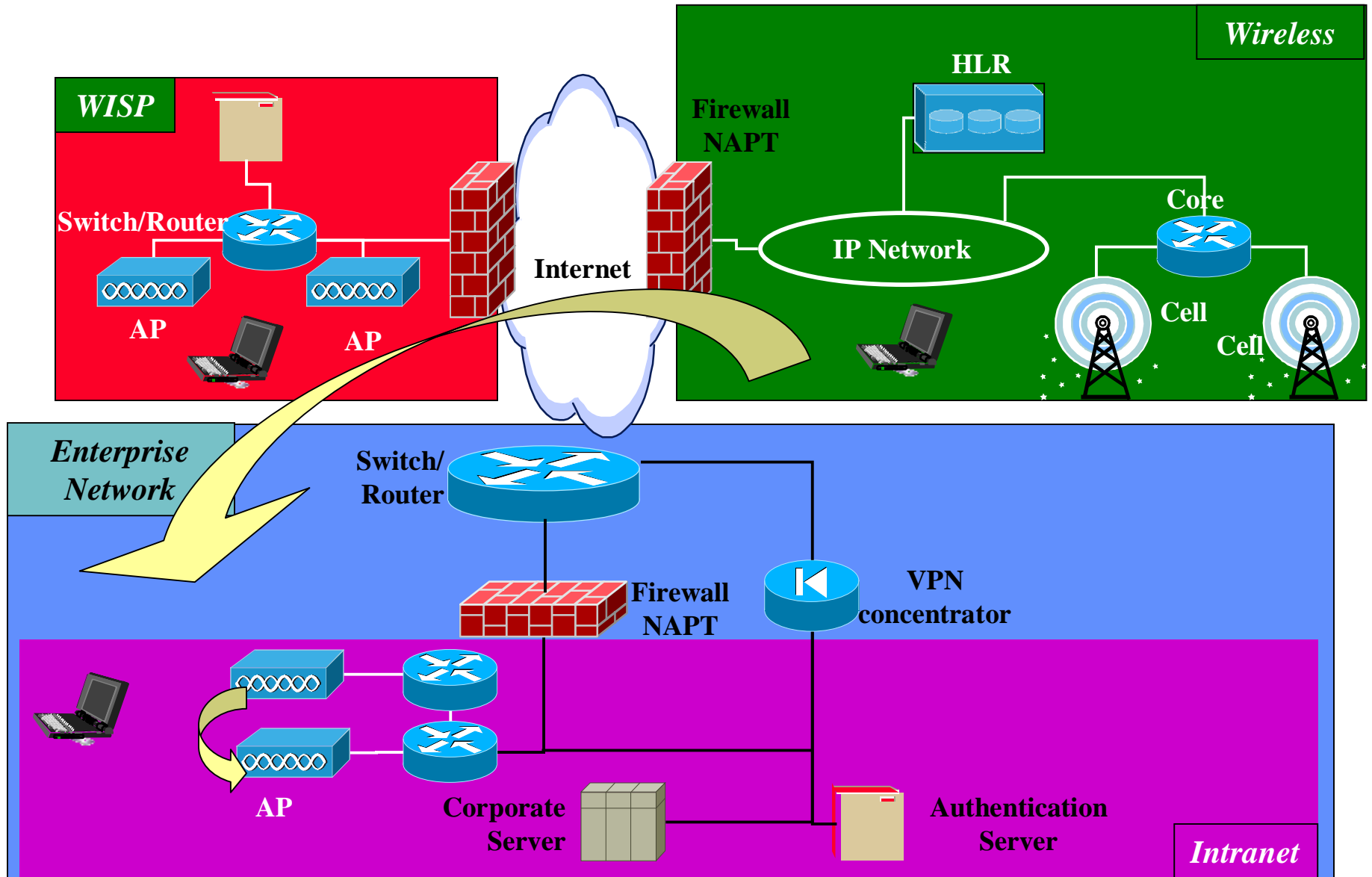
- Must support applications: Data, Voice, and Multimedia
- Support IP Packet HO (Horizontal)
 - Switched, VLAN, MPLS, or Routed network
 - Different network identifiers (Realm, SSID, Domain, ...)
- Support Circuit to Packet HO (Vertical)
 - Registration
 - Authentication
 - HO
 - Location Management
- Support Packet to Circuit HO (Vertical)
 - Candidate list QoS
 - Cellular activation
 - Call leg setup
 - HO

Standardized Communication



- 1 Measurements, System Attributes, Authentication, Admisssion
- 2 Measurements, Authentication, Admisssion
- 3 Heterogeneous HO Criteria Measurements, System Attributes, Authentication
- 4 Heterogeneous HO Measurements, primitives, preferences, commands

Mobility Scenario



Summary

- Deployable
 - Work within existing networks and infrastructure
 - Serve different markets
- End user Experience
 - Seamless service handover and continuity
 - Alerts, Choice – policy based
- AAA
 - Shared authentication would be nice, but not necessary
 - Billing should be done by each network
- Loose vs Tight coupling
 - Both possible, but numerous access technologies makes tight coupling not scalable.
- Maintain Security Associations
- Mobility and Handover
 - Where is L2.5?
 - Support different methodologies
 - MINA and NIMA via comm protocol.
 - Handover information must be QoS, Application aware
 - Do not assume any handoff protocol, such as MIP
 - E.g. packet to cellular voice handoff
 - Preserve freedom to choose handover algorithms based on User, Operator and Vendor interests.
 - Allow for session/service, terminal, and user mobility

Summary

- Communication protocol
 - Extensible, Std for multiple id, auth, svcs (SIP)
 - Should Specify Format
 - IMS, VOIP drivers
 - Identify routable valid handoff candidates/network selection
 - E.g. Starbucks valid L2, L3, but not service continuity
 - Handover information must be QoS, Application aware
- Communication Link/Session Identification
 - Primitives/Qos/handoff decision on session characteristics
 - Location independent
 - Implementation mapping to native network and/or transport protocol
- Primitives
 - Mgt, L1, L2, L3+
 - Standardize Format when available
 - Translates from different L2 technologies
 - Publish info to requesting entities
 - Handover information must be QoS, Application aware