



International Telecommunication Union

Converged Services Framework in an NGN Environment

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ITU-T Workshop

"Mobile Telecommunications and Fixed/Mobile Convergence – the realities going forward"
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Legacy Networks

- PSTN
 - Carrier grade circuit switch voice
 - Low-Modest bandwidth IP services
- Cellular Networks
 - “Carrier grade” voice
 - Low-Modest bandwidth IP services
- IP Data Networks
 - Higher rate
 - Best effort transport

Future Access Networks (AN)

- Infrastructure trend toward an IP core, and a range of services to the end user
- Wireless broadband
 - WiFi: 10-54Mbps (~30m coverage range)
 - WiMAX: 40Mbps (~10km coverage range)
- APON (BPON, GPON)
 - ATM-based IP services: 1-10Gbps (fiber)
- Cable, DSL
 - DOCSIS/EuroDOCSIS 2.0: ~40Mbps (coaxial)
 - ADSL2plus: ~25Mbps DS (up to 1.5km)
- IP is the convergence layer for access, but gives no inherent guarantee of quality



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Future Service Networks (SN)

- With new data networks available, market-driven service migration to “Everything over IP”
 - Data (email, web)
 - Voice / telephony
 - Streaming video & audio
 - Networked games
- Services today are naturally converging at the device’s application layer
 - This convergence is not backward compatible
 - No access/service guarantees
- Some operators are providing services over IP, but compatibility cannot be assumed in general

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Barriers to FM Service Convergence

- Cost constraints drive legacy infrastructure to change gradually
- Services are mismatched; resources available in one network may not be available (or readable) in another
- Business models differ, and operators compete for users
- User expectations vary by application and from home to mobile to office



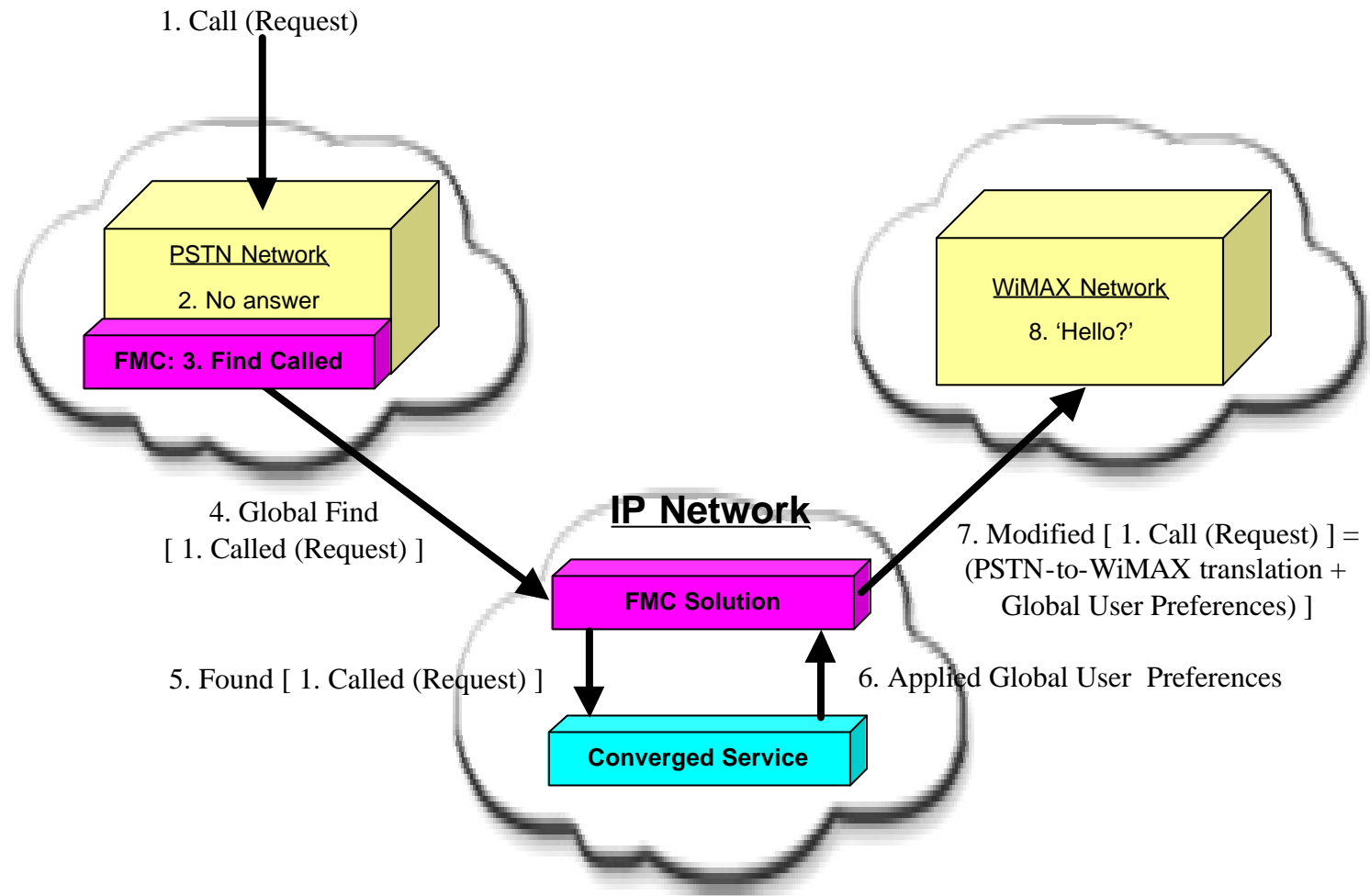
Successful FMC Service Convergence Requires:

- Physical connectivity across ANs
- Services provided independently of access
 - Service - Access decoupling
- Cross-provider cooperation
- Consistency with user expectations and legacy service behavior
 - Easy-to-use interface
 - Access anywhere
 - Trust maintained
 - Preferences enforced

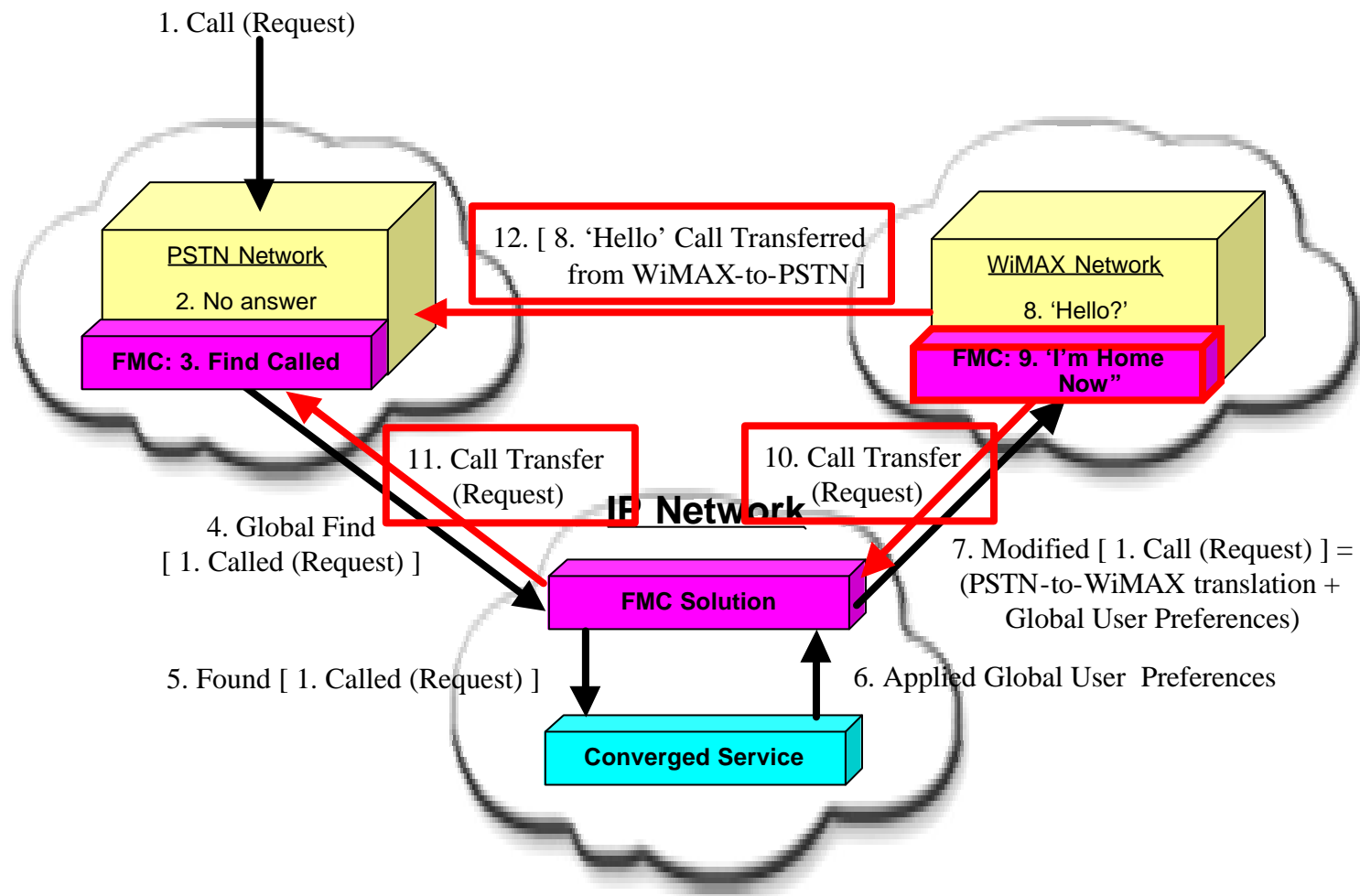
Example - Single Number Service

- “Find me” service allows a user to be reachable by a single number across multiple networks
- “Follow me” service allows a user to be mobile across multiple networks
- User preferences enforced
 - Cost
 - Availability
 - Preferred device
 - Convenience

Cross-provider "Find Me" Service



Cross-provider "Follow Me" Service



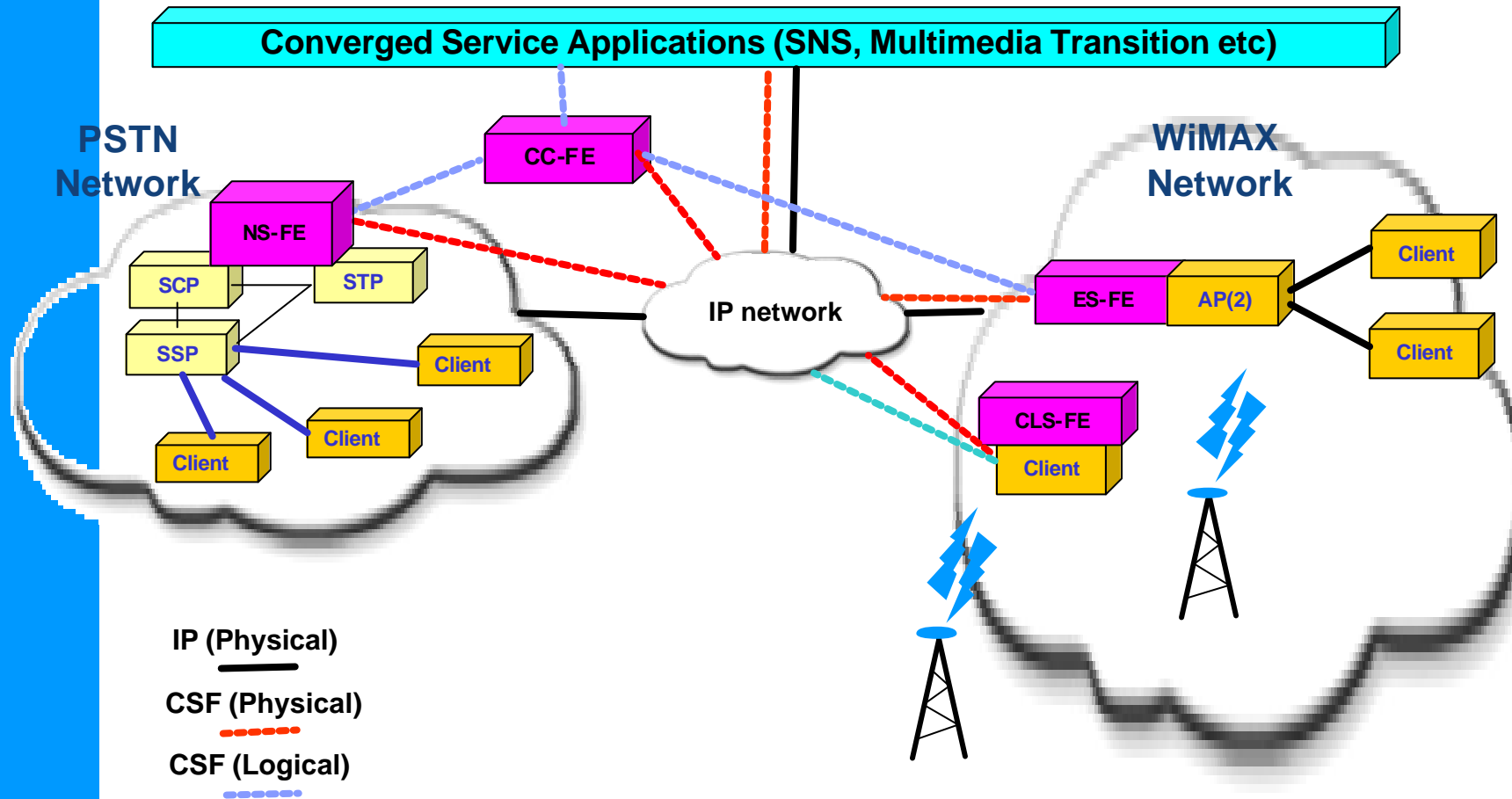
Converged Services Framework

- Supports AN-SN decoupling with maximum component re-use
 - Flexible overlay of coordination function and support functions where most cost-effective
 - Uses each access and service network's native abilities
- Allows for distributed processing and split management
 - Operators, end users control access to their components
 - Advanced services do not require that all networks implement support functions

Converged Services Framework 'Functional Entities' (FE)

- o **Convergence Control FE** binds the multiple identities, resources and sessions created by component AN and SN to coordinate services on a per-user basis
- o **Support Functions** provide interfaces to devices in the component networks
 - **Network Support FE** provides an interface to component AN for 'triggers', native resources
 - **Edge Support FE** provides an interface to edge components connected to AN and end devices
 - **Client Support FE** provides an interface to end user clients

Converged Services Framework





Converged Services Framework

o ITU-T status

- Release 2 work item established for CSF in WG2 of ITU-T FGNGN, March 2005
- Initial CSF draft created, June 2005
- CSF definition is ongoing within FGNGN WG2

Conclusions

- Fixed-mobile convergence requires global and regional standardization
- Service convergence must consider costs and effect on legacy equipment
- ITU-T will specify a range of options for graceful migration to advanced services and FMC through efforts such as CSF



Questions & Discussion

Thank you for your kind attention!