Multiservice Switching Forum (MSF)

ICBN 04'
Seamless Global Connectivity
and Services Anywhere, Anytime

Mark Carroll

AGENDA

- **Seamless Global Connectivity**

- **Multiservice Switching Forum**
  - **Goals**
  - **Strategy**
  - **Successes**
  - **Members**

- **MSF in 04'**

- **Members**

Seamless Global Connectivity

ICBN 04' Theme:

Communications and Networking technologies that facilitate Seamless Global Connectivity and Services Anywhere, Anytime

MSF Vision:

A standard, scaleable, profitable next generation network that allows for incremental voice, video and data service enablement on a common platform that is easily managed and maintained

multiservice switching forum

Enterprise

Small Business

Consumer

VPNs

Voice & Video

Internet

Mobility

Content

Transport

Service Provider of The Future

The Current Challenge:

- Separate "stove piped" networks that don't integrate well
- Very little interoperability between networks, components, carriers and vendors
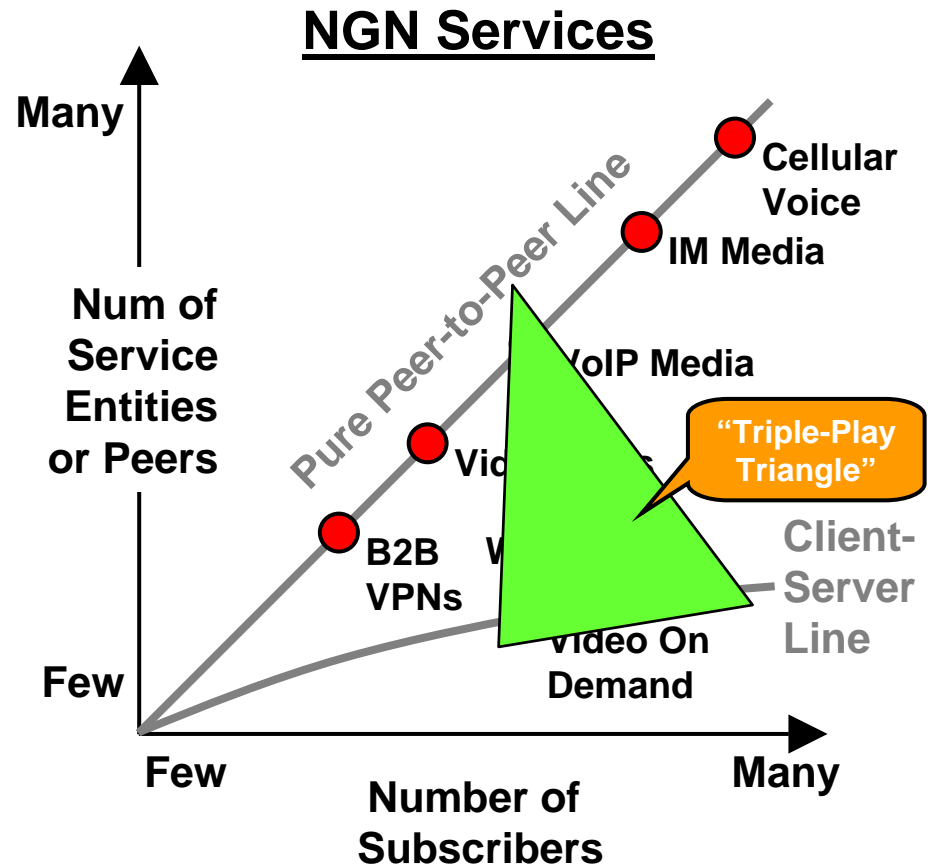- Separate systems management organizations
- Considerable legacy "lock-in"

Today
Single-service networks

Services

PLMN

PSTN/ISDN

Data/IP Networks

CATV

Access Transport & Switching Networks
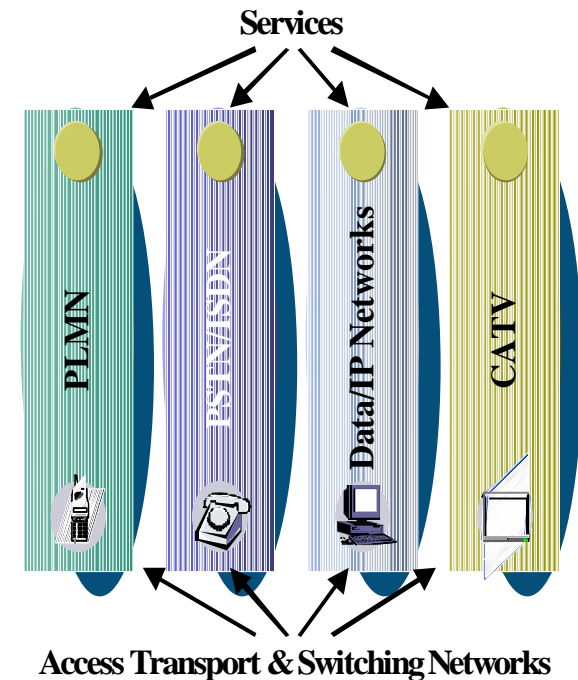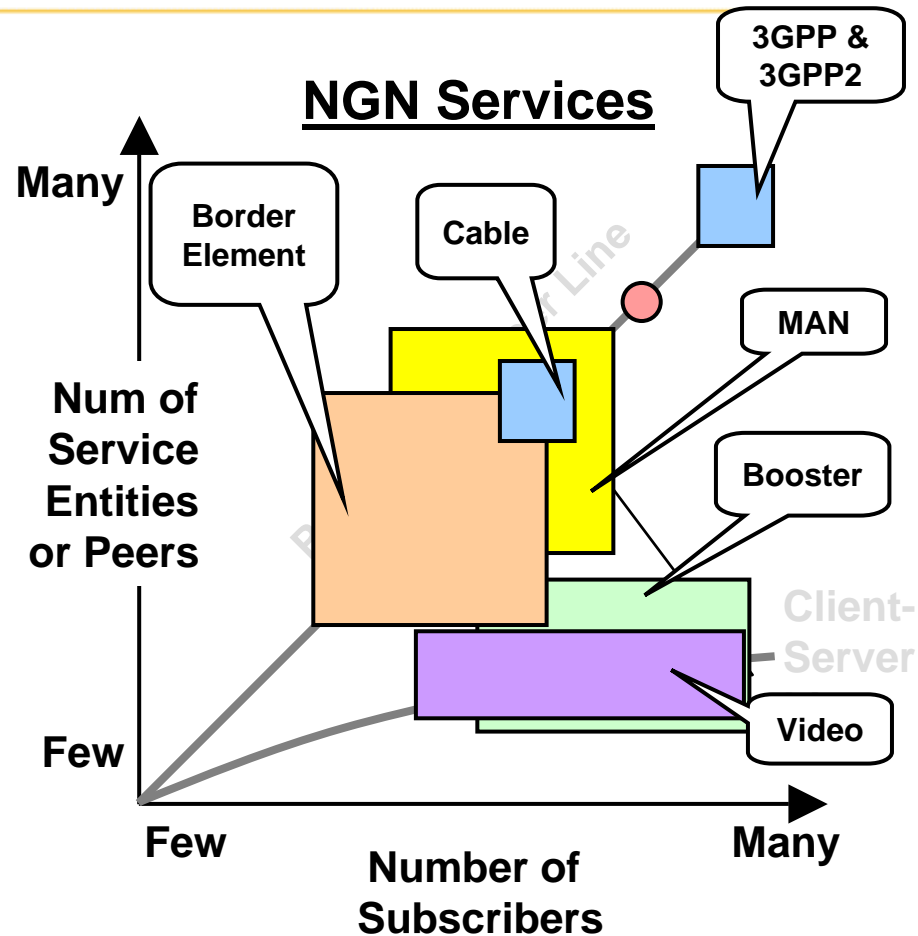
The next level …..

The Next Challenge: Applications for NGN Services

- **Applications typically fall between the bounds of the Peer-to-Peer and Client-Server Lines**

- **SPs ultimately want to be able to create billable CDRs and minimize Theft of Service for all these different traffic types**

- **Where does the sweet spot arrive and what has to be covered?**

- **Is there a critical mass that enables migration from today's networks?**

- **Where is the catalyst?**

NGN Services

Many

Num of Service Entities or Peers

Few

Pure Peer-to-Peer Line

Cellular Voice

IM Media

VoIP Media

"Triple-Play Triangle"

B2B VPNs

Client-Server Line

Video On Demand

Few — Many

Number of Subscribers

Overlay of Different RFPs

- **Many of the RFPs and Tenders in the market pertaining to Service Control only partial cover the space**

- **There are many point responses and more and more partnered solutions**

- **The Market needs a Generic and Multi-Purpose Solution in order to fulfill the promise of NGN**

NGN Services

Many

Num of Service Entities or Peers

Few

Few — Many

Number of Subscribers

Border Element

Cable

3GPP & 3GPP2

MAN

Booster

Client-Server

Video

A General Framework Proposal

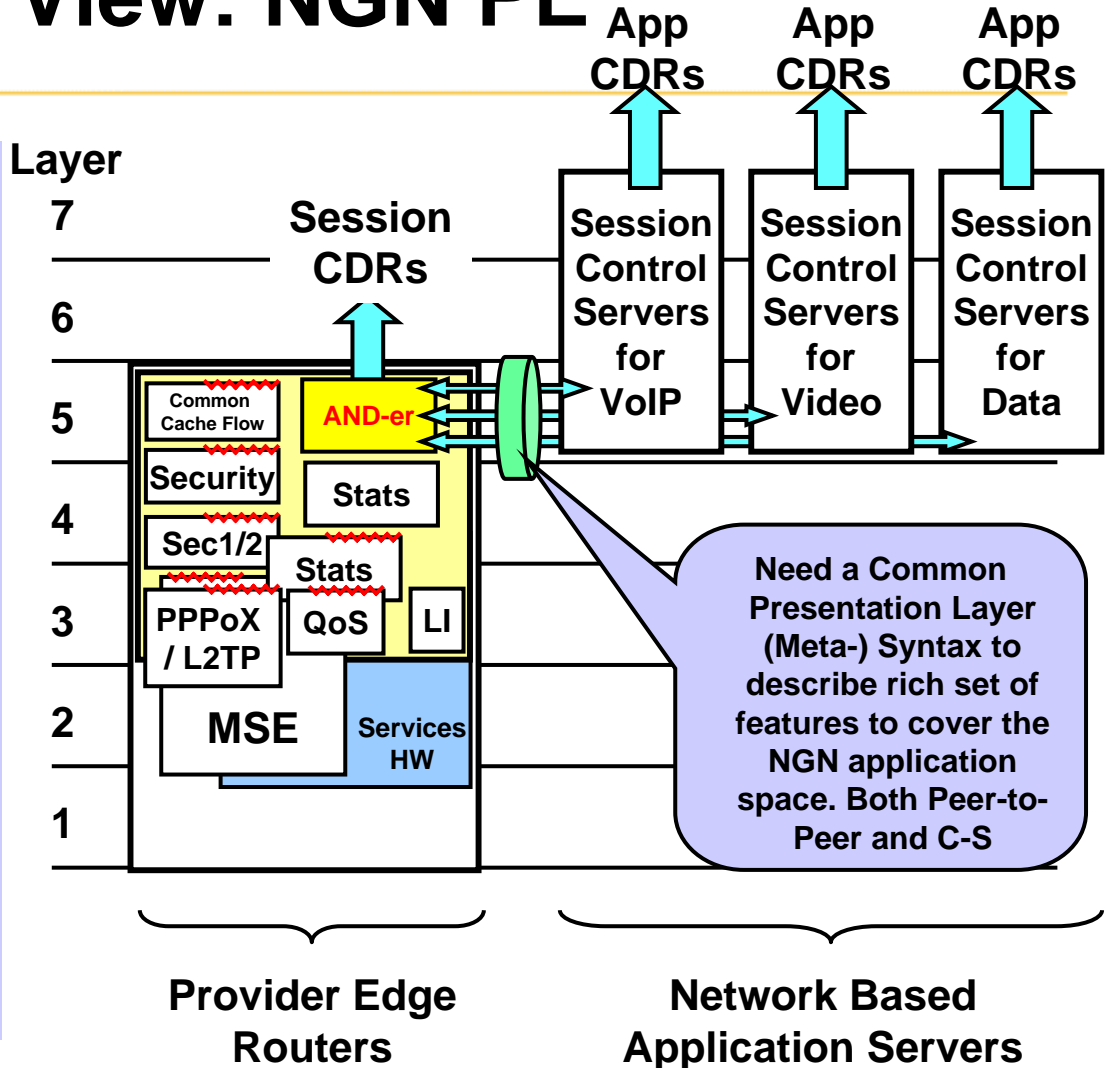- **An extensible interface for general Framework to support both Client-Server and Peer-to-Peer Service Control**

- **Concept is to provide a generic, scalable answer to all SP Service offerings**

NGN Services

Many

Num of Service Entities or Peers

CMTS DQoS

XXXX

(A Real NGN Edge Architecture)

dge

Client-Server

SG

Few

Few — **Number of Subscribers** — **Many**

CSG
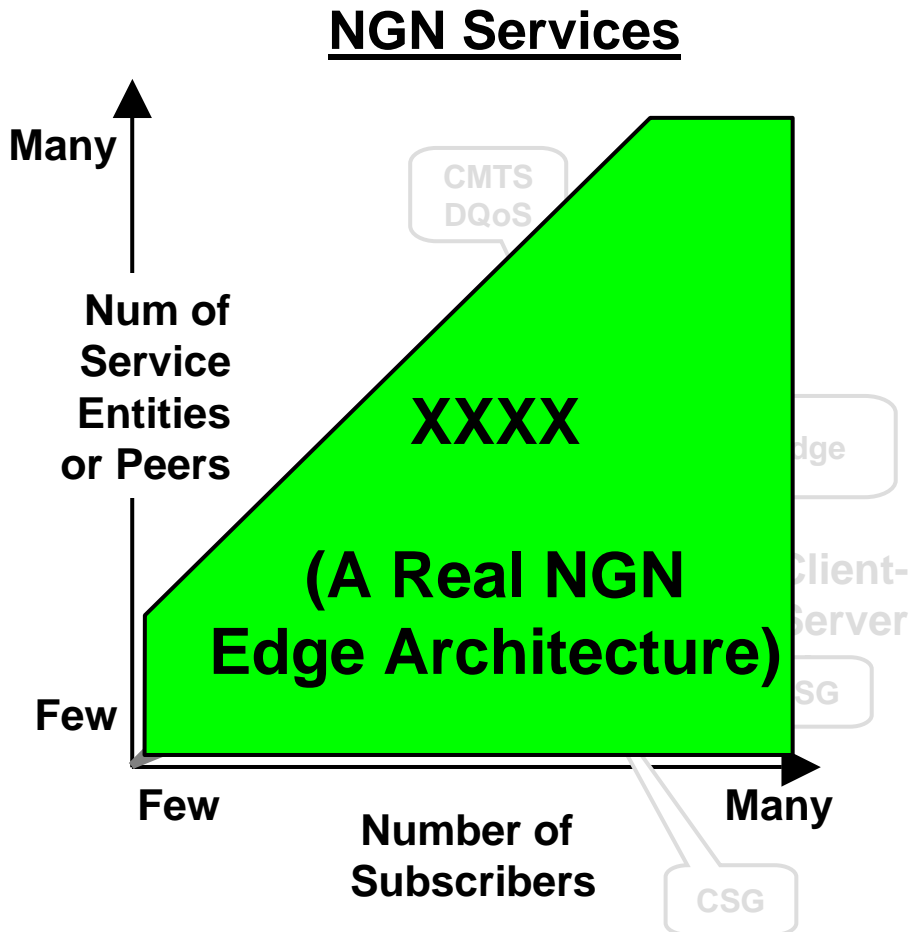
Architectural View: NGN PE

- PE Router exerts per flow policy control on originating & terminating IP addresses, Port numbers, Media types, QoS, etc.
- Policy change requests from the different Servers need to be AND-ed by the PE Router
- The Policy Control on the PE Router supports a many-to-one relationship to the network based application servers.
- CDRs can be generated for all state changes

App CDRs **App CDRs** **App CDRs**

Layer

7

Session CDRs

6

5

Common Cache Flow **AND-er**

Security **Stats**

4

Sec1/2 **Stats**

3 **PPPoX / L2TP** **QoS** **LI**

2 **MSE** **Services HW**

1

Session Control Servers for VoIP **Session Control Servers for Video** **Session Control Servers for Data**

Need a Common Presentation Layer (Meta-) Syntax to describe rich set of features to cover the NGN application space. Both Peer-to-Peer and C-S

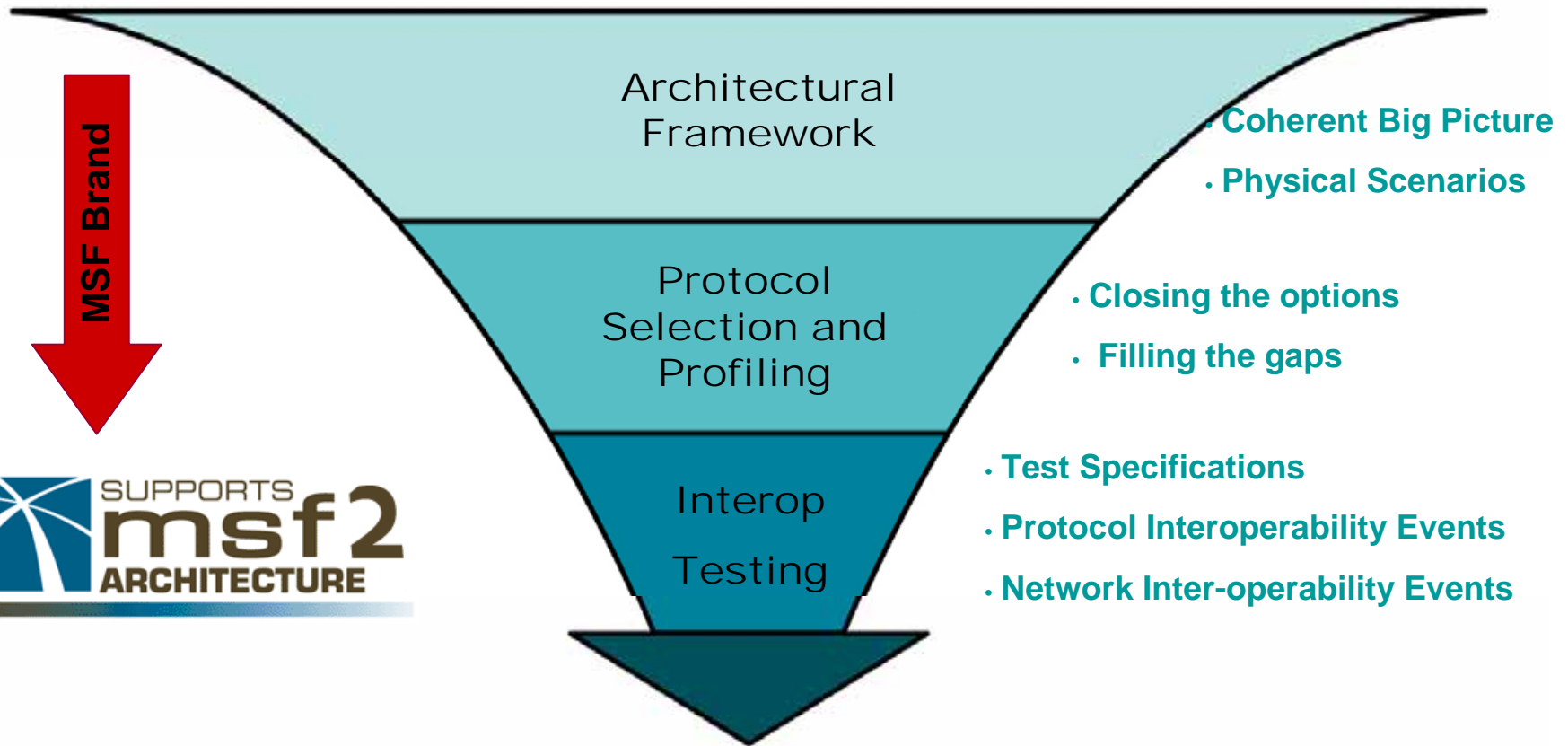**Provider Edge Routers** **Network Based Application Servers**

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MSF Goals

- Ensure practical and relevant strategies and execution by maintaining a critical mixture of service provider, vendor and test company members

- Leverage best of breed standards, protocols and architectures to create a realistic end to end NGN architecture and implementation agreements

- Create, build and test a multi-vendor, multi-service provider end to end, world wide deployment of NGN networks, technology and services in a timely manor

MSF Strategy: A Collaborative Framework

MSF Brand

SUPPORTS msf2 ARCHITECTURE

Architectural Framework

- Coherent Big Picture
- Physical Scenarios

Protocol Selection and Profiling

- Closing the options
- Filling the gaps

Interop Testing

- Test Specifications
- Protocol Interoperability Events
- Network Inter-operability Events

Commercially Viable Validated Implementation Agreements

MSF Strategy: A Value Proposition
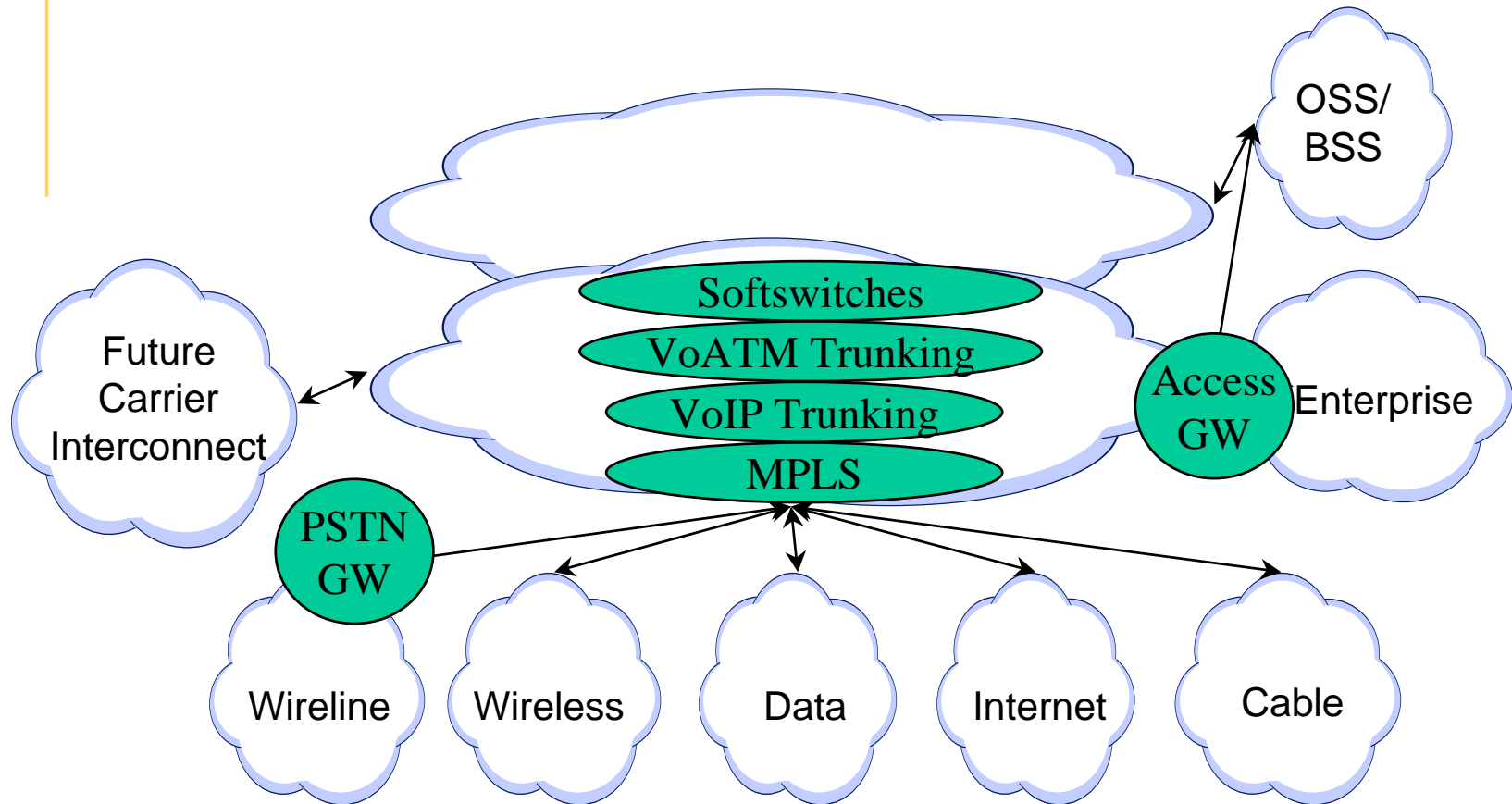
Technology Life Cycle

Technology Exploration
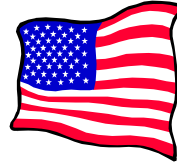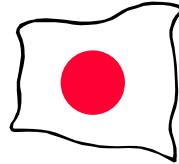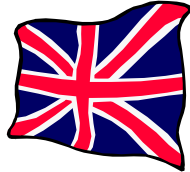
MSF Scope & Strength

Strategic Technology Vision
Architectural Framework
Technology (Protocol Profile) Development
Proof Of Concept/Feasibility Testing
Interoperability Testing
RFI Template

Detailed Design, RFP, Business Case Development, Company Specific Development, Certification Testing, Deployment

MSF Successes: MSF R1 Architecture

OSS/ BSS

Softswitches
VoATM Trunking
VoIP Trunking
MPLS

Future Carrier Interconnect

Access GW

Enterprise

PSTN GW

Wireline

Wireless

Data

Internet

Cable

MSF Successes: GMI 2002

- Global Interoperability event

- Simultaneous testing at 3 sites:
  - BTexact - Adastral Park, UK
  - NTT - Tokyo, Japan
  - University of New Hampshire IOL - New Hampshire, US

- Multi-carrier and multi-vendor environment

- Proof of the MSF Release 1 Architecture
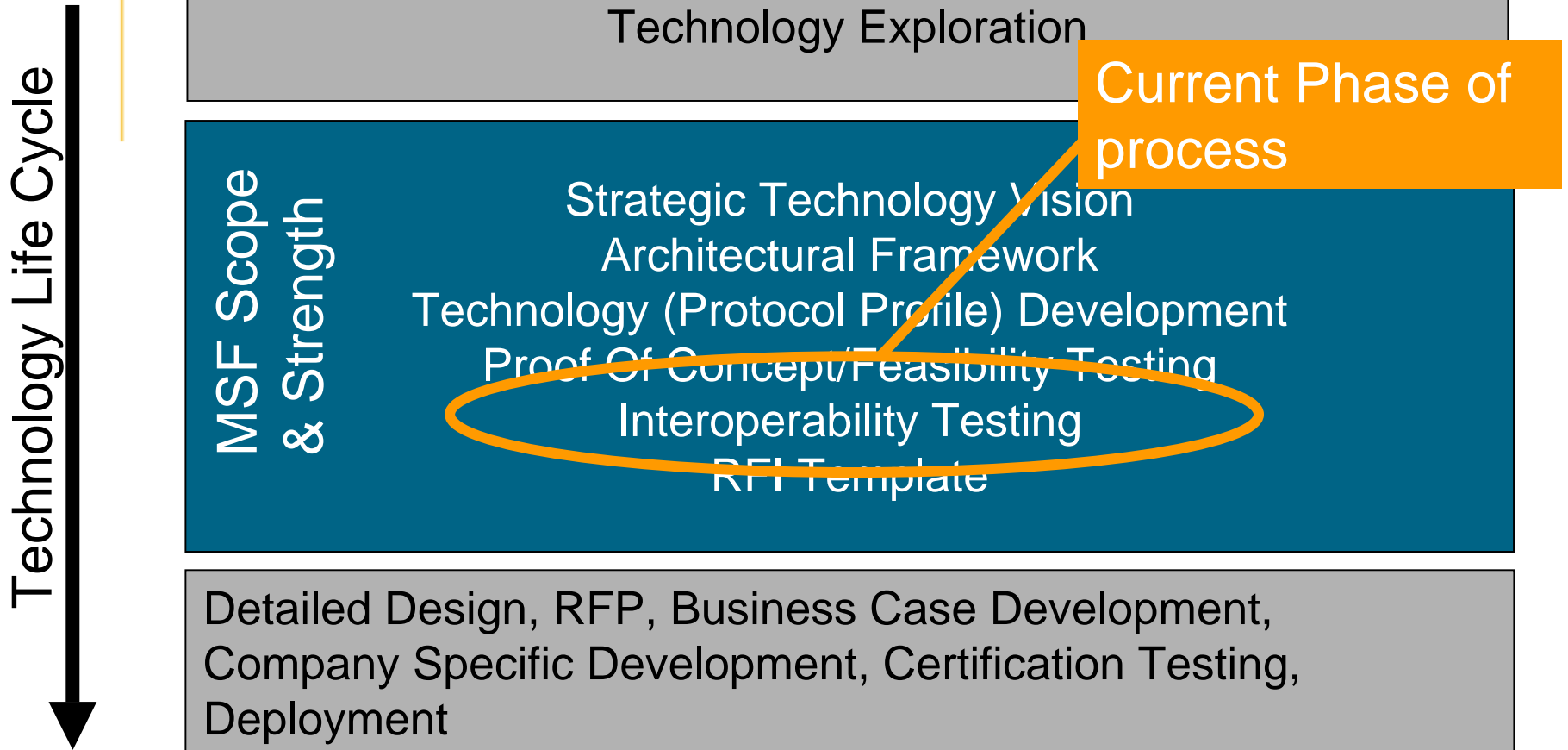
Industry Involvement in GMI 2002

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MSF 2004: Rel2 Architecture

MSF Strategy: A Value Proposition

Technology Life Cycle ↓

Technology Exploration

MSF Scope & Strength

Current Phase of process

Strategic Technology Vision
Architectural Framework
Technology (Protocol Profile) Development
Proof Of Concept/Feasibility Testing
Interoperability Testing
RFI Template

Detailed Design, RFP, Business Case Development, Company Specific Development, Certification Testing, Deployment
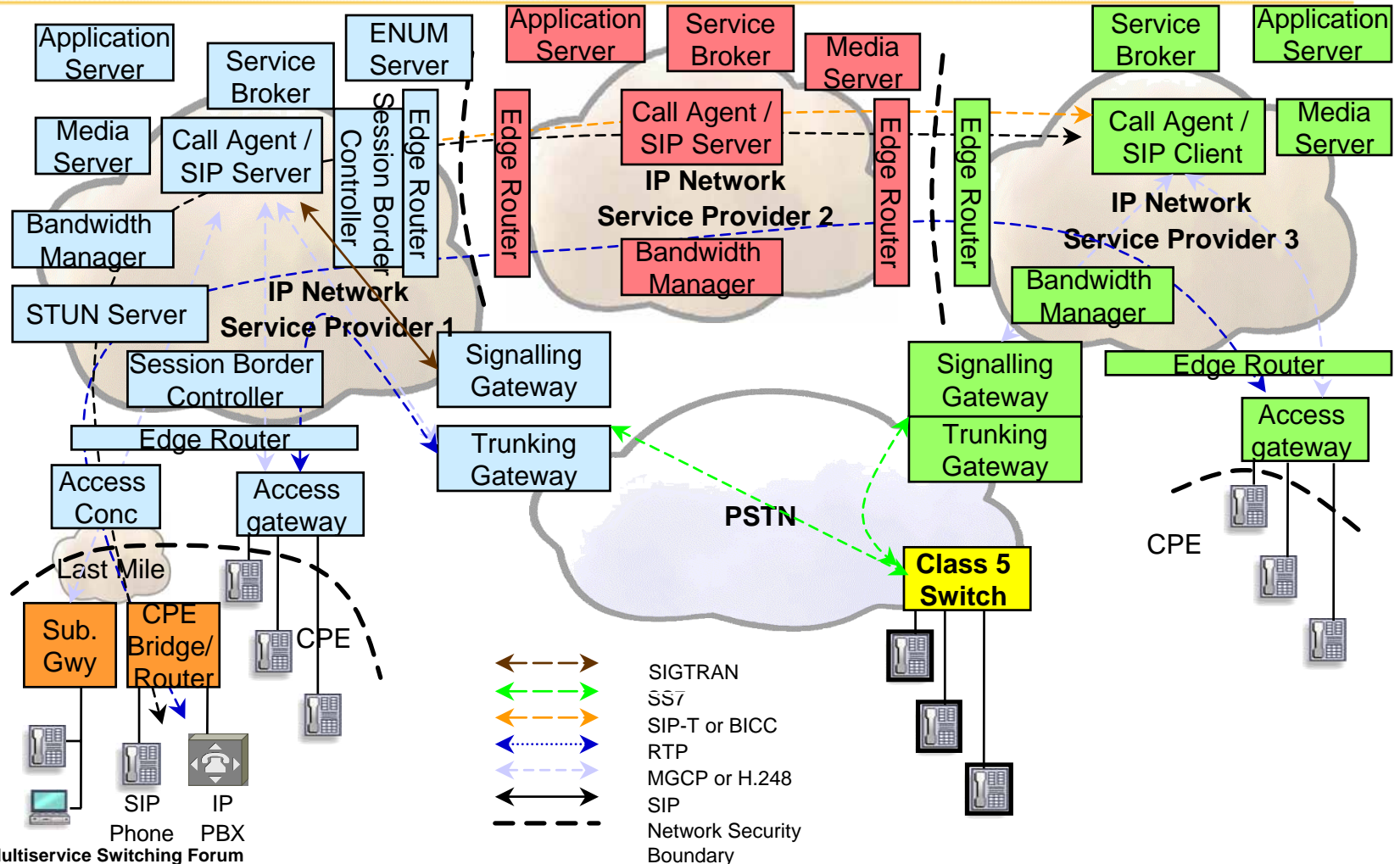
MSF 2004: GMI2004

- By testing at 4 Carrier sites simultaneously in the **BTexact** (UK), **Qwest** (US), **NTT** (Japan), and **KT** (Korea), GMI 2004 will provide tangible proof of multi-vendor interoperability for carrier–grade global networks as specified by the MSF Architecture and Implementation Agreements

- The goal – to demonstrate a deployable and operationally ready IP telephony network with services, applications, network management, enhanced QoS and security features

MSF 2004: GMI 2004 focus

- Architecture

- QoS

- Services & applications

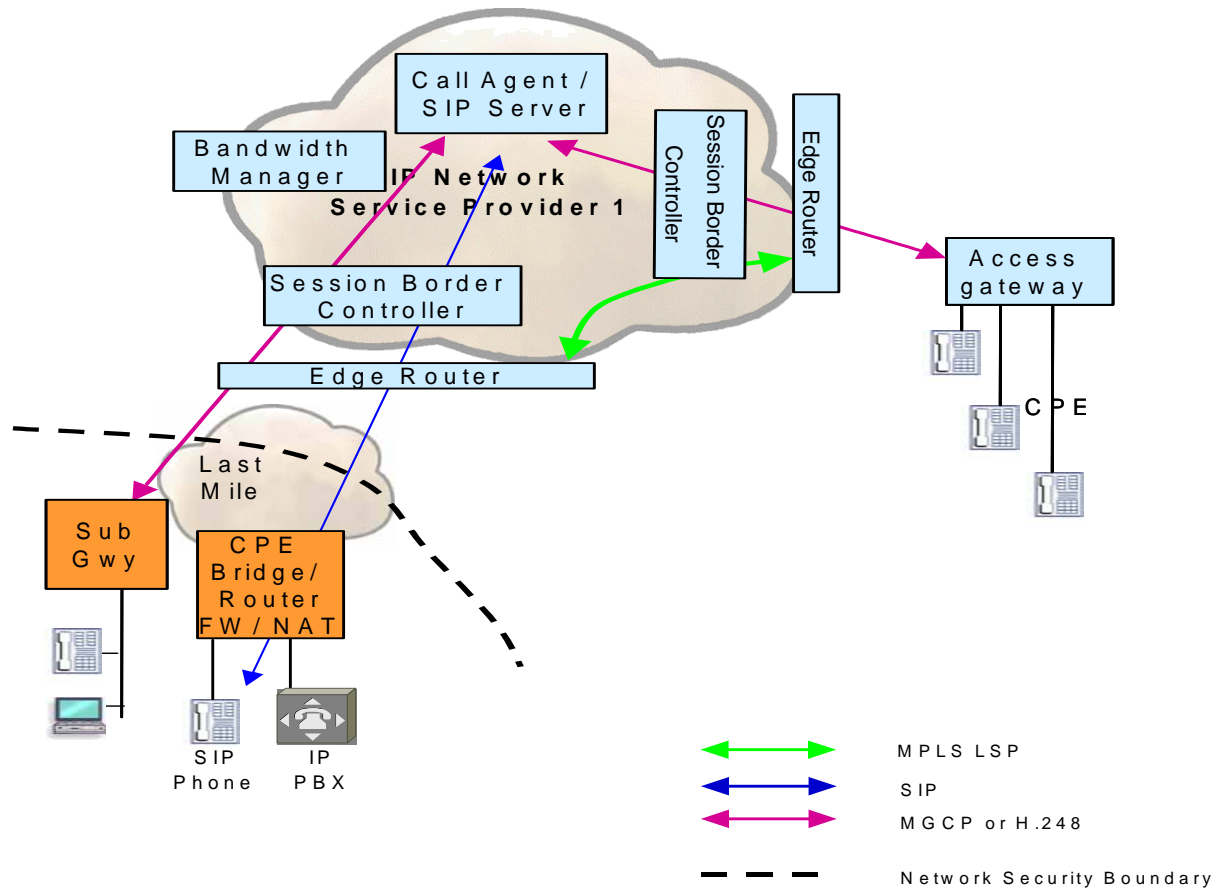- Call routing security

- Management

Detailed technical discussion documents and white papers available on MSF website
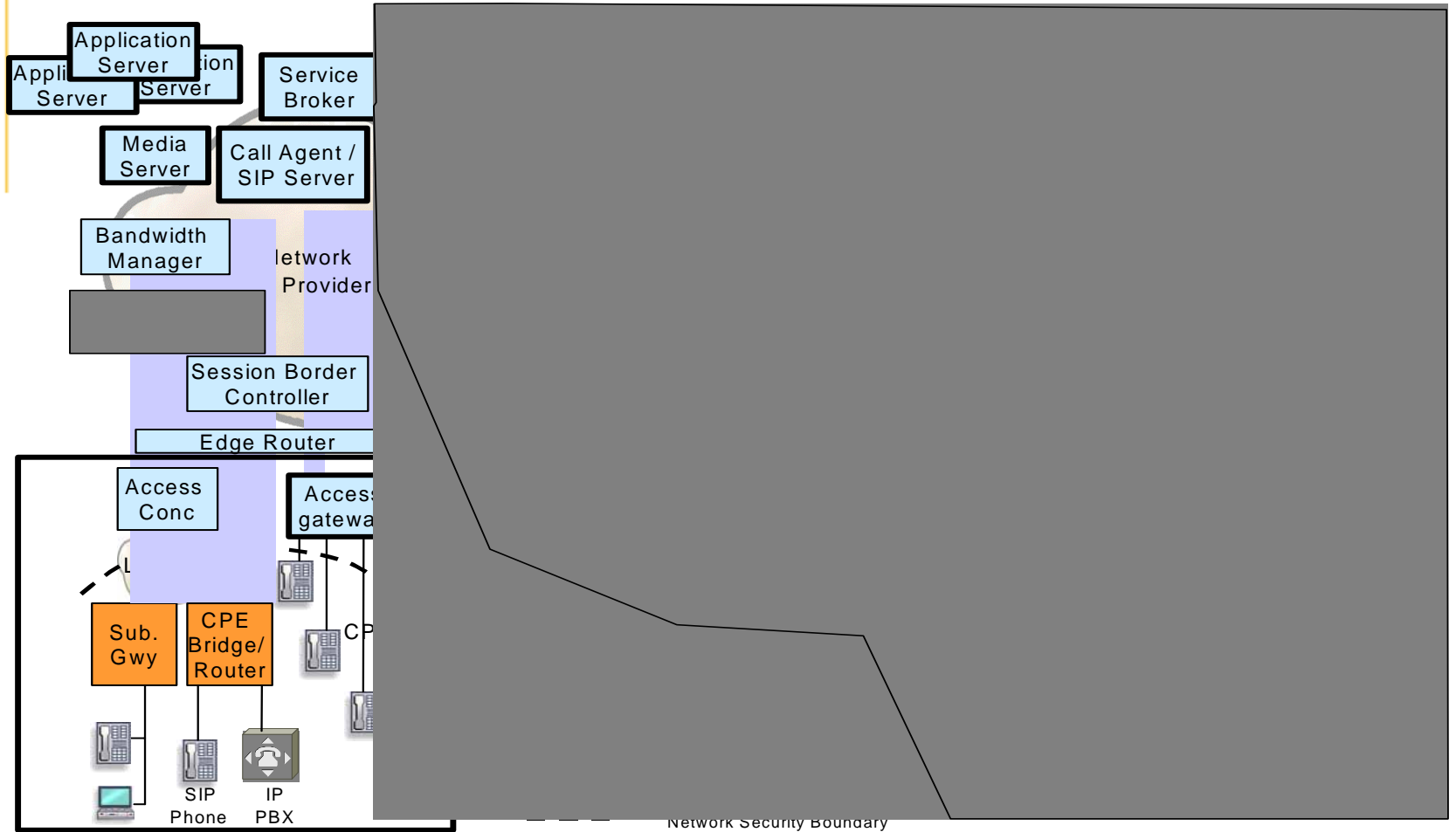
www.msforum.org

GMI2004 - 5 Scenarios

- Each Scenario specifies the following:
  - Domains
  - Physical Network Elements Involved
  - Network Connectivity
  - NAT/Firewall
  - Security
  - QoS
  - Protocols and Implementation Agreements
  - Redundancy and Failover
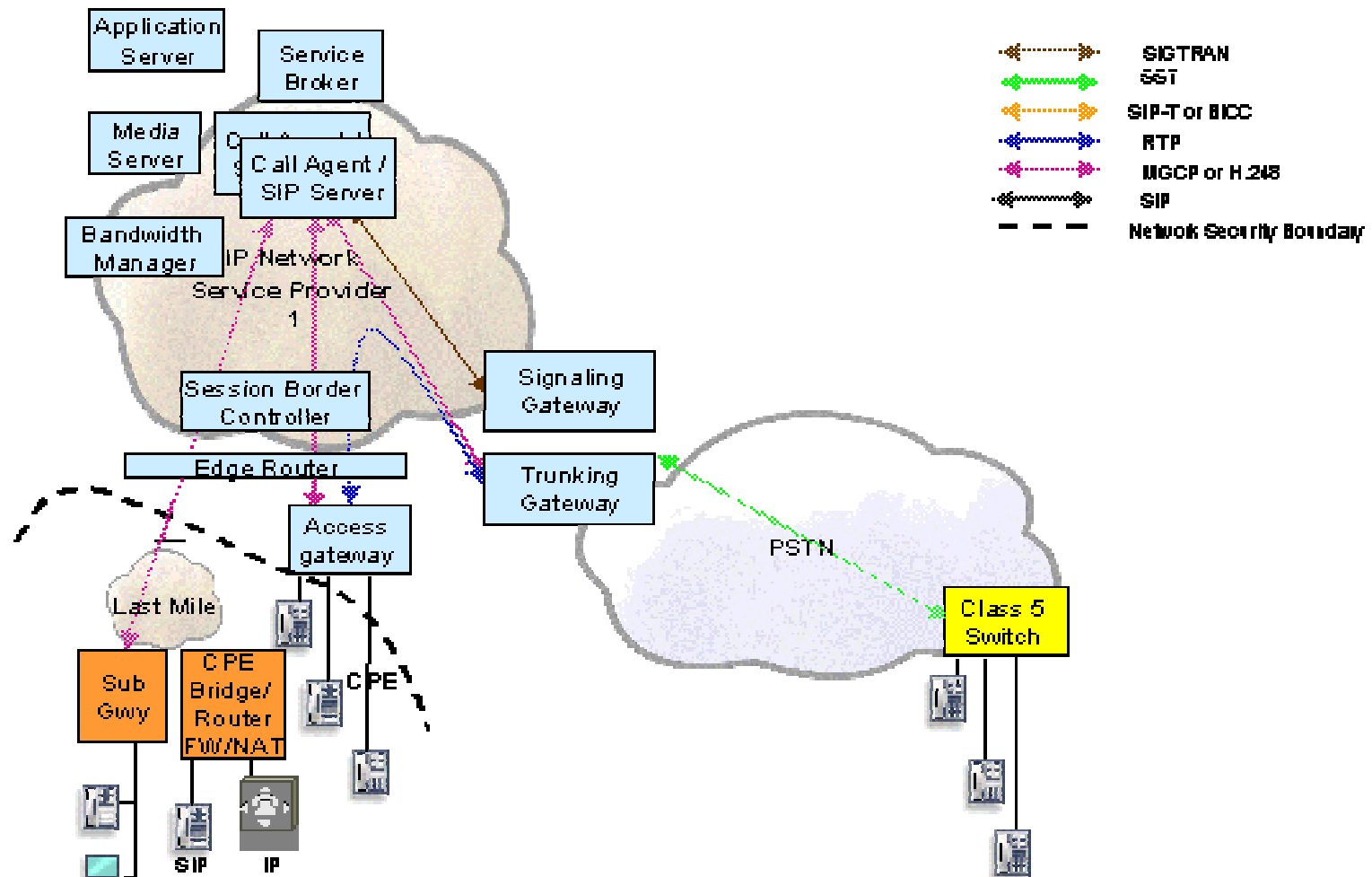 - Feature List
  - Exception Testing

Scenario 1: Single Call Agent/Single Domain

Call Agent /
SIP Server

Bandwidth
Manager

IP Network
Service Provider 1

Session Border
Controller

Edge Router

Session Border
Controller

Access
gateway

Edge Router

CPE

Last
Mile

Sub
Gwy

CPE
Bridge/
Router
FW / NAT

SIP
Phone

IP
PBX

MPLS LSP

SIP

MGCP or H.248

Network Security Boundary

Scenario 2: Single Call Agent/Single Domain/Value Added Services

Application Server

Application Server

Application Server

Service Broker

Media Server

Call Agent / SIP Server

Bandwidth Manager

Network Provider

Session Border Controller

Edge Router

Access Conc

Access gateway

Sub. Gwy

CPE Bridge/ Router

CPE

SIP Phone

IP PBX

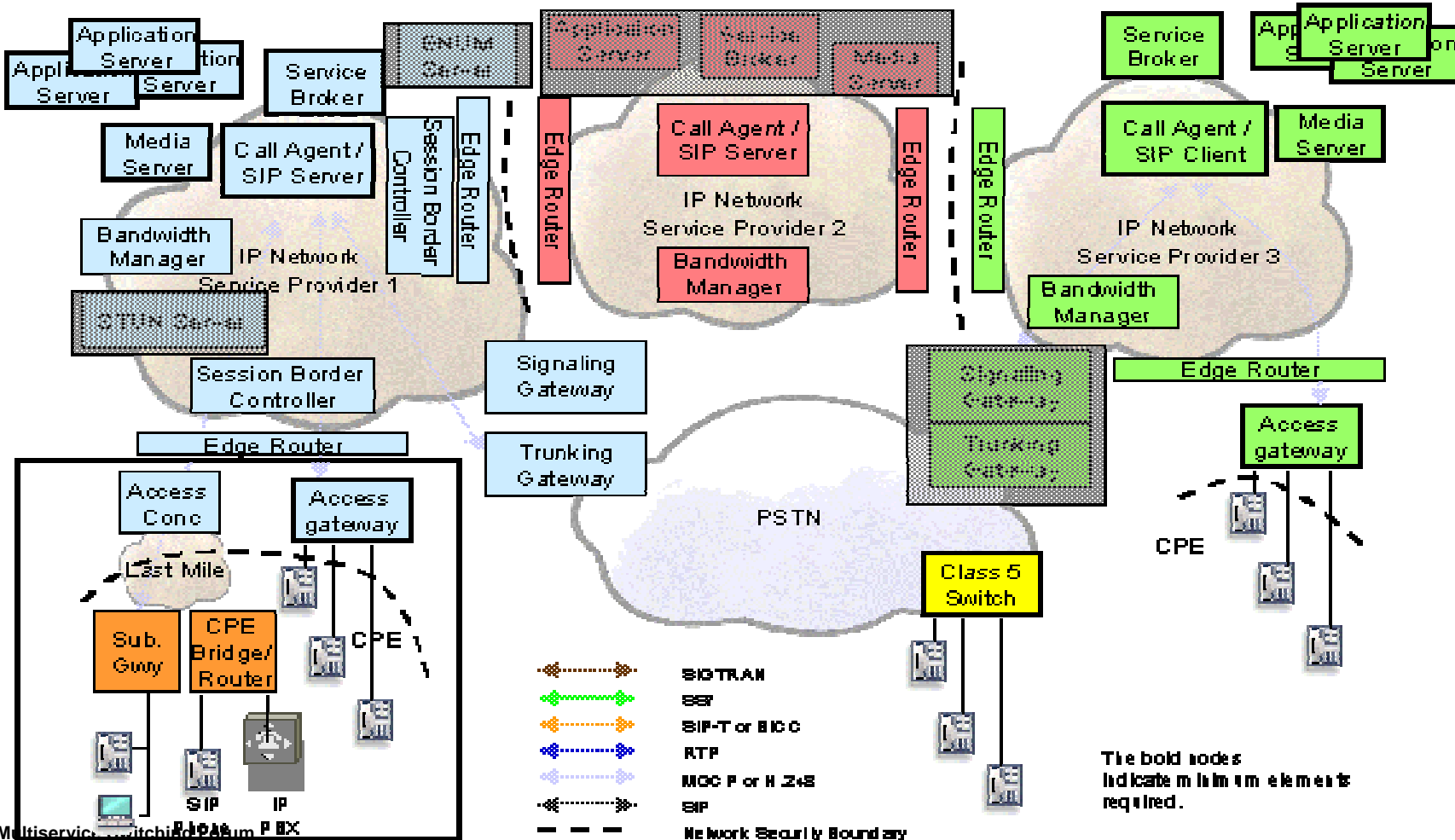Network Security Boundary

Scenario 3: Single Call Agent/Single Domain/PSTN Interconnectivity

Scenario 4: Inter-Service Provider w/ PSTN Connectivity
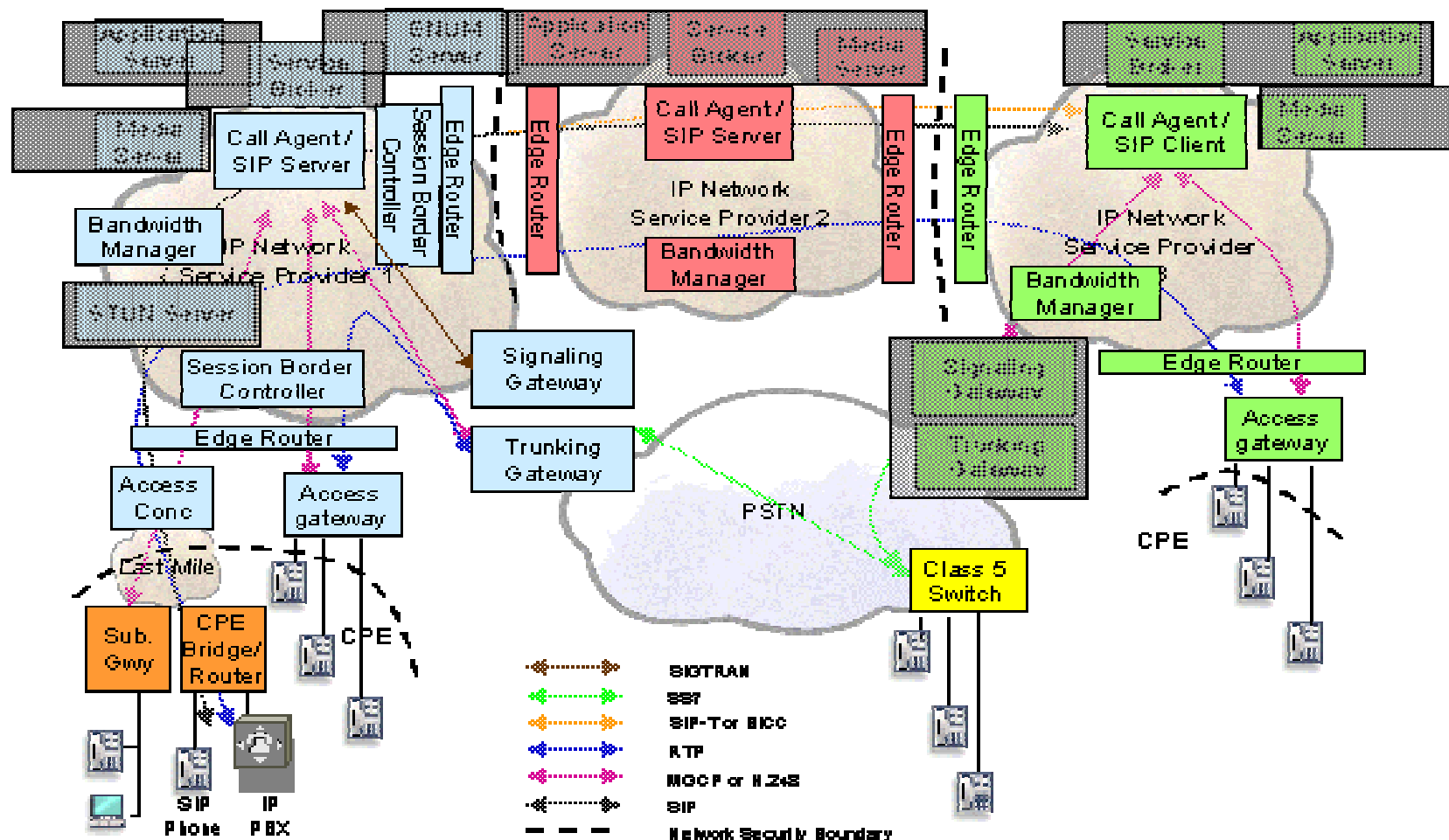
Scenario 5: Inter-Service Provider w/ Value Added Services

GMI2004 defined interfaces

GMI 2004 In Brief...

Carrier Hosts:	**GMI 2004** is being hosted by four of the world's largest telecom carriers: BT, KT, NTT and Qwest.
What?	**GMI 2004** will provide tangible proof of multi-vendor interoperability for carrier grade global networks as specified by the MSF Architecture and Implementation Agreements.
When?	**GMI 2004** will take place September 20 - October 4, 2004, culminating with a major press event at each of the carrier host locations.
Where?	• Japan: NTT Musashino Research and Development Center, Tokyo • South Korea: KT Technology Lab, Daejeon • UK: BTexact Technologies Centre, Ipswich, Suffolk • USA: Qwest Communications Labs, Dublin, Ohio
Why?	**GMI 2004** will demonstrate a deployable and operationally ready IP telephony network with services, applications, network management, enhanced quality of service (QoS) and security features.
How Much?	$9,500 USD for MSF Members $10,500 USD for MSF Partners $13,500 USD for non-MSF Members

Detailed technical discussion documents ("white papers") available at www.msforum.org

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Partnerships

- The MSF is recognised by the ITU-t

- The MSF actively liaises with regional SDO's (e.g. ETSI Tiphon)

- The MSF successfully works with the IETF (e.g. H.248/ MEGACO development)

- The MSF was selected as a successor organization by the OpenVOB

- The MSF has collaboration agreements in place with:

  - SIP forum

  - MPLS/Frame Relay Alliance - MFA

  - Telecommunications Management Forum (TMF)

Current MSF Principal Members

Thank you