IMS Architecture
and Network Convergence

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ATIS NGN-FocusGroup Viewpoint

“One picture is worth ten thousand words”
- Frederick Barnard
Framework for a Common Architecture

Next-Generation Network Framework

Public Network

OAM&P Functions

Application Functions

Session & Policy Control Functions

Network Infrastructure

Logical Interconnection

User Equipment

Application & Service Capability Functions

Session & Policy Control Functions

Network Infrastructure (IP Transport Functions)

Other Public Network

OAM&P Functions

Application & Service Capability Functions

Session & Policy Control Functions

Network Infrastructure
Framework for a Common Architecture

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IMS

Other Public Network

OAM&P Functions

Application & Service Capability Functions

Session & Policy Control Functions

Network Infrastructure

Logical Interconnection

ATIS at SUPERCOMM 2005
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Why IMS?

- **IP Multimedia Subsystem (IMS) will be at the core of converged networks**
  - For every type of network operator
  - Impacting everyday aspects of business

- **IMS is the key enabler to accelerate network convergence and flexible service delivery**
  - **Mobile operators** are implementing cost-effective network evolutions in preparation for IMS while trialing pre-IMS
  - **Fixed operators** are deploying SIP-based architectures on cost-effective IP infrastructures, evolving naturally to IMS
IMS Standardization
… a Global Phenomenon

- ITU FG-NGN
- ATIS NGN-FG
- ETSI TISPAN
- PacketCable 2.0
- 3GPP/3GPP2
- IETF SIP RFCs

"If I have seen farther than other men, it is because I have stood on the backs of giants"

- Sir Issac Newton
Convergence: Wireless and Wireline

IMS - MGW

UE

IPv6 PDN (IPv6 Network)

MGC F

PDF

I - CSCF

S- CSCF

BGCF

Application (SIP AS, OSA AS, CAMEL SE)

IPv4 PDN (IPv4 Network)

CS Networks (PSTN, CS PLMN)

3gpp R7/ TISPAN R1

D SLAM

NASS

SPDF / A-RACF

IMS Session Signalling
IMS User Plane Data
IPv4 based Signalling
IPv4 User Plane Data

AS

HSS

‘IMS Data’

SLF

HLR/AuC (‘CS/PS’)

SIP AS

IM SSF

OSA SCS

CSCF

P-CSCF

S-CSCF

I-CSCF

MRF

MRFC

MRFP

IMS GW

ALG

TrGW

IMS-MGW

CSW

GGSN

PDF

PEF

BG

BB

IPv4 based Signalling
IPv4 User Plane Data

IP v4 based Signalling
IP v4 User Plane Data

RAN

WLAN

WLAN PDG

3gpp R6

WAG

3gpp R6

WLAN

3gpp R6

WAG

3gpp R5

DSL AM

NASS

SPDF / A-RACF

IMS Session Signalling
IMS User Plane Data
IPv4 based Signalling
IPv4 User Plane Data

CS Networks (PSTN, CS PLMN)

IPv4 PDN (IPv4 Network)

IPv6 PDN (IPv6 Network)
“A rose by any other name …”
- William Shakespeare

Fixed-Mobile Convergence (FMC)

Bringing Mobility to Broadband

Ultimately, any IP application over any BB access
  ▪ Convergence itself will enable new service offerings

IMS is the technology which enables FMC
  ▪ Various pre-IMS options in the market (UMA, IMR)
  ▪ Pre-IMS tactics should evolve smoothly to IMS
Thank You!

“Man's mind,
  once stretched by a new idea,
  never regains its original dimensions.”
  - Oliver Wendell Holmes

“College isn't the place to go for ideas.”
  - Helen Keller