

# Harmonization and Convergence of IMT-2000 Systems



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# Outline

- + Industry Trends
- + Core Network Harmonization
  - Benefits of Harmonization
  - Recent IP CN Workshop in Toronto
- + Role of ITU-T SSG on “IMT-2000 and Beyond”
- + Studies in WP3/SSG
  - Harmonization
  - Fixed/Mobile Convergence
- + Concluding Remarks

# Industry Trends

- # 3G systems are evolving to provide enhanced capabilities to meet end-user needs.
- # 3G CNs are migrating towards a common packet-switched architecture using IETF protocols.
- # Service providers are moving towards support for an IP-based multimedia service concept.
- # Convergence of fixed and wireless networks provides additional synergy.

# Harmonization Objective

- ✦ A harmonized CN solution can
  - Foster global roaming across all evolving IMT-2000 systems
  - Facilitate cost-effective IMT-2000 network deployments based on the standardized open interfaces
  - Stimulate the commercial uptake of IMT-2000 services
- ✦ Harmonized CN standard should give network operators ability to deploy new services without adverse impact on other common systems

# Drivers for CN Harmonization

## + Extended Service Opportunity

- Operators are suffering from the heterogeneity of the core networks since those limit the opportunity of service transparency, seamless roaming and common application

## + IP based Trend

- Service creation over IP based CN could become easier
- The direction of moving toward IP based multimedia service

## + Promising Aspect of Access Transparency

- Increasing heterogeneity of access technologies (i.e., UTRAN, cdma2000 RAN, WLAN) give rise to the strong need for IP based CN

# Harmonization Benefits

## ✚ Benefits for Users:

- Easy Roaming
- Variety of Services
- Reduced User cost

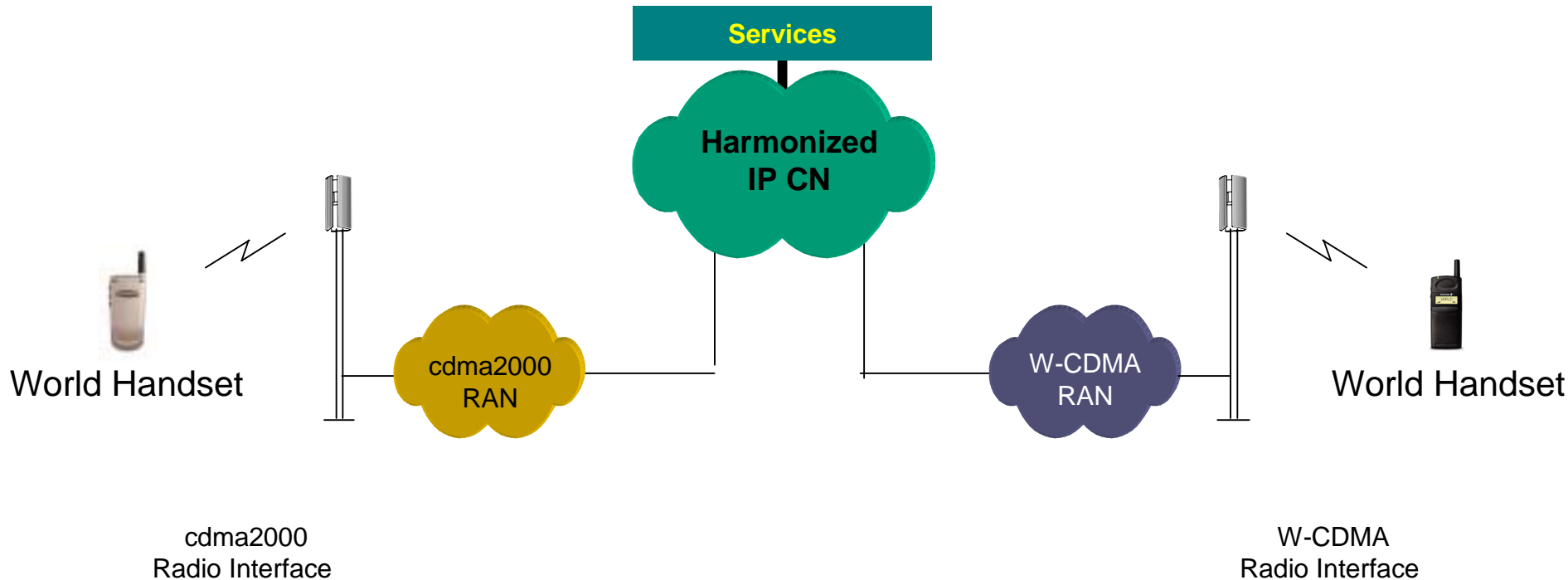
## ✚ Benefits for Vendors:

- Open architecture
- Single Platform

## ✚ Benefits for Network Operators:

- Reduce Deployment cost
- Facilitate service transparency
- Provide high commonality and feasibility that will accelerate deployment of IP multimedia services

# Harmonized IP Core Network



**Concept of a common CN designed to ensure service transparency between evolving IMT-2000 systems and having an IP-based architecture**

# IP CN Harmonization Workshop

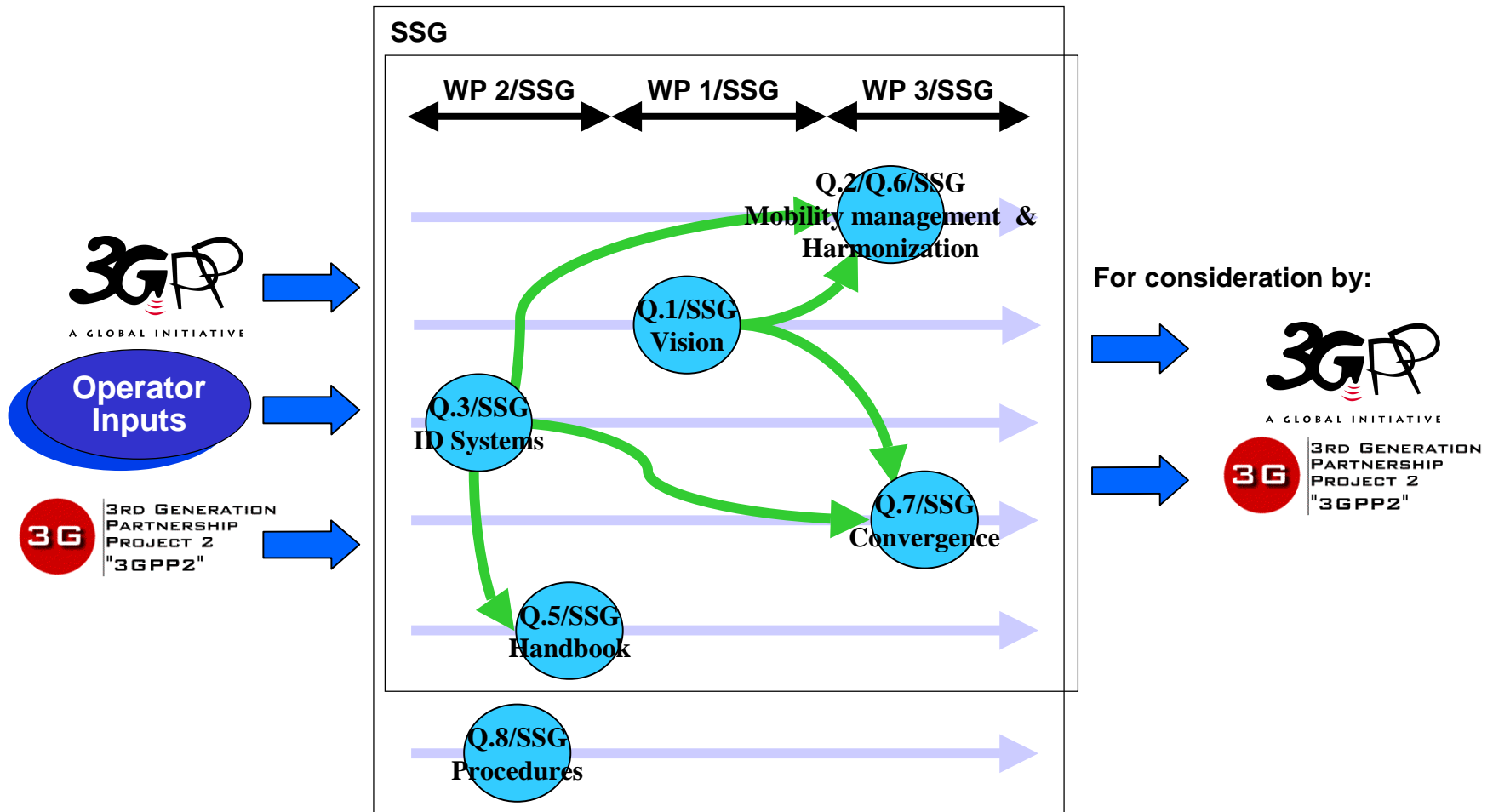
- ✦ IP CN Workshop in Toronto (3-4 April 2002) addressed following points:
  - Priority areas for harmonization were identified
  - Alignment of 3GPP IMS and 3GPP2 MMD was recognized
    - A high-level “IMS Harmonization Reference Model” was recommended for adoption by 3GPPs
    - Support was given for aligning terminology, the functional entities and interfaces in 3GPPs Reference Model
  - Future interactions among 3GPPs and IETF will be anticipated
  - Promotion of harmonization activities
  - Continue work on common evolution strategy taking into account the output from ITU-T SSG



# Fixed & Mobile Convergence

- ✦ Global roaming for the users irrespective of the access mechanism or the technology. Extend 3G services to other areas where 3G radio technology is not available
- ✦ Access of the same set of services that a user gets in his home network, depending on the fixed terminal capability like no terminal mobility
- ✦ Development of mechanisms to support a foreign subscriber's registration and authentication, and access to the service profile server of the home network by the visiting fixed network

# SSG Work Topics and Relationships



*Showing dependencies and relative time perspectives.*

# Q.6/SSG Task Objectives

- ✦ Harmonization of Existing and Evolving IMT-2000 Systems
  - Establish co-operative working arrangements with external organizations to ensure that work does not overlap with external organizations
  - Identify and study the degree of harmonization of existing IMT-2000 networks and document these in an appropriate manner.
  - Identify and study appropriate harmonization issues of the existing IMT-2000 systems where harmonization may be desired; document appropriately.
  - Develop harmonization proposals for evolving IMT-2000 systems, document appropriately for consideration by the Partnership Projects and SDOs as part of their evolution plan

# Q.7/SSG Task Objectives

- + Convergence of fixed and existing IMT-2000 systems
  - The foundation for migration paths to interoperable and harmonized network architectures to provide service transparently to users across different network access arrangements
  - Studies on network aspects and protocol requirements for Service Provisioning, Mobility Management, Session Control, and Bearer Control
  - Initial output document will describe principles and requirements for convergence of public fixed networks and existing IMT-2000 networks

# WP3/SSG Near-term Role

- + Value addition by providing near term requirements such as
    - + a common access mechanism for Emergency Services
    - + standard interfaces for lawful interception
    - + other security issues
- in such a way that they are independent of the type of network.

# Concluding Remarks

- # IP CN Harmonization is of great help for seamless roaming and enables common applications and services
- # Must consider the view of operators' evolution plan
- # Seminar participants are encouraged to submit contributions to progress ITU-T SSG work in the area of Harmonization and Fixed/Mobile Convergence