International Telecommunication Union

ITU-T Focus Group on Identity Management (FG IdM): IdM Tutorial Part II

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Overview

o **IdM Landscape Today**

o **Telcom Provider Context**

o **NGN and IdM**

o **NGN Example Use Cases**

- • **Use of Common IdM System to Support Multiple Applications in NGN**

- • **Obtaining and Correlating Cross Layer Information for IdM**

o **Role of ITU-T**

o **Relationship between SG17 (including the FG IdM) and SG13 work**

IdM Landscape Today

o **A large number of industry groups and standards organizations are working on standardizing aspects of Identity Management**

- **IdM models, frameworks and protocols have been defined by some of these organizations and further developments building on previous work are continuing.**

- **Different groups tend to optimize their solutions for the specific market segments and perspectives with which they are associated**

  – **Resulted in Identity Management islands with interoperability issues**

o **Most solutions today are mainly user centric solutions focusing on web services and electronic commerce**

o **Telecom providers are currently involved with IdM (e.g., E.164 identifiers and mobile device identifiers) and will continue to have important role in the NGN environment**

Telecom providers have to accommodate a broader perspective

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o **Telecom Network/Service Providers' Perspectives**
  - **Use of common IdM infrastructure to support multiple applications and services for efficiency**
  - **Assertion and Assurance of Entities (e.g., user, device, other providers) for:**
    — **Subscriber Services (e.g., NGN services) and as Service to 3rd Party Providers (e.g., web-based transactions services)**
    — **Security and Fraud preventions**
    — **National Emergency and Public Safety Services (e.g., 911 services in the US and community notification).**
    — **Protection of Resources and Network Infrastructure**

o **Government Perspectives**
  - **Assertion and Assurance of Entities (e.g., users, device other governments) for:**
    — **Electronic Government (eGovernment) Services (e.g., web-based transactions services)**
    — **National/local Emergency Services and Public Safety (e.g., 911 services in the US and community notification)**
    — **Law Enforcement (e.g., Lawful Interceptions)**
    — **National Security and Fraud preventions**
    — **National Emergency Telecommunications Service (ETS) and International Telecommunication Disaster Relief (TDR)**

o **The User/subscriber perspectives:**
  - **Ease of use**
  - **Single sign-on / sign-off**
  - **Privacy/User Control of Personal Information (i.e., Protection of Personal Identifiable Information [PPII])**
  - **Security (e.g., confidence of transactions, protection from Identity (ID) Theft)**

IdM and NGN

o **Certain aspects of IdM are included as integrated components of the NGN architecture specified in Recommendation Y.2012**

o **However, because of the use of different terminologies, some of these IdM functions might not be obvious.**

o **In addition, NGN requirements are defined or are being defined for subscription management and device management which are also aspects of IdM.**

o **Examples of FEs that are considered to be IdM related include:**

- **Network Access Control Functions:**
  - **T-12 - User Profile FE**
  - **T-11 – Authentication and Authorization**
- **Service Control Functions:**
  - **S-5: User Profile FE**
  - **S-4: Subscription Location FE**
  - **S-6: Authentication and Authorization FE**

o **Although certain aspects of IdM are included in the ITU-T NGN architecture, there is lack of a structured and integrated IdM approach.**

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Managing NGN Identities
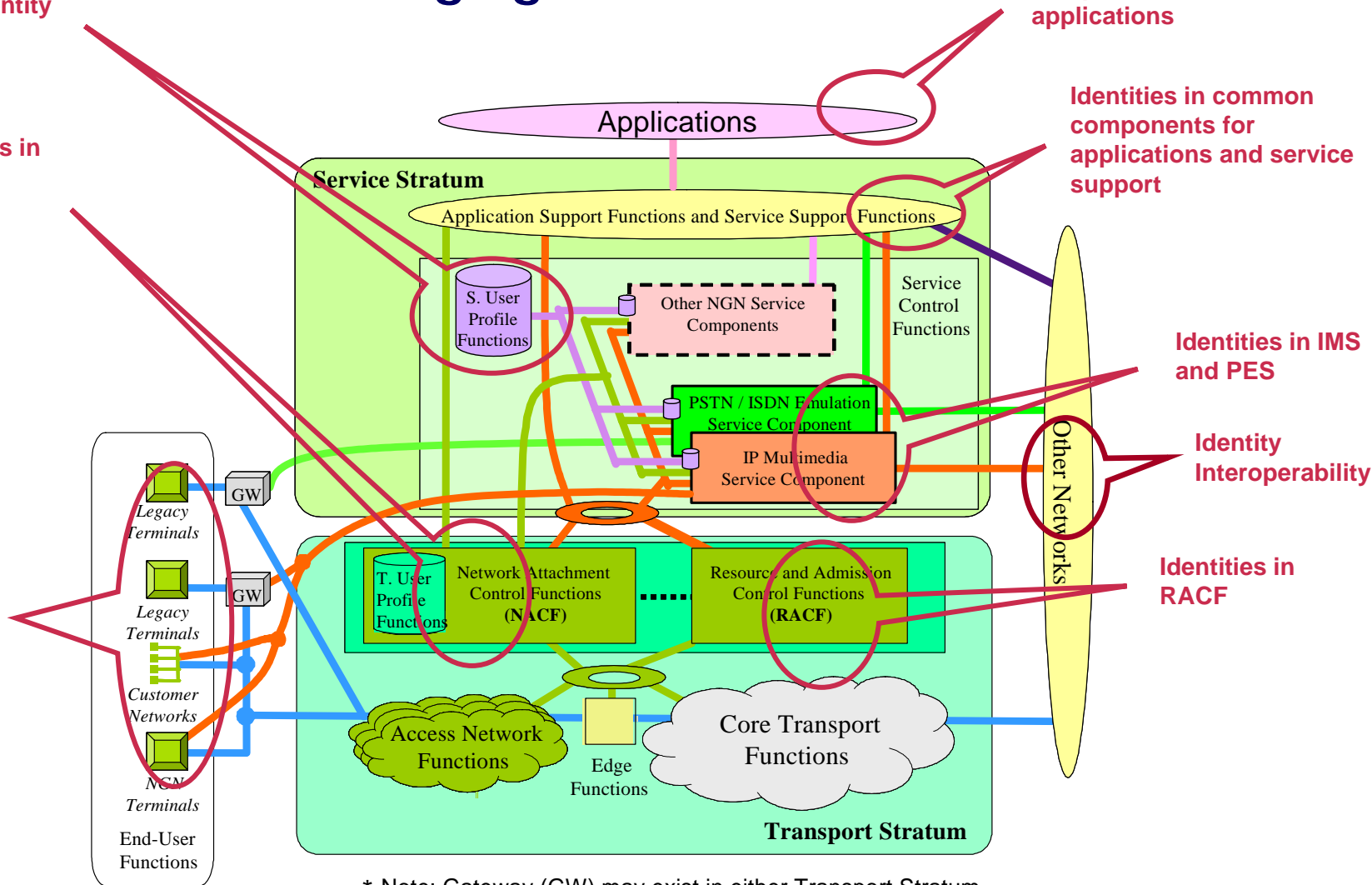
* Note: Gateway (GW) may exist in either Transport Stratum or End-User Functions.

Integration of IdM in NGN Architecture (Identity Plane)

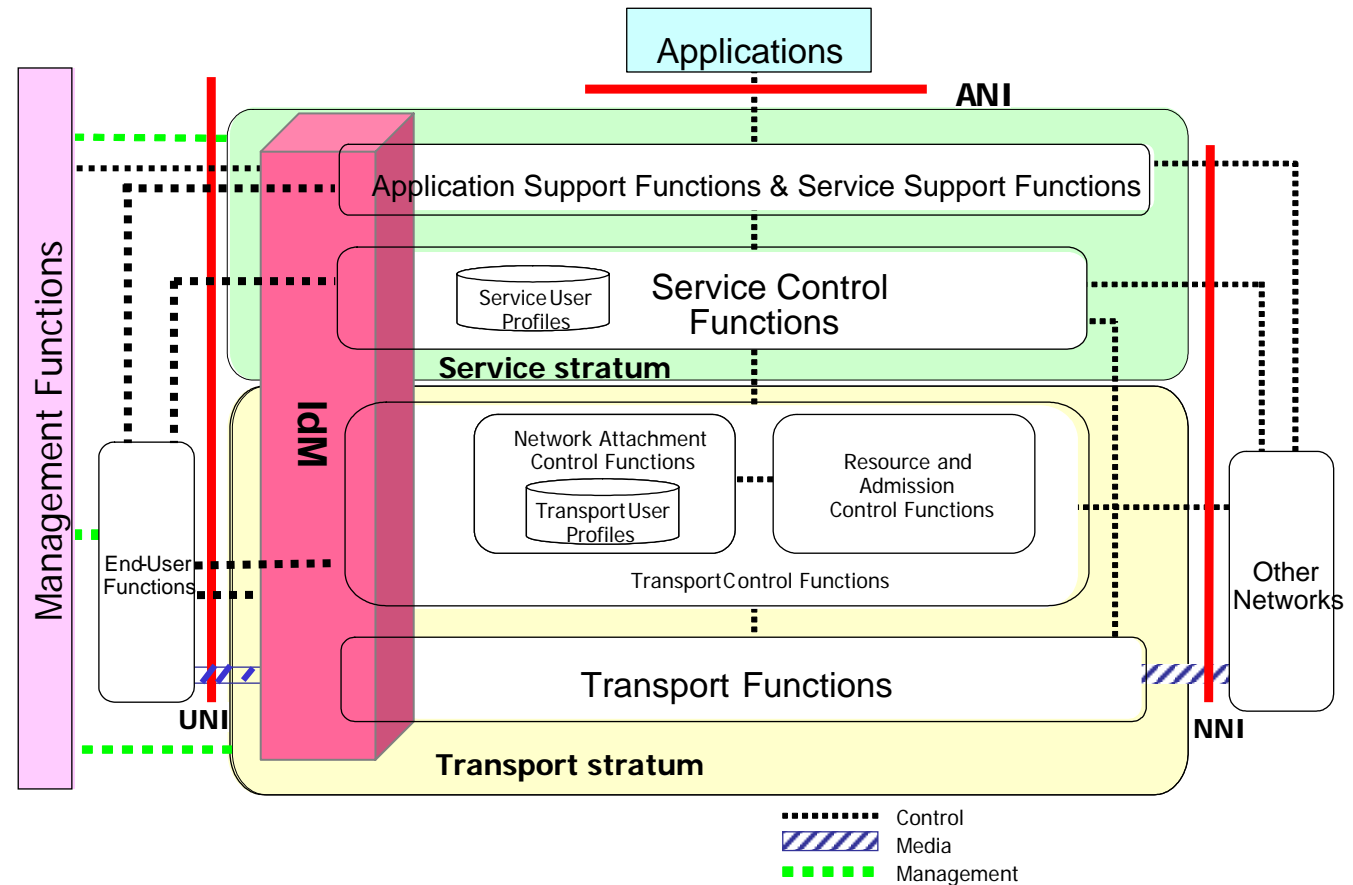o **The IdM functional block shown in "red" represents the need to specify a structured IdM approach, bridging the various layers and distributed systems of the NGN.**
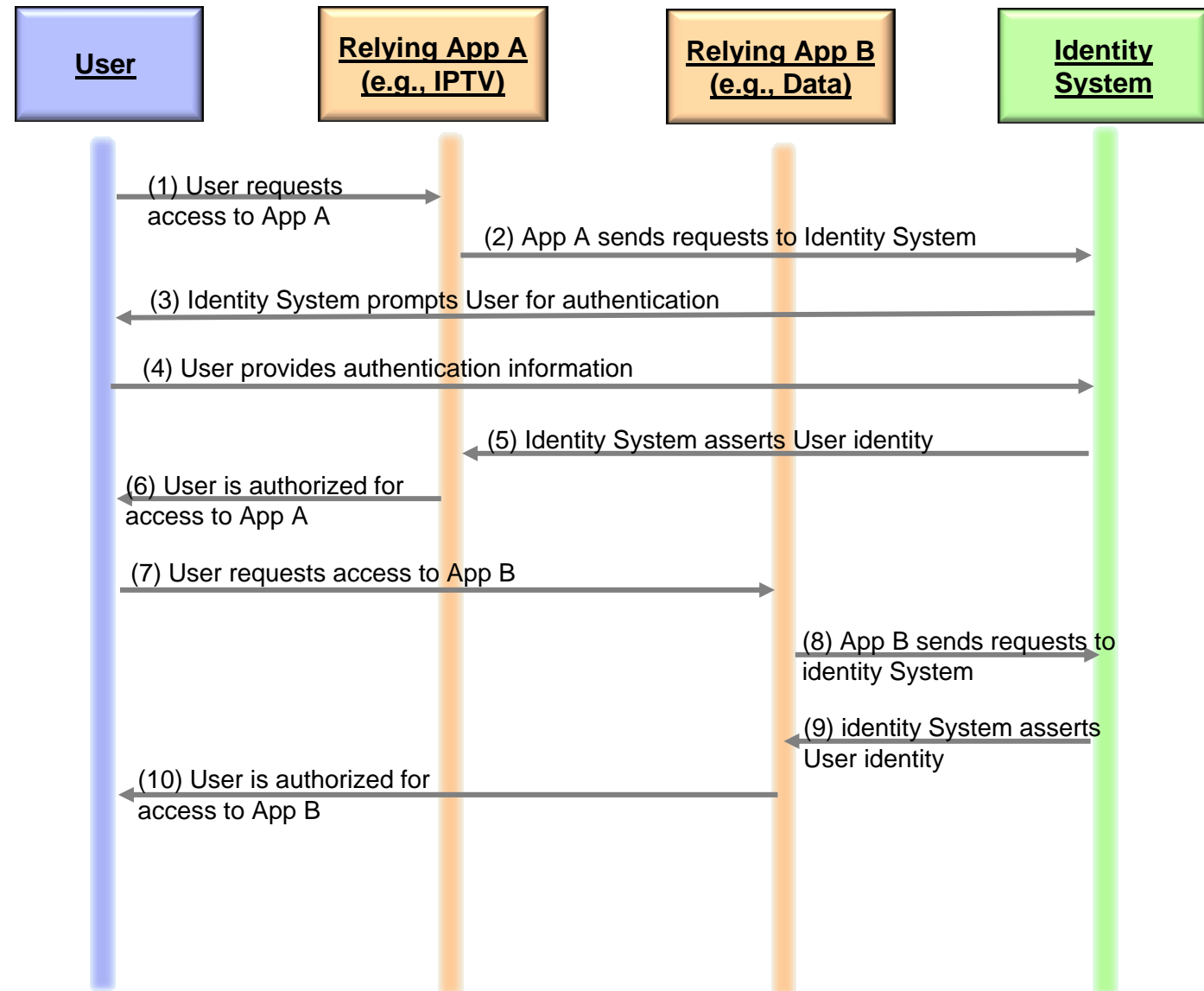
Example Use Case: Use of Common IdM System to Support Multiple Applications in NGN

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o **This example illustrates the need to specify a common IdM infrastructure to support multiple applications / services in NGN**

| User | Relying App A (e.g., IPTV) | Relying App B (e.g., Data) | Identity System |

(1) User requests access to App A

(2) App A sends requests to Identity System

(3) Identity System prompts User for authentication

(4) User provides authentication information

(5) Identity System asserts User identity

(6) User is authorized for access to App A

(7) User requests access to App B

(8) App B sends requests to identity System

(9) identity System asserts User identity

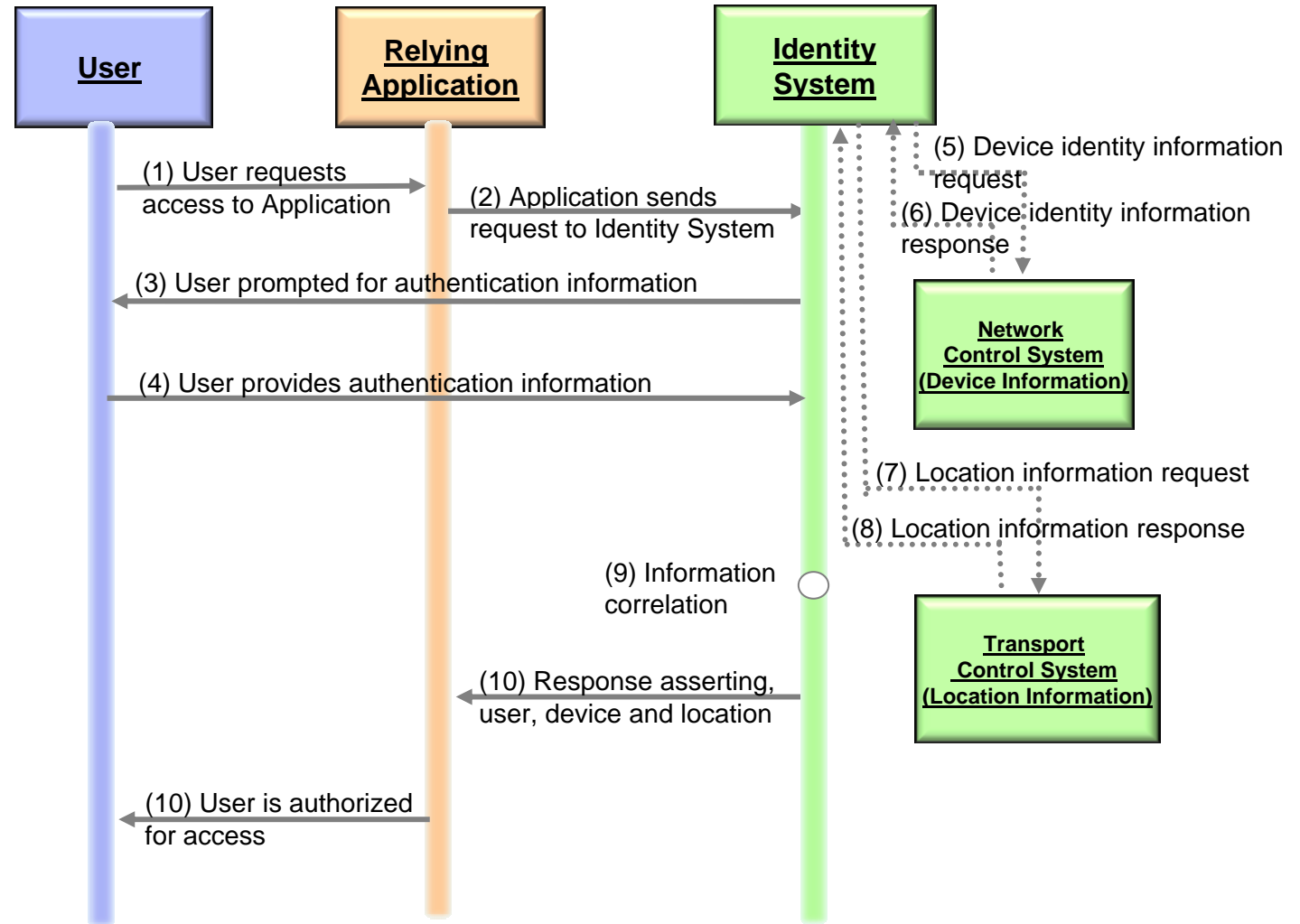(10) User is authorized for access to App B

Example Use Case: Obtaining and Correlating Cross Layer Information for IdM

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o **Example illustrates discovery and correlation of identity information located in different systems and layers of the NGN**

o **In general, IdM functions and information will be located in different systems, domains and layers of the NGN.**

User

Relying Application

Identity System

(1) User requests access to Application

(2) Application sends request to Identity System

(5) Device identity information request

(6) Device identity information response

(3) User prompted for authentication information

Network Control System (Device Information)

(4) User provides authentication information

(7) Location information request

(8) Location information response

(9) Information correlation

Transport Control System (Location Information)

(10) Response asserting, user, device and location

(10) User is authorized for access

ITU-T Role

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o **GSC-12 resolution (Global Standards Collaboration) calls for an ITU global coordinating role across array of standards bodies**

o **TSB and ITU organs are expected to respond to global IdM needs at World Telecommunication Standardization Assembly (WTSA) and other venues**

o **Almost every ITU-T Study Groups may have Identity Management related action items**

  • **Specific work already in progress in some SGs (e.g., SG 13 and SG 17)**

  • **Coordination across SGs important**

  • **Coordination with other SDOs and Forums working on IdM also important**

o **Actions essential for network/cyber security**

Relationship between SG17 (including the FG IdM) and SG13 work

o **SG13**
  - **Address NGN specific IdM issues based on the SG13 definition and scope of NGN**
  - **Includes internal and external interfaces to IdM systems**

o **SG 17**
  - **Address issues related to global interoperability, bridging and harmonization**
  - **For example, develop generic framework similar to X.805 for IdM**

o **ITU-T SG17 FG IdM**
  - **Feed results as appropriate into all relevant SGs in a timely manner**
  - **Each SG can use as appropriate to progress their own work on IdM**