ITU Arab Regional Forum on NGN
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Brief overview of ITU-T activities related to the migration to NGN

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PSTN/ISDN and the Migration to NGN: preserving the existing services

In evolution path to NGN, NGN shall support:
o   legacy terminal equipment (e.g. PSTN/ISDN phones)
o   PSTN/ISDN-like capabilities

PSTN/ISDN Emulation

o   From the end user perspective, the NGN "appears" supporting the same types of services offered by the existing PSTN/ISDN
o   Legacy terminals are enabled to continue to use existing telecommunication services while connected to NGN
o   Implemented via adaptation to an IP infrastructure

PSTN/ISDN Simulation

o   NGN terminals in an NGN network are enabled to use PSTN/ISDN-like service capabilities
o   But legacy terminals with terminal adaptations may be used too
o   Implemented over IP-based control infrastructure (e.g. using SIP)

ITU-T standards achievements in Migration to NGN

Scenarios for PSTN/ISDN evolution to NGN [Y.2261]

o Aspects to consider about migration

o Call Server (SoftSwitch) based core network evolution: 3 scenarios (start from Local Exchanges, start from Transit Exchanges, One-step)

o IMS-based core network evolution: One-step scenario

o Access network evolution: xDSL access network scenario

Generalities on PSTN/ISDN Emulation and Simulation [Y.2262]

o Adaptation functions for legacy user equipment at UNI user/network side
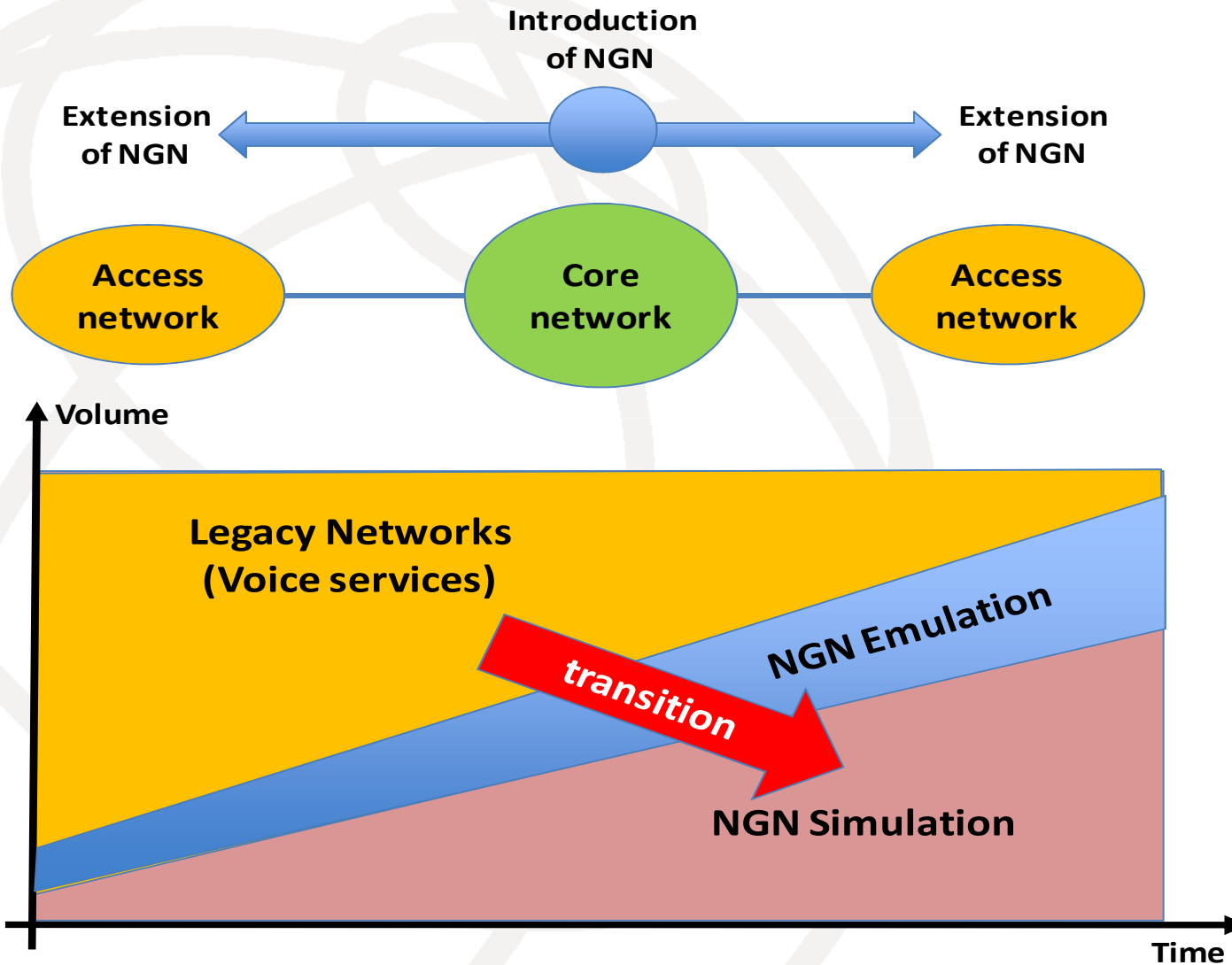
PSTN/ISDN Emulation

o 2 approaches for emulation: Call Server based [Y.2271], IMS based

o PSTN/ISDN Emulation architecture [Y.2031]– «Emulation service component » in NGN

PSTN/ISDN Simulation

o PSTN/ISDN simulation services rely on IMS capabilities (3GPP MMTel)

o Requirements in [Y.2211], OIP/OIR protocol specification in [Q.3614]

General view of migration scenarios to NGN

Introduction of NGN

Extension of NGN

Extension of NGN

Access network

Core network

Access network

Volume

Legacy Networks (Voice services)

NGN Emulation

transition

NGN Simulation

Time

PSTN/ISDN evolution scenarios to NGN [Y.2261]: CS-based core network evolution
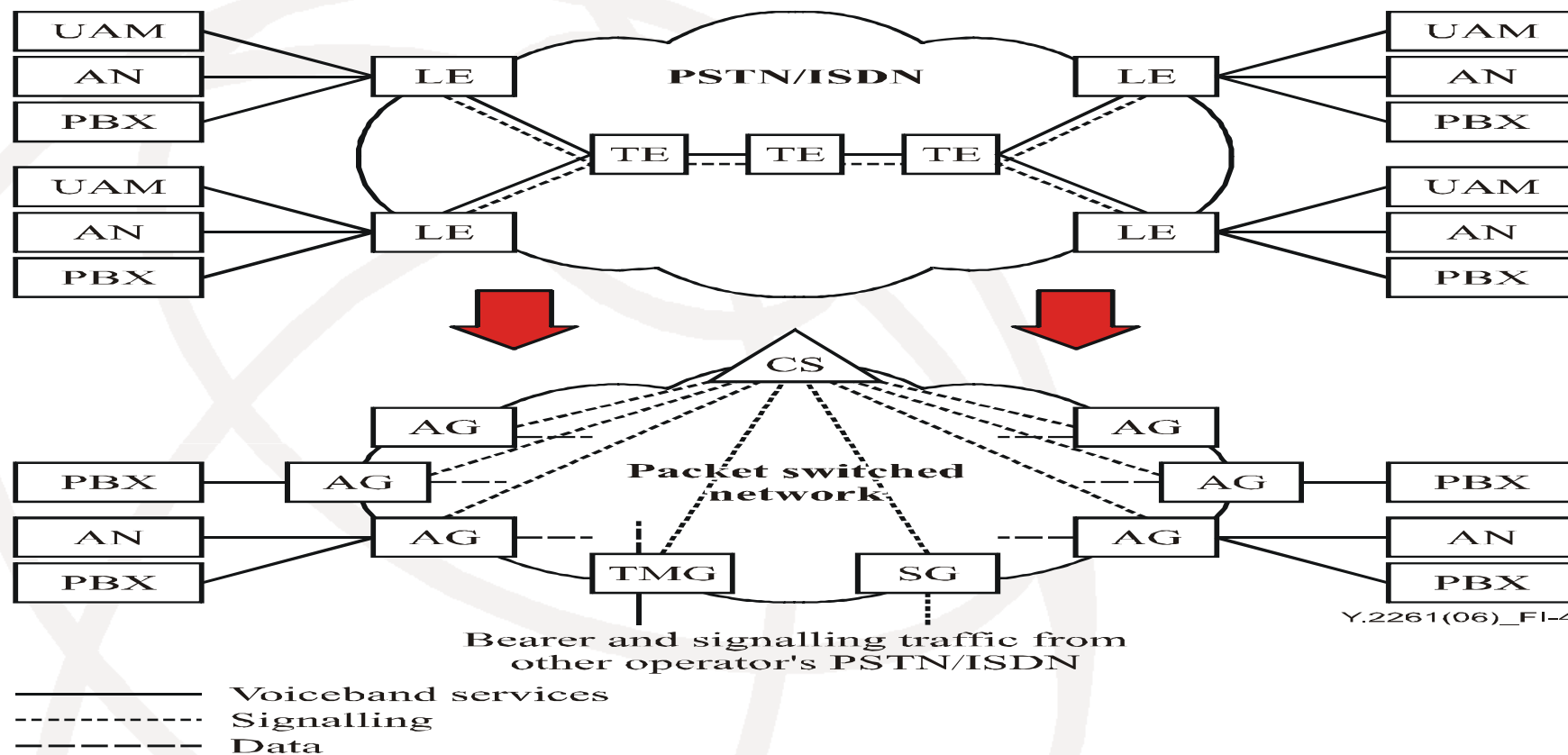
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"One-step" scenario

- PSTN/ISDN is replaced with PSN in one step. LEs are replaced by AGs and their functions divided between AGs and CS

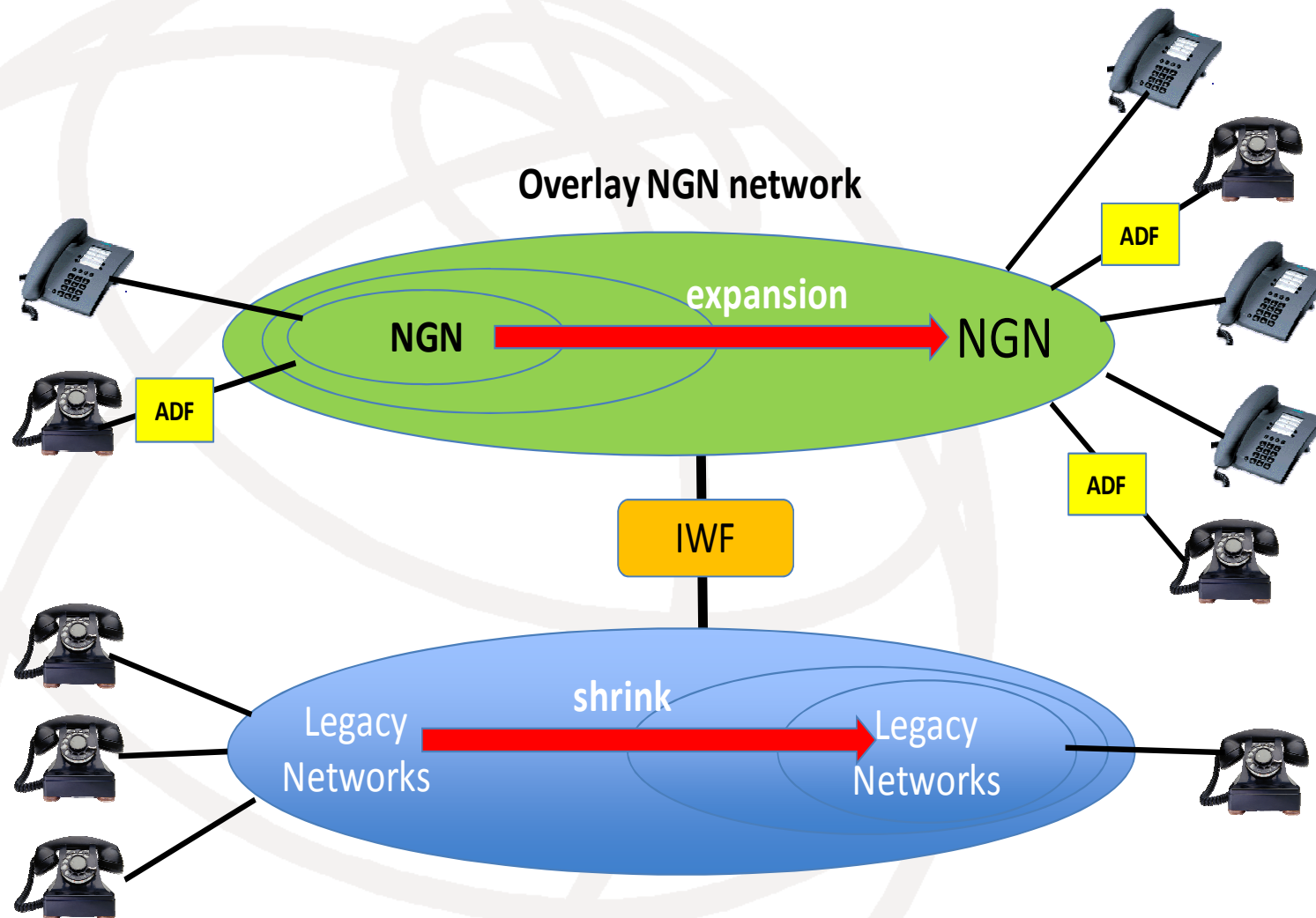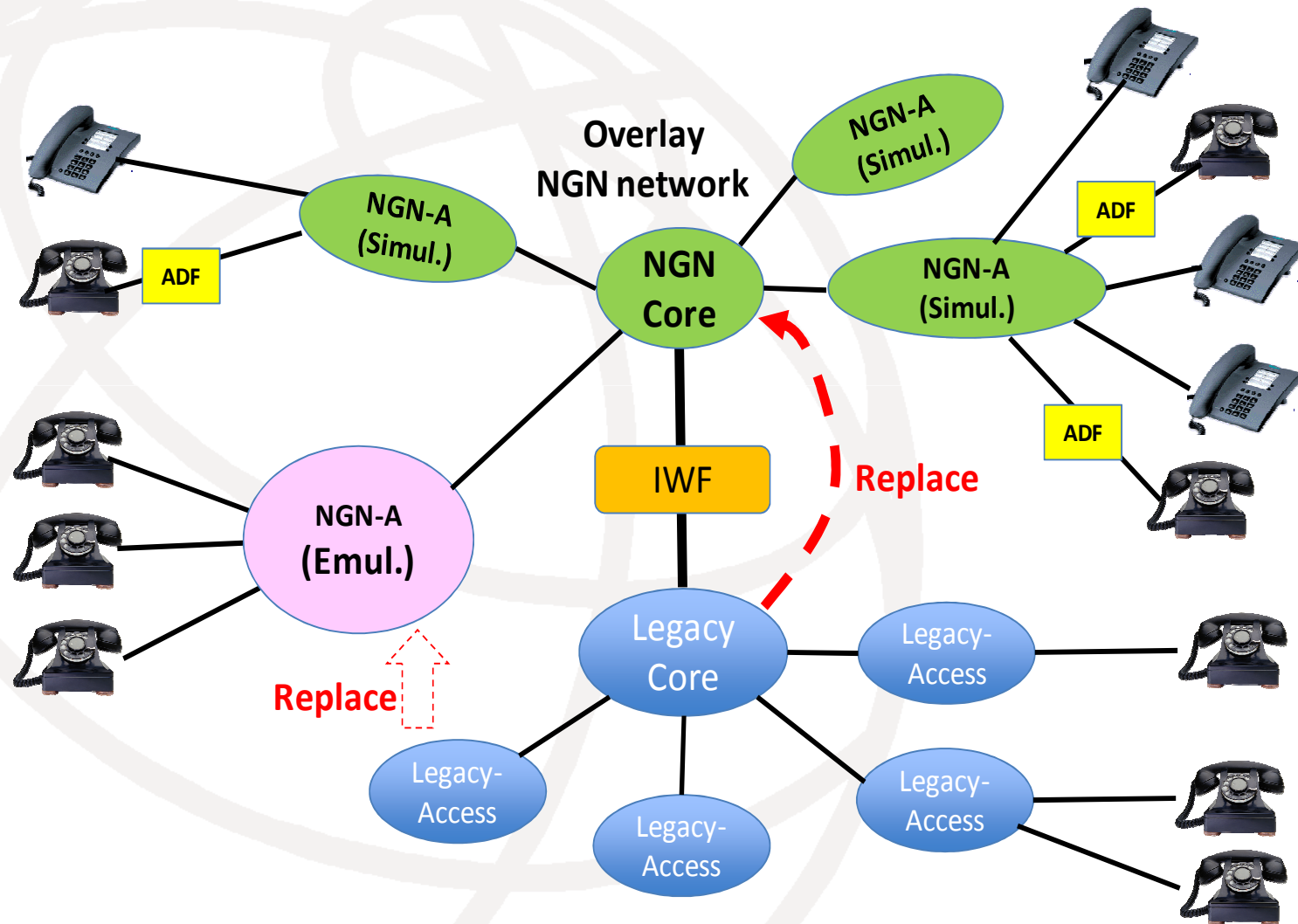# PSTN/ISDN evolution scenarios to NGN [Y.2261]: IMS-based core network evolution

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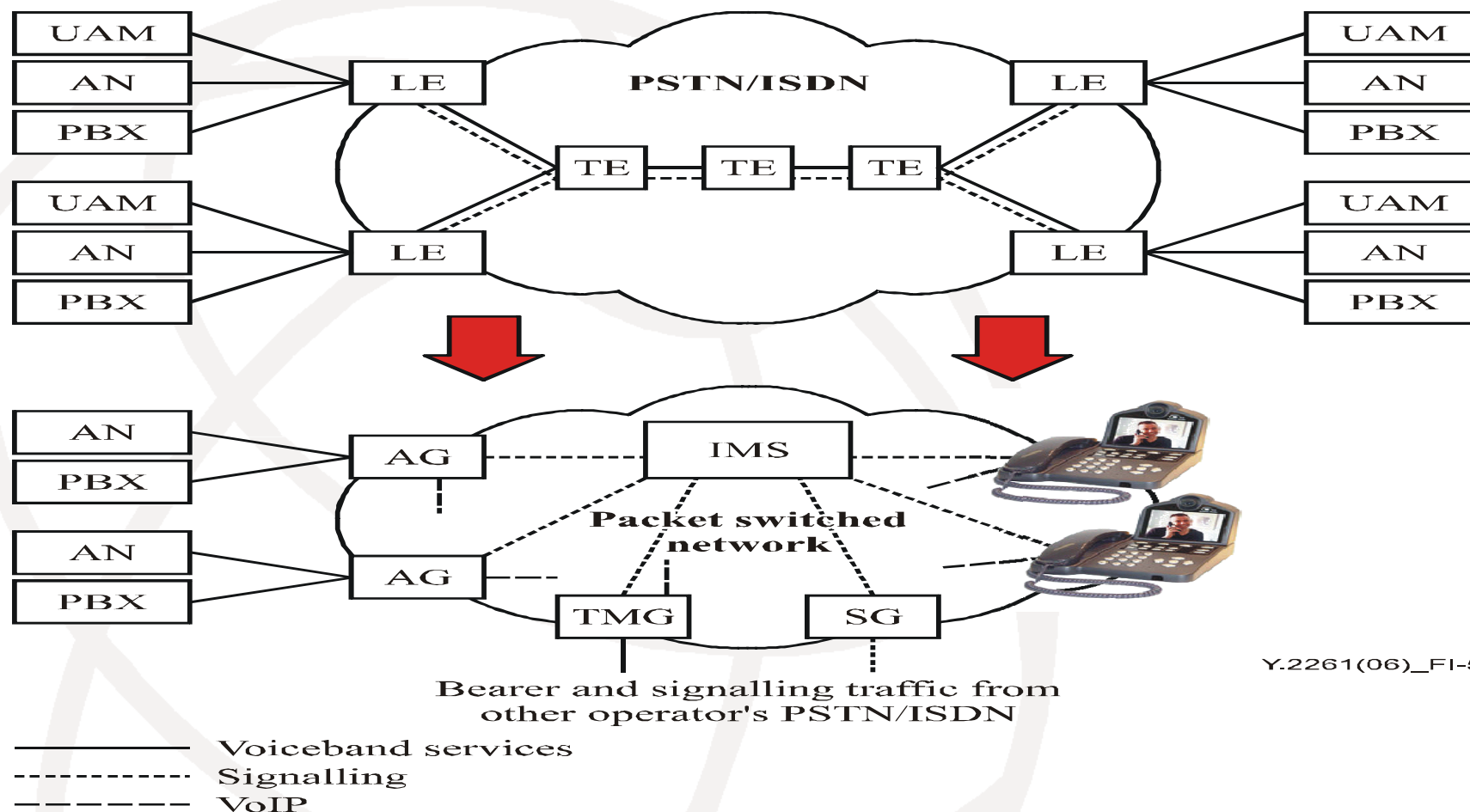
"One-step" scenario

- PSTN/ISDN evolves directly to a PSN based on IMS core network architecture. End-users access using NGN user equipment or legacy user equipment connected via AG

"Overlay" migration scenario

Overlay NGN network

expansion

NGN → NGN

ADF

ADF

ADF

IWF

shrink

Legacy Networks → Legacy Networks

"Replacement" migration scenario

PSTN/ISDN Emulation architecture [Y.2031] – a specific Emulation Service component (PES) in NGN

CS-based PES

- Depending on the network configuration, a CS may be functionally deployed as
    - Access call server
    - Breakout call server
    - IMS call server
    - Gateway call server
    - Routing call server
- Y.2031 provides mapping correspondence between CS-based PES functional entities and NGN functional entities

IMS-based PES

- The functional architecture of the IMS-PES is based on the IMS architecture

- Y.2031 provides mapping correspondence between IMS-based PES functional entities and NGN functional entities