



Hewlett Packard
Enterprise

4G EVOLUTION TO CLOUD NATIVE 5G CORE: Evolution through co-existence

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THE 5G NETWORK – DELIVERING SEAMLESS CONTINUOUS CONNECTIVITY

Multiple Networks and Vendors, co-existing within an evolving standards-based landscape



5G Footprint

Limited footprint for several years due to mmWave density requirements
LTE Buildout started in 2008 and is still taking place



Roaming Considerations

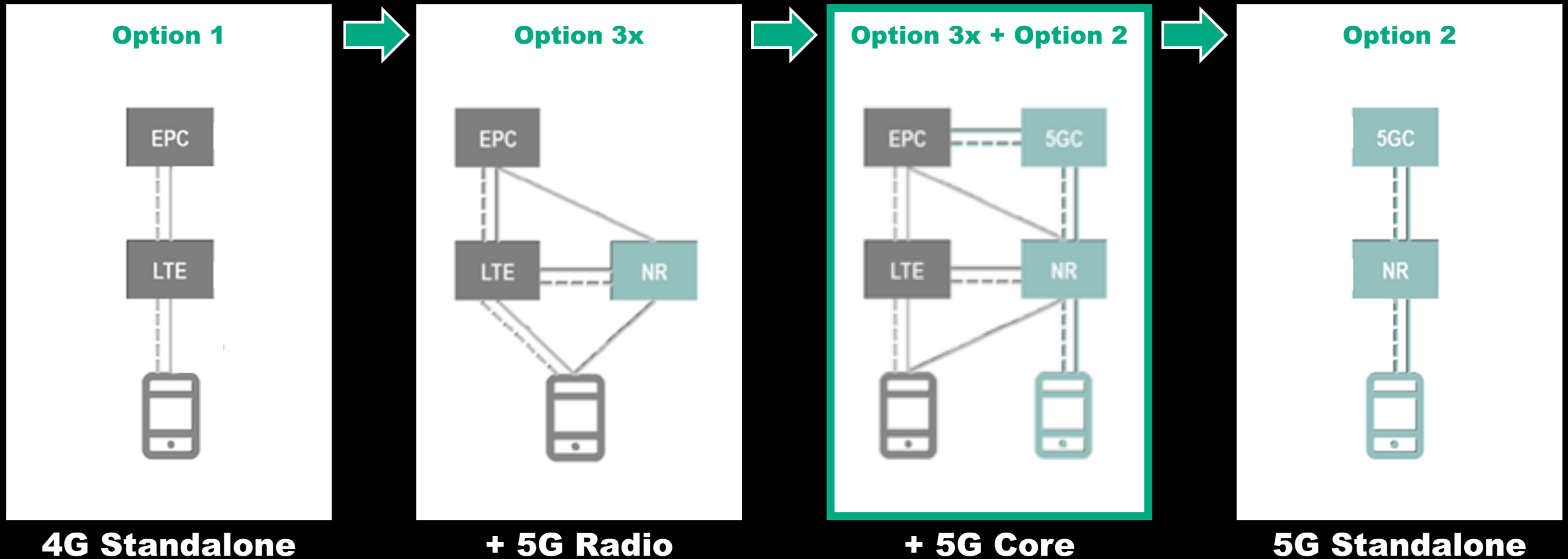
Slower moving countries
Greenfield operators must still allow subscribers to roam



Service Continuity

IMS and SMS termination remains HSS features
No Circuit-Switch fallback from 5G

TYPICAL 4G - 5G EVOLUTION PATH

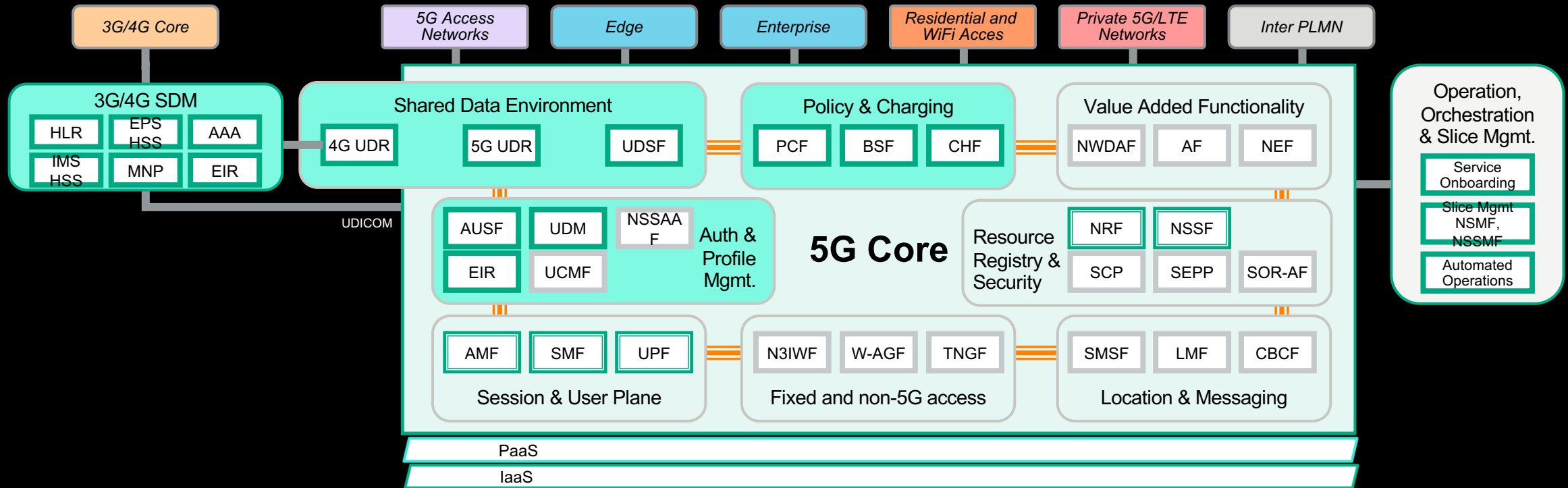


https://www.gsma.com/futurenetworks/wp-content/uploads/2018/04/Road-to-5G-Introduction-and-Migration_FINAL.pdf



HPE 5G CORE

built for multi-networking



A complete 5G core solution

- Open, standards based, modular
- Multi-vendor pre-integrated
- Service-based Architecture

Cloud-native from the ground up

- Network Functions as stateless micro-services
- Multi-cloud deployment

Shared Data Environment (SDE)

- Storing profile, policy and session data
- Enabler for cloud-native NFs

3G/4G/5G co-existence

- HSS integration with Service-based Architecture (UDICOM)
- One SDE across all

End-to-end Orchestration

- Full suite of management functions
- NFV MANO
- Network slice management

A SHARED DATA ENVIRONMENT

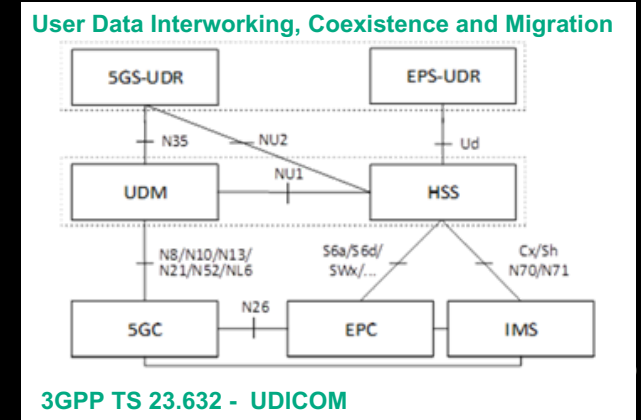
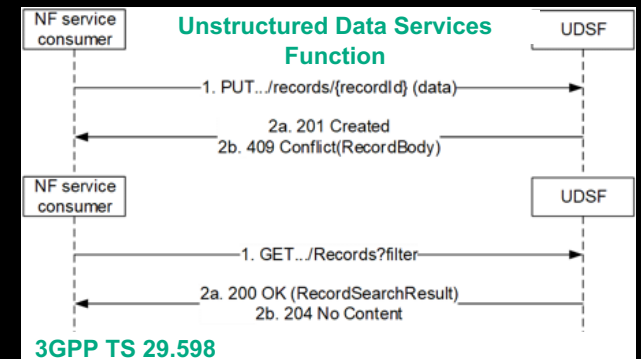
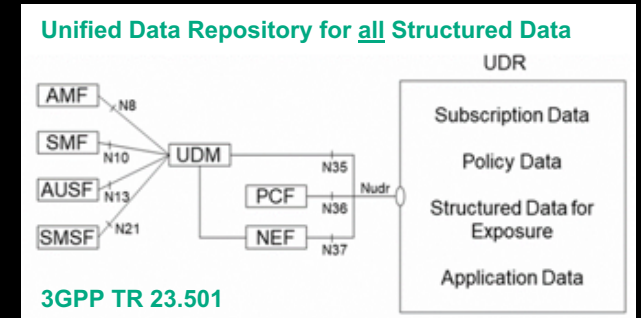
Seamless interworking across network types using standardized interfaces

- NG Mobile Network alliance imperatives
- Standardized API's for access and control
- Common Datastore for Legacy and 5G-Core Data
- Structured and Unstructured Data
- Cloud Native Design imperatives
- Separation of data from application
- No proprietary interfaces
- Multiple vendors using a common data layer.

3GPP Standards
Enabling Dataless,
Stateless, Mixed,
Multi-Vendor
Architectures



https://www.ngmn.org/fileadmin/ngmn/content/downloads/Technical/2018/180831_NDL_White_Paper_v1.0.pdf



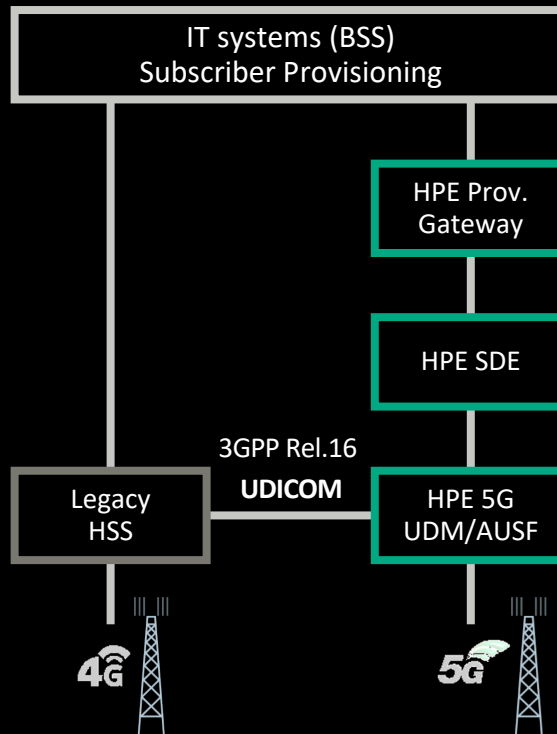
5G INTERWORKING FOR STRUCTURED DATA MODELS



Release 16

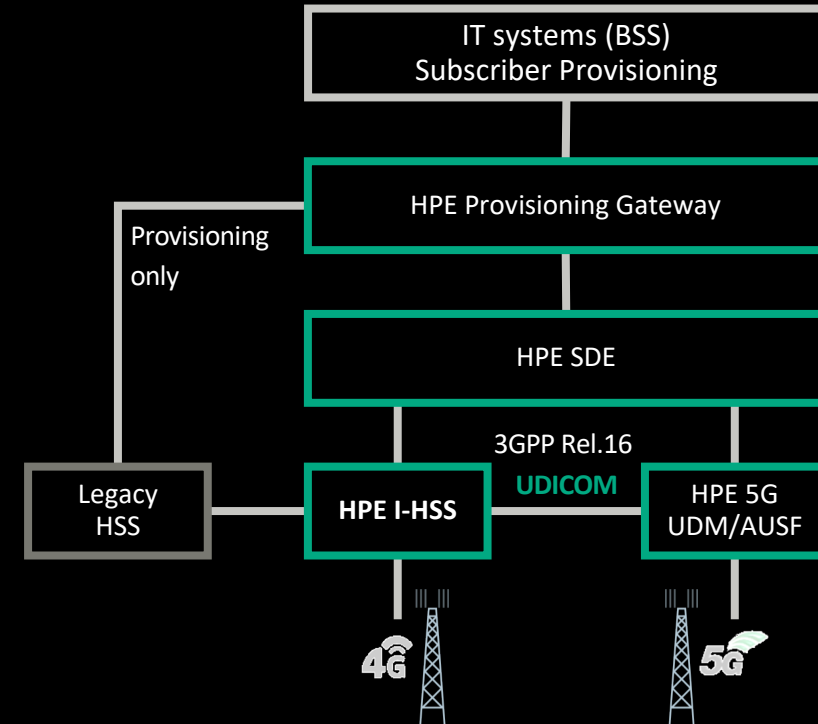
- TS23.632 - UDICOM
- Standardized interface between HSS and UDM
- Allows operators to deploy separate HSS and UDM, even from different vendors.
- Supported features:
 - Authentication
 - Single Registration Handover
 - IMS
 - SMS over NAS

Option 1 – Evolve Legacy



- Keep existing vendor for 4G/IMS
- Add a specialized vendor for 5G
- Enhance Legacy HSS with 3GPP Rel 16 UDICOM
- Dual provisioning

Option 2 – Cap & Replace



- One vendor for combined 4G/5G subscriber data
- 4G only subscribers still served on legacy
- Single interface to 4G network
- Single interface to provisioning

SUMMARY – 4G TO 5G TRANSITION PLANNING



Single Data Layer for true cloud native & multi-vendor 5G



Standards-based 4G/5G User Data Interworking



Combined Policy & Charging solution



Identity Federation across Networks



An aerial view of a city at dusk, with a sunset sky in shades of blue and orange. The city lights are visible, and the overall scene is a mix of natural and urban elements.

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