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International Telecommunication Union

IPTV – Any Device, Anytime, Anywhere

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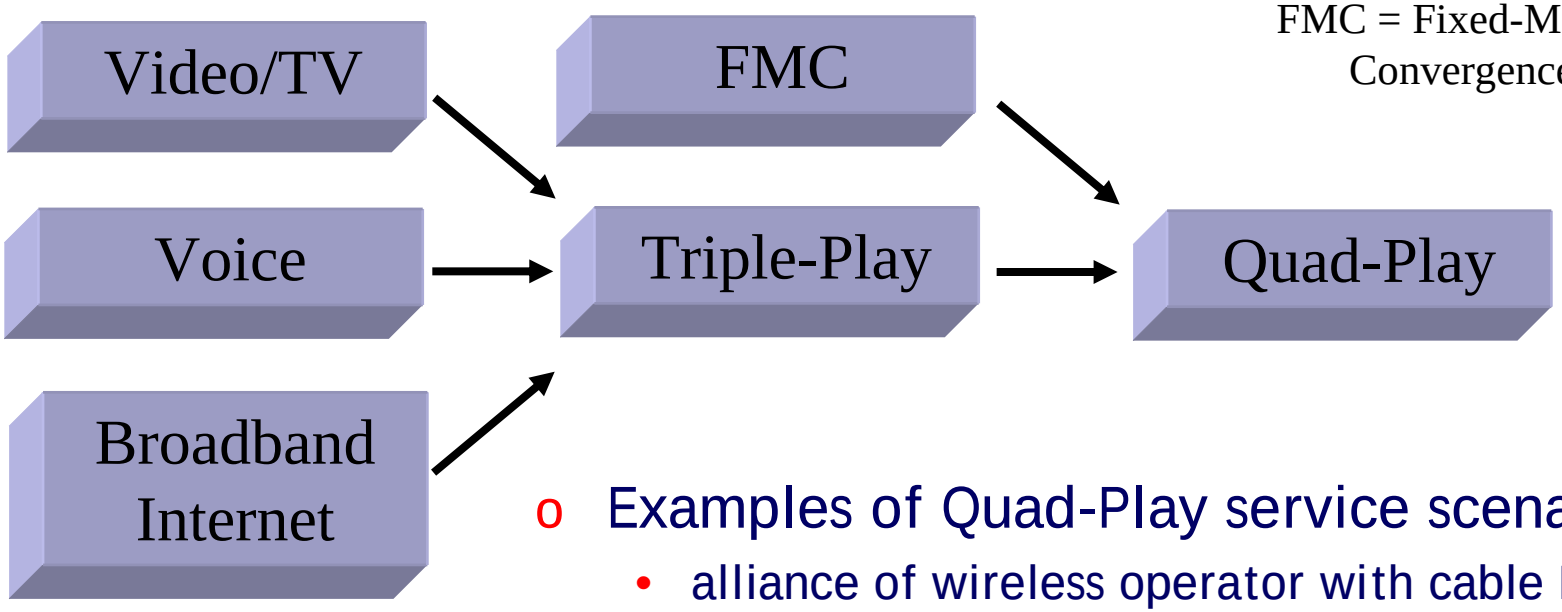
User Requirements

- Key user requirements for ITV include
  - TV content choice in fixed and mobile formats
  - interactive applications, inc. games, e-commerce, etc
  - ubiquitous ‘converged service’ availability – home, office, vehicle and on-the-move
  - variety of fixed and mobile devices
  - access from many network types

Converged Services Evolution



FMC = Fixed-Mobile Convergence

- Examples of Quad-Play service scenarios:
  - alliance of wireless operator with cable MSO
  - alliance of wireless operator with telco
  - combined fixed-mobile operator
- IPTV must co-exist with video services that are not reliant on IP, eg. traditional broadcast and 3GPP-MBMS
- IPTV promises to provide a generic video solution to drive Quad-Play and beyond

Quad-Play Architecture

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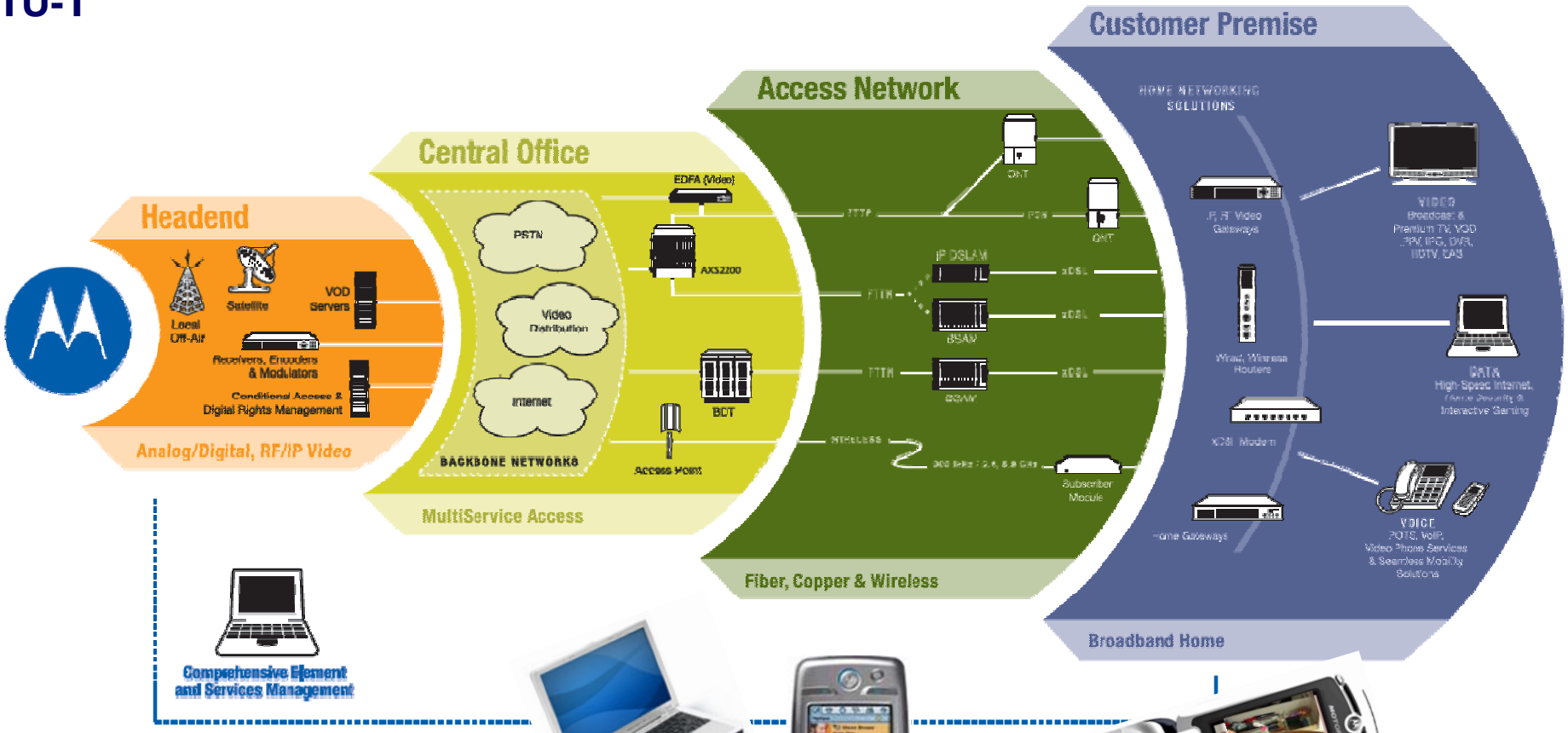

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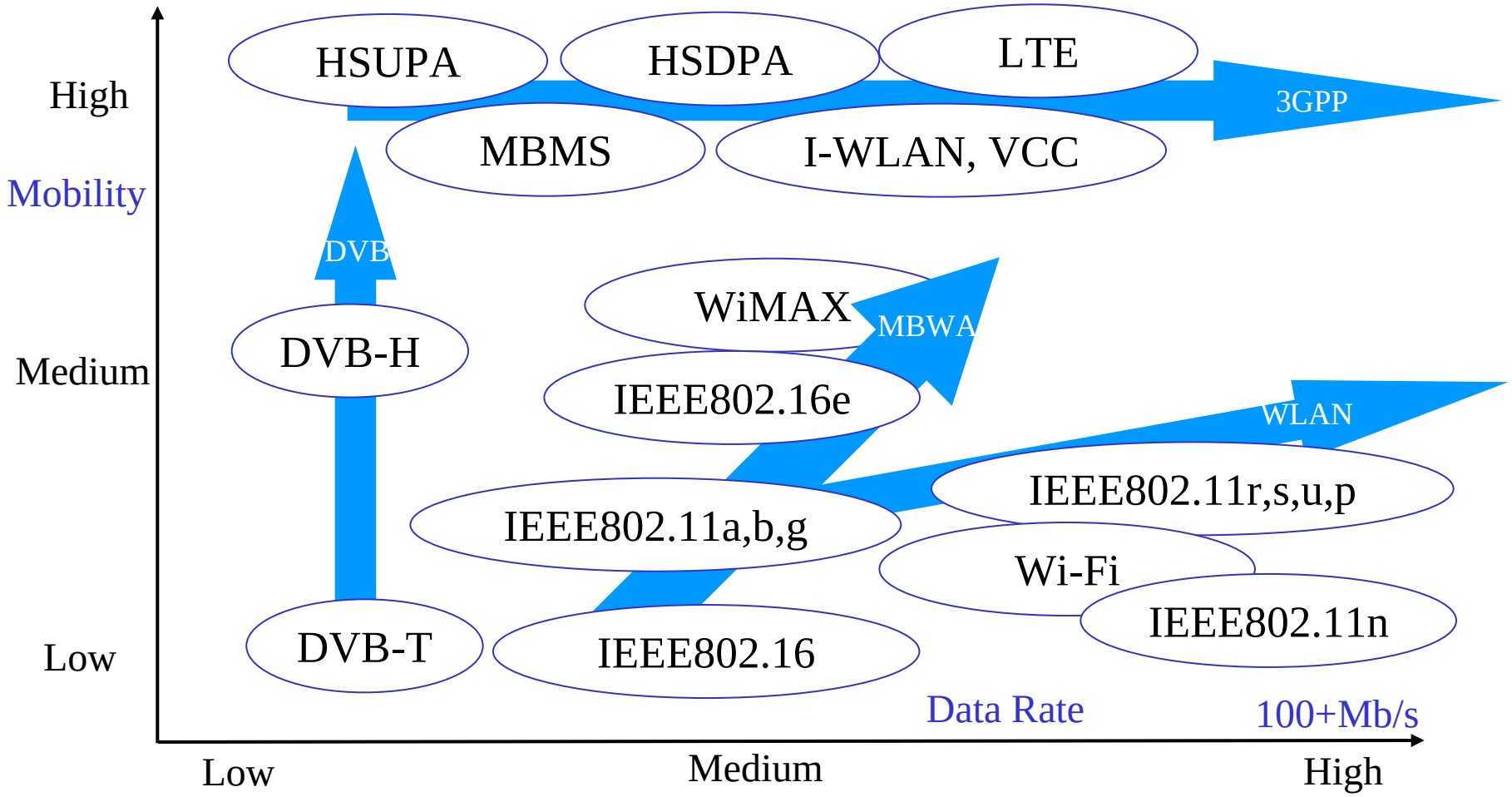
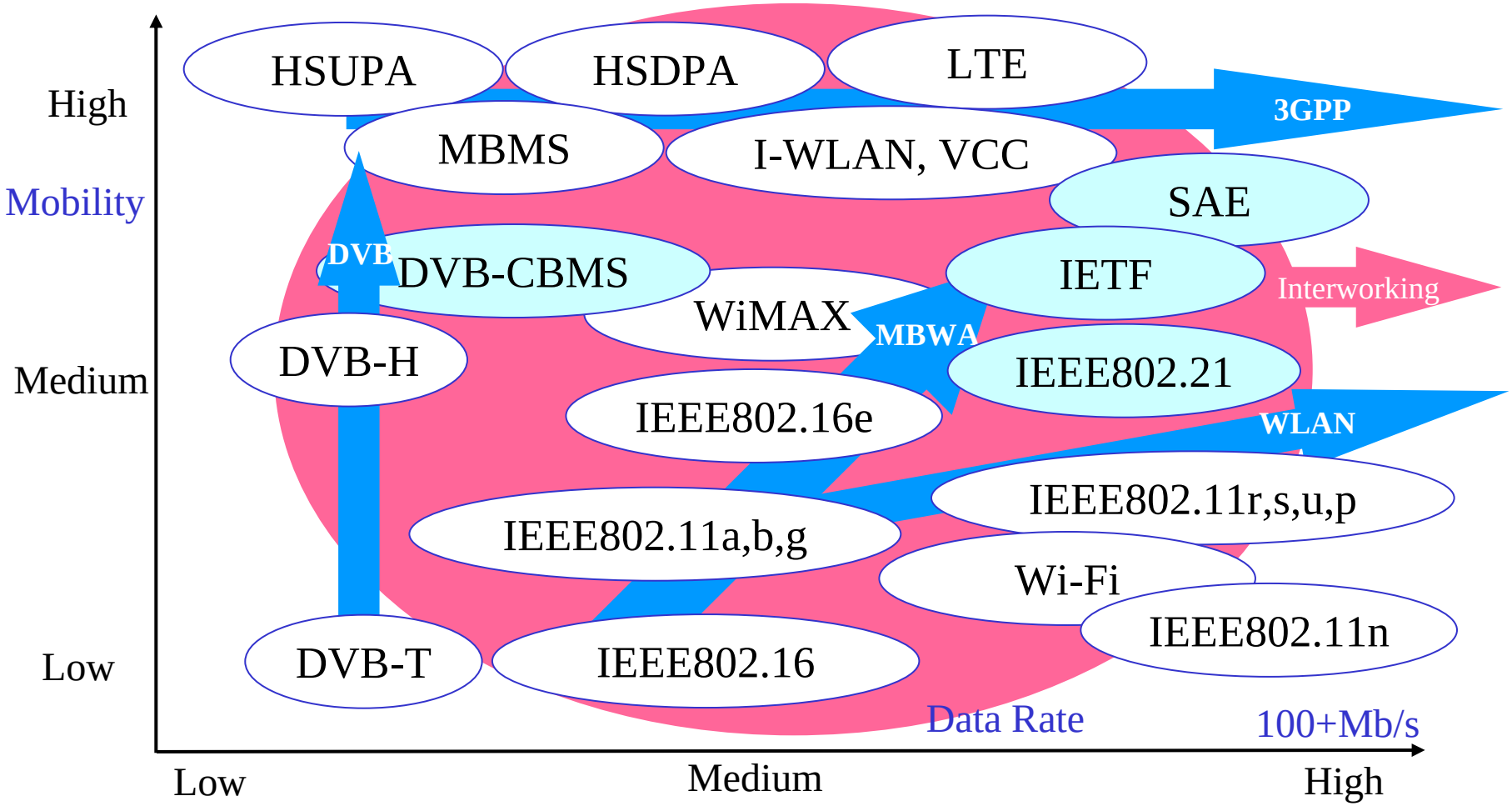
Radio Access Network Evolution

Wireless technology is becoming more 'video-friendly', and increasingly able to enhance the user's 'quad play' and IPTV experience



Heterogeneous Network Evolution

Interworking between different and complementary wireless networks facilitates ubiquitous availability of converged IPTV services



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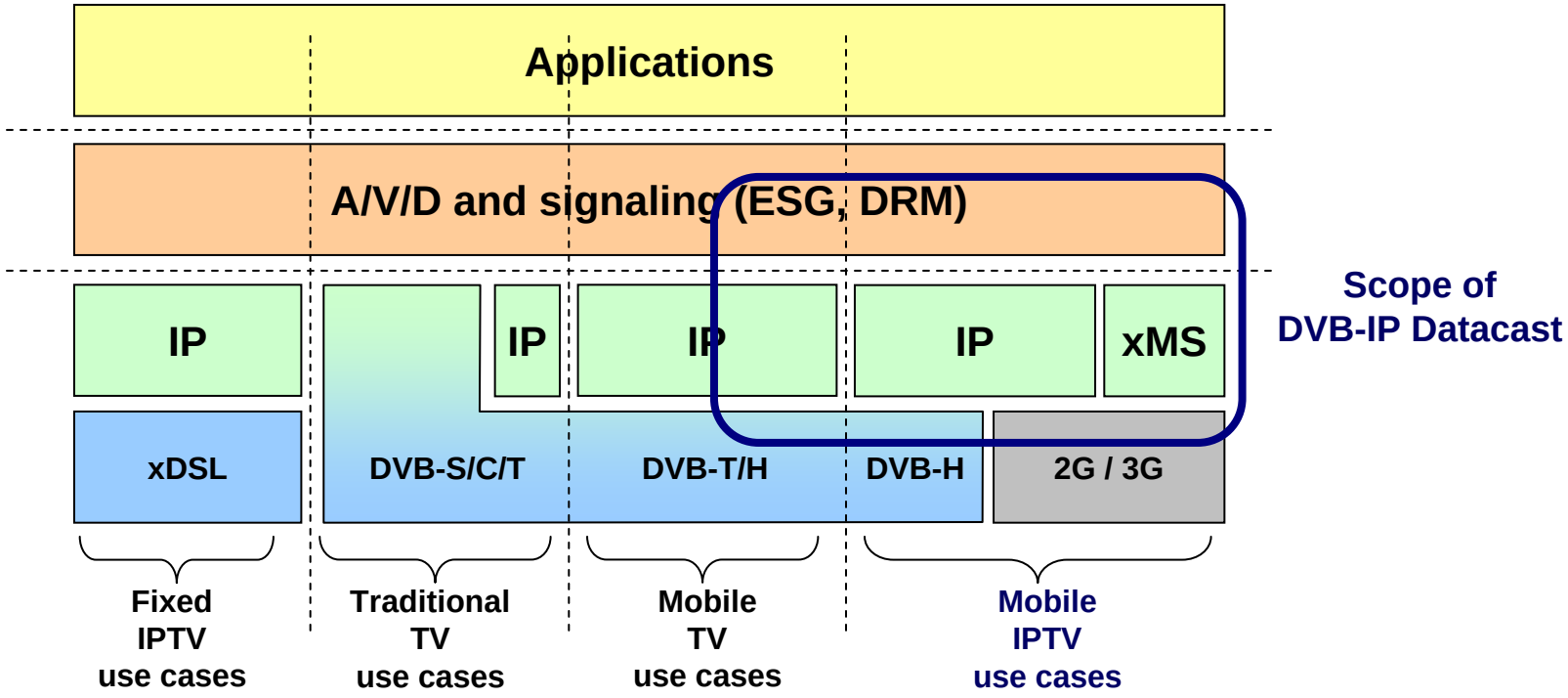
Example: Mobile Broadcasting with DVB

- DVB3.0 aims at generalizing IP-based delivery of content

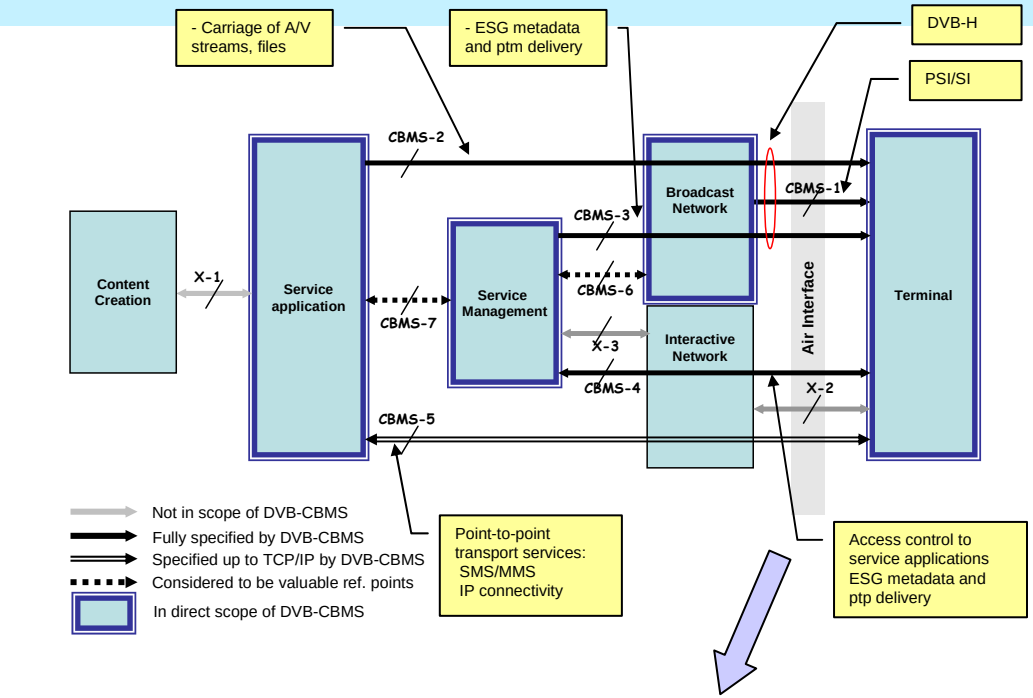


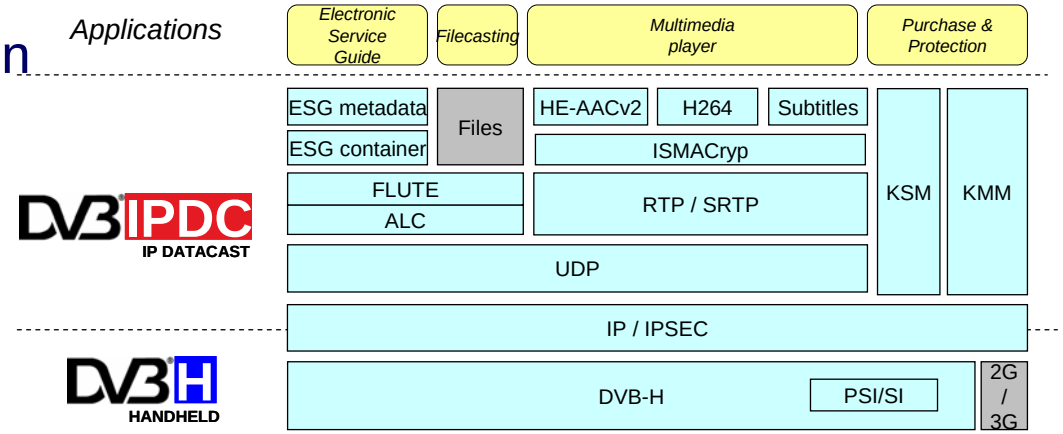
- DVB-CBMS* (Convergence of Broadcast and Mobile Services) targets IP delivery to mobiles

* Chair:
Georges Martinez, Motorola

DVB- IP Datacast

- DVB-IPDC specifies a bearer-agnostic IP based platform for the delivery of broadcast content to mobile devices
- DVB-IPDC end-to-end architecture combines heterogeneous broadcast and interactive networks
- DVB-IPDC phase 1 over; DVB-H is currently being commercially rolled out in various regions
- DVB-H is supported by Mobile DTV Alliance
- DVB-IPDC is well-suited for « Mobile IPTV »





source: Georges Martinez
Chair, DVB-CBMS

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DVB-IPDC Specification Status at ETSI

- Specification status

• Phase 1 Umbrella Specification	ETSI proc.	(TS 102 468)
• Use cases	**Published**	TR 102 473
• Architecture	**Published**	TR 102 469
• PSI/SI	**Published**	TS 102 470
• Content Delivery Protocols	**Published**	TS 102 472
• Electronic Service Guide	**Published**	TS 102 471
• Audio-Video Coding	**Published**	TS 102 005 v2
• Service Purchase and Protection	ETSI proc.	(TS 102 474)

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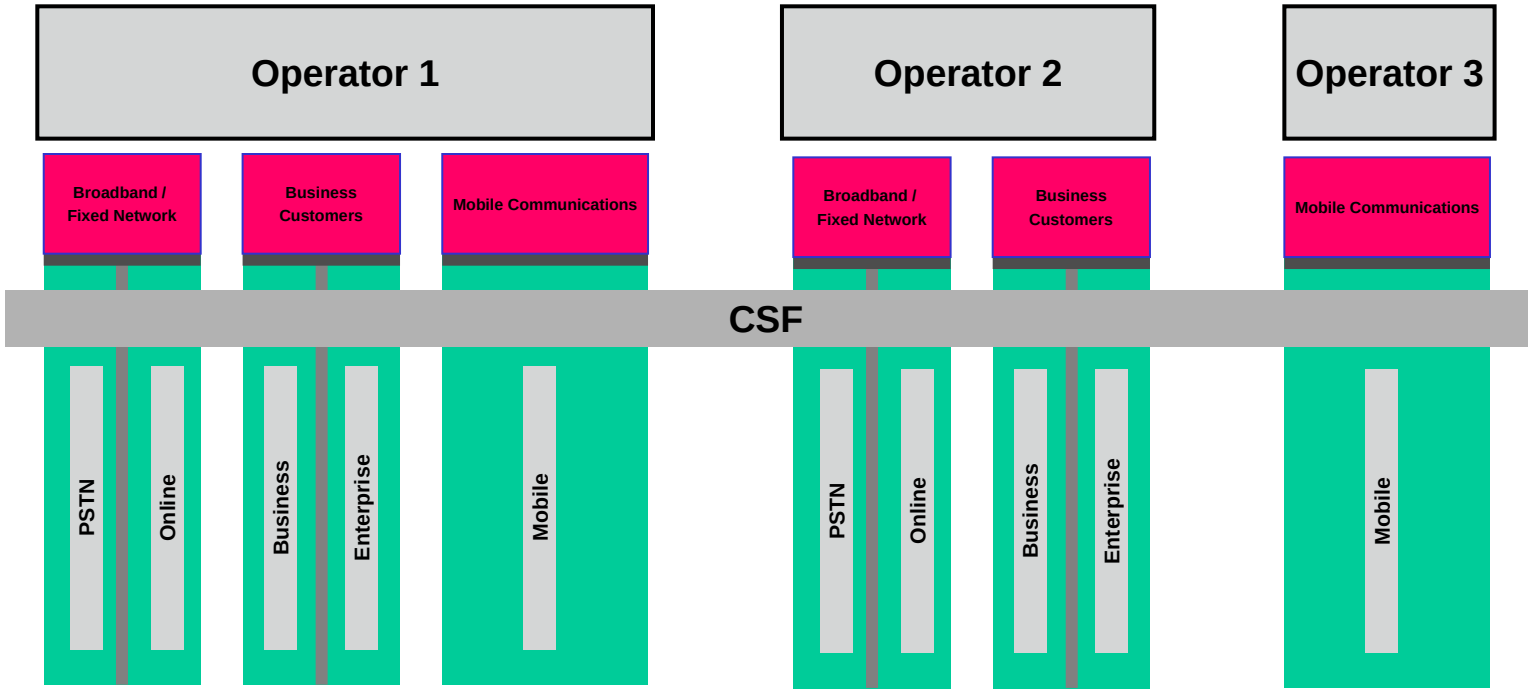
Benefit of CSF

- Converged Services Framework (CSF) coordinates services across different administrative domains from a user perspective



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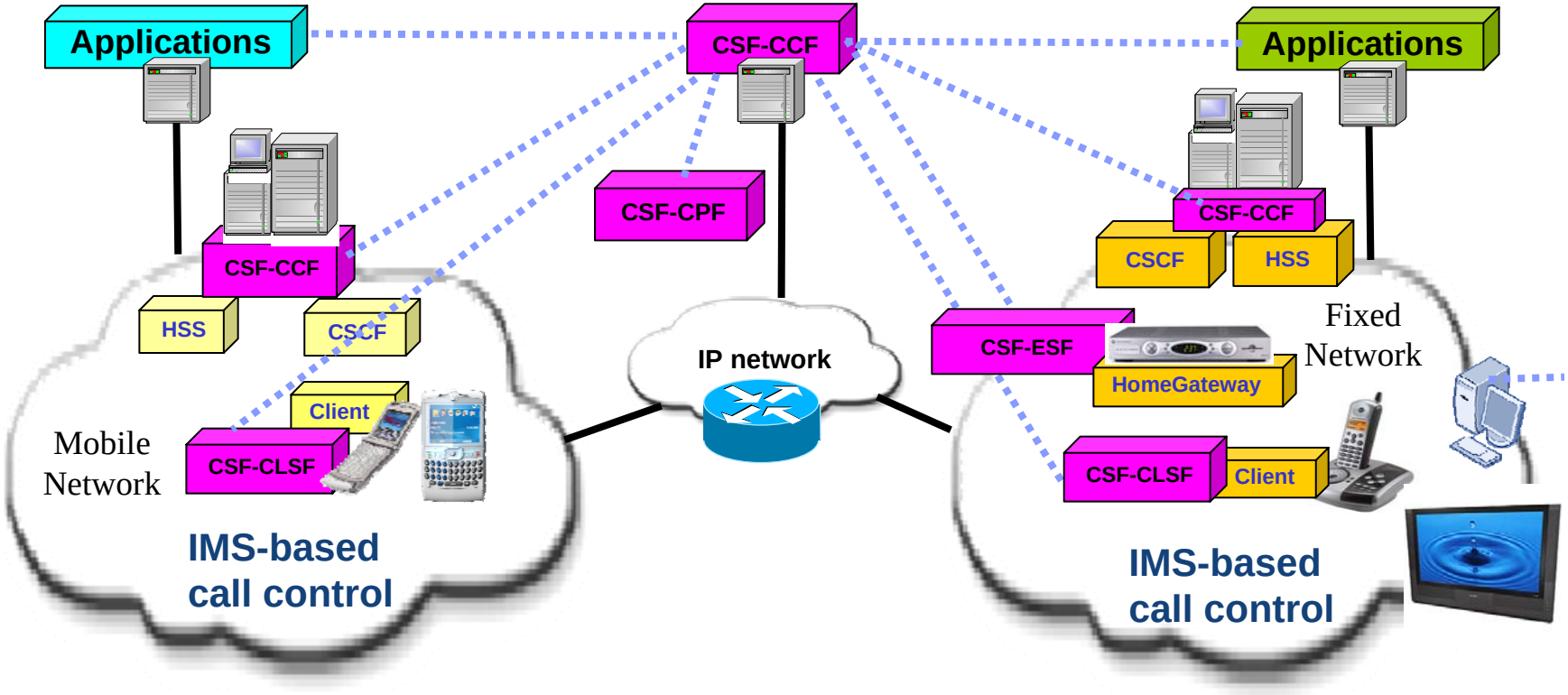
CSF Functional Elements

- Convergence Coordination Function (CCF):
  - Coordinates the multiple preferences, resources and sessions created by each access and service network to affect a consistent convergence offering.
- Convergence Support Functions (xSF):
  - Network SF (NSF) - Interface to each AN's session controls
  - Edge SF (ESF) - Interface to each AN and ESF subtending devices
  - Client SF (CLSF) - Interface to end user clients
- Convergence Policy Function (CPF):
  - provides policy management which is implementation-independent

Service Continuity Across Domains



- CSF is currently the subject of a new Draft ITU-T Recommendation in SG13 NGN
  - co-editors: Syed Husain (Motorola) and Jinkyung Hwang (KT)

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- Thank You!