



ITU Kaleidoscope 2011

The fully networked human?
Innovations for future networks and services

Accessibility support for persons with disabilities by Total Conversation Service Mobility Management in Next Generation Networks

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Definitions & Scope

- Accessibility (Art. 9 UN Convention on the rights of persons with disabilities):

Usability of a product, service, environment or facility by people with the widest range of capabilities

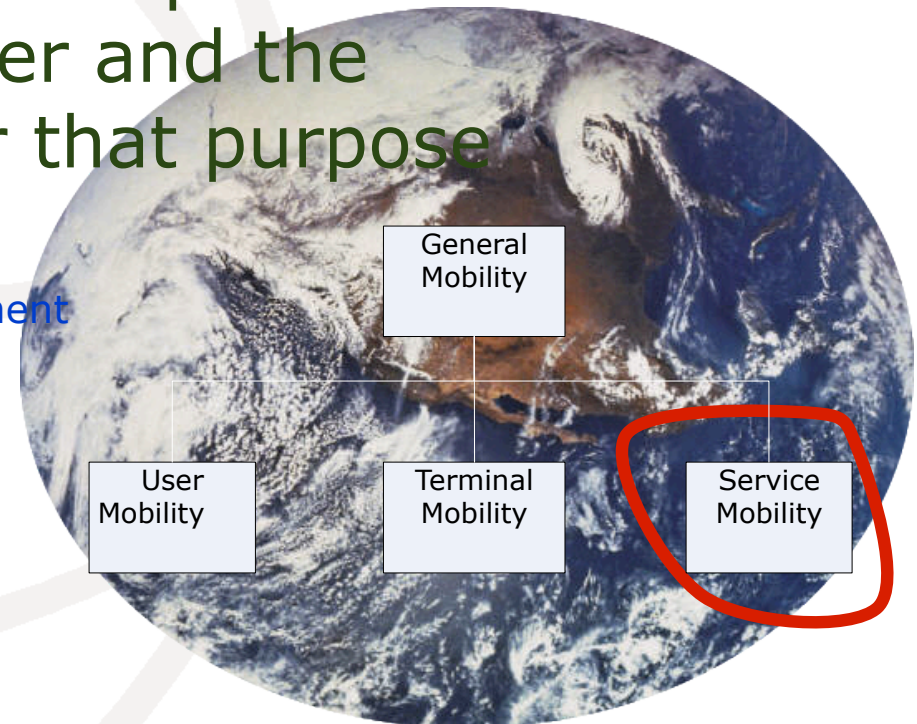
- Accessibility in the given context narrowed to sensory/physical people

Definitions & Scope

- Service Mobility (e.g. ITU-T Y.2091): Service mobility defines the ability of a user to access during an ongoing session the particular subscribed (multimedia) - services irrespective of the location of the user and the terminal that is used for that purpose

New recommendations on service mobility management will be published by ITU-T soon:

- ▶ ITU-T Y.2809 „Framework of Mobility Management in Service Stratum for NGN“
- ▶ Draft Sup.15 to Y.2000-series - Profile based application adaptation service using NGN



Total Conversation (ITU-T F.703)

A central concept in accessible communication, joins real-time text, video and voice communication in one mainstream telecom service useful for all: type, sign, show, talk - all in the same call



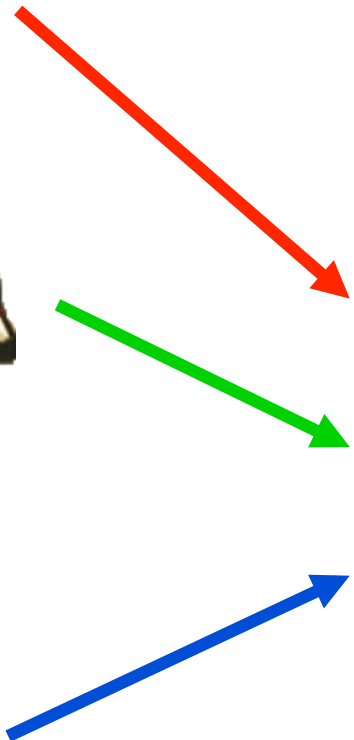
Video telephony



Text telephony



Voice telephony



Possibly complemented by Braille display (#char positions in a line 12-40)

Source: Omnitor

Accessible replacement of Voice Telephony.

Service variants

□ Disability dependence (simplified)

	Voice stream	Video stream	Text stream
Blind	x		x (Braille)
Deafened	x (one way talking)	x (lip reading)	x
Deaf signing		x (sign)	x
Hard-of-hearing	x	x (lip reading)	x
Deafblind speaking	x (one way talking)		x (Braille)
Deafblind signing		x (sign)	x (Braille)
Blind and speech disabled	x (one way listening)		x (Braille)
No communication disability	x	x	x

Service variants (cont.)

Combinations

	Blind	Deafened	Deaf signing	Hard-of-hearing	Deafblind speaking	Deafblind signing	Blind and speech disabled
Blind	<->: text (B), voice						
Deafened	<->:text (B) ->: voice (one way talk)	<->: text, video (lip reading)					
Deaf signing	<->: text (B)	<->: text, video (?)	<->: text, video (sign)				
Hard-of-hearing	<->: text (B), voice	<->: text, video (lip reading) <-: voice (one way talk)	<->: text, video (?)	<->: text, voice, video (lip reading)			
Deafblind speaking	<->: text(B) ->: voice (one way talk)	<->: text (B)	<->: text (B)	<->: text (B) ->: voice (one way talk)	<->: text (B)		
Deafblind signing	<->: text (B)	<->:text (B) ->: video (?)	<->: text (B) ->: video(sign)	<->: text (B), video (?)	<->: text (B)	<->: text (B)	
Blind and speech disabled	<->: text (B) <-: voice (one way listening)	<->:text (B) <-: voice (one way talk)	<->: text (B)	<->: text (B) <-: voice (one way listening)	<->: text (B) <-: voice (one way listening)	<->: text (B)	<->: text (B)

Occurrences:

- textstream: 6 out of 28
- text stream (B): 28 out of 28
- voice stream: 10 out of 28
- video stream: 9 out of 28

(B): textstream complemented by Braille capable device

Access capabilities & consequences



	Text	Voice	Video
Bandwidth	240B/s	100KB/s	500KB/s
Latency	500ms	400ms	400ms
packetloss	5%	5%	5%

	Text	Voice	Video
Bandwidth	240B/s	100KB/s	500KB/s
Latency	500ms	400ms	400ms
packetloss	5%	5%	5%

	Text	Voice	Video
Bandwidth	240B/s	100KB/s	500KB/s
Latency	500ms	400ms	400ms
packetloss	5%	5%	5%



Bandwidth	400KB/s
Latency	150ms
packetloss	3%

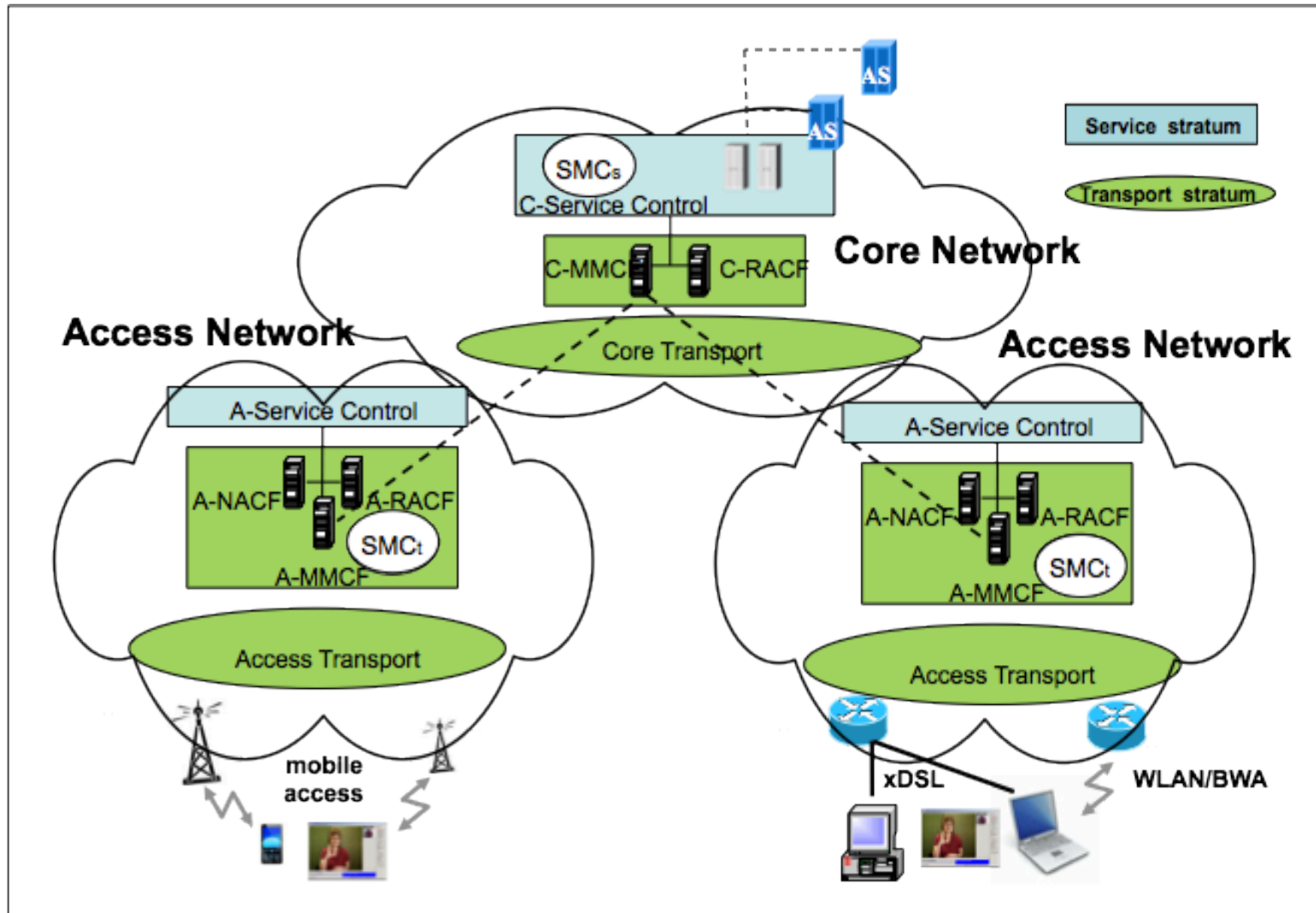


Bandwidth	1MB/s
Latency	150ms
packetloss	3%

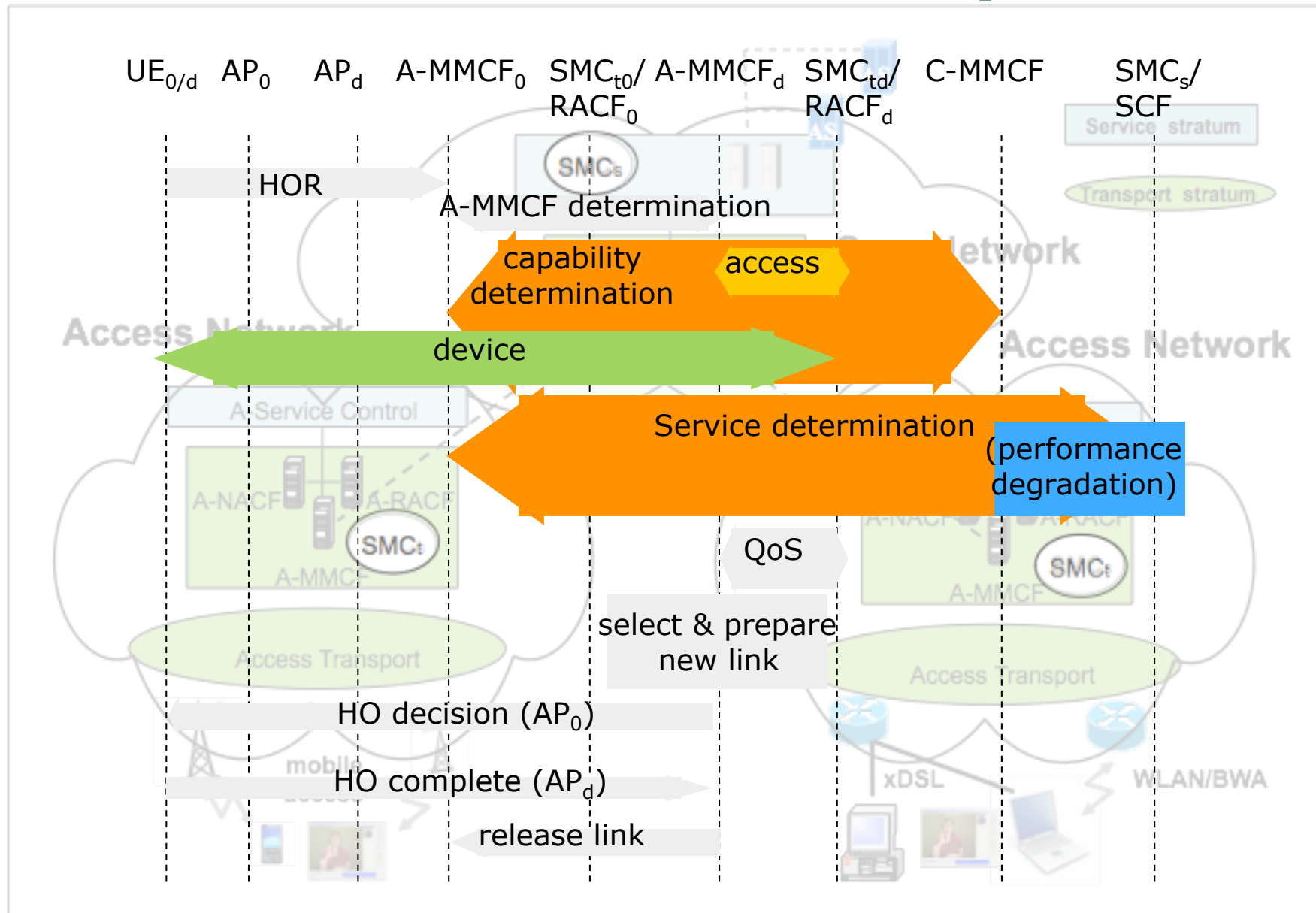
Bandwidth	100KB/s
Latency	450ms
packetloss	3%



Functional Architecture



Details of the handover process



Early experience

- Media streams shall be handled separately by the mobile device SW
- Performance critical in case of fast changing transmission conditions
- Consideration of at first mandatory stream management
- Demand for easy managable/usable user profile (ETSI STF 342 TS 102 747, ES 202 746)
- Harmonization with/ integration into new Y.2809, Sup.15 2000 series
- It's easier to get written a paper than to approve and implement appropriate recommendations

Final remarks

- ❑ Useful links
 - ❑ Q.26/16: <http://www.itu.int/ITU-T/studygroups/com16/sg16-q26.html>
 - ❑ JCA-AHF (Accessibility and Human Factors):
<http://itu.int/ITU-T/jca/ahf>
 - ❑ FG AVA (Audiovisual Media Accessibility):
<http://www.itu.int/en/ITU-T/focusgroups/ava>
 - ❑ Packetizer <http://www.packetizer.com/ipmc/h325>
- ❑ Many thanks to for their tremendous support to
 - ❑ Gunnar Hellström (Omnitor, Sweden),
 - ❑ Paul Jones (Rapporteur Q.12/16, Cisco, US) and
 - ❑ BillPechey (Rapporteur Q.26/16, UK)

Finally



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