3GPP TSG-T2 #18
Velen, Germany
12 -16 August 2002

T2-020628

Agenda Item:

Source: **Mobixell Networks**

Title: **MMSC – Transcoding Interface**

Document for: Discussion

12-16 August 2002 Meeting # : 3GPP TSG-T2#18

Location: Velen, Germany

Security Classification Category:	Please mark with "X" where applicable
Restricted - Members	X
Restricted – Group Members	X
Restricted – Associate Members	X
Restricted – Other ( )	

Status	Please mark with "X" one of the following For Approval: ( ) For Information: ( )

MMSC – Transcoding Platform Interface

Micha Avni, Mobixell Networks

Presentation to T2#18, August, 2002

Presentation Agenda

1. The meaning of **transcoding**
2. Why standardize a Transcoder Interface
3. Table a draft Interface Document
4. Conclusion

The Meaning of Transcoding

Presentation Agenda:

1. **The meaning of transcoding**
2. Why standardize a Transcoder Interface
3. Table a draft Interface Control Document
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MMS Summit, Apr 9, 02 Conclusions

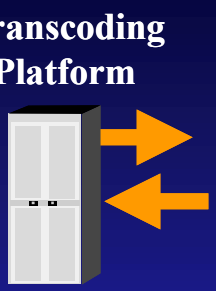
Transcoding issues

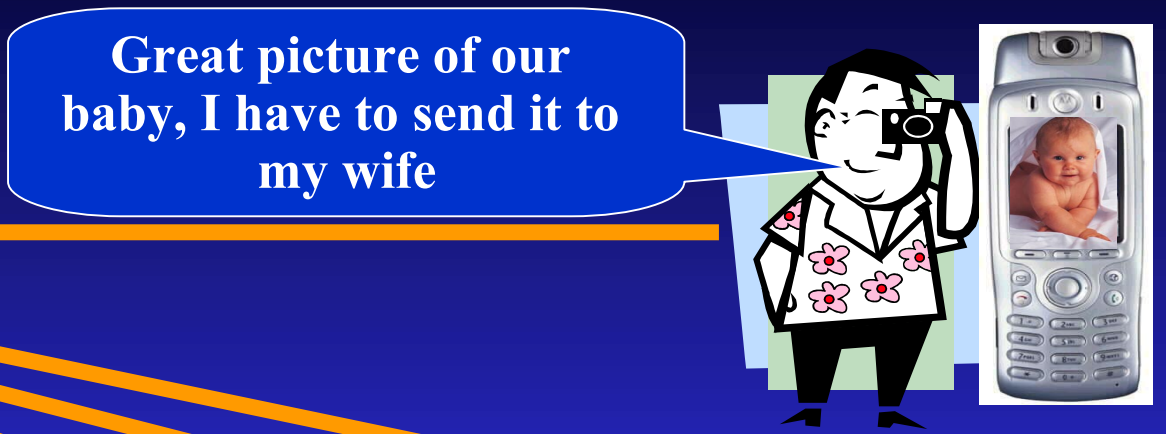
- MAIN ISSUE: How do we deal with IOT between a superior handset and a normal handset?
  - Need transcoding for backward compatibility.
- *Transcoding types*
  - *Media Transcoding*
  - *Download versus streaming*
  - *Mark up Transcoding*
- What do we need?
- Agreed Action Plan
  - Provide input paper on media Transcoding for discussion (Andrew Forster by 14/04/02)
  - Circulate “10 Commandments of MIME types” (GT by 12/04/02)
  - Define a MIME type to MIME type conversion map
  - Summarise available transcoding capabilities

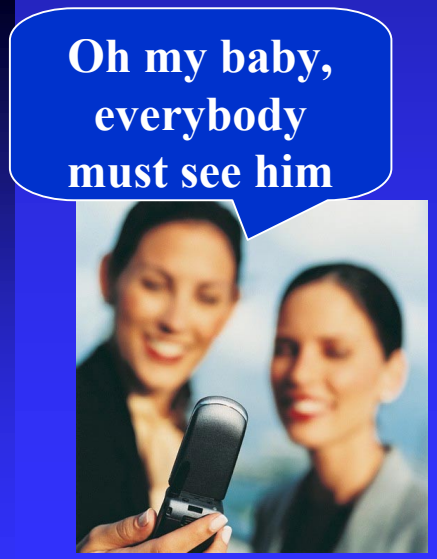
Transcoding Services - Background

- Mobile Rich-Media is characterized by:
  - Diversification of terminal media profiles
  - Diversification of media content profiles
  - Unpredictable network resources needed
- Transcoding: “The adaptation of source media to match the destination terminal profile”
- Transcoding services are needed for various applications

Transcoding & Messaging







Transcoding Services

- Multimedia Transcoding: Adaptation of rich-content to: a) various media formats, b) resolutions, c) color depths, d) file sizes etc.
- Transcoding: match source media to the destination terminal
- Transcoding: optimize the content to the mobile network

Transcoding Services

- Transcoding: needed by applications such as MMS, MME, media download servers, mobile portals, rich-media games, sports and news clips etc.
- A central transcoding service center may be used in support of applications mentioned above, including MMS.

Why Standardize

1. The meaning of transcoding
2. **Why standardize a Transcoder Interface**
3. Table a draft Interface Document
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MMS Terminal Capabilities

Handset	Colors	Resolution	Standard Formats	Extra Formats
Vendor A Model 1	256	80x101	JPEG; GIF; WBMP; AMR	AAC
Vendor A Model 2	4096	208x320	?	VideoMP4
Vendor B Model 1	4 Grey	65x96	JPEG; GIF; ?	Animated GIF; SP MIDI
Vendor B Model 2	4096	128x128	JPEG; GIF; WBMP; ?	PNG; SP MIDI
Vendor B Model 3	4096	176x208	JPEG; GIF; WBMP; AMR	Animated GIF; EPOC Bitmap; TIFF/F; WAV;
Vendor C Model 1	4096	176x220	JPEG; GIF;	TIFF/F; VideoMP4; Video ASF

Sample Transcoding Matrix

From \ To	GIF	JPEG	BMP	WBMP	PNG	TIFF	PBM	AMR	AMR-WB	AAC	WMA	MP3	PCM WAV	G723.1	Animated GIF	MPEG4	H.263	WMT
GIF																		
JPEG																		
BMP																		
PNG																		
TIFF																		
WBMP																		
PBM																		
AMR																		
AMR-WB																		
AAC																		
WMA																		
G711																		
MP3																		
PCM WAV																		
G723.1																		
MIDI																		
MPEG1 L2																		
Anim. GIF																		
MPEG4																		
H.263																		
WMT																		
MPEG1																		
MPEG2																		
Flash																		

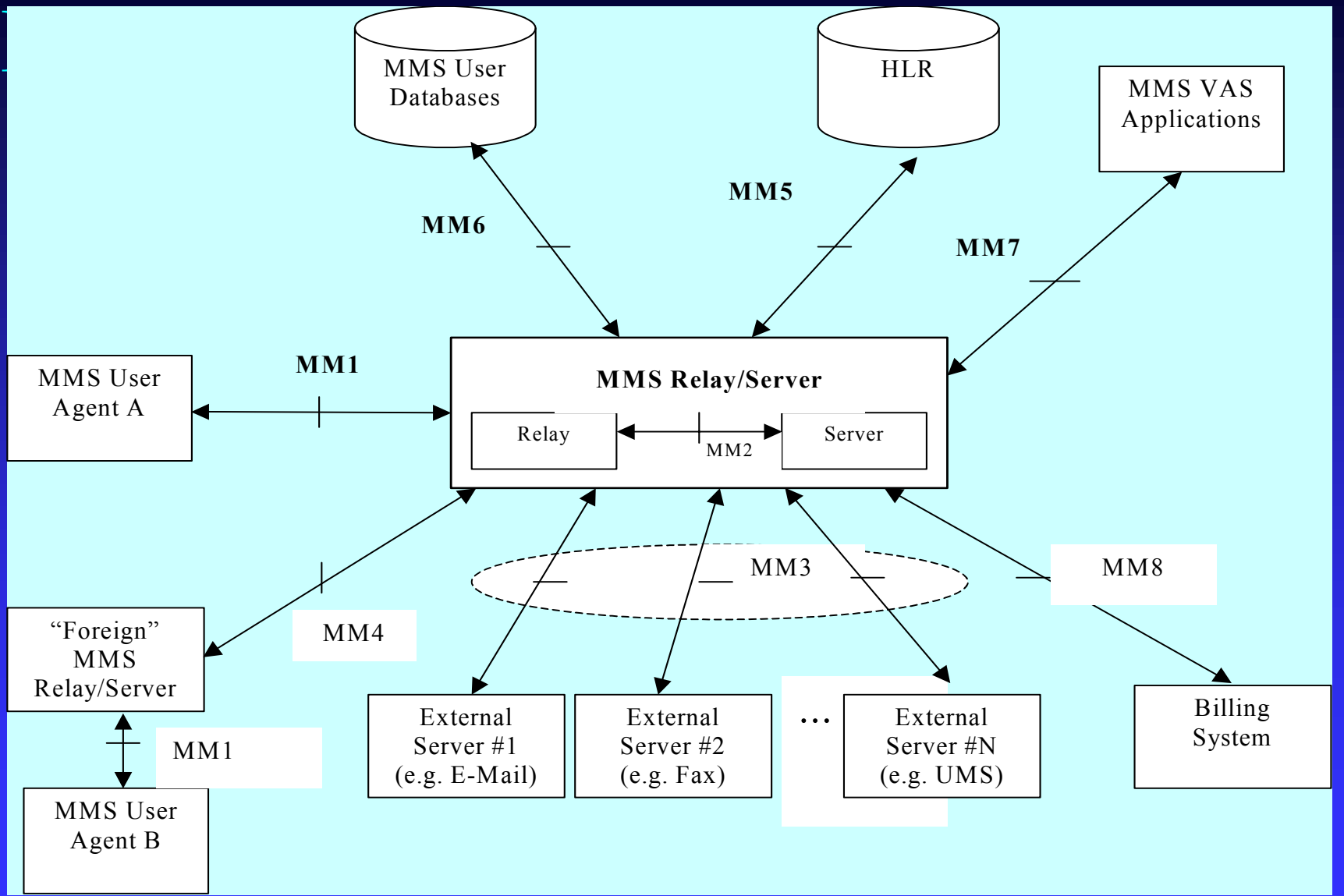
MMS Content Adaptation

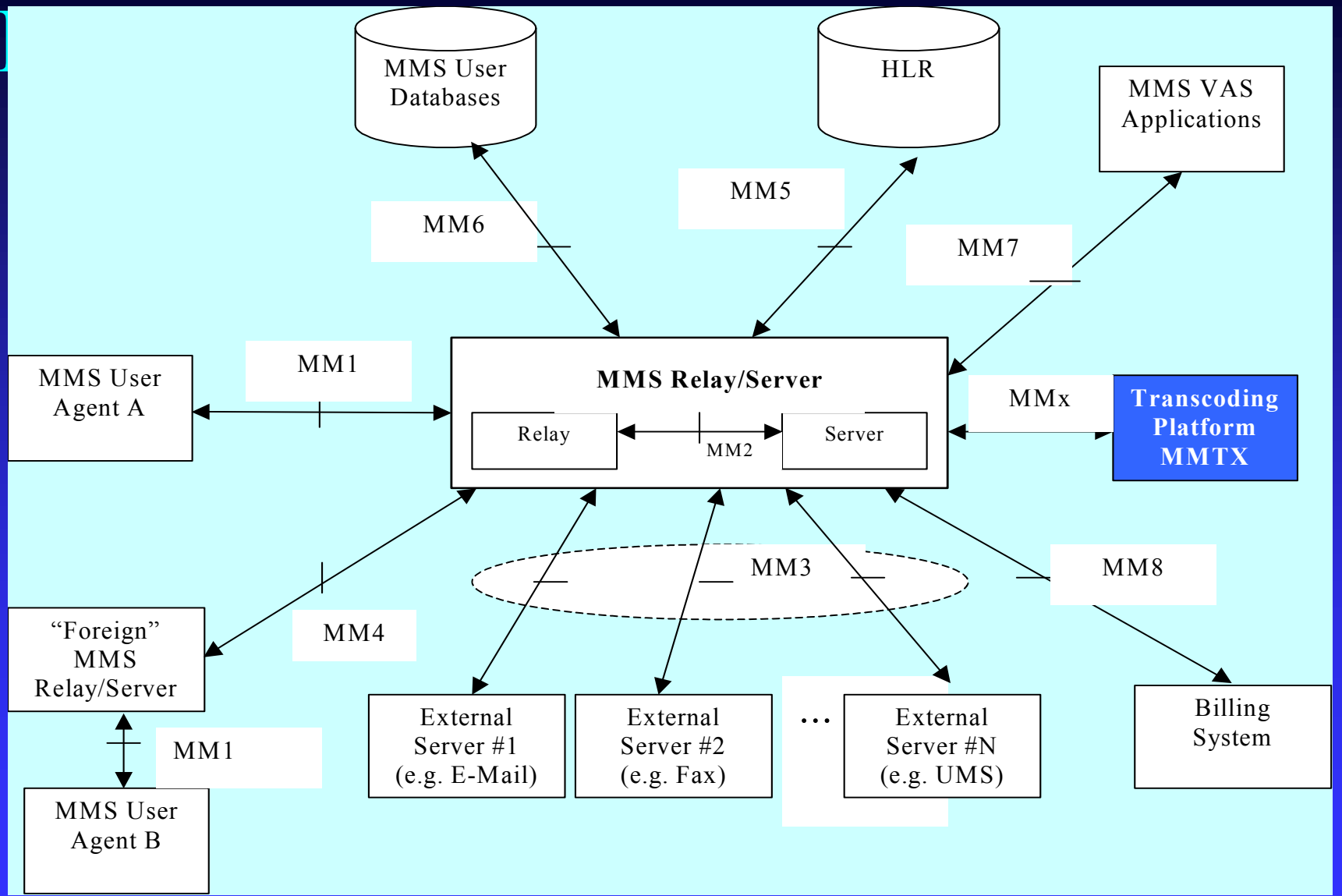
Content Adaptation – transcoding:

- Resolution reduction
- Colour conversion
- Media format conversion
- Rate reduction
- File-size reduction to a specified size
- Detail enhancement
- Trans-media conversions

Why standardize?

- A central transcoding service center may be used in support of all applications mentioned above, including MMS.
- Operator will gain from the general purpose transcoding platform, through the use of a general interface, to get Best Of Breed
- Standard interface will allow the transcoding platform to evolve into a general multimedia engine including media streaming and delivery


MMS User Databases
HLR
MMS VAS Applications
MM6
MM5
MM7
MMS User Agent A
MM1
MMS Relay/Server
Relay
MM2
Server
MM3
MM8
MM4
"Foreign" MMS Relay/Server
External Server #1 (e.g. E-Mail)
External Server #2 (e.g. Fax)
...
External Server #N (e.g. UMS)
Billing System
MM1
MMS User Agent B


MMS User Databases
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MMS Relay/Server
Relay
MM2
Server
MMx
Transcoding Platform MMTX
MM3
MM8
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"Foreign" MMS Relay/Server
External Server #1 (e.g. E-Mail)
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MM1
MMS User Agent B

A Draft Interface Document

Presentation Agenda:

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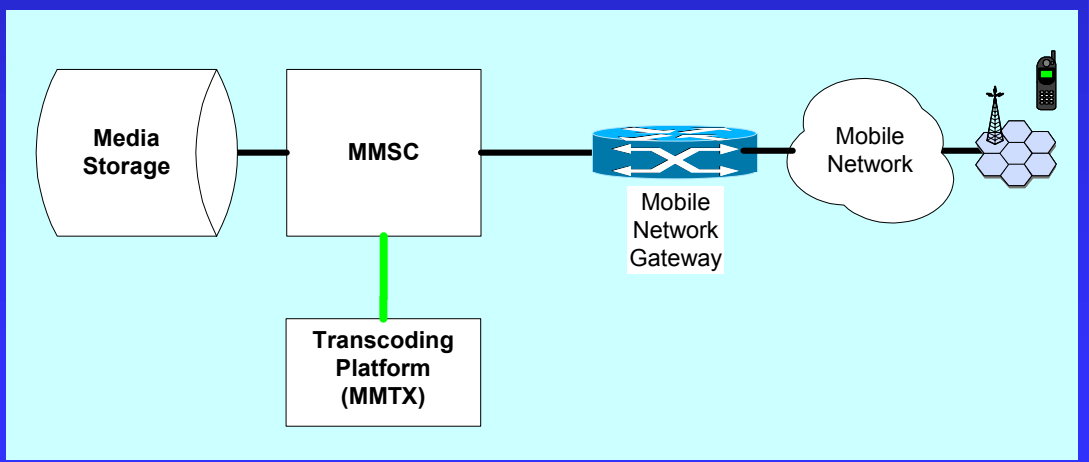
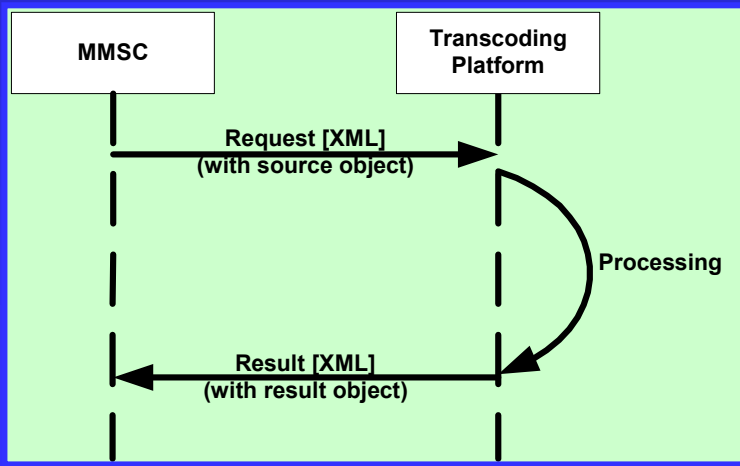
The Proposed Interface - Basics

Obviously, the proposed interface is royalty-free:

1. The transport protocol is HTTP while transaction protocol is SOAP 1.1 (XML) based
2. Both input and output transactions are SOAP (XML) based





The Proposed Interface (Principles)

1. **The SOAP message is bound to the HTTP request/response model by providing SOAP request parameters in the body of the HTTP POST request, and the SOAP response in the body of the HTTP response**
2. **Transcoding-control data is delivered in SOAP messages over HTTP**
3. **Actual source and transcoded Rich-Media (if included with the message) are delivered in SOAP attachments**
4. **The SOAP message and Rich-Media (if included) are wrapped in a MIME message**
5. **Usage statistics are included as part of a transaction result**

The Proposed Interface (Principles)

6. Transcoding platform receives one (blocking) request per transcoding object
7. When multiple object transcoding is required (in the same message), the platform receives multiple transcoding requests
8. Multiple blocking requests MAY be queued over the HTTP connection
9. Multiple requests, MAY be activated concurrently, and each uses a new HTTP connection
10. The MMSC and the platform are able to both initiate and react to SOAP messages
11. Requests exceeding the platform capacity (per installation, license, etc.) are rejected

Conclusion

We propose a decision:

"The SerG LS be responded positively and the proposed CR re MMSC transcoding platform interface be refined and completed as a basis for a 3GPP standard, in response to the LS"

Thank You