ITU-T Study Group 16 – Multimedia Services, Systems and Terminals

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ITU-T Study Group 16
(www.itu.int/ITU-T/studygroups/com16)
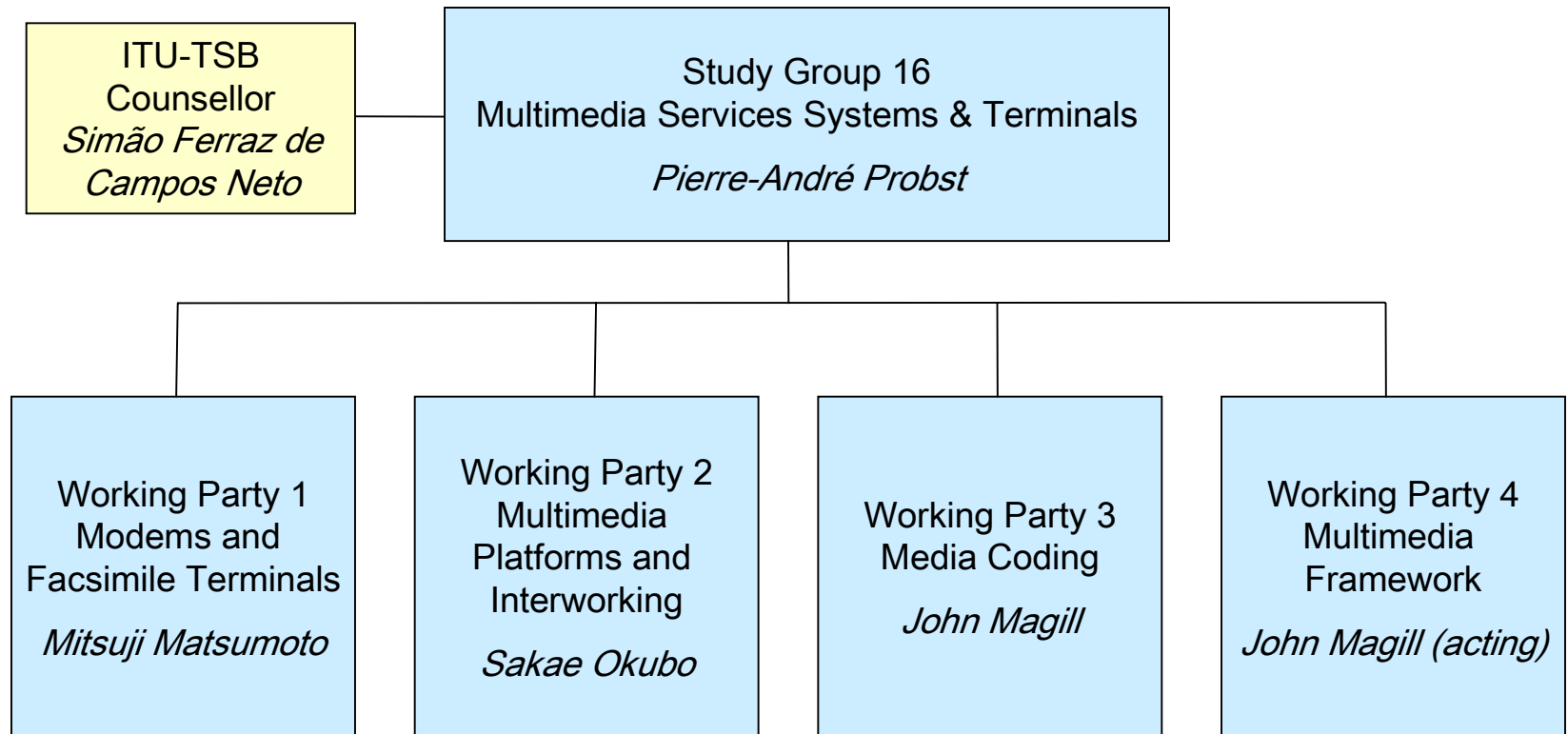
Responsible for studies relating to:

o multimedia service definition and multimedia systems, including the associated terminals, modems, protocols and signal processing.

Lead Study Group on

o Multimedia Services, Systems and Terminals

o e-business and e-commerce

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ITU-T Study Group 16 Structure

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│     ITU-TSB         │      │              Study Group 16                │
│    Counsellor       │──────│   Multimedia Services Systems & Terminals  │
│ Simão Ferraz de     │      │                                            │
│   Campos Neto       │      │         Pierre-André Probst                │
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│ Working Party 1│ │ Working Party 2│ │ Working Party 3│ │ Working Party 4│
│  Modems and    │ │  Multimedia    │ │  Media Coding  │ │  Multimedia    │
│  Facsimile     │ │  Platforms and │ │                │ │  Framework     │
│  Terminals     │ │  Interworking  │ │  John Magill   │ │                │
│                │ │                │ │                │ │ John Magill    │
│ Mitsuji        │ │  Sakae Okubo   │ │                │ │  (acting)      │
│ Matsumoto      │ │                │ │                │ │                │
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ITU-T Study Group 16 WPs (1)

Working Party 1/16 - Modems and facsimile terminals

H/16   Accessibility to Multimedia Systems and Services

11/16   Voiceband Modems: Specification and Performance Evaluation

12/16   DCE-DCE protocols for the PSTN and ISDN

13/16   DTE-DCE Interfaces and Protocols

14/16   Facsimile terminals

Working Party 2/16 - Multimedia platform and interworking

D/16   Interoperability of Multimedia Systems and Services

F/16   Quality of Service (QoS) and End-to-End Performance in Multimedia Systems

G/16   Security of Multimedia Systems and Services

1/16   Multimedia Systems, Terminals and Data Conferencing

2/16   Multimedia over Packet Networks using H.323 Systems

3/16   Infrastructure and Interoperability for Multimedia over Packet Network Systems

4/16   Video and data conferencing using Internet supported services

5/16   Mobility for Multimedia Systems and Services

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ITU-T Study Group 16 WPs (2)

Working Party 3/16 – Media coding

E/16	Media coding
6/16	Advanced video coding
7/16	Wideband coding
8/16	Encoding of speech signals at bit rates around 4 kbit/s
9/16	Variable bit rate coding of speech signals
10/16	Software tools for signal processing standardization activities and maintenance of existing voice coding standards
15/16	Distributed Speech Recognition (DSR) and Distributed Speaker Verification (DSV)

Working Party 4/16 – Multimedia framework

A/16	MediaCom-2004
B/16	Multimedia Architecture
C/16	Multimedia applications and services
I/16	Telecommunications for Disaster Relief
J/16	Multimedia framework for E-Health applications **New!**

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MM Service Descriptions

Integration of media components from the user's point-of-view

Service definition and requirements are available in the F-series. F.700 contains the umbrella definitions:

o Definition of several MM tasks:
  - *Conferencing* (multipoint, bi-directional, real-time)
  - *Conversation* (point-to-point, bi-directional, real-time)
  - *Distribution* (point-to-multipoint, unidirectional)
  - *Sending* (point-to-point distribution, Tx controlled, UD; info pushing)
  - *Receiving* (point-to-point distribution, Rx controlled, UD; info retrieval)
  - *Collecting* (multipoint-to-point distrib., UD, Rx controlled; info polling)

o Media components: audio, video, text, graphics, data and still-pictures

o Quality level for media components: {-1, 0, 1, 2, 3, 4}

MM Service Descriptions (2)

F.70x: network-independent definitions

F.702 (F.MCV)-Multimedia conference services

F.703 (F.MCS)-MM conversational services

Network-specific definitions

F.731- N-ISDN MM conference services

F.732- B-ISDN MM conference services

MediaCom 2004
An ITU-T Study Group 16 Project

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MediaCom 2004 Context

Created in recognition of:

o   the rapid growth in digital, wireless, and IP networks;

o   the convergence of technologies e.g. broadcasting, communications, information technology, etc.;

o   that multimedia topics are addressed in many SDOs;

o   the growth in multimedia services and applications;

o   the need to study performance, interworking, interfaces etc. for user satisfaction.

MediaCom 2004: Objectives

The objective of the MediaCom2004 Project in SG 16 is to create a framework for the harmonized and coordinated development of multimedia communication **standardization for use** across all   ITU-T and ITU-R Study Groups, and in close cooperation with other regional and international SDOs and industry forums.

MediaCom 2004: Goal

One of the main goals of the MediaCom2004 Project is to **reduce** need for *higher layer* Gateway functionality

Telephony, FAX, VPS/VCS, Webcasting, Multimedia

CS Network

Gateway

IP Network

Gateway

Mobile Network

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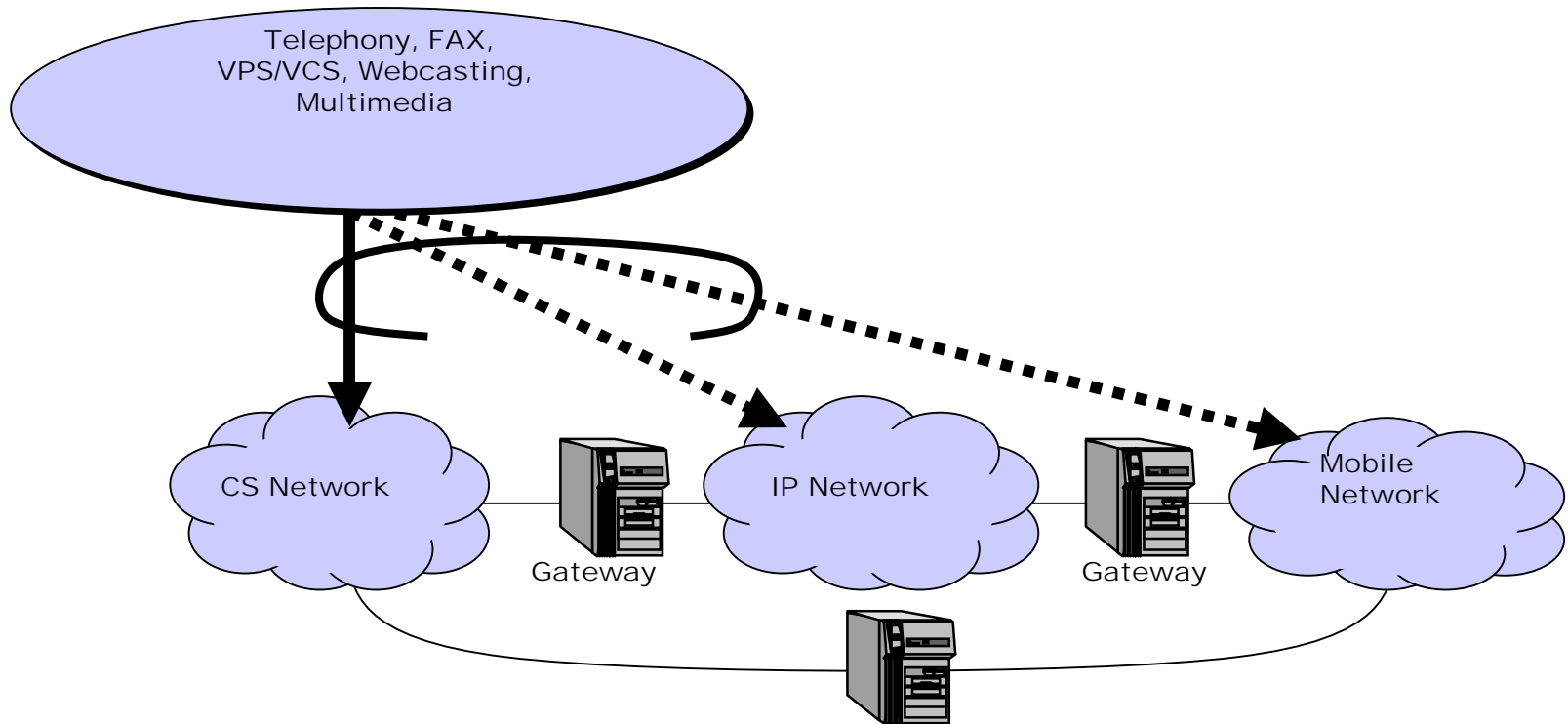
MediaCom2004 - Timelines

o Scope and plan drafted 1999/2000; approved at WTSA 2000

o Recent workshops

- IP Networking/MediaCom 2004 (Geneva, April 2001)
- MM in the 21st Century (Brazil, June 2001)
- MM Convergence (Geneva, March 2002)
- Security (Seoul/Korea, May 2002)
- IP/Optical (Chitose, July 2002)
- Satellites in IP & Multimedia (December 2002)

o Steering Committee meetings:

- 23 April 2001
- 14 March 2002

o Project updating:

- SG16 meeting, Brazil, May 2001
- SG16 meeting, Geneva, February & October 2002

o Next review:

- Other ITU-T Workshops (Emergency Telecoms, E-health)
- Next SG 16 meetings

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MediaCom 2004 Interactions

Seeking to work with:

o Other ITU-T Study Groups

o ITU-R Study Groups

o IETF

o ISO/IEC

o Regional bodies, e.g. ETSI

o Industry & other bodies as required

MediaCom2004 Work Strategy

o Seven Framework Study Areas (FSA)
  - (A/16) *Project MediaCom 2004*
  - (B/16) *MM Architecture*
  - (C/16) *MM Applications and Services*
  - (D/16) *Interoperability of MM Systems and Services*
  - (E/16) *Media Coding*
  - (F/16) *QoS & E-to-E performance in MM Systems*
  - (G/16) *Security of MM Systems and Services*
  - (H/16) *Accessibility (total comm. concept)*
  - (I/16) *Telecommunications for disaster relief*

o MediaCom 2004 Steering Committee

o Aligned 'Questions' in Study Group 16

o Database of multimedia related standards

MediaCom 2004 Framework in SG16

MEDIACOM 2004 (Q.A/16)

Generic Questions B/16 to I/16
Framework Standardisation Areas (FSA)

Equipment and system questions
1/16 to 15/16
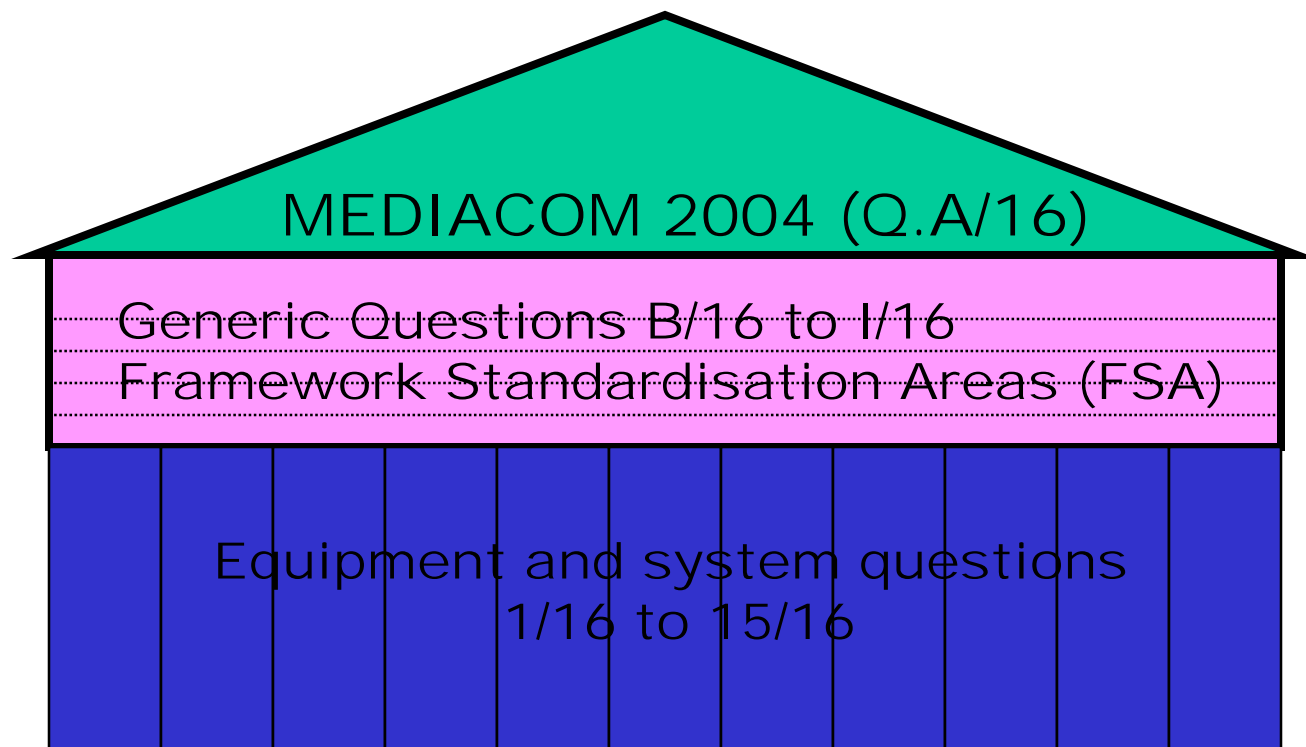
MediaCom 2004 Steering Committee (SC)

o High level committee: role of the SC is to address coordination issues at high level and determine issues to be coordinated by the relevant technical groups.

o A tool to help coordination across all SDOs working on MM communication standards

o Address multilateral issues

o Co-operation through discussion to provide customer oriented solution

o Members: SGs ITU-T, SGs ITU-R, IETF, MPEG, ETSI, W3C, ….

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MediaCom 2004 – Continued activities

o Permanent review of the project (see SG16 page at `itu.int/ITU-T/studygroups/com16`)

o Coordination is in general performed at working level

o Workshops represent an excellent opportunity to improve the communications among the different entities involved in the development of MM standards

Working Party 1
Modems and Facsimile Terminals

Status report of SG 16 activities: Modems and Facsimile (1)

o **Accessibility (Q H/16):**

- Text telephony (Rec V.18): extension to include text telephony for mobile users

- Text telephony over IP

o **PCM Modems (Q 11/16):**

- New Rec V.150.1 (ex V.MoIP): procedures for the end-to-end connection of V-series DCEs over IP-networks

Working Party 2
Multimedia Terminals and Systems

Status report of SG 16 activities: WP2 (1)

o **Interoperability of MM systems and services (Q D/16):**
  - Roadmap for interoperability studies

o **QoS and E-to-E performance in MM-Systems (Q F/16):**
  - QoS Architecture (H.qos.arch)
  - MM QoS service classification (H.mmclass)
  - Call processing performance in MM systems (H.mmcp)
  - Controlling service priority (H.priority)

o **Security of MM systems and services (Q G/16):**
  - Hybrid security profile to Rec H.235 on Security and Encryption
  - Mobile security (Rec H.510)
  - Security for Emergency Telecommunications and Disaster Relief (ETS)

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Status report of SG 16 activities: WP2 (2)

o MM-Systems, terminals and data conferencing (Q 1/16):
  - Revision to Recs T.120, H.222.0, H.320, H.324

o MM over packet based networks (H.323 systems) (Q 2/16):
  - Further development of H.323 (QoS, Internet protocols, modem relay)
  - Further development to H.460 (use of generic extensive framework)

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Status report of SG 16 activities: WP2 (3)

o Infrastructure and interoperability for MM over packet based networks (Q 3/16):

   • Media gateway decomposition Rec. H.248.1: packages add new functionality

o Video and data conf. using IP-supported services (Q 4/16):

   • Integration of video and data, interoperability

o Mobility (Q 5/16):

   • H.5xx series

   • Mobility protocols and procedures

   • Terminal mobility

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Working Party 3
Media Coding

Status report of SG 16 activities: Media coding

o **Media coding (Q E/16):**

- Media coding involves four aspects: Audio, Video, Still-image & possibly other media coding (eg character coding)
- Umbrella question for Media Coding coordination
- Completion of JPEG T.800, T.801, T.803, T.804 (future work done in ISO/IEC JPEG)

o **Advanced video coding (Q 6/16):**

- New generation of video coding standards for all applications (Joint Video Team SG16/MPEG)
→ ITU-T H.264 | MPEG4 Part 10 (*Advanced Video Coding*)

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Status report of SG 16 activities: WP3 JVT-Project (1)

- New ITU-T Q.6/SG16 (VCEG - Video Coding Experts Group) standardization activity for video compression

- August 1999: 1st test model (TML-1)

- December 2001: Formation of the Joint Video Team (JVT) between VCEG and MPEG to finalize H.264 as a joint project: JVT Coding (similar to MPEG-2/H.262)

- February 2002: WD-2 (11th test model: TML-11)

- Approved in May 2004: significant impact in the industry
  `www.itu.int/rec/recommendation.asp?type=folders&lang=e&parent=T-REC-H.264`

- Huge line-up of implementors; compliant videoconferencing products in the market 3Q 2003; adoption by DVB for carriage over MPEG2; under consideration by DVD Forum as an evolution to MPEG2

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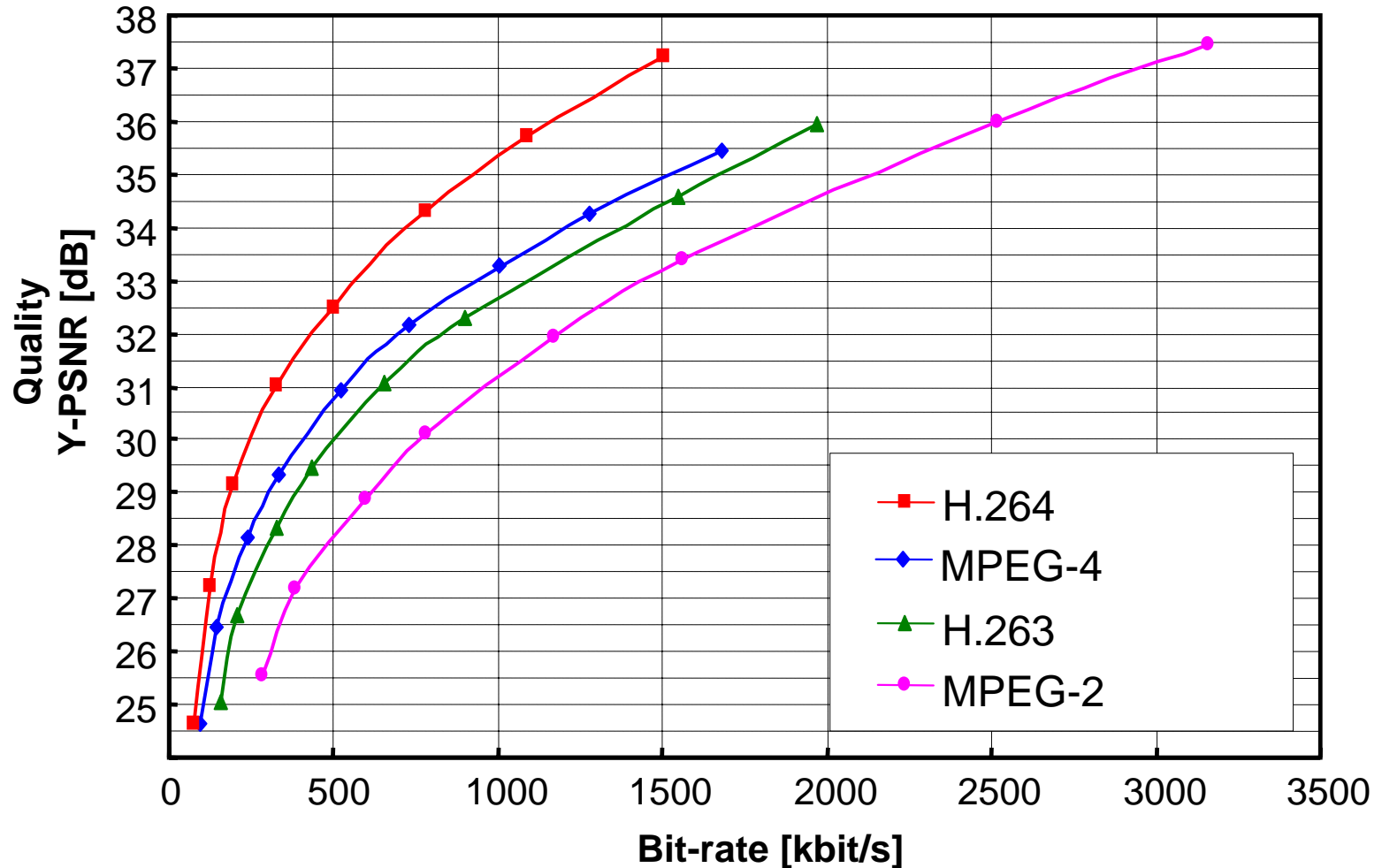# Status report of SG 16 activities: WP3 JVT-Project (2)

- Simple syntax specification

  - Targeting simple and clean solutions

  - Avoiding any excessive quantity of optional features or profile configurations

- Improved Coding Efficiency

  - Average bit rate reduction of 50% given fixed fidelity compared to any other standard

- Improved Network Friendliness

  - Issues examined in H.263 and MPEG-4 are further improved

  - Major targets are mobile networks and Internet

Status report of SG 16 activities: WP3 H.264 Compression Performance

Tempete CIF 30Hz

Status report of SG 16 activities: WP3 audio coding

o **Wideband coding (Q 7/16):**

 - wideband speech coding at around 16 kbit/s

o **4 kbit/s speech coding (Q 8/16):**

 - procedure to continue under discussion

o **Variable bitrate coding of speech signals (Q 9/16):**

 - work plan under discussion

 - applications: 3G, VoIP, PSTN, PCME, DCME,…

o **Software tools (Q 10/16):**

 - maintenance existing coding standards

 - extension of the ITU-T SW tool library

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Working Party 4
Multimedia framework

Status report of SG 16 activities: MM Framework

o **Telecommunications for Disaster Relief (Q.I/16):**
  - Support for emergency communications in disaster recovery operations
  - TDR trends: *CS→IP, Telephony→MM, National→Global*
  - Q.I/16 endorsed by TSAG (SG2/SG16 responsibility?)
  - Workshop in Geneva, 17-19 February 2003
    (see http://www.itu.int/ITU-T/worksem/ets)
  - Creation of a Partnership Coordination Panel for TDR with SDOs, Intergovernmental organizations and NGOs

o **Focus Group on FS-VDSL:**
  - Transfer of Full Service VDSL Forum activities to a Focus Group of SG 16 in accordance with Rec A.7
  - Adopted a technical specification for FS-VDSL
  - Technical Specification "upgrade": 2 Recommendations consented and one Supplement approved in May 2003

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Focus Group on Full-Service VDSL

o New working strategy to cooperate with Fora/Consortia & complement the work of ITU-T Study Groups

o A.7: establishment of an arms-length organization of ITU-T

o Aim: enable Triple Play using VDSL

o Five-part specification:
- Part 1: Operator requirements
- Part 2: System Architecture
- Part 3: Customer Premises Equipment
- Part 4: PHY for Interoperable VDSL Systems
- Part 5: OAM & P aspects for FS-VDSL Services

o Parts 2+3 & 5 were transformed into Recs (H.610 & H.611) Part 1 became Supplement 3 to H-Series

o See `www.itu.int/ITU-T/studygroups/com16`

o The experience proved to be an efficient way to work together

Conclusions – MediaCom 2004

o Coordination and harmonisation for development of standards supporting converging services, IT/Telecommunications & Broadcasting is under way and urgently needed

o MEDIACOM 2004 of SG16 is the umbrella for this activity in the field of services and applications

o In SG 16, work is progressing in services, emergency telecoms, telematic terminals, modems, MM Terminals (including IP telephony), and media coding

o Exploring new innovative ways to work and increase the value to the membership

o The workshops represent an excellent opportunity to better understand the MM work and to coordinate the work among the different players.

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