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| itu_logo | | **International Telecommunication Union**  **Telecommunication Standardization Bureau** | |  |
|  | | | Geneva, 8 July 2015 | |
| Ref: | **TSB Circular 162**  COM 9/SP | | - To Administrations of Member States of the Union | |
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| E-mail: | [tsbsg9@itu.int](mailto:tsbsg9@itu.int) | | **Copy:**  - To ITU-T Sector Members;  - To ITU-T Associates;  - To ITU Academia;  - To the Chairman and Vice-Chairmen of Study Group 9;  - To the Director of the Telecommunication Development Bureau;  - To the Director of the Radiocommunication Bureau | |
| Subject: | **Approval of revised Question 9/9** | | | |

Dear Sir/Madam,

1 At the request of the Chairman of Study Group 9 *Broadband cable and TV*, I have the honour to inform you that, in accordance with the procedure described in Resolution 1, Section 7, § 7.2.2, of WTSA (Dubai, 2012), Member States and Sector Members present at the last meeting of this Study Group which was held in Beijing from 10 to 17 June 2015, agreed by reaching consensus to approve the revised Question 9/9:

*Q9/9* (*Requirements for advanced service capabilities over broadband cable home networks*) - See **Annex 1**.

2 **Question 9/9 is therefore approved.**

3 The resulting Recommendations are assumed to fall under the Alternative approval process (AAP).

Yours faithfully,

Chaesub Lee  
Director of the Telecommunication  
Standardization Bureau

**Annex: 1**

Annex 1

(to TSB Circular 162)

**Agreed revision to Q9/9 text**

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Additions and deletions to the Q9/9 text are shown in revision marks.  
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## Question 9/9 ‑ Requirements for advanced service capabilities over broadband cable home networks

(Continuation of Question 9/9)

**Motivation**

The increasing integration and convergence of traditional cable television technologies and emerging information/communication technologies (e.g. cloud computing, software defined networking, network functions virtualisation) are enabling advanced capabilities for supporting new advanced services on cable television networks. Question 9/9 will focus on requirements for advanced service capabilities over broadband cable home networks.

In the future, driven by the ever increasing demand of customer for a better lifestyle through smart home, the broadband cable home networks will not only deliver traditional broadband services and multimedia content to subscribers, but also enable advanced smart cable television services (e.g. multi-screen services, multi-device services, etc.) and enable additional smart home services (e.g. home automation, home energy management, home-monitoring, home healthcare and education, etc.). This will benefit consumers, multi-service operators (MSOs) and third application providers by providing advanced services over broadband cable networks.

To meet the customer’s increasing demand on any-screen and anywhere, certain functional requirements such as multi-screen play, mobile-device apply and remote access are needed. Interconnecting and interworking between wired and wireless broadband cable home networks should be supported.

To ensure appropriate quality of experience (QoE), certain functional, application/service creation and application programming interface (API) requirements need to be incorporated into the requirements for service enablement. Increasing high bandwidth and content delivery services need to be supported.

The resulting software stack will be capable of providing high bandwidth services, content delivery services and lifestyle services. It will include support for technologies such as cloud computing, software defined networking/network functions virtualisation (SDN/NFV), IPv6 and machine-to-machine/Internet of things (M2M/IoT). Consideration should be given to support of legacy installed base along with IP network services.

**Question**

Study items to be considered include, but are not limited to:

– What performance characteristics should broadband cable home networks possess in order to satisfactorily transport data streams associated with specific services as these streams are passed between access network and the home network and across the home network to the terminal device?

– What mechanisms should be employed in order to maintain the QoE on data streams associated with specific services as these streams are passed between the access network and the broadband cable home networks?

– What mechanisms should be employed in order to improve the user experience by functionality such as remote content access, multi-screen play and mobile device support over broadband cable home networks?

– What network management mechanisms should be employed to provision new network-based advanced services to devices connected to the broadband cable home networks?

– What application management mechanisms should be employed to provision advanced applications to devices connected to the broadband cable home networks?

– What security mechanisms should be employed to provide protection of the broadband cable home networks?

– What content protection mechanisms should be employed to provide safeguards for content stored and distributed on the broadband cable home networks?

– What mechanisms should be employed to realize seamless interconnection between multiple devices for advanced services in broadband cable home networks?

– What type of protocol conversions should be used for the purpose of seamlessly interconnecting IP to non-IP domains in broadband cable home networks?

– What mechanisms should be employed to support low cost, less cumbersome and low maintenance on broadband cable home networks?

– What enhancements to existing Recommendations are required to provide energy savings directly or indirectly in information and communication technologies (ICTs) or in other industries? What enhancements to developed or new Recommendations are required to provide such energy savings?

**Tasks**

Tasks include, but are not limited to:

– maintenance of ITU-T J.190-J.192;

– requirements document for distributing video over broadband cable home networks, including consideration of management and provisioning, QoE, content protection, and user interface;

– requirements document for bridging of IP to non-IP domains;

– requirements document for supporting multi-screen/device services and smart home services over broadband cable home networks;

– one or more Recommendations to address the issues identified in the requirements documents listed above.

An up-to-date status of work under this Question is contained in the Study Group 9 work programme (<http://itu.int/ITU-T/workprog/wp_search.aspx?sp=15&q=9/9>).

**Relationships**

**Recommendations**

– Reference architecture: ITU-T J.700

– Application platform: ITU-T J.200, J.201, J.202

– Set top box: ITU-T J.290, J.291, J.293, J.295, J.296

– Gateway device: ITU-T J.294

– Home network: ITU-T J.190, J.192

Questions

– 5/9, 8/9 and 10/9 (on non-redundant issues from an end-to-end perspective)

Study groups

– ITU‑T SGs 13, 15, and 16

Standardization bodies

– ISO, IEC, ISO/IEC JTC 1, ARIB, ATIS, ETSI, IEEE, IETF, MoCA, NIST, OMA, SCTE, SMPTE

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