



INTERNATIONAL TELECOMMUNICATION UNION

# ITU-T

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

## Series Q

### Supplement 31

(12/2000)

SERIES Q: SWITCHING AND SIGNALLING

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### **Technical report TRQ.2141.0: Signalling requirements for the support of narrowband services over broadband transport technologies – Capability set 2 (CS-2)**

ITU-T Q-series Recommendations – Supplement 31

(Formerly CCITT Recommendations)

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## **Supplement 31 to ITU-T Q-series Recommendations**

### **Technical report TRQ.2141.0: Signalling requirements for the support of narrowband services over broadband transport technologies – Capability set 2 (CS-2)**

#### **Summary**

This Supplement to ITU-T Q-series Recommendations is a technical report on the requirements for Capability Set 2 of the Support of Narrowband Services using Broadband Bearer Technologies. Its scope is limited to overall functionality of the Serving Node (SN) and the requirements common to associated protocols at the call control level, the bearer control level, the call-bearer interactions and the signalling transport needed to provide this capability across a variety of broadband backbone networks for Capability Set 2 (CS-2).

#### **Source**

Supplement 31 to ITU-T Q-series Recommendations was prepared by ITU-T Study Group 11 (2001-2004) and approved under the WTSA Resolution 5 procedure on 6 December 2000.

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## Supplement 31 to ITU-T Q-series Recommendations

### Technical report TRQ.2141.0: Signalling requirements for the support of narrowband services over broadband transport technologies – Capability set 2 (CS-2)

## 1 Scope

This Supplement provides requirements for the support of narrowband services via broadband transport technologies. Its scope is limited to overall functionality of the Serving Node (SN) and the requirements common to associated protocols at the call control level, the bearer control level, the call-bearer interactions and the signalling transport needed to provide this capability across a variety of broadband backbone networks for Capability Set 2 (CS-2).

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### 3 Abbreviations

This Supplement uses the following abbreviations:

|       |                                           |
|-------|-------------------------------------------|
| AAL1  | ATM Adaptation Layer 1                    |
| AAL2  | ATM Adaptation Layer 2                    |
| BCF   | Bearer Control Function                   |
| BCF-G | Bearer Control Gateway Function           |
| BCF-J | Bearer Control Joint Function             |
| BCF-N | Bearer Control Nodal Function             |
| BCF-R | Bearer Control Relay Function             |
| BCF-T | Bearer Control Transit Function           |
| BCS   | Bearer Control Segment                    |
| BCU   | Bearer Control Unit                       |
| BICC  | Bearer Independent Call Control           |
| BIWF  | Bearer Interworking Function              |
| BIWN  | Bearer Interworking Node                  |
| BMC   | Bearer and Media Control                  |
| BNC   | Backbone Network Connection               |
| BNCL  | Backbone Network Connection Link          |
| CBC   | Call and Bearer Control                   |
| CCA   | Call Control Association                  |
| CMN   | Call Mediation Node                       |
| CS    | Capability Set                            |
| CSF   | Call Service Function                     |
| CSF-C | Call Service Co-ordination Function       |
| CSF-G | Call Service Gateway Function             |
| CSF-N | Call Service Nodal Function               |
| CSF-T | Call Service Transit Function             |
| DSS1  | Digital Subscriber Signalling System No.1 |
| DTMF  | Dual Tone Multi-Frequency                 |
| GSMN  | Gateway Serving Mediation Node            |
| GSN   | Gateway Serving Node                      |
| IN    | Intelligent Networks                      |
| IP    | Internetworking Protocol                  |
| ISDN  | Integrated Services Digital Network       |
| ISN   | Interface Serving Node                    |
| ISUP  | Integrated Services User Part             |
| MCF   | Media Control Function                    |

|      |                                   |
|------|-----------------------------------|
| MG   | Media Gateway                     |
| MGC  | Media Gateway Controller          |
| MMSF | Media Mapping/Switching Function  |
| NBC  | Network Bearer Connection         |
| PDU  | Protocol Data Unit                |
| SCTP | Stream Control Transport Protocol |
| SIP  | Session Initiation Protocol       |
| SN   | Serving Node                      |
| SRN  | Service Resource Node             |
| SWN  | Switching Node                    |
| TDM  | Time Division Multiplex           |
| TE   | Terminal Equipment                |
| TMR  | Transmission Medium Requirement   |
| TSN  | Transit Serving Node              |
| USI  | User Service Information          |

## 4 Definitions

Definitions of the items contained in the composite functional model are as follows:

**4.1 Backbone Network Connection (BNC):** Represents the edge to edge transport connection within the backbone network, consisting of one or more Backbone Network Connection Links (BNCL). The Backbone Network Connection represents a segment of the end to end Network Bearer Connection (NBC).

**4.2 Backbone Network Connection Link (BNCL):** Represents the transport facility between two adjacent backbone network entities containing a bearer control function.

**4.3 Bearer Control Function (BCF):** Note that five types of BCFs are illustrated in the composite functional model; BCF-G, BCF-J, BCF-N, BCF-R and BCF-T.

- The Bearer Control Joint Function (BCF-J) provides the control of the bearer switching function, the communication capability with two associated call service functions (CSF), and the signalling capability necessary to establish and release the backbone network connection.
- The Bearer Control Gateway Function (BCF-G) provides the control of the bearer switching function, the communication capability with its associated call service function (CSF-G), and the signalling capability necessary to establish and release of the backbone network connection.
- The Bearer Control Nodal Function (BCF-N) provides the control of the bearer switching function, the communication capability with its associated call service function (CSF), and the signalling capability necessary to establish and release of the backbone network connection to its peer (BCF-N).
- The Bearer Control Relay Function (BCF-R) provides the control of the bearer switching function and relays the bearer control signalling requests to next BCF in order to complete the edge to edge backbone network connection.
- The Bearer Control Transit Function (BCF-T) provides the control of the bearer switching function, the communication capability with its associated call service function (CSF-T).