

3GPP/SMG Meeting #8
 Phoenix USA 15-19 Nov 1999

Document **N2-99J76**

e.g. for 3GPP use the format TP-99xxx
 or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

23.003 CR 013r1

Current Version: **3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#6**
 list expected approval meeting # here ↑

for approval
 for information

strategic
 non-strategic (for SMG Use only)

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

Proposed change affects: (U)SIM ME UTRAN / Radio Core Network
 (at least one should be marked with an X)

Source: TSG N2 **Date:** 1999-11-16

Subject: Introduction of Reserved Service Labels in the APN

Work item: GPRS Phase 2

Category: <i>(only one category shall be marked with an X)</i>	F Correction	<input type="checkbox"/>	Release:	Phase 2	<input type="checkbox"/>
	A Corresponds to a correction in an earlier release	<input type="checkbox"/>		Release 96	<input type="checkbox"/>
	B Addition of feature	<input checked="" type="checkbox"/>		Release 97	<input type="checkbox"/>
	C Functional modification of feature	<input type="checkbox"/>		Release 98	<input type="checkbox"/>
	D Editorial modification	<input type="checkbox"/>		Release 99	<input checked="" type="checkbox"/>
			Release 00	<input type="checkbox"/>	

Reason for change: The PDP type IP has been extended to allow the separation of PDP context activation and ISP Environment setup. These extensions support e.g DHCP end-to-end and Mobile IP.
 In order to help automatic APN selection, the concept of Reserved Service Label is introduced, which indicates that a special service is supported by the APN. The service offering is not exclusively coupled to the reserved APN: all APNs can support the new services if configured to do so by the operator.

Clauses affected: 9.1; 9.1.1

Other specs affected:	Other 3G core specifications	<input checked="" type="checkbox"/>	→ List of CRs:	23.060 CR 025
	Other GSM core specifications	<input type="checkbox"/>	→ List of CRs:	
	MS test specifications	<input type="checkbox"/>	→ List of CRs:	
	BSS test specifications	<input type="checkbox"/>	→ List of CRs:	
	O&M specifications	<input type="checkbox"/>	→ List of CRs:	

Other comments:

<----- double-click here for help and instructions on how to create a CR.

9 Definition of Access Point Name

In the GPRS backbone, an Access Point Name (APN) is a reference to a GGSN. To support inter-PLMN roaming, the internal GPRS DNS functionality is used to translate the APN into the IP address of the GGSN.

9.1 Structure of APN

The APN is composed of two parts as follows:

- The APN Network Identifier which defines to which external network the GGSN is connected to and optionally a requested service by the MS. ~~service to be offered.~~ This part of the APN is mandatory.
- The APN Operator Identifier which defines in which PLMN GPRS backbone the GGSN is located. This part of the APN is optional.

The APN Operator Identifier is placed after the APN Network Identifier. An APN consisting of both the Network Identifier and Operator Identifier corresponds to a DNS name of a GGSN and has a maximum length of 100 octets.

The syntax of the APN shall follow the Name Syntax defined in RFC 2181 [14] and RFC 1035 [15]. The APN consists of one or more labels. Each label is coded as one octet length field followed by that number of octets coded as 8 bit ASCII characters. Following RFC 1035 [15] the labels should consist only of the alphabetic characters (A-Z and a-z), digits (0-9) and the dash (-). The case of alphabetic characters is not significant. The APN is not terminated by a length byte of zero.

NOTE: A length byte of zero is added by the SGSN at the end of the APN before interrogating a DNS server.

For the purpose of presentation, an APN is usually displayed as a string in which the labels are separated by dots (e.g. "Label1.Label2.Label3").

9.1.1 Format of APN Network Identifier

The APN Network Identifier shall contain at least one label and shall have a maximum length of 63 octets. An APN Network Identifier shall not start with the strings "rac", "lac" or "sgsn" and it shall not end in ".gprs". It shall also not take the value "*".

In order to guarantee uniqueness of APN Network Identifier within the GPRS PLMN(s), an APN Network Identifier, without considering a possible starting Reserved Service Label, containing more than one label corresponds to an Internet domain name. This name should only be allocated by the PLMN to an organisation that has officially reserved this name in the Internet domain. Other types of APN Network Identifiers are not guaranteed to be unique within the GPRS PLMN(s).

An APN Network Identifier consisting of 3 or more labels and starting with a Reserved Service Label, or an APN Network Identifier consisting of a Reserved Service Label alone, shall indicate, that for this APN, the GGSN supports additional services. Reserved Service Labels and the corresponding services they stand for are to be agreed among operators.