Unión Internacional de Telecomunicaciones

UIT-T Q.1980.1

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SECTOR DE NORMALIZACIÓN
DE LAS TELECOMUNICACIONES
DE LA UIT

SERIE Q: CONMUTACIÓN Y SEÑALIZACIÓN

Especificaciones de la señalización relacionada con el control de llamada independiente del portador

Sintaxis de señalización de banda estrecha – Definición de sintaxis

Recomendación UIT-T Q.1980.1

UIT-T

Unión Internacional de Telecomunicaciones

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Recomendación UIT-T Q.1980.1

Sintaxis de señalización de banda estrecha – Definición de sintaxis

Resumen

La presente Recomendación describe una sintaxis de señalización de banda estrecha (NSS, *narrowband signalling syntax*) que proporciona un conjunto normalizado de parámetros de telefonía. La NSS permite la correspondencia de múltiples protocolos de telefonía actualmente en uso con un conjunto de parámetros común.

Orígenes

La Recomendación UIT-T Q.1980.1 fue aprobada el 10 de diciembre de 2004 por la Comisión de Estudio 11 (2005-2008) del UIT-T por el procedimiento de la Recomendación UIT-T A.8.

PREFACIO

La UIT (Unión Internacional de Telecomunicaciones) es el organismo especializado de las Naciones Unidas en el campo de las telecomunicaciones. El UIT-T (Sector de Normalización de las Telecomunicaciones de la UIT) es un órgano permanente de la UIT. Este órgano estudia los aspectos técnicos, de explotación y tarifarios y publica Recomendaciones sobre los mismos, con miras a la normalización de las telecomunicaciones en el plano mundial.

La Asamblea Mundial de Normalización de las Telecomunicaciones (AMNT), que se celebra cada cuatro años, establece los temas que han de estudiar las Comisiones de Estudio del UIT-T, que a su vez producen Recomendaciones sobre dichos temas.

La aprobación de Recomendaciones por los Miembros del UIT-T es el objeto del procedimiento establecido en la Resolución 1 de la AMNT.

En ciertos sectores de la tecnología de la información que corresponden a la esfera de competencia del UIT-T, se preparan las normas necesarias en colaboración con la ISO y la CEI.

NOTA

En esta Recomendación, la expresión "Administración" se utiliza para designar, en forma abreviada, tanto una administración de telecomunicaciones como una empresa de explotación reconocida de telecomunicaciones.

La observancia de esta Recomendación es voluntaria. Ahora bien, la Recomendación puede contener ciertas disposiciones obligatorias (para asegurar, por ejemplo, la aplicabilidad o la interoperabilidad), por lo que la observancia se consigue con el cumplimiento exacto y puntual de todas las disposiciones obligatorias. La obligatoriedad de un elemento preceptivo o requisito se expresa mediante las frases "tener que, haber de, hay que + infinitivo" o el verbo principal en tiempo futuro simple de mandato, en modo afirmativo o negativo. El hecho de que se utilice esta formulación no entraña que la observancia se imponga a ninguna de las partes.

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Recomendación UIT-T Q.1980.1

Sintaxis de señalización de banda estrecha – Definición de sintaxis

1 Alcance

Esta Recomendación especifica una sintaxis de codificación flexible de la información de señalización de banda estrecha para transferirla en protocolos que no tienen la capacidad inherente de transferir dicha información.

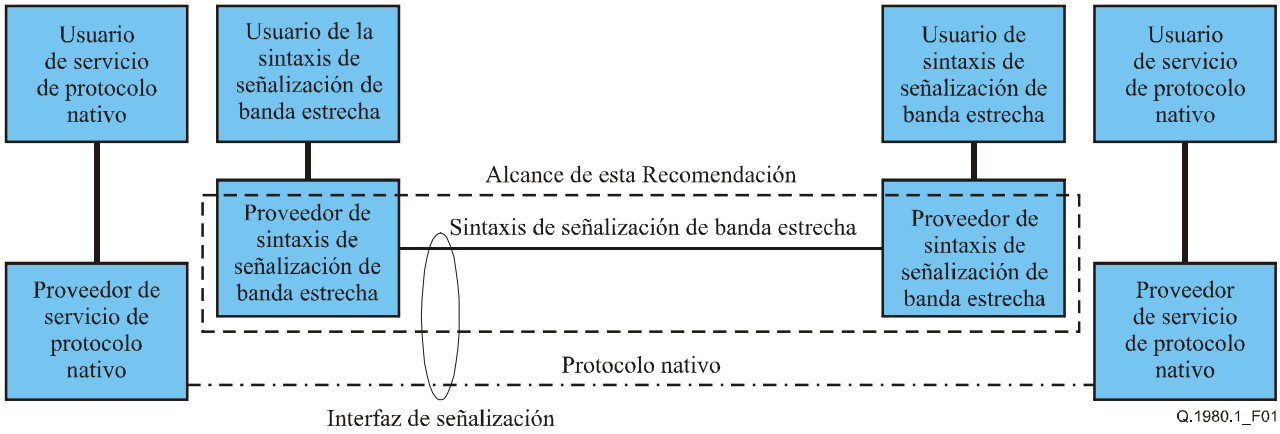

Figura 1/Q.1980.1 – Alcance de esta Recomendación

2 Referencias

Las siguientes Recomendaciones del UIT-T y otras referencias contienen disposiciones que, mediante su referencia en este texto, constituyen disposiciones de la presente Recomendación. Al efectuar esta publicación, estaban en vigor las ediciones indicadas. Todas las Recomendaciones y otras referencias son objeto de revisiones por lo que se preconiza que los usuarios de esta Recomendación investiguen la posibilidad de aplicar las ediciones más recientes de las Recomendaciones y otras referencias citadas a continuación. Se publica periódicamente una lista de las Recomendaciones UIT-T actualmente vigentes. En esta Recomendación, la referencia a un documento, en tanto que autónomo, no le otorga el rango de una Recomendación.

– Recomendación UIT-T H.225.0 (2003), *Protocolos de señalización de llamada y paquetización de trenes de medios para sistemas de comunicación multimedios por paquetes*.

– Recomendación UIT-T H.323 (2003), *Sistemas de comunicación multimedios basados en paquetes*.

– Recomendación UIT-T Q.761 (1999), *Sistema de señalización N.º 7 – Descripción funcional de la parte usuario de la RDSI.*

– Recomendación UIT-T Q.762 (1999), *Sistema de señalización N.º 7 – Funciones generales de los mensajes y señales de la parte usuario de la RDSI.*

– Recomendación UIT-T Q.763 (1999), *Sistema de señalización N.º 7 – Formatos y códigos de la parte usuario de la RDSI;* más enmienda 1 (2001), *Codificación del parámetro de transporte de aplicación*; corrigendum 1; (2001), más enmienda 2 (2002), *Soporte para el plan internacional de preferencias en situaciones de emergencia*.

– Recomendación UIT-T Q.765.5 (2004), *Sistema de señalización N.º 7 – Mecanismo de transporte de aplicación: Control de llamada independiente del portador*.

– Recomendación UIT-T Q.767 (1991), *Aplicación de la parte usuario RDSI del sistema de señalización N.º 7 para las interconexiones RDSI internacionales;* más enmienda 1 (2002), *Soporte para el plan internacional de preferencias en situaciones de emergencia*.

– Recomendación UIT-T Q.850 (1998), *Utilización de los elementos de información, causa y ubicación en el sistema de señalización digital de abonado N.º 1 y en la parte usuario RDSI del sistema de señalización N.º 7*, más enmienda 1 (2001).

– Recomendación UIT-T Q.931 (1998), *Especificación de la capa 3 de la interfaz usuario-red de la red digital de servicios integrados para el control de la llamada básica;* más enmienda 1 (2002), *Extensiones para soportar el equipo de multiplexación digital;* más erratum 1 (2003).

– Recomendación UIT-T Q.1902.3 (2001), *Protocolo de llamada independiente del portador (conjunto de capacidades 2) y parte usuario de la RDSI del sistema de señalización N.º 7: Formatos y códigos*, más enmienda 1 (2002), *Soporte para el plan internacional de preferencia en situaciones de emergencia*.

– ETSI TS 126 103 v 5.5.0 (2004-09), *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Speech codec list for GSM and UMTS (3GPP TS 26.103 version 5.5.0 Release 5)*.

– IETF RFC 2045 (1996), *Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies*.

– IETF RFC 2046 (1996), *Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types*.

– IETF RFC 2183 (1997), *Communicating Presentation Information in Internet Messages: The Content-Disposition Header Field*.

– IETF RFC 2234 (1997), *Augmented BNF for Syntax Specifications: ABNF*.

– IETF RFC 2327 (1998), *SDP: Session Description Protocol*.

– IETF RFC 3261 (2002), *SIP: Session Initiation Protocol*.

3 Definiciones

En la presente Recomendación se definen los siguientes términos:

3.1 parámetro de compatibilidad: Parámetro de NSS utilizado para transportar objetos de sintaxis no reconocidos y que requiere el parámetro PRN para ser interpretado. El conjunto de parámetros de compatibilidad incluye los parámetros FDC, UFC, PCI y MCI.

NOTA – El parámetro ATP también requiere el parámetro PRN para ser interpretado.

3.2 parámetro transposable: Parámetro de la PU-RDSI/BICC que satisface las siguientes condiciones con respecto al protocolo que transporta el cuerpo del mensaje NSS:

– todos los campos del parámetro PU-RDSI/BICC están representados por un campo o una combinación de campos en el protocolo encapsulador;

– todos los valores posibles del campo PU-RDSI/BICC están representados por un valor en el(los) campo(s) correspondiente(s) del protocolo encapsulador; y

– el valor original de todos los campos PU-RDSI/BICC puede ser recuperado cuando se restablece la correspondencia del protocolo encapsulador solo (prescindiendo del campo NSS o PU-RDSI/BICC encapsulado) con la misma variante de PU-RDSI/BICC según se hizo inicialmente en el nodo de origen NSS.

3.3 mensaje NSS: Cuerpo compuesto de un conjunto contiguo de líneas de texto, como se define en la cláusula 5.

4 Abreviaturas, siglas o acrónimos

En esta Recomendación se utilizan las siguientes abreviaturas, siglas o acrónimos.

ABNF Forma Backus-Naur aumentada (*augmented Backus-Naur form*) (véase RFC 2234)

ASCII Código de la norma americana para intercambio de información (*American standard code for information interchange*)

BICC Control de llamada independiente del portador (*bearer independent call control*)

COT Prueba de continuidad (*continuity test*) (utilizada en los circuitos TDM)

IA5 Alfabeto Internacional N.º 5 (*international alphabet 5*) (idéntico al ASCII de 7 bits)

IEPS Plan internacional de preferencias en situaciones de emergencia (*international emergency preference scheme*)

IE Elemento de información (*information element*)

MIME Ampliaciones multifunción del correo Internet (*multipurpose internet mail extensions*)

NSS Sintaxis de señalización en banda estrecha (*narrowband signalling syntax*)

PBX Centralita privada (*private branch exchange*)

POTS Servicio telefónico tradicional (*plain old telephone service*)

PU-RDSI Parte usuario de la RDSI

RAS Registro, admisión y situación (véase la Rec. UIT-T H.225.0) (*registration, admission and status*)

RDSI Red digital de servicios integrados

RTP Protocolo de transporte en tiempo real (*real-time transport protocol*)

RTPC Red telefónica pública conmutada

SDP Protocolo de descripción de sesión (*session description protocol*)

SIP Protocolo de iniciación de sesión (*session initiation protocol*)

SS7 Sistema de señalización N.º 7 (*signalling system N.º 7*)

TDM Multiplexación por división en el tiempo (*time division multiplexing*)

UIT-T Unión Internacional de Telecomunicaciones – Sector de Normalización de las Telecomunicaciones

5 Aspectos generales de la sintaxis de mensajes y parámetros

En esta cláusula se especifican las normas generales del formato de mensajes, parámetros y campos NSS.

5.1 Juego de caracteres

Los mensajes NSS están compuestos por caracteres imprimibles IA5 (es decir, ASCII de 7 bits) más el retorno del carro (CR, *carriage return*) (CR = x0D) y el cambio de renglón (LF, *line feed*) (LF = x0A). Los caracteres alfabéticos utilizan mayúsculas y minúsculas. Las reglas relativas a mayúsculas y minúsculas se describen en la presente cláusula y en 5.2.

Los valores que puedan requerir la representación de información con caracteres distintos de los de este juego se presentarán como una secuencia de uno o más octetos binarios, expresados como una serie de uno o más pares de caracteres ("0"-"9", "A"-"F") sin una "x" precedente que representa los octetos binarios como valores hexadecimales. Los caracteres "A" a "F" deben ser mayúsculas. La ordenación de los octetos binarios en un determinado valor viene definida por el protocolo fuente. La secuencia de pares de caracteres resultante se colocará en un campo de valor NSS sin carácter "x" precedente en ese mismo orden. El primer carácter de cada par representa los cuatro bits más significativos del octeto binario expresado. Si un octeto del protocolo fuente contiene bits que no pertenecen al valor de campo o subcampo que se codifica, dichos bits se pondrán a cero antes de aplicar la codificación hexadecimal.

NOTA – La ordenación de los bits dentro de cada octeto en la representación de codificación hexadecimal es inversa a su orden de transmisión en el protocolo fuente. Véase 1.9/Q.763.

En las cláusulas 7.3 y 7.4 se indica si se utiliza la representación ASCII o la hexadecimal para cada valor de campo o subcampo.

Los caracteres CR y LF se reservan para usarlos juntos como terminación de línea. Véase 5.2.1.

Los caracteres "," y "=" se reservan como separadores. Los paréntesis, "(" y ")", y las llaves, "{" y "}" se reservan como delimitadores de grupo. En 5.2 se describe la aplicación de estos caracteres reservados.

El carácter "\" está reservado como mecanismo de escape y debe ser colocado inmediatamente antes de cualquier carácter "," o "=" o "(", ")" o "{" o "}" o CR o LF o "\" que se encuentre en un valor de campo durante la construcción del parámetro. En el análisis sintáctico, el primer carácter "\" que se encuentre no se considera parte del valor de campo, sino que lo será el carácter siguiente a "\".

5.2 Estructura

5.2.1 Mensaje NSS

El mensaje NSS se compone de una secuencia de líneas, empezando cada una con una secuencia de tres letras mayúsculas seguidas de una coma y terminando con una secuencia de retorno del carro - cambio de renglón (x0Dx0A).

A excepción de la línea de identificador de mensaje, la secuencia inicial de letras en una línea identifica un parámetro. En la línea identificador de mensaje, la secuencia inicial de letras identifica un mensaje.

En 6.2, "Códigos de identificador de mensaje NSS", se enumeran los identificadores de mensaje definidos en esta Recomendación.

En 7.2, "Códigos de parámetro NSS", se enumeran los identificadores de parámetro definidos en esta Recomendación.

Un mensaje NSS comienza con tres parámetros específicos de la NSS obligatorios: versión (VER), nombre/versión de protocolo (PRN), e identificador de mensaje, en este orden, seguidos de ninguno o más parámetros.

En esta Recomendación no se especifican qué parámetros adicionales deben figurar en un mensaje NSS, ni el orden en que deben aparecer las líneas de parámetros. Se recomienda mantener el mismo orden de los parámetros correspondientes en el mensaje del protocolo fuente.

NOTA – Se supone que los mensajes NSS no incluirán líneas de parámetros derivadas de parámetros del protocolo fuente cuya correspondencia se haya realizado satisfactoriamente con el protocolo encapsulador. Las reglas de interfuncionamiento de BICC y PU-RDSI con la combinación de SIP (RFC 3261) o Rec. UIT-T H.323 y NSS están fuera del alcance de este documento.

Múltiples parámetros del mismo tipo indican concurrencia de un parámetro en un solo mensaje NSS.

5.2.2 Línea de parámetro NSS

Todos los identificadores de parámetros están seguidos por una secuencia de campos. El número de campos que deberán estar presentes para cada parámetro definido en esta Recomendación y el orden en el que deben aparecer se definen en las subcláusulas pertinentes de 7.3, "Descripción detallada de parámetros" y en 7.4, "Parámetros ASE de BAT".

Dos campos sucesivos irán separados por una coma ",".

5.2.3 Campos NSS

En las cláusulas 7.3, "Descripción detallada de los parámetros" y 7.4 "Parámetros ASE de BAT" se especifica el tipo y el conjunto de valores reales permitidos para cada campo.

El valor puede omitirse si se desconoce el valor del campo, dejando únicamente la coma de separación si sigue un campo. Esto sólo se permite si la gama de valores permisibles para dicho campo incluye "desconocido". El extremo descodificador deberá interpretar que un valor de campo vacío tiene el valor "desconocido".

Los valores de campo definidos como literales en 7.3 deben ser transmitidos exactamente como se define, por ejemplo, un valor de campo "0001" no debe ser transmitido como "1".

Para múltiples grupos de campos y valores en algunos parámetros, las iteraciones del mismo tipo o valor de elemento pueden figurar entre paréntesis "("and")". Las llaves "{"and"}", indican una tupla de elementos distintos. Las comas deben separar elementos dentro de cada tipo de grupo. Desde la perspectiva de construcciones de más alto nivel, estos grupos se consideran como un solo valor de campo. Se proporcionan descripciones detalladas en los parámetros donde esto se aplica, por ejemplo, en 7.3.18, Ubicación geodésica del llamante (CGL, *calling geodetic location*), y en 7.3.23, Indicadores de causa (CAI, *cause indicators*).

5.3 Modo de transmisión compacto NSS

La codificación normal de la NSS requiere que los valores de campo se presenten sin rótulos de identificación. Esto es posible porque todos los valores de campo de un parámetro tienen un orden fijo.

NOTA – Para la visualización por personas, puede insertarse antes de cada valor de campo la construcción "field-name=". Los caracteres alfabéticos de los nombres de campo son siempre minúsculas. En 7.3, "Descripción detallada de los parámetros", se especifican los nombres de los campos para facilitar su lectura, pero no se transmiten. En el apéndice II se muestra la ABNF correspondiente para la conversión del modo de transmisión en visualización.

Para un ejemplo de un mensaje NSS en modo de transmisión compacto véase el apéndice I.

6 Definiciones de mensajes

A continuación se describen los identificadores de mensaje que soporta la NSS. En la cláusula 7 se describen todos los mensajes, parámetros y campos específicamente introducidos por el protocolo NSS con la estructura y utilización prevista. Aunque en esta Recomendación se desglosan detalladamente la estructura y los valores de campo de los parámetros NSS, éstos no deben considerarse como descripciones de la estructura y la utilización de los mensajes, parámetros y campos de PU-RDSI existentes.

NOTA – Se supone que los procedimientos asociados con los parámetros de la NSS serán los aplicables a los parámetros del protocolo fuente con el cual se establece la correspondencia. Este aspecto queda fuera del alcance de esta Recomendación.

6.1 Mensajes no soportados

El NSS no dispone de equivalentes de los mensajes PU-RDSI/BICC que no tienen significado de extremo a extremo, especialmente los mensajes de gestión de circuitos TDM. Es posible utilizar procedimientos de tratamiento de mensajes NSS no reconocidos (véase 12.3) en caso de que haya que transmitir este tipo de mensajes.

6.2 Códigos de identificador de mensaje NSS

A continuación se presenta una lista de nombres de mensaje y sus correspondientes códigos de identificador de mensaje NSS asociados. Los códigos de parámetro y los códigos de identificador de mensaje comparten el mismo espacio de código.

Nombre del mensaje	*Código de identificador de mensaje*	
Dirección completa (*address complete*)	ACM	
Respuesta (*answer*)	ANM	
Transporte de aplicación (*application transport*)	APM	
Progresión de llamada (*call progress*)	CPG	
Información de tarificación (*charge information*)	CRG	
Confusión	CFN	
Conexión (*connect*)	CON	
Continuidad (*continuity*)	COT	
Facilidad (*facility*)	FAC	
Facilidad aceptada (*facility accepted*)	FAA	
Rechazo de facilidad (*facility reject*)	FRJ	
Petición de facilidad (*facility request*)	FAR	
Intervención (*forward transfer*)	FOT	
Lista de parámetros genéricos (*generic parameter list*)	GPL	específico de la NSS
Petición de identificación (*identification request*)	IDR	
Respuesta de identificación (*identification response*)	IRS	
Información	INF	
Petición de información (*information request*)	INR	
Dirección inicial (*initial address*)	IAM	
Prevención de bucle (*loop prevention*)	LOP	
Gestión de recurso de red (*network resource management*)	NRM	
Sobrecarga (*overload*)	OLM	
Paso de largo (*pass along*)	PAM	
Información previa a la liberación (*pre-release information*)	PRI	
Liberación (*release*)	REL	
Liberación completa (*release complete*)	RLC	
Reanudación (*resume*)	RES	

Segmentación (*segmentation*)	SGM	
Dirección subsiguiente (*subsequent address*)	SAM	
Número de directorio subsiguiente (*subsequent directory number*)	SDN	
Suspensión (*suspend*)	SUS	
Mensaje no reconocido (*unrecognized message*)	UNR NSS	específico de la
Información de usuario a usuario (*user-to-user information*)	USR	

En 12.1 figuran explicaciones de los mensajes específicos de la NSS.

7 Definiciones de parámetros

En esta cláusula se describen la sintaxis, los parámetros, los campos y los valores de campo.

7.1 Disposición de los parámetros no soportados

El parámetro "fin de parámetros opcionales" procede de las especificaciones de la PU-RDSI. La NSS no admite este parámetro porque esa función es reemplazada por las reglas de codificación definidas en 5.2.1.

7.2 Códigos de parámetros de la NSS

La siguiente lista de nombres de parámetros procede de un superconjunto de parámetros de la PU-RDSI y BICC que figuran en las especificaciones indicadas en la cláusula 2. Para la transparencia se necesitan parámetros específicos de la NSS.

Los códigos de parámetro y los códigos de identificador de mensaje comparten el mismo espacio de código.

Nombre de parámetro	*Código NSS*	
Información de entrega de acceso (*access delivery information*)	ADI	
Transporte de acceso (*access transport*)	ATP	
Indicador acción (*action indicator*)	ACT	ASE de BAT
Transporte de aplicación (*application transport*)	APP	
Nivel de congestión automático (*automatic congestion level*)	ACL	
Indicadores de llamada hacia atrás (*backward call indicators*)	BCI	
Servicio de red virtual global hacia atrás (*backward GVNS*)	BVN	
Identificador de conexión de red hacia atrás (*backward network connection identifier*)	BID	ASE de BAT
rapport de compatibilité BAT (*BAT compatibilitiy report*)	BAT	ASE de BAT
Informe de compatibilidad de BAT (*bearer control information*)	BCD	ASE de BAT

Información de control de portador (*bearer control tunnelling*)	BCT	ASE de BAT
Identificador de unidad de control de portador (*bearer control unit identifier*)	BDU	ASE de BAT
Características de conexión de la red portadora (*bearer network connection characteristics*)	BNC	ASE de BAT
Capacidad de redireccionamiento del portador (*bearer redirection capability*)	BRC	ASE de BAT
Indicadores de redireccionamiento del portador (*bearer redirection indicators*)	BRI	ASE de BAT
Establecimiento del servicio de compleción de llamadas (*call completion service set-up*)	CCS	
Información de desviación de llamada (*call diversion information*)	CDI	
Indicadores de tratamiento de desviación de llamada (*call diversion treatment indicators*)	CDT	
Información de historial de llamada (*call history information*)	CHI	
Indicadores de tratamiento de ofrecimiento de llamada (*call offering treatment indicators*)	OCT	
Referencia de llamada (*call reference*)	CRF	
Número de transferencia de llamada (*call transfer number*)	CTN	
Referencia de transferencia de llamada (*call transfer reference*)	CTR	
Número del directorio llamado (*called directory number*)	CDN	
Número RI llamado (*called IN number*)	CIN	
Número de la parte llamada (*called party number*)	CPN	
Ubicación geodésica del llamante (*calling geodetic location*)	CGL	
Información de velocidad geodésica de la parte llamante (*calling party geodetic velocity information*)	CGV	
Número de la parte llamante (*calling party number*)	CGN	
Categoría de la parte llamante (*calling party's category*)	CPC	
Información de selección de portador (*carrier selection information*)	CSI	
Indicadores de causa (*cause indicators*)	CAI	

Indicador de compleción de llamadas en caso de ausencia de respuesta posible (*CCNR possible indicator*)	CCN	
Identificación de la parte tasada (*charged party identification*)	CPI	
Código de identificación de circuito (instancia de llamada) (*circuit identification (call instance) code*)	CIC	
Código de enclavamiento de grupo cerrado de usuarios (*closed user group interlock code*)	GIC	
Códec	COD	ASE de BAT
Lista de códecs (*codec list*)	CDL	ASE de BAT
Procesamiento de codificación-decodificación (*coding decoding processing*)	CDP	
Petición de llamada de cobro revertido (*collect call request*)	COL	
Indicador de tratamiento de conferencia (*conference treatment indicator*)	CNF	
Número conectado (*connected number*)	CNN	
Petición de conexión (*connection request*)	CNR	
Indicadores de continuidad (*continuity indicators*)	CTI	
Identidad de correlación (*correlation identity*)	COR	
Información de presentación visual (*display information*)	DIS	
Información de control del eco (*echo control information*)	ECI	
Indicadores de información de evento (*event information indicators*)	EVI	
Indicadores de facilidad (*facility indicators*)	FAI	
Indicadores de llamada hacia adelante (*forward call indicators*)	FCI	
Servicio de red virtual global hacia adelante (*forward GVNS*)	FVN	
Dirección genérica (número genérico) (*generic address (generic number)*)	GEA	
Cifras genéricas (*generic digits*)	GED	
Indicador de notificación genérica (*generic notification indicator*)	GNO	
Identificación global de llamada (referencia global de llamada) (*global call identification (global call reference)*)	GCI	Específico de la NSS

Difícil de alcanzar (*hard to reach*)	HTR	
Contador de saltos (*hop counter*)	HOC	
Indicadores de información (*information indicators*)	INI	
Indicadores de petición de información (*information request indicators*)	IRI	
Compatibilidad de servicio de red inteligente (*IN service compatibility*)	INC	
Identificador de grupo de tráfico entre nodos (*inter-nodal traffic group identifier*)	ITG	
Dirección de función de interfuncionamiento (*interworking function address*)	IWF	ASE de BAT
Información de compatibilidad de campo conocido (*known field compatibility information*)	FDC	Específico de la NSS
Número de lugar (*location number*)	LON	
Indicador de prevención de bucle (*loop prevention indicator*)	LPI	
Lista de parámetros con correspondencia (*mapped parameter list*)	MPL	Específico de la NSS
Indicador de petición de identificación de llamadas malintencionadas (*MCID request indicator*)	MRI	
Indicador de respuesta de identificación de llamadas malintencionadas (*MCID response indicator*)	MCR	
Información de compatibilidad de mensaje (*message compatibility information*)	MCI	
Precedencia con apropiación multinivel	MLP	
Indicadores de naturaleza de la conexión (*nature of connection indicators*)	NOC	
Controles de gestión de la red (*network management controls*)	NMC	
Número de encaminamiento de la red (*network routing number*)	NRN	
Facilidad específica de la red (*network specific facilities*)	NSF	
Información hacia adelante sobre portabilidad de número (*number portability forward information*)	NPF	
Indicadores de llamada hacia atrás opcionales (*optional backward call indicators*)	OBI	
Indicadores de llamada hacia delante opcionales *optional forward call indicators*)	OFI	

Número de red inteligente llamado inicialmente (*original called IN number*)	OCI	
Número llamado inicialmente (*original called number*)	OCN	
Código de punto de centro de conmutación internacional de origen (*originating ISC point code*)	ISC	
Información de compatibilidad de parámetro (*parameter compatibility information*)	PCI	
Capacidad de pivote (*pivot capability*)	PCA	
Contador pivote (*pivot counter*)	PCT	
Información de encaminamiento pivote hacia atrás (*pivot routing backward information*)	PBI	
Información de encaminamiento pivote hacia delante (*pivot routing forward information*)	PFI	
Indicadores de encaminamiento pivote (*pivot routing indicator*)	PVR	
Situación de pivote (*pivot status*)	PVS	
Contador de retardo de propagación (*propagation delay counter*)	PDC	
Nombre de protocolo (*protocol name*)	PRN	Específico de la NSS
Capacidad indagación sobre liberación (*query on release capability*)	QOR	
Información de redireccionamiento hacia atrás (*redirect backward information*)	RBI	
Capacidad de redireccionamiento (*redirect capability*)	RDC	
Contador de redireccionamiento (*redirect counter*)	RCT	
Información de redireccionamiento hacia delante (*redirect forward information*)	RFI	
Situación de redireccionamiento (*redirect status*)	RDS	
Número redireccionante (*redirecting number*)	RGN	
Información de redireccionamiento (*redirection information*)	RNI	
Número de redireccionamiento (*redirection number*)	RNN	
Restricción de número de redireccionamiento (*redirection number restriction*)	RNR	

Operaciones a distancia (*remote operations*)	RMO	
Identificador de control de función de servicio (*SCF ID*)	SCF	
Indicador de segmentación (*segmentation indicator*)	SEG	Específico de la NSS
Activación de servicio (*service activation*)	SEA	
Señal	SIG	ASE de BAT
Código de punto de señalización (*signalling point code*)		SPC
Información de parámetro fuente (*source parameter information*)	SPI	Específico de la NSS
Número subsiguiente (*subsequent number*)	SUN	
Indicadores de suspensión/reanudación (*suspend/resume indicators*)	SRI	
Identificador de transacción (*transaction ID*)	TID	Específico de la NSS
Selección de red de tránsito (*transit network selection*)	TNS	
Medio de transmisión requerido (*transmission medium required*)	TMR	
Medio de transmisión requerido prima (*transmission medium required prime*)	TMP	
Medio de transmisión utilizado (*transmission medium used*)	TMU	
Indicadores de acción de diálogo interactivo de usuario (*UID action indicators*)	UID	
Indicadores de capacidad de diálogo interactivo de usuario (*UID capability indicators*)	UCI	
Información de compatibilidad de campo desconocido (*unknown field compatibility information*)	UFC	Específico de la NSS
Información de servicio de usuario (*user service information*)	USI	
Información de servicio de usuario prima (*user service information prime*)	USP	
Información de teleservicio de usuario (*user teleservice information*)	UTI	
Indicadores de usuario a usuario (*user-to-user indicators*)	UUI	
Información de usuario a usuario (*user-to-user information*)	UUS	
Versión de NSS (*version of NSS*)	VER	Específico de la NSS

Es posible que los fabricantes y operadores de telecomunicaciones deseen utilizar parámetros nuevos o específicos de su red privada. En estos casos, los parámetros deben usar un código de tres letras distinto de los que figuran en la lista anterior y deben encapsularlo en el parámetro información de compatibilidad de parámetro (PCI) para no afectar a los nodos intermedios. Los nodos que acepten utilizar dicho parámetro también deberán aceptar los valores PRN para indicar el conjunto de parámetros que se espera.

El orden de los parámetros detallados a continuación en la cláusula 7 siguen el mismo orden de la lista precedente. La siguiente lista está ordenada por código NSS para hallar más fácilmente el nombre completo del parámetro.

Código NSS	*Nombre de parámetro*
ACL	Nivel de congestión automático (*automatic congestion level*)
ACT	Indicador de acción (*action indicator*)
ADI	Información de entrega de acceso (*access delivery information*)
APP	Transporte de aplicación (*application transport*)
ATP	Transporte de acceso (*access transport*)
BAT	Informe de compatibilidad de BAT (*BAT compatibility report*)
BCD	Información de control de portador (*bearer control information*)
BCI	Indicadores de llamada hacia atrás (*backward call indicators*)
BCT	Tunelización de control de portador (*bearer control tunnelling*)
BDU	Identificador de unidad de control de portador (*bearer control unit identifier*)
BID	Identificador de conexión de red hacia atrás (*backward network connection identifier*)
BNC	Características de conexión de la red portadora (*bearer network connection characteristics*)
BRC	Capacidad de redireccionamiento de portador (*bearer redirection capability*)
BRI	Indicadores de redireccionamiento de portador (*bearer redirection indicators*)
BVN	Servicio de red virtual global hacia atrás (*backward GVNS*)
CAI	Indicadores de causa (*cause indicators*)
CCN	Indicador de compleción de llamadas en caso de ausencia de respuesta posible (*CCNR possible indicator*)
CCS	Establecimiento del servicio de compleción de llamadas (*call completion service set-up*)
CDI	Información de desviación de llamada (*call diversion information*)
CDL	Lista de códecs (*codec list*)
CDN	Número del directorio llamado (*called directory number*)

CDP	Procesamiento de codificación-decodificación (*coding decoding processing*)
CDT	Indicadores de tratamiento de desviación de llamada (*call diversion treatment indicators*)
CGL	Ubicación geodésica del llamante (*calling geodetic location*)
CGN	Número de la parte llamante (*calling party number*)
CGV	Información de velocidad geodésica de la parte llamante (*calling party geodetic velocity information*)
CHI	Información de historial de la llamada (*call history information*)
CIC	Código de identificación de circuito (instancia de llamada) (*circuit identification (call instance) code*)
CIN	Número RI llamado (*called IN number*)
CNF	Indicadores de tratamiento de conferencia (*conference treatment indicator*)
CNN	Número conectado (*connected number*)
CNR	Petición de conexión (*connection request*)
COD	Códec
COL	Petición de llamada de cobro revertido (*collect call request*)
COR	Identidad de correlación (*correlation identity*)
CPC	Categoría de la parte llamante (*calling party's category*)
CPI	Identificación de la parte tasada (*charged party identification*)
CPN	Número de la parte llamada (*called party number*)
CRF	Referencia de llamada (*call reference*)
CSI	Información de selección de portador (*carrier selection information*)
CTI	Indicadores de continuidad (*continuity indicators*)
CTN	Número de transferencia de llamada (*call transfer number*)
CTR	Referencia de transferencia de llamada (*call transfer reference*)
DIS	Información de presentación visual (*display information*)
ECI	Información de control del eco (*echo control information*)
EVI	Indicadores de información de evento (*event information indicators*)
FAI	Indicadores de facilidad (*facility indicators*)
FCI	Indicadores de llamada hacia adelante (*forward call indicators*)
FDC	Información de compatibilidad de campo conocido (*known field compatibility information*)
FVN	Servicio de red virtual global hacia adelante (*forward GVNS*)

GCI	Identificación global de llamada (*global call identification*)
GEA	Dirección genérica (*generic address*)
GED	Cifras genéricas (*generic digits*)
GIC	Código de enclavamiento de grupo cerrado de usuarios (*closed user group interlock code*)
GNO	Indicador de notificación genérica (*generic notification indicator*)
HOC	Contador de saltos (*hop counter*)
HTR	Difícil de alcanzar (*hard to reach*)
INC	Compatibilidad de servicio de red inteligente (*IN service compatibility*)
INI	Indicadores de información (*information indicators*)
IRI	Indicadores de petición de información (*information request indicators*)
ISC	Código de punto de centro de conmutación internacional de origen (*originating ISC point code*)
ITG	Identificador de grupo de tráfico entre nodos (*inter-nodal traffic group identifier*)
IWF	Dirección de función de interfuncionamiento (*interworking function address*)
LON	Número de lugar (*location number*)
LPI	Indicador de prevención de bucle (*loop prevention indicator*)
MCI	Información de compatibilidad de mensaje (*message compatibility information*)
MCR	Indicador de respuesta de identificación de llamadas malintencionadas (*MCID response indicator*)
MLP	Precedencia con apropiación multinivel
MPL	Lista de parámetros con correspondencia (*mapped parameter list*)
MRI	Indicador de petición de identificación de llamadas malintencionadas (*MCID request indicator*)
NMC	Controles de gestión de red (*network management controls*)
NOC	Indicadores de naturaleza de la conexión (*nature of connection indicators*)
NPF	Información hacia adelante sobre portabilidad de número (*number portability forward information*)
NRN	Número de encaminamiento de la red (*network routing number*)
NSF	Facilidad específica de la red (*network-specific facilities*)
OBI	Indicadores de llamada hacia atrás opcionales (*optional backward call indicators*)

OCI	Número de red inteligente llamado inicialmente (*original called IN number*)
OCN	Número llamado inicialmente (*original called number*)
OCT	Indicadores de tratamiento de ofrecimiento de llamada (*call offering treatment indicators*)
OFI	Indicadores de llamada hacia adelante opcionales (*optional forward call indicators*)
PBI	Información de encaminamiento pivote hacia atrás (*pivot backward information*)
PCA	Capacidad de pivote (*pivot capability*)
PCI	Información de compatibilidad de parámetro (*parameter compatibility information*)
PCT	Contador pivote (*pivot counter*)
PDC	Contador de retardo de propagación (*propagation delay counter*)
PFI	Información de encaminamiento pivote hacia adelante (*pivot forward information*)
PRN	Nombre de protocolo (*protocol name*)
PVR	Indicador de encaminamiento pivote (*pivot routing indicator*)
PVS	Situación de pivote (*pivot status*)
QOR	Capacidad de indagación sobre liberación (*query on release capability*)
RBI	Información de redireccionamiento hacia atrás (*redirect routing backward information*)
RCT	Contador de redireccionamiento (*redirect counter*)
RDC	Capacidad de redireccionamiento (*redirect capability*)
RDS	Situación de redireccionamiento (*redirect status*)
RFI	Información de redireccionamiento hacia adelante (*redirect routing forward information*)
RGN	Número redireccionante (*redirecting number*)
RMO	Operaciones a distancia (*remote operations*)
RNI	Información de redireccionamiento (*redirection information*)
RNN	Número de redireccionamiento (*redirection number*)
RNR	Restricción de número de redireccionamiento (*redirection number restriction*)
SCF	Identificador de función de control de servicio (*SCF ID*)
SEA	Activación del servicio (*service activation*)
SEG	Indicador de segmentación (*segmentation indicator*)
SIG	Señal
SPC	Código de punto de señalización (*signalling point code*)

SPI	Información de parámetro fuente (*source parameter information*)
SRI	Indicadores de suspensión/reanudación (*suspend/resume indicators*)
SUN	Número subsiguiente (*subsequent number*)
TID	Identificador de transacción (*transaction ID*)
TMP	Medio de transmisión requerido prima (*transmission medium required prime*)
TMR	Medio de transmisión requerido (*transmission medium required*)
TMU	Medio de transmisión utilizado (*transmission medium used*)
TNS	Selección de red de tránsito (*transit network selection*)
UCI	Indicadores de capacidad de diálogo interactivo de usuario (*UID capability indicators*)
UFC	Información de compatibilidad de campo desconocido (*unknown field compatibility information*)
UID	Indicadores de acción de diálogo interactivo de usuario (*UID action indicators*)
USI	Información de servicio de usuario (*user service information*)
USP	Información de servicio de usuario prima (*user service information prime*)
UTI	Información de teleservicio de usuario (*user teleservice information*)
UUI	Indicadores de usuario a usuario (*user-to-user indicators*)
UUS	Información de usuario a usuario (*user-to-user information*)
VER	Versión de NSS (*version of NSS*)

7.3 Descripciones detalladas de los parámetros

La designación "a" significa que se pueden utilizar todos los caracteres posibles permitidos en 5.1, a menos que se indique lo contrario en la descripción de campo. La designación "d" significa que sólo se utilizan los caracteres 0-9. La designación "h" significa que el campo o subcampo debe ser codificado en hexadecimal.

El primer valor de campo de casi todos los campos será el valor "desconocido". "Desconocido" significa que se carece de información o no está disponible en la fuente de codificación NSS.

Las columnas a la izquierda en las siguientes cláusulas son valores **literales** que se utilizarán como puntos de código. En las líneas *Format* "<tag>=" precede a los valores de campo, aunque estos nombres de campo, (rótulos) no se transmiten en la codificación compacta utilizada para la transmisión.

7.3.1 Información de entrega de acceso (ADI, *access delivery information*)

```
Format: ADI,adi=a

Fields:

Field-01: adi - access delivery indicator
 a   description
 -   -----------
 u - unknown
 y - set-up message generated
 n - no set-up message generated
```

7.3.2 Transporte de acceso (ATP, *access transport*)

```
Format: ATP,dat=1*(2Hex)

Fields:     (may carry Q.931 IE)

Field-01: dat - access Transport data
 1*(2h)  description
 ------  -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1).
          (If unknown, parameter is omitted.)
```

7.3.3 Transporte de aplicación (APP, *application transport*)

```
Format: APP,aci=a,sni=a,rci=a,si=a,seg=hh,slr=hh,apm=0*(2Hex)

Fields:

Field-01: aci - application context identifier
 a   definition
 -   ----------
 u - unknown
 0 - Unidentified Context and Error Handling (UCEH) ASE
 1 - PSS1 ASE (VPN)
 2 - Charging ASE
 3 - GAT ASE
 4 - BAT ASE
 5 - Enhanced Unidentified Context and Error Handling
     (EUCEH) ASE

Field-02: sni - send notification indicator
 a   definition
 -   ----------
 u - unknown
 n - do not send notification
 y - send notification

Field-03: rci - release call indicator
 a   definition
 -   ----------
 u - unknown
 n - do not release call
 y - release call

Field-04: si - sequence indicator
 a   definition
 -   ----------
 0 - subsequent segment to first segment
 1 - new sequence
```

```
Field-05: seg - segmentation indicator
 dd   definition
 --   ----------
 00
-99 - 2 decimal digits 0-9 - indicates number
      of following segments

Field-06: slr - segmentation local reference
 hh  definition
 --  ----------
 00
-FF - 2 hexadecimal digits 0-9 or A-F

Field-07: apm - APM user information
 0*(2h)   description
 ------   -----------
 0*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1).

See clause 7.4 for additional NSS parameters that must be used with
the APP Field-01 code point number 4 (BAT ASE) instead of tunnelling
in Field-07. In this case, Field-07 shall be left empty in the encoding of the
APP parameter. When other Field-01 code point values are used, the APM user
information is encoded in Field-07 and not parameters in clause 7.4. When
Field-07 is empty and BAT ASE clause 7.4 parameters are absent from the
message, then the APM user information value is "unknown".
```

7.3.4 Nivel de congestión automático (ACL, *automatic congestion level*)

```
Format: ACL,acl=a

Fields:

Field-01: acl - auto congestion level
 a   description
 -   -----------
 u - unknown
 1 - congestion level 1 exceeded
 2 - congestion level 2 exceeded
```

7.3.5 Indicadores de llamada hacia atrás (BCI, *backward call indicators*)

```
Format: BCI,cha=a,sta=a,cpc=dd,e2ei=a,e2em=a,inter=a,iupi=a,h=a,
        acc=a,eco=a,sccpm=d  <NOTE – continuation of same line.>

Fields:

Field-01: cha - charge indicator
 a   description
 -   -----------
 0 - no indication
 y - charge
 n - no charge

Field-02: sta - called party status
 a   description
 -   -----------
 0 - no indication
 f - subscriber free
 c - connect when free
```

```
Field-03: cpc - call(ed) party category (reuses clause 7.3.21 cpc=field)
 dd   description
 --   -----------
 00 - unknown/no indication
 09 - ordinary subscriber
 15 - public payphone

Field-04: e2ei - end-to-end information indicator
 a   definition
 -   ---------
 u - unknown (meaning 'No Indication')
 y - end-to-end information is available
 n - end-to-end information is not available

Field-05: e2em - end-to-end method indicator
 a   definition
 -   ----------
 u - unknown
 n - no end-to-end method available
 1 - pass-along method available
 2 - SCCP method available
 3 - pass-along and SCCP methods available

Field-06: inter - interworking Indicator
 a   definition
 -   ----------
 u - unknown
 y - interworking has been encountered
 n - interworking has not been encountered (SS7/BICC all the way)

Field-07: iupi - ISDN user part indicator
 a   definition
 -   ----------
 u - unknown
 y - ISDN user part/BICC is used all the way
 n - ISDN user part/BICC is not used all the way

Field-08: h - hold indicator
 a   definition
 -   ----------
 u - unknown
 y - call hold requested
 n - call hold not requested

Field-09: acc - ISDN access indicator
 a   definition
 -   ----------
 u - unknown
 y - Terminating access is ISDN
 n - Terminating Access is not ISDN

Field-10: eco - Echo control device indicator
 a   definition
 -   ----------
 u - unknown
 y - incoming half echo device included
 n - incoming half echo device not included
```

```
Field-11: sccpm - SCCP Method Indicator
 d   definition
 -   ----------
 0 - no indication
 1 - connectionless method available
 2 - connection-oriented method available
 3 - connectionless and connection-oriented methods available
```

7.3.6 Servicio de red virtual global hacia atrás (BVN, *backward GVNS*)

```
Format: BVN,tai=a

Fields:

Field-01: tai - terminating access indicator
 a   description
 -   -----------
 0 - no information
 d - dedicated terminating access
 s - switched terminating access
```

7.3.7 Establecimiento del servicio de compleción de llamadas (CCS, *call completion service set-up*)

```
Format: CCS,ccss=a

Fields:

Field-01: ccss - CCSS call indicator
 a   description
 -   -----------
 0 - no indication
 y - CCSS call
```

7.3.8 Información de desviación de llamada (CDI, *call diversion information*)

```
Format: CDI,nso=a,rr=a

Fields:

Field-01: nso - notification subscription options
 a   description
 -   -----------
 u - unknown
 1 - presentation restricted
 2 - presentation allowed with redirection number
 3 - presentation allowed without redirection number

Field-02: rr - redirecting reason
 a   description
 -   -----------
 u - unknown
 1 - user busy
 2 - no reply
 3 - unconditional
 4 - deflection during alerting
 5 - deflection immediate response
 6 - mobile subscriber not reachable
```

7.3.9 Indicadores de tratamiento de desviación de llamada (CDT, *call diversion treatment indicators*)

```
Format: CDT,ct=a

Fields:

Field-01: ct - call diversion treatment
 a   definition
 -   ----------
 u - unknown
 y - call diversion allowed
 n - call diversion not allowed
```

7.3.10 Información historial de la llamada (CHI, *call history information*)

```
Format: CHI,pd=ddddd

Fields:

Field1 : pd - propagation delay

 ddddd   definition
 -----   ----------
 00000 - delay unknown
-65535 - delay in milliseconds
```

7.3.11 Indicadores de tratamiento y ofrecimiento de llamada (OCT, *call offering treatment indicators*)

```
Format: OCT,coi=a

Fields:

Field-01: coi - call offering treatment indicator

 a   description
 -   -----------
 u - unknown
 n - call offering not allowed
 y - call offering allowed
```

7.3.12 Referencia de llamada (CRF, *call reference*)

```
Format: CRF,cid=hhhhhh,pc=aaaaaaaaaa

Fields:

Field-01: cid - call identity
 hhhhhh   description
 ------   -----------
 000000 - 6 characters 0-9, A-F representing hexadacimal values
-FFFFFF
```

```
Field-02: pc - Point Code
 aaaaaaaaaaa   description
 -----------   -----------
 nnn.ccc.mmm - nine characters separated by two periods, where
               nnn is for network/zone (most significant 3 or 8 bits),
               ccc is for cluster/area (middle 8 bits),
               mmm is for member (least significant 3 or 8 bits).
               The nnn, ccc, and mmm are 3-digit numbers from 000 to 255
               representing the decimal equivalent of the subfield viewed
               as a binary number. [NOTE – ITU format is 3.8.3 bit.]
```

7.3.13 Número de transferencia de llamada (CTN, *call transfer number*)

```
Format: CTN,noa=dd,npi=a,pi=a,si=a,#=1*h

Fields:

Field-01: noa - nature of address
 dd   description
 --   -----------
 00 - unknown, number present
 02 - unique subscriber number
 04 - unique national (significant) number
 06 - unique international number
 08 - network-specific number
 30 - network routing number in national (significant) format
 31 - network routing number in network-specific format
 32 - network routing number concatenated with Called Directory
      Number
 35 - PISN specific number

[NOTE – noa= appears in the following additional parameters:
 CDN, CPN, CIN, CGN, CNN, FVN, GEA, HTR, LON, OCI, OCN, RGN, RNN.
 Those parameters refer back to the above list because of its
 size. The NRN parameters use alternative lists.]

Field-02: npi - numbering plan indicator
 a   description
 -   -----------
 u - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)
 2 - Data numbering plan (ITU-T Rec. X.121)
 3 - Telex numbering plan (ITU-T Rec. F.69)
 4 - Private numbering plan
 5 - national

Field-03: pi - presentation indicator
 a   description
 -   -----------
 u - unknown
 y - presentation allowed
 n - presentation restricted
 0 - address not available

Field-04: si - screening indicator
 a   description
 -   -----------
 u - unknown
 1 - user provided not screened
 2 - user provided screening passed
 3 - user provided screening failed
 4 - network provided
```

```
Field-05: # - address
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.14 Referencia de transferencia de llamada (CTR, *call transfer reference*)

```
Format: CTR,ref=ddd

Fields:

Field-01: ref - call transfer reference
 ddd   description
 ---   -----------
 000 - positive integer number 0-9 (omit if parameter unknown)
-255
```

7.3.15 Número de directorio llamado (CDN, *called directory number*)

```
Format: CDN,noa=dd,inn=a,npi=a,#=1*h

Fields:

Field-01: noa - nature of address
 dd  description
 --  -----------
     See definition of "noa=" in clause 7.3.13,
     Call Transfer Number (CTN).

Field-02: inn - internal network number indicator
 a   description
 -   -----------
 u - unknown
 n - routing to internal network number not allowed
 y - routing to internal network number allowed

Field-03: npi - numbering plan indicator
 a   description
 -   -----------
 u - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)
 2 - Data numbering plan (ITU-T Rec. X.121)
 3 - Telex numbering plan (ITU-T Rec. F.69)
 4 - Private numbering plan
 5 - national

Field-04: # - address
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.16 Número de RI llamado (CIN, *called IN number*)

```
Format: CIN,noa=dd,npi=a,pi=a,#=1*h

Fields:

Field-01: noa - nature of address
 dd  description
 --  -----------
     See definition of "noa=" in clause 7.3.13,
     Call Transfer Number (CTN).
```

```
Field-02: npi - numbering plan indicator
 a   description
 -   -----------
 u - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)
 2 - Data numbering plan (ITU-T Rec. X.121)
 3 - Telex numbering plan (ITU-T Rec. F.69)
 4 - Private numbering plan
 5 - national

Field-03: pi - presentation indicator
 a   description
 -   -----------
 u - unknown
 y - presentation allowed
 n - presentation restricted
 0 - address not available

Field-04: # - address
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.17 Número de la parte llamada (CPN, *called party number*)

```
Format: CPN,noa=dd,inn=a,npi=a,#=1*h

Fields:

Field-01: noa - nature of address
 dd   description
 --   -----------
      See definition of "noa=" in clause 7.3.13,
      Call Transfer Number (CTN).

Field-02: inn - Internal network number indicator
 a   description
 -   -----------
 u - unknown
 n - routing to internal network number not allowed
 y - routing to internal network number allowed

Field-03: npi - numbering plan indicator
 a   description
 -   -----------
 u - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)
 2 - Data numbering plan (ITU-T Rec. X.121)
 3 - Telex numbering plan (ITU-T Rec. F.69)
 4 - Private numbering plan
 5 - national

Field-04: # - address
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.18 Ubicación geodésica del llamante (CGL, *calling geodetic location*)

```
Format: CGL,pi=a,si=a,type=d,[Field Container]

Fields:

Field-01: pi - presentation indicator
 a   description
 -   -----------
 u - unknown
 y - presentation allowed
 n - presentation restricted
 0 - location not available

Field-02: si - screening indicator
 a   description
 -   -----------
 u - unknown
 1 - user provided not screened
 2 - user provided screening passed
 3 - user provided screening failed
 4 - network provided

Field-03: type - type of shape
 d   definition
 -   ----------
 u - unknown
 0 - ellipsoid point                       field container 1
 1 - ellipsoid point with uncertainty      field container 2
 2 - ellipsoid point with altitude and
     uncertainty                           field container 3
 3 - ellipse on ellipsoid                  field container 4
 4 - ellipsoid circle sector               field container 5
 5 - polygon                               field container 6
 6 - ellipsoid point with altitude         field container 7
 7 - ellipsoid point with altitude and
     uncertainty ellipsoid                 field container 8
 8 - ellipsoid arc                         field container 9

Field containers:

Field container 1 - ellipsoid point

 Format: ns=d,lat=1*d,lon=1*d

 Field-04: ns - north/south
   d   description
   -   -----------
   0 - north
   1 - south

 Field-05: lat - degrees of latitude
   1*d   description
   -     -----------
   1*d - This field value is the decimal equivalent of the
         23-bit binary value N, that when multiplied by 90 and
         divided by 2^23 produces degrees and fraction of degrees
         to multiple decimal places of precision. This note
         applies to all latitude fields in this parameter.
         Example: 111 0000 0000 0000 0000 0000 = 7,340,032
           x 90 = 660,602,880 / 2^23 = 78.75 degrees.
         In other words, N/(2^23) produces a fraction 0≤X<1 of
         the total 90 degrees.
```

```
 Field-06: lon - degrees of longitude
   1*d   description
   -     -----------
   1*d - This field value is the decimal equivalent of the
         24-bit binary value N, that when multiplied by 360 and
         divided by 2^24 produces degrees and fraction of degrees
         to multiple decimal places of precision. For conversion
         to negative degrees West, when resulting degrees exceed
         180, subtract 360. This note applies to all longitude
         fields in this parameter.
         Example: N/(2^24)x360 is similar to that above. A value
         of 275 degrees converts to: 275 - 360 = -85 degrees West.

Field container 2 - ellipsoid point with uncertainty

 Format: ns=d,lat=1*d,lon=1*d,unc=d,con=d

 Field-04: ns - north/south
   d   description
   -   -----------
   0 - north
   1 - south

 Field-05: lat - degrees of latitude
   1*d   description
   ---   -----------
   1*d - same as in field container 1

 Field-06: lon - degrees of longitude
   1*d   description
   ---   -----------
   1*d - same as in field container 1

 Field-07: unc - uncertainty
   1*d   description
   ---   -----------
   1*d - This field value is the decimal equivalent of the
         7-bit binary value K used in the formula:
         uncertainty = 10 x [ (1.1)^K - 1] that produces
         uncertainty values in the range of 0 to 1800 metres.
         This applies to all Latitude/Longitude uncertainty
         fields in this parameter.

 Field-08: con - confidence
   1*d   description
   ---   -----------
   1*d - This field value is the decimal equivalent of the
         7-bit binary value 0≤K≤100 expressed as a percentage,
         and where K=0 means "no information".
         This applies to any confidence field in this parameter.

Field container 3 - ellipsoid point with altitude and uncertainty

 Format: ns=d,lat=1*d,lon=1*d,unc=1*d,as=d,alt=1*d,
         auc=1*d,con=1*d  [NOTE - continued on same line.]

 Field-04: ns - north/south
   d   description
   -   -----------
   0 - north
   1 - south
```

```
Field-05: lat - degrees of latitude
  1*d   description
  -     -----------
  1*d - same as in field container 1

Field-06: lon - degrees of longitude
  1*d   description
  -     -----------
  1*d - same as in field container 1

Field-07: unc - uncertainty
  1*d   description
  -     -----------
  1*d - same as in field container 2

Field-08: as - altitude sign
  d   description
  -   -----------
  0 - above ellipsoid
  1 - below ellipsoid

Field-09: alt - altitude
  1*d   description
  ---   -----------
  1*d - This field value is the decimal equivalent of the
        15-bit binary value indicating 0≤a≤32767 metres. This
        applies to any altitude field in this parameter.

Field-10: auc - altitude uncertainty code
  1*d   description
  ---   -----------
  1*d - This field value is the decimal equivalent of the
        7-bit binary value K used in the formula:
        uncertainty = 45 x [ (1.025)^K - 1] that produces
        uncertainty values in the range of 0 to 1000 metres.
        This note applies to all altitude uncertainty fields
        in this parameter.

Field-11: con - confidence
  1*d   description
  ---   -----------
  1*d - same as in field container 2

Field container 4 - ellipse on ellipsoid

Format: ns=d,lat=1*d,lon=1*d,maj=1*d,min=1*d,ori=1*d,
        con=1*d

Field-04: ns - latitude sign
  d   description
  -   -----------
  0 - north
  1 - south

Field-05: lat - degrees of latitude
  1*d   description
  ---   -----------
  1*d - same as in field container 1

Field-06: lon - degrees of longitude
  1*d   description
  ---   -----------
  1*d - same as in field container 1
```

```
 Field-07: maj - major radius
   1*d   description
   ---   -----------
   1*d - This field value is the decimal equivalent of the
         7-bit binary value K used in the formula:
         radius = 10 x [ (1.1)^K - 1] that produces radius
         values in the range of 0 to 1800 metres. This
         note applies to most Radius fields in this parameter.

 Field-08: min - minor radius
   1*d   description
   ---   -----------
   1*d - same as major radius above

 Field-09: ori - orientation
   1*d   description
   ---   -----------
   1*d - This field value is the decimal equivalent of the
         8-bit binary value 0≤K≤180 degrees. This applies to
         any orientation field in this parameter.

 Field-10: con - confidence
   1*d   description
   ---   -----------
   1*d - same as in field container 2

Field container 5 - ellipsoid circle sector

 Format: ns=d,lat=1*d,lon=1*d,rad=1*d,off=1*d,ang=1*d,
         con=1*d

 Field-04: ns - north/south
   d   description
   -   -----------
   0 - north
   1 - south

 Field-05: lat - degrees of latitude
   1*d   description
   ---   -----------
   1*d - same as in field container 1

 Field-06: lon - degrees of longitude
   1*d   description
   ---   -----------
   1*d - same as in field container 1

 Field-07: rad - radius
   1*d   description
   ---   -----------
   1*d - same as major radius in container 4

 Field-08: off - offset angle
   1*d   description
   ---   -----------
   1*d - This field value is the decimal equivalent of the
         8-bit binary value 0≤K≤180 with degrees=2*K, where
         0 degrees is North and 90 degrees is East. This
         applies to any offset or included angle field in this
         parameter.

 Field-09: ang - included angle
   1*d   description
   ---   -----------
   1*d - same as offset angle above
```

```
   Field-10: con - confidence
     1*d   description
     ---   -----------
     1*d - same as in field container 2

  Field container 6 - polygon

   Format: num=dd,(3*15{ns=d,lat=1*d,lon=1*d}),con=1*d

   Field-04: num - number of points
     dd   description
     --   -----------
     03 - the number of points in the polygon
    -15

   For each point in the polygon, a tuple of three fields is needed
   to describe that point. The number of tuples is indicated by
   Field-04 above. Each tuple must begin with an open brace
   "{", end with a close brace "}", with tuples comma-delimited.
   A comma separates subfields within the tuple. Example:
   Triangle: ({ns=0,lat=33,lon=89},
             {ns=0,lat=34,lon=90},
             {ns=0,lat=34,lon=89})

   In the following fields, T1, T2, and T3 compose the tuple:

   Field-T1: ns - north/south
     d   description
     -   -----------
     0 - north
     1 - south

   Field-T2: lat - degrees of latitude
     1*d   description
     -     -----------
     1*d - same as in field container 1

ç   Field-T3: lon - degrees of longitude
     1*d   description
     -     -----------
     1*d - same as in field container 1

   A single occurrence of confidence ends the parameter:

   Field-NN: con - confidence
     1*d   description
     ---   -----------
     1*d - same as in field container 2

Field container 7 - ellipsoid point with altitude

   Format: ns=d,lat=1*d,lon=1*d,as=d,alt=1*d

   Field-04: ns - north/south
     d   description
     -   -----------
     0 - north
     1 - south

   Field-05: lat - degrees of latitude
     1*d   description
     -     -----------
     1*d - same as in field container 1
```

```
 Field-06: lon - degrees of longitude
   1*d   description
   -     -----------
   1*d - same as in field container 1

 Field-07: as - altitude sign
   d   description
   -   -----------
   0 - above ellipsoid
   1 - below ellipsoid

 Field-08: alt - altitude
   1*d   description
   ---   -----------
   1*d - same as in field container 3

Field container 8 - ellipsoid point with altitude and
                    uncertainty ellipsoid

 Format: ns=d,lat=1*d,lon=1*d,as=d,alt=1*d,maj=1*d,min=1*d,
         ori=1*d,auc=1*d,con=1*d

 Field-04: ns - latitude sign
   d   description
   -   -----------
   0 - north
   1 - south

 Field-05: lat - degrees of latitude
   1*d   description
   ---   -----------
   1*d - same as in field container 1

 Field-06: lon - degrees of longitude
   1*d   description
   ---   -----------
   1*d - same as in field container 1

 Field-07: as - altitude sign
   d   description
   -   -----------
   0 - above ellipsoid
   1 - below ellipsoid

 Field-08: alt - altitude
   1*d   description
   ---   -----------
   1*d - same as in field container 3

 Field-09: maj - major radius
   1*d   description
   ---   -----------
   1*d - same as in field container 4

 Field-10: min - minor radius
   1*d   description
   ---   -----------
   1*d - see ITU-T Recs Q.763/Q.1902.3 for encoding

 Field-11: ori - orientation
   1*d   description
   ---   -----------
   1*d - same as in field container 4
```

```
 Field-12: auc - altitude uncertainty code
   1*d   description
   ---   -----------
   1*d - same as in field container 3

 Field-13: con - confidence
   1*d   description
   ---   -----------
   1*d - same as in field container 2

Field container 9 - ellipsoid arc

 Format: ns=d,lat=1*d,lon=1*d,inr=1*d,unc=1*d,off=1*d,ang=1*d,
         con=1*d

 Field-04: ns - latitude sign
   d   description
   -   -----------
   0 - north
   1 - south

 Field-05: lat - degrees of latitude
   1*d   description
   ---   -----------
   1*d - same as in field container 1

 Field-06: lon - degrees of longitude
   1*d   description
   ---   -----------
   1*d - same as in field container 1

 Field-07: inr - inner radius
   1*d   description
   ---   -----------
   1*d - This field value is the decimal equivalent of the
         16-bit binary value N used in the standard formula. This
         note applies to most Radius fields in this parameter.

 Field-08: unc - uncertainty radius (identical to uncertainty)
   1*d   description
   ---   -----------
   1*d - same as in field container 2

 Field-09: off - offset angle
   1*d   description
   ---   -----------
   1*d - same as in field container 5

 Field-10: ang - included angle
   1*d   description
   ---   -----------
   1*d - same as offset angle in container 5

 Field-11: con - confidence
   1*d   description
   ---   -----------
   1*d - same as in field container 2
```

7.3.19 Información de velocidad geodésica de la parte llamante (CGV, *calling party geodetic velocity information*)

```
Format: CGV,pi=a,si=a,type=d,[field container]

Based on the value of "type", none or one of the following field
containers will follow. This parameter can appear multiple times,
indicating different types of information within the same message.

Fields:

Field-01: pi - presentation indicator
 a   description
 -   -----------
 u - unknown
 y - presentation allowed
 n - presentation restricted
 0 - location not available

Field-02: si - screening indicator
 a   description
 -   -----------
 u - unknown
 1 - user provided not screened
 2 - user provided screening passed
 3 - user provided screening failed
 4 - network provided

Field-03: type - type of geodetic velocity information
 d   definition
 -   ----------
 0 - unknown
 1 - Horizontal velocity                  field container 1
 2 - Horizontal with Vertical velocity    field container 2
 3 - Horizontal velocity with Uncertainty field container 3
 4 - Horizontal with Vertical velocity
     and Uncertainty                      field container 4

Field Containers:

Field Container 1 (type=1)

 Format: bear=ddd,hvel=ddddd

 Fields:

 Field-04: bear - bearing
   ddd   definition
   ---   ----------
   000 - degrees clockwise from North
  -360   (maximum)

 Field-05: hvel - horizontal speed
   ddddd   definition
   -----   ----------
   00000 - rounded up to nearest kilometer per hour
  -65535   (e.g., X.5 rounds to X+1)

Field Container 2 (type=2)

 Format: bear=ddd,hvel=ddddd,dir=d,vvel=ddd
```

```
 Fields:

 Field-04: bear - bearing
   ddd   definition
   ---   ----------
   000 - degrees clockwise from North
  -360   (maximum)

 Field-05: hvel - horizontal speed
   ddddd   definition
   -----   ----------
   00000 – rounded up to nearest kilometer per hour
  -65535   (e.g., X.5 rounds to X+1)

 Field-06: dir - direction of vertical speed
   d   definition
   -   ----------
   0 - upward
   1 - downward

 Field-07: vvel - vertical speed
   ddd   definition
   ---   ----------
   000 - rounded up to nearest kilometer per hour
  -255   (e.g., X.5 rounds to X+1)

Field Container 3 (type=3)

 Format: bear=ddd,hvel=ddddd,hu=ddd

 Fields:

 Field-04: bear - bearing
   ddd   definition
   ---   ----------
   000 - degrees clockwise from North
  -360   (maximum)

 Field-05: hvel - horizontal speed
   ddddd   definition
   -----   ----------
   00000 - rounded up to nearest kilometer per hour
  -65535   (e.g., X.5 rounds to X+1)

 Field-06: hu - horizontal uncertainty speed
   ddd   definition
   ---   ----------
   000 - increments of one kilometer per hour
  -254
   255 - indicates that uncertainty is not specified

Field Container 4 (type=4)

 Format: bear=ddd,hvel=ddddd,hu=ddd,dir=d,vvel=ddd,vu=ddd

 Fields:

 Field-04: bear - bearing
   ddd   definition
   ---   ----------
   000 - degrees clockwise from North
  -360   (maximum)
```

```
Field-05: hvel - horizontal speed
  ddddd   definition
  -----   ----------
  00000 - rounded up to nearest kilometer per hour
 -65535   (e.g., X.5 rounds to X+1)

Field-06: hu - horizontal uncertainty speed
  ddd   definition
  ---   ----------
  000 - increments of one kilometer per hour
 -254
  255 - indicates that uncertainty is not specified

Field-07: dir – direction of vertical speed
  d   definition
  -   ----------
  0 – upward
  1 - downward

Field-08: vvel - vertical speed
  ddd   definition
  ---   ----------
  000 - rounded up to nearest kilometer per hour
 -255   (e.g., X.5 rounds to X+1)

Field-09: vu - vertical uncertainty speed
  ddd   definition
  ---   ----------
  000 - increments of one kilometer per hour
 -254
  255 - indicates that uncertainty is not specified
```

7.3.20 Número de la parte llamante (CGN, *calling party number*)

```
Format: CGN,noa=dd,cni=a,npi=a,pi=a,si=a,#=1*h

Fields:

Field-01: noa - nature of address
 dd  description
 --  -----------
     See definition of "noa=" in clause 7.3.13,
     Call Transfer Number (CTN).

Field-02: cni - complete number indicator
 a   description
 -   -----------
 u - unknown
 y - number complete
 n - number incomplete

Field-03: npi - numbering plan indicator
 a   description
 -   -----------
 u - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)
 2 - Data numbering plan (ITU-T Rec. X.121)
 3 - Telex numbering plan (ITU-T Rec. F.69)
 4 - Private numbering plan
 5 - national
```

```
Field-04: pi - presentation indicator
 a   description
 -   -----------
 u - unknown
 y - presentation allowed
 n - presentation restricted
 0 - address not available
 1 - restricted by network

Field-05: si - screening indicator
 a   description
 -   -----------
 u - unknown
 1 - user provided not screened
 2 - user provided screening passed
 3 - user provided screening failed
 4 - network provided

Field-06: # - address
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.21 Categoría de la parte llamante (CPC, *calling party's category*)

```
Format: CPC,cpc=dd

Fields:

Field-01: cpc - Call(ing) Party Category
     (Calling or called derived from parameter context)
 dd   description
 --   -----------
 00 - unknown
 01 - operator, Language French
 02 - operator, Language English
 03 - operator, Language German
 04 - operator, Language Russian
 05 - operator, Language Spanish
 06 - admin1
 07 - admin2
 08 - admin3
 09 - ordinary calling subscriber
 11 - calling subscriber with priority
 12 - data call (voiceband data)
 13 - test call
 15 - public  payphone
 19 - IEPS call marking for preferential call set-up
```

7.3.22 Información de selección de portador (CSI, *carrier selection information*)

```
Format: CSI,csi=dd

Fields:

Field-01: csi - carrier selection information (omit parm if unknown)
dd   description
--   -----------
00 - no indication
01 - selected carrier identification pre-subscribed and no
     input by calling party
02 - selected carrier identification pre-subscribed and
     input by calling party
```

```
03 - selected carrier identification pre-subscribed and
     input by calling party undetermined
04 - selected carrier identification not pre-subscribed and
     input by calling party
05 - primary preferred carrier of the charged party
06 - alternate preferred carrier of the charged party
07 - selected carrier identification presubscription unknown (verbal)
     instructions from the calling party
08 - selected carrier identification presubscription unknown (verbal)
     instructions from the charged party
09 - emergency call handling
10 - carier selected by input from the calling party
11 - carrier selected by a network operator
```

7.3.23 Indicadores de causa (CAI, *cause indicators*)

```
Format: CAI,cs=a,loc=aaa,rec=a,cau=ddd,
            di={condition_coding,tni_coding,ccbs_ind,
               call_rejected_ind,cdpn_coding,fac_id_reject,
               attribute_ids,chan_type,incompat_param,
               timer_num,msg_type,param_name}

 [NOTE – The eleven subfields according to ITU-T Rec. Q.850 may occur. Their
 values are defined in detail in the grammar in Annex A. When no
 diagnostics are included, the braces and all between the braces
 are omitted, and only the comma before the di= remains.]

Fields:

Field-01: cs - code standard
 a  definition
 -  ----------
 u - unknown
 c - ITU-T standardized coding
 i - ISO/IEC
 n - national standard
 p - standard defined for the network either public or private

Field-02: loc - location
 aaa  definition
 ---  ----------
 unk - unknown
 usr - user
 lpn - local private network (private network serving local user)
 lln - local public network (public network serving local user)
 tra - transit network
 rln - remote local network (public network serving remote user)
 rpn - remote private network (private network serving remote user)
 int - international network
 bip - network beyond interworking point

Field-03: rec - recommendation (specific standard)
 a   definition
 -   ----------
 u - unknown
 q - ITU-T Rec. Q.763
 p - Public land and mobile networks, Q.1000-series Recommendations
 1 - ITU-T Rec. X.21
 5 - ITU-T Rec. X.25
```

```
Field-04: cau - cause indicators
 ddd   definition
 ---   ----------
 000 - unknown
 001 - Unallocated number
 002 - no route to specified transit network
 003 - no route to destination
 004 - send special information tone
 005 - misdialed trunk prefix
 006 - channel unacceptable
 007 - call awarded and being delivered in an established channel
 008 - preemption
 009 - preemption - circuit reserved for reuse
 014 - Query On Release (QOR): ported number
 016 - normal call clearing
 017 - user busy
 018 - no user responding
 019 - no answer from user
 020 - subscriber absent
 021 - call rejected
 022 - number changed
 023 - redirect to new destination (e.g., release to pivot)
 024 - call rejected due to feature at the destination
 026 - non-selected user clearing
 027 - destination out of order
 028 - invalid number format
 029 - facility rejected
 030 - response to status enquiry
 031 - normal unspecified
 034 - no circuit/channel available
 038 - network out of order
 039 - permanent frame mode connection out of service
 040 - permanent frame mode connection operational
 041 - temporary failure
 042 - switching equipment congestion
 043 - access information discarded
 044 - requested circuit/channel not available
 046 - precedence call blocked
 047 - resource unavailable unspecified
 049 - quality of service unavailable
 050 - requested facility not subscribed
 053 - outgoing calls barred within CUG
 055 - incoming calls barred within CUG
 057 - bearer capability not authorized
 058 - bearer capability not presently available
 062 - Inconsistency in designated outgoing access information and
       subscriber class
 063 - service or option not available unspecified
 065 - bearer capability not implemented
 066 - channel type not implemented
 069 - requested facility not implemented
 070 - only restricted digital information bearer capability is
       available
 079 - service or option not implemented unspecified
 081 - invalid call reference value
 082 - identified channel does not exist
 083 - a suspended call exists but this call identity does not
 084 - call identity in use
 085 - no call suspended
 086 - call having the requested call identity has been cleared
 087 - user not member of CUG
 088 - incompatible destination
 090 - non-existent CUG
 091 - invalid transit network selection
```

```
 095 - invalid message unspecified
 096 - mandatory information element missing
 097 - message type non-existent or not implemented
 098 - message not compatible with call state or
       message type non-existent or not implemented
 099 - information element/parameter not implemented
 100 - invalid parameter contents
 101 - message not compatible with call state
 102 - recovery on timer expiry
 103 - parameter non-existent or not implemented passed on
 110 - message with unrecognized parameter
 111 - protocol error unspecified
 127 - interworking unspecified

Field-05: di - diagnostics

 di={condition_coding,tni_coding,ccbs_ind,call_rejected_ind,
     cdpn_coding,fac_id_reject,attribute_ids,chan_type,
     incompat_param,timer_num,msg_type,param_name}

[NOTES – Subfields tni_codings and attribute_ids may occur multiple
times. When that occurs, the subfield encoding takes the form of:
... ,(val1,val2,val3), ... in the comma-delimited list within the
di= braces.

The value of the subfield may also be a tuple of values. In
that case, that one subfield takes the form of:
... ,({part1-1,part1-2,part1-3},{part2-1,part2-2,part2-3}), ...
Note that any collective set of related values, be it di={ } or the
set composing the subfield value {part1,part2,part3} are enclosed
with braces. In contrast, parentheses () are used to enclose multiple
instances of the same type of value. Combined example:
,di={val1,({x1,x2,x3},{y1,y2,y3}),,,,,,,,,,} with 2 instances of
value 2 named x and y, each composed of 3 sub-subfields.

The twelve subfields according to Q.850 may occur independently.
Their values are defined in detail in the grammar in Annex A.

When no diagnostics are included, the compact form uses only one
comma: ",di=" becomes "," -- NOT ",di={,,,,,,,,,,}" and
",{,,,,,,,,,,}".
Note that if any subfield is present, the braces and all
placeholder commas are required: ,{,,,,,,,val8,,,,}   ]
```

7.3.24 Indicador de compleción de llamadas en caso de ausencia de respuesta posible (CCN, *CCNR possible indicator*)

```
Format: CCN,cpi=a

Fields:

Field-01: cpi - ccnr possible indicator
 a  definition
 -  ----------
 u - unknown
 n - CCNR not possible
 y - CCNR possible
```

7.3.25 Identificación de la parte tasada (CPI, *charged party identification*)

```
Format: CPI,dat=1*(2Hex)

Fields:

Field-01: dat - charge information used in ITU-T Rec. Q.1218 or Q.1228
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1).
          (If unknown, parameter is omitted.)
```

7.3.26 Código de identificación de circuito (instancia de llamada) (CIC, *circuit identification (call instance) code*)

```
Format: CIC,cic=ddddddddddd

Field-01: cic - circuit identification code
 ddddddddddd   description
 ----------   -----------
 0000000000 - unknown
-4294967295   ten-digit positive integer
```

7.3.27 Código de enclavamiento de grupo cerrado de usuarios (GIC, *closed user group interlock code*)

```
Format: GIC,ni=hhhh,bc=hhhh

Field-01 : ni - network identity
 hhhh   description
 ----   -----------
 0000 - unknown
-FFFF   positive integer of 0-9, A-F

Field-02 : bc - binary code
 hhhh   description
 ----   -----------
 0000 - unknown
-FFFF   four digits of 0-9, A-F.
```

7.3.28 Procesamiento de codificación-decodificación (CDP, *coding decoding processing*)

```
Format: CDP,toc=aaaa,comp=d

Fields:

Field-01: toc - type of compression
 aaaa   description
 ----   --------------
 ulaw - G.711 m-law
 alaw - G.711 A-law
 g726 - G.726 32 kbit/s ADPCM
 g728 - G.728 LD-CELP
 g729 - G.729 CS-ACELP

Field-02: comp - compression status indicator
 d   definition
 -   ----------
 0 - Decompressed
 1 - Compressed
```

7.3.29 Indicador de petición de llamada de cobro revertido (COL, *collect call request indicator*)

```
Format: COL,cci=a

Fields:

Field-01: cci - collect Call Indicator
 a   description
 -   -----------
 0 - no indication
 y - collect call request
```

7.3.30 Indicadores de tratamiento de conferencia (CNF, *conference treatment indicators*)

```
Format: CNF,cai=a

Fields:

Field-01: cai - conference acceptance indicator
 a   definition
 -   ----------
 0 - no indication
 y - accept conference request
 n - reject conference request
```

7.3.31 Número conectado (CNN, *connected number*)

```
Format: CNN,noa=dd,npi=a,pi=a,si=a,#=1*h

Fields:

Field-01: noa - nature of address
 dd  description
 --  -----------
   See definition of "noa=" in clause 7.3.13,
   Call Transfer Number (CTN).

Field-02: npi - numbering plan indicator
 a   description
 -   -----------
 u - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)
 2 - Data numbering plan (ITU-T Rec. X.121)
 3 - Telex numbering plan (ITU-T Rec. F.69)
 4 - Private numbering plan
 5 - national

Field-03: pi - presentation indicator
 a   description
 -   -----------
 u - unknown
 y - presentation allowed
 n - presentation restricted
 0 - address not available

Field-04: si - screening indicator
 a   description
 -   -----------
 u - unknown
 1 - user provided not screened
 2 - user provided screening passed
 3 - user provided screening failed
 4 - network provided
```

```
Field-05: # - address
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.32 Petición de conexión (CNR, *connection request*)

```
Format: CNR,loc=hhhhhh,pc=aaaaaaaaaaa,cls=ddd,cre=ddd

Fields:

Field-01: loc - local reference
 hhhhhh   description
 ------   -----------
 000000 - unknown
-FFFFFF   0-9, A-F

Field-02: pc - Point Code
 aaaaaaaaaaa  description
 -----------  -----------
 nnn.ccc.mmm - nine characters separated by two periods, where
               nnn is for network/zone (most significant 3 or 8 bits),
               ccc is for cluster/area (middle 8 bits),
               mmm is for member (least significant 3 or 8 bits).
               The nnn, ccc, and mmm are 3-digit numbers from 000 to 255
               representing the decimal equivalent of the subfield viewed
               as a binary number. [NOTE – ITU format is 3.8.3 bit.]

Field-03: cls - protocol class
 ddd   description
 ---   -----------
 000 - classes 0-255
-255

Field-04: cre - credit
 ddd   description
 ---   -----------
 000 - credit 0-255
-255
```

7.3.33 Indicadores de continuidad (CTI, *continuity indicators*)

```
Format: CTI,cti=a

Fields:
Field-01: cti - continuity indicator
 a   description
 -   -----------
 u - unknown
 f - continuity check failed
 s - continuity check successful
```

7.3.34 Identidad de correlación (COR, *correlation identity*)

```
Format: COR,dat=1*(2Hex)

Fields:
Field-01: dat - representation of the parameter contents
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1).
          (If unknown, parameter is omitted.)
```

7.3.35 Información de presentación visual (DIS, *display information*)

```
Format: DIS,info=1*(2Hex)

Fields:

Field-01: info - display info
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1).
          (If unknown, parameter is omitted.)
```

7.3.36 Información de control del eco (ECI, *echo control information*)

```
Format: ECI,oei=d,iei=d,oer=a,ier=a

Fields:

Field-01: oei - outgoing echo device control information indicator
 d   description
 -   -----------
 0 - no information
 1 - outgoing echo control device included
 2 - outgoing echo control device not included but available
 3 - outgoing echo control device not included and not available

Field-02: iei - incoming echo device control information indicator
 d   description
 -   -----------
 0 - no information
 1 - incoming echo control device included
 2 - incoming echo control device not included but available
 3 - incoming echo control device not included and not available

Field-03: oer - outgoing echo device control request indicator
 a   description
 -   -----------
 0 - no information
 a - outgoing echo control device activation request
 d - outgoing echo control device deactivation request

Field-04: ier - incoming echo device control request indicator
 a   description
 -   -----------
 0 - no information
 a - incoming echo control device activation request
 d - incoming echo control device deactivation request
```

7.3.37 Indicadores de información de eventos (EVI, *event information indicators*)

```
Format: EVI,evi=a,evr=a

Fields:

Field-01: evi - event information indicator
 a   description
 -   -----------
 u - unknown
 a - Alerting
 p - Progress
 i - in-band information or pattern is now available
 1 - call forwarded on busy
 2 - call forwarded on no reply
 3 - call forwarded unconditional

Field-02: evr - event presentation restriction indicator
 a   description
 -   -----------
 0 - no indication
 y - presentation restricted
 n - not restricted
```

7.3.38 Indicador de facilidad (FAI, *facility indicators*)

```
Format: FAI,fai=a

Fields:

Field-01: fai - facility indicator
 a   definition
 -   ----------
 s - user-to-user service
```

7.3.39 Indicadores de llamada hacia adelante (FCI, *forward call indicators*)

```
Format:  FCI,int=a,e2ei=a,e2em=a,inter=a,iupi=a,pref=a,acc=a,
       sccpm=a <NOTE – continued on same line.>

Fields:

Field-01: int - international call indicator
 a   definition
 -   ----------
 u - unknown
 y - yes - call to be treated as an international call
 n - no - call to be treated as a national call

Field-02: e2ei - end-to-end information indicator
 a   definition
 -   ---------
 u - unknown
 y - end-to-end information available (ISUP)/reserved (BICC)
 n – no end-to-end information available
```

```
Field-03: e2em - end-to-end method indicator
 a   definition
 -   ----------
 u - unknown
 n - no end-to-end method available (only link-by-link method available)
 1 - pass-along method available (national use)(ISUP)/reserved (BICC)
 2 - SCCP method available (ISUP)/reserved (BICC)
 3 - pass-along and SCCP methods available(national use)(ISUP)/
     reserved (BICC)

Field-04: inter - interworking indicator
 a   definition
 -   ----------
 u - unknown
 y - interworking encountered
 n - no interworking encountered (Signalling System No. 7/BICC all the way)

Field-05: iupi - ISDN user part/BICC indicator
 a   definition
 -   ----------
 u - unknown
 y - ISDN user part/BICC used all the way
 n - ISDN user part/BICC not used all the way

Field-06: pref - ISDN user part/BICC preference indicator
 a   definition
 -   ----------
 u - unknown
 n - ISDN user part/BICC not required all the way
 1 - ISDN user part/BICC preferred all the way
 2 - ISDN user part/BICC required all the way

Field-07: acc - ISDN access indicator
 a   definition
 -   ----------
 u - unknown
 y - Originating access ISDN
 n - Originating Access not ISDN

Field-08: sccpm - SCCP method indicator
 a   definition
 -   ----------
 0 - no information
 1 - connectionless method available (national use)(ISUP)/reserved (BICC)
 2 - connection oriented method available (ISUP)/reserved (BICC)
 3 - connectionless and connection oriented methods available (national use)
     (ISUP)/reserved (BICC)

 NOTE 1 – For interworking the collect call indicator has
 been superseded by use of the parameter COL.

 NOTE 2 – Ported out of rate center and local service provider
 portability now moved to parameter NPF.
```

7.3.40 Servicio de red virtual global hacia adelante (FVN, *forward global virtual network services*)

```
Format: FVN,type=aaa,[Field Container]

This parameter can appear multiple times in one message indicating
different types of information.
```

```
Fields:

Field-01: type
 aaa   description
 ---   -----------
 osp - Originating Participating Service provider    Field container 1
 cug - GVNS User Group CUG                           Field container 2
 trn - Terminating Network Routing Number            Field container 3

Field container 1

 Format: osp=1*d
 Field-02: osp - originating participating service provider
   1*d   description
   ---   -----------
   1*d - 1 or more digits (0-9) representing the OSPP

Field container 2

 Format: cug=1*d
 Field-02: cug - GVNS User Group CUG
   1*d   description
   ---   -----------
   1*d - 1 or more digits (0-9) representing GVNS User Group CUG

Field container 3

 Format: noa=dd,npi=a,trn=1*d

 Field-02: noa - nature of address
   dd   description
   --   -----------
        See definition of "noa=" in clause 7.3.13,
        Call Transfer Number (CTN).

 Field-03: npi - numbering plan indicator
   a   description
   -   -----------
   u - unknown
   1 - ISDN numbering plan (ITU-T Rec. E.164)
   2 - Data numbering plan (ITU-T Rec. X.121)
   3 - Telex numbering plan (ITU-T Rec. F.69)
   4 - Private numbering plan
   5 - national

 Field-04: trn - terminating network routing number
   1*d   description
   ---   -----------
   1*d - 1 or more digits (0-9) representing GVNS User Group CUG
```

7.3.41 Dirección genérica/número genérico (GEA, *generic number/address*)

```
Format: GEA,type=aaaa,noa=dd,npi=a,cni=a,pi=a,si=a,#=1*h

Based on the value of type the following parameters will follow.

Fields:

Field-01: type - type of address (number qualifier indicator)
 aaaa   definition
 ----   ----------
 dest - destination number/additional called number
 diad - dialed number
 rsrv - reserved (used in 1993 Q.761)
```

```
 sufs - supplemental user provided calling address - failed network
        screening
 suns - supplemental user provided calling address - not screened
 trs1 - redirecting terminating number
 trs2 - additional connected number
 trs3 - additional calling party number
 trs4 - additional original called number
 trs5 - additional redirecting number
 trs6 - additional redirection number

Field-02: noa - nature of address
 dd  description
 --  -----------
     See definition of "noa=" in clause 7.3.13,
     Call Transfer Number (CTN).

Field-03: npi - numbering plan indicator
 a   description
 -   -----------
 u - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)
 2 - Data numbering plan (ITU-T Rec. X.121)
 3 - Telex numbering plan (ITU-T Rec. F.69)
 4 - Private numbering plan
 5 - national

Field-04: cni - complete number indicator
 a   description
 -   -----------
 u - unknown
 y - number complete
 n - number incomplete

Field-05: pi - address presentation indicator
 a   description
 -   -----------
 u - unknown
 y - presentation allowed
 n - presentation restricted
 0 - address not available

Field-06: si - screening indicator
 a   description
 -   -----------
 u - unknown or not applicable
 1 - user provided not screened (verified)
 2 - user provided screening passed
 3 - user provided screening failed
 4 - network provided

Field-07: # - address
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.42 Cifras genéricas (GED, *generic digits*)

```
Format: GED,tod=d,es=d,#=1*h

Fields:

Field-01: tod - type of digits
```

```
 d   definition
 -   ----------
 0 - account code
 1 - authorization code
 2 - private network traveling class mark
 5 - business communication group identity

Field-02: es - Encoding scheme
 d   description
 -   -----------
 0 - BCD even
 1 - BCD odd
 2 - IA5
 3 - binary

 NOTE – Because ISUP IA5 and binary digits may contain
 non-zero most significant bit, each ISUP character must be
 represented as 2 hexadecimal characters (0-9, A-F) in NSS.

Field-03: # - digits
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.43 Indicador de notificación genérica (GNO, *generic notification indicator*)

```
Format: GNO,ni=dd

Fields:

Field-01: ni - notification indicator
 dd   description
 --   -----------
 00 - user suspended
 01 - user resumed
 02 - bearer service change
 03 - discriminator for extension to ASN.1 encoded component
 04 - call completion delay
 05 - conference call established
 06 - conference call disconnected
 07 - other party added
 08 - isolated
 09 - reattached
 10 - other party isolated
 11 - other party reattached
 12 - other party split
 13 - other party disconnected
 14 - conference floating
 15 - call is a waiting call
 16 - diversion activated
 17 - call transfer, alerting
 18 - call transfer, active
 19 - remote hold
 20 - remote retrieval
 21 - call is diverting
 99 - unknown
```

7.3.44 Identificación global de llamada (GCI, *global call identification*)

```
The Global Call ID field is a system-wide unique identifier for a
Call. The Global Call ID may be passed in all NSS messages associated
with a given call to aid in correlation.
```

```
Format: GCI,gci=1*a

Fields:

Field-01: gci - global Call ID

1*a   definition
---   ----------
IA5 - IA5 printable characters. See Annex A for specific encoding
      details. See Appendix I for suggested implementation details.
```

7.3.45 Difícil de alcanzar (HTR, *hard to reach*)

```
HTR,noa=dd,npi=d,#=1*h

Fields:

Field-01: noa - nature of address
 dd  description
 --  -----------
     See definition of "noa=" in clause 7.3.13,
     Call Transfer Number (CTN).

Field-02: npi - numbering plan indicator
 d   description
 -   -----------
 0 - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)
 2 - Data numbering plan (ITU-T Rec. X.121)
 3 - Telex numbering plan (ITU-T Rec. F.69)
 4 - Private numbering plan
 5 - national

Field-03: # - digits
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.46 Contador de saltos (HOC, *hop counter*)

```
Format: HOC,hc=dd

Fields:

Field-01: hc - Hop Counter
 dd   definition
 --   ----------
 00 - zero
-31   positive integer 0-31
```

7.3.47 Indicadores de información (INI, *information indicators*)

```
Format: INI,inf=a,resp=a,sol=a

Fields:

Field-01: inf - information requested
 a   definition
 -   ----------
 1 - calling party number
 2 - hold provided indicator
 3 - calling party category
```

```
 4 - charge information
 5 - malicious call ID

Field-02: resp - information response
 a   definition
 -   ----------
 i - information included
 x - information not available
 n - information not included

Field-03: sol - solicited
 a   definition
 -   ----------
 u - unknown
 y - solicited information
 n - un-solicited information

[NOTE – This parameter can appear multiple times in an NSS message.]
```

7.3.48 Indicadores de petición de información (IRI, *information request indicators*)

```
Format: IRI,inf=a

Fields:

Field-01: inf - information requested
 a   definition
 -   ----------
 1 - calling party number
 2 - holding indicator
 3 - calling party category
 4 - charge information
 5 - malicious call ID

[NOTE – This parameter can appear multiple times in an NSS message.]
```

7.3.49 Compatibilidad de servicio de red inteligente (INC, *IN service compatibility*)

```
Format: INC,dat=1*(2Hex)

Fields:

Field-01: dat - IN Service Compatibility Indication parameter
                defined by ITU-T Rec. Q.1228
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1).
          (If unknown, parameter is omitted.)
```

7.3.50 Identificador de grupo de tráfico entre nodos (ITG, *inter-nodal traffic group identifier*)

```
Format: ITG,dat=1*(2Hex)

Fields:

Field-01: dat - ASCII equivalent of binary value representing
                the traffic group for the call
 1*(2h)         description
 ------         -----------
 1*(2h) -       one or more pairs of characters (0-9, A-F) representing a
                hexadecimal encoding (see clause 5.1).
                (If unknown, parameter is omitted.)
```

7.3.51 Información de compatibilidad de campo conocido (FDC, *known field compatibility information*)

```
This field is used in order to allow network-specific values of
known fields to be transmitted even though the actual field is
populated with a best-fit mapping.

All parameters declared in this Recommendation have individual fields
numbered. For any field which requires a value not declared in this
Recommendation, the encoding application should map the value to a
best-fit declared value in the actual field and include a known
field compatibility parameter containing the actual value. This
should be passed transparently through intermediate nodes which do
not understand NSS. This parameter can appear multiple times.

Format: FDC,parm=aaa,fname=aaaaa,instr=a,dat=1*(2Hex)

Fields:

Field-01 : parm - parameter name
aaa   definition
---   ----------
aaa - 3 acsii characters as defined at the beginning of clause 7.2
      for NSS parameter names

Field-02 : fname - field name - refers to the field name declared
           against the parameter in this Recommendation
aaaaa      definition
-----      ----------
aaaaa -    five-character maximum lower-case alphabetic field name
           (See Appendix II grammar for nss_field_name.)

Field-03 : instr - instruction
a   definition
-   ----------
u - unknown
1 - release call if not understood, regardless of the ability to
    forward
2 - use the default value if not understood regardless of the
    ability to forward, no notification required, but continue call
3 - use the default value if not understood regardless of the
    ability to forward, send notification (in Confusion) but
    continue call
4 - Attempt to forward value; if unable to forward the value release
    the call
5 - Attempt to forward value; if unable to forward the value use
    default value without notification but continue the call
6 - Attempt to forward value; if unable to forward the value use
    default value and send notification but continue the call

Field-04: dat - hexadecimal representation of the field value
                contents
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1).
```

7.3.52 Número de lugar (LON, *location number*)

```
Format: LON,noa=dd,inn=a,npi=a,pi=a,si=a,#=1*h

Fields:
Field-01: noa - nature of address
 dd    description
 --    -----------
     See definition of "noa=" in clause 7.3.13,
     Call Transfer Number (CTN).

Field-02: inn - Internal network number indicator
 a   description
 -   -----------
 u - unknown
 n - routing to internal network number not allowed
 y - routing to internal network number allowed

Field-03: npi - numbering plan indicator
 a   description
 -   -----------
 u - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)
 2 - Data numbering plan (ITU-T Rec. X.121)
 3 - Telex numbering plan (ITU-T Rec. F.69)
 4 - Private numbering plan
 5 - national

Field-04: pi - presentation indicator
 a   description
 -   -----------
 u - unknown
 y - presentation allowed
 n - presentation restricted
 0 - address not available

Field-05: si - screening indicator
 a   description
 -   -----------
 u - unknown
 1 - user provided not screened
 2 - user provided screening passed
 3 - user provided screening failed
 4 - network provided

Field-06: # - address
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.53 Indicador de prevención de bucle (LPI, *loop prevention indicator*)

```
Format: LPI,req=d,lpi=a

Fields:

Field-01 : req - request indicator
 d   definition
 -   ----------
 0 - request
 1 - response
```

```
Field-02 : lpi - loop indicator
 a   definition
 -   ----------
 u - unknown (insufficient information)
 1 - no loop exists
 2 - loop detected (simultaneous transfer)
```

7.3.54 Lista de parámetros con correspondencia (MPL, *mapped parameter list*)

```
Format: MPL,plist=(aaa,aaa,…)

Fields:

Field-01: plist - parameter list
aaa   description
---   -----------
aaa - Comma-separated list of one or more parameter codes bounded
      by parentheses, e.g., MPL,plist=(GEN,GED,OCN,RNI). Commas
      are used only when two or more parameter codes are present.
      Parentheses are always present. (See ABNF in Annex A.)
```

7.3.55 Indicador de petición de identificación de llamadas malintencionadas (MRI, *MCID request indicator*)

```
Format: MRI,ri=a,hi=a

Fields:

Field-01 : ri - request indicator
 a   definition
 -   ----------
 u - unknown
 n - MCID not requested
 y - MCID requested

Field-02 : hi - holding indicator
 a   definition
 -   ----------
 u - unknown
 n - Holding not requested
 y - Holding requested
```

7.3.56 Indicador de respuesta de indicación de llamadas malintencionadas (MCR, *MCID response indicator*)

```
Format: MCR,rp=a,hp=a

Fields:

Field-01 : rp - response indicator
 a   definition
 -   ----------
 u - unknown
 n - MCID not included
 y - MCID included

Field-02 : hp - hold provided indicator
 a   definition
 -   ----------
 u - unknown
 n - Holding not provided
 y - Holding provided
```

7.3.57 Información de compatibilidad de mensaje (MCI, *message compatibility information*)

```
This parameter is usually expected to be associated with a UNR
message. This parameter gives explicit information to the next node
on how to proceed when an unrecognized message is forwarded.

Format: MCI,instr=a,tri=d,dat=1*(2Hex)

Fields:

Field-01: instr - instruction
 a   definition
 -   ----------
 u - unknown
 1 - release Call regardless of the ability to forward the message
 2 - discard message regardless of the ability to forward the
     message, no notification required, but continue call
 3 - discard message regardless of the ability to forward the
     message, send notification (in Confusion) but continue call
 4 - Attempt to forward message; if unable to forward the message,
     release the call
 5 - Attempt to forward message; if unable to forward the message,
     discard message without notification but continue the call
 6 - Attempt to forward message; if unable to forward the message,
     discard the message send notification but continue the call

Field-02 : tri - transit at intermediate exchange indicator
 d   definition
 -   ----------
 0 - no transit (end node interpretation)
 1 - yes transit

Field-03: dat - encapsulation of unrecognized message
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1).
```

7.3.58 Precedencia con apropiación multinivel (MLP, *MLPP precedence*)

```
Format: MLP,lfb=a,pl=a,ni=hhhh,sd=hhhhhh

Fields:

Field-01: lfb - Look-ahead For Busy
 a   definition
 -   ----------
 u - unknown
 y - lfb allowed
 n - lfb not allowed
 r - path reserved (national use)

Field-02: pl - Precedence Level
 a   definition
 -   ----------
 u - unknown
 0 - flash override
 1 - flash
 2 - immediate
 3 - priority
 4 - routine
```

```
Field-03: ni - Network ID
 hhhh   definition
 ----   ----------
 0000 - unknown
-9999 - 4 hex digits 0-9

Field-04: sd - MLPP service domain
 hhhhhh   definition
 ------   ----------
 000000 - unknown
-FFFFFF - 6 hex digits 0-9 or A-F
```

7.3.59 Indicadores de naturaleza de la conexión (NOC, *nature of connection indicator*)

```
Format: NOC,sat=d,eco=a,cot=d

Fields:

Field-01: sat - satellite indicator
 d   definition
 -   ----------
 u - unknown
 0 - no satellite in connection
 1 - one satellite in connection
 2 - two satellites in connection

Field-02: eco - echo control device indicator
 a   definition
 -   ----------
 u - unknown
 n - echo device not included
 y - echo device included

Field-03: cot - continuity indicator
 d   definition
 -   ----------
 0 - not applicable
 1 - continuity check not required/no COT to be expected (BICC)
 2 - continuity check required on this circuit (NOTE – COT may
     not be applicable across a packet-based network. If not
     applicable, then this value must not be used.)
 3 - continuity check performed on a previous circuit/
     COT to be expected (BICC)
```

7.3.60 Controles de gestión de red (NMC, *network management controls*)

```
Format: NMC,tari=a

Fields:

Field-01 : tari - temporary alternative routing indicator
 a   definition
 -   ----------
 0 - no indication
 y - TAR controlled call
```

7.3.61 Número de encaminamiento de la red (NRN, *network routing number*)

```
Format: NRN,npi=a,noa=d,#=1*h

Fields:

Field-01: npi - numbering plan indicator
 a   description
 -   -----------
 u - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)

Field-02: noa - nature of address
 d   description
 -   -----------
 0 - unknown
 1 - network routing number in national (significant) number format
 2 - network routing number in network specific number format

Field-03: # - address
 1*h  description
 ---  -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.62 Facilidad específica de la red (NSF, *network specific facilities*)

```
Format: NSF,ton=a,nip=a,nid=1*(2Hex),nsf=1*(2Hex)

Fields:

Field-01: ton - type of network identification
 a   description
 -   -----------
 u - unknown
 c - ITU/CCITT (international network)
 n - national

Field-02: nip - network identification plan
 a  description
 -  -----------
 a - one IA5 character of 0-9, A-F, meaning determined by ton

Field-03: nid - network identification
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1).

Field-04: nsf - network-specific facility indicator
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1).
```

7.3.63 Información hacia adelante sobre portabilidad de número (NPF, *number portability forward information*)

```
Format: NPF,nps=a

Fields:

Field-01: nps - number portability status indicator
 a   definition
 -   ----------
 0 - no indication
 1 - number portability query not done for called number
 2 - number portability query done, non-ported called subscriber
 3 - number portability query done, ported called subscriber
```

7.3.64 Indicadores de llamada hacia atrás opcionales (OBI, *optional backward call indicators*)

```
Format: OBI,inb=a,cf=a,mlpp=a

Fields:

Field-01: inb - inband information Indicator
 a   definition
 -   ----------
 0 - no indication
 y - in-band information or an appropriate pattern is now available
 n - in-band information or an appropriate pattern is not available

Field-02: cf - call forwarding (diversion) may occur indicator
 a   definition
 -   ----------
 0 - no indication
 y - call forwarding (diversion) may occur
 n - call forwarding (diversion) may not occur

Field-03: mlpp - mlpp user Indicator
 a   definition
 -   ----------
 0 - no indication
 y - MLPP user
 n - not an MLPP user

NOTE – Segmentation is indicated by presence of SEG parameter.
For user-network interaction - see UID Indicators parameter - UID
```

7.3.65 Indicadores de llamada hacia adelante opcionales (OFI, *optional forward call indicators*)

```
Format: OFI,cug=a,cnn=a

Fields:

Field-01: cug - closed user group call indicator
 a   definition
 -   ----------
 u - unknown
 n - non-cug call
 1 - closed user group call, outgoing access allowed
 2 - closed user group call, outgoing access not allowed

Field-02: cnn - connected line identity request Indicator
 a   definition
 -   ----------
```

```
 u - unknown
 y - connected line identity requested
 n - connected line identity not requested

NOTE – Segmentation is indicated by presence of SEG parameter.
```

7.3.66 Número de red inteligente llamada inicialmente (OCI, *original called IN number*)

```
Format: OCI,noa=dd,npi=a,pi=a,si=a,#=1*h

Fields:

Field-01: noa - nature of address
 dd  description
 --  -----------
     See definition of "noa=" in clause 7.3.13,
     Call Transfer Number (CTN).

Field-02: npi - numbering plan indicator
 a   description
 -   -----------
 u - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)
 2 - Data numbering plan (ITU-T Rec. X.121)
 3 - Telex numbering plan (ITU-T Rec. F.69)
 4 - Private numbering plan
 5 - national

Field-03: pi - presentation indicator
 a   description
 -   -----------
 u - unknown
 y - presentation allowed
 n - presentation restricted
 0 - address not available

Field-04: si - screening indicator
 a   description
 -   -----------
 u - unknown
 1 - user provided not screened
 2 - user provided screening passed
 3 - user provided screening failed
 4 - network provided

Field-05: # - address
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.67 Número llamado inicialmente (OCN, *original called number*)

```
Format: OCN,noa=dd,npi=a,pi=a,#=1*h

[Fields are the same as in OCI directly above, omitting si field.]
```

7.3.68 Código de punto de centro de conmutación internacional de origen (ISC, *originating ISC point code*)

```
Format: ISC,pc=aaaaaaaaaaa

Fields:

Field-01: pc - Point Code
 aaaaaaaaaaa   description
 -----------   -----------
 nnn.ccc.mmm - nine characters separated by two periods, where
               nnn is for network/zone (most significant 3 or 8 bits),
               ccc is for cluster/area (middle 8 bits),
               mmm is for member (least significant 3 or 8 bits).
               The nnn, ccc, and mmm are 3-digit numbers from 000 to 255
               representing the decimal equivalent of the subfield viewed
               as a binary number. [NOTE – ITU format is 3.8.3 bit.]
```

7.3.69 Información de compatibilidad de parámetros (PCI, *parameter compatibility information*)

```
This parameter is used to transmit any unknown parameter across the
network. This parameter includes instructions for the end node on
how to proceed in the event of not being able to interpret the
parameter.

Format: PCI,instr=a,tri=d,dat=1*(2Hex)

Fields:

Field-01: instr - instruction
 a  definition
 -  ----------
 u - unknown
 0 - Release call regardless of the ability to forward the
     parameter
 1 - Discard message regardless of the ability to forward the
     parameter, no notification required, but continue call
 2 - Discard message regardless of the ability to forward the
     parameter, send notification (in Confusion), but continue call
 3 - Discard parameter regardless of the ability to forward the
     parameter, no notification required, but continue call
 4 - Discard parameter regardless of the ability to forward the
     parameter, send notification (in Confusion) but continue call
 5 - Attempt to forward the parameter; if unable to forward the
     parameter release the call
 6 - Attempt to forward the parameter; if unable to forward the
     parameter discard message without notification but continue
     the call
 7 - Attempt to forward the parameter; if unable to forward the
     parameter, discard message, send notification but continue the
     call
 8 - Attempt to forward the parameter; if unable to forward the
     parameter, discard the parameter; without notification but
     continue the call
 9 - Attempt to forward the parameter; if unable to forward the
     parameter discard the parameter; send notification but
     continue the call
```

```
Field-02 : tri - transit at intermediate exchange indicator
 d   definition
 -   ----------
 0 - no transit (end node interpretation)
 1 - yes transit (transit node interpretation)

Field-03: dat - representation of the parameter contents
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1) of the parameter.
```

7.3.70 Capacidad de pivote (PCA, *pivot capability*)

```
Format: PCA,ppi=a,iwri=a

Fields:

Field-01: ppi - pivot possible indicator
 a   definition
 -   ----------
 0 - no indication
 1 - pivot routing possible before ACM
 2 - pivot routing possible before ANM
 3 - pivot routing possible at any time during call

Field-02: iwri - interworking to redirection indicator
 a   definition
 -   ----------
 u - unknown
 y - allowed
 n - not allowed
```

7.3.71 Contador pivote (PCT, *pivot counter*)

```
Format: PCT,pct=dd

Fields:

Field-01: pct - pivot counter
 dd   definition
 --   ----------
 00 - unknown or zero
-31   positive integer 0-31
```

7.3.72 Información de encaminamiento pivote hacia atrás (PBI, *pivot routing backward information*)

```
Format: PBI,tag=a,[Field Container]

Fields:

Field-01: tag - information type tag
 a   description
 -   -----------
 u - unknown
 1 - return to invoking exchange information       field container 1
 2 - return to invoking exchange call identifier   field container 2
 3 - invoking pivot reason                         field container 3
```

```
Field containers:

 Field container 1

 Format: dur=d

 Field-01: dur - duration
   ddddd   description
   -----   -----------
   00000 - number of seconds
  -65535

 Field container 2

  Format: cid=hhhhhh,pc=aaaaaaaaaaa

  Fields:

  Field-01: cid - call identity
  hhhhhh  description
  ------  -----------
  00-ff - six characters representing hexadecimal values

  Field-02: pc - point code
  aaaaaaaaaaa   description
  -----------   -----------
  nnn.ccc.mmm - nine characters separated by two periods, where
                nnn is for network/zone (most significant 3 or 8 bits),
                ccc is for cluster/area (middle 8 bits),
                mmm is for member (least significant 3 or 8 bits).
                The nnn, ccc, and mmm are 3-digit numbers from 000 to 255
                representing the decimal equivalent of the subfield viewed
                as a binary number. [NOTE – ITU format is 3.8.3 bit.]

 Field container 3

 Format: rea=ddd

 Field-01: rea - pivot reason
   ddd   description
   ---   -----------
   000 – unknown/not available
   001 - service provider portability
   002 - location portability
   003 - service portability
```

7.3.73 Información de encaminamiento pivote hacia adelante (PFI, *pivot routing forward information*)

```
Format: PFI,tag=a,[Field Container]

Fields:

Field-01: tag - information type tag
 a   description
 -   -----------
 u - unknown
 1 - return to invoking exchange possible
 2 - return to invoking exchange call identifier   field container 1
 3 - performing pivot indicator                    field container 2
 4 - invoking pivot reason                         field container 3
```

```
Field containers:

Field container 1

 Format: cid=hhhhhh,pc=aaaaaaaaaaa

  Fields:

  Field-01: cid - Call identity
  hhhhhh  description
  ------  -----------
  00-ff - six characters representing hexadecimal values

  Field-02: pc - Point Code
  aaaaaaaaaaa   description
  -----------   -----------
  nnn.ccc.mmm - nine characters separated by two periods, where
                nnn is for network/zone (most significant 3 or 8 bits),
                ccc is for cluster/area (middle 8 bits),
                mmm is for member (least significant 3 or 8 bits).
                The nnn, ccc, and mmm are 3-digit numbers from 000 to 255
                representing the decimal equivalent of the subfield viewed
                as a binary number. [NOTE – ITU format is 3.8.3 bit.]

Field container 2

  Format: ppr=ddd,ppi=a

  Field-01: ppr - performing pivot reason
   ddd   description
   ---   -----------
   000 - unknown/not available
   001 - service provider portability
   002 - location portability
   003 - service portability

  Field-02: ppi - pivot possible indicator
   a   definition
   -   ----------
   0 - no indication
   1 - pivot routing possible before ACM
   2 - pivot routing possible before ANM
   3 - pivot possible at any time during call

Field container 3

   Format: rea=ddd

   Field-01: rea - pivot reason
    ddd   description
    ---   -----------
    000 - unknown/not available
    001 - service provider portability
    002 - location portability
    003 - service portability
```

7.3.74 Indicador de encaminamiento pivote (PVR, *pivot routing indicator*)

```
Format: PVR,pvr=a

Fields:

Field-01: pvr - pivot routing indicator
 a   definition
 -   ----------
 0 - no indication
 1 - pivot request
 2 - cancel pivot request
 3 - pivot request failure
 4 - interworking to redirection prohibited
```

7.3.75 Situación de pivote (PVS, *pivot status*)

```
Format: PVS,psi=a

Fields:

Field-01: psi - pivot status indicator
 a   definition
 -   ----------
 0 - no indication
 1 - acknowledgement of pivot routing
 2 - pivot routing will not be invoked
```

7.3.76 Contador de retardo de propagación (PDC, *propagation delay counter*)

```
Format: PDC,pd=ddddd

Fields:

Field1 : pd - propagation delay

 ddddd   definition
 -----   ----------
 00000 - delay in milliseconds
-65535
```

7.3.77 Nombre de protocolo (PRN, *protocol name*)

```
This parameter shall be populated by the node that first
constructs the NSS encoding. This parameter shall appear in the
first forward and first backward messages as a minimum.

Format: PRN,prot=aaaaa

Fields:
Field-01: prot - Protocol base derivative
 aaaaa - 5 char String indicating base variant derivative
 -----   ------------------------------------------------
 uknow - unknown
 q761* - ITU-T Recs Q.761-Q.764
 q1902 - ITU-T Rec. Q.1902.3
```

7.3.78 Capacidad de indagación sobre liberación (QOR, *query on release capability*)

```
Format: QOR,qci=a

Fields:

Field-01: qci - query on release capability indicator
 a   definition
 -   ----------
 0 - no indication
 y - QOR support
```

7.3.79 Información de redireccionamiento hacia atrás (RBI, *redirect backward information*)

```
Format: RBI,tag=a,[Field Container]

Fields:

Field-01: tag - information type tag
 a   description
 -   -----------
 u - unknown
 1 - return to invoking exchange information       field container 1
 2 - return to invoking exchange call identifier   field container 2
 3 - invoking redirect reason                      field container 3

Field containers:

 Field container 1

 Format: dur=d

 Field-01: dur - duration
   ddddd   description
   -----   -----------
   00000 - unknown
  -65535   number of seconds

 Field container 2

  Format: cid=hhhhhh,pc=aaaaaaaaaaa

  Fields:

  Field-01: cid - call identity
  hhhhhh   description
  ------   -----------
  000000 - six characters representing hexadecimal values
 -FFFFFF

  Field-02: pc - point code
  aaaaaaaaaaa   description
  -----------   -----------
  nnn.ccc.mmm - nine characters separated by two periods, where
                nnn is for network/zone (most significant 3 or 8 bits),
                ccc is for cluster/area (middle 8 bits),
                mmm is for member (least significant 3 or 8 bits).
                The nnn, ccc, and mmm are 3-digit numbers from 000 to 255
                representing the decimal equivalent of the subfield viewed
                as a binary number. [NOTE – ITU format is 3.8.3 bit.]
```

```
 Field container 3

 Format: rea=ddd

 Field-01: rea - redirect reason
   ddd   description
   ---   -----------
   000 - unknown/not available
   001 - service provider portability
   002 - location portability
   003 - service portability
```

7.3.80 Capacidad de redireccionamiento (RDC, *redirect capability*)

```
Format: RDC,rc=a

Fields:

Field-01: rc - redirect capability
 a   definition
 -   ----------
 0 - no indication
 1 - redirection possible before ACM
 2 - redirection possible before ANM
 3 - redirection possible at any time during the call
```

7.3.81 Contador de redireccionamiento (RCT, *redirect counter*)

```
Format: RCT,rc=dd

Fields:

Field-01: rc - redirect counter
 dd   definition
 --   ----------
 00 - zero redirections known to application (unknown)
-31 - 1-31 positive integer indicating number of redirections
```

7.3.82 Información de redireccionamiento hacia adelante (RFI, *redirect forward information*)

```
Format: RFI,tag=a,[Field Container]

Fields:

Field-01: tag - information type tag
 a   description
 -   -----------
 u - unknown
 1 - return to invoking exchange possible
 2 - return to invoking exchange call identifier   field container 1
 3 - perform redirect indicator                    field container 2
 4 - invoking redirect reason                      field container 3

Field containers:

 Field container 1

 Format: cid=hhhhhh,pc=aaaaaaaaaaa

  Fields:

  Field-01: cid - call identity
  hhhhhh  description
  ------  -----------
  00-ff - six characters representing hexadecimal values
```

```
 Field-02: pc - point code
 aaaaaaaaaaa  description
 -----------  -----------
 nnn.ccc.mmm - nine characters separated by two periods, where
               nnn is for network/zone (most significant 3 or 8 bits),
               ccc is for cluster/area (middle 8 bits),
               mmm is for member (least significant 3 or 8 bits).
               The nnn, ccc, and mmm are 3-digit numbers from 000 to 255
               representing the decimal equivalent of the subfield viewed
               as a binary number. [NOTE – ITU format is 3.8.3 bit.]

Field container 2

 Format: prr=ddd,rpi=d

 Field-01: prr - performing redirect reason
  ddd   description
  ---   -----------
  000 - unknown/not available
  001 - service provider portability
  002 - location portability
  003 - service portability

 Field-02: rpi - redirect possible indicator
  a   definition
  -   ----------
  0 - no indication
  1 - redirection possible before ACM
  2 - redirection possible before ANM
  3 - redirection possible at any time during call

Field container 3

  Format: rea=ddd

  Field-01: rea - redirect reason
   ddd   description
   ---   -----------
   000 - unknown/not available
   001 - service provider portability
   002 - location portability
   003 - service portability
```

7.3.83 Situación de redireccionamiento (RDS, *redirect status*)

```
Format: RDS,rpi=a

Fields:

Field-01: rpi - redirect possible indicator
 a   definition
 -   ----------
 0 - no indication
 1 - acknowledgement of redirection
 2 - redirection will not be invoked
```

7.3.84 Número redireccionante (RGN, *redirecting number*)

```
Format: RGN,noa=dd,npi=a,pi=a,#=1*h

Fields:

Field-01: noa - nature of address
 dd   description
 --   -----------
      See definition of "noa=" in clause 7.3.13,
      Call Transfer Number (CTN).

Field-02: npi - numbering plan indicator
 a   description
 -   -----------
 u - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)
 2 - Data numbering plan (ITU-T Rec. X.121)
 3 - Telex numbering plan (ITU-T Rec. F.69)
 4 - Private numbering plan
 5 - national

Field-03: pi - presentation indicator
 a   description
 -   -----------
 u - unknown
 y - presentation allowed
 n - presentation restricted
 0 - address not available

Field-04: # - address
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.85 Información de redireccionamiento (RNI, *redirection information*)

```
Format: RNI,ri=d,orr=a,rc=dd,rr=a

Fields:

Field-01: ri - Redirecting Indicator
 d   definition
 -   ----------
 0 - no redirection
 1 - call rerouted
 2 - call rerouted, all redirection info presentation restricted
 3 - call diverted
 4 - call diverted, all redirection information presentation
     restricted
 5 - call rerouted, redirection number presentation restricted
 6 - call diversion, redirection number presentation restricted

Field-02: orr - original redirection Reason
 a   definition
 -   ----------
 u - unknown/not available
 1 - user busy
 2 - no reply
 3 - unconditional
 4 - deflection during alerting
 5 - deflection immediate response
 6 - mobile subscriber not reachable
```

```
Field-03: rc - redirection counter
 dd   definition
 --   ----------
 00 - zero redirections known to application (unknown)
-31 - 1-31 positive integer indicating number of redirections

Field-04: rr - redirection reason
 a   definition
 -   ----------
 u - unknown/not available
 1 - user busy
 2 - no reply
 3 - unconditional
 4 - deflection during alerting
 5 - deflection immediate response
 6 - mobile subscriber not reachable
```

7.3.86 Número de redireccionamiento (RNN, *redirection number*)

```
Format: RNN,noa=dd,inn=a,npi=a,#=1*h

Fields: (redirected-to number)

Field-01: noa - nature of address
 dd   description
 --   -----------
      See definition of "noa=" in clause 7.3.13,
      Call Transfer Number (CTN).

Field-02: inn - Internal network number indicator
 a   description
 -   -----------
 u - unknown
 n - routing to internal network number not allowed
 y - routing to internal network number allowed

Field-03: npi - numbering plan indicator
 a   description
 -   -----------
 u - unknown
 1 - ISDN numbering plan (ITU-T Rec. E.164)
 2 - Data numbering plan (ITU-T Rec. X.121)
 3 - Telex numbering plan (ITU-T Rec. F.69)
 4 - Private numbering plan
 5 - national

Field-04: # - address
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.87 Restricción del número de redireccionamiento (RNR, *redirection number restriction*)

```
Format: RNR,rnr=a

Fields:

Field-01: rnr - redirection number restriction
 a   definition
 -   ----------
 u - unknown
 y - presentation allowed
 n - presentation restricted
```

7.3.88 Operaciones a distancia (RMO, *remote operations*)

```
Format: RMO,pp=a,dat=1*(2Hex)

Fields:

Field-01: pp - protocol profile
 a   description
 -   -----------
 u - unknown
 1 - remote operations protocol

Field-02: dat - representation of the parameter contents
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1) of the parameter.
          [Follows Q.700 description method based on X.690 encoding
          rules or uses X.680 ASN.1 encoding of this parameter.
          Components are based on ROSE ITU-T Rec. X.880.
          See 6.90/Q.1902.3, for more details.
          This element is viewed as a tunneled opaque object.]
```

7.3.89 Indicador de función de control de servicio (SCF, *SCF ID*)

```
Format: SCF,scf=1*(2Hex)

Fields:

Field-01: scf - SCF id
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1) of the parameter.
```

7.3.90 Indicador de segmentación (SEG, *segmentation indicator*)

```
This parameter indicates that more information related to this message will
follow in a subsequent SGM message. The SEG parameter is not tied to a maximum
or minimum message length. SEG in a NSS body part can only be used to indicate
segmentation of the messages used in a NSS body part.

Format: SEG,

Fields: No fields
```

7.3.91 Activación de servicio (SEA, *service activation*)

```
Format: SEA,fci=dd

Fields:

Field-01: fci - feature code indicator (omit parameter if unknown)
 dd   description
 --   -----------
 20 - call transfer
```

7.3.92 Código de punto de señalización (SPC, *signalling point code*)

```
Format: SPC,pc=aaaaaaaaaaa

Fields:

Field-01: pc - point code
 aaaaaaaaaaa   description
 -----------   -----------
 nnn.ccc.mmm - nine characters separated by two periods, where
               nnn is for network/zone (most significant 3 or 8 bits),
               ccc is for cluster/area (middle 8 bits),
               mmm is for member (least significant 3 or 8 bits).
               The nnn, ccc, and mmm are 3-digit numbers from 000 to 255
               representing the decimal equivalent of the subfield viewed
               as a binary number. [NOTE – ITU format is 3.8.3 bit.]
```

7.3.93 Información de parámetro fuente (SPI, *source parameter information*)

```
Format: SPI,mparm=aaa,sparm=hhh

Fields:

Field-01: mparm - mapped-to parameter
aaa   description
---   -----------
aaa - Three-letter NSS parameter name, e.g., DIS for Display.

Field-02: sparm - source parameter
hhh   description
---   -----------------
0-9 - Three ASCII characters representing hex digits that
A-F   identify the Source Parameter ID. For example, 07E
      means User-to-User IE was 1 of N possible source
      parameters. PRN provides context for this value.
```

7.3.94 Número subsiguiente (SUN, *subsequent number*)

```
Format: SUN,#=1*h

Fields:

Field-01: # - address
 1*h   description
 ---   -----------
 1*h - one or more telephony digits: 0-9, A-F
       (see formal grammar)
```

7.3.95 Indicadores de suspención/reanudación (SRI, *suspend/resume indicators*)

```
Format: SRI,sri=a

Fields:

Field-01: sri - suspend/resume indicator
 a   definition
 -   ----------
 u - unknown
 s - ISDN subscriber initiated
 n - network initiated
```

7.3.96 Identificadores de transacción (TID, *transaction identifier*)

```
This parameter is used as a unique identifier for a message. It is
the responsibility of the first NSS entry point from the PSTN
(typically an access server) to construct this parameter and for all
intermediate nodes to pass this on transparently or construct one if
not present. Once created, TID must not be modified by subsequent
nodes. This is used for message event correlation across switching
nodes but does not require call state history to be maintained to
generate this parameter. The distinction between TID and GCI is
that TID typically involves tracing the message only, whereas the
GCI may span multiple messages and multiple call legs.

Format: TID,tid=1*a

Fields:

Field-01: tid - global call ID

1*a   definition
---   ----------
IA5 - IA5 printable characters. See Annex A for specific encoding
      details. See Appendix I for suggested implementation details.
```

7.3.97 Selección de red de tránsito (TNS, *transit network selection*)

```
Format: TNS,ton=a,nip=a,tns=1*a

Fields:

Field-01: ton - type of network
 a   definition
 -   ----------
 u - unknown
 c - ITU/CCITT
 n - national

Field-02: nip - network identification plan
 a   definition
 -   ----------
 u - unknown
 1 - public data network identification code
     (DNIC - ITU-T Rec. X.121)
 2 - public land mobile network identification code
     (MNIC - ITU-T Rec. E.212)

  [NOTE – Need to use FDC to carry nip= for national plans.]

Field-03: tns - network identification
 1*a   definition
 ---   ----------
 IA5 - characters of 0-9, A-F of length defined by ton and nip
```

7.3.98 Medio de transmisión requerido (TMR, *transmission medium required*)

```
Format: TMR,tmr=dd

Fields:

Field-01: tmr - transmission medium required
                (omit parameter if unknown)
 dd   definition
 --   ----------
```

```
00 - speech
01 - 3.1 kHz audio
02 - 7 kbit/s audio/video
03 - 64 kbit/s preferred
04 - 1 x 64 kbit/s unrestricted
05 - 2 x 64 kbit/s unrestricted
06 - 3 x 64 kbit/s unrestricted
07 - 4 x 64 kbit/s unrestricted
08 - 5 x 64 kbit/s unrestricted
09 - 6 x 64 kbit/s unrestricted (384 kbit/s)
10 - 7 x 64 kbit/s unrestricted
11 - 8 x 64 kbit/s unrestricted
12 - 9 x 64 kbit/s unrestricted
13 - 10 x 64 kbit/s unrestricted
14 - 11 x 64 kbit/s unrestricted
15 - 12 x 64 kbit/s unrestricted
16 - 13 x 64 kbit/s unrestricted
17 - 14 x 64 kbit/s unrestricted
18 - 15 x 64 kbit/s unrestricted
19 - 16 x 64 kbit/s unrestricted
20 - 17 x 64 kbit/s unrestricted
21 - 18 x 64 kbit/s unrestricted
22 - 19 x 64 kbit/s unrestricted
23 - 20 x 64 kbit/s unrestricted
24 - 21 x 64 kbit/s unrestricted
25 - 22 x 64 kbit/s unrestricted
26 - 23 x 64 kbit/s unrestricted
27 - 24 x 64 kbit/s unrestricted (1536 kbit/s)
28 - 25 x 64 kbit/s unrestricted
29 - 26 x 64 kbit/s unrestricted
30 - 27 x 64 kbit/s unrestricted
31 - 28 x 64 kbit/s unrestricted
32 - 29 x 64 kbit/s unrestricted
33 - 30 x 64 kbit/s unrestricted (1920 kbit/s)
```

7.3.99 Medio de transmisión requerido prima (TMP, *transmission medium required prime*)

```
Format: TMP,tmr=dd

Fields:

Field-01: tmr - transmission medium required
                (omit parameter if unknown)
 dd  definition
 --  ----------
     See definition of tmr field in TMR parameter above.
```

7.3.100 Medio de transmisión utilizado (TMU, *transmission medium used*)

```
Format: TMU,tmr=dd

Fields:

Field-01: tmr - transmission medium required
                (omit parameter if unknown)
 dd  definition
 --  ----------
     See definition of tmr field in TMR parameter above.
```

7.3.101 Indicadores de acción de diálogo interactivo de usuario (UID, *UID action indicators*)

```
Format: UID,tc=a,t9=a

Fields:

Field-01: tc - through connection instruction indicator
 a   definition
 -   ----------
 0 - no indication
 y - through connect in both directions

Field-02: t9 - T9 timer instruction
 a   definition
 -   ----------
 0 - no indication
 y - stop or do not start T9 timer
```

7.3.102 Indicadores de capacidad de diálogo interactivo de usuario (UCI, *UID capability indicators*)

```
Format: UCI,tc=a,t9=a

Fields:

Field-01: tc - through connection indicator
 a  definition
 -  ----------
 0 – no indication
 y - through connection modification possible
 n - through connection modification not possible

Field-02: t9 - T9 timer instruction
 a   definition
 -   ----------
 0 - no indication
 y - stopping of T9 timer possible
 n - stopping of T9 timer not possible
```

7.3.103 Información de compatibilidad de campo desconocido (UFC, *unknown field compatibility information*)

```
This field is used in order to allow network-specific fields not
declared in this Recommendation to be transmitted even though the
actual field does not exist in the Recommendation. The parameter
includes the parameter name in which the field appears, and a free
format description and value area. This will only be able to be
interpreted by the end point if the protocol name and potentially
protocol version match there is a high probability that the
unrecognized values will be understood.

This parameter can appear multiple times.

Format: UFC,parm=aaa,instr=d,fname=aaaaa,dat=1*(2Hex)

Fields:

Field-01: parm - parameter name where field is to be found
aaa   definition
---   ----------
aaa - 3 ASCII characters of a-z denoting NSS parameter name
```

```
Field-02: instr - instruction on how to proceed
d   definition
-   ----------
1 - release call if not understood, regardless of the ability to
    forward
2 - use the default value if not understood, regardless of the
    ability to forward, no notification required, but continue call
3 - use the default value if not understood regardless of the
    ability to forward, send notification (in Confusion) but
    continue call
4 - Attempt to forward value; if unable to forward the value
    release the call
5 - Attempt to forward value; if unable to forward the value use
    default value without notification but continue the call
6 - Attempt to forward value; if unable to forward the value use
    default value and send notification but continue the call

Field-03: fname - field name
aaaaa   definition
-----   ----------
aaaaa - 5 ASCII characters that describe the field
        (See Appendix II grammar for nss_field_name)

Field-04: dat - Value of field
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1) of the field value.
```

7.3.104 Información de servicio de usuario (USI, *user service information*)

```
Format: USI,type=aaaa,[field container]

Based on the value of "type", one of the following field containers
will follow. This parameter can appear multiple times, indicating
different types of information with the same message.

Fields:

Field-01: type - type of User Service information
 aaaa   definition
 ----   ----------
 rate - bearer rate information              field container 1
 sup1 - supplementary information 1          field container 2
 symm - symmetry supplementary information   field container 3
 mult - rate multiplier                      field container 4
 lay1 - layer 1  supplementary information   field container 5
 subr - subrate  supplementary information   field container 6
 v110 - v110     supplementary information   field container 7
 v120 - v120     supplementary information   field container 8
 pari - parity   supplementary information   field container 9
 modm - modem    supplementary information   field container 10
 lay2 - layer 2  supplementary information   field container 11
 lay3 - layer 3  supplementary information   field container 12

Field Containers:

Field Container 1 (type=rate)

 Format: cs=a,cap=a,mode=a,rate=d
```

```
 Fields:

 Field-02: cs - coding standard
   a   definition
   -   ----------
   u - unknown
   c - ITU-T standardized coding
   i - ISO/IEC standard
   n - national standard
   p - standard defined for the network either public or private

 Field-03: cap - Information transfer capability
   a   definition
   -   ----------
   u - unknown
   s - speech
   d - unrestricted digital information
   r - restricted digital information
   3 - 3.1 kbit/s audio
   7 - 7 kbit/s audio
   v - video

 Field-04: mode - transfer mode
   a   definition
   -   ----------
   u - unknown
   c - circuit mode
   p - packet mode

 Field-05: rate - Information transfer rate
   d   definition
   -   ----------
   0 - not applicable (used for packet calls)
   1 - 64 kbit/s
   2 - 384 kbit/s
   3 - 1472 kbit/s
   4 - 1536 kbit/s
   5 - 1920 kbit/s
   6 - multirate (64 kbit/s base rate)
   7 - 2 x 64 kbit/s

Field Container 2 (type = sup1)

 Format: str=d,estab=d,conf=d

 Field-02: str - structure

   d   definition
   -   ----------
   0 - default or unknown
   1 - 8 kHz integrity
   2 - service data unit integrity
   3 - unstructured

 Field-03: estab - establishment
   d   definition
   -   ----------
   u - unknown
   d - demand

 Field-04: conf - configuration
   d   definition
   -   ----------
   u - unknown
   p - point-to-point
```

```
Field Container 3 (type = symm)

 Format: sym=aa,rate=d

 Field-02: sym - symmetry
   aa   definition
   --   ----------
   uu - unknown
   sb - symmetric bidirectional

 Field-03: rate - information transfer rate in the backwards
                  direction
   d   definition
   -   ----------
   0 - not applicable (used for packet calls)
   1 - 64 kbit/s
   2 - 384 kbit/s
   3 - 1472 kbit/s
   4 - 1536 kbit/s
   5 - 1920 kbit/s
   6 - multirate (64 kbit/s base rate)
   7 - 2 x 64 kbit/s

Field Container 4 (type = mult)

 Format: mult=dd

 Field-02: mult - rate multiplier
   dd   definition
   --   ----------
   00 - unknown
   02 - values 2 to the maximum number of B-channels
  -99   available on the interface

Field Container 5 (type = lay1) Layer 1 Protocol

 Format: lay1=aaaa

 Field-02: lay1 - Layer 1 protocol
   aaaa   definition
   ----   ----------
   uuuu - unknown
   v110 - ITU-T standardized rate adaptation V.110/X.30.
   ulaw - G.711 u-law
   alaw - G.711 a-law
   g721 - G.721 32 kbit/s ADPCM and ITU-T Rec. I.460
   g722 - G.722 and G.725/G.724 7 kHz audio
   h221 - H.221 and H.242
   nonc - non-ITU-T rate adaptation
   v120 - ITU-T standardized rate adaptation V.120
   hdlc - ITU-T standardized X.31 HDLC flag stuffing
   g735 - ITU-T Rec. G.735 for 384 kbit/s video
   h223 - ITU-T Recs H.223 and H.245

Field Container 6 (type = subr)

 Format: subr=dd,neg=a,sync=a

 Field-02: subr - user rate (sub-rate)
   dd   definition
   --   ----------
```

```
   00 - rate is indicated by E-bits in ITU-T Rec. I.460
   01 - 0.6       kbit/s     ITU-T Recs V.6 and X.1
   02 - 1.2       kbit/s     ITU-T Rec. V.6
   03 - 2.4       kbit/s     ITU-T Recs V.6 and X.1
   04 - 3.6       kbit/s     ITU-T Rec. V.6
   05 - 4.8       kbit/s     ITU-T Recs V.6 and X.1
   06 - 7.2       kbit/s     ITU-T Rec. V.6
   07 - 8.0       kbit/s     ITU-T Rec. I.460
   08 - 9.6       kbit/s     ITU-T Recs V.6 and X.1
   09 - 14.4      kbit/s     ITU-T Rec. V.6
   10 - 16.0      kbit/s     ITU-T Rec. I.460
   11 - 19.2      kbit/s     ITU-T Rec. V.6
   12 - 32.0      kbit/s     ITU-T Rec. I.460
   13 - 48.0      kbit/s     ITU-T Recs V.6 and X.1
   14 - 56.0      kbit/s     ITU-T Rec. V.6
   15 - 0.1345    kbit/s     ITU-T Rec. X.1
   16 - 0.1000    kbit/s     ITU-T Rec. X.1
   17 - 0.075/1.2 kbit/s     ITU-T Recs V.6 and X.1
   18 - 1.2/0.075 kbit/s     ITU-T Recs V.6 and X.1
   19 - 0.050     kbit/s     ITU-T Recs V.6 and X.1
   20 - 0.075     kbit/s     ITU-T Recs V.6 and X.1
   21 - 0.110     kbit/s     ITU-T Recs V.6 and X.1
   22 - 0.150     kbit/s     ITU-T Recs V.6 and X.1
   23 - 0.200     kbit/s     ITU-T Recs V.6 and X.1
   24 - 0.300     kbit/s     ITU-T Recs V.6 and X.1
   25 - 12        kbit/s     ITU-T Rec. V.6

 Field-03: neg - negotiation
   a   definition
   -   ----------
   n - in-band negotiation not possible
   y - in-band negotiation possible

 Field-04: sync - synchronization
   a   definition
   -   ----------
   n - asynchronous
   y - synchronous

Field Container 7 (type = v110) V.110/X.30 Rate Adaptation

 Format: int=dd,txnic=a,rxnic=a,txfl=a,rxfl=a

 Field-02: int - intermediate rate
   dd   definition
   --   ----------
   08 - 8 kbit/s
   16 - 16 kbit/s
   32 - 32 kbit/s

 Field-03: txnic - Network independent clock (NIC) on
                   transmission (TX)
   a   definition
   -   ----------
   u - unknown
   y - required to send data with network independent clock
   n - not required to send data with network independent clock
```

```
 Field-04: rxnic - Network independent clock (NIC) on reception
                   (RX)
   a   definition
   -   ----------
   u - unknown
   y - can  accept data with network independent clock
   n - cannot accept data with network independent clock

 Field-05: txfl - Flow control on transmission (TX)
   a   definition
   -   ----------
   u - unknown
   y - required to send data with flow control mechanism
   n - not required to send data with flow control mechanism

 Field-06: rxfl - Flow control on reception (RX)
   a   definition
   -   ----------
   u - unknown
   y - can accept data with flow control mechanism
   n - cannot accept data with flow control mechanism

Field Container 8 (type = v120) V.120 Rate Adaptation

 Format: hdr=a,mf=a,mode=d,lli=d,asgn=d,inbnd=d

 Field-02: hdr - rate adaptation header
   a   definition
   -   ----------
   u - unknown
   y - rate adaptation header included
   n - rate adaptation header not included

 Field-03: mf - multiframe establishment support for data link
   a   definition
   -   ----------
   u - unknown
   y - multiframe frame establishment supported
   n - multiframe frame establishment not supported

 Field-04: mode - Mode of operation
   d   definition
   -   ----------
   0 - bit transparent mode of operation
   1 - protocol sensitive mode of operation

 Field-05: lli - Logical link identifier (LLI) negotiation
   d   definition
   -   ----------
   0 - default LLI of 256 will be used
   1 - full protocol negotiation

 Field-06: asgn - assignor/assignee
   d   definition
   -   ----------
   0 - message originator is "Default Assignee"
   1 - message originator is "Assignor only"

 Field-07: inbnd - inband/out-of-band negotiation
   d   definition
   -   ----------
   0 - not applicable to this standard
   1 - negotiation is done in-band using logical link 0
```

```
Field Container 9 (type = pari) Parity

 Format: stp=d,dat=d,par=a

 Field-02: stp - number of stop bits
   d   definition
   -   ----------
   1 - 1  bit
   2 - 2  bits
   3 - 1.5 bits

 Field-03: dat - number of data bits
   d   definition
   -   ----------
   5 - 5 bits
   7 - 7 bits
   8 - 8 bits

 Field-04: par - parity
   a   definition
   -   ----------
   o - odd
   e - even
   n - none
   0 - forced to 0
   1 - forced to 1

Field Container 10 (type = modm) Modem Type

 Format: modm=dd,dupl=d

 Field-02: modm - modem type
   dd   definition
   --   ----------
   00 - V.22
   01 - V.22 bis
   02 - V.23
   03 - V.26
   04 - V.26 bis
   05 - V.26 ter
   06 - V.27
   07 - V.27 bis
   08 - V.27 ter
   09 - V.29
   10 - V.32
   11 - V.21
   12 - V.34

 Field-03: dupl - duplex
   d  definition
   -  ----------
   h - half-duplex
   f - full-duplex

Field Container 11 (type = lay2) Layer 2 Protocol

 Format: lay2=dd,mode=a,use=a,inf=hh,win=ddd

 Field-02: lay2 - layer 2 protocol
   dd   definition
   --   ----------
   00 - T1.602
   01 - ITU-T Rec. X.25 link level
   02 - ITU-T Rec. Q.921 (I.441)
```

```
    03 - LAN LLC (ISO/IEC 8802-2)
    04 - ITU-T Rec. Q.922
    05 - ITU-T Rec. Q.922 core aspects
    06 - Basic Mode ISO 1745
    07 - ITU-T Rec. X.25 Multilink
    08 - Extended LAPB
    09 - HDLC ARM
    10 - HDLC NRM
    11 - HDLC ABM
    12 - ITU-T Rec. X.75
    13 - User specified
    14 - DTE-DCE Operation (ISO/IEC 7776)

  Field-03: mode - Mode of Operation
    a   definition
    -   ----------
    n - Normal mode of operation
    e - extended mode of operation

  Field-04: use - Q.933 use
    a   definition
    -   ----------
    n - Coding as defined in ITU-T Rec. Q.933 NOT used

  Field-05: inf - User specified layer 2 protocol information
    hh    definition
    --    ----------
    00-FF 2 digit Hex data

  Field-06: win - Window Size (k)
    ddd   definition
    ---   ----------
          3 digit decimal (range 1 to 127)

Field Container 12 (type = lay3) Layer 3 Protocol

  Format: lay3=d,mode=a,pks=d,win=ddd,inf=d

   Field-02: lay3 - layer 3 protocol
    d   definition
    -   ----------
    0 - T1.607
    1 - ITU-T Rec. X.25 packet layer
    2 - ITU-T Rec. Q.931 (I.451)/ANSI T1.607
    3 - ISO/IEC TR 9577
    4 - ISO/IEC 8208
    5 - ITU-T Rec. X.223 and ISO/IEC 8878
    6 - ISO/IEC 8473 (OSI Connectionless mode protocol)
    7 - ITU-T Rec. T.70
    8 - User specified

  Field-03: mode - Mode of Operation
    a   definition
    -   ----------
    n - Normal mode of operation
    e - extended mode of operation

  Field-04: pks - Default Packet size
    d   definition
    -   ----------
    0 - Default packet size 16 octets
    1 - Default packet size 32 octets
    2 - Default packet size 64 octets
    3 - Default packet size 128 octets
```

```
  4 - Default packet size 256 octets
  5 - Default packet size 512 octets
  6 - Default packet size 1024 octets
  7 - Default packet size 2048 octets
  8 - Default packet size 4096 octets

Field-05: win - Window size
  ddd  definition
  ---  ----------
       3 digit decimal in the range of 1-127

Field-06: inf - Additional Layer 3 protocol information
  d   definition
  -   ----------
  0 - Internet Protocol (IP)
  1 - Point-to-Point Protocol (PPP)
```

7.3.105 Información de servicio de usuario prima (USP, *user service information prime*)

```
Format: USP,type=aaaa,{field container}

This parameter represents another iteration of the USI. Refer to
parameter USI: for formatting rules.
```

7.3.106 Información de teleservicio de usuario (UTI, *user teleservice information*)

```
Format: UTI,cs=a,int=d,pfl=d,hlc=ddd,ehl=ddd

Fields:
Field-01: cs - coding standard
 a   definition
 -   ----------
 u - unknown
 c - ITU-T standardized coding
 i - ISO/IEC standard
 n - national standard
 p - standard defined for the network either public or private

Field-02: int - interpretation
 d   definition
 -   ----------
 0 - unknown
 4 - high-level characteristics identification

Field-03: pfl - presentation method of protocol profile
 d   definition
 -   ----------
 0 - unknown
 1 - high-level protocol profile

Field-04: hlc - High-level characteristics identification
 ddd   definition
 ---   ----------
 000 - no information
 001 - telephony
 002 - group 2/3 fax (ITU-T Rec. F.182)
 003 - group 4 fax class I (ITU-T Rec. F.184)
 004 - group 4 fax class II/III (ITU-T Rec. F.184)
 005 - syntax based videotex (ITU-T Recs F.300 and T.102)
 006 - international videotex interworking
 007 - telex service (ITU-T Rec. F.60)
 008 - message handling systems (ITU-T Rec. X.400)
 009 - OSI application (ITU-T Rec. X.200)
 010 - FTAM application (ISO 8571)
```

```
 011 - maintenance
 012 - management
 013 - videotelephony (ITU-T Recs F.720, F.721, F.731)
 014 - videoconferencing (ITU-T Recs F.702, F.731)
 015 - audiographic conferencing (ITU-T Recs F.701, F.731)
 016 - audiovisual service
 017 - multimedia service
 018 - Teletex service, basic mode of operation
       (ITU-T Rec. F.200)
 019 - Teletex service, basic and processable mode of operation
       (ITU-T Rec. F.220)

Field-05: ehl - Extended High-level characteristics identification
 ddd   definition
 ----   ----------
 000 - no information (use when ehl is not present)
       otherwise use same definitions as hlc field above
```

7.3.107 Indicadores de usuario a usuario (UUI, *user-to-user indicators*)

```
Format:  UUI,type=aaaa,{field container}

Based on the value of type the following parameters will follow.

Fields:

Field-01: type - type of UUI indicator
 aaaa   description
 ----   -----------
 reqt - request    Field Container 1
 resp - response   Field Container 2

Field Containers:

Field Container 1 (type=reqt)

 Format: srv1=a,srv2=a,srv3=a

 Fields:

 Field-02: srv1 - Service 1
   a   description
   -   -----------
   0 - no information
   y - request, essential
   n - request, not essential

 Field-03: srv2 - Service 2
   a   description
   -   -----------
   0 - no information
   y - request, essential
   n - request, not essential

 Field-04: srv3 - Service 3
   a   description
   -   -----------
   0 - no information
   y - request, essential
   n - request, not essential

Field Container 2 (Type = resp)

 Format: srv1=a,srv2=a,srv3=a,ndi=a
```

```
Fields:

Field-02: srv1 - Service 1
  a   description
  -   -----------
  0 - no information
  y - provided
  n - not provided

Field-03: srv2 - Service 2
  a   description
  -   -----------
  0 - no information
  y - provided
  n - not provided

Field-04: srv3 - Service 3
  a   description
  -   -----------
  0 - no information
  y - provided
  n - not provided

Field-05: ndi - network discard indicator
  a   description
  -   -----------
  0 - no information
  y - user-to-user information discarded by the network
```

7.3.108 Información de usuario a usuario (UUS, *user-to-user information*)

```
Format: UUS,pd=a,dat=1*(2Hex)

Fields:

Field-01: pd - protocol discriminator
 a   description
 -   -----------
 0 - user-specific protocol
 1 - OSI higher layer protocols
 2 - ITU-T Rec. X.263 (replaces ITU-T Rec. X.244)
 3 - IA5 characters (are contained in field 2)
 4 - ITU-T Recs X.208 and X.209 coded user information
 5 - ITU-T Rec. V.120 rate adaption
 6 - ITU-T Recs Q.931/I.451 user-network call control messages

Field-02: dat - user-to-user info
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1).
```

7.3.109 Versión de NSS (VER, *version of NSS*)

```
Format: VER,v=aaaa

Fields:

Field-01: v - version
 aaaa   description
 ----   -----------
```

```
x.yy - x and yy are version.sub-version numerical values, e.g.
       "v=2.15". Decimal characters 0-9 must be used for x and
       yy.
```

7.4 Parámetros ASE de BAT

Los siguientes parámetros se pueden utilizar para transportar explícitamente estos parámetros en la NSS en vez de tunelizarlos como ascii con codificación binaria dentro de la información de usuario apm.

7.4.1 Indicador de acción (ACT, *action indicator*)

```
Format: ACT,instr={d,a,d,a},act=dd

Fields:

Field-01: instr - compatibility information
 The subfields {d,a,d,a} are defined as follows:

 Subfield-01: Pass-on possible
 d   description
 -   -----------
 0 - pass-on
 1 - discard information element
 2 - discard BICC data
 3 - release call

 Subfield-02: Pass-on possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data

 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: act - action indicators
 dd   description
 --   -----------
 00 - no indication
 01 - connect backward
 02 - connect forward
 03 - connect forward, no notification
 04 - connect forward, plus notification
 05 - connect forward, no notification + selected codec
 06 - connect forward, plus notification + selected codec
 07 - use idle
 08 - connected
 09 - switched
 10 - selected codec
 11 - modify codec
 12 - successful codec modification
 13 - codec modification failure
```

```
 14 - mid-call codec negotiation
 15 - modify to selected codec information
 16 - mid-call codec negotiation failure
 17 - start signal, notify
 18 - start signal, no notify
 19 - stop signal, notify
 20 - stop signal, no notify
 21 - start signal acknowledge
 22 - start signal reject
 23 - stop signal acknowledge
 24 - bearer redirect
```

7.4.2 Identificador de conexión de red hacia atrás (BID, *backward network connection identifier*)

```
Format: BID,instr={d,a,d,a},bid=1*(2Hex)

Fields:

Field-01: instr - compatibility information
 The subfields {d,a,d,a} are defined as follows:

 Subfield-01: Pass-on possible
 d   description
 -   -----------
 0 - pass-on
 1 - discard information element
 2 - discard BICC data
 3 - release call

 Subfield-02: Pass-on possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data

 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: bid - backward connection identifier
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1) of the parameter.
```

7.4.3 Informe de compatibilidad de BAT (BAT, *BAT compatiblity report*)

```
Format: BAT,instr={d,a,d,a},rea=d,diag=(*{diagnostic_id,diagnostic_index})

Fields:

Field-01: instr - compatibility information
 The subfields {d,a,d,a} are defined as follows:
```

```
 Subfield-01: Pass-on possible
 d   description
 -   -----------
 0 - pass-on
 1 - discard information element
 2 - discard BICC data
 3 - release call

 Subfield-02: Pass-on possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data

 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: rea – report reason
 d   description
 -   -----------
 0 - no indication
 1 - information element non-existent or not implemented
 2 - BICC data with unrecognized information element, discarded

Field-03: diag - diagnostics
 diag = (*{diagnostic_id,diagnostic_index})

NOTE – The diagnostics field is a parenthesis delimited
comma-separated list of diagnostics tuples. The diagnostics
tuples are delimited by braces.
```

7.4.4 Información de control de portador (BCD, *bearer control information*)

```
 Format: BCD,instr={d,a,d,a},dat=1*(2Hex)

 Fields:

 Field-01: instr - compatibility information
  The subfields {d,a,d,a} are defined as follows:

  Subfield-01: Pass-on possible
  d   description
  -   -----------
  0 - pass-on
  1 - discard information element
  2 - discard BICC data
  3 - release call

  Subfield-02: Pass-on possible notification
  a   description
  -   -----------
  y - send notification
  n - do not send notification
```

```
 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data

 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: dat – bearer control tunnelling protocol data unit
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1).
```

7.4.5 Tunelización de control de portador (BCT, *bearer control tunnelling*)

```
Format: BCT,instr={d,a,d,a},bct=d

Fields:

Field-01: instr - compatibility information
 The subfields {d,a,d,a} are defined as follows:

 Subfield-01: Pass-on possible
 d   description
 -   -----------
 0 - pass-on
 1 - discard information element
 2 - discard BICC data
 3 - release call

 Subfield-02: Pass-on possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data

 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: bct - bearer control tunnelling indicator
 d   description
 -   -----------
 0 - no indication
 1 - tunnelling to be used
```

7.4.6 Identificador de unidad de control de portador (BDU, *bearer control unit identifier*)

```
Format: BDU,instr={d,a,d,a},lid=hhhhhhhh,nid=0*(2Hex)

Fields:

Field-01: instr - compatibility information
 The subfields {d,a,d,a} are defined as follows:

 Subfield-01: Pass-on possible
 d   description
 -   -----------
 0 - pass-on
 1 - discard information element
 2 - discard BICC data
 3 - release call

 Subfield-02: Pass-on possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data

 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: lid - local identity
 hhhhhhhh   description
 --------   -----------
 0-9, A-F - 8 IA5 characters 0-9, A-F
            representing hexadecimal values

Field-03: nid - network identity
 0*(2h)   description
 ------   -----------
 0*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1) of the parameter.
```

7.4.7 Características de conexión de la red portadora (BNC, *bearer network connection characteristics*)

```
Format: BNC,instr={d,a,d,a},bnc=d

Fields:

Field-01: instr - compatibility information
 The subfields {d,a,d,a} are defined as follows:

 Subfield-01: Pass-on possible
 d   description
 -   -----------
```

```
 0 - pass-on
 1 - discard information element
 2 - discard BICC data
 3 - release call

 Subfield-02: Pass-on possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data

 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: bnc - bearer network connection characteristics
 d   description
 -   -----------
 0 - no indication
 1 - AAL Type 1
 2 - AAL Type 2
 3 - Structured AAL Type 1
 4 - IP/RTP
```

7.4.8 Capacidad de redireccionamiento de portador (BRC, *bearer redirection capability*)

```
Format: BRC,instr={d,a,d,a},brc=d

Fields:

Field-01: instr - compatibility information
 The subfields {d,a,d,a} are defined as follows:

 Subfield-01: Pass-on possible
 d   description
 -   -----------
 0 - pass-on
 1 - discard information element
 2 - discard BICC data
 3 - release call

 Subfield-02: Pass-on possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data
```

```
 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: brc - bearer redirection capability
 d   description
 -   -----------
 0 - late cut-through not supported
 1 - late cut-through supported
```

7.4.9 Indicadores de redireccionamiento de portador (BRI, *bearer redirection indicators*)

```
Format: BRI,instr={d,a,d,a},bri=(dd,dd,…)

Fields:

Field-01: instr - compatibility information
 The subfields {d,a,d,a} are defined as follows:

 Subfield-01: Pass-on possible
 d   description
 -   -----------
 0 - pass-on
 1 - discard information element
 2 - discard BICC data
 3 - release call

 Subfield-02: Pass-on possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data

 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: bri - bearer redirection indicators
 dd   description
 --   -----------
 00 - no indication
 01 - late cut-through request
 02 - redirect temporary reject
 03 - redirect backwards request
 04 - redirect forwards request
 05 - redirect bearer release request
 06 - redirect bearer release proceed
 07 - redirect bearer release complete
 08 - redirect cut-through request
 09 - redirect bearer connected indication
 10 - redirect failure
 11 - new connection identifier
```

```
NOTE – One or more indicators are provided in a parenthesis
delimited comma-separated list.
```

7.4.10 Lista de códecs (CDL, *codec list*)

```
Format: CDL,instr={d,a,d,a},({<codec-1>},{<codec-2>},{<codec-3>},…)

Fields:

Field-01: instr - compatibility information (for the entire codec list)
 The subfields {d,a,d,a} are defined as follows:

 Subfield-01: Pass-on possible
 d   description
 -   -----------
 0 - pass-on
 1 - discard information element
 2 - discard BICC data
 3 - release call

 Subfield-02: Pass-on possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data

 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: This is a parenthesis-delimited comma-separated list of codecs
 that follow the structure of the COD fields (see clause 7.4.11). The
 codecs are listed in decreasing order of preference (i.e., codec-1 has
 highest preference level).
```

7.4.11 Códec (COD, *codec*)

```
Format: COD,instr={d,a,d,a},org=ddd,codec=dd,
      confg=(opt-1,opt-2,opt-3,…),cdat=0*(2Hex)

Fields:

Field-01: instr - compatibility information (for a single codec)
 The subfields {d,a,d,a} are defined as follows:

 Subfield-01: Pass-on possible
 d   description
 -   -----------
 0 - pass-on
 1 - discard information element
 2 - discard BICC data
 3 - release call
```

```
 Subfield-02: Pass-on possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data

 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: org - organization name
 ddd   description
 ---   -----------
 000 - no indication
 001 - ITU-T
 002 - ETSI (refer to ETS 126 103)

Field-03: codec - codec name
 dd   description
 --   -----------
 00 - no indication
 01 - G.711 a-law
 02 - G.711 mu-law
 03 - G.711 a-law 56 kbit/s
 04 - G.711 mu-law 56 kbit/s
 05 - G.722 (sb-adpcm)
 06 - G.723.1
 07 - Annex A/G.723.1 (silence suppression)
 08 - G.726 (adpcm)
 09 - G.727 (embedded adpcm)
 10 - G.728
 12 - G.729 (cs-acelp)
 12 - Annex B/G.729 (silence suppression)

Field-04: confg - codec configuration (option selection form)
 Confg=(opt-1,opt-2,opt-3,…)

 The semantic for each option (opt-1, etc.) is codec-specific and
 usually defined in a standard, e.g., Table 13/Q.765.5. The semantic
 follows the byte (first to last) and bit order (LSB to MSB) of the
 standard.

 When a configuration option is supported, coding is "y";
 when it is not supported, coding is "n".

        For ITU-T Recs G.726 and G.727:  (Example: confg=(y,n,y,n) means
        Option#   Description            that 16 and 32 kbit/s are supported)
        Opt-1     16 kbit/s rate
        Opt-2     24 kbit/s rate
        Opt-3     32 kbit/s rate
        Opt-4     40 kbit/s rate
```

```
        For ITU-T Rec. G.728:
        Option#   Description
        Opt-1     9.6 kbit/s rate
        Opt-2     12.8 kbit/s rate
        Opt-3     16 kbit/s rate

        For ITU-T Rec. G.729 (cs-acelp) or Annex B:
        Option#   Description
        Opt-1     6.4 kbit/s rate
        Opt-2     8 kbit/s rate
        Opt-3     11.8 kbit/s rate

        NOTE – When the value is "()" the NULL list means that
        all options are supported, i.e., the equivalent of "(y,y,y…)".
        When the value is absent this means that there is no configuration
        data for this codec.

Field-05: cdat - codec alternate configuration (free-form)
 0*(2h)   description
 ------   -----------
 0*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1) of the parameter.
```

7.4.12 Dirección de función de interfuncionamiento (IWF, *interworking function address*)

```
Format: IWF,instr={d,a,d,a},iwf=1*(2Hex)

Fields:

Field-01: instr - compatibility information
 The subfields {d,a,d,a} are defined as follows:

 Subfield-01: Pass-on possible
 d   description
 -   -----------
 0 - pass-on
 1 - discard information element
 2 - discard BICC data
 3 - release call

 Subfield-02: Pass-on possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data

 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: iwf - interworking function address
 1*(2h)   description
 ------   -----------
 1*(2h) - one or more pairs of characters (0-9, A-F) representing a
          hexadecimal encoding (see clause 5.1) of the parameter.
```

7.4.13 Señal (SIG, *signal*)

```
Format: SIG,instr={d,a,d,a},sig=(1*{sigid=dd,dur=ddddd})

Fields:

Field-01: instr - compatibility information
 The subfields {d,a,d,a} are defined as follows:

 Subfield-01: Pass-on possible
 d   description
 -   -----------
 0 - pass-on
 1 - discard information element
 2 - discard BICC data
 3 - release call

 Subfield-02: Pass-on possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

 Subfield-03: Pass-on not possible
 d   description
 -   -----------
 0 - release call
 1 - discard information element
 2 - discard BICC data

 Subfield-04: Pass-on not possible notification
 a   description
 -   -----------
 y - send notification
 n - do not send notification

Field-02: sig - signal
  sig = (1*{sigid,dur})

NOTE – The signal field is a parenthesis-delimited comma-separated
list of signal tuples. The signal tuples are delimited by braces.


Subfield-01: sigid - signal identifier
 dd   description
 --   -----------
 00 - DTMF 0
 01 - DTMF 1
 02 - DTMF 2
 03 - DTMF 3
 04 - DTMF 4
 05 - DTMF 5
 06 - DTMF 6
 07 - DTMF 7
 08 - DTMF 8
 09 - DTMF 9
 10 - DTMF *
 11 - DTMF #
 12 - DTMF A
 13 - DTMF B
 14 - DTMF C
 15 - DTMF D
 16 - dial tone
 17 - pabx internal dial tone
```

```
 18 - special dial tone
 19 - second dial tone
 20 - ringing tone
 21 - special ringing tone
 22 - busy tone
 23 - congestion tone
 24 - special information tone
 25 - warning tone
 26 - intruction tone
 27 - call waiting tone
 28 - pay tone
 29 - payphone recognition tone
 30 - comfort tone
 31 - tone on hold
 32 - record tone
 33 - caller waiting tone
 34 - positive indication tone
 35 - negative indication tone

Subfield-02: dur - duration
 ddddd   description
 -----   -----------
 ddddd - 0-65535 milliseconds the signal is played
```

8 Codificación MIME del cuerpo de mensaje NSS

En las siguientes cláusulas se describen los elementos de encabezamiento específicos de MIME (especificados en RFC 2045) que se pueden usar para encapsular la NSS en un mensaje SIP. Los encabezamientos MIME deben ser utilizados con mensajes SIP, pero no con mensajes H.323, que tienen sus propios mecanismos de encapsulación.

8.1 Campo de encabezamiento de versión MIME

El campo de encabezamiento de versión MIME utiliza el número de versión para declarar que el mensaje se conforma con MIME y permitir que los agentes de procesamiento de correo distingan entre estos mensajes y los generados por un software más antiguo o no conforme, que normalmente carecerán de este campo.

8.2 Campo de encabezamiento tipo de contenido

El campo de encabezamiento tipo de contenido para el cuerpo de MIME de NSS es "application/nss".

En NSS, no se utiliza el parámetro "base" opcional, sino que la identidad del protocolo fuente es transportada en el parámetro PRN de NSS.

En NSS, no se utiliza el parámetro "version" opcional. En su lugar, la versión de la NSS utilizada es transportada en el parámetro VER de NSS, lo que permite la transferencia directa de redes SIP a redes H.323, que no utilizan los encabezamientos MIME en la codificación.

El parámetro "charset" indica que el contenido de la parte de cuerpo de MIME utilizará únicamente la codificación americana US-ASCII de 7 bits. En algunos parámetros en NSS se usan caracteres ASCII de un byte para representar el equivalente hexadecimal de valores binarios de un cuarteto. La codificación de 7 bits permite el transporte de correo electrónico textual siempre y cuando se duplique la anchura de banda. Esta transformación de codificación binaria a ASCII se aplica generalmente para parámetros de compatibilidad cuyo tamaño es limitado.

8.3 Campo de encabezamiento codificación de transferencia de contenido

El campo de encabezamiento codificación de transferencia de contenido se utiliza para indicar la transformación de codificación que se ha aplicado al cuerpo de mensaje y el dominio del resultado.

Las transformaciones de codificación distintas de la transformación de identidad se suelen aplicar a los datos para que puedan pasar por mecanismos de transporte de correo, que pueden tener limitaciones de datos o de juegos de caracteres.

El mecanismo empleado para la codificación de transferencia de contenido se elegirá de entre "7bit", "8bit", "binario", "quoted-printable", "base64", ietf-token, o "x-token". Los mensajes PU-RDSI son naturalmente binarios, pero la NSS utilizará US-ASCII para representar todos los rótulos y valores de parámetros. Los valores binarios son indicados por la representación ASCII del equivalente hexadecimal. Este encabezamiento es opcional en la NSS.

8.4 Campo de encabezamiento disposición del contenido

El encabezamiento disposición del contenido (especificado en RFC 2183) indica cómo procesar la NSS encapsulada y cómo tratar el tipo de contenido recibido, si éste no es reconocido. El tipo de disposición por defecto de un cuerpo de mensaje NSS es "signal". Este tipo indica que la parte cuerpo contiene información de señalización asociada con la sesión, pero no la describe. Este encabezamiento es opcional en la NSS.

8.5 Especificación de tipo de medios MIME de NSS

Este tipo de medios es definido por la siguiente información:

– nombre de tipo de medio: application;
– nombre de subtipo de medio: nss;
– parámetros requeridos: none (ninguno);
– parámetros opcionales: charset;
– esquema de codificación: us-ascii;
– consideraciones de seguridad: Véase la cláusula 11.

9 Encapsulación en SIP

La NSS se encapsula en SIP colocándolo en el cuerpo del mensaje. El tipo de contenido debe tener el valor "application/nss" y la disposición del contenido debe tener el valor "signal". Véase en el apéndice I un ejemplo de mensaje SIP que utiliza un encabezamiento MIME para transportar un cuerpo de mensaje NSS.

10 Encapsulación en H.323

La NSS puede ser tunelizada en los mensajes H.323 versión 4 (11/2000).

No obstante, para garantizar la compatibilidad con versiones anteriores, los mensajes NSS pueden ser tunelizados en el campo **non-StandardControl** del parámetro H323-UU-PDU de los mensajes H.323v2 y H.323v3.

11 Consideraciones relativas a la seguridad

De ser necesario, para la seguridad de la NSS se utilizarán los mecanismos definidos para asegurar los componentes del protocolo encapsulador (es decir, SIP o H.323).

12 Elementos sintácticos y procedimientos específicos de la NSS

12.1 Mensajes específicos de NSS

Todos los mensajes NSS, que están declarados también en la PU-RDSI, se utilizarán como se indica en los procedimientos de señalización de las Recs. UIT-T Q.761 y Q.1902.1. En la

Rec. UIT-T Q. 1980.1 se abordará el tratamiento de nuevos mensajes o las modificaciones de estas Recomendaciones.

12.1.1 Lista de parámetros genéricos (GPL, *generic parameter list*)

El mensaje GPL se utiliza cuando una aplicación ha de transmitir cualquier combinación de parámetros fuera del contexto de otros tipos de mensajes definidos. El mensaje GPL no tiene semántica asociada y no hay modificaciones de la máquina de estados.

12.1.2 Mensaje no reconocido (UNR, *unrecognized message*)

El mensaje UNR amplía el concepto de tratamiento de parámetros no reconocidos a los mensajes. El UNR transporta de manera transparente cualquier mensaje que no es reconocido por el protocolo nativo en el ingreso. El parámetro MCI proporciona una instrucción de tratamiento de mensaje y transporta el contenido del mensaje no reconocido al destino final, que podrá disponer del mensaje convenientemente.

12.2 Parámetros específicos de NSS

En esta cláusula se describen brevemente los parámetros específicos de la NSS.

12.2.1 Tratamiento de campo no reconocido (UFC, *unrecognized field handling*): Mecanismo de compatibilidad de campo

El parámetro UFC amplía el concepto de parámetros no reconocidos utilizando la compatibilidad de parámetros (PCI) para recurrir a la compatibilidad de campos a fin de tratar los campos no reconocidos en un parámetro. En 12.3 figuran más detalles sobre la construcción del parámetro.

12.2.2 Tratamiento de valor no reconocido (FDC, *unrecognized value handling*): Mecanismo de compatibilidad de valor

El parámetro FDC amplía los conceptos PCI y UFC a aquellos casos donde se reconoce el campo, pero no su valor. Se definen más detalles sobre la construcción del parámetro en 12.3.

12.2.3 Nombre/versión de protocolo (PRN, *protocol name/version*)

El parámetro PRN proporciona información sobre el protocolo fuente de los mensajes y parámetros necesaria para su interpretación. En concreto, los parámetros de compatibilidad requieren el parámetro PRN para ser interpretados.

12.2.4 Versión (VER, *version*)

El parámetro VER proporciona información sobre la versión de la NSS utilizada para construir el mensaje y los parámetros NSS. El uso de la misma versión garantiza que se realiza adecuadamente el análisis sintáctico de los parámetros NSS.

12.2.5 Indicador de segmentación (SEG, *segmentation indicator*)

El parámetro SEG indica que sigue un mensaje SGM adicional con parámetros adicionales relacionados con el mensaje que transporta el parámetro SEG.

12.2.6 Identificación global de llamada (GCI, *global call identification*)

El parámetro GCI permite asociar todos los mensajes relacionados con una sola "llamada".

12.2.7 Identificador de transacción (TID, *transaction identifier*)

En el primer punto de entrada a una red IP, puede haber un identificador de transacción único (TID) en el mensaje, que puede pasar inalterado a través de la red, de manera que las herramientas de rastreo de llamada externas (rastreadores) puedan asociar cualquier evento que llegue con sus eventos generados asociados.

12.2.8 Lista de parámetros con correspondencia (MPL, *mapped parameter list*)

El parámetro MPL se utiliza para indicar los parámetros del protocolo fuente que corresponden con parámetros del protocolo encapsulador. No obstante, cuando un parámetro es transportado por el protocolo que encapsula la NSS y por la NSS, el nombre del parámetro no se incluirá en la MPL. La lista de parámetros de MPL y de NSS indica los parámetros presentes en el mensaje fuente original, lo que ayuda al nodo de recepción a reconstruir el mensaje RTPC original, aunque algunos valores puedan haber cambiado.

NOTA – El movimiento de un parámetro, por ejemplo, mediante correspondencia entre la NSS y el protocolo que la transporta, requiere un ajuste correspondiente de la MPL. La especificación de este interfuncionamiento, por ejemplo, SIP/NSS a H.323/NSS, queda fuera del alcance de esta Recomendación.

12.2.9 Información de parámetro fuente (SPI, *source parameter information*)

El parámetro SPI se utiliza para indicar el tipo de parámetro fuente que proporcionó la información inicial, cuando el protocolo fuente define más de un tipo de parámetro que puede transportar la misma información y cuando el tramo de llamada RTPC subsiguiente debe utilizar el mismo tipo de parámetro. Si el protocolo fuente transporta dos casos de un parámetro, el orden de los parámetros SPI reflejará el orden original de los parámetros en la fuente.

12.3 Procedimientos de compatibilidad NSS

El parámetro PRN se utiliza en el mensaje para interpretar cualquier información de compatibilidad de mensajes/parámetros/campos incluida en el mensaje. La omisión de esta información en el mensaje puede impedir la utilización o interpretación de dicha información, lo que provocaría el abandono de la llamada si las instrucciones de compatibilidad así lo indican.

En las líneas de parámetros NSS no se colocará ningún campo, a menos que se indique explícitamente en esta especificación. Todos los campos existentes en variantes específicas de red del protocolo fuente, pero no en el parámetro correspondiente para un determinado parámetro NSS especificado en este documento, se tratarán como campos no reconocidos. El nombre de parámetro, el nombre de campo no reconocido y su valor pueden ser indicados en un parámetro UFC utilizando los procedimientos de compatibilidad de campo. Todas las excepciones de los parámetros con respecto a los valores de campo pueden ser referenciadas por el nombre del parámetro y el número de campo en el parámetro FDC.

NOTA – Con respecto al parámetro UFC, queda fuera del alcance de esta Recomendación la ordenación de campos opcionales en variantes de la PU-RDSI que pueden corresponder con el UFC.

Los parámetros de compatibilidad para campos desconocidos (UFC) y valores desconocidos (FDC) deberán seguir inmediatamente después del parámetro que modifican. Si se requiere la compatibilidad para más de un campo, el orden de arriba a abajo de los parámetros de compatibilidad seguirá el orden definido en la NSS, o indicará el orden de campos del parámetro del protocolo fuente, si éste no se encuentra en la NSS. La modificación de los parámetros de compatibilidad concuerda con la modificación de otros parámetros, de manera que sólo el caso actual de un parámetro de compatibilidad esté presente en el mensaje para cada parámetro, campo o valor. En el apéndice I se muestran ejemplos de ordenación de los parámetros de compatibilidad.

Un parámetro FDC o UFC independientes constituyen un error de sintaxis, y su tratamiento queda fuera del alcance de esta Recomendación.

Al codificar un elemento de sintaxis no reconocido, se utilizará el mecanismo de compatibilidad más bajo (con mayor granularidad). Por ejemplo, cuando no se conocen:

– valores de campo, se utilizará la información de compatibilidad de campo conocido (FDC);
– campos, se utilizará la información de compatibilidad de campo desconocido (UFC);
– rótulos de parámetro, se utilizará la información de compatibilidad de parámetro (PCI);
– rótulos de mensaje, se utilizará el mensaje no reconocido (UNR).

Básicamente, el parámetro UNR se utilizará como último recurso, no como primero.

Anexo A

Gramática ABNF de la sintaxis de señalización de banda estrecha

Parte 1. Formato general de los parámetros NSS

```
nss_message = compact_message

compact_message = VER_param CRLF
                  PRN_param CRLF
                  nss_msg_name "," CRLF
                  *compact_nss_param
```

NOTA – Pueden encontrarse más detalles sobre los números de compact_fields de los parámetros NSS en la parte 2, Formato detallado de los parámetros NSS.

```
nss_msg_name = "ACM" / "ANM" / "APM" / "CFN" / "CON" /
               "COT" / "CPG" / "CRG" / "FAA" / "FAC" /
               "FAR" / "FOT" / "FRJ" / "GPL" / "IAM" /
               "IDR" / "INF" / "INR" / "IRS" / "LOP" /
               "NRM" / "OLM" / "PAM" / "PRI" / "REL" /
               "RES" / "RLC" / "SAM" / "SDN" / "SGM" /
               "SUS" / "UNR" / "USR" / token
```

NOTA – Si un campo tiene un valor desconocido, no ha de ser especificado explícitamente, lo que significa que no hay ningún valor presente.

```
opt-unk = ["u"] ; Wherever used "u" may be omitted.

dat_field = 1*(2HEX)

HEX  = DIGIT / %0x41-46 ; 'A-F' case sensitive
             ; see clause 5 for rules to transform octet to ascii

UALPHA = %0x41-5a ; 'A-Z'

LALPHA = %0x61-7a ; 'a-z'

ALPHA = UALPHA / LALPHA

ALPHANUM = ALPHA / DIGIT

LALPHANUM = LALPHA / DIGIT

UALPHANUM = UALPHA / DIGIT
```

```
CHAR = %x20-27 / %x2a-2b / %x2d-3c / %x3e-5b / %x5d-7a / %x7c / %x7e
       / NSS_ESCAPED_CHAR

NSS_ESCAPED_CHAR = %x5c %x0a / ; LF
                   %x5c %x0d / ; CR
                   %x5c %x28 / ; opening parenthesis '('
                   %x5c %x29 / ; closing parenthesis ')'
                   %x5c %x2c / ; comma ','
                   %x5c %x3d / ; equal '='
                   %x5c %x5c / ; backslash '\'
                   %x5c %x7b / ; opening brace '{'
                   %x5c %x7d / ; closing brace '}'

CRLF = %x0d %x0a

telephone-number = 1*phonedigit

phonedigit    = HEX
```

NOTA – Las cifras telefónicas se codifican en el mismo orden en que se transmitirían en PU-RDSI o BICC, contrariamente a la codificación hexadecimal de octetos binarios.

```
token = 1*(alphanum / "-" / "." / "!" / "%" /
           "*" / "_" / "+" / "`" / "'" / "~" ) ; from RFC 3261, p. 221
```

NOTA – La gramática que se presenta en la parte 2 se ha simplificado y actualizado para que corresponda exactamente con la especificación de la cláusula 7. Tanto las definiciones de parámetros como de campos se han ordenado alfabéticamente para facilitar su consulta. Del mismo modo, muchas estructuras de datos tienen incorporada directamente la lista de valores posibles en las definiciones de campo.

Parte 2. Formato detallado de los parámetros NSS

```
compact_nss_param = ( token /
  ACL_param / ACT_param / ADI_param / APP_param / ATP_param /
  BAT_param / BCD_param / BCI_param / BCT_param / BDU_param /
  BID_param / BNC_param / BRC_param / BRI_param / BVN_param /
  CAI_param / CCN_param / CCS_param / CDI_param / CDL_param /
  CDN_param / CDP_param / CDT_param / CGL_param / CGN_param /
  CGV_param / CHI_param / CIC_param / CIN_param / CNF_param /
  CNN_param / CNR_param / COD_param / COL_param / COR_param /
  CPC_param / CPI_param / CPN_param / CRF_param / CSI_param /
  CTI_param / CTN_param / CTR_param / DIS_param / ECI_param /
  EVI_param / FAI_param / FCI_param / FDC_param / FVN_param /
  GCI_param / GEA_param / GED_param / GIC_param / GNO_param /
  HOC_param / HTR_param / INC_param / INI_param / IRI_param /
  ISC_param / ITG_param / IWF_param / LON_param / LPI_param /
  MCI_param / MCR_param / MLP_param / MPL_param / MRI_param /
  NMC_param / NOC_param / NPF_param / NRN_param / NSF_param /
  OBI_param / OCI_param / OCN_param / OCT_param / OFI_param /
  PBI_param / PCA_param / PCI_param / PCT_param / PDC_param /
  PFI_param / PVR_param / PVS_param / QOR_param / RBI_param /
  RCT_param / RDC_param / RDS_param / RFI_param / RGN_param /
  RMO_param / RNI_param / RNN_param / RNR_param / SCF_param /
  SEA_param / SEG_param / SIG_param / SPC_param / SPI_param /
  SRI_param / SUN_param / TID_param / TMP_param / TMR_param /
  TMU_param / TNS_param / UCI_param / UFC_param / UID_param /
  USI_param / USP_param / UTI_param / UUI_param / UUS_param ) CRLF
```

NOTA – A menos que especifique explícitamente, cada campo puede aparecer en un parámetro como máximo una vez, en el orden que se especifica a continuación.

NOTA – Se presenta la siguiente lista por orden alfabético de las definiciones de parámetros.

```
ACL_param = "ACL," acl_field

ACT_param = "ACT," inst_field "," act_field

ADI_param = "ADI," adi_field

APP_param = "APP," aci_field "," sni_field "," rci_field "," sn_field ","
            seg_field "," slr_field "," apm_field

ATP_param = "ATP," dat_field


BAT_param = "BAT," inst_field "," rea_field "," diag_list_field

BCD_param = "BCD," inst_field "," dat_field

BCI_param = "BCI," charge_field "," status_field "," cpc_field ","
            e2ei_field "," e2em_field "," inter_field "," isup_ind_field ","
            hold_ind_field "," acc_field "," echo_field "," sccpm_field

BCT_param = "BCT," inst_field "," bct_field

BDU_param = "BDU," inst_field "," lid_field "," nid_field

BID_param = "BID," inst_field "," bid_field

BNC_param = "BNC," inst_field "," bnc_field

BRC_param = "BRC," inst_field "," brc_field

BRI_param = "BRI," inst_field "," bri_field

BVN_param = "BVN," bvn_field


CAI_param = "CAI," cs_field "," lc_field "," rec_field "," cause_field ","
            diag_field

CCN_param = "CCN," ccn_field

CCS_param = "CCS," ccs_field

CDI_param = "CDI," nso_field "," rr_field

CDL_param = "CDL," inst_field "," codec_list_field

CDN_param = "CDN," noa_field "," inn_field "," npi_field "," nr_field

CDP_param = "CDP," toc_field "," comp_field

CDT_param = "CDT," cdt_field

CGL_param = ("CGL," cgl_field_0) /
            ("CGL," cgl_field_1) /
            ("CGL," cgl_field_2) /
            ("CGL," cgl_field_3) /
            ("CGL," cgl_field_4) /
            ("CGL," cgl_field_5) /
            ("CGL," cgl_field_6) /
```

```
            ("CGL," cgl_field_7) /
            ("CGL," cgl_field_8) /
            ("CGL," cgl_field_9)

CGN_param = "CGN," noa_field "," cni_field "," npi_field "," pi_field ","
            si_field "," nr_field

CGV_param = ("CGV," cgv_field_0) /
            ("CGV," cgv_field_1) /
            ("CGV," cgv_field_2) /
            ("CGV," cgv_field_3) /
            ("CGV," cgv_field_4)

CHI_param = "CHI," chi_field

CIC_param = "CIC," cic_field

CIN_param = "CIN," noa_field "," npi_field "," pi_field "," nr_field

CNF_param = "CNF," cnf_field

CNN_param = "CNN," noa_field "," npi_field "," pi_field "," si_field ","
            nr_field

CNR_param = "CNR," loc_field "," pc_field "," cls_field "," cre_field

COD_param = "COD," codec_seq_field

COL_param = "COL," col_field

COR_param = "COR," dat_field

CPC_param = "CPC," cpc_field

CPI_param = "CPI," dat_field

CPN_param = "CPN," noa_field "," inn_field "," npi_field "," nr_field

CRF_param = "CRF," call_id_field "," pc_field

CSI_param = "CSI," csi_field

CTI_param = "CTI," cti_field

CTN_param = "CTN," noa_field "," npi_field "," pi_field "," si_field ","
            nr_field

CTR_param = "CTR," ctr_field


DIS_param = "DIS," dis_field


ECI_param = "ECI," out_info_field "," in_info_field "," out_req_field ","
            in_req_field

EVI_param = "EVI," evi "," evr


FAI_param = "FAI," fai_field

FCI_param = "FCI," intnat_field "," e2ei_field "," e2em_field ","
            inter_field "," isup_ind_field "," isdn_pref "," acc_field ","
            sccpm_field
```

```
FDC_param = "FDC," nss_param_name "," nss_field_name "," instr_field ","
            dat_field

FVN_param = ("FVN," fvn_field_1) /
            ("FVN," fvn_field_2) /
            ("FVN," fvn_field_3)


GCI_param = "GCI," gci_field

GEA_param = "GEA," gea_type "," noa_field "," npi_field "," cni_field ","
            pi_field "," si_field "," nr_field

GED_param = "GED," type_of_digit "," encoding_scheme "," nr_field

GIC_param = "GIC," net_id_field "," gic_bc_field

GNO_param = "GNO," gno_field


HOC_param = "HOC," hoc_field

HTR_param = "HTR," noa_field "," npi_field "," nr_field


INC_param = "INC," dat_field

INI_param = "INI," ini_info_field "," ini_resp_field "," ini_sol_field

IRI_param = "IRI," iri_field

ISC_param = "ISC," pc_field

ITG_param = "ITG," dat_field

IWF_param = "IWF," inst_field "," iwf_field


LON_param = "LON," noa_field "," inn_field "," npi_field "," pi_field ","
            si_field "," nr_field

LPI_param = "LPI," req_field "," loop_field


MCI_param = "MCI," mci_inst "," tri_field "," dat_field

MCR_param = "MCR," mcr_resp "," hold_prov

MLP_param = "MLP," mlp_lfb "," mlp_pl "," net_id_field "," mlp_sd

MPL_param = "MPL," mpl_field

MRI_param = "MRI," mlp_req_field "," hold_ind_field


NMC_param = "NMC," nmc_field

NOC_param = "NOC," sat_field "," echo_field "," cot_field

NPF_param = "NPF," nps_field

NRN_param = "NRN," npi_field "," nrn_noa_field "," nr_field
```

```
NSF_param = "NSF," ton_field "," nip_field "," nsf_nid "," nsf_ind


OBI_param = "OBI," obi_inb "," obi_cf "," obi_mlpp

OCI_param = "OCI," noa_field "," npi_field "," pi_field "," si_field ","
            nr_field

OCN_param = "OCN," noa_field "," npi_field "," pi_field "," nr_field

OCT_param = "OCT," oct_field

OFI_param = "OFI," cug_call "," con_line_id_req


PBI_param = ("PBI,tag=u"    ) /
            ("PBI," pbi_field_1) /
            ("PBI," pbi_field_2) /
            ("PBI," pbi_field_3)

PCA_param = "PCA," pca_field "," iwri_field

PCI_param = "PCI," pci_inst "," tri_field "," dat_field

PCT_param = "PCT," pct_field

PDC_param = "PDC," pdc_field

PFI_param = ("PFI,tag=u"    ) /
            ("PFI,tag=1"    ) /
            ("PFI," pfi_field_1) /
            ("PFI," pfi_field_2) /
            ("PFI," pfi_field_3)

PRN_param = "PRN," prot_field

PVR_param = "PVR," pvr_field

PVS_param = "PVS," pvs_field


QOR_param = "QOR," qor_field


RBI_param = ("RBI,tag=u"    ) /
            ("RBI," rbi_field_1) /
            ("RBI," rbi_field_2) /
            ("RBI," rbi_field_3)

RCT_param = "RCT," rct_field

RDC_param = "RDC," rdc_field

RDS_param = "RDS," rds_field

RFI_param = ("RFI,tag=u"    ) /
            ("RFI,tag=1"    ) /
            ("RFI," rfi_field_1) /
            ("RFI," rfi_field_2) /
            ("RFI," rfi_field_3)

RGN_param = "RGN," noa_field "," npi_field "," pi_field "," nr_field

RMO_param = "RMO," protocol_profile "," dat_field
```

```
RNI_param = "RNI," redirecting_ind "," orig_red__reason ","
            redirect_count "," redirect_reason

RNN_param = "RNN," noa_field "," inn_field "," npi_field "," nr_field

RNR_param = "RNR," rnr_field


SCF_param = "SCF," scf_field

SEA_param = "SEA," sea_field

SEG_param = "SEG,"

SIG_param = "SIG," inst_field "," sig_list_field

SPC_param = "SPC," pc_field

SPI_param = "SPI," mparm_field "," sparm_field

SRI_param = "SRI," sri_field

SUN_param = "SUN," sun_field


TID_param = "TID," tid_field

TMP_param = "TMP," tmr_field

TMR_param = "TMR," tmr_field

TMU_param = "TMU," tmr_field

TNS_param = "TNS," ton_field "," nip_field "," trans_field


UCI_param = "UCI," uci_tc_field "," uci_t9_field

UFC_param = "UFC," nss_param_name "," instr_field "," nss_field_name ","
            dat_field

UID_param = "UID," uid_tc_field "," uid_t9_field

USI_param = ("USI," usi_field_1)  /
            ("USI," usi_field_2)  /
            ("USI," usi_field_3)  /
            ("USI," usi_field_4)  /
            ("USI," usi_field_5)  /
            ("USI," usi_field_6)  /
            ("USI," usi_field_7)  /
            ("USI," usi_field_8)  /
            ("USI," usi_field_9)  /
            ("USI," usi_field_10) /
            ("USI," usi_field_11) /
            ("USI," usi_field_12) /

USP_param = USI_param

UTI_param = "UTI," cs_field "," interp_field "," pfl_field "," hlc_field ","
            ehl_field

UUI_param = ("UUI," uui_field_1) /
            ("UUI," uui_field_2)
```

```
UUS_param = "UUS," pd_field "," dat_field


VER_param = "VER," ver_field
```

NOTA – A continuación se presenta una lista por orden alfabético de las definiciones de campo compacto.

```
acc_field = (opt-unk / "n" / "y")

aci_field = opt-unk / DIGIT

acl_field = (opt-unk / "1" / "2")

act_field = 2DIGIT

adi_field = (opt-unk / "n" / "y")

alt_field = 1*DIGIT

ang_field = 1*DIGIT

apm_field = 0*(2HEX)

asg_field = ("0" / "1")    ; CGL

attribute_ids = attribute_id /
                ( "(" attribute_id 1*("," attribute_id) ")" )

attribute_id = "{" attribute_num "," rejected_attribs "," avail_attribs "}"

attribute_num = "1" / ; info transfer cap
                "2" / ; info transfer mode
                "3" / ; info transfer rate
                "4" / ; structure
                "5" / ; configuration
                "6" / ; establishment
                "7" / ; symmetry
                "8" / ; info transfer rate_dest_orig
                "9" / ; layer id
                "A"   ; rate multiplier

auc_field = 1*DIGIT

avail_attribs = rejected_attribs


bct_field = DIGIT

bear_field = 3DIGIT

bid_field = 1*(2HEX)

bnc_field = DIGIT

brc_field = ("0" / "1")

bri_field = "(" redir_ind *( "," redir_ind ) ")"

bvn_field = ("0" / "d" / "s")


call_id_field = 6HEX
```

```
call_rejected_ind = "{" reject_reason "," reject_cond
                    [ "," user_specific_diag ] [ "," ie_type "," ie_id ]
                    "}"

cap_field = LALPHANUM

cause_field = 3DIGIT

cc_field = opt-unk / "n" / "1" / "2"

ccbs_ind = (opt-unk / "n" / "y") ; y for CCBS possible, n for CCBS not possible
                                 ; u for unknown

ccn_field = (opt-unk / "n" / "y")

ccs_field = ("0" / "y")

cdpn_coding = "{" noa_field "," npi_field "," nr_field "}"
              NOTE – Only short form is used in the 'embedded' field.

cdt_field = (opt-unk / "n" / "y")

cgl_field_0 = pi_field "," si_field "," opt-unk

cgl_field_1 = pi_field "," si_field "," "0" "," ns_field ","
              lat_field "," lon_field

cgl_field_2 = pi_field "," si_field "," "1" "," ns_field ","
              lat_field "," lon_field "," unc_field "," con_field

cgl_field_3 = pi_field "," si_field "," "2" "," ns_field ","
              lat_field "," lon_field "," unc_field "," asg_field ","
              alt_field "," auc_field "," con_field

cgl_field_4 = pi_field "," si_field "," "3" "," ns_field ","
              lat_field "," lon_field "," maj_field "," min_field ","
              ori_field "," con_field

cgl_field_5 = pi_field "," si_field "," "4" "," ns_field ","
              lat_field "," lon_field "," rad_field "," off_field ","
              ang_field "," con_field

cgl_field_6 = pi_field "," si_field "," "5" "," num_field ","
              pts_fields "," con_field

cgl_field_7 = pi_field "," si_field "," "6" "," ns_field ","
              lat_field "," lon_field "," asg_field "," alt_field

cgl_field_8 = pi_field "," si_field "," "7" "," ns_field ","
              lat_field "," lon_field "," asg_field "," alt_field ","
              maj_field "," min_field "," ori_field "," auc_field ","
              con_field

cgl_field_9 = pi_field "," si_field "," "8" "," ns_field ","
              lat_field "," lon_field "," inr_field "," unc_field ","
              off_field "," ang_field "," con_field

cgv_field_0 = pi_field "," si_field "," "0"

cgv_field_1 = pi_field "," si_field "," "1" "," bear_field ","
              hvel_field
```

```
cgv_field_2 = pi_field "," si_field "," "2" "," bear_field ","
              hvel_field "," dir_field "," vvel_field

cgv_field_3 = pi_field "," si_field "," "3" "," bear_field ","
              hvel_field "," hu_field

cgv_field_4 = pi_field "," si_field "," "4" "," bear_field ","
              hvel_field "," hu_field "," dir_field "," vvel_field ","
              vu_field

chan_type = "0" / "1" / "2" / "3" ; B, H0, H11, H12 channel units respectively
                                  ; per Table 4-13/Q.931 octet 3.2
                                  ; not generated by ISUP

charge_field = ("0" / "n" / "y")

chi_field = 5DIGIT

cic_field = 10DIGIT

cls_field = 3DIGIT

cnf_field = ("0" / "n" / "y")

cni_field = (opt-unk / "n" / "y")

codec_field = 2DIGIT

codec_list_field = "(" "{" codec_seq_field "}"
                       *( "," "{" codec_seq_field "}" ) ")"

codec_seq_field = inst_field "," org_field "," codec_field ","
                  config_field "," config_alt_field

col_field = ("0" / "y")

comp_field = "0" / "1"

con_field = 1*DIGIT

con_line_id_req = (opt-unk / "n" / "y")

condition_coding = "{" cond_c1 "," cond_c2 "," cond_c3 "}"

cond_c1 = (opt-unk / "0" / "1") ; u for unknown, 0 for user, 1 for provider

cond_c2 = (opt-unk / "0" / "1") ; u for unknown, 0 for normal, 1 for abnormal

cond_c3 = reject_cond

conf_field = (opt-unk / "p")

config_alt_field = *(2HEX)

config_field = [ "(" [ option_field *( "," option_field) ] ")" ]

cot_field = DIGIT

cpc_field = 2DIGIT

cre_field = 3DIGIT

cs_field = ( opt-unk / "c" / "i" / "n" / "p" ) ; i from ITU-T Rec. Q.850
```

```
csi_field = 2DIGIT

cti_field = opt-unk / "f" / "s"

ctr_field = 3DIGIT

cug_call = opt-unk / "n" / "1" / "2"


dat_field = 1*(2HEX)

data_bit = DIGIT

diag_field = [ "{" [condition_coding]  "," ; Condition, see subfield
                   [tni_coding]        "," ; Transit Network Identity (TNS/NSF)
                   [ccbs_ind]          "," ; CCBS Indicator (ITU-T Rec. Q.733.3)
                   [call_rejected_ind] "," ; Call Rejected Diagnostic
                   [new_dest]          "," ; New destination Called Party Number
                   [fac_id_reject]     "," ; Facility ID/Rejected parameter
                   [attribute_ids]     "," ; Attribute identity
                   [chan_type]         "," ; Channel type
                   [incompat_param]    "," ; Incompatible parameter (IE ID)
                   [timer_num]         "," ; Timer Number
                   [msg_type]          "," ; Message Type
                   [param_name]        "}" ; Parameter Name
                  ] ; at least one diagnostic or else entire field is empty

diag_list_field =  [ "(" "{" diagnostic_id "," diagnostic_index "}"
                   *( "," "{" diagnostic_id "," diagnostic_index "}" ) ")" ]

diagnostic_id = 2HEX

diagnostic_index = 2(2HEX)

dir_field = DIGIT

dis_field = 1*(2Hex)

dur_field = 5DIGIT

duration_ms = 5DIGIT


e2ei_field = (opt-unk / "n" / "y")

e2em_field = (opt-unk / "n" / "1" / "2" / "3")

echo_field = (opt-unk / "n" / "y")

ehl_field =  3DIGIT

encoding_scheme = DIGIT

estab_field = (opt-unk / "d")

evi = opt-unk / "a" / "p" / "i" / DIGIT

evr = "0" / "y" / "n"


fai_field = "s"

fac_id_reject = 1*(2HEX) ;network dependent, variable length.
```

```
fvn_field_1 = "osp," 1*DIGIT

fvn_field_2 = "cug," 1*DIGIT

fvn_field_3 = "trn," noa_field "," npi_field "," trn_field


gci_field = token ["@" token]

gea_type = ( "dest" / "diad" / "rsrv" / "sufs" / "suns" /
             "trs1" / "trs2" / "trs3" / "trs4" / "trs5" / "trs6" )

gic_bc_field       = 4HEX

gno_field          = 2DIGIT


hlc_field          = 3DIGIT

hoc_field          = 2DIGIT

hold_ind_field     = (opt-unk / "n" / "y")

hold_prov          = (opt-unk / "n" / "y")

hu_field           = 3DIGIT

hvel_field         = 5DIGIT


ie_type            = ("0" / "1")

ie_id              = 1*(2HEX)

in_info_field      = DIGIT

in_req_field       = "0" / "a" / "d"

incompat_param     = 2HEX

ini_info_field     = DIGIT

ini_resp_field     = "i" / "x" / "n"

ini_sol_field      = (opt-unk / "n" / "y")

inn_field          = (opt-unk / "n" / "y")  ; CDN and CPN

inr_field          = 1*DIGIT

inst_field         = "{" pass_field "," not_field "," nopass_field "," not_field
                     "}"

instr_field        = opt-unk / DIGIT

inter_field        = (opt-unk / "n" / "y")

interp_field       = DIGIT  ; UTI parameter

intnat_field       = (opt-unk / "n" / "y")

iri_field          = DIGIT

isdn_pref          = opt-unk / "n" / "1" / "2"
```

```
isup_ind_field     = (opt-unk / "n" / "y")

iwf_field          = dat_field

iwri_field         = (opt-unk / "n" / "y") ; PCA


lat_field          = 1*DIGIT

layer1_field       = 4LALPHANUM

layer2_field       = lay2_prot "," lay_mode "," lay2_use "," lay2_inf ","
                     lay_win

layer3_field       = lay3_prot "," lay_mode "," lay3_pks "," lay_win ","
                     lay3_inf

lay_mode           = LALPHA

lay_win            = 3DIGIT

lay2_prot          = 2DIGIT

lay2_use           = LALPHA

lay2_inf           = 2HEX

lay3_prot          = DIGIT

lay3_pks           = DIGIT

lay3_inf           = DIGIT

lc_field           = ( "unk" / "usr" / "lpn" / "lln" / "tra" /
                     "rln" / "rpn" / "int" / "bip" ) ;CAI

lid_field          = 4(2HEX)

loc_field          = 6HEX ;CNR

lon_field          = 1*DIGIT

loop_field         = (opt-unk / "1" / "2")


maj_field          = 1*DIGIT

mci_inst           = opt-unk / DIGIT

mcr_resp           = (opt-unk / "n" / "y")

min_field          = 1*DIGIT

mlp_lfb            = opt-unk / "y" / "n" / "r"

mlp_pl             = opt-unk / DIGIT

mlp_req_field      = (opt-unk / "n" / "y")

mlp_sd             = 6HEX

mod_field          = opt-unk / "c" / "p"
```

```
modem_type          = 2DIGIT

mparm_field         = nss_param_name

mpl_field           = "(" nss_param_name *("," nss_param_name) ")"

msg_type            = 2HEX ; refer to Table 4/Q.763 and Table 4-2/Q.931

mult_rate_field     = 2DIGIT


neg_field           = ("n" / "y")

net_id_field        = 4HEX ; GIC and MLP

new_dest = cdpn_coding / ; CDP alone or CDP plus TNS
           ( "{" cdpn_coding ","
           "{" ton_field "," nip_field "," cc_field "," trans_field "}"
           "}" )

nid_field  = *(2HEX)

nip_field         = LALPHANUM ; NSF and TNS

nmc_field         = ("0" / "1" / "y")

noa_field         = 2DIGIT

nopass_field      = DIGIT

not_field         = ("n" / "y")

npi_field         = opt-unk / DIGIT

nps_field         = DIGIT

nr_field          = telephone-number

nrn_noa_field     = DIGIT

ns_field          = ("0" / "1")

nso_field         = opt-unk / DIGIT

nsf_nid           = 1*(2HEX)

nsf_ind           = 1*(2HEX)

num_field         = 2DIGIT


obi_cf            = ("0" / "n" / "y")

obi_mlpp          = ("0" / "n" / "y")

obi_inb           = ("0" / "n" / "y")

oct_field         = (opt-unk / "n" / "y")

off_field         = 1*DIGIT

option_field      = ("y" / "n")

org_field         = 3DIGIT
```

```
ori_field        = 1*DIGIT

orig_red__reason = opt-unk / DIGIT

out_info_field   = DIGIT

out_req_field    = "0" / "a" / "d"


param_name       = 2HEX ; Table 5/Q.763 (in CAI param)

parity           = "o" / "e" / "n" / "0" / "1"

pass_field       = DIGIT

pbi_field_1      = "1," duration_ms

pbi_field_2      = "2," call_id_field "," pc_field

pbi_field_3      = "3," redirect_reason_field

pc_cluster       = 3DIGIT

pc_field         = (pc_net "." pc_cluster "." pc_member)

pc_member        = 3DIGIT

pc_net           = 3DIGIT

pca_field        = DIGIT

pci_inst         = opt-unk / DIGIT

pct_field        = 2DIGIT

pdc_field        = 5DIGIT

pd_field         = DIGIT

pfi_field_1      = "2," duration_ms

pfi_field_2      = "3," pfi_ppr "," pfi_ppi

pfi_field_3      = "4," redirect_reason_field

pfi_ppr          = 3DIGIT

pfi_ppi          = DIGIT

pfl_field        = ("0" / "1")

pi_field         = opt-unk / "y" / "n" / "0"

prot_field       = 5CHAR

protocol_profile = (opt-unk / "1")

pts_field        = "{" ns_field "," lat_field "," lon_field "}"

pts_fields       = "(" pts_field 2*14("," pts_field) ")"

pvr_field        = DIGIT
```

```
pvs_field        = ("0" / "1" / "2")

qor_field        = ("0" / "y")

rad_field        = 1*DIGIT

rate_field       = DIGIT

rbi_field_1      = "1," duration_ms

rbi_field_2      = "2," call_id_field "," pc_field

rbi_field_3      = "3," redirect_reason_field

rci_field        = (opt-unk / "n" / "y")

rct_field        = 2DIGIT

rdc_field        = DIGIT

rds_field = ("0" / "1" / "2")

rea_field = DIGIT

rec_field = (opt_unk / "q" / "p" / "1" / "5")

redir_ind = 2DIGIT

redirecting_ind = DIGIT

redirect_count  = 2DIGIT

redirect_reason = opt-unk / DIGIT

redirect_reason_field = 3DIGIT

reject_reason  = ("00" / "01" / "02")
 ; 00 for user_specific,
 ; 01 for IE missing,
 ; 02 for IE contents not sufficient

reject_cond   = (opt-unk / "0" / "1")
 ; u for unknown,
 ; 0 for transient,
 ; 1 for permanent

rejected_attribs = rejected_attrib /
                   "(" rejected_attrib 1*("," rejected_attrib) ")"

rejected_attrib = 1*(2HEX)

req_field     = ("0" / "1")

rfi_field_1   = "2," call_id_field "," pc_field

rfi_field_2   = "3," rfi_prr "," rfi_rpi

rfi_field_3   = "4," redirect_reason_field

rfi_prr     = 3DIGIT

rfi_rpi     = DIGIT
```

```
rnr_field   = (opt-unk / "n" / "y")

rr_field    = opt-unk / DIGIT


sat_field   = opt-unk / DIGIT

sccpm_field  = ("0" / "1" / "2" / "3")

scf_field    = 1*(2HEX)

sea_field    = 2DIGIT

seg_field    = 2DIGIT

si_field     = opt-unk / DIGIT

sig_list_field = "(" "{"sigid_field ","dur_field "}"
                 *( "," "{"sigid_field ","dur_field "}" ) ")"

sigid_field = 2DIGIT

slr_field   = 2HEX

sn_field   = ("0" / "1")

sni_field   = (opt-unk / "n" / "y")

sparm_field  = 3HEX

sri_field   = (opt-unk / "s" / "n")

status_field = (opt-unk / "f" / "c")

stop_bit   = DIGIT

str_field   = DIGIT

sub_add_field = 2DIGIT

sun_field   = nr_field

sym_field   = 2LALPHA

sync_field  = ("n" / "y")


tid_field   = token ["@" token]

timer_num   = 3DIGIT ; not generated by ISUP (in CAI diagnostics)

tmr_field   = DIGIT

tni_coding  = tni_val / "(" tni_val 1*("," tni_val) ")"  ; CAI

tni_val = "{" ("0," ton_field "," nip_field "," nsf_nid "," nsf_ind)   ; NSF
            / ("1," ton_field "," nip_field "," cc_field "," trans_field) ; TNS
            "}"  ; encapsulates the corresponding information element

toc_field   = 4LALPHANUM

ton_field   = (opt-unk / "c" / "n") ; type of network for CID, NSF, and TNS
```

```
trans_field  = 1*HEX

trn_field   = 1*DIGIT

tri_field   = ("0" / "1")

type_of_digit = DIGIT ; GED


uci_t9_field = ("0" / "y" / "n")

uci_tc_field = ("0" / "y" / "n")

uid_t9_field = ("0" / "y")

uid_tc_field = ("0" / "y")

unc_field  = 1*DIGIT

user_specific_diag = 1*(2HEX)

usi_asgn_field = ("0" / "1")

usi_field_1 = "rate," cs_field "," cap_field "," mod_field "," rate_field

usi_field_2 = "sup1," str_field "," estab_field "," conf_field

usi_field_3 = "symm," sym_field "," rate_field

usi_field_4 = "mult," mult_rate_field

usi_field_5 = "lay1," layer1_field

usi_field_6 = "subr," sub_addr_field "," neg_field "," sync_field

usi_field_7 = "v110," usi_int_field "," usi_txnic_field ","
              usi_rxnic_field "," usi_txfl_field "," usi_rxfl_field

usi_field_8 = "v120," usi_hdr_field "," usi_mf_field "," usi_mode_field ","
              usi_lli_field "," usi_asgn_field "," usi_inband_field

usi_field_9 = "pari," stop_bit "," data_bit "," parity

usi_field_10 = "modm," modem_type

usi_field_11 = "lay2," layer2_field

usi_field_12 = "lay3," layer3_field

usi_hdr_field = (opt-unk / "n" / "y")

usi_inband_field = ("0" / "1")

usi_int_field  = 2DIGIT

usi_lli_field  = ("0" / "1")

usi_mf_field   = (opt-unk / "n" / "y")

usi_mode_field = ("0" / "1")

usi_rxfl_field = (opt-unk / "n" / "y")

usi_rxnic_field = (opt-unk / "n" / "y")
```

```
usi_txfl_field = (opt-unk / "n" / "y")

usi_txnic_field = (opt-unk / "n" / "y")

uui_field_1 = "reqt," uui_srv1 "," uui_srv2 "," uui_srv3

uui_field_2 = "resp," uui_ssrv1 "," uui_ssrv2 "," uui_ssrv3 "," uui_ndi

uui_ndi   = ("0" / "y")

uui_srv1   = ("0" / "y" / "n")

uui_srv2   = ("0" / "y" / "n")

uui_srv3   = ("0" / "y" / "n")

uui_ssrv1  = ("0" / "y" / "n")

uui_ssrv2  = ("0" / "y" / "n")

uui_ssrv3   = ("0" / "y" / "n")

ver_field   = DIGIT "." 2DIGIT

vu_field    = 3DIGIT

vvel_field  = 3DIGIT
```

Apéndice I

Ejemplos de codificación de la sintaxis de señalización de banda estrecha (NSS)

I.1 Ejemplos de mensaje

En este apéndice se presentan algunos ejemplos de mensajes NSS en modo visualización (literal) y modo transmisión (compacto), así como la encapsulación del cuerpo de NSS utilizando MIME en un mensaje SIP.

Cuadro I.1/Q.1980.1 – Ejemplos de secuencias de mensajes

Secuencia de mensaje en modo visualización	Secuencia de mensaje en modo transmisión
VER,v=1.00 PRN,prot=q1902 IAM, GCI,gci=1234567890 TID,tid=4444000010 NOC,sat=0,eco=n,cot=0,vci=n FCI,int=n,e2ei=n,e2em=1,inter=n,iupi=y,pref=n,acc=y,sccpm=0 CPC,cpc=09 USI,type=rate,cs=n,cap=s,mode=c,rate=1 USI,type=lay1,lay1=ulaw CPN,noa=04,inn=y,npi=1,#=7035551234 CGN,noa=04,cni=y,npi=1,pi=y,si=1,#=4085551234	VER,1.00 PRN,q1902 IAM, GCI,1234567890 TID,4444000010 NOC,0,n,0,n FCI,n,n,1,n,y,n,y,0 CPC,09 USI,rate,n,s,c,1 USI,lay1,ulaw CPN,04,y,1,7035551234 CGN,04,y,1,y,1,4085551234
VER,v=1.00 PRN,prot=q1902 ACM, TID,tid=4444000020 GCI,gci=123456789@itsp1.com BCI,cha=y,sta=f,cpc=09,e2ei=n,e2em=1,inter=n,iupi=y,h=n,acc=y,eco=n,sccpm=0	VER,1.00 PRN,q1902 ACM, TID,tid=4444000020 GCI,123456789@itsp1.com BCI,y,f,09,n,1,n,y,n,y,n,0
VER,v=1.00 PRN,prot=q1902 ANM, GCI,gci=1234567890 TID,tid=4444000030	VER,1.00 PRN,q1902 ANM, GCI,1234567890 TID,tid=4444000030
VER,v=1.00 PRN,prot=q1902 REL, GCI,gci=1234567890 TID,tid=4444000040 CAI,cs=c,loc=lln,rec=q,cau=016,di=	VER,1.00 PRN,q1902 REL, GCI,1234567890 TID,4444000040 CAI,c,lln,q,016,
VER,v=1.00 PRN,prot=q1902 RLC, GCI,gci=1234567890 TID,tid=4444000050	VER,1.00 PRN,q1902 RLC, GCI,1234567890 TID,4444000050

Para ilustrar la utilización del tipo de medios "aplicación/nss", a continuación se presenta un mensaje INVITE que tiene la información SDP de origen (especificada en RFC 2327) y un mensaje IAM de la PU-RDSI encapsulado. Cabe señalar que las dos cabidas útiles están separadas por el parámetro "boundary" (frontera) (especificado en RFC 2046) que, en este ejemplo, tiene el valor "unique-boundary". Esto forma parte de la especificación multiparte de MIME y no está relacionado con el tipo de medios "applications/nss".

Ejemplo:

```
INVITE sip:7775551212@callagent.company.com SIP/2.0
Via: SIP/2.0/UDP callagent.itsp.com:5060
From: Sip:7775553333@callagent.itsp.com
To: Sip:7775551212@callagent.company.com
Call-ID: Q23ert67@callagent.itsp.com
Cseq: 1
Contact: <sip:johndoe@company.com>
Subject: Transit stuff
Content-Type: multipart-mixed; boundary=unique-boundary
Content-Length: 1234
MIME-Version: 1.0

--unique-boundary
Content-Type: application/sdp; charset=us-ascii

v=0
o=john-doe 200104101630 001 IN IP4 111.22.33.4
s=NSS Call Session
c=IN IP4 callagent.company.com
t= 3034423619 3034443619
m=audio 9092 RTP/AVP 0 3 4

--unique-boundary
Content-Type: application/nss; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-Disposition: signal; handling=required

VER,1.00
PRN,q1902
IAM,
GCI,1234567890123456
TID,444400001
NOC,0,n,0,n
FCI,n,n,1,n,y,n,y,n
CPC,09
```

USI,rate,n,s,c,1

USI,lay1,ulaw

CPN,04,y,1,7891234567

CGN,04,y,1,y,1,9876543210

--unique-boundary—

I.2 Ejemplo de ordenación de compatibilidad

A continuación se presenta un ejemplo del orden en que los parámetros de compatibilidad se encuentran en un mensaje NSS. El parámetro FDC (o UFC) debe seguir inmediatamente al parámetro cuyo valor de campo necesita el FDC (o UFC). Si hay más de un FDC para el mismo parámetro, el orden de esos parámetros FDC (o UFC) seguirá el orden de los campos según aparecen en el parámetro.

Por ejemplo, suponiendo que los campos noa y pi del primer GEA necesitan un FDC, y el campo si del segundo GEA también necesita un FDC, el orden adecuado de los parámetros será:

GEA,<type>,<**noa>**,<npi>,<cni>,<**pi>**,<si>,<#>

FDC for **noa**,,,

FDC for **pi**,,,

GEA,<type>,<noa>,<npi>,<cni>,<pi>,<**si**>,<#>

FDC for **si**,,,

A continuación se presenta una estructura de mensaje incorrecta, porque indica que los valores de los tres parámetros FDC están asociados con el número hallado en el segundo parámetro GEA:

GEA,<type>,<**noa>**,<npi>,<cni>,<**pi>**,<si>,<#>

GEA,<type>,<noa>,<npi>,<cni>,<pi>,<**si**>,<#>

FDC for **noa**,,,

FDC for **pi**,,,

FDC for **si**,,,

I.3 Ejemplo de estructura de GCI y TDI

Se presentan algunas directrices para construir los valores de GCI y TDI.

Utilícense valores de la forma: locally-unique-identifier@address, donde locally-unique-identifier es un valor determinado por el protocolo y la dirección es globalmente única. Se recomienda utilizar una dirección IPv4 del tipo: 123.123.123.123; una dirección IPv6 o el nombre de dominio totalmente cualificado (FQDN). También se puede utilizar una representación ASCII de la dirección IEEE 802 de 48 bits. Se recomienda que locally-unique-identifier sea un valor de 16 caracteres formado por los caracteres 0-9 o A-F del IA5 con incremento monotónico.

Para la correspondencia con UIT-T H.225 para GloballyUniqueID, éste podría ser también una representación ASCII de 16 caracteres de un sello de tiempo UTC seguido de una representación ASCII de 4 caracteres de la secuencia de reloj, que podría ampliarse directamente del valor de 10 bytes 8 bits del GloballyUniqueID o el sello de tiempo UTC podría ordenarse poniendo el año en la posición más a la izquierda.

Los octetos binarios de referencia de llamada global BICC podrían ser representados como dígitos hexadecimales en el locally_unique_identifier, seguido de "@" y el FQDN de la pasarela. El carácter "punto" (.) separaría las tres partes de la referencia de llamada global, (por ejemplo, un valor de referencia de 3 octetos:

msb->1000 0010<-lsb, 0000 0011, y 0001 1010 aparecerían como: 82.03.1A@gw1-abc.com)

Dado que el identificador de llamada es generado por y para un mensaje SIP, no hay motivo para abordar la complejidad de la codificación de la URL y la comparación de cadenas sin distinción de mayúsculas o minúsculas. Lo que sigue se ha extraído de SIP:

El ID de llamada (call-ID) DEBE ser un identificador globalmente único y NO DEBE ser reutilizado para llamadas posteriores. Se RECOMIENDA el uso de identificadores criptográficamente aleatorios. Las implementaciones PUEDEN utilizar la forma "localid@host". Los ID de llamada se expresan en mayúsculas y minúsculas y se comparan simplemente byte por byte. La utilización de identificadores criptográficamente aleatorios proporciona un cierto grado de protección contra el pirateo de sesión. Es necesario conocer los valores de Call-ID, To y From para identificar un tramo de llamada. La distinción entre llamada y tramo de llamada es importante en las llamadas con control de terceros.

Apéndice II

Codificación literal de NSS

Es posible generar fácilmente una descripción literal a partir del modo de transmisión compacto insertando los literales de cadenas de nombre de campo de la forma "tag=" en sus posiciones fijas. Asimismo, el modo compacto puede ser generado a partir de la descripción literal eliminando "tag=" de todos los campos.

Formato general de la ABNF de descripción literal de NSS

```
The compact transmission encoding and verbose description use identical message,
parameter, and value formats. Only the field encoding differs. The field formats
include the tag literals as defined below.

verbose_message = VER_param CRLF ; using the field definitions below
         PRN_param CRLF     ; using the field definitions below
         nss_msg_name "," CRLF
         *verbose_nss_param  ; using the field definitions below
```

NOTA – A continuación se presenta una lista alfabética de las definiciones de campo literales.

```
acc_field = "acc=" (opt-unk / "n" / "y")

aci_field = "aci=" opt-unk / DIGIT

acl_field = "acl=" (opt-unk / "1" / "2")

act_field = "act=" 2DIGIT

adi_field = "adi=" (opt-unk / "n" / "y")

alt_field = "alt=" 1*DIGIT

ang_field = "ang=" 1*DIGIT

apm_field = "apm=" 0*(2HEX)

asg_field = "as=" ("0" / "1")    ; CGL

attribute_ids = attribute_id /
                ( "(" attribute_id 1*("," attribute_id) ")" )

attribute_id = "{" attribute_num "," rejected_attribs "," avail_attribs "}"

attribute_num = "1" / ; info transfer cap
                "2" / ; info transfer mode
                "3" / ; info transfer rate
                "4" / ; structure
                "5" / ; configuration
                "6" / ; establishment
                "7" / ; symmetry
                "8" / ; info transfer rate_dest_orig
                "9" / ; layer id
                "A"   ; rate multiplier

auc_field = "auc=" 1*DIGIT

avail_attribs = rejected_attribs
```

```
bct_field = "bct=" DIGIT

bear_field = "bear=" 3DIGIT

bid_field = "bid=" 1*(2HEX)

bnc_field = "brc=" DIGIT

brc_field = "brc=" ("0" / "1")

bri_field = "bri=" "(" redir_ind *( "," redir_ind ) ")"

bvn_field = "tai=" ("0" / "d" / "s")


call_id_field = "cid=" 6HEX

call_rejected_ind = "{" reject_reason "," reject_cond
                    [ "," user_specific_diag ] [ "," ie_type "," ie_id ]
                    "}"

cap_field = "cap=" LALPHANUM

cause_field = "cau=" 3DIGIT

cc_field = "cc=" opt-unk / "n" / "1" / "2"

ccbs_ind = (opt-unk / "n" / "y") ; y for CCBS possible, n for CCBS not possible
                                 ; u for unknown

ccn_field = "cpi=" (opt-unk / "n" / "y")

ccs_field = "ccss=" ("0" / "y")

cdpn_coding = "{" noa_field "," npi_field "," nr_field "}"
              NOTA – Sólo la forma abreviada se utiliza en el campo 'insertado'.

cdt_field = "ct=" (opt-unk / "n" / "y")

cgl_field_0 = pi_field "," si_field "," "type=u"

cgl_field_1 = pi_field "," si_field "," "type=0" "," ns_field ","
              lat_field "," lon_field

cgl_field_2 = pi_field "," si_field "," "type=1" "," ns_field ","
              lat_field "," lon_field "," unc_field "," con_field

cgl_field_3 = pi_field "," si_field "," "type=2" "," ns_field ","
              lat_field "," lon_field "," unc_field "," asg_field ","
              alt_field "," auc_field "," con_field

cgl_field_4 = pi_field "," si_field "," "type=3" "," ns_field ","
              lat_field "," lon_field "," maj_field "," min_field ","
              ori_field "," con_field

cgl_field_5 = pi_field "," si_field "," "type=4" "," ns_field ","
              lat_field "," lon_field "," rad_field "," off_field ","
              ang_field "," con_field

cgl_field_6 = pi_field "," si_field "," "type=5" "," num_field ","
              pts_fields "," con_field
```

```
cgl_field_7 = pi_field "," si_field "," "type=6" "," ns_field ","
              lat_field "," lon_field "," asg_field "," alt_field

cgl_field_8 = pi_field "," si_field "," "type=7" "," ns_field ","
              lat_field "," lon_field "," asg_field "," alt_field ","
              maj_field "," min_field "," ori_field "," auc_field ","
              con_field

cgl_field_9 = pi_field "," si_field "," "type=8" "," ns_field ","
              lat_field "," lon_field "," inr_field "," unc_field ","
              off_field "," ang_field "," con_field

cgv_field_0 = pi_field "," si_field "," "type=0"

cgv_field_1 = pi_field "," si_field "," "type=1" "," bear_field ","
              hvel_field

cgv_field_2 = pi_field "," si_field "," "type=2" "," bear_field ","
              hvel_field "," dir_field "," vvel_field

cgv_field_3 = pi_field "," si_field "," "type=3" "," bear_field ","
              hvel_field "," hu_field

cgv_field_4 = pi_field "," si_field "," "type=4" "," bear_field ","
              hvel_field "," hu_field "," dir_field "," vvel_field ","
              vu_field

chan_type = "0" / "1" / "2" / "3" ; B, H0, H11, H12 channel units respectively
                                  ; per Table 4-13/Q.931 octet 3.2
                                  ; not generated by ISUP

charge_field = "cha=" ("0" / "n" / "y")

chi_field = "pd=" 5DIGIT

cic_field = "cic=" 10DIGIT

cls_field = "cls=" 3DIGIT

cnf_field = "cai=" ("0" / "n" / "y")

cni_field = "cni=" (opt-unk / "n" / "y")

codec_field = "codec=" 2DIGIT

codec_list_field = "(" "{" codec_seq_field "}"
                       *( "," "{" codec_seq_field "}" ) ")"

codec_seq_field = inst_field "," org_field "," codec_field ","
                  config_field "," config_alt_field

col_field = "cci=" ("0" / "y")

comp_field = "comp=" "0" / "1"

con_field = "con=" 1*DIGIT

con_line_id_req = (opt-unk / "n" / "y")

condition_coding = "{" cond_c1 "," cond_c2 "," cond_c3 "}"

cond_c1 = (opt-unk / "0" / "1") ; u for unknown, 0 for user, 1 for provider

cond_c2 = (opt-unk / "0" / "1") ; u for unknown, 0 for normal, 1 for abnormal
```

```
cond_c3 = reject_cond

conf_field = "conf=" (opt-unk / "p")

config_alt_field = "cdat=" *(2HEX)

config_field = "confg=" [ "(" [ option_field *( "," option_field) ] ")" ]

cot_field = "cot=" DIGIT

cpc_field = "cpc=" 2DIGIT

cre_field = "cre=" 3DIGIT

cs_field = "cs=" ( opt-unk / "c" / "i" / "n" / "p" ) ; i ITU-T Rec. from Q.850

csi_field = "csi=" 2DIGIT

cti_field = "cti=" opt-unk / "f" / "s"

ctr_field = "ref=" 3DIGIT

cug_call = "cug=" opt-unk / "n" / "1" / "2"


dat_field = "dat=" 1*(2HEX)

data_bit = "dat=" DIGIT

diag_field = [ "{" [condition_coding]       "," ; Condition, see subfield
                   [tni_coding]             "," ; Transit Network Identity
                                                  (TNS/NSF)
                   [ccbs_ind]               "," ; CCBS Indicator (Q.733.3)
                   [call_rejected_ind]      "," ; Call Rejected Diagnostic
                   [new_dest]               "," ; New destination Called Party
                                                  Number
                   [fac_id_reject]          "," ; Facility ID/Rejected parameter
                   [attribute_ids]          "," ; Attribute identity
                   [chan_type]              "," ; Channel type
                   [incompat_param]         "," ; Incompatible parameter (IE ID)
                   [timer_num]              "," ; Timer Number
                   [msg_type]               "," ; Message Type
                   [param_name]             "}" ; Parameter Name
       ] ; at least one diagnostic or else entire field is empty
```

NOTA: Los subcampos de diagnóstico no tienen construcción de rótulos (tag=).

```
diag_list_field = "diag=" [ "(" "{" diagnostic_id "," diagnostic_index "}"
                  *( "," "{" diagnostic_id "," diagnostic_index "}" ) ")" ]

diagnostic_id = 2HEX

diagnostic_index = 2(2HEX)

dir_field = "dir=" DIGIT

dis_field = "info=" 1*(2Hex)

dur_field = "dur=" 5DIGIT

duration_ms = "dur=" 5DIGIT
```

```
e2ei_field = "e2ei=" (opt-unk / "n" / "y")

e2em_field = "e2em=" (opt-unk / "n" / "1" / "2" / "3")

echo_field = "eco=" (opt-unk / "n" / "y")

ehl_field = "ehl=" 3DIGIT

encoding_scheme = "es=" DIGIT

estab_field = "estab=" (opt-unk / "d")

evi = "evi=" opt-unk / "a" / "p" / "i" / DIGIT

evr = "evr=" "0" / "y" / "n"


fai_field = "fai=" "s"

fac_id_reject = 1*(2HEX) ;network dependent, variable length.

fvn_field_1 = "type=osp,osp=" 1*DIGIT

fvn_field_2 = "type=cug,cug=" 1*DIGIT

fvn_field_3 = "type=trn," noa_field "," npi_field "," trn_field


gci_field = "gci=" token ["@" token]

gea_type = "type=" ("dest" / "diad" / "rsrv" / "sufs" / "suns" /
           "trs1" / "trs2" / "trs3" / "trs4" / "trs5" / "trs6" )

gic_bc_field = "bc=" 4HEX

gno_field  = "ni=" 2DIGIT

hlc_field   = "hlc=" 3DIGIT

hoc_field   = "hc=" 2DIGIT

hold_ind_field = "h=" (opt-unk / "n" / "y")

hold_prov   = "hp=" (opt-unk / "n" / "y")

hu_field    = "hu=" 3DIGIT

hvel_field   = "hvel=" 5DIGIT

ie_type    = ("0" / "1")

ie_id     = 1*(2HEX)

in_info_field = "iei=" DIGIT

in_req_field  = "ier=" "0" / "a" / "d"

incompat_param = 2HEX

ini_info_field = "inf=" DIGIT

ini_resp_field = "inf=" "i" / "x" / "n"
```

```
ini_sol_field = "inf=" (opt-unk / "n" / "y")

inn_field   = "inn=" (opt-unk / "n" / "y")  ; CDN and CPN

inr_field   = "inr=" 1*DIGIT

inst_field = "instr={" pass_field "," not_field "," nopass_field "," not_field
             "}"

instr_field  = "instr=" opt-unk / DIGIT

inter_field  = "inter=" (opt-unk / "n" / "y")

interp_field  = "int=" DIGIT  ; UTI

intnat_field  = "int=" (opt-unk / "n" / "y")

iri_field   = "iri=" DIGIT

isdn_pref   = "pref=" opt-unk / "n" / "1" / "2"

isup_ind_field = "iupi=" (opt-unk / "n" / "y")

iwf_field = "iwf=" dat_field

iwri_field   = "iwri=" (opt-unk / "n" / "y") ; PCA

lat_field   = "lat=" 1*DIGIT

layer1_field  = "lay1=" 4LALPHANUM

layer2_field  = lay2_prot "," lay_mode "," lay2_use "," lay2_inf "," lay_win

layer3_field  = lay3_prot "," lay_mode "," lay3_pks "," lay_win "," lay3_inf

lay_mode    = "mode=" LALPHA

lay_win    = "win=" 3DIGIT

lay2_prot   = "lay2=" 2DIGIT

lay2_use    = "use=" LALPHA

lay2_inf    = "inf=" 2HEX

lay3_prot   = "lay3=" DIGIT

lay3_pks    = "pks=" DIGIT

lay3_inf    = "inf=" DIGIT

lc_field    = "loc=" ( "unk" / "usr" / "lpn" / "lln" / "tra" /
                       "rln" / "rpn" / "int" / "bip" ) ;CAI

lid_field = "lid=" 4(2HEX)

loc_field   = "loc=" 6HEX ;CNR

lon_field   = "lon=" 1*DIGIT

loop_field   = "lpi=" (opt-unk / "1" / "2")


maj_field    = "maj=" 1*DIGIT
```

```
mci_inst    = "instr=" opt-unk / DIGIT

mcr_resp    = "rp=" (opt-unk / "n" / "y")

min_field    = "min=" 1*DIGIT

mlp_lfb     = "lfb=" opt-unk / "y" / "n" / "r"

mlp_pl     = "pl=" opt-unk / DIGIT

mlp_req_field  = "ri=" (opt-unk / "n" / "y")

mlp_sd     = "sd=" 6HEX

mod_field    = "mode=" opt-unk / "c" / "p"

modem_type   = "modm=" 2DIGIT

mparm_field   = "mparm=" nss_param_name

mpl_field    = "plist=" "(" nss_param_name *("," nss_param_name) ")"

msg_type    = 2HEX ; refer to Table 4/Q.763 and Table 4-2/Q.931

mult_rate_field = "mult=" 2DIGIT

neg_field  = "neg=" ("n" / "y")

net_id_field = "ni=" 4HEX ; GIC and MLP

new_dest = cdpn_coding / ; CDP alone or CDP plus TNS
           ( "{" cdpn_coding ","
           "{" ton_field "," nip_field "," cc_field "," trans_field "}"
           "}" )

nid_field = "nid=" *(2HEX)

nip_field  = "nip=" LALPHANUM ; NSF and TNS

nmc_field  = "tari=" ("0" / "1" / "y")

noa_field  = "noa=" 2DIGIT

nopass_field = DIGIT

not_field = ("n" / "y")

npi_field  = "npi=" opt-unk / DIGIT

nps_field  = "nps=" DIGIT

nr_field   = "#=" telephone-number

nrn_noa_field = "noa=" DIGIT


ns_field   = "ns=" ("0" / "1")

nso_field  = "nso=" opt-unk / DIGIT

nsf_nid   = "nid=" 1*(2HEX)

nsf_ind   = "nsf=" 1*(2HEX)
```

```
num_field  = "num=" 2DIGIT

obi_cf     = "cf=" ("0" / "n" / "y")
obi_mlpp     = "mlpp=" ("0" / "n" / "y")
obi_inb     = "inb=" ("0" / "n" / "y")
oct_field    = "coi=" (opt-unk / "n" / "y")
off_field    = "off=" 1*DIGIT
option_field = ("y" / "n")
org_field = "org=" 3DIGIT
ori_field    = "ori=" 1*DIGIT
orig_red__reason = "orr=" opt-unk / DIGIT
out_info_field = "oei=" DIGIT
out_req_field  = "oer=" "0" / "a" / "d"
param_name = 2HEX ; Table 5/Q.763 (in CAI param)
parity   = "parity=" ("o" / "e" / "n" / "0" / "1")
pass_field = DIGIT
pbi_field_1 = "tag=1," duration_ms
pbi_field_2 = "tag=2," call_id_field "," pc_field
pbi_field_3 = "tag=3," redirect_reason_field
pc_cluster = 3DIGIT
pc_field  = "pc=" (pc_net "." pc_cluster "." pc_member)
pc_member  = 3DIGIT
pc_net   = 3DIGIT
pca_field  = "ppi=" DIGIT
pci_inst  = "instr=" (opt-unk / DIGIT)
pct_field  = "pct=" 2DIGIT
pdc_field  = "pd=" 5DIGIT
pd_field  = "pd=" DIGIT
pfi_field_1 = "tag=2," duration_ms
pfi_field_2 = "tag=3," pfi_ppr "," pfi_ppi
pfi_field_3 = "tag=4," redirect_reason_field
pfi_ppr   = "ppr=" 3DIGIT
```

```
pfi_ppi   = "ppi=" DIGIT

pfl_field  = "pfl=" ("0" / "1")

pi_field  = "pi=" opt-unk / "y" / "n" / "0"

prot_field = "prot=" 5CHAR

protocol_profile = "pp=" (opt-unk / "1")

pts_field  = "{" ns_field "," lat_field "," lon_field "}"

pts_fields = "(" pts_field 2*14("," pts_field) ")"

pvr_field  = "pvr=" DIGIT

pvs_field  = "psi=" ("0" / "1" / "2")


qor_field = "qor=" ("0" / "y")


rad_field    = "rad=" 1*DIGIT

rate_field   = "rate=" DIGIT

rbi_field_1   = "tag=1," duration_ms

rbi_field_2   = "tag=2," call_id_field "," pc_field

rbi_field_3   = "tag=3," redirect_reason_field

rci_field    = "rci=" (opt-unk / "n" / "y")

rct_field    = "rc=" 2DIGIT

rdc_field    = "rc=" DIGIT

rds_field    = "rpi=" ("0" / "1" / "2")

rea_field = "rea=" DIGIT

rec_field = "rec=" (opt_unk / "q" / "p" / "1" / "5")

redir_ind = 2DIGIT

redirecting_ind = "ri=" DIGIT

redirect_count = "rc=" 2DIGIT

redirect_reason = "rr=" (opt-unk / DIGIT)

redirect_reason_field = "rea=" 3DIGIT

reject_reason  = ("00" / "01" / "02")
 ; 00 for user_specific,
 ; 01 for IE missing,
 ; 02 for IE contents not sufficient

reject_cond   = (opt-unk / "0" / "1")
 ; u for unknown,
 ; 0 for transient,
 ; 1 for permanent
```

```
rejected_attribs = rejected_attrib /
                   "(" rejected_attrib 1*("," rejected_attrib) ")"

rejected_attrib = 1*(2HEX)

req_field    = "req=" ("0" / "1")

rfi_field_1   = "tag=2," call_id_field "," pc_field

rfi_field_2   = "tag=3," rfi_prr "," rfi_rpi

rfi_field_3   = "tag=4," redirect_reason_field

rfi_prr     = "prr=" 3DIGIT

rfi_rpi     = "rpi=" DIGIT

rnr_field    = "rnr=" (opt-unk / "n" / "y")

rr_field     = "rr=" opt-unk / DIGIT


sat_field   = "sat=" (opt-unk / DIGIT)

sccpm_field  = "sccpm=" ("0" / "1" / "2" / "3")

scf_field   = "scf=" 1*(2HEX)

sea_field   = "fci=" 2DIGIT

seg_field   = "seq=" 2DIGIT

si_field   = "si=" opt-unk / DIGIT

sig_list_field = "sig=" "(" "{"sigid_field ","dur_field "}"
                 *( "," "{"sigid_field ","dur_field "}" ) ")"

sigid_field = "sigid=" 2DIGIT

slr_field   = "slr=" 2HEX

sn_field   = "si=" ("0" / "1")

sni_field   = "sni=" (opt-unk / "n" / "y")

sparm_field  = "sparm=" 3HEX

sri_field   = "sri=" (opt-unk / "s" / "n")

status_field = "sta=" (opt-unk / "f" / "c")

stop_bit   = "stp=" DIGIT

str_field   = "str=" DIGIT

sub_add_field = "subr=" 2DIGIT

sun_field   = nr_field

sym_field   = "sym=" 2LALPHA

sync_field  = "sync=" ("n" / "y")
```

```
tid_field   = "tid=" token ["@" token]

timer_num   = 3DIGIT ; not generated by ISUP (in CAI diagnostics)

tmr_field   = "tmr=" DIGIT

tni_coding  = tni_val / "(" tni_val 1*("," tni_val) ")"  ; CAI

tni_val = "{" ("0," ton_field "," nip_field "," nsf_nid "," nsf_ind)      ; NSF
           / ("1," ton_field "," nip_field "," cc_field "," trans_field) ; TNS
           "}"  ; encapsulates the corresponding information element

toc_field   = "toc=" 4LALPHANUM

ton_field   = "ton=" (opt-unk / "c" / "n") ; type of network for CID, NSF, and
              TNS

trans_field  = "tns=" 1*HEX

trn_field   = "trn=" 1*DIGIT

tri_field   = "tri=" ("0" / "1")

type_of_digit = "tod=" DIGIT ; GED


uci_t9_field = "t9=" ("0" / "y" / "n")

uci_tc_field = "tc=" ("0" / "y" / "n")

uid_t9_field = "t9=" ("0" / "y")

uid_tc_field = "tc=" ("0" / "y")

unc_field  = "unc=" 1*DIGIT

user_specific_diag = 1*(2HEX)

usi_asgn_field = "asgn=" ("0" / "1")

usi_field_1 = "type=rate," cs_field "," cap_field "," mod_field "," rate_field

usi_field_2 = "type=sup1," str_field "," estab_field "," conf_field

usi_field_3 = "type=symm," sym_field "," rate_field

usi_field_4 = "type=mult," mult_rate_field

usi_field_5 = "type=lay1," layer1_field

usi_field_6 = "type=subr," sub_addr_field "," neg_field "," sync_field

usi_field_7 = "type=v110," usi_int_field "," usi_txnic_field ","
              usi_rxnic_field "," usi_txfl_field "," usi_rxfl_field

usi_field_8 = "type=v120," usi_hdr_field "," usi_mf_field "," usi_mode_field ","
              usi_lli_field "," usi_asgn_field "," usi_inband_field

usi_field_9 = "type=pari," stop_bit "," data_bit "," parity

usi_field_10 = "type=modm," modem_type

usi_field_11 = "type=lay2," layer2_field
```

```
usi_field_12 = "type=lay3," layer3_field

usi_hdr_field  = "hdr=" (opt-unk / "n" / "y")

usi_inband_field = "inbnd=" ("0" / "1")

usi_int_field  = "int=" 2DIGIT

usi_lli_field  = "lli=" ("0" / "1")

usi_mf_field   = "mf=" (opt-unk / "n" / "y")

usi_mode_field = "mode=" ("0" / "1")

usi_rxfl_field = "rxfl=" (opt-unk / "n" / "y")

usi_rxnic_field = "rxnic=" (opt-unk / "n" / "y")

usi_txfl_field = "txfl=" (opt-unk / "n" / "y")

usi_txnic_field = "txnic=" (opt-unk / "n" / "y")

uui_field_1 = "type=reqt," uui_srv1 "," uui_srv2 "," uui_srv3

uui_field_2 = "type=resp," uui_ssrv1 "," uui_ssrv2 "," uui_ssrv3 "," uui_ndi

uui_ndi   = "ndi=" ("0" / "y")

uui_srv1   = "srv1=" ("0" / "y" / "n")

uui_srv2   = "srv2=" ("0" / "y" / "n")

uui_srv3   = "srv3=" ("0" / "y" / "n")

uui_ssrv1  = "srv1=" ("0" / "y" / "n")

uui_ssrv2  = "srv2=" ("0" / "y" / "n")

uui_ssrv3  = "srv3=" ("0" / "y" / "n")

ver_field   = "v=" DIGIT "." 2DIGIT

vu_field   = "vu=" 3DIGIT

vvel_field  = "vvel=" 3DIGIT
```

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