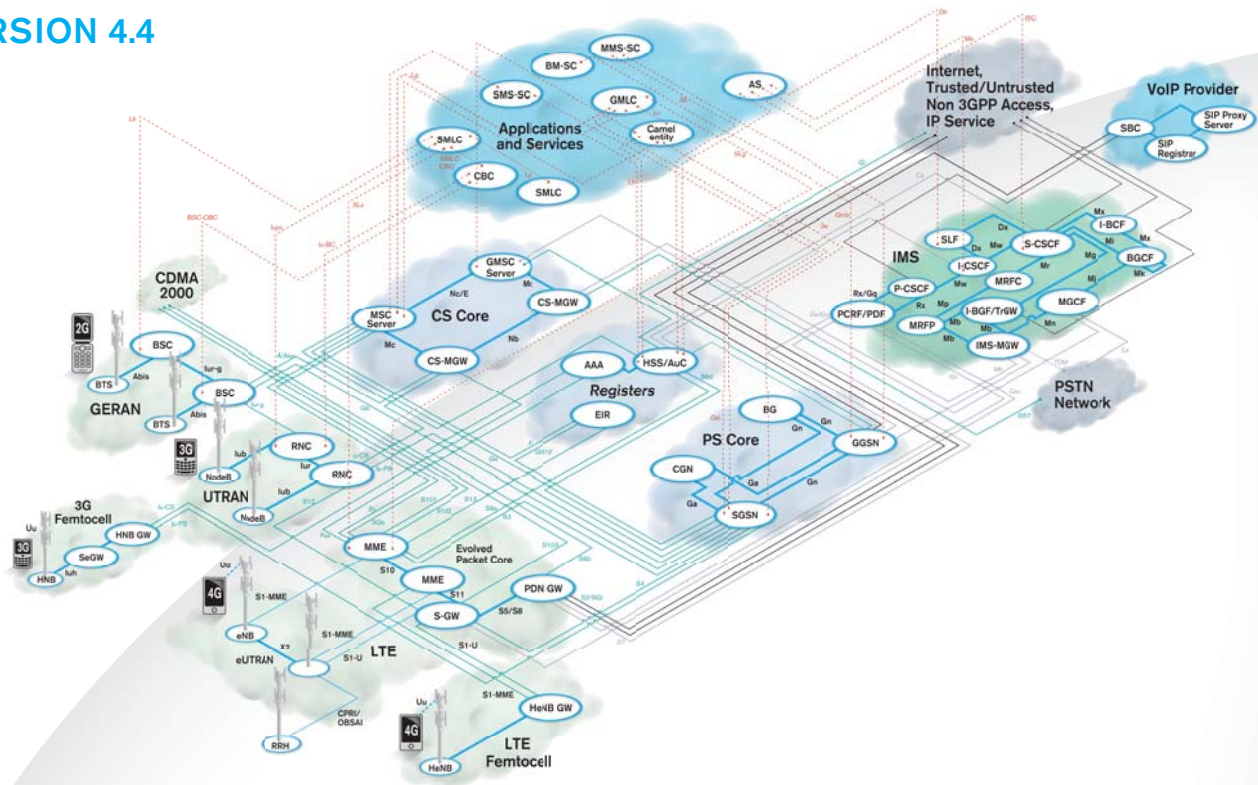


Analyzer Technology Coverage

VERSION 4.4



Lists the details regarding wireless technology interface and protocol support for LTE/UMTS/GSM/Core, all IP Application protocols which can be analysed, and all analyzed and gathered KPIs.

PRODUCT NOTE

TECHNOLOGY PACKAGE PROTOCOL COVERAGE

LTE TECHNOLOGY PACKAGE

LTE Uu interface

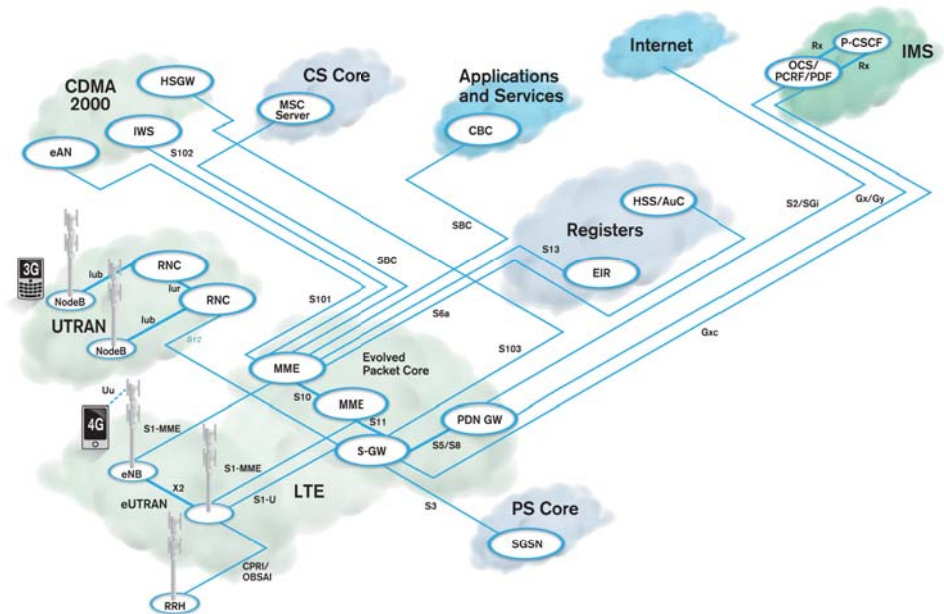
- > LTE RRC: 3GPP 36.331 v.10.7.0, v.10.6.0, v.10.3.0, v.9.2.0, v.9.2.0, v.8.7.0
- > NAS: 3GPP 24.301 v.10.3.0, v.9.2.0, v.8.3.0
- > GSM/3G supplementary services: 3G TS 24.080 v.9.2.0, v.7.3.0, v.6.3.0, v.5.5.0
- > LPP: 3GPP 36.355 v.9.6.0
- > GSM/3G SMS: 3G TS 24.011 v.10.0.0, TS 23.040 v.7.1.0, v.6.7.0, v.5.6.1, TS 23.038 v.7.0.0, v.6.1.0, v.5.6.0
- > LTE MAC: 3GPP TS 36.321 v.8.7.0
- > LTE RLC: 3GPP TS 36.322 v.8.7.0
- > LTE PDCP: 3GPP TS 36.323 v.9.0.0

S1, X2 interfaces

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > S1-AP: 3GPP 36.413 v.10.6.0, v.10.2.0, v.9.6.0, v.9.2.2, v.8.7.0
- > LPPa: 3GPP TS 36.455 v.9.4.1
- > DoCoMo S1-AP: 3GPP 36.413 v.9.3.0-1.6, 9.3.0-1.5, 9.3.0-1.3
- > NAS: 3GPP 24.301 v.10.7.0, v.10.3.0, v.9.2.0, v.8.3.0
- > GSM/3G supplementary services: 3G TS 24.080 v.9.2.0, v.7.3.0, v.6.3.0, v.5.5.0
- > LPP: 3GPP 36.355 v.9.6.0
- > GSM/3G SMS: 3G TS 24.011 v.10.0.0, TS 23.040 v.7.1.0, v.6.7.0, v.5.6.1, TS 23.038 v.7.0.0, v.6.1.0, v.5.6.0
- > NSN LTE O&M: v.18.1.0, v.14.1.0
- > X2-AP: 3GPP 36.423 v.10.2.0, v.9.2.0, v.8.7.0
- > DoCoMo X2-AP: 3GPP 36.423 v.8.5.0-1.1
- > GTPv1: 3G TS 29.060 v.9.8.0, v.8.8.0, v.7.6.0, v.6.13.0, v.5.10.0, 3GPP 29.281 v.9.3.0, v.8.2.0, v.1.1.0
- > UDP: IETF RFC 768, RFC 254
- > IP applications

S2a, S2b, Sgi, S3, S4, S5, S8, S10, S11, S12, S16, S101, Sv interfaces

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > UDP: IETF RFC 768, RFC 254
- > Radius: IETF RFC 2548, RFC 2869, RFC 3162, 3GPP 29.061 v.10.5.0, v.9.3.0 (vendor-specific subattributes)
- > Mobile IPv6: 3GPP TS 29.275 v.10.4.0, v.9.5.0, v.8.5.0, IETF RFC 3775, RFC 5213, RFC 5149
- > GTPv2: 3GPP TS 29.274 v.10.7.0, v.10.4.1, v.9.7.0, v.9.4.0, v.8.5.0, 3GPP 29.276, v.10.3.0, v.10.2.0, v.9.5.0, 3GPP 29.280, v.10.4.0, v.10.2.0, v.9.7.0
- > GTPv1: 3G TS 29.060 v.9.8.0, v.8.8.0, v.7.6.0, v.6.13.0, v.5.10.0, 3GPP 29.281 v.9.3.0, v.8.2.0, v.1.1.0
- > IP applications



S102 interface

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > UDP: IETF RFC 768, RFC 254
- > S102-AP: 3GPP 29.277 v.9.2.0, 3GPP2 A.S0008-C v.3.0, 3GPP2 A.S0009-C v.3.0

S6a, S6d, S7, S13, S13', Gx, Gxx, Gy, Rx interfaces

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > TCP: IETF RFC 793 (09/1981)
- > DIAMETER: IETF RFC 4740, RFC 3588, RFC 3589, RFC 2867, RFC 2868, RFC 4006, 3GPP 29.061 v.10.6.0, v.10.4.0, v.9.5.1, v.6.8.0, 3GPP TS 29.272 v.10.6.0, v.10.4.0, v.9.6.0, v.8.2.0, 3GPP 32.299 v.10.6.0, v.10.3.0, v.9.7.0, v.7.7.0, 3GPP 29.212 v.10.7.0, v.10.4.0, v.9.6.1, 3GPP 29.214 v.10.6.0, v.10.4.0, v.9.6.0
- > M3UA: IETF RFC 3332 (09/2002)
- > SCCP: ITU-T Q.713 (03/2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > TCAP: ITU-T Q.773 (06/1997), ANSI T1.114 (1996)
- > MAP: 3G TS 29.002 v.7.13.0, v.7.8.0, v.6.14.0, v.6.8.0, v.5.10.0, v.5.7.0, v.4.13.0, v.3.12.0; GSM 09.02 Ph2 v.4.19.1; GSM 09.02 Ph1 v.3.11.0

SGs interface

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > SGs-AP: 3GPP 29.118 v.10.5.0, v.9.5.0
- > GSM/3G SMS: 3G TS 24.011 v.10.0.0, TS 23.040 v.7.1.0, v.6.7.0, v.5.6.1, TS 23.038 v.7.0.0, v.6.1.0, v.5.6.0

SBC interface

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > SBC-AP: 3GPP 29.168 v.10.1.0

UMTS TECHNOLOGY PACKAGE

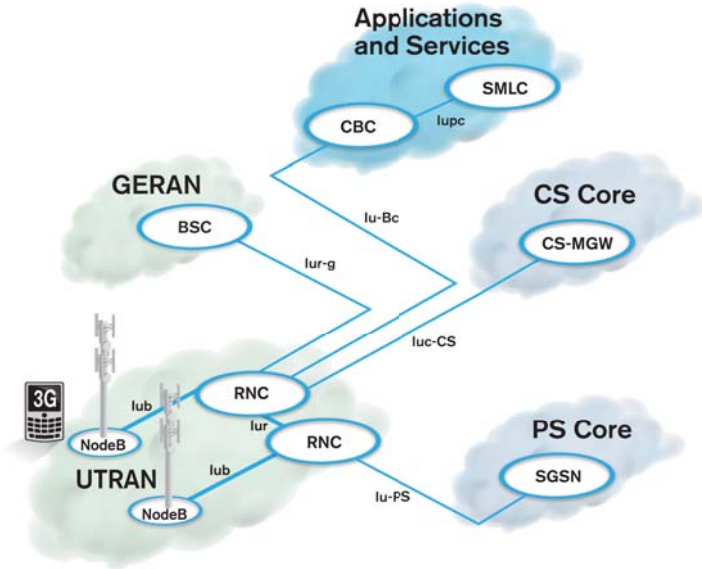
lub interface

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998), RFC 2507 (02/1999)
- > UDP: IETF RFC 768, RFC 254
- > AALO: ITU-T I.361 (02/1999)
- > OAM F5: ITU-T I.610 (02/1999)
- > AAL2: ITU-T I.363.2 (11/2000), ITU-T I.366.1 (12/2000)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > AAL5: ITU-T I.363.5 (08/1996)
- > SSCOP: ITU-T Q.2110 (07/1994), Q.2130 (07/1994), Q.2140 (02/1995)
- > NBAP: 3G TS 25.433 v.10.5.0, v.9.5.0, v.8.8.0, v.7.11.0, v.6.12.0, v.5.9.0
- > NSN NBAP: TS 25.433 v.6.10.0, v.7.4.0 and NSN v.1.1.0, TS 25.433 v.7.9.0 and NSN v.3.2.0, TS 25.433 v.8.4.0 and NSN v.4.1.0, TS 25.433 v.8.7.1 and NSN v.5.1.0, TS 25.433 v.9.2.0 and NSN v.6.5.1, TS 25.433 v.9.7.0 and NSN v.7.0.2
- > Ericsson NBAP: 3G TS 25.433 v.3.6.0
- > Nortel NBAP: v.5.23, v.4.11, TS 25.433 v.6.9.0 and Nortel v.5.23
- > DoCoMo NBAP: TS RID 008 v.13.0.1 (01/2007), v.10.0.4 (08/2005), v.8.0.2 (01/2005)
- > CCSA NBAP: R7
- > NSN O&M: v.18.1.0, v.14.1.0, v.11.0.3, v.8.0.2, v.7.0.2
- > ALCAP: ITU-T Q.2630.2 (12/2000)
- > RACH/FACH/PCH: TS 25.435 v.8.3.0, v.7.6.0, v.6.3.0, v.5.7.0
- > DCH: 3G TS 25.427 v.7.4.0, v.6.7.0, v.5.3.0
- > E-DCH: 3G TS 25.427 v.9.0.1, v.8.1.0, v.7.4.0, v.6.8.0
- > HS-DSCH: 3G TS 25.435 v.9.4.0, v.8.3.0, v.7.6.0, v.6.3.0, v.5.7.0
- > RLC: 3G TS 25.322 v.8.4.0, v.7.3.0, v.6.8.0, v.5.8.0
- > MAC: 3G TS 25.321 v.8.5.0, v.7.12.0, v.6.9.0, v.5.6.0
- > RRC: 3G TS 25.331 v.10.7.0, v.9.8.0, v.9.4.0, v.8.10.0, v.8.6.0, v.7.11.0, v.6.12.0, v.5.9.0
- > DoCoMo RRC: TS RID 005_2 v.13.0.1 (01/2007), v.10.0.4 (08/2005), v.8.0.2 (01/2005)
- > CCSA RRC: R7
- > PDCP: 3G TS 25.323 v.8.5.0, v.7.5.0
- > BMC: 3G TS 25.324 v.10.0.0
- > RLP: 3G TS 24.022 v.10.0.1
- > GSM/3G Layer 3: 3G TS 24.008 v.10.6.1, v.9.5.0, v.8.5.0, v.7.13.0, v.6.13.0, v.5.12.0
- > GSM/3G supplementary services: 3G TS 24.080 v.9.2.0, v.7.3.0, v.6.3.0, v.5.5.0
- > IP applications
- > UDPCP: OBSAI reference point 1 v.2.0
- > IPC: ITU-T Q.2631.1
- > NSN IPC: ITU-T Q.2631.1 and NSN specification v.1.1
- > Speech codecs: AMR-NB, AMR-WB

lu-CS interface

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > AALO: ITU-T I.361 (02/1999)

- > OAM F5: ITU-T I.610 (02/1999)
- > AAL5: ITU-T I.363.5 (08/1996)
- > SSCOP: ITU-T Q.2110 (07/1994), Q.2130 (07/1994), Q.2140 (02/1995)
- > UDP: IETF RFC 768, RFC 254
- > AAL2: ITU-T I.363.2 (11/2000), ITU-T I.366.1 (12/2000)
- > M3UA: IETF RFC 3332 (09/2002)
- > SUA: IETF RFC 3868 (06/2000)
- > M2UA: IETF RFC 3331 (09/2002)
- > M2PA: IETF RFC 4165 (09/2005)
- > MTP3b: ITU-T Q.2210 with 24-bit point codes (07/1996), ANSI T1.111-2001, TTC Ericsson
- > SCCP: ITU-T Q.713 (03/2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > RANAP: 3G TS 25.413 v.10.5.0, v.9.5.1, v.8.6.0, v.7.9.0, v.6.12.0, v.5.9.0
- > DoCoMo RANAP: TS RID 006 v.13.0.1 (01/2007), v.10.0.4 (08/2005), v.8.0.2 (01/2005)
- > ALCAP: ITU-T Q.2630.2 (12/2000)
- > GSM/3G Layer 3: 3G TS 24.008 v.10.6.1, v.9.5.0, v.8.5.0, v.7.13.0, v.6.13.0, v.5.12.0
- > GSM/3G supplementary services: 3G TS 24.080 v.9.2.0, v.7.3.0, v.6.3.0, v.5.5.0
- > GSM/3G SMS: 3G TS 24.011 v.10.0.0 TS 23.040 v.7.1.0, v.6.7.0, v.5.6.1, TS 23.038 v.7.0.0, v.6.1.0, v.5.6.0
- > RTP and RTCP: IETF RFC 3550 and IETF RFC 3551 (2003), IETF RFC 4867
- > lu UP: 3G TS 25.415 v.10.1.0
- > RLP: 3G TS 24.022 v.10.0.1
- > H.324M:
 - H.223: ITU-T H.223 (07/2001)
 - H.245: ITU-T H.245 (07/2001) version 10
- > IPC: ITU-T Q.2631.1
- > NSN IPC: ITU-T Q.2631.1 and NSN specification v.1.1
- > Speech codecs: AMR-NB, AMR-WB



lu-PS interface

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > AALO: ITU-T I.361 (02/1999)
- > OAM F5: ITU-T I.610 (02/1999)
- > AAL5: ITU-T I.363.5 (08/1996)
- > SSCOP: ITU-T Q.2110 (07/1994), Q.2130 (07/1994), Q.2140 (02/1995)
- > Classical IP (CIP): IETF RFC 2225 (04/1998), RFC 2364, RFC 2684
- > M3UA: IETF RFC 3332 (09/2002)
- > SUA: IETF RFC 3868 (06/2000)
- > M2UA: IETF RFC 3331 (09/2002)
- > M2PA: IETF RFC 4165 (09/2005)
- > MTP3b: ITU-T Q.2210 with 24-bit point codes (07/1996), ANSI T1.111-2001, TTC Ericsson
- > SCCP: ITU-T Q.713 (03/2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > RANAP: 3G TS 25.413 v.10.5.0, v.10.5.0, v.9.5.1, v.8.6.0, v.7.9.0, v.6.12.0, v.5.9.0
- > DoCoMo RANAP: TS RID 006 v.13.0.1 (01/2007), v.10.0.4 (08/2005), v.8.0.2 (01/2005)
- > GSM/3G Layer 3: 3G TS 24.008 v.10.6.1, v.9.5.0, v.8.5.0, v.7.13.0, v.6.13.0, v.5.12.0
- > UDP: IETF RFC 768, RFC 254
- > GTPv1: 3G TS 29.060 v.9.8.0, v.8.8.0, v.7.6.0, v.6.13.0, v.5.10.0, 3GPP 29.281 v.9.3.0, v.8.2.0, v.1.1.0
- > lu UP: 3G TS 25.415 v.7.3.0, v.6.3.0, v.5.3.0
- > IPC: ITU-T Q.2631.1
- > NSN IPC: ITU-T Q.2631.1 and NSN specification v.1.1
- > lub and lu-PS interface user plane

Iu-BC interface

- > AALO: ITU-T I.361 (02/1999)
- > OAM F5: ITU-T I.610 (02/1999)
- > AAL5: ITU-T I.363.5 (08/1996)
- > Classical IP (CIP): IETF RFC 2225 (04/1998), RFC 2364, RFC 2684
- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > TCP: IETF RFC 793 (09/1981)
- > SABP: 3G TS 25.419 v.8.2.0, v.7.0.0

Iu-PS interface

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > AAL5: ITU-T I.363.5 (08/1996)
- > Classical IP (CIP): IETF RFC 2225 (04/1998)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > M3UA: IETF RFC 3332 (09/2002)
- > SSCOP: ITU-T Q.2110 (07/1994), Q.2130 (07/1994), Q.2140 (02/1995)
- > MTP3b: ITU-T Q.2210 with 24-bit point codes (07/1996), ANSI T1.111-2001, TTC Ericsson
- > SCCP: ITU-T Q.713 (03/2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > PCAP: 3GPP TS 25.453 v.9.2.1, v.7.12.0, v.6.10.0, v.5.9.0

Iur, Iur-g interfaces

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > UDP: IETF RFC 768, RFC 254
- > AALO: ITU-T I.361 (02/1999)
- > OAM F5: ITU-T I.610 (02/1999)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > Classical IP (CIP): IETF RFC 2225 (04/1998)
- > AAL5: ITU-T I.363.5 (08/1996)
- > SSCOP: ITU-T Q.2110 (07/1994), Q.2130 (07/1994), Q.2140 (02/1995)
- > M3UA: IETF RFC 3332 (09/2002)
- > SUA: IETF RFC 3868 (06/2000)
- > M2UA: IETF RFC 3331 (09/2002)
- > M2PA: IETF RFC 4165 (09/2005)
- > MTP3b: ITU-T Q.2210 with 24-bit point codes (07/1996), ANSI T1.111-2001, TTC Ericsson
- > SCCP: ITU-T Q.713 (03/2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > RNSAP: 3GPP TS 25.423 v.10.5.0 v.9.7.0, v.8.4.1, v.7.12.0, v.6.12.0, v.5.10.0
- > DoCoMo RNSAP: TS RID 007 v.13.0.1 (01/2007), v.10.0.4 (08/2005), v.8.0.2 (01/2005)
- > ALCAP: ITU-T Q.2630.2 (12/2000)
- > IP applications

IP applications

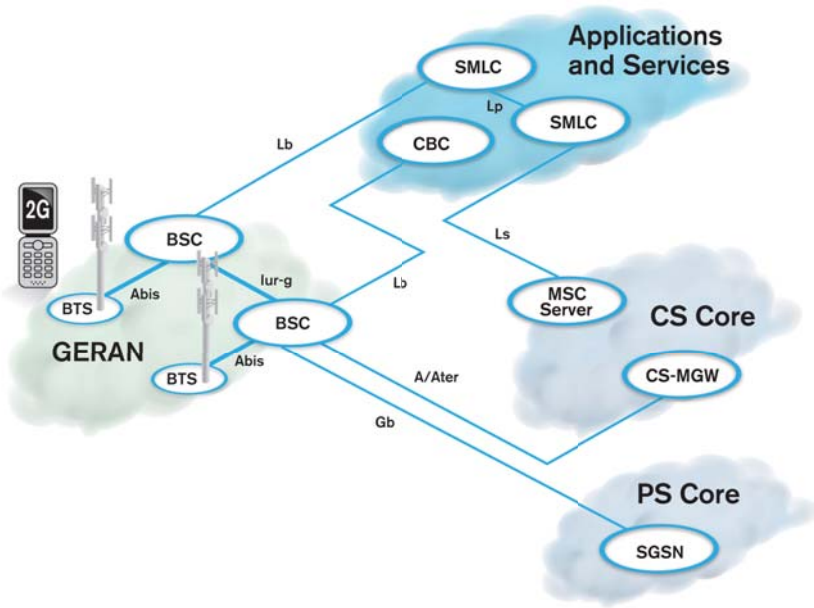
- > Iub and Iu-PS interface User Plane
- > ICMPv4: IETF RFC 792 (09/1991)
- > ICMPv6: IETF RFC 2463 (12/1998), RFC 3775 (06/2004), RFC 4443 (02/2006)
- > OSPFv2: IETF RFC 2328 (04/1998)
- > RSVP: IETF RFC 2205 (09/1997) and IETF RFC 2750 (01/2000)
- > TELNET: IETF RFC 854 (05/1983)
- > FTP: IETF RFC 959 (10/1985)
- > HTTP/1.1: IETF RFC 2616 (06/1999)
- > SNMP: IETF RFC 1157 (05/1990)
- > RADIUS: IETF RFC 2865 and IETF RFC 2868 (06/2000)
- > LDP: IETF RFC 3036 (01/2001)
- > BGP-4: IETF RFC 1771 (03/1995)
- > SIP-T: IETF RFC 3372 (09/2002), RFC 3261 (06/2002)
- > SIP: RFC 2045 (11/1996), RFC 3262 (06/2002), RFC 3323 (11/2002), RFC 3325 (11/2002), RFC 3903, RFC 3265
- > SIP-I: ITU-T Q.1912.5 (03/2004)
- > RTP and RTCP: IETF RFC 3550 and IETF RFC 3551 (2003), IETF RFC 4867
- > SDP: IETF RFC 2327 (04/1998), RFC 3605 v.1.0
- > COPS: IETF RFC 2748 (01/2000)
- > DIAMETER: IETF RFC 4740, RFC 3588, RFC 3589, RFC 2867, RFC 2868, RFC 4006, 3GPP 29.061 v.9.5.1, v.6.8.0, 3GPP TS 29.272 v.9.6.0, v.8.2.0, 3GPP 32.299 v.9.7.0, v.7.7.0, 3GPP 29.212 v.9.6.1, 3GPP 29.214 v.9.6.0
- > CHAP: IETF RFC 1994 (01/2000)
- > IPCP: IETF RFC 1332 (05/1992, 12/1995)
- > ITOT: IETF RFC 2126 (03/1997)
- > LCP: IETF RFC 1661 (01/2000), RFC 2686, 1570
- > PAP: IETF RFC 1334 (01/2000)
- > H.248/Megaco: 3GPP TS 29.332 v.7.6.0, v.6.9.0, IETF RFC 3435 (MGCP)
- > DNS: IETF RFC 3403, RFC 2782, RFC 1034 (11/1987)
- > DHCP: IETF RFC 2131 (03/1997)
- > IMAP4: IETF RFC 1730 (03/2003)
- > NTP: IETF RFC 1305 (03/1992)
- > POP3: IETF RFC 1939 (05/1996)
- > RIP2: IETF RFC 2453 (11/1998)
- > RTSP: IETF RFC 2326 (04/1998)
- > SMTP: IETF RFC 821 (04/2001)
- > LDAP: IETF RFC 4511 (06/2006)
- > EAP: IETF RFC 3748, RFC 4186
- > MMSE: OMA v.1.9
- > IKE: IETF RFC 4306 (12/2005)

GSM TECHNOLOGY PACKAGE**Iur-g interface**

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > UDP: IETF RFC 768, RFC 254
- > AALO: ITU-T I.361 (02/1999)
- > OAM F5: ITU-T I.610 (02/1999)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > Classical IP (CIP): IETF RFC 2225 (04/1998), RFC 2364, RFC 2684
- > AAL5: ITU-T I.363.5 (08/1996)
- > SSCOP: ITU-T Q.2110 (07/1994), Q.2130 (07/1994), Q.2140 (02/1995)
- > M3UA: IETF RFC 3332 (09/2002)
- > SUA: IETF RFC 3868 (06/2000)
- > M2UA: IETF RFC 3331 (09/2002)
- > M2PA: IETF RFC 4165 (09/2005)
- > MTP3b: ITU-T Q.2210 with 24-bit point codes (07/1996), ANSI T1.111-2001, TTC Ericsson
- > SCCP: ITU-T Q.713 (03/2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > RNSAP: 3GPP TS 25.423 v.10.5.0 v.9.7.0, v.8.4.1, v.7.12.0, v.6.12.0, v.5.10.0
- > DoCoMo RNSAP: TS RID 007 v.13.0.1 (01/2007), v.10.0.4 (08/2005), v.8.0.2 (01/2005)
- > ALCAP: ITU-T Q.2630.2 (12/2000)
- > IP applications

Abis interface

- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > LAPD: ITU-T Q.921 (09/1997)
- > Ericsson LAPD G08A
- > TRAU full-rate: 3GPP TS 48.060 v.7.0.0, GSM TS 08.60 v.8.2.0
- > TRAU half-rate: 3GPP TS 48.061 v.7.0.0, GSM TS 08.61 v.8.1.0
- > Ericsson TRAU 16 kbit: G08A, G06A
- > Ericsson TRAU 8 kbit: G06A
- > Alcatel-Lucent TRAU: B10 Ed.1 (09/2006)
- > BTSM: 3GPP TS 48.058 v.7.0.0, v.6.1.0
- > NSN BTSM v.8.2.0, v.7.2.0, v.6.1.0, v.5.1.0
- > NSN IUA v.1.1.0
- > NSN PA-FP v.1.4.0
- > NSN RTP v.1.4.0
- > NSN PDMP v.1.4.0
- > Ericsson BTSM G14B, G13A, G12B, G12A, G11B, G10A, G09A, R12.1, R11, GSM450
- > Nortel BTSM rev.13.07, 12.10, 11.07, 10.16, 10.06, 9.05
- > Siemens BTSM BR 9.0, BR8.0, BR7.0
- > Alcatel-Lucent BTSM B10, B9
- > Nortel AGPRS RSL v.18, v.17, v.16, v.15.1, v.14.4
- > Nortel AGPRS GSL v.18, v.17, v.16, v.15.1, v.14.4
- > SMSCB: 3G TS 44.12 v.5.0.0
- > GSM RR: 3G TS 44.018 v.10.6.0, v.9.7.0, v.8.11.0, v.7.14.0, v.6.20.0, v.5.16.0
- > Ericsson RR G14B, G11
- > GSM/3G Layer 3: 3G TS 24.008 v.10.6.1, v.9.5.0, v.8.5.0, v.7.13.0, v.6.13.0, v.5.12.0
- > GSM/3G SMS: 3G TS 24.011 v.10.0.0, TS 23.040 v.7.1.0, v.6.7.0, v.5.6.1, TS 23.038 v.7.0.0, v.6.1.0, v.5.6.0
- > GSM/3G supplementary services: 3G TS 24.080 v.9.2.0, v.7.3.0, v.6.3.0, v.5.5.0, v.5.4.0, v.5.2.0, v.4.3.1, v.4.3.0, v.3.2.0
- > RRC: 3G TS 25.331 v.9.4.0, v.8.10.0, v.7.11.0, v.5.9.0
- > GSM-R:
 - GCC: 3G TS 44.068 v.9.0.0
 - BCC: 3G TS 44.069 v.10.0.0
- > Ericsson PCU frame analysis G14B, R12, R11
- > NSN PCU frame analysis v.3.0.3, v.2.0.1
- > Nortel PCU async frame analysis v.04.02
- > Nortel PCU sync frame analysis v.01.05
- > Siemens PCU frame analysis BR 7.0, BR 8.0, BR 9.0
- > RLC: 3G TS 44.060 v.10.8.0, v.9.6.0, v.8.10.0, v.7.14.0, v.6.19.0, v.5.12.0
- > MAC: 3G TS 44.060 v.10.8.0, v.9.6.0, v.8.10.0, v.7.14.0, v.6.19.0, v.5.11.0
- > Ericsson RLC G11B
- > LLC: 3G TS 44.064 v.10.1.0
- > SNDCP: 3G TS 44.065 v.10.0.0
- > Mobile IP protocols
- > Abis O&M transport layer: 3GPP TS 52.021 v.10.0.0
- > Network management (NM) procedures and messages on Abis interface: 3GPP 52.021 v.10.0.0
- > NSN Abis O&M v.1.25-2
- > Ericsson L2TPv3 G11B, G08B, G07A, G06A
- > Ericsson HGSM 07A
- > Ericsson RBS 200 O&M G01 R10, R11
- > Ericsson RBS 2000 O&M: G12, G14B, G13A, G13B, G12B, G12A, G11B, G11A, G10A, G09A, G08A, G07A, GSM450, 12.1, R11, R10
- > Ericsson O&M Femto G07A



- > Ericsson P-GSL (03/2006): G14B, G11A, G09A, G08B
- > Ericsson TFP G11B, G08A
- > Ericsson PCS-X (03/2006)
- > Ericsson distribution layer (03/2006)
- > Ericsson ROMT-IP (03/2006)
- > Nortel Abis O&M v.18, v.17, v.16, v.15.1.1, v.15.1, v.14.4
- > Nortel AGPRS OAM v.18, v.17, v.16, v.15.1.1, v.15.1, v.14.4
- > Siemens Abis O&M version 9.0, 8.0, 7.0
- > Alcatel-Lucent Abis O&M B10 Ed. 02, B9 Ed. 04, B6 Ed. 02
- > Alcatel-Lucent BSCGP B10, B9
- > Alcatel-Lucent MEGCH B10, B9
- > CESoPSN RFC 5086
- > Speech codecs: GSM HR, GSM FR, GSM EFR, AMR-NB

- > Speech codecs: G.711 (μ-law/A-law), GSM HR, GSM FR, GSM EFR, AMR-NB, AMR-WB

Ericsson A/Ater interface

- > MTP-2: A/Ater ITU-T Blue Book Q.703 (1988 and 07/1996), ANSI T1.111 (1996), TTC (1999)
- > MTP-3: ITU-T Blue Book Q.704 (1996), ANSI T1.111 (2001), TTC (1999)
- > SCCP: ITU-T Q.713 (2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > Ericsson BTAP: (06/2003)
- > Ericsson RPP: (11/2003)
- > Speech codecs: GSM HR, GSM FR, GSM EFR, AMR-NB, AMR-WB

A interface

- > MTP-2: ITU-T Blue Book Q.703 (1988 and 07/1996), ANSI T1.111 (1996), TTC (1999)
- > V.110: ITU-T V.110 v.5.2.0
- > MTP-3: ITU-T Blue Book Q.704 (1996), ANSI T1.111 (2001), TTC (1999)
- > SCCP: ITU-T Q.713 (03/2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > BSSMAP: 3G TS 48.008 v.10.5.0, v.9.5.0, v.8.7.0, v.7.13.0, v.6.11.0, v.5.12.0
- > Ericsson BSSMAP G14B (2013-12), G14B, G10B
- > RANAP: 3G TS 25.413 v.9.5.1, v.8.6.0, v.8.3.0, v.7.9.0, v.6.12.0, v.5.9.0
- > RRC: 3G TS 25.331 v.9.4.0, v.8.10.0, v.7.11.0, v.5.9.0
- > GSM/3G Layer 3: 3G TS 24.008 v.10.6.1, v.9.5.0, v.8.5.0, v.7.13.0, v.6.13.0, v.5.12.0
- > GSM/3G SMS: 3G TS 24.011 v.10.0.0, TS 23.040 v.7.1.0, v.6.7.0, v.5.6.1, TS 23.038 v.7.0.0, v.6.1.0, v.5.6.0
- > GSM/3G supplementary services: 3G TS 24.080 v.9.2.0, v.7.3.0, v.6.3.0, v.5.5.0, v.5.4.0, v.5.2.0, v.4.3.1, v.4.3.0, v.3.2.0
- > RLP: 3G TS 24.022 v.10.0.1
- > Fax adaptor: 3GPP 43.045 v.6.0.0 (12/2004)
- > T.30: ITU-T T.30 (07/2003)
- > Tandem free operation (TFO): 3GPP TS 28.062 Inband tandem free operation (TFO) of speech codecs v.7.0.0, v.6.3.0

Gb interface

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 02(02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > PCM: ITU-T G.703, ANSI T1.403 (HDLC)
- > Frame relay: GSM TS 08.14 v.6.0.0, ANSI T1.607 (1998)
- > UDP: IETF RFC 768, RFC 254
- > NS: 3G 48.016 v.10.0.0
- > BSSGP: 3G TS 48.018 v.10.7.0, v.9.4.0, v.7.12.0, v.6.17.0, v.5.11.0
- > LLC: 3G TS 44.064 v.10.1.0
- > GSM/3G Layer 3: 3G TS 24.008 v.10.6.1, v.9.5.0, v.8.5.0, v.7.13.0, v.6.13.0, v.5.12.0
- > SNDCP: 3G TS 44.065 v.10.0.0
- > Mobile IP protocols

Abis and Gb interface User Plane

Mobile IP protocols on top of SNDCP

- > Abis and Gb interface User Plane
- > ICMPv4: IETF RFC 792 (09/1991)
- > ICMPv6: IETF RFC 2463 (12/1998), RFC 3775 (06/2004), RFC 4443 (02/2006)
- > OSPFv2: IETF RFC 2328 (04/1998)
- > RSVP: IETF RFC 2205 (09/1997) and IETF RFC 2750 (01/2000)
- > TELNET: IETF RFC 854 (05/1983)
- > FTP: IETF RFC 959 (10/1985)
- > SNMP: IETF RFC 1157 (05/1990)
- > HTTP/1.1: IETF RFC 2616 (06/1999)
- > RADIUS: IETF RFC 2865 and IETF RFC 2868 (06/2000)
- > LDP: IETF RFC 3036 (01/2001)
- > BGP-4: IETF RFC 1771 (03/1995)
- > SIP-T: IETF RFC 3372 (09/2002), RFC 3261 (06/2002)
- > SIP: RFC 2045 (11/1996), RFC 3262 (06/2002), RFC 3323 (11/2002), RFC 3325 (11/2002), RFC 3903, RFC 3265, RFC 3428, RFC 3311, RFC 3515
- > SIP-I: ITU-T Q.1912.5 (03/2004)
- > RTP and RTCP: IETF RFC 3550 and IETF RFC 3551 (2003), IETF RFC 4867
- > SDP: IETF RFC 2327, RFC 3605 v.1.0
- > COPS: IETF RFC 2748
- > DIAMETER: IETF RFC 4740, RFC 3588, RFC 3589, RFC 2867, RFC 2868, RFC 4006, 3GPP 29.061 v.9.5.1, v.6.8.0, 3GPP TS 29.272 v.9.6.0, v.8.2.0, 3GPP 32.299 v.9.7.0, v.7.7.0, 3GPP 29.212 v.9.6.1, 3GPP 29.214 v.9.6.0
- > CHAP: IETF RFC 1994 (01/2000)
- > IPCP: IETF RFC 1332 (05/1992, 12/1995)
- > ITOT: IETF RFC 2126 (03/1997)
- > LCP: IETF RFC 1661 (01/2000), RFC 2686, 1570
- > PPP: IETF RFC 1661 (07/1994), RFC 1662 (07/1994), RFC 2516
- > ML-PPP: IETF RFC 1990 (08/1996), RFC 2682
- > PAP: IETF RFC 1334 (01/2000)
- > MMSE: OMA v.1.9

BSC-CBC interface

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981)
- > IPv6: IETF RFC 2460 (12/1998)
- > TCP: IETF RFC 793 (09/1981)
- > CBSP: 3GPP TS 48.049 v.10.1.0

Generic Access Network (GAN) Up interface

- > BSSMAP-UMA: M13.2 v.1.9
- > UMA-RLC: Release 1
- > UMA-RR: Release 1

CORE TECHNOLOGY PACKAGE

Lb, Lp, Ls interfaces

- > PCM: ITU-T G.703, ANSI T1.403 (HDLC) > MTP-2: ITU-T Blue Book Q.703 (1988 and 07/1996), ANSI T1.111 (1996), TTC (1999)
- > MTP-3: ITU-T Blue Book Q.704 (1996), ANSI T1.111 (2001), TTC (1999) > SCCP: ITU-T Q.713 (03/2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > BSSAP-LE: 3GPP TS 49.031 v.8.1.0, v.7.3.0, v.6.5.0, v.5.4.0
- > Ericsson BSSAP-LE G14B
- > BSSLAP: 3GPP TS 48.071 v.8.0.0 > RRLP: 3GPP TS 44.031 v.6.8.0

C, D, E, F, G, H, SS7 (including SigTran and broadband SS7) interfaces

- > PCM: ITU-T G.703, ANSI T1.403 (HDLC)
- > MTP-2: ITU-T Blue Book Q.703 (1988 and 07/1996), ANSI T1.111 (1996), TTC (1999)
- > AAL0: ITU-T I.361 (02/1999)
- > OAM F5: ITU-T I.610 (02/1999)
- > AAL5: ITU-T I.363.5 (08/1996)
- > Classical IP (CIP): IETF RFC 2225 (04/1998)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > SSCOP: ITU-T Q.2110 (07/1994), Q.2130 (07/1994), Q.2140 (02/1995)
- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > MTP-3: ITU-T Blue Book Q.704 (1996), ANSI T1.111 (2001), TTC (1999)
- > M3UA: IETF RFC 3332 (09/2002)
- > SUA: IETF RFC 3868 (06/2000)
- > M2UA: IETF RFC 3331 (09/2002)
- > M2PA: IETF RFC 4165 (09/2005)
- > MTP3b: ITU-T Q.2210 (07/1996), ANSI T1.111-2001, TTC Ericsson
- > SCCP: ITU-T Q.713 (03/2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > TCAP: ITU-T Q.773 (06/1997), ANSI T1.114 (1996)
- > TUP: ITU-T Q.723 (11/1988), Amendment 1 (03/1993)
- > Chinese TUP: GF 001-9001
- > Finnish TUP: THK, 1993 (changes 05/1995)
- > INAP: ETS 300 374
- > Ericsson INAP
- > Alcatel-Lucent INAP
- > Ericsson prepaid Brazil service (11/2002)
- > Siemens INAP 7M+, 5M+
- > MAP: 3G TS 29.002 v.7.13.0, v.7.8.0, v.6.14.0, v.6.8.0, v.5.10.0, v.5.7.0, v.4.13.0, v.3.12.0; GSM 09.02 Ph2 v.4.19.1; GSM 09.02 Ph1 v.3.11.0
- > MAP IS41C: ANSI/TIA/EIA-41.5-C (02/1996)
- > MAP IS41D: ANSI/TIA/EIA-41-D-1997, ANSI/TIA/EIA-41-D-1-2002 (Addendum 1)
- > MAP IS41E: ANSI/TIA/EIA-41.000-E-3 (03/2004)
- > NSN MAP (12/2005)
- > Ericsson CMS30 MAP (09/2001)

- > CAMEL/CAP: 3G TS 29.078 v.7.4.0, v.7.3.0, v.7.1.0, v.6.5.0, v.5.8.0, v.4.8.0, v.3.3.0
- > ISUP: ITU-T Q.763 (12/1999), Amendment 1 (03/2001), Corrigendum 1 (07/2001), ANSI T1.113 (2000), TTC, NSN ITU-T and ANSI ISUP
- > Chinese ISUP: YDN 038-1997, NSN Chinese ISUP
- > UK ISUP: PNO-ISC/SPEC/007, Issue 3.0 (11/2004), NSN UK ISUP
- > Swedish ISUP: SS 63 63 93, Edition 1 (2000)
- > French ISUP: Spirou 1998, Edition 1.0
- > Australian ISUP: ACIF 6500:2000
- > Finnish ISUP: SFS 5779, ISUP Version 2 (1996), NSN Finnish ISUP
- > Russian ISUP: National ISUP, v.2.0 (1994)
- > Indian ISUP: ITU-T Q.763 (09/1997), ES 201 296 v.1.1.2 (09/1998)
- > ISUP: NTT DoCoMo (04/2004), NTT Fixed (04/2006), NTT Generic (04/2006), J-Phone (04/2006)

Mc interface

- > AAL0: ITU-T I.361 (02/1999)
- > OAM F5: ITU-T I.610 (02/1999)
- > AAL5: ITU-T I.363.5 (08/1996)
- > SSCOP: ITU-T Q.2110 (07/1994), Q.2130 (07/1994), Q.2140 (02/1995)
- > Classical IP (CIP): IETF RFC 2225 (04/1998)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > M3UA: IETF RFC 3332 (09/2002)
- > SUA: IETF RFC 3868 (06/2000)
- > M2UA: IETF RFC 3331 (09/2002)
- > M2PA: IETF RFC 4165 (09/2005)
- > MTP3b: ITU-T Q.2210 (07/1996), ANSI T1.111-2001, TTC Ericsson
- > Megaco:
 - 3G TS 29.232 v.7.6.0, v.6.9.0
 - IETF RFC 3435 (MGCP)
 - Ericsson package
 - NSN package
 - ABNF RFC 2234

Nb interface

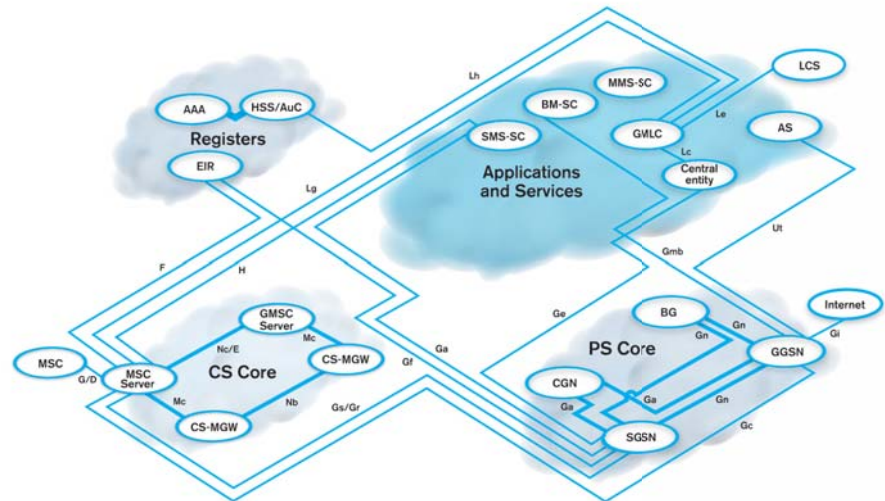
- > AALO: ITU-T I.361 (02/1999)
- > OAM F5: ITU-T I.610 (02/1999)
- > AAL5: ITU-T I.363.5 (08/1996)
- > SSCOP: ITU-T Q.2110 (07/1994), Q.2130 (07/1994), Q.2140 (02/1995)
- > AAL2: ITU-T I.363.2 (11/2000), ITU-T I.366.1 (12/2000)
- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > UDP: IETF RFC 768, RFC 254
- > RTP and RTCP: IETF RFC 3550 and IETF RFC 3551 (2003), IETF RFC 4867
- > MTP3b: ITU-T Q.2210 (07/1996), ANSI T1.111-2001, TTC Ericsson
- > Nb UP: 3G TS 29.415 v.10.0.1
- > ALCAP: ITU-T Q.2630.2 (12/2000)
- > Tandem Free Operation (TFO): 3GPP TS 28.062 Inband tandem free operation (TFO) of speech codecs v.7.0.0, v.6.3.0

Nc interface

- > AALO: ITU-T I.361 (02/1999)
- > OAM F5: ITU-T I.610 (02/1999)
- > AAL5: ITU-T I.363.5 (08/1996)
- > SSCOP: ITU-T Q.2110 (07/1994), Q.2130 (07/1994), Q.2140 (02/1995)
- > Classical IP (CIP): IETF RFC 2225 (04/1998)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > PCM: ITU-T G.703, ANSI T1.403 (HDLC)
- > MTP-2: ITU-T Blue Book Q.703 (1988 and 07/1996), ANSI T1.111 (1996), TTC (1999)
- > M3UA: IETF RFC 3332 (09/2002)
- > SUA: IETF RFC 3868 (06/2000)
- > M2UA: IETF RFC 3331 (09/2002)
- > M2PA: IETF RFC 4165 (09/2005)
- > MTP3b: ITU-T Q.2210 (07/1996), ANSI T1.111-2001, TTC Ericsson
- > BICC: ITU-T Q.1902.3 (07/2001), ANSI T1.673(2002), Ericsson TTC (05/2006), NSN ITU-T and ANSI BICC, UK NSN M15.1 (2011-06)
- > APM: Q.765.5
- > SIP-T: IETF RFC 3372 (09/2002), RFC 3261 (06/2002)
- > SIP: RFC 2045 (11/1996), RFC 3262 (06/2002), RFC 3323 (11/2002), RFC 3325 (11/2002), RFC 3903, RFC 3265, RFC 3428, RFC 3311, RFC 3515
- > SIP-I: ITU-T Q.1912.5 (03/2004)

Short message service center interfaces

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > UDP: IETF RFC 768, RFC 254
- > NSN SMRSE



ISDN Primary Rate Interface (E1/T1) ja ISDN over SigTran

- > ISDN Layer 3: ITU-T Q.931 (05/1998), ITU-T Q.931 Amendment 1 (12/2002), ITU-T Q.931 Erratum 1 (02/2003), ITU-T Q.932 (05/1998), ETSI EN 300 403-1 (11/1999)
- > ISDN supplementary services: ETS 300 196-1 with ETR 018, Edition 4 and extensions:
 - Advice of charge (AOC): ETS 300 182
 - Completion of calls to busy subscriber (CCBS): ETS 300 359
 - Diversion services: ETS 300 207
 - Connected line identification presentation (COLP): ETS 300 097
 - Conference call, add-on (CONF): ETS 300 185
 - Explicit call transfer (ECT): ETS 300 369
 - Closed user group (CUG): ETS 300 138
 - Call hold (HOLD): ETS 300 141
 - Malicious call identification (MCID): ETS 300 130
 - User-to-user signaling (UUS): ETS 300 286
 - Three-party (3PTY): ETS 300 188
- > IUA: RFC 3057 (02/2001)

Gc, Gf, Gr, Ge interfaces

- > PCM: ITU-T G.703, ANSI T1.403 (HDLC)
- > MTP-2: ITU-T Blue Book Q.703 (1988 and 07/1996), ANSI T1.111 (1996), TTC (1999)
- > AALO: ITU-T I.361 (02/1999)
- > OAM F5: ITU-T I.610 (02/1999)
- > AAL5: ITU-T I.363.5 (08/1996)
- > Classical IP (CIP): IETF RFC 2225 (04/1998)
- > IPv4: IETF RFC 791 (09/1981)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > SSCOP: ITU-T Q.2110 (07/1994), Q.2130 (07/1994), Q.2140 (02/1995)
- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > MTP-3: ITU-T Blue Book Q.704 (1996), ANSI T1.111 (2001), TTC (1999)
- > SCCP: ITU-T Q.713 (03/2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > TCAP: ITU-T Q.773 (06/1997), ANSI T1.114 (1996)
- > MAP: 3G TS 29.002 3G TS 29.002 v.7.13.0, v.7.8.0, v.6.14.0, v.6.8.0, v.5.10.0, v.5.7.0, v.4.13.0, v.3.12.0;

GSM 09.02 Ph2 v.4.19.1; GSM 09.02 Ph1 v.3.11.0

- > MAP IS41C: ANSI/TIA/EIA-41.5-C (02/1996)
- > MAP IS41D: ANSI/TIA/EIA-41-D-1997, ANSI/TIA/EIA-41-D-1-2002 (Addendum 1)
- > MAP IS41E: ANSI/TIA/EIA-41.000-E-3 (03/2004)
- > NSN MAP (12/2005)
- > Ericsson CMS30 MAP (09/2001)
- > CAMEL/CAP: 3G TS 29.078 v.7.4.0, v.7.3.0, v.7.1.0, v.6.5.0, v.5.8.0, v.4.8.0, v.3.3.0
- > M3UA: IETF RFC 3332 (09/2002)
- > SUA: IETF RFC 3868 (06/2000)
- > M2UA: IETF RFC 3331 (09/2002)
- > M2PA: IETF RFC 4165 (09/2005)
- > MTP3b: ITU-T Q.2210 (07/1996), ANSI T1.111-2001, TTC Ericsson

Gn/Gp interface

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > AAL5: ITU-T I.363.5 (08/1996)
- > Classical IP (CIP): IETF RFC 2225 (04/1998)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > UDP: IETF RFC 768, RFC 254
- > GTPv1: 3G TS 29.060 v.9.8.0, v.8.8.0, v.7.6.0, v.6.13.0, v.5.10.0, 3GPP TS 29.281 v.9.3.0, v.8.2.0, v.1.1.0
- > GTPv0: 3GPP TS 09.60 v.6.6.0, 3GPP TS 29.060 v.8.8.0 (06/2009)
- > IP applications

Gi, Gmb, Ut interfaces

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > AAL5: ITU-T I.363.5 (08/1996)
- > Classical IP (CIP): IETF RFC 2225 (04/1998), RFC 2364, RFC 2684
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > TCP: IETF RFC 793 (09/1981)
- > UDP: IETF RFC 768, RFC 254
- > IP applications

Gs interface

- > PCM: ITU-T G.703, ANSI T1.403 (HDLC)
- > MTP-2: ITU-T Blue Book Q.703 (1988 and 07/1996), ANSI T1.111 (1996), TTC (1999)
- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > AAL5: ITU-T I.363.5 (08/1996)
- > Classical IP (CIP): IETF RFC 2225 (04/1998), RFC 2364, RFC 2684
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > MTP-3: ITU-T Blue Book Q.704 (1996), ANSI T1.111 (2001), TTC (1999)
- > M3UA: IETF RFC 3332 (09/2002)
- > SUA: IETF RFC 3868 (06/2000)
- > M2UA: IETF RFC 3331 (09/2002)
- > M2PA: IETF RFC 4165 (09/2005)
- > SCCP: ITU-T Q.713 (03/2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > BSSAP+: 3G TS 29.018 v.5.5.0

Ga interface

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > AAL5: ITU-T I.363.5 (08/1996)
- > Classical IP (CIP): IETF RFC 2225 (04/1998), RFC 2364, RFC 2684
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > ICMPv4: IETF RFC 792 (09/1991)
- > ICMPv6: IETF RFC 2463 (12/1998), RFC 3775 (06/2004), RFC 4443 (02/2006)
- > OSPFv2: IETF RFC 2328 (04/1998)
- > RSVP: IETF RFC 2205 (09/1997) and IETF RFC 2750 (01/2000)
- > UDP: IETF RFC 768, RFC 254
- > TCP: IETF RFC 793 (09/1981)
- > GTP: 3GPP TS 32.295 v.7.0.0, 3G TS 32.015 v.3.12.0

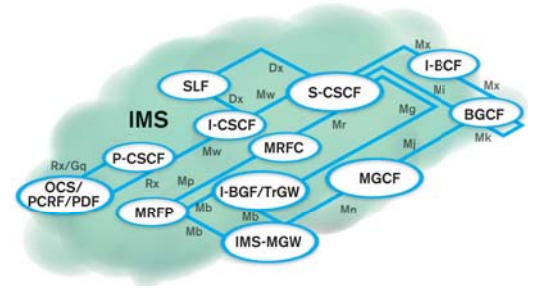
IP applications

- > ICMPv4: IETF RFC 792 (09/1991)
- > ICMPv6: IETF RFC 2463 (12/1998), RFC 3775 (06/2004), RFC 4443 (02/2006)
- > OSPFv2: IETF RFC 2328 (04/1998)
- > RSVP: IETF RFC 2205 (09/1997) and IETF RFC 2750 (01/2000)
- > TELNET: IETF RFC 854 (05/1983)
- > FTP: IETF RFC 959 (10/1985)
- > HTTP/1.1: IETF RFC 2616 (06/1999)
- > SNMP: IETF RFC 1157 (05/1990)
- > RADIUS: IETF RFC 2865 and IETF RFC 2868 (06/2000)
- > LDP: IETF RFC 3036 (01/2001)
- > BGP-4: IETF RFC 1771 (03/1995)
- > SIP-T: IETF RFC 3372 (09/2002), RFC 3261 (06/2002)
- > SIP: RFC 2045 (11/1996), RFC 3262 (06/2002), RFC 3323 (11/2002), RFC 3325 (11/2002), RFC 3903, RFC 3265, RFC 3428, RFC 3311, RFC 3515
- > SIP-I: ITU-T Q.1912.5 (03/2004)
- > RTP and RTCP: IETF RFC 3550 and IETF RFC 3551 (2003), IETF RFC 4867

- > SDP: IETF RFC 2327 (04/1988), RFC 3605 v.1.0
- > COPS: IETF RFC 2748 (01/2000)
- > DIAMETER: IETF RFC 4740, RFC 3588, RFC 3589, RFC 2867, RFC 2868, RFC 4006, 3GPP 29.061 v.9.5.1, v.6.8.0, 3GPP TS 29.272 v.9.6.0, v.8.2.0, 3GPP 32.299 v.9.7.0, v.7.7.0, 3GPP 29.212 v.9.6.1, 3GPP 29.214 v.9.6.0
- > CHAP: IETF RFC 1994 (01/2000)
- > IPCP: IETF RFC 1332 (05/1992, 12/1995)
- > ITOT: IETF RFC 2126 (03/1997)
- > LCP: IETF RFC 1661 (01/2000), RFC 2686, 1570
- > PAP: IETF RFC 1334 (01/2000)
- > H.248/Megaco: 3GPP TS 29.332 v.7.6.0, v.6.9.0, IETF RFC 3435 (MGCP)
- > DNS: IETF RFC 3403, RFC 2782, RFC 1034 (11/1987)
- > DHCP: IETF RFC 2131 (03/1997)
- > IMAP4: IETF RFC 1730 (03/2003)
- > NTP: IETF RFC 1305 (03/1992)
- > POP3: IETF RFC 1939 (05/1996)
- > RIP2: IETF RFC 2453 (11/1998)
- > RTSP: IETF RFC 2326 (04/1998)
- > SMTP: IETF RFC 821 (04/2001)
- > SMPP: SMS Forum v.5.0
- > LDAP: IETF RFC 4511 (06/2006)
- > EAP: IETF RFC 3748, RFC 4186
- > L2TPv3: IETF RFC 3931

Lh, Lg, Lc interfaces

- > PCM: ITU-T G.703, ANSI T1.403 (HDLC)
- > MTP-2: ITU-T Blue Book Q.703 (1988 and 07/1996), ANSI T1.111 (1996), TTC (1999)
- > MTP-3: ITU-T Blue Book Q.704 (1996), ANSI T1.111 (2001), TTC (1999)
- > AAL5: ITU-T I.363.5 (08/1996)
- > Classical IP (CIP): IETF RFC 2225 (04/1998)
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > M3UA: IETF RFC 3332 (09/2002)
- > SUA: IETF RFC 3868 (06/2000)
- > M2UA: IETF RFC 3331 (09/2002)
- > M2PA: IETF RFC 4165 (09/2005)
- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > SCCP: ITU-T Q.713 (03/2001), ANSI T1.112 (1996), TTC JT Q.713 v5
- > TCAP: ITU-T Q.773 (06/1997), ANSI T1.114 (1996)
- > INAP: ETS 300 374
- > Ericsson INAP
- > Alcatel-Lucent INAP
- > Ericsson prepaid Brazil service (11/2002)
- > Siemens INAP 7M+, 5M+
- > MAP: 3G TS 29.002 3G TS 29.002 v.7.13.0, v.7.8.0, v.6.14.0, v.6.8.0, v.5.10.0, v.5.7.0, v.4.13.0, v.3.12.0; GSM 09.02 Ph2 v.4.19.1; GSM 09.02 Ph1 v.3.11.0
- > MAP IS41C: ANSI/TIA/EIA-41.5-C (02/1996)
- > MAP IS41D: ANSI/TIA/EIA-41-D-1997, ANSI/TIA/EIA-41-D-1-2002 (Addendum 1)
- > MAP IS41E: ANSI/TIA/EIA-41.000-E-3 (03/2004)
- > NSN MAP (12/2005)



IMS TECHNOLOGY PACKAGE

C, Cx, D, Dh, Dx, E, F, G, Gi, Gmb, Go, Gq, Gx, Gx (S7), Gxa, Gxc, Gxx, Gy, H, IMS, ISC, Lc, Le, Lh, Ma, Mb, Mg, Mi, Mj, Mk, Mn, Mp, Mr, Mw, Mx, Nc, Rx, Sh, Sq, Ss7 and Registers Interfaces

- > Ethernet: IETF RFC 826 (11/1982), IEEE 802.1Q-2003, IETF RFC 3032, IETF RFC 3031 (MPLS)
- > AAL5: ITU-T I.363.5 (08/1996)
- > Classical IP (CIP): IETF RFC 2225 (04/1998), RFC 2364, RFC 2684
- > IPv4: IETF RFC 791 (09/1981), RFC 2507 (02/1999)
- > IPv6: IETF RFC 2460 (12/1998)
- > ICP: IMA specification v.1.1 (03/1999)
- > TCP: RFC 793 (09/1981)
- > UDP: IETF RFC 768, RFC 254
- > SCTP: IETF RFC 2960 (10/2000), RFC 4960, RFC 5061 (09/2007), RFC 4895, RFC 4820, RFC 3758
- > M3UA: IETF RFC 3332 (09/2002)
- > ISUP: ITU-T Q.763 (12/1999), Amendment 1 (03/2001), Corrigendum 1 (07/2001), ANSI T1.113 (2000), TTC, NSN ITU-T and ANSI ISUP
- > BICC: ITU-T Q.1902.3 (07/2001), ANSI T1.673 (2002), Ericsson TTC (05/2006), NSN ITU-T and ANSI BICC, UK NSN M15.1
- > SIP: RFC 2045 (11/1996), RFC 3262 (06/2002), RFC 3323 (11/2002), RFC 3325 (11/2002), RFC 3903, RFC 3265, RFC 3428, RFC 3311, RFC 3515
- > SIP-I: ITU-T Q.1912.5 (03/2004)
- > SDP: IETF RFC 2327 (04/1988), RFC 3605 v.1.0
- > MSRP: IETF RFC 4975, RFC 4976
- > RTP and RTCP: IETF RFC 3550 and IETF RFC 3551 and IETF RFC 1890 (2003), IETF RFC 4867
- > COPS: IETF RFC 2748 (01/2000)
- > DIAMETER: IETF RFC 4740, RFC 3588, RFC 3589, RFC 2867, RFC 2868, RFC 4006, 3GPP 29.061 v.9.5.1, v.6.8.0, 3GPP TS 29.272 v.9.6.0, v.8.2.0, 3GPP 32.299 v.9.7.0, v.7.7.0, 3GPP 29.212 v.9.6.1, 3GPP 29.214 v.9.6.0
- > H.248/Megaco: 3GPP TS 29.332 v.7.6.0, v.6.9.0, IETF RFC 3435 (MGCP)
- > Speech codecs: G.711, GSM-HR, GSM-FR, GSM-EFR, AMR-NB, AMR-WB, G.723.1, G.729, iLBC, G.726

CALL AND SESSION ANALYSIS COVERAGE

CALL AND SESSION SUPPORT WITH M5 (M5, TRAVELHAWK, POWERHAWK, TRAVELHAWK PRO, POWERHAWK PRO)

LTE TECHNOLOGY PACKAGE

- > S1, S3, S4, S5/S8, S6a, S10, S11, S13, SGs, Uu, X2 interfaces

UMTS TECHNOLOGY PACKAGE

- > Iub, IuCS, IuPS interfaces

GSM TECHNOLOGY PACKAGE

- > A, Abis, Ater (3GPP), Gb interfaces

CORE TECHNOLOGY PACKAGE

- > C, D, E, F, G, Gi, Gn, Gs, H, SIP, SS7 (MAP, CAP, INAP, ISUP), Mc, Nb, Nc interfaces

IMS TECHNOLOGY PACKAGE

- > Cx, Dh, Dx, Gq, Gx, Gy, Rx interfaces

CALL AND SESSION SUPPORT with SIGNALLING ANALYSIS MODULE (TRAVELHAWK PRO, POWERHAWK PRO)

LTE SIGNALING ANALYSIS MODULE

- > S1, X2, S3, S4, S5/S8, S6a, S10, S11, S13, SGs interfaces

PS CORE SIGNALING ANALYSIS MODULE

- > Iu-PS, Gb, MAP, Gn interfaces

NETWORK KPI COVERAGE

(TRAVELHAWK PRO, POWERHAWK PRO)

LTE SIGNALING KPIs

S1 Interface

- > Attach
- > Attach Failures
- > PDN Context Activation
- > PDN Context Activation Failures
- > TA Updated
- > TA Update Failures

S3 Interface

- > Forward Relocation
- > Forward Relocation Failures
- > Relocation Cancel
- > Relocation Cancel Failures
- > Identification
- > Identification Failures
- > Context Success
- > Context Failures

S10 Interface

- > Forward Relocation
- > Forward Relocation Failures
- > Relocation Cancel
- > Relocation Cancel Failures
- > Identification
- > Identification Failures
- > Context Success
- > Context Failures
- > Forward Access Context
- > Forward Access Context Failures

S11 Interface

- > Create Session
- > Create Session Failures
- > Delete Session
- > Delete Session Failures

- > Create Bearer
- > Create Bearer Failures
- > Downlink Data Notification
- > Downlink Data Notification Failed
- > Downlink Data Notification Failure Indication
- > Release Access Bearers
- > Release Access Bearers Failures
- > Delete PDN Connection Set
- > Delete PDN Connection Set Failures

S13 Interface

- > Mobile Equipment Identity
- > Mobile Equipment Identity Failures

X2 Interface

- > HO Preparation
- > HO Failures
- > HO Cancel
- > UE Context Release
- > SN Status Transfer

QoS Performance KPIs

- > Throughput
- > Jitter
- > Packet counter
- > TCP round-trip time
- > TCP retransmission ratio
- > Delay

PS CORE SIGNALING ANALYSIS KPIs

Iu-PS interface

- > PDP Context Activation Success
- > PDP Context Activation Failures

Gn Interface

- > PDP Context Activation Success
- > PDP Context Activation Failures
- > PDP Session Completion
- > PDP Session Completion Failures
- > PDP Context Activation UTRAN
- > PDP Context Activation UTRAN Failures
- > PDP Context Activation GERAN
- > PDP Context Activation GERAN Failures

Gb Interface

- > PDP Context Activation (Gb)
- > PDP Context Activation Failures (Gb)
- > Attach (Gb)
- > Attach Failures (Gb)
- > RAU (Gb)
- > RAU FAILURES (Gb)
- > VISITED APN (Gb)
- > ATTEMPTED APN Failures (Gb)

Gr (MAP) Interface

- > MO SMS
- > MO SMS Failures
- > MT SMS
- > MT SMS Failures
- > Update Location
- > Update Location Failures
- > Update GPRS Location
- > Update GPRS Location Failures
- > Send Routing Information
- > Send Routing Information Failures
- > Check IMEI
- > Check IMEI Failure

IP APPLICATION STATISTICS

IP & GTP USER PLANE KPIs

DNS

- > UL & DL Average Throughput
- > Amount of UL & DL Flows
- > Amount of Errors
- > Procedure Failure Rate
- > Average DNS Resolving Time

HTTP, IMAP, FTP, POP3, SIP, SMTP UL & DL

- > UL & DL Average Throughput
- > Amount of UL & DL Flows
- > Amount of Errors
- > Procedure Failure Rate

ICMP

- > UL & DL Average Throughput
- > Amount of UL & DL Flows
- > Amount of Errors
- > Average PING Reply Time

ICMPv6, OTT Applications (Skype, Facebook, YouTube),

SCTP, UDP

- > UL & DL Average Throughput
- > Amount of UL & DL Flows
- > Amount of Errors

RTP/RTCP

- > UL & DL Average Throughput
- > Amount of UL & DL Flows
- > Amount of Errors
- > UL & DL Average MOS

TCP

- > UL & DL Average Throughput
- > Amount of UL & DL Flows
- > Amount of Errors
- > UL & DL Data Loss Rate
- > UL & DL Packet Retransmission Rate

IP APPLICATION ANALYSIS PROTOCOL COVERAGE

BASIC IP APPLICATION PACKAGE

SUPPORTED PROTOCOLS

INFRASTRUCTURE AND TUNNELS

Middleware

- > amqp (Advance Message Queuing Protocol)
- > dcerpc (Distributed Computing Environment Remote Procedure Call)
- > diop (Datagram Inter-ORB Protocol)
- > giop (General Inter-ORB Protocol (Corba))
- > giops (Secure General Inter-ORB Protocol)
- > iiop (Internet Inter-ORB Protocol)
- > msrpc (Microsoft Remote Procedure Call)
- > rmi_iiop (RMI over IIOP)
- > rpc (Remote Procedure Call)
- > soap (Simple Object Access Protocol)

Compression

- > ccp (Control Compression Protocol)
- > comp (Compression)

Tunneling

- > 3gpp_li
- > gapwap
- > etherip (Ethernet Over IP)
- > etsi_li (ETSI Lawful Interception TS 10 232-1 V2.1.1)
- > gre (Generic Routing Encapsulation)
- > gtp (GPRS Tunneling Protocol)
- > gtpv2 (GPRS Tunneling Protocol version 2)
- > http_tunnel (HTTP Tunnel)
- > ipv6cp (IPv6 Control Protocol)
- > l2tp (Level 2 Tunneling Protocol)
- > lqr (Link Quality Report Protocol)
- > mobile_ip
- > openvpn (OpenVPN)
- > ppp (Point to Point Protocol)
- > pppoe (PPP Over Ethernet)
- > pptp (Point-to-Point Tunneling Protocol)
- > socks2http (socks2http)
- > socks4 (SOCKSv4)
- > socks5 (SOCKSv5)
- > tcp_over_dns (AnalogBit tcp-over-dns)
- > teredo (Teredo)
- > ultrasurf
- > vjc_comp (Van Jacobson Compression)
- > vjc_uncomp (Van Jacobson Uncompressed)
- > xot (XOT (X25 over TCP))

Network Service

- > 3pc (Third Party Connect Protocol)
- > 802_11 (802.11 Protocol)
- > 8021q (Ethernet VLAN)
- > acse (ISO 8650-1 Association Control Service)
- > activenet (Active Networks)
- > ah (Authentication Header)
- > any_ohop (Any O-hop protocol)
- > argus (ARGUS)
- > aris (ARIS)
- > arp (Address Resolution Protocol)
- > atalk (AppleTalk)
- > ax25 (AX.25 Frames)
- > bbn_rcc_mon (BBN RCC Monitoring)
- > bna (BNA)
- > br_sat_mon (Backroom SATNET Monitoring)
- > cbt (Core-based trees)
- > cftp (CFTP)
- > cgiproxy (CGI Proxy)
- > cgmp (Cisco Group Management Protocol)
- > chaos (Chaos)
- > compaq_peer (Compaq Peer Protocol)
- > cotp (Connection Oriented Transfer Protocol (ISO))
- > cphb (Computer Protocol Heart Beat)
- > cplx (Computer Protocol Network Executive)
- > crtp (Combat Radio Transport Protocol)
- > crudp (Combat Radio User Datagram)
- > cvs (Concurrent Versions System)
- > dccc (Datagram Congestion Control Protocol)
- > dcn_meas (DCN Measurement Subsystems)
- > ddp (Datagram Delivery Protocol)

- > ddx (D-II Data Exchange (DDX))
- > dec (DEC Protocol)
- > dfs (Any distributed file system)
- > dgp (Dissimilar Gateway Protocol)
- > dhcp (Dynamic Host Configuration Protocol)
- > dns (Domain Name Service)
- > dsr (Dynamic Source Routing Protocol)
- > dtls (DTLS Protocol)
- > dtp (Dynamic Trunking Protocol)
- > echo (Echo Protocol)
- > egp (Exterior Gateway Protocol)
- > emcon (EMCON)
- > encap (Encapsulation Header)
- > esp (Encap Security Payload)
- > eth (Ethernet)
- > fibre_channel (Fibre Channel)
- > fire (FIRE)
- > ggp (Gateway_to_Gateway)
- > gmtp (GMTP)
- > hip (Host Identity Protocol)
- > hmp (Host Monitoring)
- > hopopt (IPv6 Hop-by-Hop Option)
- > host (Any host internal protocol)
- > hpellc (HP Extended Local-Link Control)
- > iatp (Interactive Agent Transfer Protocol)
- > iccp (Inter-Control Center Communications Protocol)
- > icmp (Internet Control Message Protocol)
- > icmp6 (Internet Control Message Protocol for IPv6)
- > idpr (Inter_Domain Policy Routing Protocol)
- > idpr_cmtpp (IDPR Control Message Transport Protocol)
- > idrp (Inter_Domain Routing Protocol)
- > ifmp (Ipsilon Flow Management Protocol)
- > igmp (Internet Group Management Protocol)
- > igp (any private interior gateway (used by Cisco for their IGRP))
- > il (IL Transport Protocol)
- > i_nlsip (Integrated Net Layer Security TUBA)
- > ip (Internet Protocol)
- > ip6 (Internet Protocol V6)
- > ipcomp (IP Payload Compression Protocol)
- > ipcp (IP Control Protocol)
- > ipcvt (Internet Packet Core Utility)
- > ip_exp (Use for experimentation and testing)
- > ip_in_ip (IP_within_IP Encapsulation Protocol)
- > ipt (IPDS MES Physical Layer Tester)
- > ippc (Internet Pluribus Packet Core)
- > ip_rdp (Reliable Data Protocol over IP)
- > ip_reserved (Reserved type)
- > iptm (Protocol Internet Protocol Traffic Manager)
- > ipx (Novell IPX)
- > ipx_in_ip (IPX in IP)
- > ipxsap (Service Advertisement Protocol)
- > irtt (Internet Reliable Transaction)
- > isis (ISIS for ipv4)
- > isl (InterSwitch Link Frame Format)
- > iso_ip (ISO Internet Protocol)
- > iso_tp4 (ISO Transport Protocol Class 4)

- > kryptolan (Kryptolan)
- > lan (Any local network)
- > larp (Locus Address Resolution Protocol)
- > leaf_1 (Leaf 1)
- > leaf_2 (Leaf 2)
- > live_storage (Windows Live File Storage)
- > llc (Logical Link Control)
- > loadbalan (Load Balancing)
- > m2pa (MTP2 User Peer-to-Peer Adaptation Layer)
- > m2ua (MTP2 User Adaptation Layer)
- > m3ua (MTP3 User Adaptation Layer)
- > manet (MANET Protocols)
- > mcs (Multipoint Communication Service)
- > merit_inp (MERIT Internodal Protocol)
- > mfe_nsp (MFE Network Services Protocol)
- > micp (Mobile Internetworking Control Protocol)
- > mipv6 (Mobile IPv6)
- > mms_iso (ISO 9506 Manufacturing Message Specification)
- > mobile (IP Mobility)
- > mobilehdr (Mobile Header)
- > mpl_s_in_ip (Multi Protocol Label Switching data-carrying mechanism)
- > mtp (Multicast Transport Protocol)
- > mux (Multiplexing)
- > narp (NBMA Address Resolution Protocol)
- > nbns (Netbios Name Service)
- > ncp (Netware Core Protocol)
- > netbit (Bulk Data Transfer Protocol)
- > nsfnet_igpp (NSFNET_IGP)
- > ntp (Network Time Protocol)
- > nvp_ii (Network Voice Protocol)
- > osini (OSI Network Layer)
- > pgm (PGM Reliable Transport Protocol)
- > phproxy (PHProxy)
- > pim (Protocol Independent Multicast)
- > pipe (Private IP Encapsulation within IP)
- > pnni (PNNI over IP)
- > pp (ISO 8823 Presentation Protocol)
- > private_enc (Any private encryption scheme)
- > prm (Packet Radio Measurement)
- > ptp (Performance Transparency Protocol)
- > pup (PUP)
- > pvp (Packet Video Protocol)
- > qnx (QNX)
- > rlp (Resource Location Protocol)
- > rohc (Robust Header Compression)
- > rpl (IBM RPL Protocol)
- > rsvp_e2e_ignore (Original experimental academic or proprietary protocols)
- > rtmp (Real Time Messaging Protocol)
- > rvd (MIT Remote Virtual Disk Protocol)
- > s1ap (S1 Application Protocol (S1AP))
- > sat_expak (SATNET and Backroom EXPAK)
- > sat_mon (SATNET Monitoring)
- > scc_sp (Semaphore Communications Sec. Pro.)
- > sccp_ss7
- > scps (SCPS)
- > sctp (Stream Control Transmission Protocol)
- > sdrp (Source Demand Routing Protocol)

Network Service (con't)

- > secure_vmtp {SECURE_VMTP}
- > shim6 {Shim6 Protocol}
- > simple_msg_p {Simple Message Protocol}
- > skip {SKIP}
- > sm {SM}
- > sna {SNA}
- > snap {Sub-Network Access Protocol}
- > snp {Sitara Networks Protocol}
- > snpp {Simple Network Paging Protocol}
- > sp {ISO 8327 Session Protocol}
- > sprite_rpc {Sprite RPC Protocol}
- > sps {Secure Packet Shield}
- > srp {SpectraLink Radio Protocol}
- > sscopmce {Service Specific Connection Oriented Protocol for M-Cast Env}
- > st {Stream}
- > stun {Simple Traversal of UDP through NATs}
- > sua {SCCP User Adaptation Layer}
- > sun_nd {SUN ND PROTOCOL_Temporary}
- > svn {Subversion version control system}
- > swipe {IP with Encryption}
- > t38 {Group 3 facsimile communication over IP}
- > tcf {TCF}
- > tcp {Transport Control Protocol}
- > tibcordv {TIBCO RendezVous Protocol}
- > time {Time Protocol}
- > tlsp {Transport Layer Security}
- > tp_plus_plus {TP++ Transport Protocol}
- > trunk_1 {Trunk 1}
- > trunk_2 {Trunk 2}
- > ttp {TTP}
- > udp {User Datagram Protocol}
- > udplite {Connectionless protocol very similar to UDP}
- > unassigned_ip_prot {Unassigned over-ip protocol type from 143 to 253}
- > uti {UTI}
- > v5ua {V5.2-User Adaptation Layer}
- > vines {Vines Banyan Systems}
- > visa {VISA Protocol}
- > vmtp {VMTP}
- > wb_expak {WIDEBAND EXPAK}
- > wb_mon {WIDEBAND Monitoring}
- > websocket {Wang Span Network}
- > wesp {Wrapped Encapsulating Security Payload}
- > whois {Whois Protocol}
- > wins {WINS Replication protocol}
- > wsn {Wang Span Network}
- > xnet {Cross Net Debugger}
- > xns {Xerox Network Systems}
- > xns_idp {XEROX NS IDP}
- > xyplex {XYPLEX}

Routing

- > apollo {Apollo Domain:XEROX}
- > bgp {Border Gateway Protocol}
- > eigrp {Enhanced Interior Gateway Routing Protocol}
- > hsrp {Cisco Hot Standby Router Protocol{HSRP}}
- > ipxrip {RIP over IPX}
- > loop {Loopback:XEROX}
- > mpls {Multiprotocol Packet Label Switching}

- > nlsip {Netware Link Services Protocol}
- > ospf {Open Short Path First}
- > pwe {Pseudo Wire Emulation}
- > rip1 {Routing Information Protocol V1}
- > rip2 {Routing Information Protocol V2}
- > ripng1 {Routing Internet Protocol ng1}
- > stp {Spanning Tree Protocol}
- > vrrp {Virtual Router Redundancy Protocol}

Standard

- > base {TD virtual protocol}
- > established {Established TCP Connection}
- > high_entropy {High Entropy}
- > incomplete {Incomplete}
- > malformed {Malformed}
- > spid {Statistical Protocol IDentification}
- > synflood {TCP Syn flood}
- > unknown {Unknown}

Network Management

- > altiris {Altiris}
- > cdp {Cisco Discovery Protocol}
- > lcp {Line Control Protocol}
- > iperf
- > netflow {Cisco Netflow Protocol}
- > rsvp {Reservation Protocol}
- > snmp {Simple Network Management Protocol}
- > sonmp {Nortel/SynOptics Netwok Management Protocol}
- > zabbix_agent {Zabbix agent}

AUTHENTICATION-SERVICE**Authentication**

- > chap {PPP Challenge Handshake Authentication Protocol}
- > diameter {Diameter}
- > ident {Identification Protocol}
- > krb5 {Kerberos}
- > pap {PPP Password Authentication Protocol}
- > radius {Remote Authentication Dial-In User Service}
- > tacacs_plus {TACACS+}
- > yppasswd {Yellow Page Passwd}
- > ypserv {Yellow Pages Server}

VOIP & STREAMING**Audio/Video**

- > O50plus
- > adobe_connect {adobe_connect}
- > babelgum
- > baofeng
- > bbc_player {BBC Player}
- > blip_tv
- > blockbuster
- > bmf {ISO Base Media File Format}
- > cctv_vod
- > cnet_tv
- > facetime {Apple FaceTime}
- > flash {Flash Media Playback}
- > fring
- > fuze_meeting
- > gotomeeting {gotomeeting - online meeting service [Citrix]}
- > grooveshark
- > h225 {H225}

- > h245 {H245}
- > h248_binary
- > h248_text
- > hbo_go
- > howcast
- > hulu
- > iax {Inter Asterisk eXchange}
- > icall
- > icecast {Icecast}
- > iheartradio
- > itunes {iTunes}
- > jajah
- > meetingplace {Cisco MeetingPlace}
- > metacafe
- > mgcp {Media Gateway Control Protocol}
- > mms {Microsoft Multimedia Streaming}
- > mogulus
- > mpegts {Mpeg 2 Transmission}
- > msn_video {MSN Video}
- > msrp {The Message Session Relay Protocol {MSRP}}
- > netflix
- > niconico_douga
- > paltalk_audio {Paltalk audio chat}
- > paltalk_video {Paltalk video}
- > pplive {PPLive}
- > ppstream {ppStream - P2P based Streamed Media}
- > q931 {Q931}
- > qik_video
- > qqlive {QQLive network player}
- > qvod {QVOD Player}
- > rdt {Real Data Transport}
- > rhapsody
- > rtcp {Real Time Control Protocol}
- > rtp {Real Time Protocol}
- > rtsp {Real Time Streaming Protocol}
- > sccp {Skinny Client Control Protocol}
- > shoutcast {Shoutcast}
- > silverlight {Silverlight}
- > sip {Session Initiation Protocol}
- > sky_player
- > skype
- > slacker
- > slingbox {Slingbox}
- > sopcast {Sopcast}
- > soundcloud
- > spotify {Spotify}
- > tango {Tango Video Calls}
- > tunein
- > tvants {TVAnts Protocol}
- > tvuplayer {TVU network player}
- > uusee {UUSee Protocol}
- > veohTV {VeohTV}
- > vevo
- > viber {Viber}
- > voddler
- > webex {WebEx}
- > x25 {X25}
- > yahoo_screen
- > ymsg_video {YMSG Video}
- > zattoo {Zattoo}

Telephony

- > bssap (BSS Application Part)
- > isup (ISDN User Part)

EMAIL

Mail

- > imap (Internet Message Access Protocol version 4)
- > imaps (Secure IMAP)
- > lotusnotes (Lotus Notes)
- > mapi (MS Exchange Message API)
- > pop3 (Post Office Protocol)
- > pop3s (Secure POP3)
- > smtp (Simple Mail Transfer Protocol)
- > smtps (Secure SMTP)

WEB

Gaming

- > all_slots_casino (All Slots Casino)
- > cstrike (CounterStrike)
- > eve_online
- > everquest
- > halflife (Half-Life and Half-Life 2)
- > imvu (IMVU)
- > line_games (Line games)
- > line_wind_runner (LineWindRunner)
- > lineage2
- > magumagu (Magu-Magu (aka 2013 for Kakao))
- > poker_stars (Poker Stars)
- > psn (Playstation Network)
- > quake (Quake)
- > runescape
- > steam (Steam)
- > wfc (Nintendo Wi-Fi Connection)
- > wiiconnect24 (WiiConnect24)
- > wow (World of Warcraft)
- > xboxlive (Xbox Live)

Web

- > 01net (01net)
- > 0zz0
- > 10050net (10050)
- > 10086cn (10086cn)
- > 104com (104)
- > 1111tw (1111)
- > 114la (114la)
- > 115com (115com)
- > 118114cn (118114cn)
- > 11st (11st)
- > 123people (123people)
- > 163com (163com)
- > 17173com (17173)
- > 17u (17u)
- > 2ch (2ch)
- > 2shared (2Shared)
- > 360cn (360)
- > 4399com (4399)
- > 4shared (4Shared)
- > 51_com
- > 51_com_bbs
- > 51_com_music
- > 51_com_posting

- > 51job
- > 51la
- > 56com
- > 58com
- > 591 tw
- > 7k7k (7k7k)
- > 91com (91 (TQ Game))
- > 9game (9game)
- > abcnews (abcnews)
- > about (about)
- > accuweather (accuweather)
- > acer (acer)
- > acrobat (acrobat)
- > activesync (Activesync)
- > addictinggames (addictinggames)
- > adnstream (ADNSStream)
- > adobe_meeting_rc (Adobe Meeting Remote Control)
- > adobe_online_office
- > adobe_update (Adobe Update Manager)
- > adrive (Adrive)
- > adultadworld (adultadworld)
- > adultfriendfinder (adultfriendfinder)
- > advogato (Advogato)
- > agame (agame)
- > aiaigame (aiaigame)
- > aili (Aili)
- > aizhan (Aizhan)
- > akamai (Akamai Technologies CDN)
- > alexa (alexa)
- > alibaba (Alibaba)
- > alimama (Alimama)
- > alipay (Alipay)
- > aljazeera (aljazeera)
- > allocine (allocine)
- > amazon (amazon)
- > amazon_aws (Amazon Web Services/Cloudfront CDN)
- > amazon_mp3 (amazon)
- > amazon_video (amazon)
- > ameba (Ameba)
- > americanexpress (americanexpress)
- > amie_street (Amie street)
- > anobii (aNobii)
- > answers (answers)
- > anzhi (Anzhi)
- > appchina (Appchina)
- > apple (Apple)
- > apple_airport (Apple Airport)
- > apple_maps (Apple Maps)
- > apple_siri (Apple SIRI)
- > apple_update (Apple Update)
- > appledaily (Appledaily)
- > appshopper (Appshopper)
- > archive (Archive)
- > armorgames (armorgames)
- > asiae (Asiae)
- > ask (Ask)
- > asmallworld (ASmallWorld)
- > athlinks (Athlinks)

- > att (att)
- > atwiki (Atwiki)
- > auction
- > aufeminin (aufeminin)
- > auone (auone)
- > avg_update (Avg Update)
- > avira_update (Avira Update)
- > avoidr (Avoidr)
- > axifile
- > babycenter (Babycenter)
- > babyhome (Babyhome)
- > backpackers (Backpackers)
- > badongo
- > baidu (Baidu)
- > baidu_hi_games
- > baidu_player
- > baike (Baikē)
- > bca_co (Bca.co)
- > beanfun (Beanfun)
- > bebo (Bebo)
- > bebo_mail
- > berniaga
- > bet365
- > bigadda (Bigadda)
- > biglobe_ne (Biglobe)
- > bigtent (BigTent)
- > bigupload (Bigupload)
- > biip (Biip)
- > bing (Bing)
- > bitdefender_update (BitDefender Update)
- > blackberry (BlackBerry)
- > blackberry_update (BlackBerry OS Update)
- > blackplanet (BlackPlanet)
- > blogdetik (Blogdetik)
- > blogger (blogger)
- > blogging (Blogging)
- > blogspot (blogspot)
- > blogster (Blogster)
- > blokus (Blokus)
- > bloomberg (Bloomberg)
- > bluejayfilms (bluejayfilms)
- > bolt (Bolt)
- > bonpoo (Bonpoo)
- > books (Books)
- > books_iread (Books iRead)
- > box_net (Box.net)
- > brighttalk (Brighttalk)
- > buddybuddy (BuddyBuddy)
- > bugs (Bugs)
- > businessweek (businessweek)
- > businessweekly (Businessweekly TW)
- > buzzfeed
- > buzznet (Buzznet)
- > bypassthat (BypassThat)
- > cafemom (Cafemom)
- > cam4 (cam4)
- > campfire (Campfire)

Web (con't)

- > camzap (Camzap)
- > capitalone (CapitalOne)
- > care2 (Care2)
- > cartoonnetwork (CartoonNetwork)
- > cdiscount (Cdiscount)
- > cellufun (Cellufun)
- > channel4 (Channel4)
- > chatroulette
- > china_airlines (China Airlines)
- > chinacom (China.com)
- > chinacomcn (China.com.cn)
- > chinanews (Chinanews)
- > chinatimes (Chinatimes)
- > chinaren
- > chinaz (Chinaz)
- > chosun (Chosun)
- > chosun_daily (Chosun Daily)
- > chrome_update (Chrome Update)
- > citrix_online
- > cjmal (CJ Mal)
- > ck101 (Ck101)
- > classmates (Classmates)
- > clearspace (Jlve (formerly Clearspace))
- > cloob (Cloob)
- > cloudflare (CloudFlare CDN)
- > cloudme
- > clubic (clubic)
- > cnn (cnn)
- > cntv (cntv)
- > cnyes (Cnyes)
- > cnzz (Cnzz)
- > cocolog_nifty (Cocolog-nifty)
- > college_blender (College Blender)
- > comcast (comcast)
- > comm
- > concur (Concur)
- > conduit (Conduit Services)
- > coralcdn_user (CoralCDN user)
- > couch_surfing (Couch surfing)
- > coupang (Coupang)
- > coupang
- > crocko
- > csdn (Csdn)
- > ctrip (Ctrip)
- > cyworld
- > daily_booth (Daily booth)
- > dailymail (dailymail)
- > dailymotion (Dailymotion)
- > daily_strength (Daily strength)
- > dangdang (Dangdang)
- > daum (daum)
- > daummail
- > davidov (davidov)
- > dcinside
- > debian_update (Debian/Ubuntu Update)
- > decayenne (Decayenne)

- > deezer (Deezer)
- > delicious (Delicious Update)
- > depositfiles (DepositFiles)
- > detik (Detik)
- > detiknews (Detiknews)
- > deviant_art (Deviant Art)
- > digg (digg)
- > digitalverse (DigitalVerse)
- > diodeo
- > directdownloadlinks (DirectDownload Links)
- > directv (directv)
- > disaboom (Disaboom)
- > divshare (DivShare)
- > dmm_co (Dmm)
- > dnshop
- > docstoc (Docstoc)
- > dol2day (Dol2day)
- > donga
- > dontstayin (DontStayIn)
- > doorblog (Doorblog)
- > douban
- > doubleclick_ads (DoubleClick ads)
- > draugiem (Draugiem)
- > dreamwiz (Dreamwiz)
- > dropbox (Dropbox)
- > drupal (drupal)
- > duowan (Duowan)
- > dynamicintranet (Dynamic Intranet)
- > earthcam (EarthCam)
- > eastmoney (Eastmoney)
- > easytravel (Easytravel TW)
- > ebay (Ebay)
- > egnyte
- > elftown (Elftown)
- > elle_tw (Elle Taiwan)
- > illuminate
- > emaps
- > eons (Eons)
- > epenicus (Epenicus)
- > eroom_net (eRoom.net)
- > esnips (eSnips)
- > espn (ESPN)
- > etao (Etao)
- > ettoday (Ettoday)
- > evernote
- > evony (Evony)
- > exblog (Exblog)
- > expedia (Expedia)
- > experience_project (Experience Project)
- > exploroo (Exploroo)
- > eyejot (Eyejot)
- > eyny (Eyny)
- > ezfly (Ezfly)
- > eztravel (Eztravel)
- > facebook (Facebook)
- > facebook_apps (Facebook Apps)
- > faceparty (Faceparty)

- > faces (Faces)
- > fashionguide (Fashionguide)
- > fc2 (FC2)
- > fetlife (Fetlife)
- > file_dropper (File Dropper)
- > fileflyer (Fileflyer)
- > file_host (File Host)
- > filemail
- > filer_cx (Filer.cx)
- > fileserve
- > files_to (Files.to)
- > filestube (Filestube)
- > fillos_de_galicia (Fillos de Galicia)
- > filmaffinity (FilmAffinity)
- > firefox_update (Adobe Flash-Plugin Update)
- > fledgewing (FledgeWing)
- > flickr (Flickr)
- > flixster (Flixster)
- > flumotion (Flumotion)
- > fluxiom (Fluxiom)
- > fly_proxy (Fly Proxy)
- > fogbugz (Fogbugz)
- > fortunechina (Fortunechina)
- > fotki (Fotki)
- > fotolog (Fotolog)
- > fotoweb
- > foursquare (Foursquare)
- > foxmovies (foxmovies)
- > foxnews (foxnews)
- > foxsports (foxsports)
- > freebsd_update (FreeBSD Updates)
- > freetv (FreeTV)
- > friends_reunited (Friends Reunited)
- > friendster (Friendster)
- > fruhstückstreff (Fruhstückstreff)
- > fsecure_update (Fsecure Update)
- > fubar (Fubar)
- > funshion (Funshion video player)
- > gaiaonline (GaiaOnline)
- > gamebase_tw (Gamebase Taiwan)
- > gamer_tw (Gamer Taiwan)
- > gamerdna (GamerDNA)
- > games_co (Gamer Taiwan)
- > gamesmomo (Gamesmomo)
- > ganji (Ganji)
- > gather (Gather)
- > gatherplace
- > gays (Gays)
- > geni (Geni)
- > gigapup (Gigapup)
- > gfan (Gfan)
- > glide (Glide)
- > gmarket (Gmarket)
- > gogobox
- > gogoyoko (Gogoyoko)
- > gohappy (Gohappy)

Web (con't)

- > gomeetnow
- > gomtw_vod (Gom TV (VOD))
- > goo_ne (Goo)
- > goodreads (Goodreads)
- > google (Google)
- > google_ads (Google ads)
- > google_analytics (Google Analytics)
- > google_appengine (Google App Engine)
- > google_cache (Google Cache)
- > google_desktop (Google Desktop)
- > google_docs
- > google_drive
- > google_earth (Google Earth)
- > google_gen (Google Generic)
- > google_maps (Google Maps)
- > google_picasa (Google Picasa)
- > google_plus (Google Plus)
- > google_skymap (Google Skymap)
- > google_toolbar (Google Toolbar)
- > google_translate (Google Translate)
- > gougou (Gougou Search engine)
- > gratisindo (Gratisindo)
- > gree (Gree)
- > grono (Grono)
- >groupon (groupon)
- > groupwise
- > gsshop (Gsshop)
- > gstatic (Gstatic)
- > gudanglagu (Gudanglagu)
- > gyao (Gyao)
- > habbo (Habbo)
- > hangame (Hangame)
- > hankooki (Hankooki)
- > hankyung (Hankyung)
- > hao123 (Hao123)
- > hardsextube (hardsextube)
- > hatena_ne (Hatena)
- > heraldm (HeraldM)
- > here (HERE)
- > hexun (Hexun)
- > hgtv (hgtv)
- > hi5 (Hi5)
- > hinet_games (Hinet games)
- > hospitality_club (Hospitality Club)
- > hotfile
- > howstuffworks (howstuffworks)
- > http (HyperText Transfer Protocol)
- > https (Secure HTTP)
- > hudong (Hudong)
- > hyves (Hyves)
- > i_gamer (I-gamer)
- > i_part (I-part)
- > iapp (Iapp)
- > ibibo (Ibibo)
- > icap (ICAP)
- > ifeng (Ifeng)
- > ifeng_finance (Ifeng finance)

- > ifile_it (ifile.it)
- > ikea (ikea)
- > imageshack
- > imdb (Internet Movie Database (IMDb))
- > imeem (Imeem)
- > imeet
- > imgur
- > impress (Impress)
- > indaba_music (Indaba Music)
- > indonetnetwork (Indonetnetwork)
- > indowebster (Indowebster)
- > inilah (Inilah.com)
- > instagram (Instagram)
- > intalking (Intalking)
- > internations (InterNations)
- > interpark (Interpark)
- > intuit (intuit)
- > iqiyl (Iqiyl)
- > irc_galleria (IRC Galleria)
- > issuu
- > italki (Italki)
- > itsmy (Itsmy)
- > itv_player
- > iwiw (Iwiw)
- > jaiku (Jaiku)
- > jammerdirect (JammerDirect)
- > jango (Jango)
- > jap (Jap)
- > java_update (Java Update)
- > jingdong (JingDong (formerly 360buy))
- > jira (Jira)
- > jne (Jne.co)
- > jobstreet
- > joongang_daily (Jira)
- > jubii (Jubii)
- > justin_tv (Justin.tv)
- > kaioo (Kaioo)
- > kakaku (Kakaku)
- > kankan
- > kapanlagi (Kapanlagi)
- > karosgame (karosgame)
- > kaskus (Kaskus)
- > kaspersky (kaspersky)
- > kaspersky_update (Kaspersky Update)
- > kb_bank (KB bank)
- > kbs
- > keezmovies (keezmovies)
- > kemenkumham
- > khan
- > kino (Kino)
- > kiwibox (Kiwibox)
- > klikbca (KlikBCA)
- > kompas
- > kompasiana
- > konaminet
- > kproxy (Kproxy)
- > ku6 (Ku6)
- > kuxun (Kuxun)

- > lady8844 (Lady8844)
- > laredoute (laredoute)
- > lastfm (Last.Fm)
- > lastpass
- > lativ (Lativ)
- > ldblog (Ldblog)
- > leapfile (Leapfile)
- > leboncoin (leboncoin)
- > letv (letv)
- > level3 (Level 3 Communications CDN)
- > lg_eshop (LG eshop)
- > libero_video (Libero Video)
- > librarything (LibraryThing)
- > lifeknot (Lifeknot)
- > lintasberita (LintasBerita)
- > lionair (Lionair)
- > liontravel (Liontravel)
- > listografy (Listografy)
- > live (Live)
- > livedoor (livedoor)
- > liveinternet (liveinternet)
- > livejournal (LiveJournal)
- > live_meeting (Live Meeting)
- > livemocha (Livemocha)
- > livingsocial (Livingsocial)
- > llnwd (Limelight Networks CDN)
- > lokalisten
- > lotour (Lotour)
- > lotte (Lotte)
- > lotus_live
- > lunarstorm (Lunarstorm)
- > lvping (Lvping)
- > lync-online
- > mail_ru_games
- > mail_ru_moiimir
- > mail_ru_webagent
- > mandriva_update (Mandriva Update)
- > mangocity (Mangocity)
- > mapquest
- > mashable (mashable)
- > mashare
- > match (match)
- > mbc (MBC)
- > mbn (mbn)
- > mediafire (MediaFire)
- > meetin (MEETin)
- > meettheboss (Meettheboss)
- > meetme
- > meetup (Meetup)
- > meevee (MeeVee)
- > mega (MEGA (from Kim Dotcom))
- > megaproxy (Megaproxy)
- > megaupload (Megaupload)
- > megavideo (Megavideo)
- > mekusharim
- > mendeley
- > mgoon
- > mixi (Mixi)

Web (con't)

- > mk (Mk)
- > mobile01 (Mobile01)
- > mobile_me (Mobile Me)
- > mocospace (MocoSpace)
- > mog (MOG)
- > mobage
- > momoshop (Momoshop)
- > monex
- > money_163 (Money 163)
- > moneydj (Moneydj)
- > monster (monster)
- > mop (Mop)
- > mouthshut (MouthShut)
- > mozilla (mozilla)
- > mpquest (Mpquest)
- > msn_search (Msn_search)
- > mt (Mt)
- > mtv (mtv)
- > multiply (Multiply)
- > multiupload (multiupload)
- > musica (musica)
- > muxlim (Muxlim)
- > myanimelist (MyAnimeList)
- > mychurch (MyChurch)
- > mydownloader
- > myheritage (MyHeritage)
- > mylife (MyLife)
- > my_opera (My Opera)
- > myspace (Myspace)
- > myspace_video (Myspace Video)
- > myvideo (myvideo)
- > mywebsearch (mywebsearch)
- > my_yahoo (my_yahoo)
- > napster (Napster)
- > nasa (nasa)
- > nasza_klasa (Nasza Klasa)
- > nationalgeographic (nationalgeographic)
- > nationallottery (national-lottery)
- > naver (naver)
- > naverdrive
- > navermail
- > nba (nba)
- > nba_china (Nba China)
- > nduao (Nduao)
- > nefsys
- > nend
- > netbsd_update (NetBSD Updates)
- > netload (Netload)
- > netlog (Netlog)
- > netmarble (NetMarble)
- > nettby (Nettby)
- > nexian (Nexian)
- > nexon (Nexon)
- > nexopia (Nexopia)
- > nfl (nfl)
- > ngo_post (NGO Post)
- > nifty (Nifty)
- > nike (nike)
- > nikkei (Nikkei)
- > nimbuzz_web
- > ning (Ning)
- > nod32_update (ESET NOD32 Antivirus Updates)
- > nokia_ovi (Nokia_Ovi)
- > nonghyup_bank (Nonghyup Bank)
- > norton_update (Symantec Norton AntiVirus Updates)
- > nownews (Nownews)
- > ntv (ntv)
- > nydailynews (nydailynews)
- > nytimes (nytimes)
- > octopz (Octopz)
- > office365 (Microsoft Office 365)
- > officedepot (Officedepot)
- > okwave (Okwave)
- > oneclimate (OneClimate)
- > onehub
- > oneworldtv (OneWorldTV)
- > onlinedown (onlinedown)
- > ooyala (Ooyala)
- > openbsd_update (OpenBSD Updates)
- > open_diary (Open Diary)
- > opera_update (Opera Update)
- > orb
- > orkut (Orkut)
- > outeverywhere (OUTeverywhere)
- > outlook (Outlook Web Access (Office 365))
- > paipai (Paipai)
- > panda_update (Panda Update)
- > pandora (Pandora)
- > pandora_tv (Pandora Tv)
- > paran
- > partnerup (PartnerUp)
- > party_poker (Party Poker)
- > passportstamp (PassportStamp)
- > payeasy (Payeasy)
- > pcgames (Pcgames)
- > pchome (Pchome)
- > pclady (Pclady)
- > pconline (Pconline)
- > peercast
- > pengyou (Pengyou)
- > people (People)
- > perfspot (Perfspot)
- > photobucket (Photobucket)
- > pimang (Pimang)
- > pingsta (Pingsta)
- > pinterest
- > pixiv (Pixiv)
- > pixnet (Pixnet)
- > plaxo (Plaxo)
- > playahead (Playahead)
- > playstation (playstation)
- > plurk (Plurk)
- > poco (POCO (people connected))
- > pogo (Pogo)
- > pornhub (Pornhub)
- > ppfilm (PIPI Film)
- > pps (pps)
- > pptv (pptv)
- > priceminister (priceminister)
- > pricerunner (PriceRunner)
- > privax (Privax)
- > proxeasy (Proxeasy)
- > proxono (Proxono)
- > psiphon (Psiphon)
- > qqcapacity (Qqcapacity)
- > qqdownload (QQDownload)
- > qq_blog (QQ Blog)
- > qq_finance (QQ finance)
- > qq_games (QQ Games)
- > qq_lady (QQ Lady)
- > qq_news (QQ News)
- > qq_web
- > qq_weibo (Tencent (QQ) WeiBo)
- > quarterlife (Quarterlife)
- > qunar (Qunar)
- > qzone (Qzone)
- > radiko
- > rakuten (Rakuten)
- > rambler (Rambler)
- > rapidshare (Rapidshare)
- > ravelry (Ravelry)
- > realtor (Realtor)
- > reddit (Reddit.com)
- > redhat_update (RedHat Update)
- > redtube (redtube)
- > renren (Renren)
- > republika (Republika)
- > researchgate (ResearchGATE)
- > reuters (reuters)
- > reverbNation (ReverbNation)
- > reverso (reverso)
- > rss (RSS)
- > rtl (rtl)
- > ruten (Ruten)
- > ryanair (ryanair)
- > ryze (Ryze)
- > saavn_music (Saavn Bollywood Music)
- > saberindo (Saberindo)
- > sakura_ne (Sakura)
- > salesforce (Salesforce)
- > sayclub (SayClub)
- > sbs (Sbs)
- > sciencestage (ScienceStage)
- > scispace (Scispace)
- > scribd
- > sdo (Sdo)
- > secondlife (Second Life)
- > seeqpod (Seeqpod)
- > seesaa (Seesaa)
- > seismic (Seismic)

Web (con't)

- > segye (Segye)
- > sendspace (SendSpace)
- > seoul_news (Seoul News)
- > sfr (sfr)
- > sharepoint (Microsoft SharePoint)
- > sharepoint_admin (Microsoft SharePoint Administration Application)
- > sharepoint_blog (Microsoft SharePoint Blog Management Application)
- > sharepoint_calendar (Microsoft SharePoint Calendar Management Application)
- > sharepoint_document (Microsoft SharePoint Document Management Application)
- > sharepoint_online
- > sharethemusic (ShareTheMusic)
- > shazam (Shazam)
- > shelfari (Shelfari)
- > shinhan (Shinhan)
- > shutterfly (Shutterfly)
- > siebel_crm (Siebel CRM)
- > sina (Sina)
- > sina_blog (Sina blog)
- > sina_finance (Sina finance)
- > sina_news (Sina News)
- > sina_video
- > sina_weibo (Sina Weibo)
- > sky (sky)
- > skyblog (Skyblog)
- > skycn (skycn)
- > skydrive (SkyDrive)
- > skyrock (Skyrock)
- > slideshare (slideshare)
- > socialtv (Socialtv)
- > socialvibe (SocialVibe)
- > soft4fun (Soft4fun)
- > softbank
- > sogou (Sogou)
- > sohu (Sohu)
- > sohu_blog (Sohu blog)
- > soku (Soku)
- > sonet_ne (So-net)
- > sonico (Sonico)
- > soso (Soso)
- > soufun (Soufun)
- > southwest (Southwest)
- > spdy
- > speedtest
- > spiegel (spiegel)
- > sportchosun (Sportchosun)
- > sportsillustrated (sportsillustrated)
- > sportsseoul (Sportsseoul)
- > sprint (sprint)
- > stafaband
- > stagevu (Stagevu)
- > stayfriends (stayfriends)
- > stickam (Stickam)
- > stockq (Stockq)
- > streamaudio (StreamAudio)
- > studivz (StudiVZ)
- > stumbleupon (StumbleUpon)
- > sugar_crm (Sugar CRM)
- > sugarc_sync
- > suning (Suning)
- > suppersoccer (Suppersoccer)
- > surrogafier (Surrogafier)
- > surveymonkey (surveymonkey)
- > svtpay (SVT Play)
- > tabelog (Tabelog)
- > tagged (Tagged)
- > tagoo (Tagoo)
- > taiwanlottery (Taiwanlottery)
- > taku_file_bin (Taku File Bin)
- > talenttrove (TalentTrove)
- > talkbiznow (Talkbiznow)
- > taltopia (Taltopia)
- > taobao (taobao)
- > taringa (Taringa)
- > tchatc (Tchatc)
- > teachertube (TeacherTube)
- > teachstreet (TeachStreet)
- > technline (Technline)
- > tempointeraktif (TempoInteraktif)
- > tencent (Tencent)
- > tf1 (tf1)
- > tgbus (Tgbus)
- > the_auteurs (The Auteurs)
- > thepiratebay (The Pirate Bay)
- > three (Three.co)
- > tianya (Tianya)
- > ticketmonster (Ticketmonster)
- > tidaltv (TidalTV)
- > tistory (Tistory)
- > tmall (Tmall)
- > tokbox (Tokbox)
- > togobagus (Togobagus)
- > torrentdownloads (torrentdownloads)
- > torrentz (torrentz)
- > travbuddy (TravBuddy)
- > travellerspoint (Travellerspoint)
- > travelocity (Travelocity)
- > travian (Travian)
- > trendmicro_update (Trendmicro Update)
- > tribe (Tribe)
- > tribunnews (Tribunnews)
- > trombi (Trombi)
- > tube8 (tube8)
- > tudou (Tudou)
- > tuenti (Tuenti)
- > tumblr (Tumblr)
- > tunewiki
- > tv (tv)
- > tv4play (Tv4Play)
- > twitpic (Twitpic)
- > twitter (Twitter)
- > ubuntu_one
- > udn (Udn)
- > univision (univision)
- > uploading (uploading)
- > usatoday (usatoday)
- > usejump (Usejump)
- > ustream (Ustream)
- > vampirefreaks (VampireFreaks)
- > veetle (Veetle)
- > viadeo (Viadeo)
- > videobash (videobash)
- > videosurf (videosurf)
- > vietbao (vietbao)
- > vimeo (vimeo)
- > vivanews (Vivanews)
- > vox (Vox)
- > vtunnel (Vtunnel)
- > vjew (Vjew)
- > wakoopa (Wakoopa)
- > wallstreetjournal_china (Wall Street Journal China)
- > wandoujia (Wandoujia)
- > wasabi (Wasabi)
- > washingtonpost (washingtonpost)
- > wat (wat)
- > wayn (Wayn)
- > weather (weather)
- > webbiographies (WebBiographies)
- > webex_weoffice
- > web_crawler (Web Crawler)
- > weourfamily (WeOurFamily)
- > werkenntwen (WerKenntWen)
- > webbiographies (WebBiographies)
- > wikia
- > wikipedia (Wikipedia)
- > windows_azure (Windows Azure CDN)
- > windowslive (Windowslive)
- > windowslivespace (WindowsLiveSpace)
- > windowsmedia (windowsmedia)
- > windows_update (Windows Update)
- > wiserearth (WiserEarth)
- > wixi (Wixi)
- > wordpress (Wordpress)
- > wretch (Wretch)
- > xanga (Xanga)
- > xbox (xbox)
- > xhamster
- > xiami (Xiami)
- > xing (Xing)
- > xinhuanet (Xinhuanet)
- > xlnet (XLNet)
- > xl_wap (XL wap)
- > xl_webmail (XL Webmail)
- > xmlrpc (XMLRPC protocol)
- > xm_radio (XM Radio)
- > xnxx (xnxx)
- > xrea (xrea)
- > xt3 (Xt3)
- > xuite (Xuite)
- > xvideos (xvideos)

Web (con't)

- > xvideolive {xvideolive}
- > yahoo {Yahoo}
- > yahoo360plusvietnam {Yahoo360PlusVietnam}
- > yahoo_answers {Yahoo Answers}
- > yahoo_biz {Yahoo biz}
- > yahoo_buy {Yahoo Buy TW}
- > yahoo_douga {Yahoo Douga}
- > yahoo_games {Yahoo games}
- > yahoo_geocities {Yahoo geocities}
- > yahoo_korea {Yahoo Korea}
- > yahoo_maps {Yahoo maps}
- > yahoo_realestate {Yahoo realestate}
- > yahoo_search {Yahoo search}
- > yahoo_stock_tw {Yahoo Stock}
- > yahoo_travel {Yahoo travel}
- > yam {Yam}
- > yammer {Yammer}
- > yandex {Yandex}
- > yelp {Yelp}
- > yesky {Yesky}
- > yihaodian {Yihaodian}
- > yoka {Yoka}
- > yomiuri {Yomiuri}
- > youdao {youdao}
- > youku {Youku}
- > youm7 {youm7}
- > youmeo {Youmeo}
- > youporn {youporn}
- > yourfilehost {YourFileHost}
- > youseemore {YouSeeMore}
- > yosendit {YouSendIt}
- > youtube {Youtube}
- > youtube_hd {Youtube HD}
- > yting {Yting}
- > yugma {Yugma}
- > yuuguu {Yuuguu}
- > zelune {Zelune}
- > ziddu {Ziddu}
- > zoho_crm {Zoho CRM}
- > zoho_db {ZHO DB and Reports}
- > zoho_meeting {Zoho Meeting}
- > zoho_notebook {Zoho Notebook}
- > zoho_people {Zoho People}
- > zoho_planner
- > zoho_share
- > zoho_sheet
- > zoho_show
- > zol {Zol}
- > zoo {Zoo}
- > zshare {Zshare}
- > zum {Zum}
- > zynga {Zynga}

Forum

- > google_groups {Google groups}
- > ircs {Secure IRC}
- > linkedin {LinkedIn website}

- > live_groups {Windows Live groups}
- > mibbit {Mibbit}
- > msn_groups {MSN groups}
- > nntp {Network News Transport Protocol}
- > nntps {Secure NNTP}
- > odnoklassniki
- > vkontakte
- > yahoo_groups {Yahoo groups}

**ADVANCED IP APPLICATION PACKAGE
(ALL THE ABOVE AND BELOW)**

SUPPORTED PROTOCOLS

Antivirus

- > sophos_update {Sophos update}
- > zonealarm_update {ZoneAlarm Updates}

Application Service

- > apns {Apple Push Notification Service}
- > appstore {Apple App Store}
- > cldap
- > dict {Dictionary Server Protocol}
- > epm {End Point Mapper}
- > garp {Generic Attribute Registration Protoco }
- > google_play {Google Play}
- > icloud
- > ios_ota_update {ios_ota_update}
- > ldap {Lighthouse Directory Access Protocol}
- > ldaps {Secure LDAP}
- > mq {WebSphere Message Queue series}
- > nspi {Name Service Provider Interface}
- > perforce {Perforce Protocol}
- > portmap {Port Mapper}
- > samsung_apps {Samsung Apps}
- > srvloc {Service Location Protocol}
- > ssdp {Simple Service Discovery Protocol}
- > syslog {Syslog}
- > windows_marketplace {Windows Phone Marketplace}
- > xfs {X Font Server protocol}

Database

- > db2 {db2 protocol}
- > drda {Distributed Relational Database Architecture}
- > filemaker_pro {FileMaker Pro}
- > informix {informix protocol}
- > mobilink {Mobilink}
- > mysql {MySQL Protocol}
- > postgres {Postgres}
- > sqli {Sqli}
- > sybase {Sybase}
- > tds {Tabular Data Stream}
- > tns {Transparent Network Service {Oracle}}

Encrypted

- > ipsec {IP secure}
- > isakmp {Internet Security Association and Key Management Protocol}
- > ocsp {Online Certificate Status Protocol}
- > ssh {Secure Shell}
- > ssl {Secure Socket Layer}
- > tor {Tor}

ERP

- > sap {SAP}

File Server

- > aimini
- > cft {Cross File Transfer}
- > ftp {File Transfer Protocol}
- > ftp_data {File Transfer Protocol Data}
- > ftps {FTP over SSL}
- > gmail_drive {Gmail drive}
- > hotline {HotLine}
- > ibackup {ibackup - online files backup protocol}
- > mount {Mount}
- > netbios {Netbios}
- > nfs {Network File System}
- > nlockmgr {Network Lock Manager}
- > rquota {Rquota}
- > rstat {Rstat}
- > rsync {Remote synchronous {file transfer}}
- > rusers {Rusers}
- > smb {Server Message Block {Windows File Server}}
- > sync {Sync}
- > tftp {Trivial File Transfer Protocol}
- > ypupdate {Yellow Pages Update}

File Transfer

- > aim_transfer {AIM Transfer Protocol}
- > irc_transfer {IRC File Transfer Data}
- > jabber_transfer {Jabber File Transfer}
- > paltalk_transfer {PalTalk Transfer Protocol}
- > qq_transfer {QQ transfer Protocol}
- > ymsg_transfer {Ymsg Transfer Protocol}

Instant Messaging

- > aim {AOL Instant Messenger}
- > aim_express {AIM express}
- > aims {Secure AIM}
- > airaim {AirAIM}
- > badoo {Badoo}
- > chat_on {ChatON}
- > ebuddy {Ebuddy}
- > friendvox {FriendVox}
- > gadugadu {Gadu Gadu}
- > gmail_chat {Google Chat}
- > gtalk {Google Talk}
- > hovrs {HOVRS}
- > icq2go {ICQ2Go}
- > iloveim {IloveIM}
- > irc {Internet Relay Chat}
- > jabber {Jabber Protocol}
- > kaixin_chat {Kaixin Chat}
- > kakaotalk {Kakao Talk}
- > kik {KIK Messenger}
- > koolim {KoolIM}
- > line {line}
- > lotus_sametime {IBM Lotus Sametime}
- > lync {Microsoft Lync}
- > maaii
- > messengerfx {MessengerFX}
- > mitalk {MiTalk Messenger {Miiiao}}

- > mplus_messenger (M+ Messenger)
- > ms_communicator (MS Communicator)
- > msn (MSN Messenger)
- > msnmobile (MSN live for Mobile)
- > mxit (Mxit)
- > mypeople_messenger
- > netmeeting_ils (netmeeting ils protocol)
- > oicq (OICQ)
- > oofoo
- > oscar (Open System for CommunicAtion in Realtime)
- > paltalk (PalTalk Protocol)
- > phweet (Phweet)
- > qq (QQ)
- > radiusim (RadiusIM)
- > teamspeak (Teamspeak v2)
- > teamspeak_v3 (TeamSpeak v3)
- > touch
- > wechat (WeChat)
- > whatsapp (WhatsApp Messenger)
- > ymsg (Yahoo Messenger)
- > ymsg_conf (Yahoo Messenger conference service)
- > ymsg_webmessenger (Yahoo messenger on web)
- > yoono (Yoono)
- > youni (Youni SMS)
- > zoho (Zoho Show)
- > zoho_im (Zoho IM)
- > xmpp (Extensible Messaging and Presence Protocol)

Microsoft Office

- > groove (Microsoft Office Groove)

Peer to Peer

- > adc (adc)
- > applejuice (AppleJuice)
- > ares (Ares Protocol)
- > bittorrent (Bittorrent Protocol)
- > blubster (Blubster)
- > bondisk
- > clip2net (Clip2Net)
- > clubbox
- > cryptoheaven
- > diino (Diino)
- > directconnect (DirectConnect)
- > edonkey (Edonkey)
- > emule (Emule)
- > ezpeer (Mymusic (formerly ezpeer))
- > fasttrack (FASTTRACK)
- > fileguri
- > filei
- > filetopia (Filetopia)
- > foxy (Foxy)

- > gigatribe
- > gnunet (GNUnet Protocol)
- > gnutella (Gnutella)
- > goboogy (GoBoogy Protocol)
- > imesh (Imesh)
- > kadmelia (Kadmelia P2P overlay protocol)
- > kazaa (Kazaa)
- > kugou (Kugou/Kugoo)
- > live_mesh (Live Mesh)
- > manolito
- > miro
- > mute (Mute Protocol)
- > nmhc (NMHC)
- > openft (OpenFT Protocol)
- > pando (Pando Protocol)
- > pichat
- > piolet
- > qqmusic (QQMusic)
- > qqstream (QQStream)
- > share
- > sisk (SoulSeek)
- > soribada (Soribada)
- > thunder (Xunlei/Thunder Protocol)
- > utp (uTorrent Transport Protocol)
- > vakaka (Vakaka)
- > winmx (Winmx)
- > winny (winNY)

Printer

- > cups (Common Unix Printer System)
- > ipp (Internet Printing Protocol)
- > jetdirect (HP Printer Job Language)
- > lpr (Line Printer Daemon)

Security Service

- > ghostsurf (GhostSurf Protocol)
- > mcafee (McAfee Client update)

Terminal

- > rlogin (Remote Login)
- > rsh (Remote Shell)
- > telnet (Telnet)
- > telnets (Secure TELNET)
- > tnvip (Tnvip)

Thin Client

- > clearcase (ClearCase)
- > gotodevice (GotoDevice)
- > gotomypc (Citrix GoToMyPC Remote Access)
- > ica (Independent Computing Architecture (Citrix))
- > jedi (Citrix JEDI)

- > pcanewhere (PCAnywhere)
- > radmin (Radmin)
- > rdp (Remote Desktop Protocol (Windows Terminal Server))
- > rfb (Remote Frame Buffer (VNC))
- > showmypc (ShowMyPc)
- > teamviewer (TeamViewer)
- > vmware (VMWare)
- > x11 (X-Window)
- > xdmcp (X Display Manager Control Protocol)

Wap

- > bxml (WAP Binary XML)
- > mmse (MMS Encapsulation)
- > smpp (Short message peer-to-peer protocol)
- > ucp (Universal Computer Protocol)
- > wsp (Wireless Session Protocol)
- > wtls (Wireless Transport layer Security)
- > wtp (Wireless Transaction Protocol)

Webmail

- > dimp (Dynamic Internet Messaging Program)
- > facebook_mail (facebook mail)
- > gmail (Google Mail)
- > gmail_basic (gmail basic)
- > gmail_mobile (Gmail mobile version)
- > gmx (gmx)
- > imp (Internet Messaging Program)
- > laposte_webmail (La Poste Webmail)
- > live_hotmail (Windows Live Hotmail)
- > livemail_mobile (Live hotmail for mobile)
- > mail_189 (Mail 189)
- > mail2000 (Mail2000)
- > mailru (mail.ru webmail)
- > maktoob (Maktoob mail)
- > mimp (IMP mobile version)
- > orangemail (Orange webmail)
- > owa (Outlook Web Access)
- > qq_mail (QQ Mail)
- > Rambler_webmail (Rambler webmail)
- > squirrelmail (SquirrelMail)
- > yandex_webmail (Yandex webmail)
- > ymail2 (Yahoo Mail Ajax version)
- > ymail classic (Yahoo Mail classic)
- > ymail_mobile (Yahoo webmail for mobile)
- > ymail_mobile_new (Yahoo webmail (new version) for mobile)
- > zimbra (Zimbra)
- > zimbra_standard (Zimbra Webmail Standard Version)

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