

APPENDIX 10

2024-08-12

3GPP MEMBERSHIP

Version 1.1



New Query

Selected categories:

- Individual Members (all partners)

Choose csv separator : export to csv file

INDIVIDUAL MEMBERS



Organization	Country	Partner
3in (Industrial Internet Innovation Center (Shanghai) Co.,Ltd.)	CHINA	CCSA
450connect GmbH (450connect GmbH)	GERMANY	ETSI
A.S.T.R.I.D. SA/NV (A.S.T.R.I.D. SA)	BELGIUM	ETSI
ABP, NRTA (Academy of Broadcasting Planning, NRTA)	CHINA	CCSA
ABS (Academy of Broadcasting Science, NRTA)	CHINA	CCSA
AccelerComm Ltd (AccelerComm Ltd)	UNITED KINGDOM	ETSI
Acer Incorporated (Acer Incorporated)	TAIWAN, PROVINCE OF CHINA	ETSI
adare GmbH (adare GmbH)	GERMANY	ETSI
Airbus (Airbus DS SLC)	FRANCE	ETSI
Ajou University (Ajou University)	KOREA (REPUBLIC OF)	TTA
albis-elcon system GermanyGmbH (albis-elcon system Germany GmbH)	GERMANY	ETSI
Alibaba (China) Group., Ltd. (Alibaba (China) Group., Ltd.)	CHINA	CCSA
All Connected BV (Rail Connected)	NETHERLANDS	ETSI
Allot Ltd (Allot Ltd)	ISRAEL	ETSI
Altan Redes S.A.P.I. de C.V. (Altan Redes S.A.P.I. de C.V.)	MEXICO	ETSI
Amazon Web Services (Amazon Web Services EMEA SARL)	LUXEMBOURG	ETSI
Amdocs Software Systems Ltd (Amdocs Software Systems Limited)	IRELAND	ETSI
Analog Devices, Inc. (Analog Devices, Inc.)	UNITED STATES	ATIS
Anemone Technology (Anemone Technology)	DENMARK	ETSI
Anritsu Corporation (ANRITSU CORPORATION)	JAPAN	ARIB
Anritsu EMEA Ltd (Anritsu EMEA Ltd)	UNITED KINGDOM	ETSI
Anterix (Anterix)	UNITED STATES	ATIS
Apple	CHINA	CCSA

(Apple Purchase Operation management)		
Apple (Guizhou) (Apple Technology Services (Guizhou) Ltd.)	CHINA	CCSA
Apple (UK) Limited (Apple (UK) Limited)	UNITED KINGDOM	ETSI
Apple (Ulanqab) (Apple Technology Services (Ulanqab) Ltd)	CHINA	CCSA
Apple AB Denmark (Apple AB, filial AF Apple Aktiebolag, Sverige)	DENMARK	ETSI
Apple Benelux B.V. (Apple Benelux B.V.)	NETHERLANDS	ETSI
Apple Benelux B.V. - Belgium (Apple Benelux B.V. - Belgium Branch)	BELGIUM	ETSI
Apple Computer Trading Co. Ltd (Apple Computer Trading (Shanghai) Co., Ltd.)	CHINA	CCSA
Apple Distribution Intl Ltd (Apple Distribution International Limited)	IRELAND	ETSI
Apple France (Apple France)	FRANCE	ETSI
Apple GmbH (Apple GmbH)	GERMANY	ETSI
Apple Inc (Apple Inc)	UNITED STATES	ATIS
Apple R&D (Apple R&D)	CHINA	CCSA
Apple Solutions (Apple Solutions Consulting Services (Beijing) Company Limited)	CHINA	CCSA
Apple Switzerland AG (Apple Switzerland AG)	SWITZERLAND	ETSI
Apple Trading (Apple Trading (Shanghai) Company Limited)	CHINA	CCSA
AQSACOM S.A.S. (AQSACOM S.A.S.)	FRANCE	ETSI
Arriver Software AB (Arriver Software AB)	SWEDEN	ETSI
ARTICLE19 (ARTICLE19)	UNITED KINGDOM	ETSI
ASELSAN (ASELSAN Inc.)	TÜRKIYE	ETSI
AsialInfo (AsialInfo Technologies (China), Inc.)	CHINA	CCSA
AsialInfo Technologies Inc (AsialInfo Technologies Inc)	CHINA	ETSI
ASR (ASR Microelectronics Co., Ltd.)	CHINA	CCSA
ASTRI (Hong Kong Applied Science & Technology Research Institute)	HONG KONG	ETSI
Astrom Technologies Pvt Lt (Astrom Technologies Pvt Lt)	INDIA	TSDSI
ASUSTEK COMPUTER (SHANGHAI) (ASUSTEK COMPUTER (SHANGHAI) CO. LTD.)	CHINA	CCSA
AT&T (AT&T)	UNITED STATES	ATIS
AT&T GNS Belgium SPRL (AT&T Global Network Services Belgium SPRL)	BELGIUM	ETSI
AT&T Labs, Inc (AT&T Labs, Inc)	UNITED STATES	ATIS
AT&T Services, Inc. (AT&T Services, Inc.)	UNITED STATES	ATIS
ATEME (ATEME SA)	FRANCE	ETSI
Avanti (Avanti Communications Ltd)	UNITED KINGDOM	ETSI
Axyom.Core (Axyom.Core Inc)	UNITED STATES	ETSI
BAE Systems AI Ltd	UNITED KINGDOM	ETSI

(BAE Systems Applied Intelligence Limited)		
Baicells Technologies Co. Ltd (Baicells Technologies Co. Ltd)	CHINA	CCSA
BBC (BRITISH BROADCASTING CORPORATION)	UNITED KINGDOM	ETSI
B-Com (B-Com)	FRANCE	ETSI
BDBOS (Federal Agency for Public Safety Digital Radio)	GERMANY	ETSI
BeammWave AB (BeammWave AB)	SWEDEN	ETSI
Beijing Lenovo Software Ltd. (Beijing Lenovo Software Ltd.)	CHINA	CCSA
BEIJING SAMSUNG TELECOM R&D (BEIJING SAMSUNG TELECOM R&D CENTER)	CHINA	CCSA
Beijing Xiaomi Electronics (Beijing Xiaomi Electronics)	CHINA	CCSA
Beijing Xiaomi Mobile Software (Beijing Xiaomi Mobile Software Co., Ltd)	CHINA	CCSA
Beijing Xiaomi Mobile Software (Beijing Xiaomi Mobile Software Co., Ltd.)	CHINA	ETSI
Beijing Xiaomi Software Tech (Beijing Xiaomi Software Technology)	CHINA	CCSA
Bell Mobility (Bell Mobility)	CANADA	ETSI
BfV (Bundesamt für Verfassungsschutz)	GERMANY	ETSI
Bharti Airtel Limited (Bharti Airtel Limited)	INDIA	TSDSI
BIFNC (BRICS Institute of Future Network)	CHINA	CCSA
BIPT (BIPT - Belgian Institute for Postal services & Telecommunications)	BELGIUM	ETSI
Bittium Wireless Ltd. (Bittium Wireless Ltd.)	FINLAND	ETSI
BJTU (Beijing Jiaotong University)	CHINA	CCSA
BJA (Bundeskriminalamt)	GERMANY	ETSI
Bluetest AB (Bluetest AB)	SWEDEN	ETSI
BMF (Austrian Federal Ministry of Finance)	AUSTRIA	ETSI
BMW AG (Bayerische Motoren Werke AG)	GERMANY	ETSI
BMWK (Bundesministerium für Wirtschaft und Klimaschutz)	GERMANY	ETSI
BOCRA (Botswana Communications Regulatory Authority)	BOTSWANA	ETSI
BOUYGUES Telecom (BOUYGUES Telecom)	FRANCE	ETSI
Broadcom (EU) (Broadcom Europe Ltd)	UNITED KINGDOM	ETSI
BSI (DE) (Bundesamt für Sicherheit in der Informationstechnik)	GERMANY	ETSI
BSNL (Bharat Sanchar Nigam Limited)	INDIA	TSDSI
BT plc (British Telecommunications plc)	UNITED KINGDOM	ETSI
BTL Inc. (BTL Inc.)	CHINA	ETSI
BTPDI (Beijing Telecom Planning & Designing Institute Co.,LTD.)	CHINA	CCSA
BUPT (Beijing University of Posts and Telecommunications)	CHINA	CCSA
Bureau Veritas ADT	TAIWAN, PROVINCE OF CHINA	ETSI

(Bureau Veritas Consumer Products Services (Hong Kong) Limited, Taoyuan Branch)

Bytedance (Bytedance (Nanjing) Technology Research and Development Co., Ltd.)	CHINA	CCSA
C Spire Wireless (C Spire Wireless)	UNITED STATES	ATIS
CableLabs (CableLabs)	UNITED STATES	ETSI
Cadence Design Systems Inc. (Cadence Design Systems Inc.)	UNITED STATES	ETSI
CAICT. (China Academy of Information and Communications Technology)	CHINA	CCSA
CALTTA (CALTTA TECHNOLOGIES CO., LTD.)	CHINA	CCSA
Cambium Networks Limited (Cambium Networks Limited)	UNITED KINGDOM	ETSI
CAMBRIDGE CONSULTANTS LTD (CAMBRIDGE CONSULTANTS LTD)	UNITED KINGDOM	ETSI
CANON Research Centre France (CANON Research Centre France SAS)	FRANCE	ETSI
CAPGEMINI (CAPGEMINI TECHNOLOGY SERVICES INDIA LIMITED)	INDIA	TSDSI
Catapult (Satellite Applications Catapult Ltd)	UNITED KINGDOM	ETSI
CATT (China Academy of Telecommunications Technology (CATT))	CHINA	ETSI
CATT (China Academy of Telecommunication Technology - (Datang Telecom Technology and Industry Group))	CHINA	CCSA
CBN (China Broadcasting Network Group Corporation Ltd.)	CHINA	CCSA
CCU (National Chung Cheng University)	TAIWAN, PROVINCE OF CHINA	ETSI
C-DAC (Centre for Development of Advanced Computing)	INDIA	TSDSI
C-DOT (C-DOT)	INDIA	TSDSI
CEA (Commissariat à l'Energie Atomique et aux Energies Alternatives)	FRANCE	ETSI
Cellnex (Cellnex Telecom)	SPAIN	ETSI
CENC (CETC Network & Communications Group Co., Ltd.)	CHINA	CCSA
CEPRI (China Electric Power Research Institute)	CHINA	CCSA
Ceragon Networks AS (Ceragon Networks AS)	NORWAY	ETSI
CERTH (CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS)	GREECE	ETSI
cetecom advanced GmbH (cetecom advanced GmbH)	GERMANY	ETSI
CEWIT (Centre of Excellence in Wireless Technology (CEWIT))	INDIA	TSDSI
CGL (CHAZAH GROUP LTD)	UGANDA	ETSI
Changeself (Changeself Technology(Shenzhen)Co.,Ltd.)	CHINA	ETSI
Charter Communications, Inc (Charter Communications, Inc)	UNITED STATES	ATIS
Chengdu OPPO Telecommunication (Chengdu OPPO Mobile Telecommunications Corp., Ltd.)	CHINA	CCSA
CHENGDU TD TECH LTD. (CHENGDU TD TECH LTD.)	CHINA	CCSA
China Broadnet (China Broadnet Mobile Communications Co., Ltd.)	CHINA	CCSA
China Mobile (Hangzhou) Inf. (China Mobile (Hangzhou) Information Technology Co., Ltd.)	CHINA	CCSA
China Mobile (Suzhou) Software	CHINA	CCSA

(China Mobile (Suzhou) Software Technology Co., Ltd.)		
China Mobile Com. Corporation (China Mobile Communications Corporation (CMCC))	CHINA	CCSA
China Mobile E-Commerce Co. (China Mobile E-Commerce Co.)	CHINA	CCSA
China Mobile Group Device Co. (China Mobile Group Device Co., Ltd)	CHINA	CCSA
China Mobile International Ltd (China Mobile International Limited)	CHINA	CCSA
China Mobile M2M Company Ltd. (China Mobile M2M Company Ltd.)	CHINA	CCSA
China Southern Power Grid Co. (China Southern Power Grid Co., Ltd.)	CHINA	CCSA
China Telecom Corporation Ltd. (China Telecom Corporation Ltd.)	CHINA	CCSA
China Telecommunications (China Telecommunications Corporation)	CHINA	ETSI
China Telecommunication Corp. (China Telecommunication Corporation)	CHINA	CCSA
China Unicom (China Unicom)	CHINA	CCSA
Chinatelecom Cloud (China Telecom Cloud Technology Co., Ltd)	CHINA	CCSA
Chongqing University (Chongqing University)	CHINA	CCSA
CHTTL (Chunghwa Telecommunication Laboratories, Chunghwa Telecommunication Co.)	TAIWAN, PROVINCE OF CHINA	ETSI
CICT (China Information Communication Technologies Group)	CHINA	ETSI
CICT (China Information Communication Technologies Group Corporation)	CHINA	CCSA
CICT Mobile (CICT Mobile Communication Technology Co., Ltd.)	CHINA	CCSA
CICTCI (CICT Connected and Intelligent Technologies Co., Ltd)	CHINA	CCSA
CIS (Center for Internet Security)	UNITED STATES	ETSI
CISA ECD (Cybersecurity and Infrastructure Security Agency (CISA) ECD)	UNITED STATES	ATIS
Cisco Systems (Cisco Systems)	UNITED STATES	ATIS
Cisco Systems Belgium (Cisco Systems Belgium)	BELGIUM	ETSI
Cisco Systems France (Cisco Systems France)	FRANCE	ETSI
CITC (CHINA INFORMATION TECHNOLOGY DESIGNING&CONSULTING INSTITUTE CO.,LTD.)	CHINA	CCSA
CKH IOD UK LIMITED (CKH IOD UK LIMITED)	UNITED KINGDOM	ETSI
CMDI (China Mobile Group Design Institute Co., Ltd)	CHINA	CCSA
CNC (CLAP-N-CLANK)	JAPAN	ETSI
CNES (CNES - Centre National d'Etudes Spatiales)	FRANCE	ETSI
Cobham SatCom A/S (Thrane & Thrane A/S)	DENMARK	ETSI
Cognyte (Cognyte Technologies Israel Ltd.)	ISRAEL	ETSI
Cohere Technologies (Cohere Technologies)	UNITED STATES	ATIS
Collins Aerospace (Collins Aerospace)	UNITED STATES	ATIS
Comba (Comba Network Systems Company Limited)	CHINA	CCSA
Comcast	UNITED STATES	ATIS

(Comcast)

Comprion GmbH
(Comprion GmbH)

GERMANY

ETSI

Comtech Telecommunications Cor
(Comtech Telecommunications Corp)

UNITED STATES

ATIS

Consort Digital
(Consort Digital Private Limited)

INDIA

ETSI

Continental Automotive
(Continental Automotive Technologies GmbH)

GERMANY

ETSI

Convida Wireless
(Convida Wireless, LLC)

UNITED STATES

ETSI

Cosmian
(Cosmian Tech SAS)

FRANCE

ETSI

CQUPT
(Chongqing University of Posts and Telecommunications)

CHINA

CCSA

Crosscall
(Crosscall)

FRANCE

ETSI

CSA
(Cyber Security Agency of Singapore)

SINGAPORE

ETSI

CSCN
(CHINA SATELLITE NETWORK GROUP CO., LTD.)

CHINA

CCSA

CSIRO
(Commonwealth Scientific and Industrial Research Organisation)

AUSTRALIA

ETSI

cstconsultancy
(CyberSecurity & Technology Consultancy LTD)

UNITED KINGDOM

ETSI

CTSI
(China Telecom System Integration Co., Ltd)

CHINA

CCSA

CTTC
(Centre tecnologic de Telecomunicacions de Catalunya)

SPAIN

ETSI

CU Digital Technology
(China Unicom Digital Technology Co., Ltd.)

CHINA

CCSA

CUC
(Communication University of China)

CHINA

CCSA

CUG
(China Unicom Global Limited)

CHINA

CCSA

Cybercore
(Beijinig Cybercore Technology Co., Ltd.)

CHINA

CCSA

Cygnusemi
(Cygnusemi)

CHINA

CCSA

Czech Telecommunication Office
(Czech Telecommunication Office)

CZECH REPUBLIC

ETSI

DAC-SSR-UPC
(D. Arquitectura de Computadores/GT Smart Sustainable Resources -Universidad Politecnica de Cataluna)

SPAIN

ETSI

DanKook University
(DanKook University)

KOREA (REPUBLIC OF)

TTA

DARS TELECOM S.L.
(DARS TELECOM S.L.)

SPAIN

ETSI

Datang Linktester Technology
(Datang Linktester Technology Co., Ltd.)

CHINA

CCSA

Datang Mobile Com. Equipment
(Datang Mobile Communications Equipment Co., Ltd)

CHINA

CCSA

DeepSig Inc
(DeepSig Inc)

UNITED STATES

ATIS

DEKRA
(DEKRA testing and Certification, S.A.U.)

SPAIN

ETSI

Dell Technologies
(Dell Technologies)

UNITED STATES

ATIS

DENSO CORPORATION
(DENSO CORPORATION)

JAPAN

ARIB

Department of Telecom
(Department of Telecommunications)

INDIA

TSDSI

Dept of Home Affairs
(Department of Home Affairs)

AUSTRALIA

ETSI

Deutsche Telekom AG
(Deutsche Telekom AG)

GERMANY

ETSI

DIGG

SWEDEN

ETSI

(Agency for Digital Government)

DISA
(Defense Information Systems Agency)

UNITED STATES

ATIS

Dish Network
(Dish Network)

UNITED STATES

ATIS

DLR
(Deutsches Zentrum für Luft- und Raumfahrt e.V.)

GERMANY

ETSI

DOCOMO Beijing Labs
(DOCOMO Beijing Communications Laboratories Co., Ltd)

CHINA

CCSA

DOCOMO Communications Lab.
(DOCOMO Communications Laboratories Europe GmbH)

GERMANY

ETSI

Dolby France SAS
(Dolby France SAS)

FRANCE

ETSI

Dolby Germany GmbH
(Dolby Germany GmbH)

GERMANY

ETSI

Dolby Sweden AB
(Dolby Sweden AB)

SWEDEN

ETSI

Dolby Technology India Pvt Ltd
(Dolby Technology India Pvt Ltd)

INDIA

TSDSI

Douyin
(Beijing Douyin Information Service Co., Ltd.)

CHINA

CCSA

DP
(DigitalPlatforms SpA)

ITALY

ETSI

DSIT
(Department for Science, Innovation and Technology)

UNITED KINGDOM

ETSI

DTCY
(Deloitte Tohmatsu Cyber LLC)

JAPAN

TTC

DTS Licensing Limited
(DTS Licensing Limited)

IRELAND

ETSI

EA Consult Services Ltd
(EA Consult Services Ltd)

UNITED KINGDOM

ETSI

EBU
(EBU - European Broadcasting Union)

SWITZERLAND

ETSI

EchoStar
(EchoStar)

UNITED KINGDOM

ETSI

ECTL
(Enhanced Communications & Technologies Pvt Ltd)

INDIA

TSDSI

EDF Recherche et Développement
(EDF)

FRANCE

ETSI

EFORT
(Etudes et Formations en Telecommunication)

FRANCE

ETSI

Elbit Systems
(Elbit Systems C4I and Cyber Ltd)

ISRAEL

ETSI

Element Materials Technology
(Element Materials Technology Warwick Ltd)

UNITED KINGDOM

ETSI

Elena
(Elena Geo Systems Pvt Ltd)

INDIA

TSDSI

Embotech AG
(Embotech AG)

SWITZERLAND

ETSI

EMITE
(EMITE Ingenieria S.L.)

SPAIN

ETSI

ENENSYS
(ENENSYS Technologies SA)

FRANCE

ETSI

Ericsson (China)
(Ericsson (China) Communications, Co.Ltd)

CHINA

CCSA

Ericsson España S.A.
(Ericsson España S.A.)

SPAIN

ETSI

Ericsson France S.A.S
(Ericsson France S.A.S)

FRANCE

ETSI

Ericsson GmbH, Eurolab
(Ericsson GmbH, Eurolab - Unternehmensbereich Forschung und Entwicklung)

GERMANY

ETSI

Ericsson Hungary Ltd
(Ericsson Hungary Ltd)

HUNGARY

ETSI

Ericsson Inc.
(Ericsson Incorporated)

UNITED STATES

ATIS

Ericsson India Private Limited

INDIA

TSDSI

(Ericsson India Private Limited)		
Ericsson Japan K.K. (Ericsson Japan K.K.)	JAPAN	ARIB
Ericsson Limited (Ericsson Limited)	UNITED KINGDOM	ETSI
Ericsson LM (Ericsson Telefonaktiebolaget LM)	SWEDEN	ETSI
Ericsson Telecomunicazioni SpA (Ericsson Telecomunicazioni SpA)	ITALY	ETSI
Ericsson-LG Co., LTD (Ericsson-LG Co., LTD)	KOREA (REPUBLIC OF)	TTA
Erillisverkot (Suomen Erillisverkot Oy)	FINLAND	ETSI
ERNET India (ERNET India)	INDIA	TSDSI
ESA (ESA - European Space Agency)	NETHERLANDS	ETSI
E-SPACE (E-SPACE SAS)	FRANCE	ETSI
ESSEN INNOVATION (ESSEN INNOVATION COMPANY LIMITED)	CHINA	CCSA
E-surfing Digital (E-surfing Digital Life Technology Co., Ltd)	CHINA	CCSA
Esurfing IoT (Esurfing IoT Tech Co., Ltd)	CHINA	CCSA
ETELM (Electronique Telematique ETELM)	FRANCE	ETSI
Etherstack Wireless Limited (Etherstack Wireless Limited)	UNITED KINGDOM	ETSI
ETRI (Electronics & Telecommunications Research Institute)	KOREA (REPUBLIC OF)	TTA
ETS-Lindgren Europe (ETS-Lindgren Europe)	FINLAND	ETSI
EURECOM (EURECOM)	FRANCE	ETSI
Eurofins KCTL (Eurofins KCTL Co. Ltd)	KOREA (REPUBLIC OF)	ETSI
European Commission (EC - European Commission)	BELGIUM	ETSI
European Patent Organisation (European Patent Organisation)	GERMANY	ETSI
EUTC (European Utilities Telecom Council (EUTC))	BELGIUM	ETSI
Eutelsat Group (Eutelsat S.A.)	FRANCE	ETSI
EVE Compliancy Solutions (EVE Compliancy Solutions)	NETHERLANDS	ETSI
Everactive (Everactive)	UNITED STATES	ATIS
F5 (F5, Inc.)	UNITED STATES	ETSI
Fabasoft AG (Fabasoft AG)	AUSTRIA	ETSI
Facebook Japan G.K. (Facebook Japan G.K.)	JAPAN	ARIB
Fastweb S.p.A. (Fastweb S.p.A.)	ITALY	ETSI
FAU (Friedrich-Alexander-Universität Erlangen-Nürnberg)	GERMANY	ETSI
FBK (Fondazione Bruno Kessler)	ITALY	ETSI
FCC (Federal Communications Commission)	UNITED STATES	ATIS
Fiberhome Technologies Group (Fiberhome Technologies Group)	CHINA	CCSA
FirstNet	UNITED STATES	ATIS

(FirstNet)

FORCE Technology
(FORCE Technology)

DENMARK

ETSI

Ford
(Ford Motor Company)

UNITED STATES

ETSI

Fraunhofer FOKUS
(Fraunhofer Institute for Open Communication Systems FOKUS)

GERMANY

ETSI

Fraunhofer HHI
(Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute)

GERMANY

ETSI

Fraunhofer IIS
(Fraunhofer Institut für Integrierte Schaltungen IIS)

GERMANY

ETSI

Frequentis AG
(Frequentis AG)

AUSTRIA

ETSI

Fujitsu Limited
(Fujitsu Limited)

JAPAN

ETSI

Fujitsu Limited
(Fujitsu Limited..)

JAPAN

ARIB

Fujitsu Limited
(Fujitsu Limited.)

JAPAN

TTC

Futurewei
(Futurewei Technologies Inc.)

UNITED STATES

ETSI

Futurewei Technologies
(Futurewei Technologies)

UNITED STATES

ATIS

G+D MS
(Giesecke+Devrient Mobile Security Germany GmbH)

GERMANY

ETSI

Gatehouse Satcom A/S
(Gatehouse Satcom A/S)

DENMARK

ETSI

GDCNI
(Guangdong Communications and Networks Institute)

CHINA

CCSA

GE Network Technologies, LLC
(GE Network Technologies, LLC)

UNITED STATES

ATIS

GEESPACE
(ZHE JIANG GEESPACE TECHNOLOGY CO., LTD.)

CHINA

CCSA

Gigaset Technologies
(Gigaset Technologies GmbH)

GERMANY

ETSI

Gilat
(Gilat Satellite Networks Ltd)

ISRAEL

ETSI

GIST
(Gwangju Institute of Science and Technology)

KOREA (REPUBLIC OF)

TTA

GLOBALSTAR Inc.
(GLOBALSTAR Inc.)

UNITED STATES

ETSI

GM - ATCI
(General Motors - ATCI)

ISRAEL

ETSI

Google Ireland Limited
(Google Ireland Limited)

IRELAND

ETSI

Group 2000
(Group 2000 Nederland B.V.)

NETHERLANDS

ETSI

GTRC
(Georgia Tech Research Corporation)

UNITED STATES

ETSI

GUANGDONG GENIUS TECHNOLOGY CO
(GUANGDONG GENIUS TECHNOLOGY CO., LTD.)

CHINA

CCSA

Guangdong OPPO Mobile Telecom.
(Guangdong OPPO Mobile Telecommunications Corp., Ltd)

CHINA

CCSA

GW
(Greenerwave)

FRANCE

ETSI

HA/ST
(HARTING Stiftung & Co. KG)

GERMANY

ETSI

Hanbat National University
(Hanbat National University)

KOREA (REPUBLIC OF)

TTA

Hangzhou Mengyuxiang
(Hangzhou Mengyuxiang Network Technology Corp., Ltd.)

CHINA

CCSA

Harman GmbH
(Harman Becker Automotive Systems GmbH)

GERMANY

ETSI

HEAD acoustics GmbH
(HEAD acoustics GmbH)

GERMANY

ETSI

Hewlett-Packard Enterprise

FRANCE

ETSI

(Hewlett-Packard Enterprise)		
HiSilicon Technologies Co. Ltd (HiSilicon Technologies Co.Ltd)	CHINA	CCSA
HISPASAT SA (HISPASAT SA)	SPAIN	ETSI
HOME OFFICE (HOME OFFICE)	UNITED KINGDOM	ETSI
Honda Motor Co., Ltd (Honda Motor Co., Ltd)	JAPAN	ARIB
Honor (Honor Device Co., Ltd.)	CHINA	CCSA
Honor (Honor Device Co., Ltd)	CHINA	ETSI
HTC Communications Co., Ltd. (HTC Communications Co., Ltd.)	CHINA	CCSA
Huawei Device Co., Ltd (Huawei Device Co., Ltd)	CHINA	CCSA
HUAWEI TECH. GmbH (HUAWEI TECHNOLOGIES Duesseldorf GmbH)	GERMANY	ETSI
Huawei Tech.(UK) Co.. Ltd (Huawei Technologies (UK) Co., Ltd.)	UNITED KINGDOM	ETSI
Huawei Technologies (Korea) (Huawei Technologies (Korea))	KOREA (REPUBLIC OF)	TTA
HUAWEI TECHNOLOGIES Co. Ltd. (Huawei Technologies Co. Ltd.)	CHINA	ETSI
HuaWei Technologies Co., Ltd (HuaWei Technologies Co., Ltd)	CHINA	CCSA
Huawei Technologies France (Huawei Technologies France)	FRANCE	ETSI
Huawei Technologies Japan K.K. (Huawei Technologies Japan K.K.)	JAPAN	TTC
HUAWEI Technologies Japan K.K. (HUAWEI Technologies Japan K.K.)	JAPAN	ARIB
Huawei Technologies R&D UK (Huawei Technologies Research & Development (UK) Limited)	UNITED KINGDOM	ETSI
Huawei Technologies Sweden AB (Huawei Technologies Sweden AB)	SWEDEN	ETSI
Huawei Telecommunication India (Huawei Telecommunication (India) Co. Pvt. Ltd.)	INDIA	TSDSI
Husqvarna AB (Husqvarna AB (publ))	SWEDEN	ETSI
Hytera Communications Corp. (Hytera Communications Corporation Limited)	CHINA	CCSA
Hyundai Motor Company (Hyundai Motor Company)	KOREA (REPUBLIC OF)	TTA
IBM Europe (IBM Europe)	GERMANY	ETSI
ICS (Institute for Communication Systems - University of Surrey)	UNITED KINGDOM	ETSI
IDEMIA (IDEMIA)	FRANCE	ETSI
IDRBT (Institute for Development and Research in Banking Technology)	INDIA	TSDSI
III (Institute for Information Industry)	TAIWAN, PROVINCE OF CHINA	ETSI
IIIT Bangalore (International Institute of Information Technology - Bangalore)	INDIA	TSDSI
IIIT Naya Raipur (International Institute of Information Technology, Naya Raipur)	INDIA	TSDSI
IISc, Bangalore (Indian Institute of Science, Bangalor)	INDIA	TSDSI
IIT Bhilai (Indian Institute of Technology Bhilai)	INDIA	TSDSI
IIT Bombay (Indian Institute of Technology Bombay)	INDIA	TSDSI
IIT Delhi	INDIA	TSDSI

(Indian Institute of Technology Delhi)		
IIT Gandhinagar (Indian Institute of Technology Gandhinagar)	INDIA	TSDSI
IIT JODHPUR (Indian Institute of Technology Jodhpur)	INDIA	TSDSI
IIT Kanpur (Indian Institute of Technology Kanpur)	INDIA	TSDSI
IIT Mandi (Indian Institute of Technology Mandi)	INDIA	TSDSI
IIT Patna (Indian Institute of Technology Patna)	INDIA	TSDSI
IIT, Kharagpur (IIT, Kharagpur)	INDIA	TSDSI
IMDA (Infocomm Media Development Authority)	SINGAPORE	ETSI
Imperial College London (Imperial College of Science Technology and Medicine)	UNITED KINGDOM	ETSI
IMU (Istanbul Medipol University)	TÜRKIYE	ETSI
Indian Institute of Tech (H) (Indian Institute of Technology Hyderabad)	INDIA	TSDSI
Indian Institute of Tech (M) (Indian Institute of Technology Madras)	INDIA	TSDSI
INFINEON TECHNOLOGIES (Infineon Technologies)	GERMANY	ETSI
Inmarsat (Inmarsat)	UNITED KINGDOM	ETSI
Institut Mines-Telecom (Institut Mines-Telecom)	FRANCE	ETSI
Institute VEDECOM (Institute VEDECOM)	FRANCE	ETSI
Intel (Intel)	UNITED STATES	ATIS
Intel Belgium SA/NV (Intel Belgium SA/NV)	BELGIUM	ETSI
Intel China Ltd. (Intel China Ltd.)	CHINA	CCSA
Intel Corporation (UK) Ltd (Intel Corporation (UK) Ltd)	UNITED KINGDOM	ETSI
Intel Corporation Italia SpA (Intel Corporation Italia SpA)	ITALY	ETSI
Intel Corporation SAS (Intel Corporation SAS)	FRANCE	ETSI
Intel Deutschland GmbH (Intel Deutschland GmbH)	GERMANY	ETSI
Intel Ireland (Intel Ireland Ltd)	IRELAND	ETSI
Intel Sweden AB (Intel Sweden AB)	SWEDEN	ETSI
Intel Technology India Pvt Ltd (Intel Technology India Pvt. Ltd.)	INDIA	TSDSI
Intel Technology Poland SP Zoo (Intel Technology Poland SP Zoo)	POLAND	ETSI
Intellian Technologies (Intellian Technologies)	KOREA (REPUBLIC OF)	TTA
Intelsat (Intelsat)	UNITED STATES	ATIS
InterDigital Belgium. LLC (InterDigital Belgium, LLC)	BELGIUM	ETSI
InterDigital Canada (InterDigital Canada)	CANADA	ATIS
InterDigital Communications (InterDigital Communications Corporation)	UNITED STATES	ATIS
InterDigital Finland Oy (InterDigital Finland Oy)	FINLAND	ETSI
InterDigital France R&D, SAS	FRANCE	ETSI

(InterDigital France R&D, SAS)		
InterDigital New York (InterDigital New York)	UNITED STATES	ATIS
InterDigital Pennsylvania (InterDigital Pennsylvania)	UNITED STATES	ATIS
InterDigital, Europe, Ltd. (InterDigital, Europe, Ltd.)	UNITED KINGDOM	ETSI
InterDigital, Inc. (InterDigital, Inc.)	UNITED STATES	ETSI
Intersec (Intersec SA)	FRANCE	ETSI
Intertek (Intertek)	UNITED KINGDOM	ETSI
IPCom GmbH & Co.KG (IPCom GmbH & Co.KG)	GERMANY	ETSI
IPLOOK (IPLOOK Networks Co., Ltd.)	CHINA	CCSA
iQoo (iQoo Software Technology (Shanghai) Co., Ltd.)	CHINA	CCSA
Iridium Satellite LLC (Iridium Satellite LLC)	UNITED STATES	ATIS
IRT Saint Exupery (Institut de recherche technologique Saint Exupery)	FRANCE	ETSI
ISED (Innovation, Science and Economic Development Canada)	CANADA	ETSI
ISRO (Indian Space Research Organisation)	INDIA	TSDSI
ISSDU (Information Security Service Digital United Inc.)	TAIWAN, PROVINCE OF CHINA	ETSI
ITL (Innovative Technology Lab Co., Ltd)	KOREA (REPUBLIC OF)	TTA
ITOCHU Techno-Solutions Corp (ITOCHU Techno-Solutions Corporation)	JAPAN	TTC
ITRI (Industrial Technology Research Institute)	TAIWAN, PROVINCE OF CHINA	ETSI
ITRON SAS (ITRON SAS)	FRANCE	ETSI
Ittiam System Pvt Ltd (Ittiam System Pvt Ltd)	INDIA	TSDSI
Japan Radio Co., Ltd (Japan Radio Co., Ltd)	JAPAN	ARIB
Jetflow (Jetflow Technologies Co., Ltd)	CHINA	CCSA
Jio (Jio Estonia OÜ)	ESTONIA	ETSI
JMA Wireless (JMA Wireless)	UNITED STATES	ATIS
John Deere GmbH & Co. KG (John Deere GmbH & Co. KG)	GERMANY	ETSI
Johns Hopkins University APL (Johns Hopkins University Applied Physics Laboratory)	UNITED STATES	ATIS
JSI GmbH (JSI GmbH)	GERMANY	ETSI
Juniper Networks (Juniper Networks)	UNITED STATES	ETSI
KAIST (Korea Advanced Institute of Science and Technology)	KOREA (REPUBLIC OF)	TTA
Kapsch TrafficCom AG (Kapsch TrafficCom AG)	AUSTRIA	ETSI
KDDI Corporation (KDDI Corporation)	JAPAN	TTC
KDDI Corporation (KDDI Corporation)	JAPAN	ARIB
Kepler (Kepler Communications GmbH)	GERMANY	ETSI
Keysight Technologies UK Ltd	UNITED KINGDOM	ETSI

(Keysight Technologies UK Ltd)		
KIPO (Korean Intellectual Property Office)	KOREA (REPUBLIC OF)	TTA
Kontron Transportation France (Kontron Transportation France S.A.S)	FRANCE	ETSI
Kookmin University (Kookmin University)	KOREA (REPUBLIC OF)	TTA
Korea Testing Laboratory (Korea Testing Laboratory)	KOREA (REPUBLIC OF)	TTA
Korea University (Korea University)	KOREA (REPUBLIC OF)	TTA
KPN N.V. (Koninklijke KPN N.V.)	NETHERLANDS	ETSI
KRRI (Korea Railroad Research Institute)	KOREA (REPUBLIC OF)	TTA
KT Corp. (KT Corporation)	KOREA (REPUBLIC OF)	TTA
Kymeta Corporation (Kymeta Corporation)	UNITED STATES	ETSI
Kyocera Corporation (Kyocera Corporation)	JAPAN	ARIB
Kyonggi University (Kyonggi University)	KOREA (REPUBLIC OF)	TTA
Kyoto University (Kyoto University)	JAPAN	ETSI
L.M. Ericsson Limited (L.M. Ericsson Limited)	IRELAND	ETSI
L3Harris Technologies (L3Harris Technologies)	UNITED STATES	ATIS
Langbo (Shanghai Langbo Communication Technology Co., Ltd.)	CHINA	CCSA
Lansus (Lansus Technologies Inc.)	CHINA	CCSA
LEGRAND FRANCE (LEGRAND FRANCE ISERE)	FRANCE	ETSI
Lekha Wireless Solutions (Lekha Wireless Solutions Pvt Ltd)	INDIA	TSDSI
Lenovo (Beijing) Ltd (Lenovo (Beijing) Ltd)	CHINA	CCSA
Lenovo Future Communications (Lenovo Future Communications Technology (Chongqing) Co., Ltd.)	CHINA	CCSA
Lenovo Information Technology (Lenovo (Beijing) Information Technology Co., Ltd.)	CHINA	CCSA
Leonardo SpA (Leonardo SpA)	ITALY	ETSI
LG Electronics Deutschland (LG Electronics Deutschland GmbH)	GERMANY	ETSI
LG Electronics Finland (LG Electronics Finland Lab Oy)	FINLAND	ETSI
LG Electronics France (LG Electronics France)	FRANCE	ETSI
LG Electronics Inc. (LG Electronics Inc.)	KOREA (REPUBLIC OF)	TTA
LG Electronics Polska (LG Electronics Polska Sp. z o.o.)	POLAND	ETSI
LG Electronics UK (LG Electronics UK Ltd)	UNITED KINGDOM	ETSI
LG Uplus (LG Uplus)	KOREA (REPUBLIC OF)	TTA
Ligado Networks (Ligado Networks)	UNITED STATES	ETSI
LKA Niedersachsen (Landeskriminalamt Niedersachsen)	GERMANY	ETSI
Lockheed Martin (Lockheed Martin)	UNITED STATES	ATIS
Logius	NETHERLANDS	ETSI

(Logius)		
Lynk Global (Lynk Global)	UNITED STATES	ATIS
Magister Solutions Ltd (Magister Solutions Ltd)	FINLAND	ETSI
Maketh Secure Limited (Maketh Secure Limited)	UNITED KINGDOM	ETSI
Marquis Technologies (Marquis Technologies Pvt Ltd)	INDIA	TSDSI
Marvell Technology, Inc. (Marvell Technology, Inc.)	UNITED STATES	ATIS
MATRIX Software (MATRIX Software, Inc.)	UNITED STATES	ETSI
Mavenir (Mavenir Systems, Inc)	UNITED STATES	ETSI
MaxWave Micro (MaxWave Microelectronics Ltd.)	CHINA	CCSA
MediaTek (Chengdu) Inc. (MediaTek (Chengdu) Inc.)	CHINA	CCSA
MediaTek (Hefei) Inc. (MediaTek (Hefei) Inc.)	CHINA	CCSA
MediaTek (Shenzhen) Inc. (MediaTek (Shenzhen) Inc.)	CHINA	CCSA
MediaTek (Wuhan) Inc. (MediaTek (Wuhan) Inc.)	CHINA	CCSA
MediaTek Beijing Inc. (MediaTek Beijing Inc.)	CHINA	CCSA
MediaTek Finland (MediaTek Wireless Finland Oy)	FINLAND	ETSI
MediaTek Germany GmbH (MediaTek Germany GmbH)	GERMANY	ETSI
MediaTek Inc. (MediaTek Incorporated)	TAIWAN, PROVINCE OF CHINA	ETSI
Mediatek India Technology Pvt. (Mediatek India Technology Pvt. Ltd.)	INDIA	TSDSI
MediaTek Korea Inc. (MediaTek Korea Inc.)	KOREA (REPUBLIC OF)	TTA
MediaTek Sweden AB (MediaTek Sweden AB)	SWEDEN	ETSI
MediaTek UK (MTK Wireless Ltd)	UNITED KINGDOM	ETSI
MeitY (Ministry of Electronics & Information Technology)	INDIA	TSDSI
Meizu Technology (Meizu Technology)	CHINA	CCSA
Mercedes-Benz AG (Mercedes-Benz AG)	GERMANY	ETSI
Mesaqin.com s.r.o (Ltd.) (Mesaqin.com s.r.o (Ltd.))	CZECH REPUBLIC	ETSI
Meta India (Meta India Online Services Pvt Ltd)	INDIA	TSDSI
Meta Ireland (Meta Platforms Ireland Ltd.)	IRELAND	ETSI
Meta USA (Meta USA)	UNITED STATES	ATIS
Microchip Technology, Inc. (Microchip Technology, Inc.)	UNITED STATES	ATIS
Microsoft Europe SARL (Microsoft Europe SARL)	FRANCE	ETSI
MidWave Wireless (MidWave Wireless)	UNITED STATES	ATIS
MIMIT (Ministry of Enterprises and Made in Italy)	ITALY	ETSI
MinEA (Ministry of Economic Affairs and Climate Policy)	NETHERLANDS	ETSI
MINISTERE DE L'INTERIEUR	FRANCE	ETSI

(MINISTERE DE L'INTERIEUR)		
Ministère Economie et Finances (Ministère de l'Economie et des Finances)	FRANCE	ETSI
Ministry for Digital - Spain (Ministry for Digital Transformation and of Civil Service)	SPAIN	ETSI
Ministry of Transport SR (Ministry of Transport of the Slovak Republic)	SLOVAKIA	ETSI
MITRE Corporation (MITRE Corporation)	UNITED STATES	ETSI
MITRE-FFRDC (MITRE-FFRDC)	UNITED STATES	ATIS
Mitsubishi Electric Co. (Mitsubishi Electric Co.)	JAPAN	ARIB
Mitsubishi Electric Corp (Mitsubishi Electric Corporation)	JAPAN	TTC
Mitsubishi Electric RCE (Mitsubishi Electric R&D Centre Europe)	FRANCE	ETSI
Motorola Mobile Com Technology (MOTOROLA MOBILE COMMUNICATION TECHNOLOGY LTD.)	CHINA	CCSA
Motorola Mobility España SA (Motorola Mobility España SA)	SPAIN	ETSI
Motorola Mobility France S.A.S (Motorola Mobility France S.A.S)	FRANCE	ETSI
Motorola Mobility Germany GmbH (Motorola Mobility Germany GmbH)	GERMANY	ETSI
Motorola Mobility UK Ltd. (Motorola Mobility UK Ltd.)	UNITED KINGDOM	ETSI
Motorola Solutions Germany (Motorola Solutions Germany GmbH)	GERMANY	ETSI
Motorola Solutions UK Ltd. (Motorola Solutions UK Ltd.)	UNITED KINGDOM	ETSI
MTCC (Mobile Technology Convergence Center)	KOREA (REPUBLIC OF)	TTA
Murata Manufacturing Co Ltd. (Murata Manufacturing Co Ltd.)	JAPAN	ARIB
MVG Industries (MVG Industries)	FRANCE	ETSI
Nanjing vivo Software Tech. (Nanjing vivo Software Technology Co., Ltd.)	CHINA	CCSA
Nanjing Weibo (Nanjing Weibo Software Technology Co., Ltd.)	CHINA	CCSA
National Instruments Corp. (National Instruments Corporation)	UNITED STATES	ETSI
National Radio Research Agency (National Radio Research Agency)	KOREA (REPUBLIC OF)	TTA
National Spectrum Consortium (National Spectrum Consortium)	UNITED STATES	ATIS
National Technical Assistance (National Technical Assistance Centre)	UNITED KINGDOM	ETSI
nbn co Limited (nbn co Limited (ABN 86 136 533 741))	AUSTRALIA	ETSI
NCI Agency (NATO Communication and Information Agency)	NETHERLANDS	ETSI
NCIS (National Criminal Investigation Service)	NORWAY	ETSI
NCSC (National Cyber Security Centre)	UNITED KINGDOM	ETSI
NDRE (National Defence Radio Establishment)	SWEDEN	ETSI
NEC Corporation (NEC Corporation)	JAPAN	ARIB
NEC Corporation (NEC Corporation)	JAPAN	ETSI
NEC Corporation. (NEC Corporation)	JAPAN	TTC
NEC Europe Ltd	UNITED KINGDOM	ETSI

(NEC Europe Ltd)		
NEC Telecom MODUS Ltd. (NEC Telecom MODUS Ltd.)	UNITED KINGDOM	ETSI
NEMERGENT (NEMERGENT SOLUTIONS SL)	SPAIN	ETSI
NERCDTV (Shanghai National Engineering Research Center of Digital Television Co.,Ltd.)	CHINA	CCSA
Netherlands Police (Netherlands Police, Division MDC)	NETHERLANDS	ETSI
Netscout Systems Inc. (Netscout Systems Inc.)	UNITED STATES	ETSI
Network Rail (Network Rail infrastructure limited)	UNITED KINGDOM	ETSI
New H3C Technologies Co., Ltd. (New H3C Technologies Co., Ltd.)	CHINA	CCSA
NextNav (NextNav)	UNITED STATES	ATIS
NHK (NHK (Japan Broadcasting Corporation))	JAPAN	ARIB
NICT (National Institute of Information and Communications Technology)	JAPAN	ARIB
Niral (Niral Networks Private Limited)	INDIA	TSDSI
NIST (National Institute of Standards and Technology)	UNITED STATES	ATIS
Nkom (Norwegian Communications Authority)	NORWAY	ETSI
Nokia (Nokia)	UNITED STATES	ATIS
Nokia Belgium (Nokia Bell N.V.)	BELGIUM	ETSI
Nokia Corporation (Nokia Corporation)	FINLAND	ETSI
Nokia Denmark (Nokia Denmark A/S)	DENMARK	ETSI
Nokia France (Nokia Networks France)	FRANCE	ETSI
Nokia Germany (Nokia Solutions and Networks GmbH & Co. KG)	GERMANY	ETSI
Nokia Hungary (Nokia Solutions and Networks Kft.)	HUNGARY	ETSI
Nokia Japan (Nokia Japan)	JAPAN	ARIB
Nokia Korea (Nokia Korea)	KOREA (REPUBLIC OF)	TTA
Nokia Poland (Nokia Solutions and Networks Sp. z.o.o.)	POLAND	ETSI
Nokia Shanghai Bell (Nokia Shanghai Bell Co., Ltd)	CHINA	CCSA
Nokia Solutions & Networks (I) (Nokia Solutions and Networks India Pvt. Ltd.)	INDIA	TSDSI
Nokia UK (Nokia UK Ltd.)	UNITED KINGDOM	ETSI
Nordic Semiconductor ASA (Nordic Semiconductor ASA)	NORWAY	ETSI
NOVAMINT (NOVAMINT)	UNITED KINGDOM	ETSI
NPL (National Physical Laboratory Management Ltd)	UNITED KINGDOM	ETSI
NTIA (National Telecommunications and Information Administration)	UNITED STATES	ATIS
NTPU (National Taipei University)	TAIWAN, PROVINCE OF CHINA	ETSI
NTT (Nippon Telegraph and Telephone Corporation (NTT))	JAPAN	TTC
NTT corporation	JAPAN	ETSI

(Nippon Telegraph and Telephone Corporation)		
NTT DOCOMO INC. (NTT DOCOMO INC.)	JAPAN	TTC
NTT DOCOMO INC.. (NTT DOCOMO INC.)	JAPAN	ARIB
NTT-AT Corp. (NTT Advanced Technology Corporation)	JAPAN	TTC
NTU (National Taiwan University)	TAIWAN, PROVINCE OF CHINA	ETSI
Nubia Technology Co.,Ltd (Nubia Technology Co.,Ltd)	CHINA	CCSA
NUFRONT (Nufront (Beijing) Technology Co., Ltd.)	CHINA	CCSA
NVIDIA (NVIDIA Corporation)	UNITED STATES	ATIS
NXP Semiconductors Netherlands (NXP Semiconductors Netherlands B.V.)	NETHERLANDS	ETSI
NYCU (National Yang Ming Chiao Tung University)	TAIWAN, PROVINCE OF CHINA	ETSI
Obvios (Obvios)	FRANCE	ETSI
Odido (Odido Netherlands B.V.)	NETHERLANDS	ETSI
Ofcom (CH) (Ofcom (CH))	SWITZERLAND	ETSI
Ofcom (U.K.) (Ofcom - Office of Communications (U.K.))	UNITED KINGDOM	ETSI
OkI Electric Industry Co. Ltd. (OKI Electric Industry Co., Ltd)	JAPAN	TTC
Omnispace (Omnispace)	UNITED STATES	ATIS
ONE Media 3.0 LLC (ONE Media 3.0 LLC)	UNITED STATES	ATIS
one2many B.V. (one2many B.V.)	NETHERLANDS	ETSI
OnePlus (OnePlus (Shenzhen) Technology Co., LTD)	CHINA	CCSA
OPPO (Guangdong OPPO Mobile Telecommunications Corp.,Ltd.)	CHINA	ETSI
OPPO (chongqing) Intelligence (OPPO (chongqing) Intelligence Technology Limited)	CHINA	CCSA
OPPO Beijing (Beijing OPPO Telecommunications Corp., Ltd.)	CHINA	CCSA
OptM Media (OptM Media Solutions Private Limited)	INDIA	TSDSI
OQTEC (OQ TECHNOLOGY)	LUXEMBOURG	ETSI
Oracle Corporation (Oracle Corporation)	UNITED STATES	ETSI
Orange (Orange)	FRANCE	ETSI
Orange Romania (Orange Romania)	ROMANIA	ETSI
Orange Spain (France Telecom España S.A.U.)	SPAIN	ETSI
Orange UK (Orange Brand Services Ltd)	UNITED KINGDOM	ETSI
ORS (Österreichische Rundfunksender GmbH & Co KG)	AUSTRIA	ETSI
OTD_US (OTD_US)	UNITED STATES	ATIS
OTE S.A (OTE S.A)	GREECE	ETSI
P.I. WORKS (P.I. WORKS TR BILISIM HIZMETLERI A.S.)	TÜRKIYE	ETSI
Pairpoint	UNITED KINGDOM	ETSI

(DABCO Ltd)		
Panasonic Holdings Corporation (Panasonic Holdings Corporation)	JAPAN	ARIB
PANASONIC R&D Center Germany (PANASONIC R&D Center Germany GmbH)	GERMANY	ETSI
PCCW Global B.V. (PCCW Global B.V.)	FRANCE	ETSI
PCI (Philips (China) Investment Co., Ltd.)	CHINA	CCSA
Peking University (Peking University)	CHINA	CCSA
Pengcheng laboratory (Pengcheng laboratory)	CHINA	CCSA
Peraton Labs (Peraton Labs)	UNITED STATES	ATIS
Philips International B.V. (Philips International B.V.)	NETHERLANDS	ETSI
PHY Wireless (PHY Wireless)	UNITED STATES	ATIS
PIDS (PIDS)	NETHERLANDS	ETSI
PKUSZ (Peking university shenzhen graduate school)	CHINA	CCSA
Plan-S (Plan S Uydu ve Uzay Teknolojileri A.S)	TÜRKIYE	ETSI
PML (Purple Mountain Laboratories: Networking, Communications and Security)	CHINA	CCSA
Polaris Wireless (Polaris Wireless)	UNITED STATES	ATIS
Polisen (Polismyndigheten)	SWEDEN	ETSI
POST Luxembourg (POST Luxembourg)	LUXEMBOURG	ETSI
Prasar Bharati (Prasar Bharati)	INDIA	TSDSI
Proximus Plc (Proximus Plc)	BELGIUM	ETSI
PSCE (Public Safety Communication Europe Forum)	BELGIUM	ETSI
PT PORTUGAL SGPS SA (PT Portugal SGPS SA)	PORTUGAL	ETSI
PTS (Swedish Post and Telecom Authority)	SWEDEN	ETSI
Public Safety Canada (Public Safety Canada)	CANADA	ETSI
Qihoo 360 (Qihoo 360 Technology Co., Ltd.)	CHINA	CCSA
Qorvo (Qorvo)	UNITED STATES	ETSI
Qualcomm Atheros, Inc. (Qualcomm Atheros, Inc.)	UNITED STATES	ATIS
QUALCOMM Europe Inc. - Italy (QUALCOMM Europe Inc. - Italy Branch Office)	ITALY	ETSI
QUALCOMM Europe Inc. - Spain (QUALCOMM Europe Inc. - Spain Branch Office)	SPAIN	ETSI
Qualcomm France (Qualcomm France SARL)	FRANCE	ETSI
Qualcomm Germany (Qualcomm Germany GmbH)	GERMANY	ETSI
Qualcomm Incorporated (Qualcomm Incorporated)	UNITED STATES	ATIS
Qualcomm India Pvt Ltd (Qualcomm India Pvt Ltd)	INDIA	TSDSI
Qualcomm Innovation Center Inc (Qualcomm Innovation Center, Inc.)	UNITED STATES	ATIS
QUALCOMM JAPAN LLC.	JAPAN	ARIB

(QUALCOMM JAPAN LLC.)

Qualcomm Korea
(Qualcomm Korea)

KOREA (REPUBLIC OF) TTA

Qualcomm Tech. Netherlands B.V.
(Qualcomm Technologies Netherlands B.V.)

NETHERLANDS ETSI

Qualcomm Technologies
(Qualcomm Technologies)

UNITED STATES ATIS

Qualcomm Technologies Int
(Qualcomm Technologies International, Ltd)

UNITED KINGDOM ETSI

Qualcomm Technologies Ireland
(QT Technologies Ireland Limited)

IRELAND ETSI

Quanray
(Shanghai Quanray Electronics Co., Ltd.)

CHINA CCSA

Quectel
(Quectel Wireless Solutions Co., Ltd.)

CHINA CCSA

QWCT
(QUALCOMM Wireless Communication Technologies (China) Limited)

CHINA CCSA

RadiSys
(RadiSys Inc.)

CANADA ETSI

Rakuten Mobile, Inc
(Rakuten Mobile, Inc)

JAPAN ARIB

RATEL
(Regulatory Authority For Electronic Communications and Postal Services)

SERBIA ETSI

Realme (Shenzhen)
(Realme Mobile Telecommunications (Shenzhen) Co., Ltd.)

CHINA CCSA

Reflection B.V.
(Reflection Investment B.V.)

NETHERLANDS ETSI

Reliance Jio
(Reliance Jio)

INDIA TSDSI

RICHTEK KOREA
(RICHTEK KOREA)

KOREA (REPUBLIC OF) TTA

RISE
(RISE Research Institutes of Sweden)

SWEDEN ETSI

ROBERT BOSCH GmbH
(ROBERT BOSCH GmbH)

GERMANY ETSI

Rogers Communications Canada
(Rogers Communications Canada Inc.)

CANADA ETSI

ROHDE & SCHWARZ
(ROHDE & SCHWARZ GmbH & Co.KG)

GERMANY ETSI

Ruijie Network Co. Ltd
(Ruijie Network Co. Ltd)

CHINA CCSA

SageRAN
(Guangdong Sageran Technology Co., Ltd)

CHINA CCSA

SAICT
(Shenzhen Academy of Information and Communication Technology)

CHINA CCSA

Samsung Electronics Co., Ltd
(Samsung Electronics Co., Ltd.)

KOREA (REPUBLIC OF) TTA

Samsung Electronics Czech
(Samsung Electronics Czech)

CZECH REPUBLIC ETSI

Samsung Electronics France SA
(Samsung Electronics France SA)

FRANCE ETSI

Samsung Electronics GmbH
(Samsung Electronics GmbH)

GERMANY ETSI

Samsung Electronics Iberia SA
(Samsung Electronics Iberia SA)

SPAIN ETSI

Samsung Electronics Nordic AB
(Samsung Electronics Nordic AB)

SWEDEN ETSI

Samsung Electronics Polska
(Samsung Electronics Polska)

POLAND ETSI

Samsung Guangzhou Mobile R&D
(Samsung Guangzhou Mobile R&D Center)

CHINA CCSA

Samsung Nanjing
(Samsung Electronic (China) R&D Center)

CHINA CCSA

Samsung R&D Institute India
(Samsung R&D Institute India - Bangalore Pvt. Ltd)

INDIA TSDSI

SAMSUNG R&D INSTITUTE JAPAN

JAPAN ARIB

(SAMSUNG R&D INSTITUTE JAPAN)		
Samsung R&D Institute UK (Samsung R&D Institute UK)	UNITED KINGDOM	ETSI
Samsung Research America (Samsung Research America)	UNITED STATES	ATIS
Samsung Shenzhen (Samsung Network R&D Center-Shenzhen)	CHINA	CCSA
Sanechips (Sanechips Technology Co. , Ltd.)	CHINA	CCSA
Sateliot (Satelio IoT Services)	SPAIN	ETSI
Schindler (Schindler Elevator Ltd)	SWITZERLAND	ETSI
SDI Squared (SDI Squared LLC)	UNITED STATES	ETSI
Sectra Communications AB (Sectra Communications AB)	SWEDEN	ETSI
Security Service (Swedish Security Service)	SWEDEN	ETSI
Semtech Neuchatel SA (Semtech Neuchatel SA)	SWITZERLAND	ETSI
Sennheiser electronic SE (Sennheiser electronic SE & Co. KG)	GERMANY	ETSI
Sensus UK (Sensus UK Systems Limited)	UNITED KINGDOM	ETSI
Sepura Ltd (Sepura Limited)	UNITED KINGDOM	ETSI
Sequans Communications (Sequans Communications)	FRANCE	ETSI
SES S.A. (SES S.A.)	LUXEMBOURG	ETSI
SETS (Society for Electronic Transactions and Security)	INDIA	TSDSI
SEU (Southeast University)	CHINA	CCSA
SGDSN (Secrétariat Général de la Défense et de la Sécurité Nationale (SGDSN))	FRANCE	ETSI
SGITG (State Grid Information & Telecommunication Group Co., Ltd.)	CHINA	CCSA
SGS Wireless (SGS Wireless)	UNITED KINGDOM	ETSI
Shanghai Chen Si Electronics (Shanghai Chen Si Electronics Technology Co., Ltd)	CHINA	CCSA
Shanghai Jiao Tong University (Shanghai Jiao Tong University)	CHINA	CCSA
Shanghai Tejet Com Technology (Shanghai Tejet Communications Technology Co., Ltd.)	CHINA	CCSA
SHARP Corporation (SHARP Corporation)	JAPAN	ARIB
Shenzhen Heytap (Shenzhen Heytap Technology Corp.,Ltd.)	CHINA	CCSA
ShenZhen Zhongxing Shitong (ShenZhen Zhongxing Shitong Tech. Co.,Ltd.)	CHINA	CCSA
SIA (Shenyang Institute of Automation, Chinese Academy of Sciences)	CHINA	CCSA
Siemens AG (Siemens AG)	GERMANY	ETSI
Signalchip Innovations Pvt. (Signalchip Innovations Pvt. Ltd.)	INDIA	TSDSI
SIST (Slovenian Institute for Standardisation)	SLOVENIA	ETSI
Sisvel (Sisvel International S.A.)	LUXEMBOURG	ETSI
SK Telecom (SK TELECOM)	KOREA (REPUBLIC OF)	TTA
SKY Perfect JSAT Corporation	JAPAN	ARIB

(SKY Perfect JSAT Corporation)

Skylo Technologies
(Skylo Technologies)

UNITED STATES

ATIS

Skyworks Solutions Inc.
(Skyworks Solutions Inc.)

UNITED STATES

ETSI

Smart Internet Lab
(Smart Internet Lab, University of Bristol)

UNITED KINGDOM

ETSI

SmarterMicro Inc.
(Smarter Microelectronics(Guangzhou) Co.,Ltd)

CHINA

CCSA

SnT - University of Luxembourg
(Interdisciplinary Centre for Security, Reliability and Trust/University of Luxembourg)

LUXEMBOURG

ETSI

SoftBank Corp.
(SoftBank Corp.)

JAPAN

ARIB

Softel Systems
(Softel Systems Pty Ltd)

AUSTRALIA

ETSI

Softil Ltd
(Softil Ltd)

ISRAEL

ETSI

Sony Corporation
(Sony Corporation)

JAPAN

ARIB

Sony Europe B.V.
(Sony Europe B.V.)

UNITED KINGDOM

ETSI

Sony Group Corporation
(Sony Group Corporation)

JAPAN

ARIB

Sooktha Consulting Pvt Ltd
(Sooktha Consulting Pvt Ltd)

INDIA

TSDSI

Soongsil University
(Soongsil University)

KOREA (REPUBLIC OF)

TTA

SOS Alarm
(SOS Alarm Sverige AB)

SWEDEN

ETSI

Southern Linc.
(Southern Linc.)

UNITED STATES

ATIS

Southwest Jiaotong university
(Southwest Jiaotong university)

CHINA

CCSA

SpaceX
(SpaceX Netherlands B.V)

NETHERLANDS

ETSI

Spark NZ Ltd
(Spark NZ Ltd)

NEW ZEALAND

ATIS

Spirent Communications
(Spirent Communications)

UNITED STATES

ETSI

Sporton International Inc
(Sporton International Inc.)

TAIWAN, PROVINCE OF CHINA

ETSI

Spreadtrum Communications
(Spreadtrum Communications (Shanghai) Co., Ltd.)

CHINA

CCSA

SRTC
(The State Radio_monitoring_center Testing Center)

CHINA

CCSA

SS8
(SS8 Networks Inc.)

UNITED STATES

ETSI

SSNS
(Special Service for the National Security of Hungary)

HUNGARY

ETSI

Starpoint
(Beijing Starpoint Technology Company Limited)

CHINA

CCSA

STE IDIRECT IRELAND LTD
(ST ENGINEERING IDIRECT (IRELAND) LIMITED)

IRELAND

ETSI

STMicroelectronics
(STMicroelectronics International NV)

SWITZERLAND

ETSI

Sumitomo Elec. Industries, Ltd
(Sumitomo Electric Industries, Ltd.)

JAPAN

ARIB

SUNGKYUNKWAN UNIVERSITY
(SUNGKYUNKWAN UNIVERSITY)

KOREA (REPUBLIC OF)

TTA

SUTD
(Singapore University of Technology and Design)

SINGAPORE

ETSI

Swift Navigation
(Swift Navigation)

UNITED STATES

ATIS

SWISSCOM
(SWISSCOM SA)

SWITZERLAND

ETSI

SWR

GERMANY

ETSI

(Südwestrundfunk)		
SyncTechno Inc. (SyncTechno Inc.)	KOREA (REPUBLIC OF)	TTA
Syniverse (M/s Syniverse Technologies Services India Pvt. Ltd.)	INDIA	TSDSI
TA (Tantra Analyst)	UNITED STATES	ETSI
Tait Europe Limited (Tait Europe Limited)	AUSTRIA	ETSI
TATA Communications Ltd (TATA Communications Ltd)	INDIA	TSDSI
Tata Elxsi Limited. (Tata Elxsi Limited.)	INDIA	TSDSI
TCL (Shenzhen TCL New Technology Company Ltd.)	CHINA	CCSA
TCS (TATA Consultancy Services)	INDIA	TSDSI
TD Tech Ltd (TD Tech Ltd)	CHINA	CCSA
TDF (TDF SAS)	FRANCE	ETSI
Tech Mahindra Limited (Tech Mahindra Limited)	INDIA	TSDSI
Tejas Network Limited (Tejas Network Limited)	INDIA	TSDSI
Tektronix GmbH (Tektronix GmbH)	GERMANY	ETSI
TELECOM ITALIA S.p.A. (Telecom Italia S.p.A.)	ITALY	ETSI
Telefonica Germany GmbH (Telefónica Germany GmbH & Co OHG)	GERMANY	ETSI
TELEFONICA S.A. (TELEFONICA S.A.)	SPAIN	ETSI
Telekom Deutschland GmbH (Telekom Deutschland GmbH)	GERMANY	ETSI
TELENOR ASA (Telenor ASA)	NORWAY	ETSI
Telesat International Limited (Telesat International Limited)	UNITED KINGDOM	ETSI
Telia Company AB (Telia Company AB)	SWEDEN	ETSI
Telit Communications S.p.A. (Telit Communications S.p.A.)	ITALY	ETSI
Telstra Limited (Telstra Limited)	AUSTRALIA	ETSI
TELUS (TELUS)	CANADA	ATIS
Tencent (Shenzhen city Tencent computer system Co. Ltd.)	CHINA	CCSA
Tencent Cloud (Tencent cloud computing Beijing Co., Ltd)	CHINA	CCSA
Teradyne (Teradyne)	UNITED STATES	ATIS
TerreStar Solutions Inc. (TerreStar Solutions Inc.)	CANADA	ATIS
Texas A&M University (Texas A&M University)	UNITED STATES	ETSI
TEXAS Instruments (Texas Instruments France)	FRANCE	ETSI
THALES (THALES)	FRANCE	ETSI
THURAYA TELECOM CO. (THURAYA TELECOMMUNICATIONS COMPANY)	UNITED ARAB EMIRATES	ETSI
Tiami Networks (Tiami Networks)	UNITED STATES	ATIS
TII	UNITED ARAB EMIRATES	ETSI

(Technology Innovation Institute)		
T-Mobile Austria GmbH (T-Mobile AUSTRIA GmbH)	AUSTRIA	ETSI
T-Mobile Polska S.A. (T-Mobile Polska Spolka Akcyjna)	POLAND	ETSI
T-Mobile USA (T-Mobile USA, Inc.)	UNITED STATES	ETSI
T-Mobile USA Inc. (T-Mobile USA Inc.)	UNITED STATES	ATIS
TNO (TNO)	NETHERLANDS	ETSI
Tomorrow's Creation Labs (Tomorrow's Creation Labs)	JAPAN	ARIB
Tongji University (Tongji University)	CHINA	CCSA
Toshiba (Toshiba)	UNITED KINGDOM	ETSI
TOWE Wireless (Sushi TOWE Wireless Testing (Shenzhen) Co.,Ltd.)	CHINA	ETSI
TOYOTA Info Technology Center (TOYOTA Info Technology Center USA, Inc.)	UNITED STATES	ETSI
TOYOTA MOTOR CORPORATION (TOYOTA MOTOR CORPORATION)	JAPAN	TTC
TRAFICOM (The Finnish Transport and Communications Agency)	FINLAND	ETSI
Trafikverket (Trafikverket)	SWEDEN	ETSI
Transssion Holdings (Transssion Holdings)	CHINA	CCSA
TransUnion (TransUnion)	UNITED STATES	ATIS
Trimble (Trimble)	UNITED STATES	ATIS
Tron Future Tech Inc. (Tron Future Tech Inc.)	TAIWAN, PROVINCE OF CHINA	ETSI
TTP plc (TTP plc)	UNITED KINGDOM	ETSI
Türk Telekomunikasyon A.S. (Türk Telekomunikasyon A.S.)	TÜRKIYE	ETSI
TURKCELL (Turkcell İletişim Hizmetleri A.S.)	TÜRKIYE	ETSI
U.S. Department of Defense (U.S. Department of Defense)	UNITED STATES	ATIS
U.S. Department of Transport. (U.S. Department of Transportation)	UNITED STATES	ATIS
U.S. National Security Agency (US National Security Agency)	UNITED STATES	ATIS
Uangel (Uangel Corporation)	KOREA (REPUBLIC OF)	TTA
Ubiik (Ubiik SAS)	FRANCE	ETSI
ubinexus (Beijing Ubinexus Technology Development Co., Ltd)	CHINA	CCSA
u-blox AG (u-blox AG)	SWITZERLAND	ETSI
UESTC (University of Electronic Science and Technology of China)	CHINA	CCSA
UL VS Ltd (UL VS Ltd)	UNITED KINGDOM	ETSI
UMA (Universidad de Malaga)	SPAIN	ETSI
umlaut (umlaut communications GmbH)	GERMANY	ETSI
UNIBO (ALMA MATER STUDIORUM Università di Bologna)	ITALY	ETSI
UniBw M	GERMANY	ETSI

(University of the Bundeswehr Munich)		
Unicom Broadband Online (Unicom Broadband Online Co., Ltd.)	CHINA	CCSA
Unicompay (Unicompay Co., Ltd.)	CHINA	CCSA
Union Inter. Chemins de Fer (Union Internationale des Chemins de Fer)	FRANCE	ETSI
Union Telephone Company (Union Telephone Company)	UNITED STATES	ATIS
Unisoc (Unisoc (Shanghai) Technologies Co., Ltd.)	CHINA	CCSA
Unisoc Beijing (Beijing Unisoc Communications Technology Co., Ltd.)	CHINA	CCSA
UPV/EHU (Universidad del País Vasco/Euskal Herriko Unibertsitatea)	SPAIN	ETSI
US Cellular Corporation. (US Cellular Corporation/TDS.)	UNITED STATES	ATIS
US DHS Science & Technology (US DHS Science & Technology)	UNITED STATES	ATIS
UTIMACO TS GmbH (UTIMACO TS GmbH)	GERMANY	ETSI
UTokyo (The University of Tokyo)	JAPAN	ETSI
Vaan Megam (Vaan Megam Networks)	INDIA	TSDSI
Valeo (Valeo Telematik und Akustik GmbH)	GERMANY	ETSI
VALID SOLUCIONES TECNOLÓGICAS (VALID SOLUCIONES TECNOLÓGICAS S.A.U)	SPAIN	ETSI
Valid8 (Valid8.com, Inc.)	UNITED STATES	ETSI
Vanchip (Vanchip (Tianjin) Technology Co., Ltd.)	CHINA	CCSA
Verizon Denmark (Verizon Denmark A/S)	DENMARK	ETSI
Verizon Finland (Verizon Finland Oy)	FINLAND	ETSI
Verizon France (Verizon France SAS)	FRANCE	ETSI
Verizon Netherlands (Verizon Nederland B.V)	NETHERLANDS	ETSI
Verizon Spain (Verizon Spain S.L.)	SPAIN	ETSI
Verizon Sweden (Verizon Sweden Aktiebolag 2116)	SWEDEN	ETSI
Verizon Switzerland AG (Verizon Switzerland AG)	SWITZERLAND	ETSI
Verizon UK Ltd (Verizon UK Ltd)	UNITED KINGDOM	ETSI
Vestel (Vestel Elektronik Sanayi ve Ticaret A.S)	TÜRKIYE	ETSI
ViaSat Satellite Holdings Ltd (ViaSat Satellite Holdings Ltd)	UNITED KINGDOM	ETSI
VIAVI Solutions (Viavi Solutions UK Ltd.)	UNITED KINGDOM	ETSI
vivo Mobile Com. (Chongqing) (vivo Mobile Communication (Chongqing) Co., Ltd)	CHINA	CCSA
vivo Mobile Communication (H) (vivo Mobile Communication (Hangzhou) Co., Ltd.)	CHINA	CCSA
vivo Mobile Communication (S) (vivo Mobile Communication (Shenzhen) Co., Ltd.)	CHINA	CCSA
vivo Mobile Communication Co., (vivo Mobile Communication Co., Ltd)	CHINA	CCSA
vivo Software Technology (vivo Software Technology (Xi'an) Co., Ltd.)	CHINA	CCSA
VIVO TECH GmbH	GERMANY	ETSI

(VIVO TECH GmbH)		
vivo Wisdom Technology (vivo Wisdom Technology Co., Ltd.)	CHINA	CCSA
Vodafone GmbH (Vodafone GmbH)	GERMANY	ETSI
VODAFONE Group Plc (Vodafone Group Plc)	UNITED KINGDOM	ETSI
Vodafone Ireland Plc (Vodafone Ireland Plc)	IRELAND	ETSI
Vodafone Italia SpA (Vodafone Italia SpA)	ITALY	ETSI
Vodafone Romania S.A. (Vodafone Romania S.A.)	ROMANIA	ETSI
Vodafone Telekomünikasyon A.S. (Vodafone Telekomünikasyon A.S.)	TÜRKIYE	ETSI
VoiceAge Corporation (VoiceAge Corporation)	CANADA	ETSI
Volkswagen AG (Volkswagen AG)	GERMANY	ETSI
VSENS (Unicom Vsens Telecommunications Co., Ltd)	CHINA	CCSA
VTT (VTT Technical Research Centre of Finland)	FINLAND	ETSI
WE Certification Oy (WE Certification Oy)	FINLAND	ETSI
Williot Ltd. (Williot Ltd.)	ISRAEL	ETSI
WILUS Inc. (WILUS Inc.)	KOREA (REPUBLIC OF)	TTA
Wipro (Wipro Limited)	INDIA	TSDSI
Wipro GE (Wipro GE Healthcare Private Limited)	INDIA	TSDSI
Wisig Networks Pvt Ltd (Wisig Networks Pvt Ltd)	INDIA	TSDSI
Wuhan Hongxin Technology (Wuhan Hongxin Technology Development Co., Ltd.)	CHINA	CCSA
XGN (XGen Network LLC)	UNITED STATES	ETSI
Xiamen Sanan Integr. Circuit (Xiamen Sanan Integrated Circuit Co., Ltd.)	CHINA	CCSA
Xiaomi Communications (Xiaomi Communications)	CHINA	CCSA
Xiaomi Digital Technology (Beijing Xiaomi Digital Technology Co., Ltd.)	CHINA	CCSA
Xiaomi Electronic Software (Beijing Xiaomi Electronic Software Co., Ltd.)	CHINA	CCSA
Xiaomi EV Technology (Xiaomi EV Technology Co., Ltd.)	CHINA	CCSA
Xiaomi Technology (Xiaomi Technology)	CHINA	CCSA
Xiaomi Technology (Polska) sp. (XIAOMI TECHNOLOGY (POLSKA) SPOLKA Z OGRANICZONA ODPOWIEDZIALNOSCIA)	POLAND	ETSI
Xiaomi Technology France (Xiaomi Technology France)	FRANCE	ETSI
Xiaomi Technology Germany GmbH (Xiaomi Technology Germany GmbH)	GERMANY	ETSI
Xiaomi Technology Italy srl (Xiaomi Technology Italy srl)	ITALY	ETSI
Xiaomi Technology Netherlands (Xiaomi Technology Netherlands B.V.)	NETHERLANDS	ETSI
Xiaomi Technology Spain S.L. (Xiaomi Technology Spain S.L.)	SPAIN	ETSI
Xiaomi Technology UK Limited (Xiaomi Technology UK Limited)	UNITED KINGDOM	ETSI
Xidian University	CHINA	CCSA

(Xidian University)

Xilinx Ireland
(Xilinx Ireland)

IRELAND

ETSI

XNET
(ZGC Institute of Ubiquitous-X Innovation and Applications)

CHINA

ETSI

X-Net
(ZGC Institute of Ubiquitous-X Innovation and Applications)

CHINA

CCSA

Yonsei University
(Yonsei University)

KOREA (REPUBLIC OF)

TTA

Zhejiang Lab
(Zhejiang Lab)

CHINA

CCSA

Zhejiang University
(Zhejiang University)

CHINA

CCSA

ZITIS
(Central Office for Information Technology in the Security Sector)

GERMANY

ETSI

Zollkriminalamt (ZKA)
(Zollkriminalamt (ZKA))

GERMANY

ETSI

ZONSON
(ZONSON SAMRT AUTO CORPORATION)

CHINA

CCSA

ZTE
(ZTE Telecom India Pvt Ltd)

INDIA

TSDSI

ZTE Corporation
(ZTE Corporation)

CHINA

CCSA

ZTE Corporation
(ZTE Corporation)

CHINA

ETSI

ZTE Deutschland
(ZTE Deutschland GmbH)

GERMANY

ETSI

ZTE FRANCE SASU
(ZTE FRANCE SASU)

FRANCE

ETSI

ZTE Italia
(ZTE Italia S.R.L.)

ITALY

ETSI

ZTE JAPAN K.K.
(ZTE JAPAN K.K..)

JAPAN

TTC

ZTE Japan K.K.
(ZTE Japan K.K.)

JAPAN

ARIB

ZTE Korea Limited
(ZTE Korea Limited)

KOREA (REPUBLIC OF)

TTA

ZTE Photonics
(ZTE Photonics Technology Co.,Ltd.)

CHINA

CCSA

ZXNE
(ZXNE CORPORATION)

CHINA

CCSA

Total : 835 Individual Members

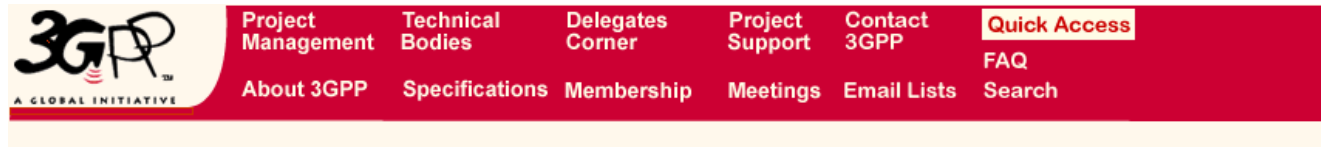


Any comments or problems with this application? Please let us know...



APPENDIX 11

The Wayback Machine - <https://web.archive.org/web/20030812012042/http://www.3gpp.org/80/faq/faq.htm>



3GPP Frequently Asked Questions

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1. Membership

1.1 Who can become an Individual Member of 3GPP and how much does it cost ?

Individual Members are by definition members of the [Organizational Partners of 3GPP](#). This means that members of standardization bodies such as ETSI, ARIB, TTA, TTC, T1 and CCSA have a right to take part in 3GPP. There are no fees payable directly to 3GPP. However, the funds required for the running of 3GPP are collected from the Organizational Partners and you may be required to contribute in some way through that route.

If you are not a member of one of the above Standardization bodies then you can find links to these bodies from the [3GPP home page](#).

If you require further guidance on how to participate in 3GPP activities you should contact the [Mobile Competence Centre](#).

1.2 Who may participate in 3GPP meetings ?

To attend a 3GPP meeting, you must be a 3GPP Individual Member (i.e. you must be a Member of one of the Organizational Partners involved in the project; ARIB, CCSA, ETSI, T1, TTA or TTC. A non-member company should seek membership with one of the above partners to be eligible to contribute and participate at 3GPP Meetings.

1.3 Who shall fill in the 3GPP Individual Member Application form ?

The person legally responsible for the requesting company shall fill in the form.

1.4 What shall I do if a 3GPP company or official contact details change?

All changes of correspondence should be notified to 3GPPContact@etsi.org

1.5 Could you explain the different membership categories ?

The different membership categories of 3GPP are described in Section B of the 3GPP Working Procedures.

1.6 Who can become an Observer ?

Observership in 3GPP is for potential Partners (i.e. Standards Bodies). This status may be granted by the Organizational Partners to an entity, which has the qualifications to become a future Partner.

1.7 Who may become a Guest Member and do guests have to pay any fees ?

The Guest Status is for potential Individual Members who may be granted permission to participate in 3GPP for a maximum period of 6 months. Guest status is granted on a case-by-case basis by the Organizational Partners (see also Working Procedures Article 10). If you like to apply for a Guest status, please send an email to 3GPPContact@etsi.org

No membership fees are requested for Guest applications.

1.8 Who can apply for Market Representative Partnership ?

The status of Market Representative may be granted to entities who have the ability to offer market advice to 3GPP and to bring into 3GPP a consensus view of market requirements (e.g. services, features and functionality) falling within the 3GPP Scope.

1.9 Can we use the 3GPP logo on our Web Site ?

YES, it is possible for permission to be granted for the use of the 3GPP logo subject to certain conditions. For more information please contact [Mrs Karen Hughes](#) from the ETSI MCC (Mobile Competence Centre).

3GPP FAQs related to Individual Members under the partner ETSI

1.10 Can an ETSI Observer become an Individual Member of 3GPP ?

NO, an ETSI Observer may "observe" all activities, but their participation is limited to the ETSI General Assembly only. Therefore, ETSI Observers have no participation rights in 3GPP. ETSI Observers have access to ETSI documentation and of course to 3GPP documentation since that is openly published on the web.

3GPP does have it's own category called "Observer" but that is entirely different and is used for potential Partners.

1.11 Can ETSI Applicant apply for 3GPP Membership ?

YES, an Applicant means that your request to become an ETSI Member will be approved at the next General Assembly. You can participate in 3GPP as soon as the ETSI application has been processed and you are flagged as a Candidate Member (i.e. there is no need to wait until the next GA).

1.12 My company is already an ETSI Member, what do I have to do to join 3PP and do I have to pay any fees ?

As an ETSI member your company is eligible for a 3GPP Individual Membership and you will be able to attend any of the 3GPP Meetings. Please fill in the on-line 3GPP Application form and your company will be then listed on the 3GPP Website (add link to the form)

There are currently no additional costs involved for participation in 3GPP (the membership fees for ETSI covers the cost of 3GPP participation).

2. 3GPP email exploder lists

2.1 Are there discussion archives for the 3GPP exploder lists ?

The home page of listserv is at: <http://list.3gpp.org/scripts/wa.exe>

Then, just follow the links to the archives. For example, the archives for the main RAN email list can be found at:

http://list.3gpp.org/archives/3gpp_tsg_ran.html

2.2 How do I subscribe to the 3GPP exploder lists ?

follow the instructions found on this page: http://www.3gpp.org/Discussion_Lists/mailling.htm

3. Miscellaneous

3.1 How do I resolve the problem with the corrupt file warning in MSWord. Note that this only applies to MSWord2000?

Problem:

When opening a document in Word 2000, the following error message appears: This document may be corrupt. To preserve the contents: Choose Select All from the Edit menu, then choose Copy from the Edit menu. Create a new document, then choose Paste from the Edit menu.

Cause:

This may be related to something called list templates. A list template is created for every numbering or bulleting scheme defined in the document. Apparently, a minor change in a scheme, or even switching a list from numbered to bulleted creates a new template. In an arcane way, tables are also related to list templates. The template count increases automatically, but cannot be decreased by the user. When more than 1500 templates are defined in the list, the document becomes corrupt. There are more reasons why a document is corrupt, so the fix proposed will not solve the problem 100% of the times.

Resolution:

- To solve the problem, you need to have MS Office 2000 Service Release 1/1a installed . To check this, in Word on the "Help" menu point to "About Microsoft Word". The first line in the window shows you the MSWord version you have. You should get something like: "Microsoft Word 2000 (9.0.3821 SR-1)". If you don't get SR-1 (or SR-1a) at the end, you need to install the Service Release. Contact your IT department or follow this link: <http://support.microsoft.com/support/kb/articles/Q245/0/25.ASP>
- You have to introduce a new entry in the Windows registry. You can do this simply by clicking twice in the file "word_bug_fix.reg" attached. Note that modifying the Windows Registry incorrectly can cause serious problems; this fix simply introduces a new entry in a MSWord part of the registry, but if you don't feel confident, contact your IT department or check the Microsoft link below.
- Open MSWord normally. The fix proposed will open the corrupted files without warning and delete the unused list templates, so its count goes under 1500. The user will not notice anything, but this implies that the document is modified. When closing, MSWord will ask the user if he wants to save the changes, even if apparently no change has been made.

This bug is confirmed by Microsoft and it is listed in its Support Web Site. Follow this link to get the complete report:

<http://support.microsoft.com/support/kb/articles/q241/5/81.asp>

3.2 Where is the information regarding the Core Network located ?

Unfortunately, there is no one document that describes the Core Network, as it is an area of work far too involved to be contained in one specification. For a general overview document of Network Architecture TS 23.002 may be downloaded from our FTP server. ftp://ftp.3gpp.org/Specs/October_99/23_series. For more general organizational information, have a look at the 3GPP web site which shows the individual areas of 3GPP and in particular Core Network. <http://www.3gpp.org/TSG/CN.htm>.

3.3 Do I need a password and user name to access the 3GPP Web site ?

No password is needed to access any information on the 3GPP Web site, all information is openly published.

4. Legal Matters

4.1 What is the 3GPP IPR Policy ?

The 3GPP Organizational Partners have agreed that their IPR policies should be respected and that their respective members should be encouraged to declare "their willingness to grant licenses on fair reasonable terms and conditions and on non discriminatory basis" (Article 3.1 of the Third Generation Partnership Project). For more information [Look Here >>>](#)

The above-mentioned principles are further reflected in [Article 55 of the 3GPP Technical Working Procedures](#) which request that each Individual Members should declare "at the earliest opportunity, any IPR which they believe to be essential, or potentially essential, to any work ongoing within 3GPP".

4.2 What is the 3GPP policy on licensing ?

With regard to the issue of royalties' payment for the use of patented technology in GSM mobile phone systems each individual company should seek a license from the holder of an essential IPR.

The IPR policies of Standards Organizations thus provide a framework for IPR negotiations since the owner of a patented technology which is declared essential to a GSM standards have undertook to comply with the ETSI IPR policy "to grant licenses on fair reasonable and non discriminatory terms and conditions"(Article 6.1 of the ETSI IPR Policy).

As of today, the principles for royalties' payment for the use of patented technology in mobile phone implementing 3GPP transposed specifications remains unchanged. That is to say that each individual company should seek a license from a patent holder who is bound by the obligations of the IPR policy of its respective Organizational Partner. For more information [Look Here >>>](#)

4.3 What is the 3G Patent Platform ?

On the fringe of standardization activities some telecom companies have set up a voluntary arrangement for the licensing of essential patents required to meet the standards published for 3G systems has emerged.

Please find a historical recap of the creation of the 3G Patent Platform. Thank you to note that Phase 3 has not started yet.

1. Discussions started in the UMTS IPR working Group (1998).

2. The UMTS IPR working group operated within the UIAP (UMTS Intellectual Property Association) to define the functions of the 3G Patent Platform.

<https://web.archive.org/web/20030812012042/http://www.3gpp.org/faq/faq.htm>

3/7

The 3G Patent Platform will provide services for:

- - Evaluating,
- - Certifying and,
- - Licensing

essential patents for 3G Mobile communications.

3. Implementation of the 3G Patent Platform scheme.

The 3G Patent Platform will operate within a new profit service company governed by the members (essential patent holders and licensees). As of today this NEW CO is not operational since it is waiting for the approval of the US/EC/Japanese competition law authorities in order to launch the above-described activities.

More information is to be found at <http://www.3gpatents.com/>

4.4 Is it true that a number 3GPP members are looking at setting up a patents cooperative, with the aim of reducing the royalties they pay each other for the use of patented technology in third-generation mobile systems ?

- Discussion started in the UMTS IPR working Group (1998),
- Creation of the UIAP (UMTS Intellectual Property Association) which has performed the function of the definition the 3G Patent Platform scheme (Evaluation of a patent, certification of essentiality, licensing arrangements, etc.) and which is the legal owner of the 3G Patent Platform Specification.
- Implementation of the scheme:

As of today NEW CO (implementing the 3G Patent Platform) has not been incorporated and the Patent Platform scheme is not operational as it is awaiting for the approval of the US/EC competition law authorities.

ETSI follows the development of the 3G Patent Platform but, as a neutral standard body, cannot take an active participation in this market initiative.

4.5 Is permission needed to use the 3GPP logo in marketing collaterals or on a web site ?

ETSI (European Telecommunications Standards Institute) is the sole owner of the following acronyms:

- ETSI,
- DECT,
- UMTS,
- 3GPP and
- TIPHON,

as well as the ETSI, TIPHON and 3GPP logos. ETSI Members shall use these Trade Marks in accordance with Collective Letter 1943. Authorization is needed to use the above mentioned acronyms and logos.

For further information please contact : [Karen Hughes](#)

4.6 Who owns the Technical Specifications and the Technical Reports approved by 3GPP ?

According to the Article 3.2.2 of the Third Generation Partnership Project Agreement, the 3GPP Organizational Partners jointly own copyright on the Technical Specifications and the Technical Reports approved by 3GPP.

4.7 Does a company implementing a product based on the 3GPP specifications have to pay any royalties to the 3GPP organization ?

The Third Generation Partnership Project is not a legal entity but a Partnership Project between different standardization organizations in the field of telecommunications.

5. Specifications

5.1 Where can the rules, protocols or software needed to develop applications for UMTS be found ?

A good place to start is on the 3GPP website <http://www.3gpp.org>, and particularly the specifications list at <http://www.3gpp.org/specs/specifications.htm>.

Look at the titles of the specs for those which are appropriate. Perhaps 21.111, 31.102 and 31.111 might be relevant.

5.2 What is the correlation between Stage 1, Stage 2 (GSM 3.90 and GSM 02.90) and Phase 1, Phase 2 ?

The "stage" nomenclature was an ancient CCITT invention, related to ISDN standardisation. "Stage 1" refers to the service description from a service-user's point of view. "Stage 2" is a logical analysis, breaking the problem down into functional elements and the information flows amongst them. "Stage 3" is the concrete implementation of the protocols between physical elements onto which the functional elements have been mapped.

5.3 Is there any simple guide to the different CAMEL specifications ?

Unfortunately there is no single document acting as a guide to the CAMEL standards. Initial plans were published in ETSI ETR 244 in 1995, though this is so old as to be more or less useless now. GSM 10.78 is the CAMEL project plan, and this is probably the best thing. This may have been available as a temp doc to SMG meeting no. 25, but is still only in draft form, and has never been made publicly available.

In the SS7 arena,

GSM 02.78 / UMTS 22.078 is the Stage 1 (requirements) document.

GSM 03.78 / UMTS 23.078 is the Stage 2 (functions, conceptual data flow)

GSM 09.78 / UMTS 29.078 is the Stage 3 (protocol) - CAMEL Application Part (CAP)

CAP has been released in several phases:

Release 1996 = Phase 1

Release 1997 = Phase 2

Release 1998 = Phase 2

Release 1999 = Phase 3 (GSM and UMTS common spec)

For UMTS, 21.978 is a feasibility study on CAMEL control of Voice over IP.

In the Intelligent Network area, CAMEL is an extension of Core INAP, under the control of ETSI SPAN3 (formerly SPS3) - ignore for simplicity the Stage 1 and Stage 2 specifications, which were under ETSI SPAN6 (formerly NA6). Core INAP was released in several phases:

CS1 = ETS 300 374 series,

CS2 = EN 301 140 series,

CS3 = EN 301 931 series.

It had originally been intended to split CS3 into two releases, and also to produce a CS4. These plans now seem to be on hold. The ETSI phasing of the various Capability Sets was not strictly aligned with the ITU-T "equivalents", and this was a source of some confusion. For further information on SPAN please contact : spansupport@etsi.org Very recently, SPAN has been reorganised, and SPAN3's work is now to be found within SPAN12.

IN CAMEL phase 1 is an enhancement of Core INAP CS1. The protocol is defined in the ETSI EN 301 152 series, which is a "delta" to ETS 300 374, and assumes a CAP according to GSM 09.78 v5.5.x (Phase 2+, Release 1996). IN CS3 includes CAMEL aspects (which were ignored for IN CS2).

5.4 Where are the specifications which identify the Vcc voltages for the SIM interface ?

3V and 1.8 V SIMs for GSM are specified in GSM 11.12 (phase 2) and GSM 11.18 (release 98) respectively.

However, in 3GPP we have developed a new specification (3G TS 31.101) which combines the physical/electrical/logical aspects of GSM 11.11, GSM 11.12 and GSM 11.18 into a single specification. The electrical and physical aspects have not really been changed compared to the GSM specification mentioned above (the logical and security aspects have been enhanced). It is recommended that you use this new specification as the basis for any new work.

5.5 Are the 3GPP specifications produced only in word ?

The 3GPP specs are published as ETSI deliverables, and these are available in PDF from <http://www.etsi.org/key>. But you can download a free Word viewer (ie read only) from the Microsoft web site. PDF is inherently secure (more so than html, in fact), and because WordViewer is very simple (it can not handle macros, for example), it is pretty safe too.

ETSI has no plans at present to publish specifications in plain text or in html.

5.6 Which group works with specifications covering the use of the GSM codec (either in C or Java based) ?

The SMG11 and 3GPP SA4 specifications available from <http://www.etsi.org/smg> and <http://www.3gpp.org> respectively deal with this. In particular, the latter site gives you a list of specifications via the status list (look for the GSM specs in the MS-Access database at :

and you can then download the specs you need. If you do not have an ETSI EOL account, you can download the ETSI equivalent standards from <http://www.etsi.org/key>.

5.7 Does the ETSI GSM standard document collection also include GSM standard documents produced by the GSM Association and exactly what kind of GSM standards does ETSI produce ?

The GSM specifications were originally started in committee GSM of CEPT. There (as "CEPT Recommendations") they were allocated a reference number of the form nn.nn, for example GSM 06.12. Even after transfer to ETSI about ten years ago, the GSM community (in Technical Committee SMG) continue to use these spec identifiers.

The specifications are grouped into 'Releases'. The original specifications were published by ETSI in 1994 and are now known as 'Phase 1'. The next release was known as 'Phase 2', and the next one as ... 'Phase 2+'. Within Phase 2+, there have been annual releases since 1996, which are known as R96, R97, R98 and R99. You can find the specifications on the SMG file server <http://docbox.etsi.org/tech-org/smg/Document/smg/specs/> grouped into directories by Release. (You need an account on the ETSI server to have access to this directory.) Looking at a spec, you can tell which release it belongs to by the version number:

version release

3.x.x	Phase 1
4.x.x	Phase 2
5.x.x	Phase 2+, R96
6.x.x	Phase 2+, R97
7.x.x	Phase 2+, R98
8.x.x	Phase 2+, R99

There will (probably) not be a Release 2000, since the work has been subsumed by the third generation specifications under 3GPP.

All (nearly) the specs of all releases are published as ETSI deliverables, and most have undergone several revisions in each release. In order to match a GSM spec number and version with the corresponding ETSI deliverable, you should go to <http://www.etsi.org/key/>.

5.8 Where would I find a document (e.g. UMTS 30.03 version 3.1.0) which does not appear on the 3GPP Status List?

Look at http://docbox.etsi.org/tech-org/smg/Document/smg/specs/UMTS/3003_320.zip but, an ETSI server account is needed to access this. It is a document stemming from the initial TC-SMG studies on UMTS, not a product of 3GPP. It was, in fact, published as an ETSI deliverable, TR 101 112, and this may be downloaded via <http://pda.etsi.org/pda>.

In general, the cross-referencing between GSM and ETSI deliverables, and between 3GPP and ETSI deliverables may be found at <http://www.etsi.org/key>

5.9 Where are all the Change Requests (CRs) located ?

All CRs are located in the CR database which is stored in

ftp://docbox.etsi.org/tech-org/smg/Document/smg/databases/change_request.

For example, CR 08.18-A042r2 will be shown as being in in document P-99-389 from SMG#29.

5.10 Where are all the current ETSI SMG specs located ?

The latest GSM status database located at

http://docbox.etsi.org/tech-org/smg/Document/smg/database/status_list.

An ETSI account is needed to access this directory.

5.11 Is the ETSI Secretariat responsible for the management of the Application Provider Codes for 3GPP ?

The ETSI secretariat does not actually allocate these number - unique number are obtained by the coding scheme that is defined in 31.110. Application identifiers for consist of two parts - a RID and a PIX.

The RID is simple: ISO/IEC have allocated the number 'A000000087' to the 3GPP. This was allocated to ETSI on behalf of the 3GPP.

The coding of the PIX is specified in annex B of 31.110. There are three different sorts of PIX:

- 3G UICC,
- 3G USIM, and
- 3G USIM toolkit

Each of these requires the use of the "Card issuer code" as defined in ITU-T recommendation E.118 [3]. This is a unique code given to each card issuer (for example, each GSM operator in the world has requested a card issuer code). So, any 3G operator that does not have a 2G system that uses SIMs will have to apply to the ITU-T in accordance with the procedures in E.118.

5.12 Which group works on the W-CDMA and the Physical Layer of W-CDMA ?

The radio aspects are standardised in TSG-RAN. The technical work is done in the 4 Working Groups of RAN (WG1 radio layer 1, WG2 radio layer 2/3, WG3 interfaces, WG4 RF measurements). I'd say you are interested in TSG-RAN WG1 then. Their specifications are numbered 25.2xx.

The temporary documents (meeting documents etc.) of WG1 are stored on ftp://ftp.3gpp.org/TSG_RAN/WG1_RL1 and the latest specifications (December 99) are or will be provided on ftp://ftp.3gpp.org/Specs/December_99/25_series.

5.13 Where can I find the list of Abstract syntax notation (ASN.1) object identifiers?

The expandable list of object identifiers is available [here >>>](#). To see the formal definition of the object identifiers, see the document cited on the right. The tree is not necessarily complete; further extensions may be included in the referenced document. For more information [look here >>>](#)

5.14 Where can I find the 3GPP Confidentiality and Integrity algorithms?

The 3GPP Confidentiality and Integrity algorithms F8 & F9 (KASUMI) have been developed through the collaborative efforts of the [3GPP Organizational Partners](#). For more information and in order to download the algorithms [look here >>>](#)

5.15 What is a Release - how does specification version numbering work?

To meet new market requirements, 3GPP specifications are continually being enhanced with new features. In order to provide developers with a stable platform for implementation while at the same time allowing the addition of new features, the 3GPP uses a system of parallel "releases". For more information [look here >>>](#)

5.16 Where can I find information on the current status of 3GPP specifications?

New versions of many 3GPP specifications are made available shortly after the 3GPP TSG plenary meetings which take place four times a year (March, June, September and December). In order to identify what the current version is or and how to find information about older versions of specifications [look here >>>](#).

5.17 What is the system for numbering specifications? Which specifications contain information on specific topics ?

All 3G and GSM specifications have a 3GPP specification number consisting of 4 or 5 digits. (e.g. 09.02 or 29.002). For a more complete description and examples [look here >>>](#)

Technical Specification Group/Working Group**Who are the TSG/WG Officials and Support team and Where can I find their contact details?**

Each TSG/WG has a Chairman, up to two Vice-Chairmen, a secretary and a member of the support team ([officials](#)).

Who are the other members of the TSG/WG?

Active participant lists are maintained by the TSGs. Any member attending a meeting will be added to the TSG/WG active participants list, and may be removed after not attending 3 or more consecutive meetings (see Article 35 of 3GPP Working Procedures).

Where can I find the Terms of Reference for my TSG/WG?

The current Terms of Reference for each TSG/WG appear on the web pages of each TSG/WG.

When did the Officials begin their Term of Office?

The four Technical Specification Groups (TSGs) have elected their 3GPP TSG officials at the Fort Lauderdale (FL) meeting in March.

The meeting reports for each TSG/WG will indicate the election/re-election/resignation of an official. A [complete list of TSG/WG officials](#) is available on the 3GPP web site.

May I become an Official?

The TSG Chairman and Vice Chairmen are elected by the Technical Specification Group from amongst the Individual Member representatives. Each TSG can elect a maximum of two Vice Chairmen. Once elected, these candidates are proposed to the PCG for appointment.

The Working Group Chairman and Vice Chairmen are elected by the Working Group from amongst the Individual Member representatives. Each Working Group can elect a maximum of two Vice Chairmen.

A candidate for TSG or Working Group election shall provide a letter of support from his Organization and nominations may be made up to the point when an election takes place.

The TSG Chairman and Vice-Chairmen shall be appointed by the PCG on the proposal of the TSG.

The Chairman and the Vice-Chairmen shall be appointed for a two year term of office. The Chairman and Vice-Chairmen may be appointed for one further consecutive term. If, at the end of a Chairman or Vice Chairmans second term, no other candidates are available, the Chairman or Vice Chairmen may be appointed for a further term.

Chairman and Vice Chairmen should not be from the same region, Organizational Partner, or from the same group of companies, unless no other candidate is available.

Successive Chairmen should not be from the same Organizational Partner, the same region or from the same group of companies, unless no other candidate is available

Where are my TSG/WGs documents stored?

Each TSG/WG has a specific area allocated on the 3GPP ftp server.

TSG/WG meetings

How do I register for a meeting?

If you are a TSG/WG member you will receive information about forthcoming meetings via the e-mail exploder. This will indicate the path on the ftp server where the invitation and related documents may be found. You may also consult the [Meetings area](#) on the 3GPP Web where the latest invitations of each TSG/WG are stored together with the calendar of meetings.

How do I submit a contribution for a meeting?

Each meeting invitation will contain details of how to register contributions for that meeting and who to send your contributions to.

How do I obtain a document number for my contribution?

Each meeting invitation will contain details of how to register contributions for that meeting and who to send your contributions to.

Where can I download documents for an upcoming meeting?

Each meeting invitation will contain details of where the documents are stored for the meeting. It is advisable for delegates attending a meeting to download the documents available prior to the meeting from the ftp server and onto their personal computers.

Where can I find a temporary document template?

The document template is made available by each TSG/WG in the meeting respective folder on the ftp server.

What happens if I am unable to attend a meeting?

You should contact your chairman and the meeting host indicating when you will be absent.

Work Items and Deliverables

What is my role when my TSG/WGs has to approve a deliverable?

Approval of Technical Specifications and Technical reports by a TSG shall normally be by consensus.

Where consensus cannot be achieved in the TSG a vote may be taken.

When Technical Specifications and Technical Reports become sufficiently stable, they shall be put under change control of the relevant TSG. The further elaboration of these Technical Specifications and Technical Reports shall be achieved by Change Requests (CRs) to be approved by the TSG.

What are the different types of deliverables?

3GPP shall prepare, approve and maintain documents known as Technical Specifications and Technical Reports. Such documents shall be drawn up by the TSGs and shall, following approval at that level, be submitted to the participating Organizational Partners to be submitted to their respective standardization processes.

Can I write an 3GPP Document myself?

Why not?! If you wish to propose a deliverable then bring it to the attention of your chairman and the other members of the TSG/WG in order to discuss the subject.

Each proposed new Work Item shall be supported by at least four Individual Members, and their names shall be recorded in the Work Item definition prepared for the TSG approval. One or more persons shall be named as Rapporteur for the proposed Work Item, and the Rapporteur shall act as the prime contact point on technical matters and for information on progress throughout the drafting phases. The supporting Individual Members are expected to contribute to and progress the new work item throughout the drafting phases.

In addition to the above, TSGs shall approve new Work Items, giving all essential parameters. The proposal shall be entered into the 3GPP work programme, clearly marked as a new entry, for which a unique reference identity shall be allocated.

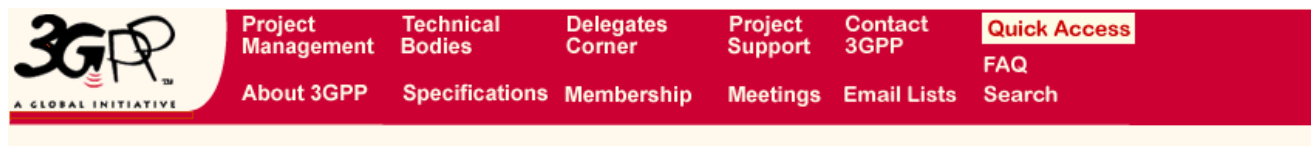
Do I and my company have to support my TSG/WGs Work Items?

Neither you or your company is obliged to support the work items of your TSG/WG, however it is normal that if you and your company are supporting members of a Work Item that you be in agreement with their work and will normally support the production of the related deliverable.

Last updated: 28th July 2003

APPENDIX 12

The Wayback Machine - <https://web.archive.org/web/20030801071028/http://www.3gpp.org/80/specs/specs.htm>



3GPP Specifications Home Page

[Spec download](#) | [Titles and spec numbers](#) | [Current version](#) | [Releases](#) | [Numbering scheme](#) | [Change Requests](#)
[Published specifications](#) | [Historical information](#) | [Work plan](#) | [TSG Working methods](#) | [Drafting rules](#) | [Delegates corner](#) | [ASN.1](#)

Quick link to the **specifications file server area** (<http>) for those who know where they are going!

To find a particular spec quickly, **go here** and click on the links in the spec-series in the table.

The term "**3GPP specification**" covers all **GSM** (including **GPRS** and **EDGE**) and **W-CDMA** specifications. The following terms are also used to describe networks using the 3G specifications: **UTRAN**, **UMTS** (in Europe) and **FOMA** (in Japan). Revised versions of many of these specifications are produced up to four times a year following the quarterly TSG plenary meetings. See the table below which gives links to lists of specifications arising from each plenary TSG meeting since the freezing of [Release 1999](#). The month of the meeting and the meeting number are shown in each case.

Following each TSG SA plenary meeting, a complete set of specifications is produced. This set includes not only the new specifications generated at that meeting, but also the latest versions of each specification that was not changed at that meeting. i.e. each directory holds a complete set of specifications. Each set has an associated **status list** as detailed in the table below. Each set (and corresponding status list) includes the specs arising from the TSG GERAN meetings held since the preceding SA meeting. (GERAN meets asynchronously from the other TSGs.)

The **Status List** (ZIPped RTF or Word format) summarizes the current version number for every release of every 3GPP specification following each TSG plenary meeting. Also listed for each specifications are:

- the 3GPP working group and rapporteur responsible for the specification
- the Project Manager in MCC (Mobile Competence Centre) responsible for the specification
- the meeting at which it was, or is expected to be, "frozen" (i.e. the point after which only corrections are allowed)

Full details of the Specifications, their history and current status can be found in the [3GPP Specifications Status database](#).

year-month	remark	latest status	specs directory	TSG CN	TSG RAN	TSG T	TSG SA	TSG GERAN
2003-06			ftp://ftp.3gpp.org/specs/2003-06-geran-mtg-15-delta					15th meeting
2003-06		StatusList	ftp://ftp.3gpp.org/specs/2003-06/	20th meeting	20th meeting	20th meeting	20th meeting	
2003-04			ftp://ftp.3gpp.org/specs/2003-04-geran-mtg-14-delta					14th meeting
2003-02		StatusList	ftp://ftp.3gpp.org/specs/2003-03/	19th meeting	19th meeting	19th meeting	19th meeting	
2003-02			ftp://ftp.3gpp.org/specs/2003-02-geran-mtg-13-delta					13th meeting
2002-11 2002-12		StatusList	ftp://ftp.3gpp.org/specs/2002-12/	18th meeting	18th meeting	18th meeting	18th meeting	12th meeting
2002-09		StatusList	ftp://ftp.3gpp.org/specs/2002-09/	17th meeting	17th meeting	17th meeting	17th meeting	11th meeting
2002-06			ftp://ftp.3gpp.org/specs/2002-06-geran-mtg-10-delta/					10th meeting
2002-06	Rel-5 features content functionally frozen (remainder)	StatusList	ftp://ftp.3gpp.org/specs/2002-06/	16th meeting	16th meeting	16th meeting	16th meeting	
2002-04			ftp://ftp.3gpp.org/specs/2002-04-geran-mtg-09-delta/					9th meeting
2002-03	Rel-5 features content functionally frozen (part)	StatusList	ftp://ftp.3gpp.org/specs/2002-03/	15th meeting	15th meeting	15th meeting	15th meeting	
2002-02								8th meeting
2001-12		StatusList	ftp://ftp.3gpp.org/specs/2001-12/	14th meeting	14th meeting	14th meeting	14th meeting	
2001-11								7th meeting
2001-09		StatusList	ftp://ftp.3gpp.org/specs/2001-09/	13th meeting	13th meeting	13th meeting	13th meeting	
2001-08								6th meeting
2001-06		StatusList	ftp://ftp.3gpp.org/specs/2001-06/	12th meeting	12th meeting	12th meeting	12th meeting	5th meeting

2001-06								4th meeting
2001-03	Rel-4 features content functionally frozen	StatusList	ftp://ftp.3gpp.org/specs/2001-03/	11th meeting	11th meeting	11th meeting	11th meeting	
2001-01								3rd meeting
2000-12		StatusList	ftp://ftp.3gpp.org/specs/2000-12/	10th meeting	10th meeting	10th meeting	10th meeting	
2000-11								2nd meeting
2000-09		StatusList	ftp://ftp.3gpp.org/specs/2000-09/	9th meeting	9th meeting	9th meeting	9th meeting	1st meeting
2000-06		StatusList	ftp://ftp.3gpp.org/specs/2000-06/	8th meeting	8th meeting	8th meeting	8th meeting	
2000-03				7th meeting	7th meeting	7th meeting	7th meeting	
1999-12	R99 features content functionally frozen			6th meeting	6th meeting	6th meeting	6th meeting	

If you plan to download a large number of specifications and are using MS Explorer 4.0 or earlier, it may be worthwhile acquiring an FTP client software tool such as:

- **lpswitch WS_FTP Pro®** : This general purpose file transfer program simplifies the process of downloading large numbers of files from an FTP site.
- **FTPSync®**: This tool allow the user to specify a directory on their local disk and synchronize it with a directory on an FTP site.

Latest version

The **latest versions** of the specifications can always be found here:

<ftp://ftp.3gpp.org/specs/latest/>.

Particular version

All older versions of specifications (where available) are stored in the archive subdirectory. All versions of all releases of a given specification are placed directly under the name of the specification.

<ftp://ftp.3gpp.org/specs/archive/>

Title or subject

If you only know the **title** or the subject, but not the specification number, the best place to start looking is the [complete list](#) of all 3GPP specification numbers and titles. A high level description of each *series* (of specification e.g. the 25.- series) is available in on the page called "[Releases and the numbering scheme for 3G specifications](#)". Once you have identified possible specification numbers, go the "Latest Version" directory mentioned above.

Specs related to a particular working group

Each 3GPP TSG Working Group has a home page, which lists the specifications under their responsibility. Follow the links from [here....](#)

Official versions published by recognized Standards Development Organizations

The 3GPP Technical Specifications (and Technical Reports) which are publicly available from this site have, in themselves, no legal standing. They only become "official" when transposed into corresponding publications of the Partner Organizations. If you are looking for the **official versions**, see the [official publications](#) page.

Further information:

- **Work plan.** The 3GPP [Work plan](#) describes the new functionality currently being elaborated in the TSG working groups. It also indicates the expected timescales for their finalization.
- **Numbering scheme.** What is the system for numbering specifications? Which specifications contain information on? Find out [here](#).
- **Releases (and phases, stages).** An introduction to the 3GPP mechanism for specifications releases can be found [here](#).
- **Historical information.** If you need to look for old / superseded specifications or change requests, start [here](#).
- **TSG working methods.** The procedures for creating, enhancing and maintaining specifications are described in [TR 21.900](#). A presentation outlining the release and change request process can be found [here](#).
- **3GPP Drafting rules.** The rules for drafting specifications are described in [TR 21.801](#).
- **Change Requests (CRs).** The change request mechanism is used when a correction or new functionality is required for an existing specification. [Here](#) you can find all information related to change requests.

last updated

2003-07-02: typo corrected

2003-06-26: Further GERAN#15 info added; minor cosmetic improvements to text; hyperlinks for identified specs are now to their info page, not their archive storage directory

2003-06-23 - CN, RAN, T, SA #20 info and preliminary GERAN#15 info added

2003-04-25 - GERAN#14 info added

2003-04-24 - quick link to spec series table page added near top; from this it is possible to get to lists of specs in each series, and thence to details of the individual specs.

2003-03-25 - table entry for TSGs#19 added

2003-02-24 - table entry for GERAN#13 added

2003-01-13 - link to CR trends page added.

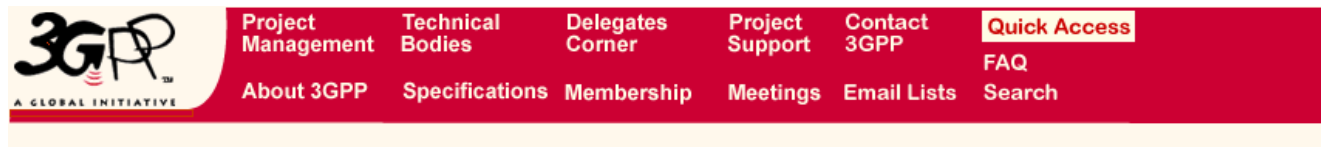
10/7/24, 2:13 PM

3GPP Specifications Home Page

2002-12-15 - TSGs#18 (GERAN#12) line added; quick link to specs file at top of page added.
2002-10-18 - reference to 3GPP Specifications Status database added.

APPENDIX 13

The Wayback Machine - <https://web.archive.org/web/20030801071011/http://www.3gpp.org:80/specs/numbering.htm>



3GPP Specifications - Numbering scheme

[Spec download](#) | [Titles and spec numbers](#) | [Current version](#) | [Releases](#) | [Numbering scheme](#) | [Change Requests](#)
[Published specifications](#) | [Historical information](#) | [Work plan](#) | [TSG Working methods](#) | [Drafting rules](#) | [Delegates corner](#) | [ASN.1](#)

All 3G and GSM specifications have a 3GPP specification number consisting of 4 or 5 digits. (e.g. 09.02 or 29.002). The first two digits define the series as listed in the table below. They are followed by 2 further digits for the 01 to 13 series or 3 further digits for the 21 to 55 series. The term "3G" means a 3GPP system using a UTRAN radio access network; the term "GSM" means a 3GPP system using a GERAN radio access network. (Thus "GSM" includes GPRS and EDGE features.)

The full title, specification number and latest version number for every specification can be found in the status list (see [main specs page](#)) and more information about terms such as R99 and Rel-4 can be found on the [Releases and phases](#) page.

A specification in the 21 to 35 series may apply either to 3G only or to GSM and 3G. A clue lies in the third digit, where a "0" indicates that it applies to both systems. For example, 29.002 applies to 3G and GSM systems whereas 25.101 and 25.201 apply only to 3G. Most specs in all other series apply only to GSM systems. However, as the spec numbering space has been used up, this guide is more frequently broken, and it is necessary to examine the information page for each spec (see the table below) or to check the lists in 01.01 / 41.101 (GSM) and 21.101 (3G) for the definitive specification sets for each system and each Release.

Subject of specification series	3G/GSM R99 and later	GSM only (Rel-4 and later)	GSM only (before Rel-4)
General information (<i>long defunct</i>)			00 series
Requirements	21 series	41 series	01 series
Service aspects ("stage 1")	22 series	42 series	02 series
Technical realization ("stage 2")	23 series	43 series	03 series
Signalling protocols ("stage 3") - user equipment to network	24 series	44 series	04 series
Radio aspects	25 series	45 series	05 series
CODECs	26 series	46 series	06 series
Data	27 series	47 series (none exists)	07 series
Signalling protocols ("stage 3") -(RSS-CN	28 series	48 series	08 series
Signalling protocols ("stage 3") - intra-fixed-network	29 series	49 series	09 series
Programme management	30 series	50 series	10 series
User Identity Module (SIM / USIM)	31 series	51 series	11 series
O&M	32 series	52 series	12 series
Access requirements and test specifications		13 series (1)	13 series (1)
Security aspects	33 series	(2)	(2)
SIM and test specifications	34 series	(2)	11 series
Security algorithms (3)	35 series	55 series	(4)

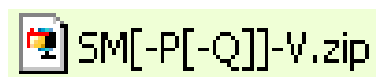
Note (1): The 13 series GSM specifications relate to European-Union-specific regulatory standards. On the closure of ETSI TC SMG, responsibility for these specifications was transferred to [ETSI TC MSG](#), (Mobile Specification Group) and they do not appear on the 3GPP file server.

Note (2): The specification of these aspects are spread throughout several series.

Note (3): Algorithms may be subject to export licencing conditions. See the [relevant 3GPP page](#). See also the [relevant ETSI pages](#).

Note (4): The original GSM algorithms are not published and are controlled by the [GSM Association](#).

The 3GPP Specifications are stored on the file server as zipped MS-Word files. The filenames have the following structure:



where the character fields have the following significance ...

S = series number - 2 characters (see the table above)
M = mantissa (the part of the spec number after the series number) - 2 or 3 characters (see above)
P = optional part number - 1 or 2 digits if present
Q = optional sub-part number - 1 or 2 digits if present
V = version number, without separating dots - 3 digits

So for example:

21900-320.zip is 3GPP TR 21.900 version 3.2.0

0408-6g0.zip is 3GPP TS 04.08 version 6.16.0

32111-4-410 is 3GPP TS 32.111 part 4 version 4.1.0

29998-04-1-100 is 3GPP TS 29.998 part 4 sub-part 1 version 1.0.0

Related Information. Further information about the Specification numbering scheme, 3GPP releases, phases, file naming conventions, and other related information can be found in [3GPP TR 21.900](#) "*Technical Specification Group working methods*".

last updated

2003-07-10: minor editorial clarifications

2003-06-27: 00.-series added to table; URLs to spec lists made relative rather than absolute (to aid site mirroring)

2003-09-26: minor corrections and clarifications

2003-04-24: links to specs series indexes added

2002-10-10: mention of 55 series specs added, plus notes 3 & 4.

APPENDIX 14

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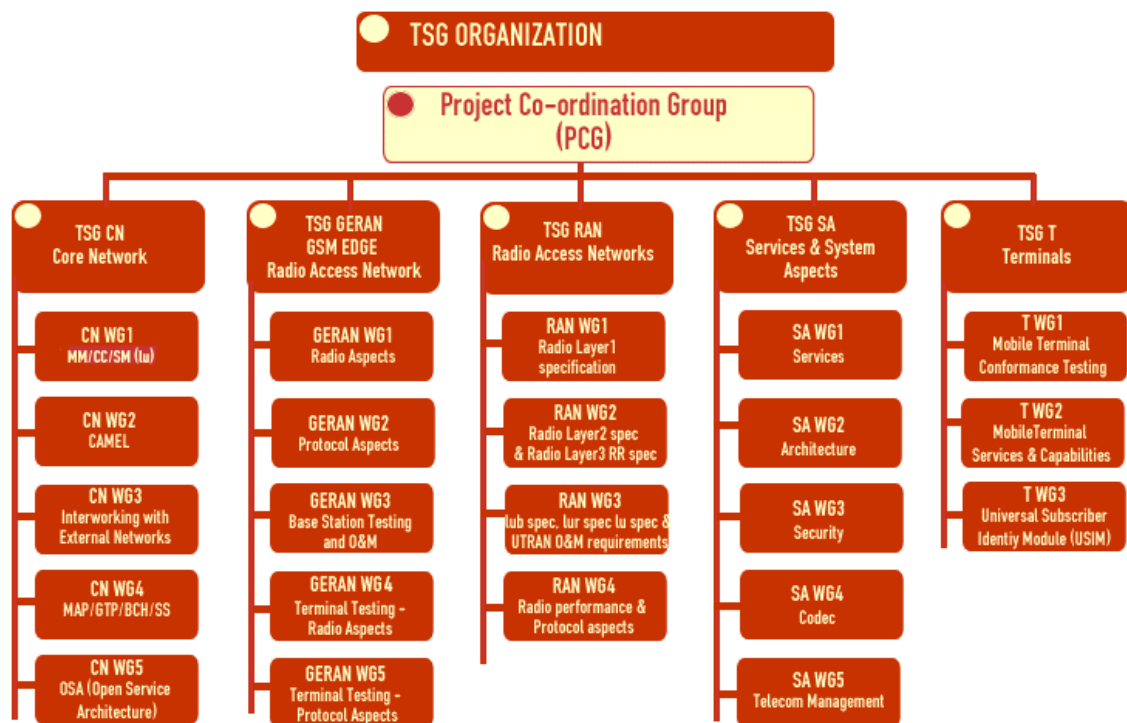
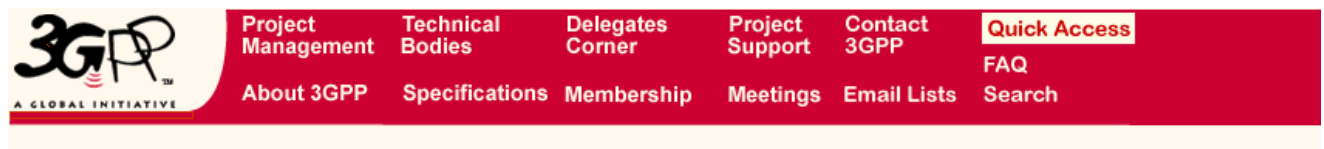
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APPENDIX 15

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last updated 14th January 2002

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TSG RAN WG1 (Radio layer 1)

Overview:

TSG RAN WG1 works on the physical layer of the radio Interface for UE and UTRAN. This includes the specification of the physical channel structures, the mapping of transport channels to physical channels, spreading, modulation, physical layer multiplexing, channel coding and error detection. The physical layer procedures and the measurements provided to upper layers are specified in WG1 as well.

****UPDATED** Election Results **UPDATED****

Useful links and information			
Terms of Reference	Next meeting	Meeting calendar	Email exploder lists
Work items	Specifications	Documents area	Contact RAN1 @

List of officials			
Position	Name / Telephone	Company / Partner	Elected on
Chairman	Dirk Gerstenberger +46 8 585 33901	Ericsson / ETSI	2003-02-18
Vice-Chairman	Masafumi Usuda +81 468-40-3190	NTT DoCoMo / ARIB	2003-02-18
Vice-Chairman	Juho Lee +82 31 279 5115	Samsung Electronics / TTA	2003-02-18
Secretary	Tsukasa SASAKI +33 4 92 94 42 06	3GPP Support	n/a

Last update: 27th February 2003

APPENDIX 17

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[\[To Parent Directory\]](#)

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www.3gpp.org - /ftp/Specs/archive/

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www.3gpp.org - /ftp/Specs/archive/21_series/

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APPENDIX 22

Technical Specification Group Services and System Aspects

Report

Meeting #20, Hämeenlinna, Finland

Version 1.0.0

09-12 June 2003

Source: Secretary TSG SA (M. Pope, MCC)
Title: Report of meeting #20 - Version 1.0.0
Status: Approved at TSG SA #21

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1 Opening of the meeting

The Chairman opened the meeting and welcomed delegates to Hämeenlinna, Finland. The Hosts, Nokia welcomed everybody to the meeting venue and provided information about the domestic arrangements for the meeting.

2 Approval of the Agenda

[TD SP-030196](#) Draft Agenda for TSG SA meeting #20. The TSG SA Chairman introduced the draft agenda which was **approved** without change.

The TSG SA Chairman reminded delegates of their Member Company responsibilities regarding the 3GPP IPR Policy.

3 Approval of the meeting report of TSG SA Meeting #19

[TD SP-030197](#) Draft Report of TSG SA meeting #19, version 0.0.5. This showed changes made from the version distributed for comment and had not received any major changes. The report was then **approved**.

4 Items for immediate consideration

There were no specific contributions under this agenda item.

5 Reports from TSG SA ad-hoc meetings and workshops

There were no specific contributions under this agenda item.

6 Letters / Reports from other groups

6.1 TSG T, TSG CN, TSG RAN, TSG GERAN

[TD SP-030323](#) Draft Summary minutes, decisions and actions from 3GPP PCG Meeting#10, Ottawa, 2 May 2003. This was introduced by the TSG SA Chairman (see report below [TD SP-030324](#)).

[TD SP-030324](#) Draft summary minutes, decisions and actions from 3GPP Organizational Partners Meeting#9, Ottawa, 2 May 2002. This was introduced by the TSG SA Chairman.

Budget and cost-saving issues were of the most significance to TSG SA discussed in the meeting. It was reported that MCC Support could only be guaranteed for up to one WG meeting between TSG Plenary meetings (i.e. each 3 months at present). This is both due to the travel costs and the human resources needed to support the current large number of meetings, which often run in parallel. It was clarified that WGs could hold more meetings between TSG Plenary meetings, but these extra meetings may not be supported by MCC. It would be possible to request exceptions from the PCG in order to efficiently progress important topics.

It was also reported that costs should be taken into account when choosing meeting venues, and that meeting room requests are kept reasonable and necessary for parallel sessions, etc.

Concerning joint sessions and co-located meetings with 3GPP2 groups, it was stressed that the requirement to inform the 3GPP TSG of the intention for such a meeting for co-ordination purposes. It was stressed that this was **not** intended to prevent such co-ordinating joint meetings from taking place. It was also clarified that the WG leadership should ideally ask the WG whether such meetings were necessary and acceptable, but the Leadership may need to make the decision in some cases, e.g. due to urgency of the decision.

Delegates were invited to read the reports of the PCG and OP meetings.

The Reports were then **noted**.

6.2 Partners and their bodies

There were no specific contributions under this agenda item.

6.3 Others

There were no specific contributions under this agenda item.

7 Reports from TSG SA Working Groups

7.1 TSG SA WG1

7.1.1 Report from TSG SA WG1 and review of progress

[TD SP-030237](#) Status report of SA WG1 to SA #19. The Status report from SA WG1 was presented by the SA WG1 Chairman, using the slides provided in [TD SP-030236](#).

Slide 20 (MBMS): MBMS requirements definition. It was commented that SA WG1 requirements work on Codecs is an SA WG4 issue and SA WG4 should postpone work on MBMS Codecs until the SA WG1 requirements are defined. The TSG RAN Chairman also reported that there were potential RAN issues with the final SA WG1 requirements, as this could impact the extra work needed in TSG RAN. The TSG GERAN Chairman also reported that the final requirements specification would probably require some *design guidelines* in order to design or choose an appropriate bearer. It was noted that there is no SA WG1 Work Item to define the MBMS Requirements and the need for this should be discussed between SA WG1 and SA WG4.

Slide 20 (OSA): The TSG CN Chairman reported that no progress had been made in 6 months for the following features: Generic Network interface function, Information transfer feature and Information services feature. It can, therefore, be concluded that there is no interest in this features from the OSA community. In line with the SA discussions in Biarritz, after 6 months monitoring showing no interest, these requirements have been removed from the OSA stage 1 specification.

Slide 14: It was clarified that SA WG1 had filtered the GSA requirements for items relevant to their work.

Slide 17: It was clarified that no agreement could be achieved at SA WG1 on speech reconstruction and so they had decided to bring the issue to TSG SA (the requirement, if agreed, may be needed to be used as part of the Codec Selection). The CR to 22.243 [TD SP-030261](#) was considered in relation to this. There was objection to the content of this CR as it was argued that this imposed a large overhead in terms of memory and processing power on the Terminal, which has to reconstruct the speech from the output of the Codec. It was also recognised that this was not a Category "F" CR as it added a new requirement. It was commented that adding new requirements at this stage changes the goals and could have an impact in the timing of Rel-6. **SA WG4 were asked to assess the Codecs ability to reconstruct speech.**

The principle of the requirement was accepted, and SA WG4 were asked to take it into account when reviewing Codecs, but the detailed wording of the CR needed further work. The CR was therefore **rejected** and SA WG1 were asked to review it taking into account the comments received.

Slide 19: SA WG1 requested guidance for the progress towards approval of TR 22.800, as SA WG1 could not agree whether the structure is adequate for the TR. SA WG1 have made no progress on agreeing the content of the TR for 6 months and the Chairman asked TSG SA whether the current structure would be acceptable for the approval of the TR as guidelines and information on the Scenarios.

It was **agreed** that, considering that this is an internal 3GPP Report and that SA WG1 could not progress the content any further, **the current structure and conclusions of the Report was acceptable to TSG SA and it should be editorially updated by SA WG1 and provided at the next TSG SA meeting for approval.** TSG SA do not expect any further maintenance or technical work on this TR. It was intended that after this, the Work Item would then be closed.

It was **noted** that if a Work Item is proposed to TSG SA as a result of the information given in TR 22.800, then the support received for the work would provide a guideline for the likelihood of the work becoming completed and approved.

The SA WG1 Chairman was thanked for his report, which was then **noted**.

7.1.2 Questions for advice from TSG SA WG1

[TD SP-030199](#) LS (from SA WG1) on SA WG2 LS on IP session control API. This LS was provided for information and was **noted**.

[TD SP-030200](#) LS (from SA WG1) on terminal MMS capability discovery prior MM notification. This LS was provided for information and was **noted**.

[TD SP-030201](#) LS from SA WG1: Clarification on MNP for Pre-paid Subscribers. This LS was related to the CRs from CN WG4 in [TD SP-030263](#). The action had therefore been fulfilled by TSG SA and the LS was then **noted**.

7.1.3 Approval of contributions from TSG SA WG1

CRs:

[TD SP-030261](#) CR to 22.243 on reconstructed speech (Rel-6). This was discussed under agenda item 7.1.1 as part of the speech reconstruction requirements discussion and was **rejected** pending further discussion in SA WG1 taking comments into account and SA WG4 Codec Evaluation.

[TD SP-030238](#) CRs to 22.038 on Cleanup of USAT requirements (R99/Rel4/5). These CRs were **approved**.

[TD SP-030239](#) CR to 22.101 on Emergency calls in data only network (R99/Rel4/5). This CR was **approved**.

TD SP-030240 CRs to 21.905 on Update to vocabulary document (Rel-4/5/6). crs

TD SP-030241 CRs to 22.042 on Alignment of NITZ with implementation (Rel-4/5). These CRs were **approved**.

TD SP-030242 CRs to 22.066 on Charging requirements in an NMP environment (Rel-5/6). CN WG4 provided two revised CRs in TD SP-030263 which were reviewed. 22.066CR005r1 and CR006r1 were **approved**.

TD SP-030243 CRs to 22.115 on Charging requirements in an NMP environment (Rel-5/6). CN WG4 provided two revised CRs in TD SP-030263 which were reviewed. 22.115 CR 012r1 and CR 013r1 were **approved**.

TD SP-030244 CR to 22.101 on Tidy-up of Subscriber Identification requirements (Rel-5/6). The Clause numbering in this CR was incorrect and could lead to wrong implementation. The document was therefore revised in TD SP-030351 which was **approved**.

TD SP-030245 CRs to 22.115 on SMS on GPRS and GSM, charging aspect (Rel-5). These CRs were **approved**.

TD SP-030246 CR to 22.140 on MMS support on the USIM (Rel-5/6). A related LS had been received from T WG2 on this CR in TD SP-030208, which was considered. T WG2 requested the rejection of the Rel-6 CR. SA WG1 considered that if this was not included in Rel-5 then there was no advantage of including this in Rel-6. The CRs in TD SP-030246 were then **rejected**.

TD SP-030247 CR to 21.905 on 3GPP Generic User Profile (Rel-6). This CR was **approved**.

TD SP-030248 CR to 22.011 on Network selection in shared networks (Rel-6). This CR was **approved**.

TD SP-030327 CRs to TS 22.011 and 22.041 on WLAN (Rel-6). These CRs were **approved**.

TD SP-030250 CRs to 22.038 to (U)SIM toolkit commands for MMS (Rel-6). It was noted that the second part of the Reason for change was included in error. The CR allows the MM Context to be sent directly by the ME. It was requested that the use-cases should be included in the reasons for change to help the understanding in future. It was decided that this should be re-considered along with the related (withdrawn) CR in TD SP-030246 which provided the USIM storage used by this CR. The CR was revised in TD SP-030333 which was further discussed and it was agreed that the last part of the second sentence on MMS Storage should be removed. The CR was further updated in TD SP-030355 which was **approved**.

TD SP-030251 CR to 22.067 on Priority Service Alignment (Rel-6). This CR was **approved** as a Category "F" CR.

TD SP-030252 CRs to 22.071 on various subjects (Rel-6). These CRs were **approved**.

TD SP-030253 CRs to 22.101 on Emergency Call requirements (Rel-6). It was noted that there were liaisons ongoing between CN WG1 and SA WG1 and it was agreed that these CRs should be **postponed** to the next meeting and reviewed taking into account the agreements reached. **Delegates were asked to provide constructive input to complete these CRs.**

TD SP-030254 CR to 22.105 on Service Based Local Policy Requirements (Rel-6). This CR was **approved**.

TD SP-030255 CR to 22.127 on Removal of features from OSA (Rel-6). This CR was **approved**.

TD SP-030256 CRs to 22.140 on Multimedia Messaging (Rel-6). These CRs were **approved**.

TD SP-030257 CRs to 22.140 on Multimedia Messaging from email approval (Rel-6). These CRs were **approved**.

TD SP-030259 CRs to 22.228 on IMS (Rel-6). These CRs were **approved**.

TD SP-030260 CR to 22.243 on Speech recognition framework for automated voice services (Rel-6). These CRs were **approved**.

TD SP-030322 CR to 22.071 on Routing of Emergency Calls based on Geographic Coordinates. It was **confirmed** that the version number for the CR was 6.3.0, as on the cover sheet and not in the Page headers. This CR was **approved**.

7.2 TSG SA WG2

7.2.1 Report from TSG SA WG2 and review of progress

TD SP-030296 SA WG2 Status Report to TSG SA #20. The Status report from SA WG2 was presented by the SA WG2 Chairman.

Slide 22: It was clarified that there is already work ongoing on IPv6 in IETF and SA WG2 have reviewed the drafts and are satisfied with the direction of the architecture work. 3GPP members are encouraged to progress the work in the IETF in order to speed up the work.

The SA WG2 Chairman was thanked for his report, which was then **noted**.

TD SP-030325 Concern over SA WG2 CR handling. This was introduced by Motorola and discussed the current practices used by SA WG2 in their handling of CRs and the extensive use of e-mail approval with a view to improve the work of SA WG2. It provided many instances of errors with the CRs presented to this meeting as an example of the consequences of these procedures.

The TSG RAN Chairman supported this contribution and reported problems in TSG RAN where documents for e-mail approval (e.g. Liaisons to other groups) are not available for the meeting in good time. It was suggested that the documents should be provided to SA WG2 meetings in good time in order to give delegates time to consider them before the meetings. Finalising e-mail approval of inputs just before the TSG Plenary meetings was also considered an unreasonable process. The SA WG2 Chairman agreed to investigate this.

It was also recognised that the large number of clashing CRs was largely due to the large number of meetings being held between TSG Plenary meetings. It was recognised that SA WG2 are performing a lot of work and it was proposed that SA WG2 should not be afraid to inform TSG SA when they cannot complete all the work in the allocated time. In this way some priority could be given to the more important work.

It was agreed that the problems would be considered off-line and the best solution found to provide consistent CRs to the meeting for approval. The contribution was then **noted** and SA WG2 were asked to take this into account in their future working procedures.

A response describing the proposed way forward was provided in **TD SP-030342** (see 7.2.3 CRs below).

7.2.2 Questions for advice from TSG SA WG2

TD SP-030202 LS (from SA WG2) on Review of the Speech Enabled Services part of the 3GPP work plan. This LS was provided for information and was **noted**.

TD SP-030203 LS (from SA WG2) on Specifications not yet under change control, but pertaining to frozen Releases. This LS was provided for information and was **noted**.

TD SP-030204 Reply LS (from SA WG2) on 'Charging Implications of 3GPP System – WLAN Interworking'. This LS was provided for information and was **noted**.

TD SP-030205 Reply LS (from SA WG2) to GERAN LS on impact of 'Early UE handling' (GP#14(03)0928). The reply to this LS was provided in **TD SP-030262** which was considered with this LS. This LS was then **noted**.

TD SP-030262 LS (from GERAN WG2) on Stage 3 work for Early UE handling. This LS was provided for information and was **noted**. The LS will be provided also to the next SA WG2 meeting.

7.2.3 Approval of contributions from TSG SA WG2

CRs:

TD SP-030299 CRs On 23.002 (Network Architecture). These CRs were **approved**.

TD SP-030300 CRs On 23.107 (QoS). These CRs were **approved**.

TD SP-030301 CRs On 23.141 (Presence). These CRs were **approved**. It was **agreed** that 23.141 CR051r1 should be Category "F".

TD SP-030302 CRs On 23.207 (End to end QoS). These CRs were **approved**.

TD SP-030342 Resolved Concerns over SA WG2 CR handling. This was introduced by the SA WG2 Chairman and proposed the following way forward:

TD SP-030297: 18 CRs in the 23.060 pack:

- Approve 447, 448, 449 with the comment that the **headers are incorrect**.
- Approve CR 452 with the comment that the **cover sheet is incorrect**.
- 431r2 and 446 can be approved with the comment that the **headers are incorrect**.
- Approve 446 and agree that the principles in CR442r4 is agreed by TSG SA and **SA WG2 task is just to reword the CR to make it unambiguously implementable**.
- **442r4 is sent back to SA WG2 according to previous comment**.

- Approve CR435r2 and give an action to **SA WG2 to create the Rel-6 for next SA plenary.**

The revised CRs were presented in **TD SP-030343** which was **approved**.

TD SP-030298 CRs On 23.171 and 23.271(LCS Stage 2):

- Approve the word version and ask **MCC to modify the CR tools to avoid the header problem.**
- Approve 166r2 with the comment that the **cover sheet should have shown impacts on 7.4, 7.5 and 9.1.1.**
- **Merge CR's CR 155R10 and CR 184r3**, new version available in **TD SP-030345**.
- CR 182R3 appears to be a Cat A and not a Cat F as marked. The cover sheet needs to be updated. Analysis: It's not a pure mirror CR, different changes in R5 and R6 i.e. only for GERAN A/Gb in R5. **No change needed.**
- Approve CR176, CR177, CR181r3 and CR182r3 with no changes **(as indicated in the CR's the sentence in 9.1.5.3 from CR176 and CR177 shall be added after the sentence added by CR181r3 and CR182r3 shall be included).**
- Approve 166r2 with the comment that **7.4 is impacted and new section 7.5 is added.**
- **Consequence for CR pack:** CR155r10 and 184r3 merged to CR155r11, new CR available in **TD SP-030345** and new CR pack available in **TD SP-030344** (see below).

TD SP-030345 CR155r11 to 23.271: Addition of Mobile-based change of area event to deferred location request. This CR was **approved**.

TD SP-030344 CRs On 23.171 and 23.271(LCS Stage 2). These CRs were **approved**.

TD SP-030303 CRs On 23.228 (IMS Stage 2):

- Approve CR292r2 with the comment that the **cover sheet version is wrong.**
- Approve CR 317r1 and CR318r2 with the comment that **5.2.2.3, 5.2.2.4 and 5.2.2.5 are not impacted.**
- Approve CR 311r1 and CR319 with the comment that the **header is incorrect.**
- Approve CR 297r3 with the comment that **5.14.2 and 5.14.3 are missing from cover sheet.**
- **Consequence for the CR pack:** no revision needed **TD SP-030303** can be approved as is, with the comments above noted in the minutes.

TD SP-030303 CRs On 23.228 (IMS Stage 2). These CRs were **approved**.

TD SP-030304 CRs On 23.895 (Early UE handling):

- Approve CR with the comment that the **header is incorrect.**
- **Consequence for the CR pack:** no revision needed **TD SP-030304** can be approved as is, with the comments above noted in the minutes

TD SP-030304 CRs On 23.895 (Early UE handling). These CRs were **approved**.

WIDs:

TD SP-030306 WID for Gq interface specification for Dynamic Policy control enhancements. This WI description was **approved**.

TD SP-030308 Proposed WID on "Bandwidth and Resource savings and Speech enhancements for CS networks". This WI description was **approved under the condition that a rapporteur is provided, T-Mobile volunteered to provide a rapporteur.**

TD SP-030307 Updated Work Item Description: PS domain and IM CN subsystem support for IMS Emergency sessions. This revised WI description was **approved**.

TD SP-030309 Revised WID for IMS Stage-2 Enhancements. This revised WI description was revised to add a CN WG4 cross reference and provided in **TD SP-030337** which was **approved**.

TSs and TRs:

TD SP-030311 TR 23.835 v.1.0.0 for information. This TR was provided for information and was **noted**. Delegates were asked to consider the content of this TR and provide any comments to SA WG2 before it is presented to TSG SA for approval.

[TD SP-030312](#) TS 23.246 v.1.0.0 for information. It was noted that there were many editors notes and "ffs" parts which should be removed as far as possible before presentation for approval to TSG SA. This TS was provided for information and was [noted](#). Delegates were asked to consider the content of this TS and provide any comments to SA WG2 before it is presented to TSG SA for approval.

[TD SP-030313](#) TS 23.234 v.1.10.0 for information. It was noted that Scenario 3 is expected to be agreed and presented in September 2003. This TS was provided for information and was [noted](#). Delegates were asked to consider the content of this TS and provide any comments to SA WG2 before it is presented to TSG SA for approval. SA WG2 were asked to finalise the document and to try to agree on one of the tunnelling options before presentation to TSG SA #21 for approval. If necessary, SA WG2 can ask TSG SA to make a decision on unsolvable issues, if a clear description of the problem and solutions is provided.

[TD SP-030310](#) TS 23.240 v.2.0.0 for approval. This TS was [approved](#) and placed under TSG SA change control as version 6.0.0 (Rel-6).

[TD SP-030314](#) TS 23.195 v.2.0.0 for approval. This document had many dependences upon decisions made in other Groups, some of which had been decided in the week prior to the meeting. [It was clarified that this was intended for Release 5](#). It was decided to discuss the issues off-line in order to try to reduce the number of open issues. The TS was updated off-line and revised in [TD SP-030335](#). This TS was [approved](#) and placed under TSG SA change control as [version 5.0.0 \(Rel-5\)](#). It was [noted](#) that 2 or 3 CRs could be expected to this Release 5 TS in order to finalise it.

7.3 TSG SA WG3

7.3.1 Report from TSG SA WG3 and review of progress

[TD SP-030220](#) SA WG3 Status Report at TSG SA#20. The Status report from SA WG3 was presented by the SA WG3 Chairman. It was reported that the SA WG3 Lawful Interception (LI) Group CRs will be approved by e-mail by SA WG3 after the LI meetings, in order to reduce the delays which can occur due to the different meeting schedules between SA WG3 and the LI Group. Only CRs which are not agreed by e-mail will be forwarded to the SA WG3 meetings for consideration.

The SA WG3 Chairman reported the planned meeting of SA WG3 with 3GPP2 Security Group in San Francisco in July 2003, where a [joint session](#) was planned between the two groups to discuss common security issues. TSG SA were asked to endorse the joint session, which will be hosted by 3GPP2. [TSG SA confirmed that the joint session with the 3GPP2 Security Group can take place.](#)

Slide 4: It was clarified that the e-mail procedure for the approval of the LI group CRs was planned as 2 weeks for circulation and comments and 2 weeks for approval of the CRs. Any problems received during the approval period would result in the CR being re-worked in the LI Group and presented to the next SA WG3 meeting.

The SA WG3 Chairman was thanked for his report, which was then [noted](#).

7.3.2 Questions for advice from TSG SA WG3

[TD SP-030206](#) Reply LS (from SA WG3) on proposed deletion of security-related work items in TSG-CN. This was introduced by the SA WG3 Chairman and provided a response to CN WG4 on their questions related to Security work. This was copied to TSG SA for information and was [noted](#).

[TD SP-030207](#) LS (from SA WG3) on clarification of USIM-based access to IMS (To TSG SA, SA WG1, SA WG2 and T WG3). This was introduced by the SA WG3 Chairman and reported that SA WG3 had not determined any security issues with interpretations 2 and 3 (Interpretation 1 was ruled out) and the issue was really a commercial one. SA WG1 reported that they had not yet been dealt with in their meetings. A related LS from T WG3 had been provided in [TD SP-030210](#) and this was considered and discussed. After discussion and consideration [it was agreed that interpretation 3 was the favoured way forward and other groups should check the impacts of this on their specifications](#). The attached CR was then considered (equivalent to the officially submitted CR in [TD SP-030223](#)) and [approved](#).

[TD SP-030210](#) LS from T WG3: Re: LS on clarification of USIM-based access to IMS. This was introduced by T-Mobile and reported that T WG3 had agreed with the SA WG3 view and that there was no preference in T WG3 which of the interpretations to take, although some delegates expressed a preference to interpretation 3 for added flexibility. This was provided for information and the solutions were discussed for clarification and the LS was [noted](#).

7.3.3 Approval of contributions from TSG SA WG3

CRs:

[TD SP-030221](#) 2 CRs to 33.108: Changes to meet international LI Requirements (Rel-5, Rel-6). These CRs were [approved](#).

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[TD SP-030222](#) 1 CR to 33.203: Annex H: Alignment of Authentication algorithm handling with RFC3329 (Rel-5). This CR was **approved**.

[TD SP-030223](#) 1 CR to 33.203: Clarification on USIM-based access to IMS (Rel-5). This was the officially provided version of the conditionally approved CR in [TD SP-030207](#) which was considered as interpretation 3 had been agreed by TSG SA. This CR was reviewed and **approved**.

[TD SP-030224](#) 1 CR to 33.102: Handling of START values stored on a ME for use with a SIM (Rel-5). This CR was **approved**.

[TD SP-030225](#) 2 CRs to 33.210: Use of IPsec ESP with encryption on the Za-interface (Rel-5, Rel-6). This CR was **approved**.

[TD SP-030226](#) 1 CR to 35.206: Addition of missing line to Rijndael S-box listing (Rel-5). This CR was **approved**. *SA WG3 were reminded that this was considered an exceptional change to a Release 5 specification.*

WIDs:

[TD SP-030227](#) WID for Feasibility Study on (U)SIM Security Reuse by Peripheral Devices on Local Interfaces. The SA WG5 Chairman reported that the use of USIM within the scope of UEM but not for Rel-6. It was noted, that this was a feasibility study and not impacting any other features at this time. It was further clarified that the WI was to study the use of the USIM security with a variety of devices and not aimed at any particular technology (e.g. WLAN) although example technologies may be included in the WI. The WID was updated to take into account the objection to the inclusion of Technology-specific examples in the justification and provided in [TD SP-030341](#) which was **approved**. (Note that this WI was classified as a **Feature**).

7.4 TSG SA WG4

7.4.1 Report from TSG SA WG4 and review of progress

[TD SP-030211](#) SA WG4 Status Report at TSG SA meeting #20. The Status report from SA WG4 was presented by the SA WG4 Chairman.

Slide 9: The use of IPv6 and IPv4 for the Characterisation tests was questioned. It was reported that the impact on the tests was expected to be small but that this was required to be included in the Characterisation tests.

Slide 11: It was clarified that the hooks will be included for OMA requirements as this does not have a significant impact on the work and will greatly ease any interworking.

Slide 21: The RAN Chairman asked if the requirements for MBMS / RABS Codec work. It was commented that the Codec design would depend on the packet sizes and this was still to be determined.

The SA WG4 Chairman was thanked for his report, which was then **noted**.

7.4.2 Questions for advice from TSG SA WG4

There were no specific contributions under this agenda item.

7.4.3 Approval of contributions from TSG SA WG4

WIDs:

[SP-030212](#) New Work Item Description on Media Codecs and Formats for IMS Messaging and Presence (Release 6). This WI description was **approved**.

[SP-030213](#) New Work Item Description on Multimedia Broadcast/Multicast Service (MBMS) codecs and protocols (Release 6). There was some concern over the restriction on the data formats proposed by the WID. It was explained that, at least from the GERAN viewpoint, the length of the frames would be important in determining the mechanisms for efficient transport. It was considered that the requirements for the examples would need to be provided by SA WG1 (the mentioned stage 1 requirements did not yet exist). Under the condition that the requirements could be developed by SA WG1 there was generally no objection to the principle of this WID. The WID was updated in [TD SP-030347](#) which was **approved**. *Note that "TIM" asked to be added to the list of Supporting Companies for this WI.*

[SP-030214](#) CRs to TS 26.104 - Correction on codec mode handling during DTX (Release 4 and Release 5). These CRs were **approved**.

SP-030215 CRs to TS 26.111 - Removal of Reference to TS 26.112 (R99, Release 4 and Release 5). It was considered unnecessary to change earlier versions of specifications due to out-of-date references. It was therefore agreed to only change the Rel-5 version (rather than create Rel-6 versions for this change). **Therefore, only 26.111 CR009r1 was approved as Category "F"**. CRs 007r1 and 008r1 were **rejected**.

SP-030216 CR to TS 26.173 - MMS compatible input/output option for fixed-point AMR-WB source code (Release 5). This CR was **approved**.

SP-030217 CRs to TS 26.234 - SMIL supported event types (Rel4 and Rel 5), and Correction to the Content Model of the SMIL Language Profile (Rel 5). It was considered sufficient to correct only the latest version of the specification as the reference could not match to a wrong event and would probably cause an error for investigation in more recent specs. **Therefore, only 26.234 CR058r1 and CR060 were approved as Category "F"**. CR 059 was **rejected**.

SP-030218 CR to TS 26.235 Handling of DTMF in IMS (Release 6). This CR was **approved**.

SP-030219 CR to TS 26.236 - Examples of QoS profiles for conversational multimedia applications (Release 5). This CR was **approved**.

The TSG SA Chairman noted that some Rel-4 CRs had been rejected, while equivalent Rel-5 CRs had been allowed as otherwise they would have created a Rel-6 specification. **He informed WG Chairmen that in order to maintain the stability of Rel-5 that such CRs would be expected to be Rel-6 CRs from the next meeting.**

7.5 TSG SA WG5

7.5.1 Report from TSG SA WG5 and review of progress

TD SP-030265 SA WG5 Status report to TSG SA #20. The Status report from SA WG5 was presented by the SA WG5 Chairman.

Slide 18: The workload of SA WG5 was a cause of concern and it was suggested that another place to put some of the SA WG5 work in order to increase the available resources. SA WG5 and other WGs (particularly CN WGs) were asked to consider if any such work split is possible and practical.

Slide 15: UEM had increased in completeness from 10% to 12% and it was reported that there was currently no Rapporteur for this work. The Protocol work in T WG2 has been stopped and will need to be provided by OMA. The linking in of OAM work to the SA WG5 specifications will probably be the main work in SA WG5 in this area.

The SA WG5 Chairman was thanked for his report, which was then **noted**.

7.5.2 Questions for advice from TSG SA WG5

7.5.3 Approval of contributions from TSG SA WG5

CRs:

SP-030266 Rel-5 CR 32.101 (Telecommunication management; Principles and high level requirements) : Correction and update of Management System Interactions. This CR was **approved**.

SP-030267 2 Rel-4/5 CR 32.235 (Charging data description for application services) : Correction on charging for roaming MMS subscribers - alignment with 22.140, 29.061 and 29.060. It was clarified that this is a correction and that the GTP changes were already in place. These CRs were **approved**.

SP-030268 2 Rel-5 CR 32.200 (Charging principles). These CRs were **approved**.

SP-030269 3 Rel-5 CR 32.205 (Charging data description for the Circuit Switched (CS) domain). These CRs were **approved**.

SP-030270 Rel-5 CR 32.215 (Charging data description for the Packet Switched (PS) domain) - Correction of "Cause Code". This CR was **approved**.

SP-030271 5 Rel-5 CR 32.225 (Charging data description for the IP Multimedia Subsystem (IMS)). IOT was noted that CR019 is subject to discussion in **TD SP-030340**. CRs 016, 017 and 018 were **approved**. After discussion of **TD SP-030340** CR019 was also **approved** and NEC were encouraged to contribute to the next SA WG5 meeting.

TD SP-030340 Issues on ICID for REGISTER (CR attached). NEC proposed the attached in favour of "option A" which supersedes the CR019 in **SP-030271**. This revised CR had not been seen or discussed in SA WG5 as it had not been provided until this TSG SA Meeting. The SA WG5 Chairman reported that the CR019 had been approved without objection in SA WG5 and it was preferred that it is approved and NEC bring their discussion to the next SA WG5 meeting. It was suggested that the ICID definition should be further elaborated within SA WG5 based on the text including CR019. This was agreed and CR019 was **approved** and NEC were asked to take their contribution to the next SA WG5 meeting.

SP-030272 Rel-5 CRs 32.235 (Charging data description for application services) : Corrections of inconsistencies in the "Charge information" field description. These CRs were **approved**.

SP-030316 Rel-5 CR 32111-2 (Fault Management; Part 2: Alarm IRP: Information Service): Correction of imported references table for managedGeneric. This CR was **approved**.

SP-030276 Rel-5 CR 32111-3 (Fault Management; Part 3: Alarm IRP: CORBA solution set): Correction of CORBA type definition in struct "AlarmInformationIdAndSev. This CR was **approved**.

SP-030277 2 Rel-5 CR 32111-4 (Fault Management; Part 4: Alarm IRP: CMIP solution set). These CRs were **approved**.

SP-030278 2 Rel-4/5 CR 32.302 (Configuration Management; Notification IRP: Information Service): Correction of the description of the objectClass and objectInstance parameter of the notification header. These CRs were **approved**.

SP-030279 Rel-5 CR 32.603 (Basic Configuration Management IRP: CORBA solution set): Alignment with Basic CM IRP information service (32.602) - add one exception for the operation createMO. This CR was **approved**.

SP-030280 3 Rel-4/5 CR 32.622 (Configuration Management; Generic network resources IRP: Network Resource Model). These CRs were **approved**.

SP-030281 Rel-5 CR 32.632 (Configuration Management; Core Network Resources IRP: Network Resource Model): CN Network Resource Model changed to the New Methodology - alignment with 32.102. This CR was **approved**.

SP-030282 8 Rel-4/5 CR 32.642/652 (Configuration Management; UTRAN/GERAN network resources IRP: Network Resource Model). These CRs were **approved**.

SP-030283 15 Rel-4/5 CR 32.64x/65x/615 (Configuration Management; UTRAN/GERAN/Bulk CM IRP): Deletion of attribute relationType. These CRs were **approved**.

SP-030284 2 Rel-4/5 CR 32.615 (Configuration Management; Bulk CM IRP: XML file format definition): Correction of Bulk CM session log file XML element "log" declaration. These CRs were **approved**.

SP-030285 Rel-5 CR 32.645 (UTRAN network resources IRP: Bulk CM XML file format definition) : Remove UTRAN NRM XML schema duplicate MOC attribute XML declarations. This CR was **approved**.

SP-030286 Rel-5 CR 32.654 (Configuration Management; GERAN network resources IRP: CMIP solution set): Alignment of object class names to externalGsmCell - Alignment with 32.624. This CR was **approved**.

SP-030287 5 Rel-5 CR 32.615/25/35/45/55 (Configuration Management; Bulk CM/ Generic/ Core/ UTRAN/ GERAN network resources IRP: Bulk CM XML file format definition): Correction of namespace URIs. These CRs were **approved**.

SP-030288 5 Rel-5 CR 32.615/25/35/45/55 (Configuration Management; Bulk CM/ Generic/ Core/ UTRAN/ GERAN network resources IRP: Bulk CM XML file format definition): Generic NRM XML schema dependencies removal. These CRs were **approved**.

SP-030289 Rel-6 CR 32.664 (Configuration Management; Kernel CM IRP: CMIP solution set) : Correction to notifyCMSynchronizationRecommendedInfo. This CR was **approved**.

SP-030291 5 Rel-99/4/5 CR 32104/32.401 (Performance Management; Concept and requirements). It was noted that the mirrored **CRs (32.401 CRs 005, 006 and 008) should be Category "A"**. It was clarified that the Change to Release 1999 in 32.104 CR011 was necessary to ensure compatible implementations and correct information delivered to the OSS. (Note that there was a number change from 32.104 to 32.401 between Release 1999 and Rel-4). These CRs were **approved**.

SP-030292 3 Rel-4/5 CR 32403 (Performance Management; Performance measurements - UMTS and combined UMTS/GSM). These CRs were **approved**.

SP-030293 2 Rel-6 CR 32403 (Performance Management; Performance measurements - UMTS and combined UMTS/GSM). This CR was **approved**.

TSs and TRs:

[SP-030273](#) Rel-6 draft TS 32.297 v1.0.0 (Telecommunication management; Charging Management; Charging interface description to the billing domain). This TS was provided for information and was [noted](#). SA WG5 were asked to specify more clearly which NEs and CDIs are to be used.

[SP-030274](#) Rel-6 draft TR 32.815 v1.0.0 (Telecommunication management; Charging management; On-line Charging System (OCS) architecture study). This TR was provided for information and was [noted](#).

[SP-030290](#) New Rel-6 TS 32.341 (File transfer Integration Reference Point (IRP): Requirements) - for Information. This TS was provided for information and was [noted](#).

[SP-030294](#) Rel-6 32.411-200 (Performance Management (PM) Integration Reference Point (IRP): Requirements). This TS was [approved](#) and placed under TSG SA change control as version 6.0.0 (Rel-6).

[SP-030295](#) Rel-6 32.412-100 (Performance Management (PM) Integration Reference Point (IRP): Information Service). This TS was provided for information and was [noted](#).

7.6 Review of TSG SA work programme

There were no specific contributions under this agenda item.

7.7 Letters to other groups

There were no letters or LSs produced to other groups.

7.8 Other issues

There were no specific contributions under this agenda item.

8 Technical coordination with TSG CN, TSG RAN, TSG T and TSG GERAN**8.1 TSG CN****8.1.1 Report and questions for discussion from TSG CN**

[TD SP-030318](#) Highlights and issues arising from TSG CN Meeting #20. The Status report from TSG CN meeting #20 was presented by the TSG CN Chairman.

IPv6 PCO option for DNS Discovery applied to Rel-99 and Rel-4.

lu UP re-initialisation solution **NOT agreed**:

- Guidance requested from SA4 on assumption that Codecs using same SDU format will be distinguishable;
- Solution at CN#21 by vote if necessary.

No CRs approved for UE work-around for non-implemented pre-R99 network fixes:

- LS from GSMA indicating that goal is to implement fixes by Q3 2003.

Release 5 Status Overview:

CRs approved for Early UE Handling; MNP work partially completed; CN WG2/CN WG3/CN WG4 still investigating whether to use 1 or 2 step HLR interrogation for SCUDIF; Security Association lifetime guidance requested from SA WG3; JAVA code annex to be added to OSA specs; Final push of Rel-5 IMS Cleanup; Major cleanup of MAP (29.002); Release 5 going into "Deep Freeze"; and No exception to Rel-5 Freeze for Out of Service pageability issue

Release 6 (New or Revised Items):

Emergency Call Enhancements IP & PS (NP-030287); Enhancements to Cx and Sh (NP-030229); IMS Stage 3 (NP-030286); Presence (NP-030302); Interworking IMS<->CS (NP-030292); Gq - Dynamic Policy Control – Stage 3 (NP-030198); MBMS (NP-030288)

Release 6 (Miscellaneous):

Agreement of working assumption: Use of IETF protocols over Ut interface (UE Data Manipulation); Many new IETF dependencies added for Rel-6; TR 29.962 Approved: Signalling interworking between the 3GPP profile of the Session Initiation Protocol (SIP) and non-3GPP SIP usage

Questions for Guidance from SA:

Please use descriptive names for WIDs: Enhancement of X doesn't describe much.

Some OSA Rel 6 Dependencies: No activity for 2 CN plenaries for:

Retrieval of Visited Network Capabilities;

Enhanced User Privacy in LCS.

Will be deleted at CN#21 if no activity by September 2003. Risk of slippage of User Data Management Function (awaiting SA WG2 guidance).

CN Feedback on OMA Overlap:

3GPP should have responsibility for the IMS platform.

There is a need to document the technical interfaces between 3GPP and OMA.

It was clarified that this meant that a division of the work is needed, e.g. the work between OMA Groups and CN WGs needs to be clearly defined.

There is a need to document the procedural mechanisms for interworking between 3GPP and OMA. The TSG CN Chairman reported that there were no plans to produce any new specification for OMA. OMA were invited to make use of existing and under development specifications. The documentation was intended to be a formal description of the work split between the two groups.

The TSG CN Chairman that 3GPP2 is continuing to use the 3GPP Core Network Specifications with some necessary modifications. *Interoperability and Commonality* is being concentrated on in order for the specifications to be used in both technologies. The TSG CN Chairman considered that the cooperation was going quite well from the 3GPP viewpoint.

It was clarified by the TSG CN Chairman that roaming was a goal between 3GPP and 3GPP2 systems, but it was unlikely to be achieved in the Rel-6 timescale.

TSG SA thanked the TSG CN Chairman for his report, which was then [noted](#).

[TD SP-030348](#) Draft Report of TSG CN meeting #20. The draft report of the TSG CN meeting was provided for information and was [noted](#).

[TD SP-030319](#) IETF status report. This was introduced by the TSG CN Chairman. Two SIP drafts are still not completed (svcrdisc, 3pcc). 8 drafts are approved but are still awaiting publication. The IETF will continue to try and expedite all outstanding 3GPP Rel-5 dependencies. Significant work in the IETF is required in the areas of Presence and IM (to meet 3GPP efficiency requirements). Significant work also required in the area of Conferencing and possibly Group Management. As a result of analysis done in CN1 have added 47 new Release 6 IETF dependencies The report was discussed and [noted](#).

8.1.2 Information on Release 1999, Release 4, 5 and 6 in TSG CN

[TD SP-030209](#) LS (from CN WG5) on User Data Management architecture requirements. This was introduced by the TSG CN Chairman. This LS was provided for information and was [noted](#).

[TD SP-030320](#) LS (from TSG CN) on MNP. This was introduced by the TSG CN Chairman. This LS was provided for information and was [noted](#).

[TD SP-030263](#) LS (from CN WG4) on Charging Requirements on MNP for Pre-paid Subscribers. This was provided as a revision to SA WG1 CRs (see agenda item 7.1.3). The LS was [noted](#) and the attached CRs reviewed under agenda item 7.1.3.

8.1.3 Information on status and changes to deliverables in TSG CN

There were no specific contributions under this agenda item. General information on the status of TSG CN work was provided in the Draft Report provided in [TD SP-030348](#) under agenda item 8.1.1.

8.2 Report from TSG RAN

8.2.1 Report and questions for discussion from TSG RAN

[TD SP-030338](#) Highlights and issues arising from TSG RAN Meeting #20. The Status report from TSG RAN meeting #20 was presented by the TSG RAN Chairman.

Release 1999 and Release 4:

Review of solutions for early Release 1999 UE

TSG RAN has been able to select a solution based on Bitmap over the Iu Interface. CRs were approved for Rel-5. The information was immediately provided to TSG CN for approval of the corresponding CRs.

UE behaviour when losing coverage

It was lately discovered that, when long duration connections exist towards the Packet side of the core, there is potential discrepancy between the UE state and the vision the Network might have. A joint session was organised during the meeting between TSG CN and TSG RAN.

It was concluded that some discrepancies exist on both side. They were discussed and found independent. TSG CN will revisit the issue as part of Rel-6.

The solution found was to fix the value of timer T317 and PLMN search shall start at least after 30 seconds. With regards to the RRC connection it was agreed that both options are kept, i.e. clear the RRC connections or keeping them because current equipment have implemented both.

In TSG RAN the issue was completed for Release 1999 and Rel-4. A corresponding CR was also supported for Rel-5. There was no agreement to change the current behaviour in Rel-5 but this will be looked after by RAN WG2 and may come back to the next meeting with a different solution.

Another mistake was identified in the specification dealing with integrity handling after SRNS Relocation. The standard was not working and correction have been elaborated and agreed.

There was a proposal to make the SFN-SFN type II measurement optional, on the basis that it is only useful for positioning when used together with IPDL, which is an optional feature in the network. Finally, it was agreed to make it optional for Release 1999 and Rel-4, Rel-5 to be decided. RAN WG2 will have to study the UE capabilities to allow for this option in various RRC states.

Release 5:

Work on Rel-5 is complete: HSDPA has been fully completed. ITU-R ad hoc is now progressing on the update 3 of M.1457. The final version will be provided in September 2003. Table shall contain the approved version after June 2003. RAN WGs were tasked to fill the isolated impact analysis for each of the CR for Rel-5 on each of the CRs provided for approval at the next plenary meeting. The Isolated impact shall provide backward compatibility issues. This also implies that forward compatibility is reviewed when CRs are provided for approval on previous Releases. However impact on ASN.1 coding requires more in depth studies and this will be re-opened at the next meeting.

Release 6:

MBMS has been scrutinised by RAN to check the status of the work: A question was addressed during the meeting on the requirement for application in the MBMS context. IP multicast functionality allow for the establishment of an uplink between the UE and the Service Centre to allow quality monitoring. Currently the solutions under consideration in TSG RAN do not consider the establishment of an uplink. **TSG SA and, more specifically, SA WG1 is requested to confirm whether or not such a requirement is foreseen.** Completion date has been delayed to March 2004. TSG RAN considered the Technical Report from SA WG2 on Galileo applicability for Location Services. TSG RAN was a bit concerned with the inclusion of simulation and requirements that are clearly not part of the mandate of SA WG2. RAN WG2 and RAN WG4 were tasked to provide further comments directly to SA WG2.

The WI on IMEI Trace was reviewed and WI sheet approved. Feasibility Study on Uplink Enhancements for UTRA TDD was agreed but due to the absence of the of the main proponent and the absence of rapporteur the issue will be reviewed at the next meeting. If no rapporteur is appointed this feasibility study will be rejected. AGPS minimum performance specification WI was agreed. It is of high importance that companies involved 3GPP TSG RAN do understand the importance of completion date for WI. This is sometime difficult to get a date that can be met and hence the 3GPP work plan is rather unstable. Extensive discussion took place regarding completion date of MBMS

Slide 5: It was clarified that the SFN-SFN type II measurement is currently mandatory and the proposal to make it optional was still under discussion.

Slide 8: Galileo applicability for Location Services. The TSG RAN Chairman reported that it is not yet determined whether there will be a significant impact on TSG RAN work. Information is sought from SA WG2 on this matter.

Slide 4, bullet 2: UE behaviour when losing coverage. It was clarified that the need for the change in Rel-5 is under discussion in the RAN WGs (mainly RAN WG2) and this will be decided at the next meeting.

Slide 7: MBMS. It was clarified that the impact on RABs and performance issues were under investigation, along with the service requirements. It was stressed by the TSG SA Chairman that it is important to have realistic timescales for the completion of work in order to allow accurate Project planning and decision taking.

TSG SA thanked the TSG RAN Chairman for his report, which was then [noted](#).

8.2.2 Information on Release 1999, Release 4, 5 and 6 status in TSG RAN

[TD SP-030264](#) LS from RAN WG4: Answer to the LS on Antenna Interface Standards Group (AISG). This was introduced by the TSG RAN Chairman and reported that RAN WG4 would incorporate a part of the AIST specifications into the RAN Specifications, asking AISG to verify the acceptability of the text in the 3GPP specifications. This was provided to TSG SA for information and was [noted](#).

8.2.3 Information on status and changes to deliverables in TSG RAN

There were no specific contributions under this agenda item. General information on the status of TSG RAN work was provided in the Draft Report provided in [TD SP-030338](#) under agenda item 8.2.1.

8.3 Report from TSG T

8.3.1 Report and questions for discussion from TSG T

[TD SP-030352](#) Status Report of TSG T meeting #20 to TSG SA. The Status report from TSG T meeting #20 was presented by the TSG T Chairman.

T WG1 - Conformance Testing

RF Test Status:

RRM Test Progress: General TSG T Issues (for detailed specific T WG issues, see [TD SP-030352](#)): On-going effort to evaluate the method of error analysis to determine the test tolerance for Cell Reselection in CELL_FACH test cases in TS 34.121 (8.3.5.1 & 8.3.5.2); Relative worst case scenario and statistical approach both deemed acceptable and further analysis is ongoing; Parameters agreed for single freq test (8.3.5.1); RAN4 guidelines requested for two freq test (8.3.5.2).

Maintenance of R99 Specifications

Follow up database maintained; Updates made in accordance with the latest core specifications.

Total Test Time

TR34.901 v2.0.1 "Test Time Optimisation based on statistical approaches" completed, version 3 approved.

Informal Meeting of RAN4/RF Group (6 – 7 May 03 in Lund, Sweden)

Review of RRM specs (TS 25.133 & TS 34.121); Resulting in 7 CRs to RAN4 meeting.

Status of RF Test Specifications

TS 34.121 Terminal Conformance Specification, Radio Transmission and Reception (FDD):
Rel-99 = 90%

TS 34.122 Terminal Conformance Specification, Radio Transmission and Reception (TDD):
Rel-99 = 91%, Rel-4 = 70%

Status of Signaling Test Specifications:

TS 34.108 Common Test Conditions for User Equipment (UE) Conformance Testing:
Maintenance of default message contents and procedures in line with Mar 03 Core specification;
Introduction and removal of RAB combinations in line with RAN LSS.

TS 34.123-1 UE Conformance Specification, part 1- Conformance Statement:
Updated in line with Mar 03 core specifications; Removal of redundant RAB test cases & state transition test cases considered to have no coverage impact.

TS 34.123-2 UE Conformance Specification, part 2 –

ICS Implementation Statement:

Updated to reflect changes in TS 34.123-1.

TS 34.123-3 UE Conformance Specification, part 3 – Abstract Test Suites (TTCN):
Strategy agreed for conversion to Mar 03 baseline.

T WG2:

MExE: No Progress.

UE Interfaces and Capabilities

GUP (Generic User Profile):

Progress is ongoing but no inputs at TSG-T#20; TS 23.241 REL-6 is expected for information in September, and for TSG-T's approval in December.

UEM (User Equipment Management):

No further work. The protocol spec and the GAP analysis will not be delivered.

SuM:

Joint Meeting with SA5 - SA5 plans to base SuM on GUP

Messaging – MMS:

Minor maintenance work on REL-4 and REL-5. REL-6 summary: Charging and addressing improvements on MM7, Extension of delivery report on MM4, Analysis on MMS applicability to IMS, etc. OTA provisioning and DRM support might be reviewed at T2#22.

REL-6 MMS WID (SP-030354):

The WID MMS Enhancements was revised as requested by TSG-T and SA. TSG-T approved the revised WID; T2 decided that those items which will have no input at T2#22 will be deleted from the WID

3GPP/3GPP2 MMS harmonization:

Informal joint discussion was held during T2#21 in San Diego; No serious disparity identified affecting interoperability between 3GPP/3GPP2 based on TS 23.140 v5.3.0.

Messaging – SMS:

Discussion is needed on FSMSC's (Fixed Network SMSC's) with ETSI AT-F

Messaging – CBS:

A discrepancy between GSM and UMTS on 'Service Area List' has been brought to T2; The outstanding CBS matter on possible discrepancy in 'message length and format' between GSM and UMTS implementations is ongoing.

T WG3: Smart Card Application Aspects:

Handover of responsibility of TS 11.10-4 to T3.

MS conformance specification; Part 4: SIM Application Toolkit conformance specification.

Updated Terms of Reference (TP-030147):

Title of the group was changed from "USIM" to "Smart Card Application Aspects" & Small editorial correction.

Other issues and information in T WG3:

Which SIM/GSM services have to be included on the USIM. To which extent has 2G authentication (as being a SIM service) to be supported by the USIM and what is the impact in case of having a 2G HLR, Rel-5 GERAN terminals and the USIM operating? It was suggested to forward the issue to SA and SA3 in order to investigate more on that scenario and to ask TSG SA and SA WG3 if it was acceptable to only accept 3G authentication in the above mentioned scenario.

Other issues and information in T WG3:

Which SIM/GSM services have to be included on the USIM. To which extent has 2G authentication (as being a SIM service) to be supported by the USIM and what is the impact in case of having a 2G HLR, Rel-5 GERAN terminals and the USIM operating? It was suggested to forward the issue to SA and SA3 in order to investigate more on that scenario and to ask TSG SA and SA WG3 if it was acceptable to only accept 3G authentication in the above mentioned scenario.

Potential overlap of work with OMA on MMS and User Equipment Management (UEM). USIM could benefit the current UEM specifications (e.g. security).

Issues related to toolkit originated emergency calls (regarding SETUP CALL 112 & CALL CONTROL) -> T3 sent LS to SA1 for further guidance.

A contradiction related to the guardtime of the T=0 transport protocol in TS 11.11, TS 51.011 and TS 31.102 was discussed. -> New CRs were approved.

The replacement of "SMS-CB" by "CBS" throughout the T3 specifications was discussed. T3 concluded to postpone the issue and to point out that SMS-CB is used in many T documents

3GPP/OMA Cooperation:

- Documents on overlap of T WG2 work with OMA and interaction with other groups were presented to TSG T.
- Long discussion on future OMA/TSG T cooperation and organization of T WG2 work after Rel-6 freezing date.
- TSG T advised T WG2 to focus on Rel-6 work, and avoid spending time discussing work transfer to OMA.
- TSG T agreed that the time scale for rebalancing of the MMS work is at the freezing point of Rel-6

Use of Automatic Document Numbering (ADN):

- TSG T will evaluate the ADN system
- Up to the management of each T WG to decide its usage

Slide 13: It was clarified that T WG2 had received a LS concerning SMS Messaging for Fixed Network SMSCs and a T WG2 member agreed to liaise with ETSI AF-F on this.

Slide 11: It was reported that the review of the Reports was considered necessary in order to clarify the wording of the CRs on OTA provisioning and DRM support.

Slide 18: The T WG3 Concerns on the **interface** with OMA was not fully known, but there may be an issue of MMS Storage on the USIM, or parameters on Smart Cards, etc.

Slide 18: USIM-only usage in MMS: TSG SA and SA WG3 are to be asked if it was acceptable to only accept 3G authentication. The issue seemed to reduce to the roaming case, where a subscriber with a USIM roams to a 2G network which does not have a 3G AuC. The 3G Authentication is needed for many applications and when roaming to an area which does not allow the 2G security.

It was concluded that currently is a consequence of the USIM that 3G Authentication is required. Any change to this would have to be agreed with SA WG3.

Slide 20: It was clarified that after Release 6, TSG T would need to consider continuing the MMS work in T WG2. Currently TSG T will continue until the completion of Rel-6 and there is no authority within the scope of T WG2 to define anything beyond this. Transfer or continuation of this will be decided a later date.

TSG SA thanked the TSG T Chairman for his report, which was then [noted](#).

[TD SP-030353](#) Draft Report of TSG T meeting #20. The draft report of the TSG T meeting was provided for information and was [noted](#).

[TD SP-030354](#) revised WID on MMS enhancements. This was introduced by the TSG T Secretary. [SA WG1 were asked to consider the WID and provide feedback to T WG2](#). The WID was then [noted](#).

8.3.2 Information on Release 1999, Release 4, 5 and 6 status in TSG T

[TD SP-030208](#) LS (from T WG2) on terminal MMS capability discovery prior MM notification. This was dealt with under agenda item 7.1.3 and was [noted](#).

8.3.3 Information on status and changes to deliverables in TSG T

There were no specific contributions under this agenda item. General information on the status of TSG T work was provided in the Draft Report provided in [TD SP-030352](#) under agenda item 8.3.1.

8.4 Report from TSG GERAN**8.4.1 Report and questions for discussion from TSG GERAN**

[TD SP-030321](#) Report of TSG GERAN Issues to TSG SA. The Report of the activities of TSG GERAN since the last TSG SA meeting was presented by the TSG GERAN Chairman. Highlights are reproduced below:

Rel 99 mobiles in Rel 97 networks:

TSG GERAN have been made aware of problems with R99 mobiles in some pre-R99 networks: Rel 99 mobiles might be rejected due to revision level indication in Classmark. Rel 99 extensions to GPRS protocols might cause network to reject messages. Specifications have in the past been updated to clarify behaviour. An LS was sent to GSMA asking for action to help quick deployment of network "corrections" and a positive answer received – This will be discussed at TSG GERAN#15.

Support for Codecs:

3GPP

TSG SA

TSG GERAN has completed work on 8-PSK channels for AMR and WB-AMR. The final radio performance requirements for 8-PSK channels have now been agreed. A CR to 44.014: "*Defining test loop for AMR-NB*" has been agreed for Rel-5 (can be implemented in mobiles of earlier Release, but first required from Rel-5).

Early UE handling:

'Basic CR' agreed: "*New cause added to Handover Request Reject*" and "*BSC does not attempt further handovers to UMTS*". Old BSS tells new BSS at external handover.

UESBI on the A interface: To discriminate different implementations of measurement reporting. This was left open for the meeting

Release 6:

Multiple TBFs for A/Gb mode: Timers for multiple TBF establishment agreed and Network and MS indications of support

- Broadcast and classmark (1 bit), respectively

Agreed to use legacy messages (with PFI) for assignment/reconfiguration.

Areas to progress:

- Partial relocation: include PFI to keep TBF alive; else drop it
- Clarifications in the relationship between TBF and PFC
- Message definition: many synergies with Iu mode

Open issues:

- Allocation of multiple TBFs on the (P)AGCH
- Multiple TBF Assignment in/for DTM

Making good progress for completion in August.

MBMS:

- One dedicated workshop with focus on radio bearers has been held.
- Estimated throughput for 1% IP-frame error rate for point-to-multipoint ~ 4.5 kbit/s per timeslot.
- (C/I = 9 dB - IP-frame size 500 bytes).
- **Change from ptp to ptm and vice versa during session is causes significant complexity (Limiting this to between sessions would significantly simplify this).**
- Progress on radio bearer key to progress on other parts.

Single Antenna Interference Cancellation (SAIC) feasibility study:

Work progressing - already a significant amount of contribution.

Simulation results based on the current assumptions shows gains in the order of 1 - 2 dB.

Current focus GMSK, CS-domain and synchronous networks.

GSM T frequency bands definition completed.

Testing:

Main focus has been on testing of: Radio & Layer 1; GPRS – Ongoing analysis of needs for update of R97 test cases to align with R99 core specifications; EDGE; Selection/Reselection & Handover (2.5G, 3G); LCS; Tracking of core specification changes; AMR (Narrow band) and DTM (Tests completed).

Work has started on including (align) the test cases which are being used by PCTRB in the US into TS 51.010. New areas of testing:

RLC/MAC (Iu interface CS and PS domain)

The following items have no progress due to lack of input: Enhanced power control; Wideband AMR; AMR 8 PSK HR; Selection/Reselections (GERAN Iu-mode >UTRAN); and Handover (GERAN Iu-mode -> UTRAN PS).

The GERAN Chairman included a chart showing the distribution of documents at the meeting, which showed that 21% of documents were incoming LSs and only 2% LSs out of the meeting. WGs are encouraged to consider each time whether it is really necessary to send the LS and to consider whether all the WGs on the To and CC lists really need to receive the LS.

Slide 21: PTCRB: It was clarified that the type approval and certification of handsets in the USA that is governed by this body. (Note the Presentation included a spelling error for PTCRB). Alignment of the test cases is needed to ensure global interoperability of products.

TSG SA thanked the TSG GERAN Chairman for his report, which was then [noted](#).

8.4.2 Information on Release 1999, Release 4, 5 and 6 status in TSG GERAN

There were no specific contributions under this agenda item. General information on the status of TSG GERAN work was provided in the Presentation and attachments in [TD SP-030321](#) under agenda item 8.4.1.

8.4.3 Information on status and changes to deliverables in TSG GERAN

There were no specific contributions under this agenda item. General information on the status of TSG GERAN work was provided in the Presentation and attachments in [TD SP-030321](#) under agenda item 8.4.1.

8.5 Letters to other groups

8.6 3GPP Work plan

[TD SP-030331](#) 3GPP Work Plan. This was introduced by A. Sultan, MCC Work Plan Manager. This was provided for information and was [noted](#).

[TD SP-030332](#) Presentation of 3GPP Work Plan. This was introduced by A. Sultan, MCC Work Plan Manager and provided the MCC-Compiled summary of the Work Plan Status.

Slide 45: Speech Recognition and Speech Enabled Services. It was questioned how the Stage 2 of this WI can be withdrawn and how can the Stage 3 be completed before the Stage 2. It was reported that the WI was under elaboration in SA WG2 and if contribution is received at their next meeting, this work could be done. It was also reported that the SA WG4 Stage 3 work is independent of the Stage 2 in this case. (The Target date for the non-existent WI was also deleted from the slide).

Slide 24: Due to the Diverse timescales on these items, the TSG RAN Chairman asked for some coordination of the work to allow all to be completed in a timely manner.

Slide 49: Priority Service. It was questioned whether any work is required by other groups on this Feature. It was reported that CN WG4 have done some work and 22.922 is intended for presentation at the next TSG CN meeting and approval in December 2003. CN WG4 were also expecting more guidance from SA WG1 on Priority Service requirements.

Slide 55: Handling of Early UEs. It was clarified that this is a Rel-5 Feature.

Slide 15: HSDPA. It was noted that although this is complete, it may need to be checked for alignment with CN WG1 and SA WG2 (are changes needed for the QoS IE as HSPDA can theoretically operate at speeds higher than the Highest specified QoS Class?). This was considered true for a number of completed items and WGs were allowed to question such things on completed items.

Slide 51: QoS Improvements: It was reported that a WI for Gq I/F had been approved.

Slide 30: LCS Enhancements. It was noted that the 3GPP work had not started but most aspects would be done by CN WG1 and the rest by external bodies.

Slide 63: Support of Conversational Services in A/Gb mode via the PS domain. It was noted that the completion date of April 2004 aligns with the current GERAN Work Plan at GERAN #14 and will be updated by GERAN #15 (end June). The Stage 3 was scheduled for completion in August 2004.

It was noted that the WIDs need regular update when the Schedules of WIs are modified in order to prevent confusion between the WID Dates and Work Plan dates.

Completion dates were estimated as follows (sorted by Completion dates to provide an analysis of content versus freeze date for Rel-6):

Unique ID	Feature	FCD
42005	Rel-6 MExE enhancements - not considered as a feature	19
50130	Seamless support of streaming services in A/Gb mode	20

3GPP

TSG SA

2468	Multiple Input Multiple Output antennas (MIMO)	20
50063	Flexible Layer One for GERAN	20
50401	Addition of frequency bands to GSM	20
32033	Handling of early Ues - Rel-5 feature?	21
34023	AMR-WB extension for high audio quality	21
1800	Rel-6 UICC/USIM enhancements and interworking	21
1216	Improvements of Radio Interface	21+22+23
11032	Interop & Comlity for IMSs using diff "IPconvity Networks"	22
12006	Enhancement of dialled service for CAMEL	22
15010	Rel-6 OSA enhancements	22
9	RAN improvements	22
32045	PS domain and IMS impacts for supporting IMS Emergency calls	22
50541	Uplink TDOA location determination for GSM/GPRS	22
32021	IMS Phase 2	22
2499	Support of Presence Capability	22
34300	Perf charact of def codecs for PS conv multimedia appli	22
34022	Packet Switched Streaming Services Rel-6	22
51101	Single Antenna Receiver Interference Cancellation (SAIC)	22
42009	Multimedia Messaging (MMS) enhancements	22-23
31012	WLAN-UMTS Interworking	22-23
32016	QoS Improvements	22-23
33002	Support for subscriber certificates	22-23
32023	Location Services enhancements 2	23
1571	Security enhancements	23
2544	Multimedia Broadcast and Multicast Service	23
31006	Speech Recognition and Speech Enabled Services	23
31008	Generic User Profile	23
35010	Rel-6 OAM&P	23
35016	Charging Management	23
50500	Support of Conv Services in A/Gb mode via the PS domain	23
2062	Subscription Management	23
1365	Support of Push Services	23-24
31018	Network Sharing	23-24
2	Evolutions of the transport in the UTRAN	NA
32015	Radio optimisation impacts on PS domain architecture	NA
31010	Digital Rights Management	NA
31015	Priority Service	?
31029	Study of Feature Interactions Requirements	?
31030	Study on Privacy Capability	?
33017	Network Domain Security; Authentication Framework (NDS/AF)	?

Conclusions (from the presentation):

- Freezing Rel-6 in December 2003 (TSG#22) will lead to have 19 to 23 features in Rel-6 (18 to 22 without Early UEs).
- Freezing it three months later (TSG#23) will enable to include 9 to 15 additional features.
- There is a tendency to be too optimistic in terms of Foreseen Completion Dates: e.g. more than twelve FCDs have been shifted 3 months later compared to TSG#19, so FCDs are likely to be postponed again as technical work progresses.

There was an extended discussion on the Rel-6 Functionality Freeze date to be chosen. It was generally felt that **December 2003 would be too soon for a reasonable completion of Features. March 2004 appeared to be a more realistic date for inclusion of a useful set of Features.** It was agreed that **March 2004 would be taken as an assumed goal for the Rel-6 Functional Freezing** date and that **no new Requirements should be presented after September 2003** to allow the Stage 2 to be completed in December 2003 and Stage 3 by March 2004, already an ambitious timescale for the work).

The Presentation was updated and provided for information in [TD SP-030358](#) which was then [noted](#).

[TD SP-030336](#) Summary of Rel-5 features. This was introduced by A Sultan (MCC Work Plan Manager). It was provided for information. Delegates were asked to check the document and provide feedback (positive and negative, or modifications) to MCC contacts in order to update the document and improve the format and content. It is intended to produce a similar document for later Releases as they become stable.

The Document was well-received by the meeting delegates and a request for it to become a permanent document in the ab.8yz-series. It was considered better to keep it an unofficial document to avoid the need for CRs for any changes required. MCC were asked to find a suitable way to make this document available (e.g. On the 3GPP Web Site as a link to Overview of Release 5). MCC were asked to consider the production of a Rel-6 document, taking information from Rapporteurs and experts from the Member Companies working on the Features. **Feedback on this Rel-5 document was requested to MCC before end June 2003, in order to stabilise the document in July 2003.**

OMA Interaction Contributions:

The contributions in [TD SP-030198](#), [TD SP-030350](#) and [TD SP-030346](#) were presented in series and discussed together:

[TD SP-030198](#) 3GPP-OMA Overlap Report. This was provided by the TSG T Vice Chairman (Kevin Holley) and provided the results of the request to 3GPP WGs for information of commonality of work in OMS and 3GPP. The report was presented to TSG RAN, TSG CN, and TSG T for discussion. It was intended to produce a conclusion on a way forward during the TSG SA meeting. It proposes that:

3GPP and OMA need to come to a mutual agreement on division of work to help eliminate the above problems. Based on an analysis of the raison d'être for the two fora, the following principle for a work split could be agreed:

- *OMA develops application and service enabler requirements for mobile services, and develops the high level architecture and implementation where the service enabler does not require tight coupling to the 3GPP System Architecture.*
- *3GPP develops 3GPP-specific capabilities to support OMA applications.*
- *3GPP and OMA establish a set of stable technical interfaces between specifications developed by the two organisations to allow each to fully complete its work without the need for too many liaison statements going back and forth.*
- *The existing independent release cycles of the two organisations will need to be factored into the relationship.*

[TD SP-030350](#) Management of OMA Overlaps and Dependencies. This was introduced by Nortel Networks and discussed the contribution in [TD SP-030198](#). It concludes that:

- *3GPP and OMA need to jointly manage areas of overlap and dependencies much more closely than at the moment.*
- *Ideally requirements should be collected in one place which both groups can contribute to if necessary.*
- *Where there 3GPP and OMA deliverables are technically linked or have technical dependencies then these interfaces need to be managed to make sure the two sides align.*
- *The timing of deliverables between 3GPP and OMA needs to be managed.*
- *The compatibility between subsystems developed by the two organisations needs to be managed as each organisation evolves the subsystems under its control.*

[TD SP-030346](#) Managing work items which spread between 3GPP and OMA. This was introduced by Vodafone and discussed the contribution in [TD SP-030198](#). It concludes that:

Vodafone believe that clear and transparent management of WIs is essential. Although the exact arrangements for each work item may well differ, we need to address:

- *The overall management responsibility of the WI*
- *The breakdown of work, considering the responsibility for services requirements (stage 1), stage 2 and stage 3 specifications.*

Before the discussion, the TSG SA Chairman reminded delegates that they should keep in mind that this is a 3GPP meeting an industrial issues should not be considered above the technical goals of 3GPP. Technical work in 3GPP follows the rules of 3GPP and approval of work in 3GPP following consensus of its Members could not take into account the direct wishes of colleagues in OMA even if they were contrary to the OMA wishes.

The following issues were identified by the TSG SA Chairman:

- Lack of visibility

- Understanding the Organisations' Working Methods
- Sharing of the Work Plan
- Identification of dependencies.

There was a suggestion that OMA are asked to provide a list of their Work which has a dependency on 3GPP work. This was considered useful in order that 3GPP could provide expected timescales for the work.

It was suggested that the 3GPP work Items should be marked and identified where they are common with OMA Work. The TSG SA Chairman commented that this was the responsibility of Member Companies belonging to both Groups, not 3GPP as a body. If, e.g. 3GPP wish to create a Stage 3 of a feature and it is suggested that OMA are working on a Stage 1 and 2, then 3GPP would investigate this to ensure the scope and timescales are adequate for our needs.

It was also suggested that 3GPP should not consider changing their processes unless a clear advantage can be identified, this would take time to understand other Bodies processes and evaluate how they would work for 3GPP.

It was also commented that there could be differences in the actual content of similar-looking Work Items between OMA and 3GPP and care should be taken to ensure that both bodies produce the necessary specifications for each other.

With respect to joint working with OMA, it was not considered necessary as a principle, but was recognised that certain experts may need to meet together, this would be determined on a case-by-case basis.

It was suggested that the TSG SA Chairman is mandated to arrange a Workshop with OMA to exchange information on the working of the Organisations and the Work being done. It was also suggested that a volunteer provides a draft dependency list (similar to the IETF dependency list). This was **agreed and the TSG SA Chairman **agreed** to try to slot this around a TSG meeting in order to minimise travel costs for delegates. It was **agreed** that OMA should be asked to inform 3GPP what their expectation are of 3GPP. Iain Sharpe **agreed** to draft the dependency list.**

It was agreed that a Liaison should be set up with OMA and for any new WI where an interaction is suspected, then the expectations of OMA and 3GPP should be determined in order to co-ordinate any common work in an efficient way.

It was recognised that the interaction with OMA will need further discussion and adjustment during the early stages of the liaison.

8.7 Review of Release 1999, Release 4 and Release 5 specification sets

TD SP-030228 CRs to 01.01 and 41.001 (All Releases). These CRs were **approved**.

TD SP-030229 CRs to Specifications Lists. These CRs were **approved**.

TD SP-030235 Renumbering of 21.102, 21.103, 41.102, 41.103. These CRs were **approved**.

TD SP-030359 CRs to 21.102, 21.103, 41.102, 41.103 to point to replacement specs, and to 21.101 to change title. These CRs were **approved**.

8.8 Review of Release 6 status, content and completion

There were no specific contributions under this agenda item. The Work Plan, particularly for the determination of Features to be potentially included in Release 6, was discussed under agenda item 8.6.

8.9 Beyond Release 6 and/or Current work plan (Vision, Phasing, New Technology etc.)

TD SP-030328 Report of Future Evolution meeting #4. This was provided for information and was **noted**. A summary was presented in TD SP-030329.

TD SP-030329 FEW summary report. This was introduced by the Future Evolution Workshop Chairman:

1 Meeting - immediately prior to SA#20. Draft report (SP-030328). Email discussion between SA#19 and SA#20. One more meeting planned prior to SA#21. Email discussion planned prior to SA#21. On track to close the workshop after SA#21.

Good progress on technical report:

Most areas are now in a "polishing" phase with baseline text agreed in most areas. Therefore it was decided to send the technical report (21.902) for information (TD SP-030330).

Due to proximity of Evolution and SA meetings this is the input version to the Evolution meeting. Plan to send for approval at SA#21.

TD SP-030330 Draft TR on Future Evolution (version 1.0.0). This was introduced by the Future Evolution Workshop Chairman. It was noted that the final version should be available soon and will be sent to the TSG SA e-mail reflector when it is available. The draft TR was then **noted**.

8.10 Other issues

There were no specific contributions under this agenda item.

9 Project Management

9.1 Review of work programme

TD SP-030231 Status list before TSGs #20. This was introduced by the MCC Specifications Manager (J. M. Meredith) and was **noted**.

TD SP-030234 Specs not under change control. This was introduced by the MCC Specifications Manager (J. M. Meredith) and lists the specifications which are still at draft status and not yet placed under change control. **WGs were encouraged to consider this list and decide what to do with the specifications and reports (stop, finalise or update status)**. The document was then **noted**.

TD SP-030233 Friendly databases. This was introduced by the MCC Specifications Manager (J. M. Meredith) and was produced in response to a Chairmen's Survey where the complexity and size of the specifications database was commented upon. This is a WWW view of the main database, in HTML format with links, which was produced to simplify the use of the database when on-line. The main database will continue to be maintained. This was considered a useful tool and delegates were asked to forward and comments to J. M. Meredith, MCC. It was clarified that the Master CR database is integrated in the main specifications database and the "CR databases" was an extracted part of this main database. It was also requested that something be developed to allow mirroring of the 3GPP web site. It was explained that the links were relative links and mirroring of the ftp site and structure should allow easy mirroring of the tool. The document was then **noted**.

TD SP-030232 Status list after TSGs #20. This will be provided after the meeting, including the changes of status of the 3GPP Specifications and Reports approved at this meeting. Delegates were encouraged to review the status list and provide corrections and comments to Mr. J. M Meredith, MCC.

9.2 Working methods

There were no specific contributions under this agenda item.

9.3 Other issues

There were no specific contributions under this agenda item.

10 Project support

TD SP-030356 Report of Support Team activities. This was introduced by the Head of MCC, A. Scrase and outlined the changes of MCC staff and budget issues. It was clarified that the Chairman's Survival Guide was at first draft status and should be made available at the next TSG Meetings. A. Scrase was thanked for his report which was **noted**.

11 Postponed issues from earlier in the meeting

There were no specific contributions under this agenda item.

12 Work plan and future meetings

TD SP-030339 Calendar of 3GPP Meetings. This was provided for information and was **noted**.

It was noted that GERAN meeting in June, Hosted by RIM in Florida USA was not included in the list.

August 2003				
TITLE	HOST	DATES	LOCATION	CTRY
3GPPGERAN#16	RIM	25 – 29 August, 2003	New York	US
3GPPT#21	SIEMENS	17 – 19 September, 2003	Frankfurt	Germany
3GPPRAN#21	SIEMENS	16 – 19 September, 2003	Frankfurt	Germany
3GPPCN#21	SIEMENS	17 – 19 September, 2003	Frankfurt	Germany
3GPPSA#21	SIEMENS	22 – 25 September, 2003	Frankfurt	Germany
3GPPGERAN#17	EF3	17 – 21 November, 2003	Budapest	Hungary
3GPPT#22	NA Friends	10 – 12 December, 2003	Hawaii	US

3GPPRAN#22	NA Friends	9 – 12 December, 2003	Hawaii	US
3GPPCN#22	NA Friends	10 – 12 December, 2003	Hawaii	US
3GPPSA#22	NA Friends	15 – 18 December, 2003	Hawaii	US
3GPPGERAN#18	EF3	2 – 6 February, 2004	TBD	Europe
3GPPT#23	NA Friends	10-12 March, 2004	TBD	US
3GPPRAN#23	NA Friends	9-12 March, 2004	TBD	US
3GPPCN#23	NA Friends	10-12 March, 2004	TBD	US
3GPPSA#23	NA Friends	15-18 March, 2004	TBD	US
3GPPGERAN#19	NA Friends	19-23 April, 2004	TBD	US
3GPPT#24	TTA	1-4 June, 2004	TBD	Korea
3GPPRAN#24	TTA	1-4 June, 2004	TBD	Korea
3GPPCN#24	TTA	1-4 June, 2004	TBD	Korea
3GPPSA#24	TTA	1-4 June, 2004	TBD	Korea
3GPP GERAN#20	EF3	21-25 June, 2004	TBD	Europe
3GPP GERAN#21	NA Friends	23-27 August, 2004	TBD	US
3GPPT#24	NA Friends	7-10 September, 2004	TBD	US
3GPPRAN#24	NA Friends	6-10 September, 2004	TBD	US
3GPPCN#24	NA Friends	7-10 September, 2004	TBD	US
3GPPSA#24	NA Friends	13-16 September, 2004	TBD	US
3GPPGERAN#22	ETSI	8-12 November, 2004	Sophia Antipolis	France
3GPPT#25	EF3	7-10 December, 2004	Athens	Greece
3GPPRAN#25	EF3	6-10 December, 2004	Athens	Greece
3GPPCN#25	EF3	7-10 December, 2004	Athens	Greece
3GPPSA#25	EF3	13-16 December, 2004	Athens	Greece

The TSG CN Chairman proposed that the TSG SA meeting could reduce the length of meeting to 3 days (Monday - Wednesday). The TSG SA Chairman responded that this would leave little time for off-line, evening discussions. There was support for reducing the length to 3 days in order to save travelling costs and also support to leave the meeting length at 4 days in order to allow good handling of issues rather than rushing to finish the agenda. It was **decided** to try a 3-day meeting for the meeting #24 in March 2004. The September meeting would remain as 4 days, starting after the Evolution Workshop, and for December, 4 days, subject to the Host checking the contract flexibility to reduce it to 3 days. Hosts were asked not to provide a Social Event for 3-day meetings on the Tuesday.

13 Any other business

[TD SP-030349](#) Church boat rowing competition. The meeting Hosts (Nokia) announced a mandatory new meeting Feature of attempting to drown at least one team from Manufacturers, Operators and Specials (Officials and MCC) using large Church Boats on the evening of 10 June 2003. Survivors would receive a chance to continue attending the meeting on 11 June 2003. The Mandatory request was [noted](#).

Secretary's Note: The three high-spirited teams fought hard in this strenuous sport and the "Specials" completed the course first. All teams were congratulated for their efforts and high commitment to this event. (No team members were drowned).

14 Close of meeting

The TSG SA Chairman thanked the delegates for their hard work and cooperation during the meeting, the Meetings Hosts, Nokia and the Support staff for the excellent facilities provided for the TSG meetings. The TSG SA Chairman thanked TeliaSonera for the very enjoyable Social Event that they sponsored at Vanajanlinna hunting castle on the Wednesday Evening. He then closed the meeting.

APPENDIX 23



www.3gpp.org / [ftp](#) / [Specs](#) / [archive](#) / [21_series](#) / **21.905**

sort by name/desc	sort by date/desc	sort by size/desc
 21905-010.zip	1999/10/21 8:17	54,7 KB
 21905-100.zip	2000/01/18 9:06	56,6 KB
 21905-300.zip	2000/04/06 15:26	81 KB
 21905-310.zip	2000/07/03 15:43	135,6 KB
 21905-320.zip	2000/10/17 13:10	88,5 KB
 21905-330.zip	2001/10/05 13:57	90,6 KB
 21905-410.zip	2001/01/08 14:48	110,2 KB
 21905-420.zip	2001/03/30 15:59	86,2 KB
 21905-430.zip	2001/06/27 8:44	87,6 KB
 21905-440.zip	2001/10/05 13:57	89,1 KB
 21905-450.zip	2003/06/18 13:31	98,3 KB
 21905-500.zip	2001/06/27 8:44	87,6 KB
 21905-510.zip	2001/10/05 13:57	89,5 KB
 21905-520.zip	2002/01/09 15:22	88,3 KB
 21905-530.zip	2002/05/13 14:31	90,9 KB
 21905-540.zip	2002/07/04 8:58	90 KB
 21905-550.zip	2002/09/16 13:45	91,5 KB
 21905-560.zip	2003/03/25 10:24	102,1 KB
 21905-570.zip	2003/06/18 13:32	102,4 KB
 21905-580.zip	2003/09/30 13:07	102,7 KB
 21905-590.zip	2005/03/24 16:59	112 KB
 21905-5a0.zip	2005/10/05 8:10	113 KB
 21905-600.zip	2002/09/16 13:45	92,1 KB
 21905-610.zip	2002/12/17 15:29	106,1 KB
 21905-620.zip	2003/03/25 10:24	108,7 KB
 21905-630.zip	2003/06/18 13:32	106,7 KB
 21905-640.zip	2003/09/30 13:07	106,7 KB
 21905-650.zip	2004/01/06 9:49	107,2 KB
 21905-660.zip	2004/03/23 12:52	108,1 KB
 21905-670.zip	2004/06/09 10:34	118 KB

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 21905-6a0.zip	2005/10/05 8:10	120,8 KB
 21905-700.zip	2005/10/06 8:57	120,5 KB
 21905-710.zip	2006/03/22 14:43	122,4 KB
 21905-720.zip	2006/06/20 11:11	122,6 KB
 21905-730.zip	2007/03/23 13:15	120,6 KB
 21905-740.zip	2007/06/21 15:25	123,6 KB
 21905-800.zip	2007/03/23 13:15	120,8 KB
 21905-810.zip	2007/06/21 15:28	124 KB
 21905-820.zip	2007/09/28 14:33	122 KB
 21905-830.zip	2007/12/19 15:55	123,9 KB
 21905-840.zip	2008/03/25 15:45	124,6 KB
 21905-850.zip	2008/06/10 14:31	124,6 KB
 21905-860.zip	2008/09/23 15:09	125,3 KB
 21905-870.zip	2008/12/18 0:13	129,6 KB
 21905-880.zip	2009/03/24 14:53	130,1 KB
 21905-900.zip	2008/12/18 0:13	128,4 KB
 21905-910.zip	2009/03/24 14:53	129 KB
 21905-920.zip	2009/06/10 7:25	129,6 KB
 21905-930.zip	2009/10/01 13:17	130,6 KB
 21905-940.zip	2009/12/18 22:58	131,2 KB
 21905-a00.zip	2009/10/01 13:17	131,7 KB
 21905-a10.zip	2009/12/18 22:58	131,2 KB
 21905-a20.zip	2010/03/31 13:42	133 KB
 21905-a30.zip	2011/03/21 16:12	238,4 KB
 21905-b00.zip	2011/12/16 16:30	238,9 KB
 21905-b01.zip	2011/12/19 9:59	239,5 KB
 21905-b10.zip	2012/06/22 9:07	243,6 KB
 21905-b20.zip	2012/09/24 8:55	241,8 KB
 21905-b30.zip	2012/12/18 16:23	240,7 KB
 21905-c00.zip	2013/06/25 10:44	245,1 KB
 21905-d00.zip	2015/12/17 17:00	129,3 KB
 21905-d10.zip	2016/07/01 7:51	130,5 KB

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 21905-e10.zip	2017/06/15 14:38	130,7 KB
 21905-e11.zip	2017/06/22 13:00	131,2 KB
 21905-f00.zip	2018/04/01 17:09	134,9 KB
 21905-f10.zip	2018/12/19 14:09	133 KB
 21905-f20.zip	2024/03/27 9:41	181,7 KB
 21905-g00.zip	2019/06/11 11:53	119,8 KB
 21905-g10.zip	2024/03/27 9:41	172,6 KB
 21905-h00.zip	2020/07/06 15:49	126,4 KB
 21905-h10.zip	2021/12/21 14:07	125,6 KB
 21905-h20.zip	2024/03/27 9:42	175,2 KB
 21905-i00.zip	2024/04/03 13:46	231,1 KB

76 items.

APPENDIX 24



3GPP_TSG_SA Archives

June 2003

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Subject: [Draft Report of TSG SA Meeting #20: V0.0.4](#)
From: Maurice Pope <Maurice.Pope@ETSI.ORG>
Reply To: Maurice Pope <Maurice.Pope@ETSI.ORG>
Date: Tue, 24 Jun 2003 11:55:59 +0200
Content-Type: multipart/mixed
Parts/Attachments: [text/plain](#) (21 kB) , [text/html](#) (21 kB) , [ole1.bmp](#) (21 kB) ,
[SA_20_Draft_Report_v004.zip](#) (587 kB)



Dear TSG SA members,

Please find attached the draft report of the previous meeting for comment.

The report (in ZIP and PDF Formats) can also be downloaded from the 3GPP FTP site at:
http://www.3gpp.org/ftp/TSG_SA/TSG_SA/TS GS_20/Report
or
ftp://ftp.3gpp.org/TSG_SA/TSG_SA/TS GS_20/Report

Please provide comments to me by 15 August 2003, in order that I can include them and provide an updated report to TSG SA meeting #21 for approval.

Best Regards,

Maurice Pope

<<SA_20_Draft_Report_v004.zip>>

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