



Welcome to the World of Standards



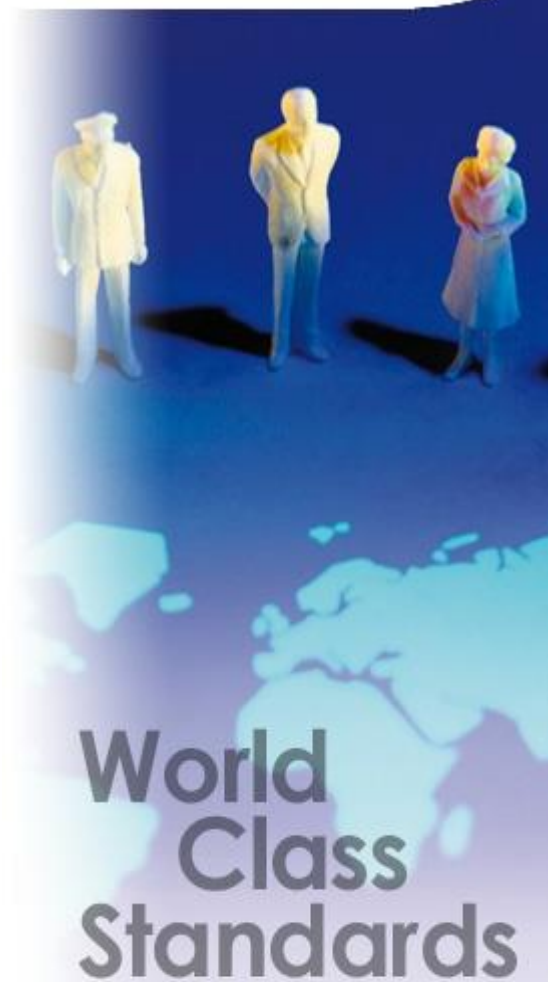
INTRODUCTION TO ETSI

Utan Mulligan, Director of Communication & Innovation

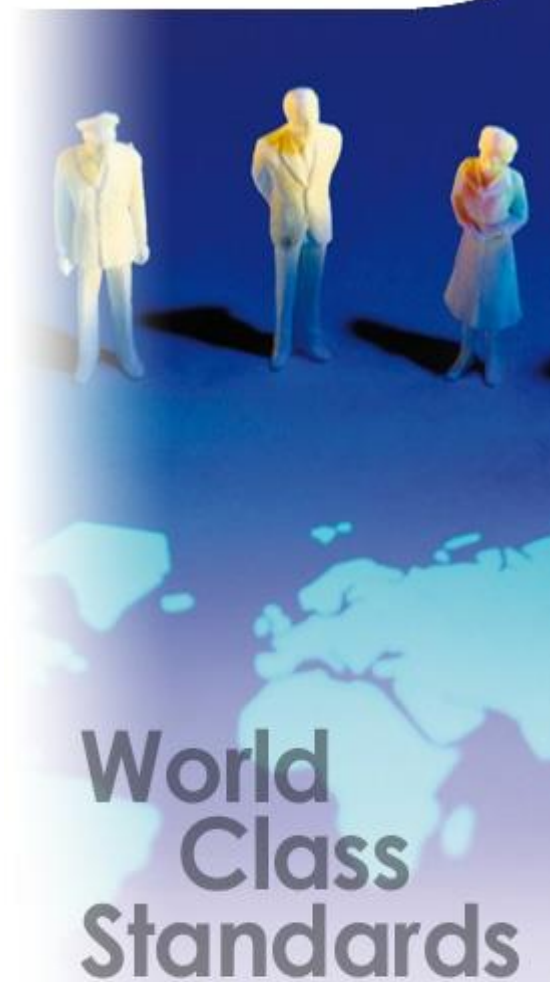
European roots, global outreach



- 🌐 ETSI is a world-leading standards developing organization for Information and Communication Technologies (ICT)
- 🌐 ETSI is recognized by the European Union as one of 3 European Standardization Organizations
- 🌐 ETSI has become highly-respected as a producer of technical standards for worldwide use



- **Technical specifications and standards** with global application
 - 40000+, all available for free download
- Support to industry and European **regulation**
- Specification & testing **methodologies**
- **Interoperability** testing

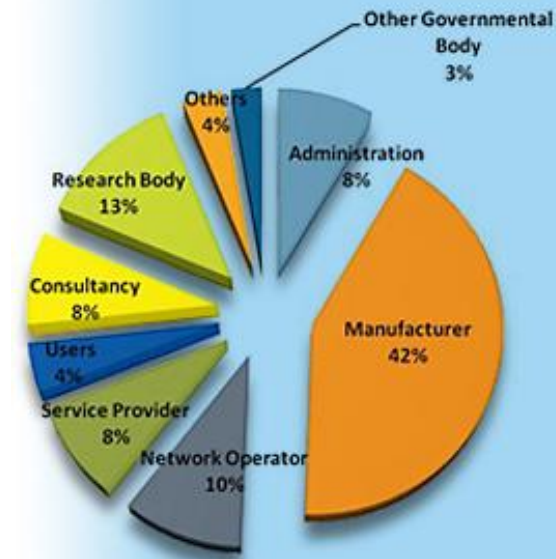


Membership

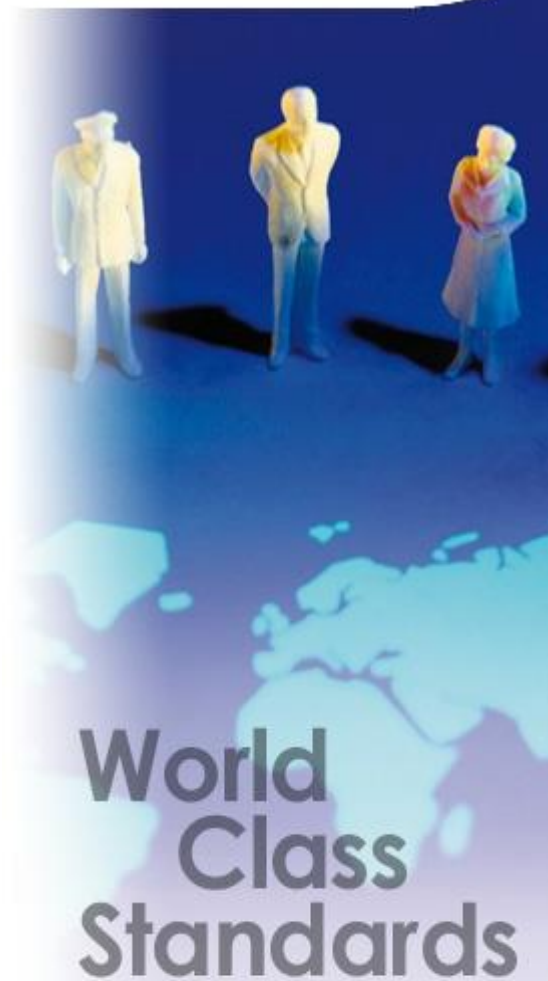


- Over **800 organizations**, big & small, from **68 countries** on **5 continents**
- Direct participation in our work
- Manufacturers, network operators, service and content providers, national administrations, ministries, universities, research bodies, consultancies, user organizations

A powerful and dynamic mix
of **skills, resources and
ambitions**



- **Independent** of all other organizations and structures, not for profit association
- Respected for **neutrality** and trustworthiness
- Esteemed for our world-leading **Intellectual Property Rights (IPR) Policy**



Find yourself in good company



3db Access AG
3xA Security AB
450connect GmbH
4GCelleX
6WIND
7LAYERERS GmbH
A.S.P.
A.S.T.R.I.D. S.A.
Aalborg University
ABB AS
AC Camerfirma SA
AccelerComm Ltd
ACCURIS Ltd
Acer Incorporated
Actility SA
adare GmbH
ADDS
Adobe Systems
ADTRAN GmbH
ADVA Optical Networking SE
ADVENICA AB
AER
Aeroflex / Cobham
Affirmed Networks Inc.
AFNOR
AFUTT
Agency for Electronic Comm.
AGH University
Agoria ICT
AIM EUROPE
Airbus DS SLC
Airbus Group SAS
AIR-LYNX
Airwave Solutions Limited
AIT
AKG Acoustics GmbH
Allot Communications Ltd.
Alstom Transport SA
Altiostar
Amazon
AMB Consulting SARL
Amdocs Software Systems Ltd
Amimon Ltd
AMK WFB
ANACOM
Analog Devices International
ANDORRA TELECOM S.A.U.
Andrew Wireless Systems GmbH
ANEC
Anemone Technology
ANITEC
ANRITSU LTD
Apple (UK) Limited
Apple Europe Limited
Apple France
Apple GmbH
Apple Italia S.R.L.
Apple Portugal
Apple Switzerland AG
Applied Communication Sciences
Approach Infinity
APSI
APWPT
AQSACOM S.A.S.
Araxxe SAS
Arcatech Ltd
Arcep
AREA Spa

ArgoNET GmbH
ARKEP
ARRIS
ASCOM (Suisse) SA
ASELSAN
Asia Pacific Telecom co. Ltd
Association eG4U
ASTRI
asut
AT&T GNS Belgium SPRL
ATIS Systems GmbH
ATMEL EUROPE SARL
Attorney-General's Department
AUDI
Austrian Standards Institute
AUTOCRUISE S.A.S.
Autoliv Electronics AB
Autotalks Ltd
Avanti Communications Ltd
Aveillant Ltd
Aviat Networks
AVM Berlin
Azimuth Systems Incorporated
Azqtel LLC
BAE Systems AI Ltd
BANE NOR SF
BankID Norge AS
Bayerisches Landeskriminalamt
BBC
B-Com
Belgian Mobile Wallet SA/NV
Bell Mobility
beyondynamic GmbH & Co. KG
BIV
BH Telecom
BIOTRONIK SE & Co. KG
BIPT
Bishop Communications Ltd
Bittium Wireless Ltd.
BK Services
BKA
BlackBerry UK Limited
Blekinge Tekniska Högskola
Bliksrud Telecom
Bluetest AB
Bluetooth SIG Inc.
BMW
BNAE
BOCRA
BOEING INTERNATIONAL CORP.
Bolloré Telecom S.A.S
Bolt & Yurdal Consulting ApS
Boston Scientific Corp.
BOUYGUES Telecom
BroadBit
Broadcast Networks Europe
BROADCOM CORPORATION
Brocade Communications Systems
BSI
BSIA
BT plc
Bull SAS
Bureau Veritas
Cable Europe
CableLabs
Cadzow Communications
Cambium Networks Limited
CAMBRIDGE CONSULTANTS LTD

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Casa Systems Inc
Catapult
CATR
CATT
CCww
C-DOT
CEA
CECED
Cellnex
Celltick Technologies Inc.
CEN
CENELEC
CENX Inc.
CEPT
Ceragon Networks AS
Certicar S.L.
CETECOM GmbH
CGC Inc.
China Telecommunications
CHTTL
Cinderella ApS
Cisco Systems Belgium
Cisco Systems France
CJSC Norsis-Trans
Climate Associates Limited
Club PSCO
CMC
CML Microcircuits
CNES
CNIT
CNRFD
CNRS
Cohda Wireless Pty Ltd
CommLedge
CommScope
CommScope Technologies AG
Comprion GmbH
Comptel Corporation
conexx
Continental Automotive GmbH
Convida Wireless LLC
Copenhagen Fire Brigade
COSMOTE S.A.
Covea Technologies
CPqD
CRC
Cryptolog International
CSEM
CTE International
CTT
CTTC
CYS
Czech Technical University
Czech Telecommunication Office
DAC-UPC
Daimler AG
Dansk Standard
DARS TELECOM S.L.
datafusion Systems GmbH
DCMS
DecaWave Ltd
Definition Networks Inc;
DEKRA
DENSO AUTOMOTIVE
Department of Communications
Deutsche Bahn AG

Deutsche Telekom AG
Deveryware
DFS Deutsche Flugsicherung
Dialog Semiconductor
Diehl Metering GmbH
Digital TV Group
DigiTask GmbH
DKE
DLR
DOCAPOST DPS
DOCOMO Communications Lab.
DocuSign
Dolby Laboratories Inc.
Doshisha University
DPS
DSPG Edinburgh Ltd
DTS Licensing Limited
EANTC AG
E-Blink s.a.
EBU
ECBF
Ecma International
ECO
e-CODEX Konsortium
ECOS
EENA
EFTA Secretariat
EGM
EGMF
EIR
EKIP
ElectronicCommunicationsOffice
Eltek
Emerson Process Mgt Limited
ENCADRE
Endress + Hauser GmbH & Co. KG
ENENSYS
Entreprise des P. et T.
ENX
ERA
Ericsson France S.A.S
Ericsson GmbH, Eurolab
Ericsson Limited
Ericsson LM
ESA
ETELM
ETISALAT
ETRI
ETS-Lindgren Europe
ETUC
EURECOM
EURL Filatov DV
EUROCONTROL
CYS
European Commission
European GPR Association
European Patent Organisation
EUTC
Eutelsat S.A.
EVE Compliancy Solutions
eWitness S.A.
Expway
Fabasoft AG
Facultad de Informatica
Fairspectrum Oy
Fastback Networks
Fastweb S.p.A.
FBConsulting S.A.R.L.
FBK

FDC
FED. MINISTRY FOR TRANSPORT
FEFI
FEIG ELECTRONIC GmbH
FICORA
Fiware Foundation
FNTC
Focus Infocom
FORCE Technology
France Brevets
Fraport AG
Fraunhofer
Fraunhofer AISEC
Fraunhofer ESK
Fraunhofer FOKUS
Fraunhofer HHI
Fraunhofer IIS
Fraunhofer IMW
Fraunhofer IVI
Fraunhofer SIT
FREEBOX S.A.S.
Friedrich-Alex-Universität
FSCOM
FUJITSU Laboratories of Europe
Fujitsu Limited
Fundacio i2CAT
Funkwerk Aktiengesellschaft
FUTURE CITIES CATAPULT
G²C
Gemalto N.V.
GENBAND Ireland Ltd
General Dynamics UK Limited
Geyser-Telecom Ltd.
GIE ANEC
GIESECKE & DEVRIENT GmbH
Gigaset Communications GmbH
GigaSpaces
Gjøvik University College
GLOBALSTAR Inc.
GNCC
GosNIAS
Governikus GmbH & Co. KG
GPSIA
Great Circle Design
Group 2000
GS1
GTRC
Guardtime
GWT
HAGER GROUP
Halmstad University
Halys
Hanyang University
HARTING Electric GmbH & Co. KG
HCL Technologies limited
HEAD acoustics GmbH
Hella
HEPTA 7291
HERON
Hewlett-Packard Enterprise
Hillebrand GmbH
HILTI AG
HISPASAT SA
Hitachi Europe Ltd.
HL2 group
HOME OFFICE
Honeywell Enraf BV
HTW Dresden

HTW Saarland
HUAWEI TECH. GmbH
Huawei Tech.(UK) Co., Ltd
HUAWEI TECHNOLOGIES Co. Ltd.
Huawei Technologies France
Huawei Technologies Sweden AB
Huber + Suhner AG
HUGHES Network Systems Ltd
Husqvarna AB
Hydeco
Hytera Communications Corp.
Hyundai Motor Europe
i4C Innovations Inc.
IAESI
IAV GmbH
IBIT Ambrosini
IBM EUROPE
ICOM (C.E.P.) FRANCE
iconectiv
ICS
ICTA
ID Quantique
Idaho National Laboratory
IDnomic
ifak
IHLMA
III
ILNAS
Imagination Technologies Ltd.
IMEC
INFINEON TECHNOLOGIES
InfoCert s.p.a.
Infraabel - ICT
Inmarsat
INRIA
INRIM
Insta Elektro GmbH
Institut für Informatik
Institut Mines-Telecom
Institute for Infocomm Research
Institute for standardization
Institute VEDECOM
Intel Corporation (UK) Ltd
Intel Deutschland GmbH
Intel Finland Oy
Intel Mobile Denmark
Intel Mobile France
INTELLINIUM
InterDigital, Inc.
International Amateur Radio
Intertek
ip.access Ltd.
IPCom GmbH & Co.KG
Irdeto BV
IRT
IRT SystemX
ISAD e.V
ISARA
Iskraltel d.o.o. Ltd
ISM
ISMB
ISO/IEC JTC 1 Secretariat
ISPRAS
Ista International GmbH
ITALTEL SpA
ITRI

Find yourself in good company



ITRON SAS
iTrust Ethics Ltd
ITS
ITT RAEN
Ixia Technologies
Izenpe S.A.
Japan Patent Office
JCP-Connect
JNSA
Joint Research Centre
JOTRON a.s.
Juniper Networks
JVCKENWOOD Nederland B.V.
Kamstrup
Kapsch CarrierCom France S.A.S.
Kapsch TrafficCom AB
Kapsch TrafficCom AG
KAT
KATHREIN-Werke KG
KDPOF S.L
KEYMILE GmbH
Keysight Technologies UK Ltd
King's College London (KCL)
Knowles Inc.
KoKom
KPN N.V.
KROHNE Messtechnik GmbH
Landis+Gyr Investments AG
Lantiq
Lattice Semiconductor
LCA
LEA - Networks
Lecit Consulting s.r.l.
LEGRAND FRANCE
Leonardo SpA
LFV Aviation Consulting AB
LG Electronics Deutschland
LG Electronics Finland
LG Electronics France
LG Electronics Polska
LG Electronics UK
LGAI Technological Center SA
Liberty Global B.V.
Ligado Networks
LITHUANIAN STANDARDS BOARD
LIWEST Kabelmedien GmbH
LKA NRW
Logaly
Low Power Radio Association
LSTI SAS
Lufthansa Systems GmbH & Co KG
Luxtrust
Lyngsoe Systems Ltd
M. Dudde hochfrequenz-technik
M.A.D.
Magna Electronics Europe GmbH
Malta Communications Authority
Marben Products
Marine Rescue Technologies Ltd
MARITIME AND COASTGUARD
AGENCY
Marquardt GmbH
MCCAA
McGill University
MCTT
MeadowCom
MediaTek Inc.

MEDTRONIC BAKKEN RESEARCH BV
Mesaqin.com s.r.o (Ltd.)
Microsec Ltd
Microsemi
MICROSOFT EUROPE SARL
Microsoft Ireland
Microsoft Ltd
Microsoft Switzerland
MINISTERE DE L'INTERIEUR
Ministère Economie Indu. Numer
MINISTERIO DE INDUSTRIA
Ministero Sviluppo Economico
Ministry of Digital Policy
Ministry of Economic Affairs
Ministry of National Develop
Ministry of Transport and Cons
Ministry of Transport ITC
Mirantis
Mitel Mobility UK Limited
MITRE Corporation
Mitsubishi Electric RCE
MMATI
Mobile Tornado Group plc
Mobis Parts Europe N.V.
Morpho Cards GmbH
Motorola Mobility España SA
Motorola Mobility France S.A.S
Motorola Mobility Germany GmbH
Motorola Mobility UK Ltd.
Motorola Solutions Danmark A/S
Motorola Solutions Germany
Motorola Solutions UK Ltd.
MSB
MTI
MTN Dubai LLC
Multi-Tech Systems, Inc
MVG Industries
Nadir Hacin
Nagravision S.A.
National Chiao Tung University
National Institute of Telecom.
National Instruments Corp.
National Taiwan University
National Technical Assistance
NATS
NAVTECH RADAR
nbn co Limited
NCSC
NCSR Demokritos
NDCA
NEC Corporation
NEC EUROPE LTD
NEC Telecom MODUS Ltd.
NEDAP
NET INSIGHT AB
Netas
NetComm Wireless Limited
Netscout Systems Inc.
Network Access Associates Ltd
Networked Energy Services Corp
Neul Limited
ng4T
NICT
NIIR
Nimbus Technologieberatung
Nkom
NMHH
Nokia Belgium

Nokia Corporation
Nokia France
Nokia Germany
Nokia UK
Nomor Research GmbH
Nordic Semiconductor ASA
Novelda AS
NSAI
NTT corporation
NXP Semiconductors Netherlands
O3b Limited
ÖBB-Infrastruktur AG
OBERTHUR TECHNOLOGIES
OFCOM (CH)
Ofcom (U.K.)
Ogero Telecom
OIC
Omnitor AB
one2many B.V.
Ontology Systems
OOREDOO
Openet Telecom
Oracle Corporation
ORANGE
Orange Romania
Orange Spain
Orange UK
OSGP Alliance
OTD
OTT Hydromet GmbH
OU Elvior
OVE
P3 communications GmbH
PA Consulting Services Ltd
PANASONIC R&D Center Germany
Pandion Limited
PARK AIR SYSTEMS LIMITED
PCS
PETER-SERVICE, JSC
Philips International B.V.
Phoenix Contact GmbH & Co. KG
Phoenix Testlab GmbH
Phonak Communications AG
PIDS
Pirelli Tyre SpA
PIWorks
PLANTRONICS LTD
PNO
PoLTE
Post- and Telecom Admin.
PostEurop
Prisma Telecom Testing srl
Procera Networks AB
ProRail
Proximus Plc
PSA Peugeot Citroen
PT PORTUGAL SGPS SA
PTS
Public Safety Canada
Q-Free ASA
QMIC
Qorvo
Qorvo Utrecht B.V.
Qualcomm Austria RFFE GmbH
QUALCOMM CDMA Technologies
Qualcomm Europe Inc. (Spain)
Qualcomm Europe Inc.(France)
Qualcomm Europe Inc.(Italy)

Qualcomm Finland RFFE Oy
Qualcomm Tech. Netherlands B.V
QUALCOMM UK Ltd
Qualcomm Wireless GmbH
Qualigon GmbH
Queens University Belfast
Quixoticity
Quion
Quortus Limited
RADIODATA GmbH
RadiSys
RATEL
RATP
Raymarine Belgium Bvba
Real.net
Red Hat Limited
RED Technologies SAS
Renault SAS
Renesas Electronics Europe
RESC
RFI SpA
Rheinmetall Defence Elec. GmbH
RIFT.io
Riverbed
ROBERT BOSCH GmbH
Rogers Communications Canada
ROHDE & SCHWARZ
ROHILL Technologies B.V.
Royal Holloway
RTX A/S
Rundfunk & Telekom
SABS
SAFT SA
Sagemcom Broadband SAS
Saguna Networks Ltd
Samsung Electronics Benelux BV
Samsung Electronics Czech
Samsung Electronics France SA
Samsung Electronics GmbH
Samsung Electronics Iberia SA
Samsung Electronics Nordic AB
Samsung Electronics Polska
Samsung Electronics Romania
Samsung R&D Institute UK
SANDISK CORPORATION
Sandvine Incorporated
Satel Oy
SBA Research
SBS aisbl
Schneider Electric Industries
Sealed sprl
SECURITE COMMUNICATIONS
Security Innovation, Inc
Semtech Neuchatel SA
Sennheiser Electronic GmbH
Sensinov
Sensium Healthcare Ltd
Sepura PLC
Sequans Communications
SES S.A.
SEVEN PRINCIPLES
SGDSN
SGS Wireless
SHARP Electronics GmbH
SHURE Europe GmbH
SIAE Microelettronica SpA
SICK AG
Siemens AG

Sierra Wireless, S.A.
SIGFOX
SIGOS GmbH
Siklu Communication Ltd.
Silicon Laboratories
Silver Spring Networks
Simless
Sintesis, Foundation
SIST
SISVEL SPA
Skylane Optics
SkyTL Inc.
SNCF RESEAU
SnT - University of Luxembourg
Softel Systems Pty Ltd
Software602 a.s.
SOMFY INTERNATIONAL
Sonus Networks Limited
Sony Europe Limited
SP Technical Research
Spectracom SAS
SpiderCloud Wireless
Spirent Communications
Sporton International Inc
Sprava zeleznicni dopravní
SPRINT Corporation
SRC
SRG Research and Consulting
SSNS
St. Jude Medical Sweden AB
StartCom CA
STIB-MIVB
STMicroelectronics
Suomen virverikko Oy
Swiss Federal Railways Ltd
SWISSCOM
SyncTechno Inc.
Systemics PAB Sp. z.o.o.
Taisys
TAIT Radio Communications
TAMUM Consulting
TCT Mobile Limited
TDF
TE Connectivity
Techem Energy Services GmbH
Technical Regulatory Authority
Technical University Dresden
Technicolor R&D France
TELECOM ITALIA S.p.A.
Teleconnect GmbH
Telefonica Germany GmbH
TELEFONICA S.A.
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Telekom Deutschland GmbH
TELENOR ASA
Telensa Limited
Teleraad
Telete Corporation
Telestrategies Inc.
TeleTrusT Bundesverband
TeliaSonera AB
Telit Communications S.p.A.
TELKOM SA SOC LTD
Telp Consultancy BV
Telstra Corporation Limited
Telus
Tencastle Limited
Terma A/S

TES Electronic Solutions
TEXAS Instruments
THALES
The Police of the Netherlands
THRANE & THRANE A/S
THURAYA TELECOM CO.
TIMT
T-Mobile Austria GmbH
T-Mobile Polska S.A.
TNO
Toshiba
TOYOTA Info Technology Center
TRA
Traffikverket
Traxens SAS
TRC
TRIORAIL GmbH & Co.KG
trovicor
TrustWeaver AB
TSFDn
Tsofun Algorithm
TTG Global Group Ltd
TU Graz
Tubitak Uekae
TURK TELEKOMUNIKASYON
A.S.
TUV SUD BABT
Ubisense Ltd
u-blox AG
UC
UK Broadband Ltd
UK CAA
UKER
UL VS Ltd
UMH de Elche
Unibridge AS
UNICON.UZ
Unifno
Union Inter. Chemins de Fer
Universität Bremen
Universität Kaiserslautern
University of Athens
University of Bradford
University of Oulu
University of Waterloo
University of Zagreb
UPV/EHU
URTRI
US Cellular Corporation
USAAR
UTIMACO TS GmbH
UTokyo
VAISALA OYJ
Valeo Radar Systems Inc.
VALID SOLUCIONES
TECNOLÓGICAS
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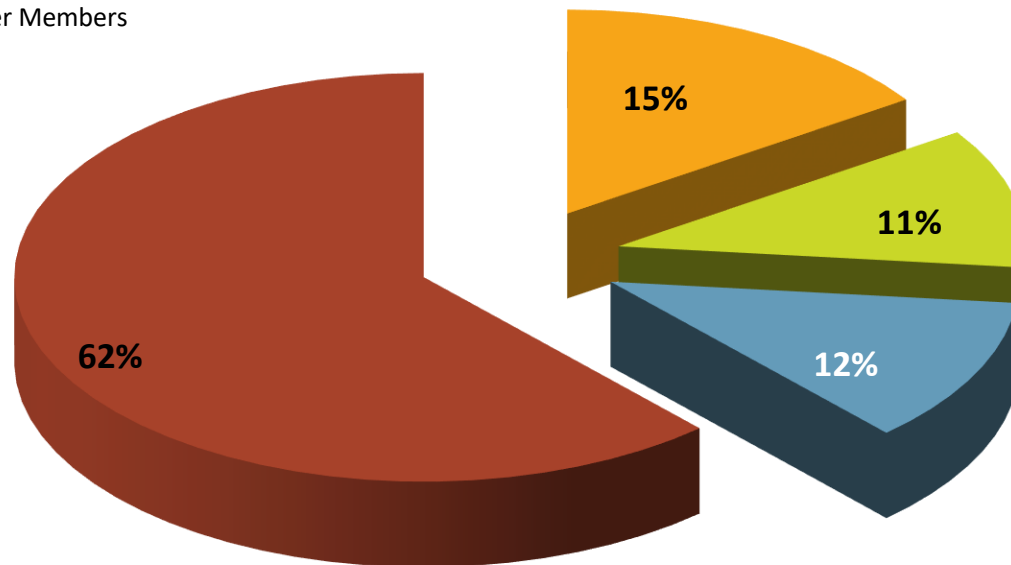
ViaSat Satellite Holdings Ltd
ViaviSolutions Deutsch. GmbH
VIKING GmbH
Virtuosys Limited
VODAFONE España SA
Vodafone GmbH
VODAFONE Group Plc
Vodafone Ireland Plc
Vodafone Italia SpA
Vodafone Romania S.A.
Vodafone Telekomünikasyon A.S.
VoiceAge Corporation
Volkswagen AG
Volvo Car Corporation
Volvo Technology Corporation
Vonniman Consulting
VT iDirect Solutions Ltd
VTT
w2bi, Inc.
Watchdata
West Pomeranian University
Wi-Fi Alliance
WIND TELECOMUNICAZIONI SPA
Wings ICT Solutions
Wipro Limited
Wireless Partners S.L.
Wirepas Oy
wiseSense GmbH
xFlow Research Inc.
Xilinx Ireland
Xura
Yaana Limited
Yaesu Musen Co. Ltd.
Yokogawa Europe B.V.
Zeata Security Ltd
Zeineddin PLLC
ZES BVBA
ZNIIS
Zodiac Aerospace SA
Zollkriminalamt (ZKA)
ZTE Corporation
ZTE Wistron Telecom AB
ZVEI

Percentage of SMEs and Micro-Enterprises



(GA#69 April 2017)

- SME
- Micro-Enterprise
- ACADEMIA (Public Research Body/University)
- Other Members



5 Strategic Objectives

- Being at the Heart of Digital
- Being an Enabler of Standards
- Being Global
- Being Versatile
- Being Inclusive



A European Standards Organization



- ETSI was conceived in the late 1980s to respond to particular needs in Europe
 - in support of the single European market
- ETSI continues to produce standards for European industry...
- ...and we produce standards and other material to support European Union and European Free Trade Association (EFTA) regulation and legislation...
 - ...for which we are officially recognised at EU/EFTA and governmental levels...
- ...as well as contributing ICT radio frequency requirements to the European co-ordination process



ETSI – a global standards producer



- ETSI was established as a European body and retains European responsibilities. But...
- ...many of ETSI's Members are global players...
- ...so ETSI seeks to have its standards adopted worldwide
- About 20% of ETSI's Members have no established operations in Europe
- Many of the other 80% are headquartered outside Europe



We are the home of the GSM™ family of standards...

And a founding partner in



And now also a founding partner in...



The home of service-layer standards for Machine to Machine communications and the Internet of Things

ETSI is not ...



- a REGULATORY body, but...
 - we provide technical specifications to support regulation
- a CERTIFICATION body, but...
 - we provide specifications and other tools to assist certification
- a FREQUENCY ALLOCATION body, but...
 - we collect, co-ordinate and contribute frequency requirements for the ICT community
- part of the European Commission, nor part of CEPT, but...
 - we work closely with these and many other organisations



- Working with others is the best way to ensure coherence between the standards produced by ETSI and those of others
- ETSI's investment in new partnerships is an important mean to adapt its activities to new standardization trends
- Partnership Agreements are crucial in those new areas where ETSI is just starting to establish its footprint

The European Standards Organizations (ESOs)



Vienna Agreement



~ 30 % of CEN standards are developed under the Vienna Agreement (depending on sectors)



Frankfurt Agreement



~ 80 % of CENELEC standards are identical to or based on IEC standards

MoU signed in 2012



ETSI partners



International SDOs/Organizations



e.g. UPU, ICAO, UNECE...

Interregional Co-operation



Regional Partners



also IEEE...

European Partners



FORA & CONSORTIA

- BBF
- CAB Forum
- CONTINUA Alliance
- DECT Forum
- DLMS
- DMR Association
- DVB
- ESMIG
- Global Platform
- IMTC
- IPV6 Forum
- NFC Forum
- NGMN Alliance
- OGF
- OMA
- TCCA
- Etc...



Getting information



- [ETSI website](#)
- [ETSI portal](#)
- [3GPP website](#)
- Other hosted sites
- E-mail exploder lists
 - For all of ETSI's activities
- Official Contact for each ETSI Member
 - Receives all formal correspondence
- Helpdesk
 - +33 (0)4 92 94 49 00 : helpdesk@etsi.org
 - http://portal.etsi.org/Helpdesk/contact_us.htm

