Presented by: Prof. Howard Benn

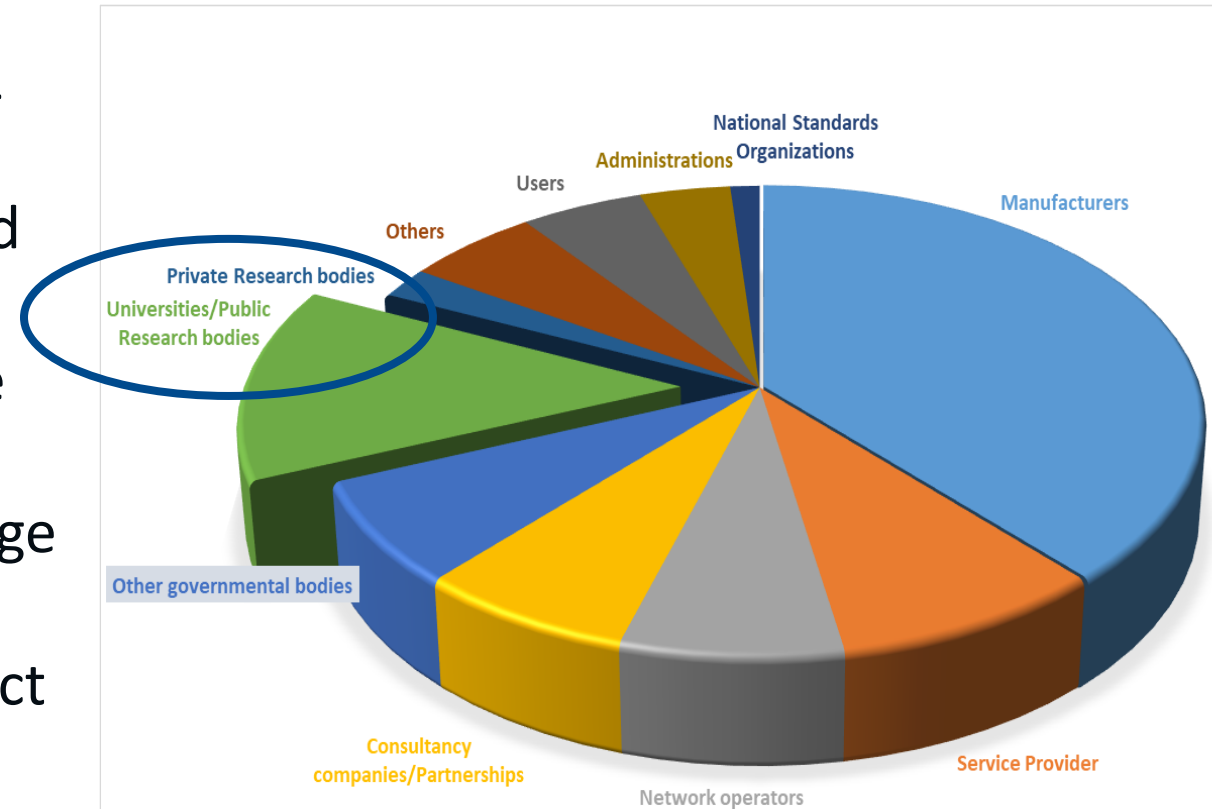For: HLF Conference: Education on standardisation in Europe

17 June 2024

My Journey in Standards

1989 – First read a standard – study comparing GSM and IS-95

1993 – Started attending SMG2 – working on 05.05 phase 2 – the GSM radio specification

1997 – Focus on creating the 3G standards in ETSI, working with Japan to align with Europe

1998 – Creation of 3GPP bring US, Korea, Japan and Europe together

1998 - 2007 – Chair of 3GPP RAN4 the RF and performance group

2008 – 2023 – Member of ETSI board

2022 – Made Professor at Bristol and QUB Universities

2024 – Working with ETSI on the Mastering Tech Standardisation program

ETSI community of researchers, academics and innovators

- ETSI currently has ~ 900 members from 62 countries over 5 continents
- Public / Private Research organisations and Universities make up for **14%**
- University membership gives access to the technical work of ETSI
- All specifications are available free of charge for everybody
- All ETSI members have equal rights of direct participation in the standards-making activities and related services
- The research and innovation community of ETSI is crucial to the development of new and evolved technologies.

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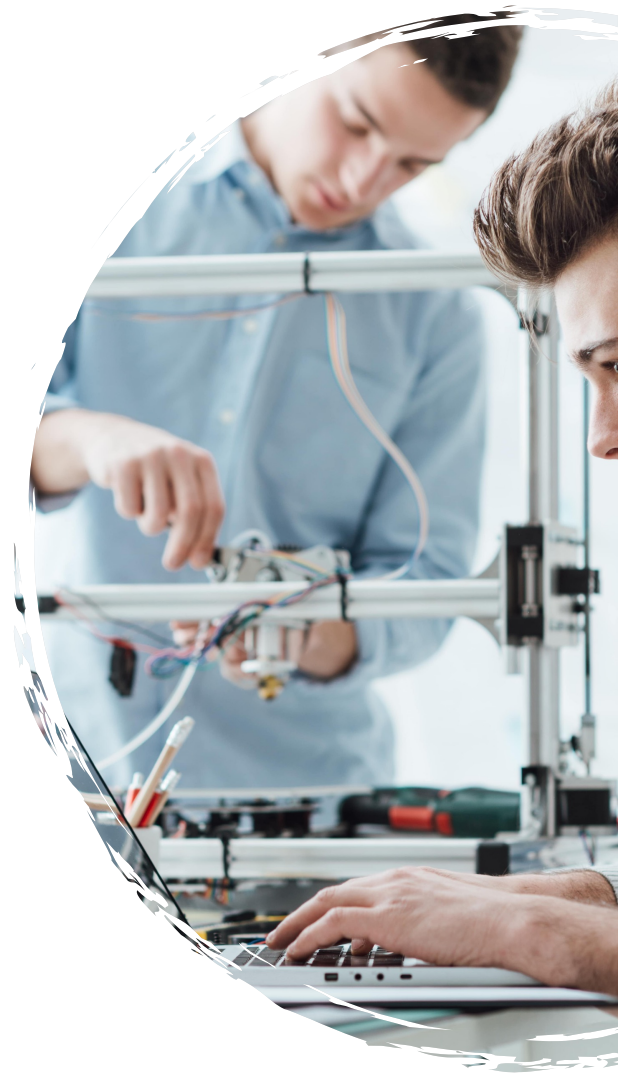# How does ETSI provides value to research communities?

- Opportunity to bring your research results directly into standardisation
- Be instrumental in the development of Tech standards that can be applied worldwide
- Benefit from ETSI's fair and effective IPR policy that is designed to protect your intellectual property
- Access to leading-edge ICT knowledge from the 900+ other members
- Learn what the industry players are thinking and where they need research to be developed
- Opportunities to be visible, build a strong community and network with both industry and governmental standards setters and policy makers
- Gain insight into critical issues such as regulatory & spectrum matters, as well as deep knowledge of the latest European research agendas and policy priorities
- A reduced membership fee for universities and researchers allows access to all technical aspects of ETSI and full participation in all of ETSI's technical groups, as well as the Partnership projects; oneM2M and 3GPP
- Researchers and academics can take up official positions (Chair / Vice-Chair), become rapporteurs for ETSI deliverables and actively drive the current and future standards work of ETSI
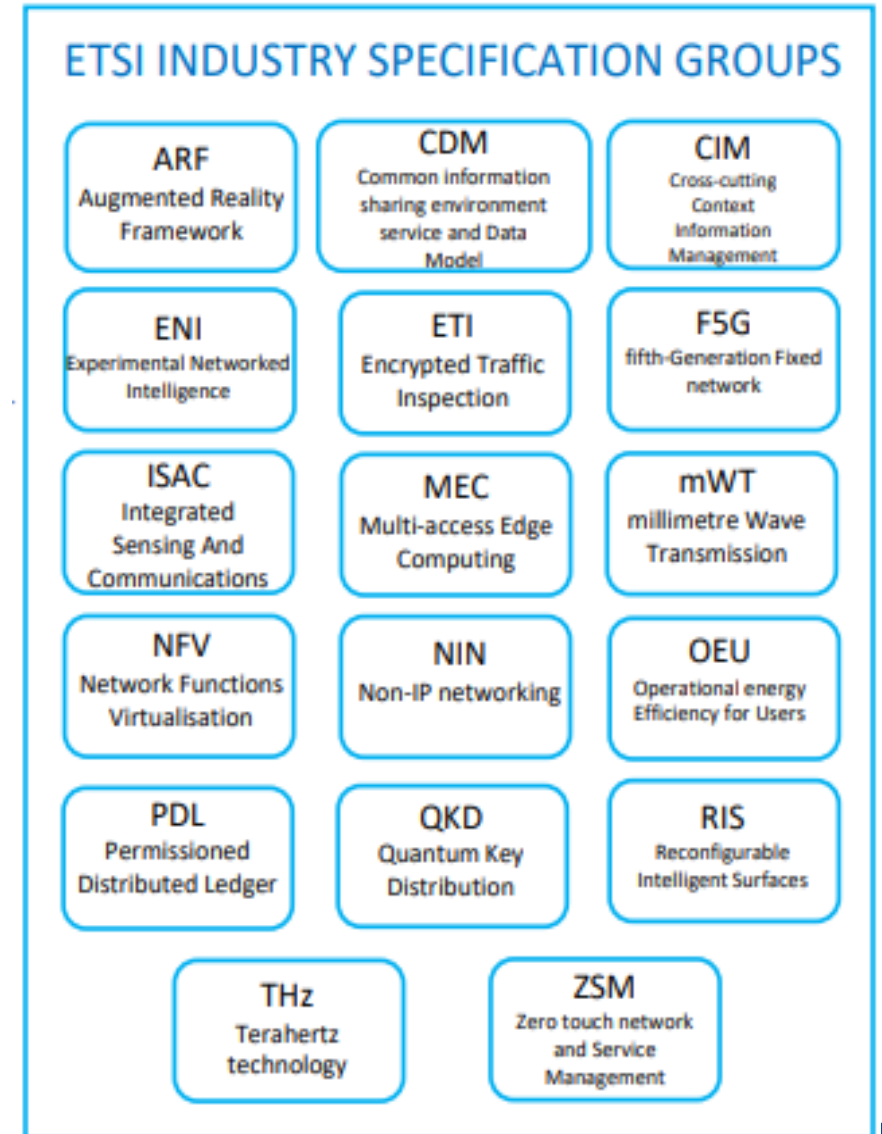
ETSI working alongside EU / national funded research projects

- ETSI as an organisation does not generally join funded research projects as a contractual partner

- However, project proponents may contact ETSI directly should they wish to include relevant activities addressing standardisation in the project proposal

- For cases where project consortia wish to establish strong links with ETSI's technical work, ETSI may, under specific conditions, provide a "letter of support" which confirms ETSI's interest in the relevant research project outcomes. The ETSI CTO considers each request for a LoS on a case-by-case basis

- In exceptional circumstances, where the linkage between the project and ETSI standards work is expected to be significant, ETSI representatives may also participate in the project advisory committee.
  This offers an opportunity to have regular exchanges with relevant projects and provide guidance on potential standards activities in ETSI

- ETSI representatives may also participate in research conferences, project coordination groups such as 5G-IA and research cluster meetings

- Should you have any questions on ETSI's participation in research projects or related topics, please contact research@etsi.org

Creating ISGs for Innovation topics, the ideal platform

- ETSI ISGs (Industry Specification Groups) are the perfect tool for developing 'early' standardization work resulting from innovative research projects
- An ISG may be established on the initiative of any group of, at least four (4), ETSI members (or applicant members) making a request to the ETSI Director-General and meeting the essential criteria for new ISGs in ETSI
- The streamlined ISG process can enable a group to be set up quickly (1 - 2 months) and deliverables may be published rapidly afterwards
- ETSI ISGs are open to both ETSI members and non-members
- This tool has been used for many successful standards efforts on technologies such as mWT, Network Virtualization, Edge, Artificial Intelligence, eXtended Reality, Blockchain and Quantum technologies.
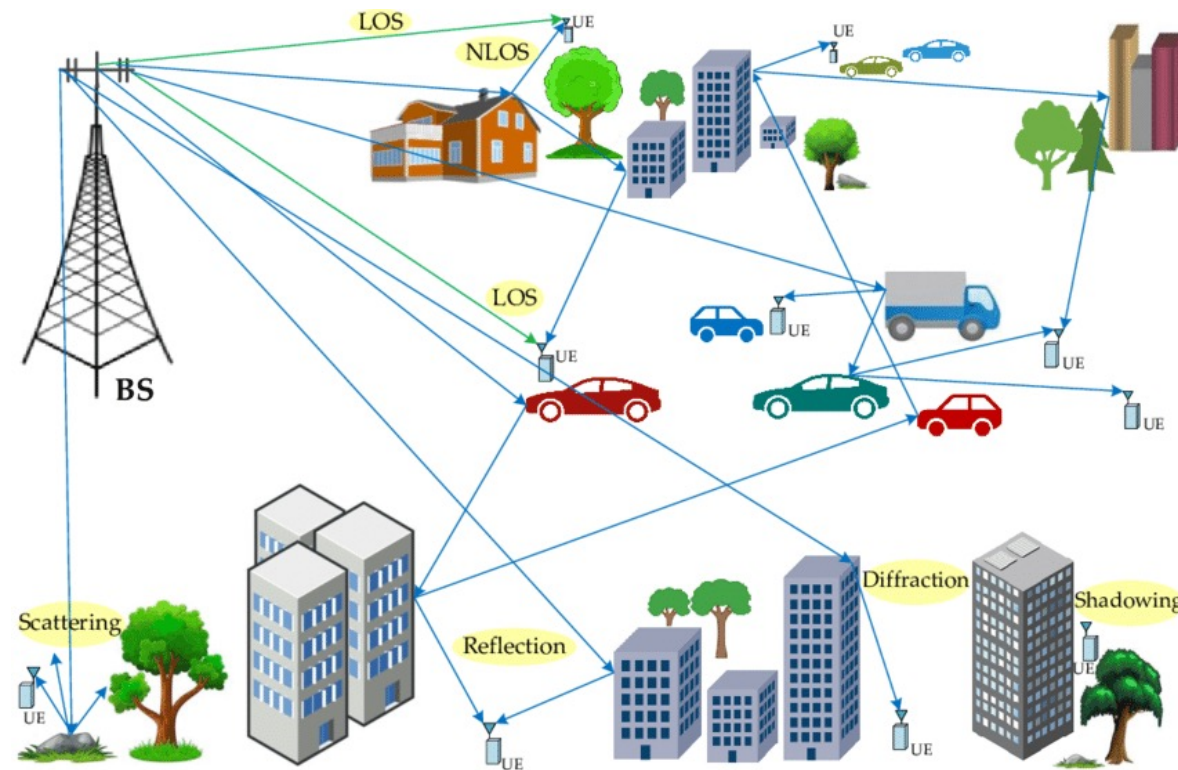
ETSI INDUSTRY SPECIFICATION GROUPS

ARF Augmented Reality Framework	**CDM** Common information sharing environment service and Data Model	**CIM** Cross-cutting Context Information Management
ENI Experimental Networked Intelligence	**ETI** Encrypted Traffic Inspection	**F5G** fifth-Generation Fixed network
ISAC Integrated Sensing And Communications	**MEC** Multi-access Edge Computing	**mWT** millimetre Wave Transmission
NFV Network Functions Virtualisation	**NIN** Non-IP networking	**OEU** Operational energy Efficiency for Users
PDL Permissioned Distributed Ledger	**QKD** Quantum Key Distribution	**RIS** Reconfigurable Intelligent Surfaces
	THz Terahertz technology	**ZSM** Zero touch network and Service Management

Example – ISG THz – Pre-3GPP work on channel models

Research – examples
- B-Com
- BJTU
- CEA
- CNRS
- ETRI
- Fraunhofer
- Surrey University
- IMEC
- Institut Mines-Telecom
- Instituto de Telecomunicacoes
- Kings College London
- Durham University (vice chair)
- Oulu University

Universities and Industry working together

Industry - examples
- Apple
- AT&T
- Intel
- Keysight
- Mitre
- LG
- Mitsubishi
- Motorola
- NEC
- Nokia
- Qualcomm

Incentives for teachers and undergraduate students

Teachers

Gain insight into where the technology is going

Keep up to date with developments that keep your syllabus current

Learn about new areas such as safety in AI, Quantum or cyber security

Feed into any research you are involved in

Students

Unlock new job opportunities

Obtain the latest updates on what the industry is working on, the practices and the trends

Professional development – need to add to route to chartered status

Learn about innovation and problem-solving

Connections with Industry experts provide networking opportunities

Students can significantly enhance their professional and personal development by getting involved in standardisation,
making them well-rounded candidates ready to tackle industry challenges and contribute to societal advancements.

ETSI Resources for Researchers and Academics

Helpdesk for Researchers

🌐 www.etsi.org/research

in https://www.linkedin.com/showcase/etsi-standardization-research-innovation-education

✉ **Helpdesk:**
research@etsi.org

✉ **Director New Technologies:**
David.Boswarthick@etsi.org

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- Dedicated research Webpages
- Dedicated contact email
- Guides / Leaflets / Videos
- Support to EU Projects
- Advice on EU Research
- Setting up new Standards Groups
- Advice on Standards Activities
- … and more

Thank you for your attention

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