The Vienna Office

Dr. Clara Neppel

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Introduction

IEEE Technology Centre GmbH, Vienna – current staff

▸ Dr. Clara Neppel, Senior Director for European Business Operations

- Responsible for IEEE's operations and presence in Europe
- From the European Patent Office

▸ Dr. Hermann Brand, European Standards Affairs Director

- Lead the regional efforts of the IEEE-SA in Europe
- From the European Telecommunications Standards Institute

▸ MStats. Tania Sanchez Juarez Zugazagoitia, Executive Administrator

- General administration of IEEE's Technology Centre
- From industry (Dell EMC, Kofax) and German Academic Exchange Service (DAAD)

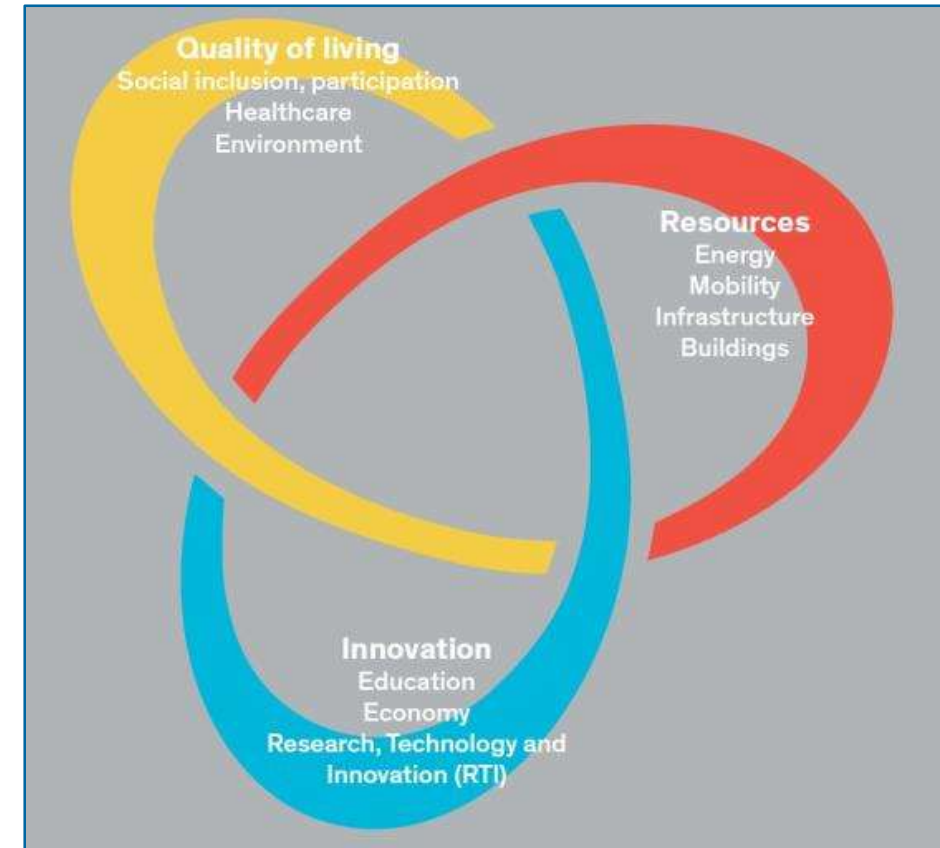# Global Solutions to Global Challenges

Worldwide offices

= IEEE Office
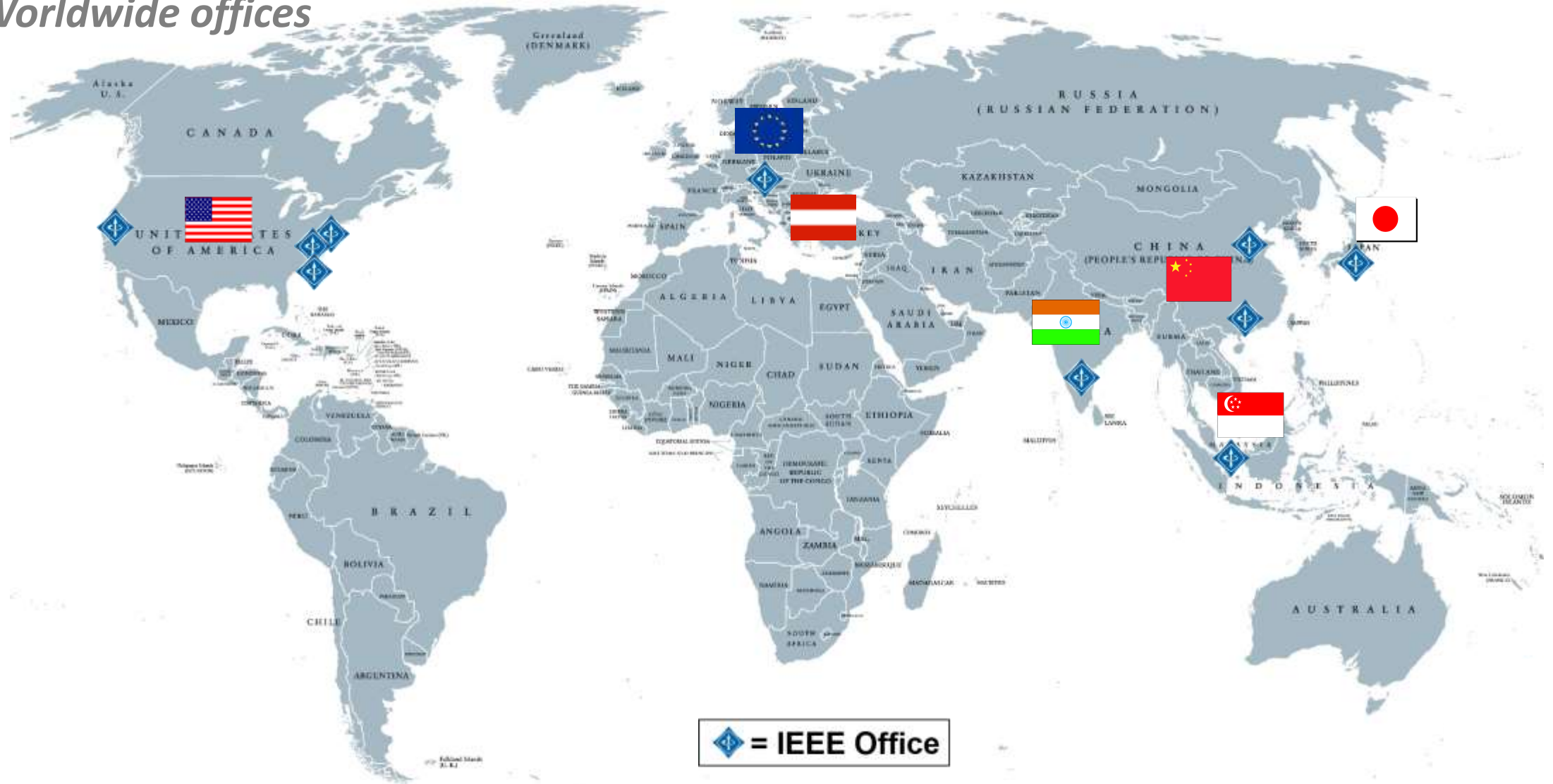
Why Vienna?

A truly global city for a global organization

▸ The easternmost city of Western Europe and the westernmost city of Eastern Europe

▸ Seat of numerous international organizations: UN, OSCE, IAEA

▸ Smart City: ranks highest for quality of living 8th year in a row

▸ Home to multiple science and technology parks, research facilities, and robust university technology transfer programs

Quality of living
Social inclusion, participation
Healthcare
Environment

Resources
Energy
Mobility
Infrastructure
Buildings

Innovation
Education
Economy
Research, Technology and
Innovation (RTI)

IEEE

The Opening

IEEE Technology Centre in Vienna

Initial goals

‣ Collaboration, support, and services to the technical community

‣ Focused on the needs of industry, academia, and governmental institutions

‣ Provide educational and career-enhancement opportunities for professionals to stay up-to-date on the latest technologies

‣ Engage and participate in **public policy** by facilitating dialogue between European technologists and policy makers

‣ Facilitate development and acceptance of international **standardization** to foster global innovation and enhance competitiveness

European Public Policy Committee (EPPC)

Marko Delimar
EPPC Chair

‣ **Charter**
- The IEEE European Public Policy Committee is a Committee of IEEE, responsible to the IEEE Board of Directors for the coordination of public policy activities relevant to the interests of IEEE members in European Union (EU) and European Free Trade Association (EFTA) countries, which are designed to benefit IEEE members, engineering professionals and the general public.
- **Full Charter at**: www.ieee.org/eppc

‣ Region 8 leaders are on the EPPC providing guidance and input to the program and events

Policy Working Groups

▸ Policy WGs:
- Two active groups on Energy and ICT
- EU & EFTA country members can apply
  - ~200 applications received 2013/2016 Call for Members
- Meet virtually and in-person to develop public policy statements and other documents
  - White Papers, Responses to Consultations, etc.
  - Engaging with policy makers at the technical level on key topics in Energy/ICT realms
- Opportunity to engage in or organize policy-related events
  - Panel Sessions, EU Dinner Debate, IEEE Summit, MEP Awards, Conferences

▸ Secretariat and program management support:
- IEEE Vienna Office and Corporate Activities staff
- Interel (Government Affairs firm located in Brussels)

IEEE Summits – Internet Governance (2014), Towards Secure Green Energy (2015), Artificial Intelligence and Ethics (2016) , Technology for Health (2017)

Public Policy Position Statements

‣ Members in Europe are individually involved in EU public affairs and in EU-funded research programs

‣ As individuals they may not have the impact or visibility that they could have by working through an international organization such as IEEE.

‣ EPP allows members to develop and promote coordinated and consensus-based public policy positions

- empowers IEEE members

- gives IEEE a voice in Europe

- Production of relevant technical statements and white papers.

‣ Sections provide input

https://www.ieee.org/about/ieee_europe/europe_publications.html

* Public policy position statements

* Heating and Cooling Future of Europe and Interactions with Electricity - 16 January 2018 (PDF, 520 KB)

About 50% of the final energy consumption in Europe is used for the heating needs of buildings, domestic hot water production, and heating in industrial processes. In addition, much of this supply comes from fossil fuels, meaning significant greenhouse gas emissions, as the heating sector alone causes about 38% of the overall EU emissions. Besides heating, in the last decade cooling has become a major factor in the share of energy consumption too, creating challenges for the electricity grid. Therefore, addressing the heating and cooling sectors is key to achieving the European climate goals, as well as increasing concerns with regards to security of supply. The IEEE European Public Policy (EPP) would like to look at this topic from an EU perspective and highlight the challenges that Europe will face, as well as the opportunities that may arise by optimally deploying new technologies.

* Electrification of Transportation in the European Union - 2 November 2017 (PDF, 602 KB)

Today, the public is generally more concerned with the environmental impact of technology than in any period of the modern industrial economy. The use of electricity to provide the energy to drive transportation is not a new idea: railways around the world have used electricity to drive trains and trams for many years. This was due to the nature of the railway, with coomfined routes allowing power to be routed effectively along the railway lines. The IEEE EPP, representing prominent European technologists, looks at this topic from an EU perspective and highlights the interests that electrification of transport can represent to current EU policies.

* Artificial Intelligence: Calling on Policy Makers to Take a Leading Role in Setting a Long-Term AI Strategy - 15 October 2017 (PDF, 568 KB)

Artificial Intelligence (AI) is quickly finding its way into the lives of people all across the world, thanks to the innovative work of scientists and technologists, many of whom are IEEE members. As AI becomes a greater part of our everyday lives, so does the discussion about managing risks and rewards. As more applications of AI are developed, IEEE members are leading the debate on how to build trust, prevent drastic failures, and integrate ethical considerations into the design of AI technologies. The IEEE European Public Policy (EPP) supports the vision that the

MEP Awards and Parliament Magazine

▸ Organized by the Parliament Magazine

▸ Recognizes Members of the European Parliament (MEP) who strive to connect Europe digitally

▸ IEEE has been a sponsor for seven years
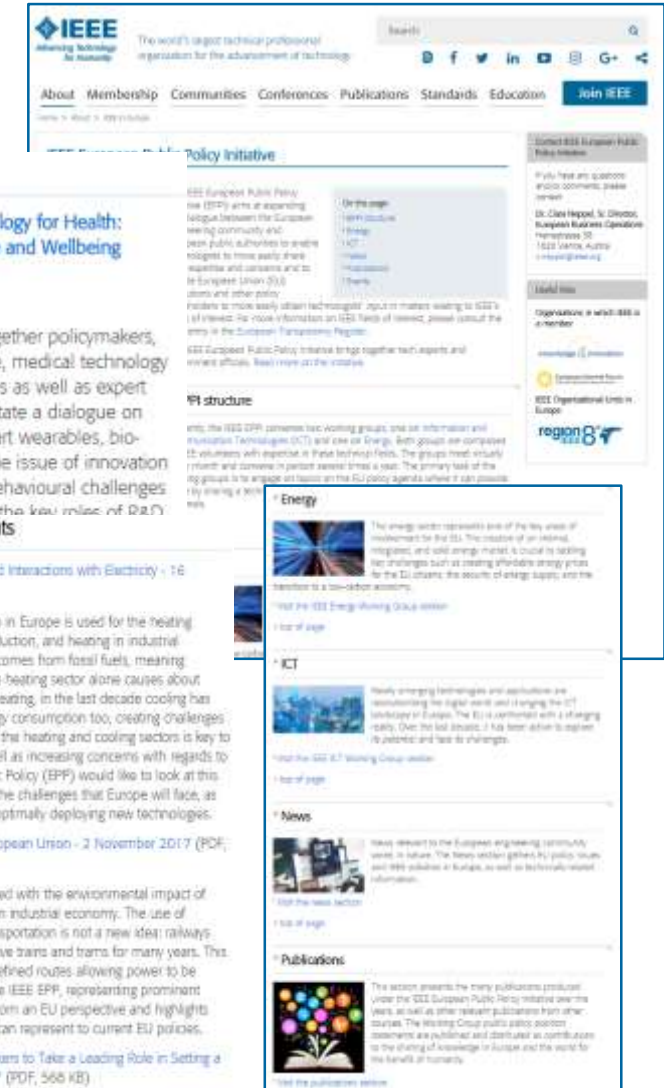
▸ In 2018 will sponsor the Digital Single Market Award

IEEE European Public Policy Web Portal

▸ Features links to:

- IEEE European Public Policy Committee
- IEEE EPP Working Group on Energy
- IEEE EPP Working Group on ICT
- News
- Publications
- Events
- Webinars

www.ieee.org/eppc

Standardization

- Engaging with industry and SMEs

- Promoting IEEE standards and standardization work program

- Identifying needs for standardization initiatives

- Engaging with European standardization stakeholders, including standards organizations

- Engaging in and contributing to European standardization policies
  - Providing information to Multi-Stakeholder Platform for ICT Standardization (MSP)
  - Informing about the IEEE approach to standardization and its work program
  - Monitoring other standards-related activities and commenting/educating where relevant

IEEE standardized solution elements – a toolbox

1) **IEEE Standards for a broad range of technical domains**,

- from ICT (LAN/MAN) to power and energy,
- from radiation to nuclear,
- from aerospace to broadcast,
- from medical devices to nanotechnologies, etc.

- **Common base (horizontal) standards** for **many vertical industries** (manufacturing, smart cities, …), e.g. **Time Sensitive** *Local/Metropolitan Area* **Networking (TSN)**
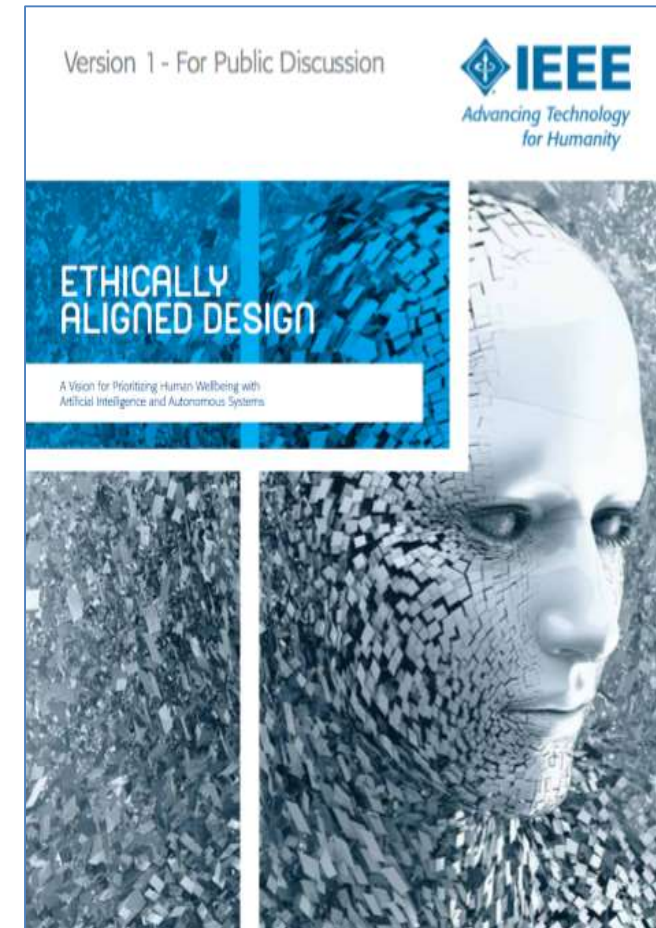
- **Specific standards** for **vertical industries**

2) Both **Technical AND Ethical** Standards

Ethically Aligned Design of Autonomous Systems

Example Artificial Intelligence

- The IEEE Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems

- IEEE P7000™ Standards Series Examples:
  - Ethical System Design
  - Addressing Algorithmic Bias
  - Governance of Employee Data
  - Personal AI Agent
  - Robotic / Systems Nudging
  - Fail-Safe Design of Autonomous Systems
  - Wellbeing Metrics Standard for AI

- 13 approved projects; 9 of the 11 established standards working groups have chairs/vice-chairs from Europe

Version 1 - For Public Discussion

◆IEEE
Advancing Technology for Humanity

ETHICALLY ALIGNED DESIGN

A Vision for Prioritizing Human Wellbeing with Artificial Intelligence and Autonomous Systems

◆IEEE

➢ IEEE TSN (Time Sensitive Networking) provides **deterministic connectivity** to **time and mission critical industrial applications** over *Ethernet* network.

  ➢ TSN guarantees data transport with bounded low latency, low jitter and extremely low data loss.

  ➢ TSN enables convergence of critical control, non-critical control, and data streams for information services on a single network

  ➢ IEEE 802.1 series of 6 standards and IEEE Std 802.3br, 4 ongoing IEEE 802.1 projects and 1 ongoing IEEE 802.3 project

➢ Other ongoing standardization projects include:

  ➢ 3D printing (e.g. P3030),

  ➢ Smart Transducer Interface for Sensors and Actuators (e.g. P1451),

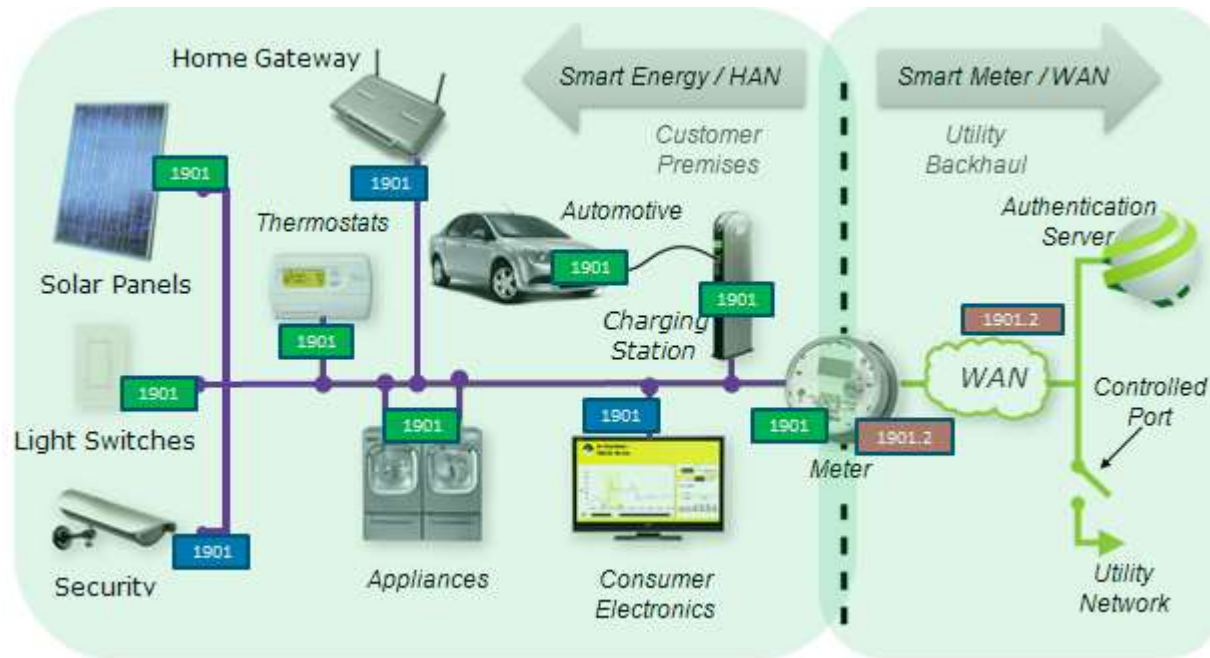 ➢ Real-time Onsite Operations Facilitation (ROOF: P1931.1)

See also ***TSN CONFERENCE 2017 TECHNOLOGY & APPLICATIONS,*** http://www.tsnaconference.de/home.html

◆ IEEE

Integrated Mobility in Smart Cities
Smart Grid and Digital Energy Management

- **IEEE 1901 Series -** Powerline Communication

■ **IEEE 2030 series** on the smart grid, including electric vehicle infrastructure

■ **IEEE 1547 series** on handling distributed resources in electric power systems

■ **IEEE 1815 series** on electric power systems communications

Find more smart grid standards and projects at http://smartgrid.ieee.org/standards

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Example: Smart Healthcare

We partner with a number of players in the field of emerging technologies, where we may bring collective value
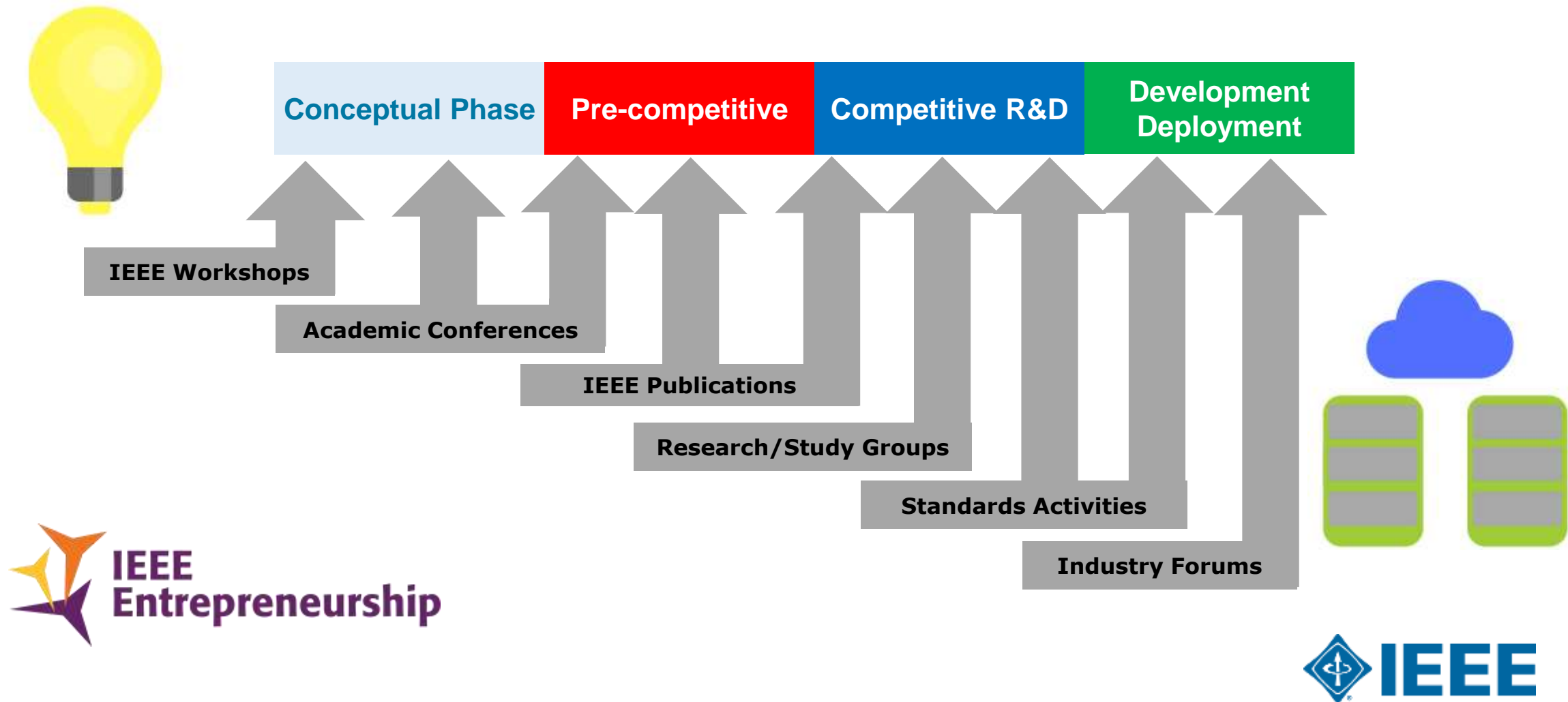

Global Standards Collaboration

No Restrictions in Engagement

- Open in membership, participation and governance
- No restrictions
- Any individual or organization globally
- Any industry or size of company

IEEE as a human-centric Innovation Platform

Conceptual Phase	Pre-competitive	Competitive R&D	Development Deployment

IEEE Workshops

Academic Conferences

IEEE Publications

Research/Study Groups

Standards Activities

Industry Forums

IEEE Entrepreneurship

Example Digital Transformation

Global and local issues

▸ Information/Communication Technologies (ICT) drive innovation in all sectors (Smart Transportation, Smart Grid, Smart Factory, Smart City …)

▸ New wave of convergence: processing of information and operation of equipment

▸ Drives Automation of everything

▸ Autonomous Systems everywhere

Technology
e.g. big data, cloud, 5G, IoT, cybersec, AI, blockchain

Economics
e.g. Digital Single Market

Politics
e.g. GDPR

IEEE

Examples of Events

- Global Standards Collaboration Meeting
- EU Startup Competition (w R8, IEEE N3XT)
- OECD conference "AI Intelligent Machines, Smart Policies"
- IEEE Summit on Technology for Health
- Hosted MGA N&A Committee
- Mobile World Congress (w Ethics Initiative)
- …
- POLITICO AI Summit: Innovation & Governance
- Industry Workshop on Automotive (w French Section)
- Webit, June 2018, Sofia
- ICT Day, DG CNECT, December 2018, Vienna

Expanding collaborations and partnerships

Recent Activities

- ▸ High level meeting between EC DG CNECT and IEEE delegation
  - Future collaboration possibilities identified in several technical areas and in education
  - Discussed possible involvement in EU framework programs
- ▸ European Public Policy WG Meetings with officials from DG Justice, CNECT and Energy
  - Topics: Cybersecurity, Artificial Intelligence, Internal Electricity Market
- ▸ Debates in the European Parliament, eg 'Blockchain Applications in Everyday Life '
  - Region 8, Standards, Industry, EU officials, Associations
- ▸ Meeting with the Austrian Ministry of Innovation
  - Introduction of IEEE initiatives, follow-up planned for TechEthics and Autonomous Driving

IEEE

IEEE Vienna Office - Expanding Global Partnerships

Inspiring innovation for those who develop and deliver technology solutions

‣ Serve as a platform for forward-thinking technology professionals across academia, government, and industry

‣ Foster global and local initiatives

‣ Initial focus on **public policy and standardization**

‣ Facilitate interdisciplinary and cross-sector collaboration

‣ Contribute to IEEE's mission to **advance technology for the benefit of humanity**

‣ Work with MGA leadership on how to provide local support for members

Engagement opportunities

▸ Vienna office can facilitate and establish long-term relationships for engaging
- With institutions and industry
- Across operating units (MGA, TA, SA, EA) on specific topics, as mobility or health

▸ Contribute to the Action for Industry program
- Work on a holistic proposal, explore also industry connections and entrepeneurship

▸ Standardization as a tool to commercialize new technologies/research results

▸ Possibility to get involved in public policy and framework programs

▸ New (cooperation) programs drive engagement opportunities and ultimately membership

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