



5th International Conference On Innovation for Shared Prosperity: Past Tense, Present Perplexed, Future Perfect

Dinesh Chand Sharma
Director- Standards and Public Policy
Project SESEI

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Outline

- European Standardisation System & Global Harmonization
- Policy Initiatives (India & Europe)
 - 5G
 - Internet of Things (IoT)
 - Artificial Intelligence (AI)
 - Fourth Industrial Revolution (4IR))



CENELEC



The European Standardization Organizations



Recognition by EU Regulation 1025/2012
= standardization as a tool for supporting competitiveness
and challenges of the society

ESO's are integrated with International

Objective - Avoid duplication of work at International and European levels with an aim for a identical worldwide and European standards



“Vienna Agreement” with

Chemistry, Material, Energy, Environment, Transport, Construction, Services, eMobility etc



CEN: 32% of portfolio identical to ISO



“Frankfurt Agreement” with

Electricity, Electro-technical



CENELEC: **72%** of portfolio identical to (+ another **6%** based on) IEC standards



MoU for telecommunications sector (ITU-T), Agreement on radio-communication sector (ITU-R) Information & Communication Technologies (ICT)



Founding Partner to 3GPP & oneM2M



Seconded European Standardisation Expert in India

Enabling Europe-India Cooperation on Standards

1 European Standard

34 identical national standards all conflicting standards removed

1 Global Solution

whenever possible, Europe's preference is for global solutions

European Standards = global solutions whenever possible and where markets push for it

access to a market of 600 million consumers

access to a global market



Market evolution



...meeting customer needs



“A measure of Innovation is the number of patents registered”

Practical implication of patents

1. company **A** makes a product and needs to implement a standard
2. the standard contains an (essential) patented technology of company **B**
3. Company **A** needs a licence to use that patented technology
4. Thanks to the patent declaration, company **B** (and any successor) is committed to deliver the licence for free or by payment at FRAND conditions
5. Both parties negotiate the terms of the licence

FRAND = Fair, Reasonable and Non-Discriminatory conditions

Patent holder vs. Standard users ?

The risk of tensions between competing interests



- Patent ambush
- Patent shark/ trolling
- Royalty stacking
- Patent hold-up

Patents: a challenge for standardization in an innovative world?

- Standards and Research
- Complexity of technologies & complexity of standards
- Internet of Things (“IoT”)
- Device-to-device communication (“D2D”)
- New generations of interoperable products

IPR In Standards: Patents

Key points

- Do not underestimate discussions on patents in standards
- CEN, CENELEC, ETSI (and ISO, IEC, 3GPP, oneM2M) have a well established patent policy
- Patents declarations and FRAND are essential elements
- Essential Patents issues always involve € and \$...and keep lawyers happy!
- CEN-CENELEC ensure fair recognition of the patent holders and patent users rights



Policy Initiatives (Europe & India)

(5G, IoT, AI, Fourth Industrial Revolution (4IR))



5G

Europe

- In 2013, EC established **Public Private Partnership on 5G (5GPPP)** to accelerate R&D in 5G technology.
 - funded by **Horizon 2020** and is being organized in 3 phases:
 - Phase 1: The future 5G network architecture (2015-2017): **19 research projects**
 - Phase 2: Move towards demonstration and experiments with the involvement of the vertical industries (2017-2019): **21 projects**,
 - Phase 3: End to end 5G platforms, connected and automated mobility, trials across vertical industries and long term 5G evolution: **15 new projects**
- EC launched **5G Action Plan for Europe in 2016** to start launching 5G services by end of 2020 in all EU member states,
 - In 2018, EC launched **European 5G observatory** to monitor the progress of the 5G Action Plan and to focus on 5G developments in Europe.

India

- Government has set up a High Level Forum (HLF) to articulate the Vision for 5G in India.
 - ✓ HLF has published a report "**Making India 5G Ready**"
- **Building an End-to-End 5G Test Bed**: three-year program began in March 2018 to advance R&D in 5G
 - This program has been awarded to IIT Madras, IIT Hyderabad, IIT Delhi, IIT Kanpur, CEWIT, SAMEER and IISc Bangalore.
- **Telecom Regulatory (TRAI) released White Paper on 'Enabling 5G in India'**
 - highlights the specifications of the 5G technology, architecture of 5G network, spectrum requirements for 5G networks, the regulatory issues & challenges and areas that will require investment for 5G deployment.
- **National Digital Communication Policy-2018 (NDCP-2018)**:
 - Emphasizes on Hi-speed internet, IoT/M2M by rollout of 5G technologies

Internet of Things (IoT)/M2M

Europe

- In May 2015 “[Digital Single Market Strategy](#)” was adopted that includes elements which lead Europe a step further in accelerating developments on IoT
 - As part of “[Digitising European Industry](#)”, EC published “[Advancing the Internet of Things in Europe](#)” that specifies the EU's IoT vision.
- In 2015, EC initiated [Alliance for Internet of Things Innovation \(AIOTI\)](#) to open a stream of dialogue among IoT players in Europe
 - To foster experimentation, replication, and deployment of IoT and supporting convergence and interoperability of IoT standards; gathering evidence on market obstacles for IoT deployment; and mapping and bridging global, EU, and member states' IoT innovation activities.
 - AIOTI WGs have published following reports covering IoT policy and standards issues.
 - [AIOTI WG01: Report on Internet of Things Applications](#)
 - [AIOTI WG02 Report on Innovation Ecosystems](#)
 - [AIOTI WG03 Reports on IoT Standards](#)
 - [AIOTI WG04 Report on Policy Issues](#)
 - [AIOTI WG05 Smart Living Environment for Ageing Well Reports](#)
 - [AIOTI WG06 on Smart Farming and Food Safety Reports](#)
 - [AIOTI WG08 Report on Smart Cities](#)
 - [AIOTI WG09 Report on Smart Mobility](#)
 - [AIOTI WG11 Report on Smart Manufacturing](#)

India

- [Draft Internet of Things \(IoT\) Policy](#): released by DeitY/Meity in 2016 to create an IoT industry of USD 15 billion by 2020
 - to develop IoT products specific to Indian needs in all possible domains
 - To support government's initiatives to develop connected and smart IoT based system
- [National Telecom M2M Roadmap 2015](#): released by DoT for growth of M2M
 - Efforts towards assimilation of various M2M standards
 - Approach towards M2M adoption in different sectors of economy.
- **As part of Digital India Initiative, Government has announced [Centre of Excellence for internet of Things \(CoE-IoT\)](#)**
 - NASSCOM is establishing CoE-IoT along with Meity, ERNET and State Governments to build IoT ecosystem in India
- **DoT has released draft guidelines for M2M Service Providers Registration in 2016.**
- In 2017, TRAI has released [recommendations](#) allowing all telecom licence holders to provide M2M service using any spectrum.
- In 2018, DoT issued **13-digit numbers to telecom operators** for the trial of M2M communications and [M2M guidelines](#) in relation to SIM cards used for M2M communication services.

Artificial Intelligence (AI)

Europe

- EC launched “[European AI Alliance](#)”—a community of stakeholders and experts in AI Field.
 - a place to share practices, contribute to the AI ethics guidelines, Network and encourage activities related to the development of AI.
- EC released its Communication COM(2018) 237 ‘[Artificial Intelligence for Europe](#)’ in April 2018.
 - Setting out a European initiative on AI, which is part of its “Delivering on the Digital Single Market – 3rd Data package”.
- On 10th April 2018, Twenty-five EU countries agreed to work together in AI domain and signed [declaration on AI cooperation](#).
- **Digitising Europe Programme in AI:** €2.5 billion is planned to help spread AI across the European economy and society. This budget builds on the [European approach on AI](#).
- In May 2018, [GDPR](#) – a wide-ranging regulation intended to strengthen and unify data protection for all individuals within the EU – went into effect.
 - On 8 April 2019, the High-Level Expert Group on AI presented [Ethics Guidelines](#) for Trustworthy AI

India

- In June 2018, Government think-tank, NITI Ayog has unveiled its [discussion paper on national strategy on AI](#) which aims to guide R&D in new and emerging technologies.
- NITI Aayog identified following five sector that can benefit from adoption of AI
 - Healthcare,
 - Agriculture,
 - Education,
 - Infrastructure and
 - Transportation
- As per [latest news](#), Government of India plans to start National programme on AI to harness the benefits of emerging technologies in identified areas.

Fourth Industrial Revolution/Smart Manufacturing

Europe

- **Factories of the Future Public-Private Partnership**: launched in November 2008 to strengthen Europe's industrial competitiveness and sustainability via R&I in new production technologies and systems
 - Covers areas such as digital automation, process optimisation of manufacturing assets, simulation and analytics technologies and ICT innovation for manufacturing SMEs
- Several European countries have launched or are launching national initiatives to stimulate Industry 4.0 implementation.
- Currently, Horizon 2020 has the following open calls related to connected smart factories/Smart manufacturing:
 - ICT-08-2019 – Security and resilience for collaborative manufacturing environments
 - DT-ICT-07-2018-2019 – Digital Manufacturing platforms for connected smart factories
 - DT-ICT-13-2019 – Digital Platforms/Pilots Horizontal activities
 - DT-ICT-03-2020 – I4MS phase 4- uptake of digital game changers and digital manufacturing platforms (planned for 2020)
 - ICT-38-2020 – AI for manufacturing (planned for 2020)
 - ICT-39-2020 – Digital advances for local/urban manufacturing (planned for 2020)

India

- Department of Heavy Industry, launched **SAMARTH Udyog Bharat 4.0** to raise awareness about Industry 4.0 among the Indian manufacturing industry through demonstration centres.
 - Currently there are four centres: Center for Industry 4.0 (C4i4) Lab Pune; IITD-AIA Foundation for Smart Manufacturing; I4.0 India at IISc Factory R & D Platform; Smart Manufacturing Demo & Development Cell at CMTI
- In August 2017, Department for Promotion of Industry and Internal Trade (DPIIT) had floated a **draft industrial policy** with an aim to promote foreign technology transfer
- In November 2018, Bureau of Indian Standards (BIS) has released **Pre-Standardization report on smart manufacturing**.
 - Report would serve as roadmap for India for Standardization in the field of Smart Manufacturing.
- As per recent news, Government of India to announce **new industrial policy soon**, which will replace industrial policy 1991

Thank you!

Dinesh Chand Sharma

(Seconded European Standardization Expert in India)

Director – Standardization & Public Policy

SESEI C/O EBTC, DLTA Complex, Gate No 3, 1st Floor, 1, Africa Avenue,
New Delhi 110029

Mobile: +91 9810079461, **Tel:** +91 11 3352 1525,

dinesh.chand.sharma@sesei.eu

www.sesei.eu ↔ www.sesei.in