



# 6th International Conference on **Public Key Infrastructure and its Applications (PKIA 2025)**

*Building Trust: Standardization of E-  
Signature Infrastructure*

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- About BIS
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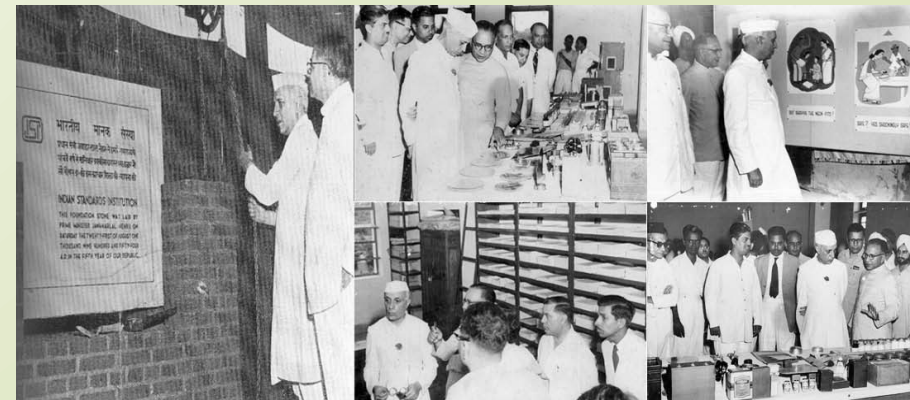
# About BIS

- ❑ The Indian Standards Institution (ISI) was set up in 1947 as a registered society, under a Government of India resolution.
- ❑ ISI Certification Mark Act promulgated in 1952
- ❑ Certification marking scheme initiated in 1955
- ❑ Bureau of Indian Standards (BIS) Act 1986 gave it statutory status on 1 April 1987.
- ❑ BIS Act 2016 enforced on 12th October 2017 makes BIS the National Standards Body of India.
- ❑ Revised Hallmarking Regulation also enacted in June 2018.

Indian  
Standards  
Institution  
1947

BIS Act  
1986

BIS Act  
2016



# BIS Locations



# Core Activities



**Standardization**



**Conformity Assessment**



**Laboratory Activity**



**Hallmarking**



**Training and Consumer Protection**



**What are Standards:**

A document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.

Standard can be a product specification, a code of practice, a terminology standard, a process specification, a service specification, a test method, system specification, dimensions, etc

**Standards are:**

- Always voluntary & Consensus based
- Established by all interested parties
- Driven mainly by Industry & drafted by the technical experts
- Approved by a recognized, independent standardization body

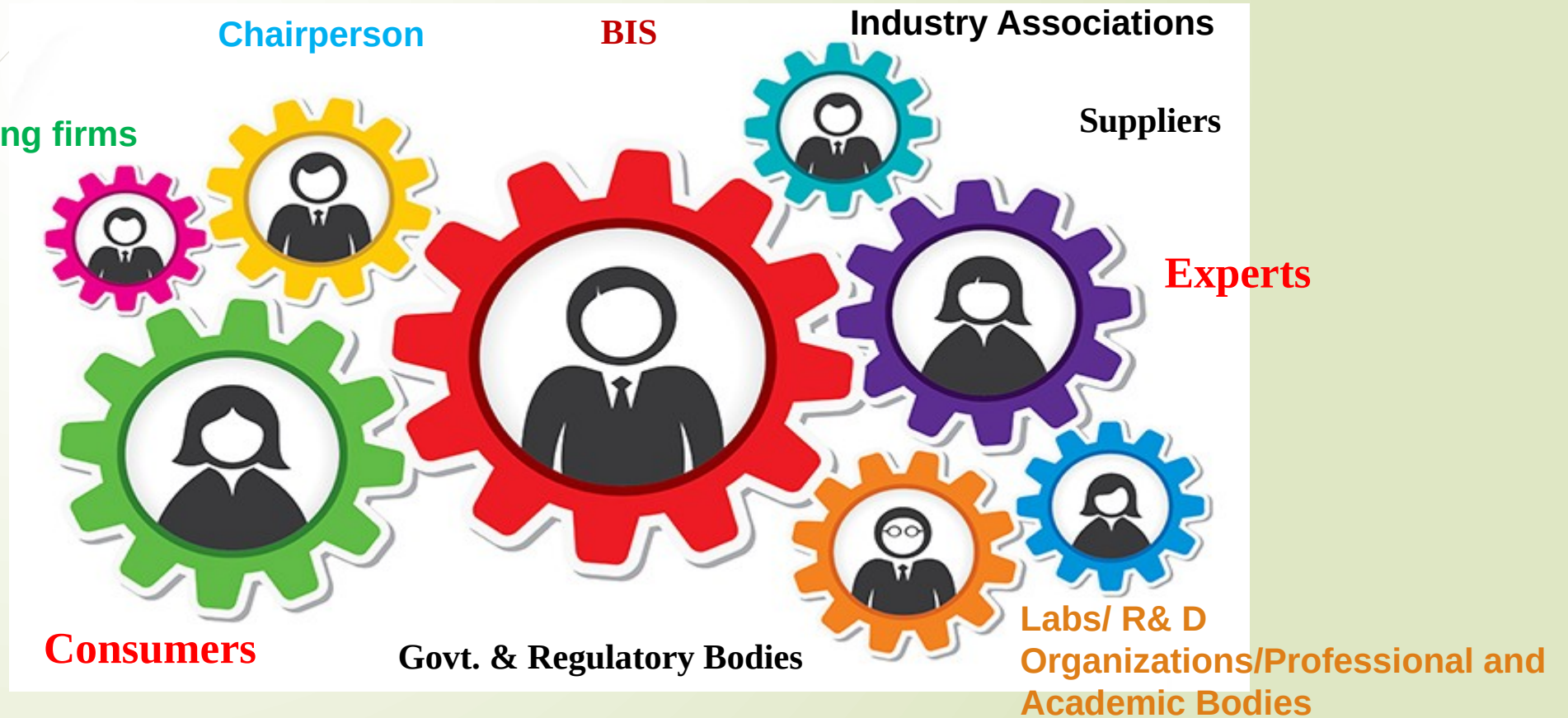


# Stakeholders

7

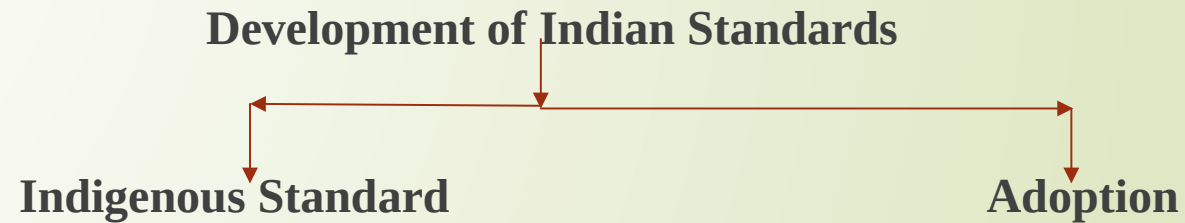
PSU/Consulting firms

Consumer interest is always kept on the forefront while formulation of standards.



**Consensus approach**

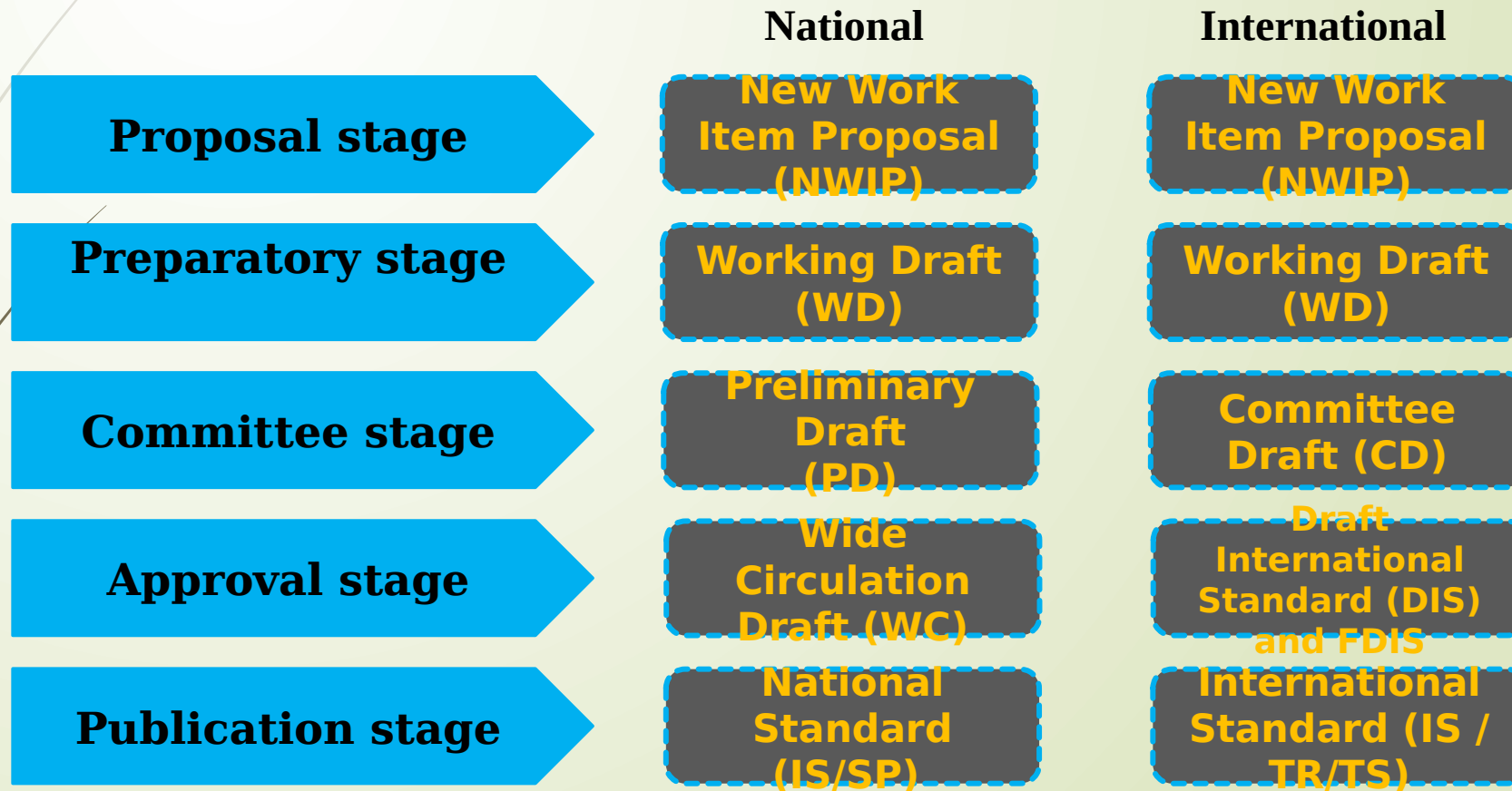
# Standards Formulation - Process



- The Sectional Committee is responsible for identification of subjects and formulation of Standards.
- The **Secretariat of Sectional Committee** is responsible for the management of all standards development work identified in the work programme of that Sectional Committee, including monitoring of their progress against the agreed target dates.



# Standards Formulation - Stages



# Standards Formulation

- ❑ BIS identified 17 sectors important to Indian industry and consumers.
- ❑ Structure comprises **Division Councils (17)**, Sectional Committees (386), Sub-Committees(215), Working Group (261) and Panels(1017).
- ❑ Presently, **22000** Indian Standards are in force – comprising of Product Specifications, Methods of Tests, Codes of Practices, Guidelines, Vocabularies etc.
- ❑ Encourages a culture of quality products and services in line with national priorities through mandatory or voluntary compliance.
- ❑ Best International level practices are followed in standards development.

# Standardization in Electronic Signatures

# Standardization in Electronic Signature Services

- Digital Signature Panel, SSD 10/P-4, under IT and IT enabled Services Sectional Committee, SSD 10, is responsible for formulation of Standards in the field of Electronic Signature Services.
- **Convener** – Mr. Vijay Kumar, In-personal Capacity.
- **Co-convenor** – Mr. Dinesh Chand Sharma, Director, SESEI
- **Member Secretary** – Mr. Dharamsoth Santhosh, BIS
- Other organizations representing the panel are:
- CCA – Shri Deepak Kumar, CDAC Bengaluru – Dr Balaji Rajendran, CSIR-NPL – Shri Ashish Ranjan, GLEIF India – Shri Vikas Panwar, IDRBT – Dr V N Sastry, Zoho Corporation Pvt. Ltd – Shri Subramaniam T, Infineon Technologies India Pvt. Ltd – Shri Madhusudan and Shri Vyasa Guruprasad, Yoganandh & Ram LLP – Shri Chandrasekharan, eMudhra – Shri Sai Prasad, CMRTC – Dr Ashutosh saxena and NIT Sikkim – Dr Sangram Ray.

# Published Standards by BIS

- 1. **IS 19155:2025** - Electronic Signatures and Infrastructures (ESI) - General Policy Requirements for Trust Services Providers
- 2. **IS 19156:2025** - Electronic Signatures and Infrastructures (ESI) - Cryptographic Suites
- 3. **IS 19332 : 2025** - Electronic Signatures and Infrastructures (ESI) - The framework for standardization of signatures; Definitions and abbreviations.
- 4. **IS 19278 (Part 1) : 2025** - Electronic Signatures and Infrastructure (ESI) – Procedures for Creation and Validation of AdES Digital Signatures – Part 1 : Creation and Validation.
- 5. **IS 18595:2024** - Electronic Signatures and Infrastructures (ESI) - Policy and Security Requirements for Applications for Signature Creation and Signature Validation.
- 6. **IS/ISO 17090-4:2023** - Health informatics - Public key infrastructure Part 4 Digital signatures for healthcare documents.

# Published Standards by BIS

- 7. **IS/ISO/IEC 14888-3:2018** - IT Security Techniques - Digital Signatures with Appendix Part 3: Discrete Logarithm Based Mechanisms.
- 8. **IS/ISO 14533-3:2017** - Processes data elements and documents in commerce industry and administration- Long term signature profiles- Part 3: Long term signature profiles for PDF Advanced Electronic Signatures PAdES.
- 9. **IS/ISO/IEC 9796-2:2010** - Information Technology - Security Techniques - Digital Signature Schemes Giving Message Recovery Part 2: Integer Factorization Based Mechanisms ( First Revision )
- 10. **IS/ISO/IEC 14888-2:2008** - Information Technology - Security Techniques - Digital Signatures with Appendix Part 2: Integer Factorization Based Mechanisms
- 11. **IS/ISO/IEC 14888-1:2008** - Information Technology - Security Techniques - Digital Signatures with Appendix Part 1: General
- 12. **IS/ISO/IEC 9796-3:2006** - Information Technology - Security Techniques - Digital Signature Schemes Giving Message Recovery Part 3: Discrete Logarithm Based Mechanisms



# Current Ongoing Projects Under the Panel

| Sl no. | Title  | Status                          |
|--------|--|---------------------------------|
| 1      | Electronic Signatures and Infrastructures (ESI); PAdES digital signatures; Part 1: Building blocks and PAdES baseline signatures (SSD 10 (27043))  | Completed Wide Circulation.     |
| 2      | Electronic Signatures and Infrastructures (ESI); CAdES digital signatures; Part 1: Building blocks and CAdES baseline signatures (SSD 10 (27044))  | Completed Wide Circulation.     |
| 3      | Electronic Signatures and Infrastructures (ESI); XAdES digital signatures; Part 1: Building blocks and XAdES baseline signatures (SSD 10 (27046))  | Completed Wide Circulation.     |
| 4      | Electronic Signatures and Infrastructures (ESI); Signature Policies; Part 1: Building blocks and table of contents for human readable signature policy documents (ETSI TS 119 172-1)           | P-draft Circulation to be done. |
| 5      | Electronic Signatures and Infrastructures (ESI); Policy requirements for TSP providing signature validation services (ETSI TS 119 441)   | P-draft Circulation to be done. |
| 6      | Electronic Signatures and Infrastructures (ESI); Policy and security requirements for trust service providers; Part 1: TSP service components operating a remote QSCD / SCDev. (ETSI TS 431-1) | P-draft Circulation to be done. |



# Current Ongoing Projects Under the Panel

| Sl no. | Title   | Status                         |
|--------|---|--------------------------------|
| 7      | Electronic Signatures and Infrastructures (ESI); Policy and security requirements for trust service providers; Part 2: TSP service components supporting AdES digital signature creation. (ETSI TS 431-2) | P-draft circulation to be done |
| 8      | Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 1: Overview and Common Data Structures (ETSI EN 319 412-1)  | P-draft circulation to be done |
| 9      | Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 2: Certificate profile for certificates issued to natural persons (ETSI EN 319 412-2)   | P-draft circulation to be done |

# Future Roadmap of the panel

- The panel has identified more than 30 subjects for standardization as a part of future roadmap of the panel.



Microsoft Excel  
Worksheet

# Benefits of participating in standardization

- Influence the development of standards.
- Early access to industry trends.
- Insights into emerging technologies and opportunity to contribute.
- Informed decision-making.
- Building relationships with professionals.
- Collaborative opportunities and partnerships
- Exposure to technical, regulatory, and business knowledge.
- Understanding industry challenges and innovations.
- Staying informed about regulatory developments.
- Aligning with current and future standards to mitigate risks.

# Important Links



**Programme of Work** [https://www.services.bis.gov.in/php/BIS\\_2.0/bisconnect/pow\\_new](https://www.services.bis.gov.in/php/BIS_2.0/bisconnect/pow_new)



**Download Indian Standards** <https://standardsbis.bsbedge.com/>



**To Propose New Standard** [https://www.services.bis.gov.in/php/BIS\\_2.0/bisconnect/all-proposals-dg](https://www.services.bis.gov.in/php/BIS_2.0/bisconnect/all-proposals-dg)



**Access to R & D Projects**

[https://www.services.bis.gov.in/php/BIS\\_2.0/eBIS/research-projects-commissioned](https://www.services.bis.gov.in/php/BIS_2.0/eBIS/research-projects-commissioned)



**Comment on Wide Circulation Drafts**

[http://www.services.bis.gov.in/php/BIS\\_2.0/dgdashboard/draft/wcdraftDepartment](http://www.services.bis.gov.in/php/BIS_2.0/dgdashboard/draft/wcdraftDepartment)



**Comment on Published Indian Standards**

[http://www.services.bis.gov.in/php/BIS\\_2.0/dgdashboard/Published\\_Standards](http://www.services.bis.gov.in/php/BIS_2.0/dgdashboard/Published_Standards)



**Membership Request**

[https://www.services.bis.gov.in/php/BIS\\_2.0/bisconnect/dgdashboard/committee\\_sso/](https://www.services.bis.gov.in/php/BIS_2.0/bisconnect/dgdashboard/committee_sso/)

# THANK YOU!