

IEEE | BDL

IEEE Computer Society Blockchain and Distributed Ledger Standard Committee



IEEE | BDL
ANNUAL REPORT
2021

Message from the BDL Chair & Vice Chair

2021 was a very important year for BDL, one in which our standard committee prepare itself for the next major step in its journey. At the same time, as we looked at ways to meet future challenges, we didn't slacken the pace for a minute.

For an organization to succeed, it must align behind common goals. At the IEEE C/BDL, we have a clear purpose – **to manages the development of standards within the area of blockchains and distributed ledgers, the development and implementation of blockchains and distributed ledger systems, and for applications of blockchains and distributed ledgers to specific sectors, industries, and processes.** Our standards together with conformity assessment provide the method to achieve this mission. On the occasion, we would like to take you through some of the year's achievements of which we are most proud.

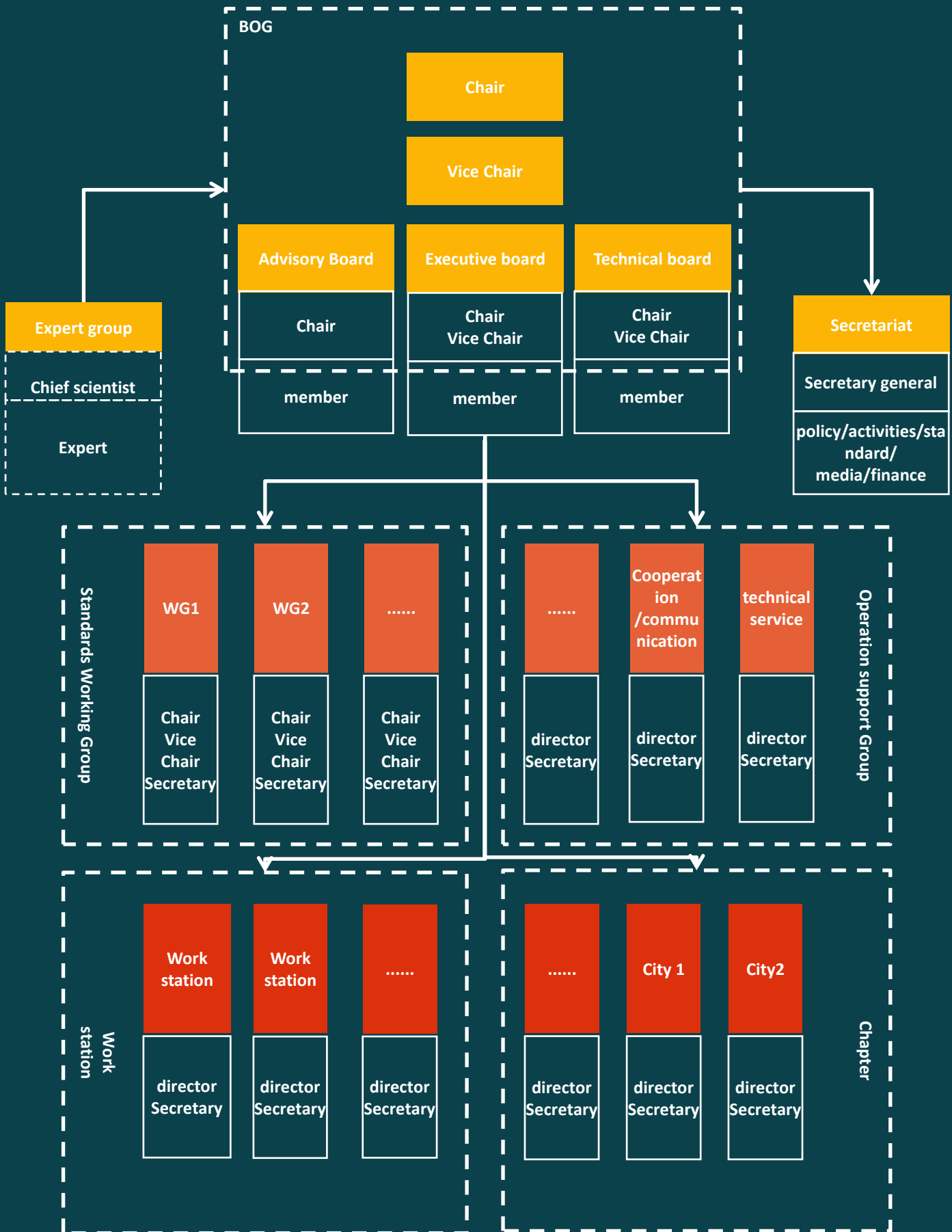
In 2021, we continued to meet, and even surpass, expectations. For example, we published IEEE 2418.7-2021, and we have 21 standards under development. You can find out more about these and other standardizing successes in this report.

At a time when we are experiencing an unprecedented global health crisis, many challenges stand ahead of us. We are proud to be a part of the IEEE C/BDL as we are adapting to the future on this journey, and we know that, together, we are on our way to create the digital world by blockchain.

Ming Li, Chair of BDL

Yu Du, Vice Chair of BDL

IEEE BDL STRUCTURE



1 HONORS ACADEMIC ADVISOR

4 SUBCOMMITTEES

20 WORKING GROUPS

2

MEMBERS OF ADVISORY BOARD,
WHO RESPONSIBLE FOR
RECHNICAL REVIEWING ON
STANDARD CONTENT

11

MEMBERS OF TECHNICAL BOARD,
WHO RESPONSIBLE FOR
STRATEGIC DEVELOPMENT
PLANNING AND CONSULTING

1 TREASURE

4 SECRETARIES

17

MEMBERS OF EXECUTIVE BOARD,
WHO RESPONSIBLE FOR
DECISION-MAKING ON MAJOR
ISSUES

18 AVERAGE VOTING MEMBERS

FOR EACH WORKING GROUPS

40+ ENTITIES AS BDL CONTRIBUTORS, LISTED HERE BELOW BY CATEGORY.

Honors Academic Advisor: Jifeng He, Academician of Chinese Academy of Sciences, East China Normal University

Advisory Board	Executive Board	Technical Board
<ul style="list-style-type: none"> Susan Corbisiero, Australian Trade and Investment Commission Hock Lai Chia, Singapore FinTech Association 	<ul style="list-style-type: none"> Bin Li, Webank Danny Deng ,Gongyilian Fangwei He, Zhongke Fuyun Fred Du, Bytom Han Hao, Annie Haobo Ma, Hoopox Hongfei Da, Distributed Technologies Jose Antonio Costa, Nokia Tiancheng Liu, Easy Visible Sky Tree Wei Xiao, Baidu Wenpeng Song, Zhongan Xiaojun Zhang, Huawei Xinlei Zhai, JD Digits Ying Yan, Ant Financial Yuming Yuan, Hainan Huochain Technology Co., Ltd Zhoudong Ji, Goldfield capital Ltd Yukun Hao, Wanxiang Blockchain 	<ul style="list-style-type: none"> Haibin Kan, Fudan University Jianming Zhu, Central University of Finance and Economics Liang Cai, Zhejiang University Qiang Tang, New Jersey Institute of Technology Ruiyun Yu, Software College, Northeastern University Yi Sun, Institute of Computing Phil Lau, Map Protocol Alison Holt, FIITP, FBCS Haishui Yan, Aurora IT Group Kyeong Hee OH, TCA Services Weilun Lao, China Southern Power Grid Guangzhou Power Supply Bureau

IEEE BDL STANDARDS AT A GLANCE

ACTIVE PROJECTS OF
WORK OF BDL

21

THE BREAKDOWN WAS AS FOLLOWS:

2 PROJECTS AT PUBLIC BALLOT STAGE

19 PROJECTS WORKING GROUP DRAFTS

RECORD NUMBER
PUBLISHED IN 2021

1

THIS OUTPUT REPRESENTS A
TOTAL OF 23 PAGES

IEEE BDL STANDARDS BY TECHNICAL SECTOR

23.5 %

TECHNICAL

17.6%

INTEROPERABILITY

17.6%

SERVICE

17.6%

ASSET

6%

APPLICATION

6%

DATA

11.7%

OTHERS

The smooth development of IEEE C/BDL 2021 cannot be separated from all member's strong support.

We will continue to make efforts on making all working groups voices heard in 2022 and beyond.

- 1 IEEE 2418.2-2020 IEEE Standard Data Format for Blockchain Systems
- 2 IEEE 2418.7-2021 IEEE Standard for the Use of Blockchain in Supply Chain Finance
- 3 P3201 Standard for Blockchain Access Control
- 4 P3202 Standard for Capability Evaluation Requirements of Blockchain Practitioners
- 5 P3203 Standard for Blockchain Interoperability Naming Protocol
- 6 P3204 Standard for Blockchain Interoperability - Cross Chain Transaction Consistency Protocol
- 7 P3205 Standard for Blockchain Interoperability - Data Authentication and Communication Protocol
- 8 P3206 Standard for Blockchain-based Digital Asset Classification
- 9 P3207 Standard for Blockchain-based Digital Asset Identification
- 10 P3208 Standard for Blockchain-based Digital Asset Exchange Model
- 11 P3209 Standard for Blockchain Identity Key Management
- 12 P3210 Standard for Blockchain-based Digital Identity System Framework
- 13 P3211 Standard for Blockchain-based Electronic Evidence Interface Specification
- 14 P3212 Standard for Blockchain System Governance Specification
- 15 P3214 Standard for Testing Specification of Blockchain Systems
- 16 P3215 Standard for Consensus Framework for Blockchain System
- 17 P3216 Standard for Blockchain Service Capability Evaluation
- 18 P3217 Standard for Application Interface Specification for Blockchain Systems
- 19 P3218 Standard for Using Blockchain for Carbon Trading Applications
- 20 P3219 Standard for Blockchain-based Zero-Trust Framework for Internet of Things (IoT)
- 21 P3220 Guide for the Application of Non-Fungible Token (NFT) Based Digital Asset
- 22 P3222 Standard for the Reference Architecture of Blockchain as a Service
- 23 P3223 Standard for the Reference Architecture of Blockchain Fusion Serve



Our performance

Our highlights



The [2418.7-2021 IEEE Standard for the Use of Blockchain in Supply Chain Finance](#) defines a baseline architectural framework and defines functional roles for blockchain-driven supply chain finance (SCF) implementations based on the account payable, e.g., core enterprise, supplier, bank, blockchain platform provider and so on. In addition, this standard outlines use cases and business flows for SCF based on blockchain, and specifies the functional implementation and security requirements.

This standard provides a foundation for the blockchain implementation solutions within supply chain finance through which all traditional supply chain finance stakeholders especially small and medium enterprises can benefit from the transparent, efficient, accurate, decentralized, and secure architecture.

Standard for the Use of Blockchain in Supply Chain Finance

Working Group Participants

Name	WG Position	Affiliation
Hui Zhang	Chair	Alipay (China) Technology Co., Ltd
Jianong Li	Vice Chair	Chinese Electronics Standardization Institute
Qi Wang	Secretary	0xSenses Corporation
Zhenzhen Jiao	Contributor	Chaincomp Technologies Co., Ltd
Tiancheng Liu	Contributor	Easy-Visible Sky Tree Technology (Beijing) Co., Ltd
Butian Huang	Contributor	Hangzhou Yunphant Network Technology Co., Ltd
Hailong Wang	Contributor	JD.com
Yinming Pang	Contributor	Linkeychain Intelligent Technology (Shanghai) Co., Ltd.
Sibo Feng	Contributor	LinkLogis Digital Technology Group Co., Ltd.
Feng Cao	Contributor	Shanghai Plian Information Technology Co., Ltd.
Yang Gao	Contributor	Shanghai Pudong Development Bank Co., Ltd.
Jian Cheng	Contributor	Shanghai Weilian Information Technology Co., Ltd.
Yong Yan	Contributor	State Grid Corporation of China
Yang Wu	Contributor	Tencent.
Erwu Liu	Contributor	Tongji University
Mingjuan Wu	Contributor	Wuxi SensingNet Industrialization Research Institute
Han Hao	Contributor	Xiamen Anne Corporation Ltd.
Jianhai Chen	Contributor	Zhejiang University
Jiange Cai	Contributor	Zhejiang University
Wenting Chang	Contributor	Alipay (China) Technology Co., Ltd
Huaiyong Hu	Contributor	Xiamen Anne Corporation Ltd.
Ming Li	Contributor	Chinese Electronics Standardization Institute
Nuqie Li	Contributor	Sichuan Changhong Electric Co.,Ltd.
Xuming Lu	Contributor	Alipay (China) Technology Co., Ltd
Hongwei Luo	Contributor	Alipay (China) Technology Co., Ltd
Yingming Pang	Contributor	
Jin Peng	Contributor	Alipay (China) Technology Co., Ltd
Lin Sun	Contributor	Chinese Electronics Standardization Institute
Lei Wu	Contributor	Zhejiang University
Quanqing Xu	Contributor	Alipay (China) Technology Co., Ltd
Sheng Yang	Contributor	
Yu Yuan	Contributor	0xSenses Corporation
Yuhang Zhang	Contributor	Alipay (China) Technology Co., Ltd

BDL PLENARY IN SU ZHOU

—Special Thanks to Wanxiang Blockchain for sponsorship with the conference.

IEEE COMPUTER SOCIETY BLOCKCHAIN AND DISTRIBUTED LEDGER STANDARDS COMMITTEE PLENARY & P3200S WG MEETING



IEEE Computer Society Blockchain and Distributed Ledger Standards Committee Plenary Meeting & IEEE P3200 Series Standards Working Group Meeting

Location: Suzhou, Jiangsu Province
Time: 28th - 30th April 2021, 9:30 am - 5:00 pm, UTC+8

IEEE C/BDL Plenary Meeting, 28th April, 9:30am-12:00am (DRAFT)

Sign in for plenary starts at 9:00am on the morning.

1.Call to Order and Introductions

2.Roster Update and Approval of Agenda

3. Approval of last Minutes

4.Opening speech given by Chair

5.Award for P2418.2

6.Award for members of IEEE C/BDL

7. BDL Officers Report

- 7.1 Vice Chair Report (Annual report)
- 7.2 Chief Secretary Report (Orientation)

8. IEEE SA update/issues at WG (Zhao Meng)

9.Working groups status report (5min for each)

- P3201 Standard for Blockchain Access Control
- P3202 Standard for Capability Evaluation Requirements of Blockchain Practitioners
- P3203 Standard for Blockchain Interoperability Naming Protocol
- P3204 Standard for Blockchain Interoperability - Cross Chain Transaction Consistency Protocol
- P3205 Standard for Blockchain Interoperability - Data Authentication and Communication Protocol
- P3206 Standard for Blockchain-based Digital Asset Classification
- P3207 Standard for Blockchain-based Digital Asset Identification
- P3208 Standard for Blockchain-based Digital Asset Exchange Model
- P3209 Standard for Blockchain Identity Key Management
- P3210 Standard for Blockchain-based Digital Identity System Framework
- P3211 Standard for Blockchain-based Electronic Evidence Interface Specification
- P3214 Standard for Testing Specification of Blockchain Systems

10.Call for participate for new working groups

- P3212 Standard for Blockchain System Governance Specification
- P3215 Standard for Consensus Framework for Blockchain System
- P3216 Standard for Blockchain Service Capability Evaluation

11.New Business and Future Meetings

12.Adjournment

standards.ieee.org



IEEE SA STANDARDS ASSOCIATION

IEEE Computer Society Blockchain and Distributed Ledger Standards Committee Plenary & IEEE P3200 Series Standards Working Group Second Meeting

Closing Plenary

Location: Suzhou, China
Date: 30th April 2021

Document type: Resolutions

Title: Resolutions - IEEE C/BDL, April 2021 Suzhou

Date of document: 2021-04-30

Expected action: INFO

Email of secretary: sunlin@csel.cn

Committee URL: <https://sagroups.ieee.org/bdlsc/>

Attendees

Chair:
Ming Li

Vice Chair:

Yu Du

Secretaries:

Yukun Hao
Lin Sun

Attendees:

Members of Executive Board
Members of Technical Board
P3200s Working Group members

IEEE Computer Society Blockchain and Distributed Ledger Standards Committee
28th - 30th April 2021, Suzhou, China

RESOLUTIONS

All Resolutions were approved unanimously unless otherwise noted.

1.Work Program

Resolution	Item	Working Group
001	IEEE P3201 Access Control Working Group appointed Du Manxiang, Shanghai Wanxiang Blockchain, as WG Chair. The WG reviewed the research results of the six-layer access control strategies based on blockchain, approved the outline and style guide	C/BDL/AC (Access Control Working Group)

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2021 IEEE Technology Seminar on Blockchain and Distributed Ledger Technology for Carbon Trading

IEEE BDL

IEEE Computer Society Blockchain and
Distributed Ledger Standards Committee

10th September 2021 AT 7PM BEIJING TIME

2021 IEEE Technology Seminar on Blockchain and Distributed Ledger Technology for Carbon Trading



Dr. Victoria Wang

Host

China Strategic Lead, IEEE Standards Association



Ming Li

19:05-19:20

Chair, IEEE Computer Society Blockchain and
Distributed Ledger Standards Committee
Director, China Electronics Standardization Institute



Jim Matthews

19:20-19:35

President, IEEE Standards Association



Dong Wang

19:35-19:55

Chair, IEEE P3218 Working Group
President, State Grid Blockchain Technology (Beijing)
Co., Ltd.



Esther Harvey

19:55-20:10

Counsellor, Department of Industry, Science, Energy
and Resources, Australian Embassy Beijing



Dr. Betty Xu

20:10-20:25

Director, SESEC,
Seconded European Standardization Expert in China



Kyeong Hee Oh

20:25-20:40

CEO, TCA services
Co-rapporteur, ITU-T SG 17 Q14
Project Leader, ISO/TC 307 IS 23257



Pedro Baiz, PhD

20:40-20:55

CTO and Co-Founder, Earn Zero
Royal Society EIR, Imperial College London
Convener, FinTech TAG, ISO/TC 322

Q&A Section 20:55-21:00

Meeting Link:

<https://ieeesa.webex.com/ieeesa/j.php?MTID=m9aaeff1d1676b162b480abbab98c8faa>

Friday, Sep 10, 2021 7:00 am | 3 hours | (UTC-04:00) Eastern Time (US & Canada)

Meeting number: 179 720 8222

Password: 20210910

IEEE Blockchain Conformity Assessment Committee (BCAC)

IEEE BLOCKCHAIN CONFORMITY ASSESSMENT PROGRAM

[Home](#) > [Products & Programs](#) > [IEEE Conformity Assessment Program \(ICAP\)](#) > [IEEE Conformity Assessment Program \(ICAP\) Programs](#) > IEEE Blockchain Conformity Assessment Program

Introduction

With the increased use of blockchain technology by companies for various applications and solutions, there are no unified specifications and requirements for technical platform, system architecture, data format, application scenarios and service capability. The IEEE Computer Society Blockchain and Distributed Ledger Standards Committee (BDLSC) and the IEEE Conformity Assessment Program (ICAP) are jointly developing a conformity assessment program to ensure blockchain systems and products, can demonstrate conformance to related IEEE standards. This program will be managed and operated by ICAP.

[Introduction](#)

[Blockchain and Distributed Ledger Standards](#)

[Conformity Assessment Committee](#)

IEEE Blockchain and Distributed Ledger Standards

The IEEE Computer Society Blockchain and Distributed Ledger Standards Committee (BDLSC) manages the development of IEEE 3200™ series and other standards for blockchain and distributed ledger. These standards encompass relevant data formats for application to specific sectors, industries, and processes.

The IEEE BDLSC will standardize the implementation of blockchain system across various industry verticals such as finance, manufacturing, agriculture, IoT, energy, and healthcare, with a focus to support blockchain data, technology, application, assets, service, and other related domains interoperability between blockchain systems.

[Join](#)

Blockchain Conformity Assessment Committee.

[Learn More >](#)

Conformity Assessment Committee

The IEEE Blockchain certification program is being developed by the IEEE Blockchain Conformity Assessment Committee (BCAC), comprised of industry stakeholders, that will bring value to users, manufacturers, solution providers, regulators, and other potential beneficiaries. The goal of the BCAC is to produce and execute a unified test and evaluation specification aligned with current and future IEEE blockchain standards.

IEEE is issuing a call for participation for entities to join this committee. The main objectives of this committee will likely include:

[Contact Us](#)

For more information, please contact ICAP at blockchain@ieee.org.

Objectives

- Demonstrate to buyers that blockchain products or systems conform to the IEEE BDL standards
- Advise on the IEEE blockchain certification scheme requirements
- Define competency and audit requirements to become an IEEE recognized test laboratory
- Develop procurement language and advise on the IEEE Certified Mark

[Join the Committee](#)

1

PLENARY MEETING

83

MEETINGS OF WORKING GROUPS

16

MEETINGS OF EXECUTIVE BOARD



BDL OFFICERS



Ming LI, BDL CHAIR

Mr. Li is Chair of IEEE Computer Society Blockchain and Distributed Ledger Standards Committee, Member of IEEE SA CAG, SMDC, RevCom, AsiaPac Regional Advisory Group, AI/SC, Chair of IEEE P2418.2 Standard Data Format for Blockchain Systems, Chair of IEEE P2841 Framework and Process for Deep Learning Evaluation, Editor of ISO/IEC TR 38505-2:2018 Governance of data, Member of ISO/TC 307, ISO/IEC JTC1 SC40, DAMA, ISACA, SAC, Associate Editors of IET BLOCKCHAIN.



Yu DU, BDL VICE CHAIR

Mr. Du is the Vice General Manager of Wanxiang Blockchain Inc. and General Director of Wanxiang Blockchain Labs. Since joining China Wanxiang Holdings in 2015, Mr. Du has been in charge of the operations of Wanxiang Blockchain Inc. and the management of Wanxiang Blockchain Labs, including New Chainbase, investment and strategic cooperation, and product development. Mr. Du has been serving as the Under-Secretary-General of CBD Forum since 2016. He is also member of the author group of the MIIT white papers. And he has a proven track record of blockchain technology, product development, and investment.



Yukun HAO, BDL CHIEF SECRETARY

Mr. Hao is the Senior Director of Wanxiang Blockchain Inc., blockchain expert serving the Ministry of Industry and Information Technology of China, and visiting researcher of Imperial College London. Mr. Hao took in charge of an R&D project of a blockchain based intelligent container operation management system; the project won the Grand Award at The First China Blockchain Development Contest. Mr. Hao has also possessed several authorized patents on blockchain and distributed system.



Lin SUN, BDL EXECUTIVE SECRETARY

Lin Sun served as IEEE BDL secretary since 2019. Ms. Sun works as a standardization engineer in China electronics institute standardization blockchain research office. Ms. Sun is also an expert of ISO TC307, and participated in the compilation and release of 'China Blockchain Technology and Application Development Research Report 2018' and 'Shenzhen Blockchain Technology and Industry Research and Development Report 2018'.



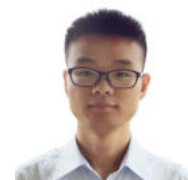
Nuqie LI, BDL PROPAGANDA SECRETARY

Nuqie Li, BDL Propaganda Secretary
Mr. Li is the Product Manager of Sichuan Changhong Electric Co., Ltd. Since joining Sichuan Changhong, Mr. Du has been in charge of blockchain product planning and design, and integration of blockchain and Internet of things. Mr. Li has participated in the preparation of 14 standards in the blockchain field, he is also member of the author group of the MIIT blockchain case set.



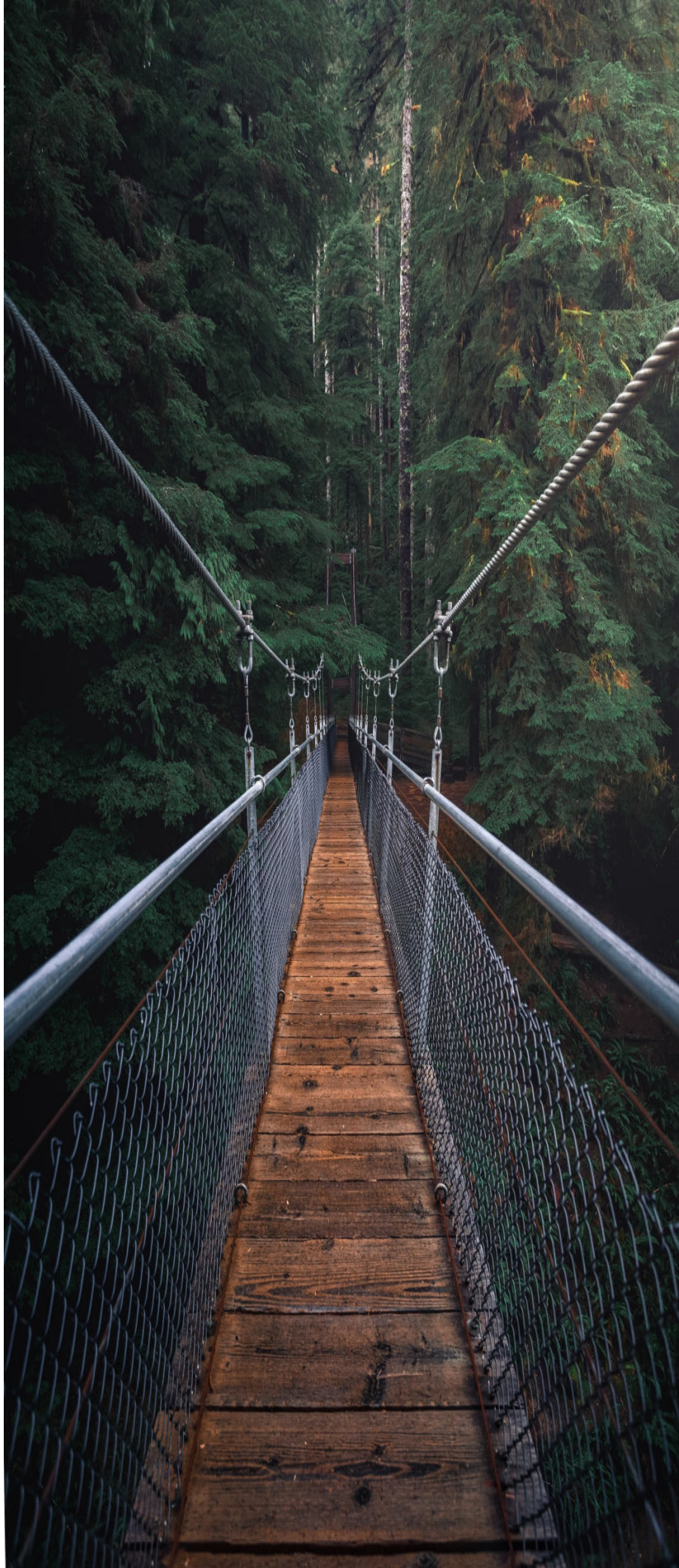
Dejun HUANG, BDL COMMUNICATIONS SECRETARY

Dejun Huang has served as IEEE BDL Communications Secretary since 2021. He works as a senior engineer in Sichuan Changhong Electric Co., LTD. Mr. Huang is also the secretary of P3206 and has participated in more than ten standards in the blockchain field.



Chao LI, BDL STANDARD SECRETARY

Mr. Li is the head of blockchain innovation Department of Shanghai Software Center. As a standard expert, Mr. Li participated in the development of a number of blockchain standards. Mr. Li is also a core member of the blockchain Technology Research Institute of Shanghai Academy of Sciences & Technology, responsible for the research and development of blockchain projects.



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IEEE Computer Society Blockchain and Distributed Ledger Standard Committee

<https://sagroups.ieee.org/bdlsc/>

IEEE C/BDL SC Secretariat

Email: sunlin@cesi.cn