

Special Interest Group Request Form

Please send to the TCCN Chair once completed

SIG Name: SIG on Wireless Blockchain Networks

Proposed Chair (name/affiliation/email):

Lei Zhang, University of Glasgow, UK Lei.Zhang@glasgow.ac.uk

Proposed Vice-Chair(s) (name/affiliation/email):

Salil Kanhere, The University of New South Wales, Australia, salil.kanhere@unsw.edu.au

Bin Cao, Beijing University of Posts and Telecommunications, China, caobin65@163.com

Zehui Xiong, Singapore University of Technology and Design, Singapore, zehui.xiong@ieee.org

External LinkedIn Group web address (or equivalent, if applicable):

Under construction. We plan to post the regular information exchange among the SIG members through a Google Group. Dr. Cao will take lead in providing the contents of the first version of the SIG website on ComSoc TCCN website.

Scope and Objectives (please provide up to 200 words):

Originally proposed as the backbone technology of Bitcoin cryptocurrency, blockchain has become a revolutionary decentralised data management framework that can transform the way in which we share information. In addition to its soaring popularity in the finance sector, blockchain has explosive growth of applications in other major industry sectors, including but not limited to, transportation, healthcare, energy and supply chain.

When combining blockchain with communication (especially wireless communication), one aspect is that how to use blockchain to facilitate the communication resource trading, sharing and optimization for 5G/6G especially for cognitive radio (i.e., blockchain for communication). Another equally or more important and fundamental aspect is how communication plays a role in blockchain and optimize blockchain performance (i.e., communication for blockchain), since essentially blockchain is a peer-to-peer network that relies on frequent communications within the consensus network. To guide the deployment and application of blockchain in the wireless environments, a framework that presents the communication procedure and roles in the wireless blockchain networks (WBN), and how blockchain can enable communication especially in cognitive radio are worth to be investigated.

The proposed SIG falls under a broad category of communication and cybersecurity, and their transformation and development which itself a very hot topic for research these years. The group will bridge the relationship between communication and blockchain from concept, fundamental research to applications thus provides a platform to beginners, experienced researchers and

scientists can understand the extensive theoretical design and architecture development and applications of WBN.

Proposed activities for the first 12 months:

The SIG sponsors and promotes technical publications, special issues, workshops, tutorials, industry panels, student activities and other related activities in the areas relevant to cognitive communications and networking. In the first 12 months, we plan to conduct the following activities:

- Propose workshops in the major and flagship IEEE conference of ICC, GLOBECOM PIMRC, WCNC etc.
- Propose special issues on leading journals such as IEEE IoTJ, IEEE Communication Mag., IEEE Wireless Communications, IEEE Network, etc.
- Organise seminars/talks in some other IEEE societies and groups such as IEEE UK/Ireland Blockchain group.
- Organise tutorials in IEEE conferences for beginners, experienced researchers and scientists.
- Organizing regular meetings and advertisings in ways such as during special sessions at related conferences on the personal web pages of the SIG organizers, and through an email distribution list of potential members.

Senior Advisors

Yue Gao, University of Surrey, UK

Chonggang Wang, Interdigital, US

Tony Q. S. Quek, Singapore University of Technology and Design, Singapore

Mugen Peng, Beijing University of Posts and Telecommunications, China

Dusit Niyato, Nanyang Technological University, Singapore

Founding Members (name/affiliation/email):

Lei Zhang, University of Glasgow, UK, Lei.Zhang@glasgow.ac.uk

Yue Gao, University of Surrey, UK, yue.gao@surrey.ac.uk

Salil Kanhere, The University of New South Wales, Australia, salil.kanhere@unsw.edu.au

Bin Cao, Beijing University of Posts and Telecommunications, China, caobin65@163.com

Jaafar M. H. Elmirghani, University of Leeds, UK, j.m.h.elmirghani@leeds.ac.uk

Hamed Ahmadi, University of York, UK, hamed.ahmadi@york.ac.uk

Alexander Okon, University of Canberra, Australia, Alex.Okon@canberra.edu.au

Mugen Peng, Beijing University of Posts and Telecommunications, China, pmg@bupt.edu.cn

Choo Raymond, University of Texas at San Antonio, raymond.choo@utsa.edu

Shengli Zhang, Shenzhen University, China, zsl@szu.edu.cn

Xavier Bellekens, University of Strathclyde, UK, xavier.bellekens@strath.ac.uk

Kumudu Munasinghe, University of Canberra, Australia, Kumudu.Munasinghe@canberra.edu.au

Mohamed Ben Farah, University of Strathclyde, UK, mohamed.ben-farah@strath.ac.uk

Thakur, Subhasis, National University of Ireland, Ireland, subhasis.thakur@nuigalway.ie

Nima Afraz, Trinity College Dublin, Ireland, nafraz@tcd.ie

Oluwakayode Onireti, University of Glasgow, UK, Oluwakayode.Onireti@glasgow.ac.uk

Yue Cao, WuHan University, China, yue.cao@whu.edu.cn

Yao Sun, University of Glasgow, UK, yao.sun@glasgow.ac.uk

Zhengguo Sheng, University of Sussex, UK, z.sheng@sussex.ac.uk

Paulo Valente Klaine, University of Glasgow, UK, Paulo.ValenteKlaine@glasgow.ac.uk

Zehui Xiong, Singapore University of Technology and Design, Singapore, zehui.xiong@ieee.org

Dusit Niyato, Nanyang Technological University, Singapore, dniyato@ntu.edu.sg

Jun Zhao, Nanyang Technological University, Singapore, JunZhao@ntu.edu.sg

Yang Zhang, Wuhan University of Technology, China, yangzhang@whut.edu.cn

Huawei Huang, Sun Yat-Sen University, China, huanghw28@mail.sysu.edu.cn

Jiawen Kang, Nanyang Technological University, Singapore, kavinkang@ntu.edu.sg

Wei Cai, The Chinese University of Hong Kong, Shenzhen, China, caiwei@cuhk.edu.cn

Kun Zhu, Nanjing University of Aeronautics and Astronautics, China, zhukun@nuaa.edu.cn

Yuan Wu, University of Macau, China, yuanwu@um.edu.mo

Jiangtian Nie, Nanyang Technological University, Singapore, jnie001@e.ntu.edu.sg

Yuan Liu, Northeastern University, China, liuyuan@swc.neu.edu.cn

Hong-Ning Dai, Macau University of Science and Technology, China, hndai@ieee.org

Xintong Ling, Southeast University, China, xtling@seu.edu.cn

Qin Hu, Indiana University–Purdue University Indianapolis, USA, qinhu@iu.edu

Zhenni Li, Guangdong University of Technology, China, lizhenni2012@gmail.com

Ali Dorri, Queensland University of Technology, Australia, ali.dorri@qut.edu.au

Dedeoglu Volkan, CSIRO Data61, Australia, Volkan.Dedeoglu@data61.csiro.au

Sidra Malik, The University of New South Wales, Australia, sidra.malik@unsw.edu.au

Hao Xu, University of Glasgow, UK, h.xu.2@research.gla.ac.uk

Special Interest Groups within TCCN

Notes: The purpose of Special Interest Groups (SIGs) is to provide focus for a particular sub-area of interest or task. It is expected that SIGs:

1. **Have a Chair and one or more Vice-Chairs to manage and promote the SIG**
2. **Have their scope and objectives clearly defined**
3. **Are only accepted if there is a clear initial programme of activities, and sufficient support from TCCN members**

Activities could take many forms, organising a special conference session, joint programme of work, journal special issue etc.

4. **Are approved by a committee of the elected TCCN officers**
5. **Are listed on the TCCN website**
6. **Have a list of Founding Members**

This would typically be the members establishing the SIG and joining in the first 3 months

7. **Report by either the SIG Chair or Vice-Chair to the TCCN Meetings every six months on their past activities, and planned activities over the next 12 months**
8. **Can be closed due to inactivity by the elected TCCN officers**

This will only be used as a last resort, when it is clear that there have been no activities for a period of time and none planned for the future.