

# IEEE International Workshop on **S**mart **S**pectrum Sharing and **I**n-Band Coexistence for **N**TN (SPIN)

## VTC2023-Fall

October 10–13, 2023  
Hong Kong



### SPIN Workshop Co-chairs

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### Important Dates

- ❖ Paper submission  
deadline  
**August 28, 2023**
- ❖ Notification of acceptance  
September 3, 2023
- ❖ Camera-ready papers  
September 9, 2023

### Submission link

[https://vtc2023f-rr-  
wks.trackchair.com/track/2212](https://vtc2023f-rr-wks.trackchair.com/track/2212)

### Webpage link

[https://sites.google.com/view/  
vtc2023-fall-spin-wksp](https://sites.google.com/view/vtc2023-fall-spin-wksp)

### Scope

As we aim at the next generation all-pervasive coverage and connectivity, we are faced with two unique challenges. On one hand, sheer number of devices requiring diverse connectivity is constrained by acute crunch of spectrum resource. On the other hand, anytime anywhere reachability demands more complex connectivity beyond conventional terrestrial networks. Further, the next generation communication systems are expected to be predominantly machine-type and human-machine interface driven, while the infrastructures will be more mobile and adaptive. Such requirements are expected to be fulfilled by the non-terrestrial networks (NTN) involving unmanned aerial/ground vehicles (UAVs/UGVs), high altitude platforms (HAPs), and low earth orbit (LEO) satellite constellations. Fleeting yet intensive communication resource requirements in such communication applications demand that the spectrum resources also need to be adaptively utilized, with more flexibility and responsibility assigned to the communicating entities. The user environment being dynamic, artificial intelligence and machine learning (AIML) is expected to be an integral part in fulfilling such adaptive needs. Keeping the above factors in mind, in this workshop we draw attention on smart spectrum-efficient and energy-sustainable NTN communications for wireless applications. In addition to theoretical research contributions, we look for technology viability and prototype development efforts on adaptive sensing and communications ranging from low-rate telemetry to highly reliable, ultra-low latency, and bandwidth-intensive applications.

### Topics

We seek original completed and unpublished work not currently under review by any other journal/magazine/conference. The topics of interest include:

- Learning-aided spectrum sharing and coexistence
- In-band coexistence in L and C bands, terrestrial and satellite broadcast spectrums
- Adaptive waveform design and SIC for in-band coexistence
- Learning-aided technologies for in-band coexistence in mmWave bands
- DVB and ATSC 3.0 standards and in-band coexistence
- In-band coexistence for joint sensing and radar communications
- AI-aided mobile integrated sensing, computing, and communications
- AI-based automatic modulation recognition
- UAV and UGV for intelligent sensing and communication support
- AI-aided UAV localization and swarm packing
- HAP-aided and LEO constellation based all-pervasive connectivity and coverage techniques
- Adaptive communication techniques in unfriendly environments
- AIML for radio environment mapping
- NOMA and SIC techniques for spectrum efficiency
- MIMO techniques and cell-free networks for spectrum efficiency
- Cross-layer solutions for energy-optimized smart communication devices
- Energy sustainability in NTNs through edge-, fog-, and cloud computing
- Light-weight, energy preserving security solutions
- O-RAN initiatives and smart spectrum sharing techniques
- Experimental testbeds on UAV/HAP-based NTN communications

### Paper Submission

The workshop accepts novel, previously unpublished papers. Prospective authors are invited to submit 5-page, original, and unpublished full papers. A full paper can be up to 7 pages in length. Final paper submission requirements: 5-page paper (without overlength charge); up to 2 additional pages are allowed with the purchase of additional page charges USD 100 per additional page at the time of registration and final paper submission. For more information, please see IEEE VTC2023-Fall official website: <https://events.vtsociety.org/vtc2023-fall/authors/call-for-papers-2/>