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| **Abstract:** | This document provides information on the publication of the latest special issue on radio wave propagation of the ITU Journal: ICT Discoveries, and announces the upcoming special issue on “The future of video and immersive media”. |

# 1 Introduction

The [ITU Journal: *ICT Discoveries*](https://www.itu.int/en/journal/Pages/default.aspx) publishes original research on ICT technical developments and their policy and regulatory, economic, social and legal dimensions. It builds bridges between disciplines, connects theory with application, and stimulates international dialogue. This interdisciplinary approach reflects ITU’s comprehensive field of interest and explores the convergence of ICT with other disciplines.

ITU Member States adopted a new Resolution at the ITU Plenipotentiary Conference, which convened in Dubai, United Arab Emirates, from 29 October to 16 November 2018, to support the further development of this scholarly, professional, peer-reviewed, digital publication, which is free of charge for both readers and authors. Members further resolved to establish collaborative efforts with the research community and to raise awareness of the ITU Journal worldwide (Resolution 207 (Dubai, 2018)).

# 2 Previous special issues

The ITU Journal published two special issues in 2018 on [The impact of Artificial Intelligence on future communication networks and services](https://www.itu.int/en/journal/001/Pages/default.aspx) and [Data for Good](https://www.itu.int/en/journal/002/Pages/default.aspx).

The first special issue features 15 research papers that explore novel applications of AI techniques that can improve the performance and efficiency of communication infrastructure, systems and components, as well as create new services and ensure optimal user experience.

This publication examines the policy, legal, societal and ethical aspects that can help safely unlock the potential of AI techniques in the field of communication technologies, and foster technical cooperation and digital inclusion. Thought AI experts were part of the Editorial Board as [Guest Editors](https://www.itu.int/en/journal/001/Pages/bios.aspx#Guests) and [Reviewers](https://www.itu.int/en/journal/001/Pages/reviewers.aspx).

The second special issue comprises of 15 academic papers that offer insight into the increasing sophistication of techniques used to exchange and understand data, while also exploring how data can safely fuel more autonomous, human centric information and communication technologies. Given the interdisciplinary nature of the issue, some papers add a deeper dimension to the discussion by looking at the policy, regulatory and ethical aspects involved in the increasing use of data today. Renowned international data experts were part of the Editorial Board as [Guest Editors](https://www.itu.int/en/journal/002/Pages/bios.aspx#Guests) and [Reviewers](https://www.itu.int/en/journal/002/Pages/reviewers.aspx). ​

The complete volumes of both the first and the second special issues are available to download from the [ITU website](https://www.itu.int/pub/S-JOURNAL), free of charge.

# 3 Publication of the latest special issue

In December 2019, the ITU Journal published its latest special issue titled, “[Propagation modelling for advanced future radio systems – Challenges for a congested spectrum](https://www.itu.int/en/journal/2019/001/Pages/default.aspx)”. This issue was published in collaboration with the ITU Radiocommunication Bureau, and in line with the World Radiocommunciation Conference held at the end of 2019.

The original research published explores the impact of radio wave propagation phenomena on the efficient use of radiofrequency spectrum and the planning of radio systems and networks.

As it stands, radio-frequency spectrum is a shared, finite, global resource in high demand, with the available spectrum currently congested and access to it coming at a high cost. Providing radio services against such constraints requires that these services operate with optimum efficiency and are provided using the minimum amount of radio spectrum, while avoiding harmful interference to and from other systems.

Innovation to increase spectral efficiency is fundamental to the sustainable growth of radio-communications and ensuring this is central to the mandate of the ITU.

Overall, this issue received 21 original academic papers and at an acceptance rate of 30%, **7 papers** from reputable academic institutions and diverse geographical backgrounds were selected for **publication**. The single-blind peer-review process was conducted by a pool of 56 international experts.

The selected papers are now freely available to download from the ITU website and can also be viewed on their individual webpages:

1. [A powerful signal nearby L1 frequency band jamming GNSS stations in Observatoire de Paris](https://www.itu.int/en/journal/2019/001/Pages/01.aspx)
2. [A quick overview of a new scintillation database](https://www.itu.int/en/journal/2019/001/Pages/02.aspx)
3. [Sub-THZ channel characterization from ray-based deterministic simulations](https://www.itu.int/en/journal/2019/001/Pages/03.aspx)
4. [IRACON propagation measurements and channel models for 5G and beyond](https://www.itu.int/en/journal/2019/001/Pages/04.aspx)
5. [Directional antenna channel modelling in urban area using ray tracing](https://www.itu.int/en/journal/2019/001/Pages/05.aspx)
6. [ALPHASAT site diversity experiments in Greece and the UK at Ka band: Comparison of 2-years results](https://www.itu.int/en/journal/2019/001/Pages/06.aspx)
7. [Analytic models for bi-static scattering from a randomly rough surface with complex relative permittivity](https://www.itu.int/en/journal/2019/001/Pages/07.aspx)

The articles have also been compiled into a [yearly volume](https://www.itu.int/en/publications/Documents/tsb/2019-ITU_Journal-ICT_Discoveries/Vol2-No1/index.html) which will be submitted for inclusion in various and reputable indexes/aggregators (Scopus, Web of Science, Google Scholar, etc.), and disseminated widely to relevant circles and the whole ITU membership. The complete volume will also be included in the [ITU iLibrary](https://www.itu-ilibrary.org/) for wider exposure.

Members of the **Editorial Board** for this issue were as follows:

* [Editor-in-Chief](https://www.itu.int/en/journal/002/Pages/bios.aspx#Song): [Jian Song](https://www.itu.int/en/journal/002/Pages/bios.aspx#Song), Tsinghua University
* [Associate Editors-in-Chief](https://www.itu.int/en/journal/002/Pages/bios.aspx#Associates):
1. [Rajkumar Buyya](https://www.itu.int/en/journal/002/Pages/bios.aspx#Buyya), University of Melbourne
2. [Jun Kyun Choi](https://www.itu.int/en/journal/002/Pages/bios.aspx#Choi), Korea Advanced Institute of Science and Technology (KAIST)
3. [Xiaolan](https://www.itu.int/en/journal/002/Pages/bios.aspx#Fu) Fu, Oxford University
4. [Mostafa Hashem Sherif](https://www.itu.int/en/journal/002/Pages/bios.aspx#Sherif), Consultant
* [Outreach Chairman](https://www.itu.int/en/journal/002/Pages/bios.aspx#Ibaraki): Stephen Ibaraki, Social Entrepreneur and Futurist - Chair REDDS Capital
* [Guest Editors](https://www.itu.int/en/journal/002/Pages/bios.aspx#Guests):
1. Christopher R. Anderson, United States Naval Academy
2. Leke Lin, China Research Institute of Radio Wave Propagation
3. Carlo Riva, Politecnico di Milano
4. Sana Salous, Durham University
5. Zhen-Wei Zhao, China Research Institute of Radio Wave Propagation

* [ITU Editorial Team](https://www.itu.int/en/journal/Pages/ITU-Editorial-Team.aspx), composed of: Executive Editor-in-Chief; Managing Editor; Editorial Assistant; Administrative Assistant; Copy Editor; Promotional Support; Communications Officer; Outreach Team; and a special Advisor, Mr. David Botha, ITU Radiocommunication Bureau.

# 4 Current special issue on the future of video

Following the initial Call for Papers in July 2019, the ITU Journal accepted submissions for the new special issue on “[The future of video and immersive media](https://www.itu.int/en/journal/2020/001/Pages/default.aspx)”. With the peer-review process currently underway, the publication of this issue is expected for April 2020.

This special issue of the ITU Journal explores the state of the art in multimedia as well as the new possibilities and associated challenges appearing on the horizon. With digital technology drastically reshaping the media landscape, our methods of entertainment, communication and connecting with people around the world are also being transformed and revolutionized. Multimedia compression and streaming delivery, increased storage capabilities and quality now allow for large-scale innovations and more highly immersive media experiences.

Such advancements will, however, be matched with pertinent questions in order to ensure that technology remains to improve society and not to threaten it. This special issue considers what new emerging technologies we can expect, how we will continue to store and analyse the vast quantity of video to be generated, and whether increasing dependence on new media will affect our ability to discern reality from fiction. It also examines whether we have the ability to counteract the threat of manipulated content and what role data governance and privacy play in a world almost mirrored by the digital sphere.

ITU remains dedicated and involved in the development of media and video technology as well as in the setting of standards in this area. This special issue is added to the list of activities within the Union that relate to video innovation, including the video compression algorithms standards, together with IEC and ISO. The work on this standard was awarded with two Primetime Emmy Awards. Recognizing ITU’s history and involvement in media technology, this special issue will also include two historical articles, detailing the development of standards within this area, particularly in the context of the JPEG standard and video coding.

Members of the **Editorial Board** for this issue are as follows:

* [Editor-in-Chief](https://www.itu.int/en/journal/002/Pages/bios.aspx#Song): [Jian Song](https://www.itu.int/en/journal/002/Pages/bios.aspx#Song), Tsinghua University
* [Associate Editors-in-Chief](https://www.itu.int/en/journal/002/Pages/bios.aspx#Associates):
1. [Rajkumar Buyya](https://www.itu.int/en/journal/002/Pages/bios.aspx#Buyya), University of Melbourne
2. [Jun Kyun Choi](https://www.itu.int/en/journal/002/Pages/bios.aspx#Choi), Korea Advanced Institute of Science and Technology (KAIST)
3. [Xiaolan](https://www.itu.int/en/journal/002/Pages/bios.aspx#Fu) Fu, Oxford University
4. [Mostafa Hashem Sherif](https://www.itu.int/en/journal/002/Pages/bios.aspx#Sherif), Consultant
* [Outreach Chairman](https://www.itu.int/en/journal/002/Pages/bios.aspx#Ibaraki): Stephen Ibaraki, Social Entrepreneur and Futurist - Chair REDDS Capital
* The [Guest Editors](https://www.itu.int/en/journal/2020/001/Pages/GE.aspx#Sullivan) for this special issue are:
1. Gary Sullivan, Microsoft
2. Yan Ye, Alibaba
3. Jens-Rainer Ohm, RWTH Aachen University
4. Lu Yu, Zhejiang University

For further information, please visit the ITU Journal [webpage](https://www.itu.int/en/journal/Pages/default.aspx) or contact the ITU Editorial Team at journal@itu.int.

# 5 Launch of a joint journal with Tsinghua University Press

In January 2019, ITU and Tsinghua University signed a Memorandum of Understanding and subsequently, a co-publishing agreement involving Tsinghua University Press (TUP). Under this agreement, a joint publication would be created with the objective of advancing research in ICTs. Under the framework of the ITU Journal, the joint publication will be titled “Intelligent and Converged Networks” and will be launched formally before the Spring of 2020.

At present, both TUP and ITU are looking to establish an international Editorial Board for this publication. Experts interested in contributing in this way are encouraged to contact the ITU Editorial (journal@itu.int) to express their interest.

# 6 Future issues

With three special issues already published ([The impact of Artificial Intelligence on future communication networks and services](https://www.itu.int/en/journal/001/Pages/default.aspx), [Data for Good](https://www.itu.int/en/journal/002/Pages/default.aspx) and [Radio wave propagation](https://www.itu.int/en/journal/2019/001/Pages/default.aspx)) as well as the upcoming issue on [The future of video and immersive media](https://www.itu.int/en/journal/2020/001/Pages/default.aspx), the ITU Journal is currently accepting open submissions on any topic within its scope and at any time during the year.

Across the various disciplines, specific topics within the scope of the Journal are available on our [website](https://www.itu.int/en/journal/Pages/about.aspx), as a non-exhaustive list.

Together with the publication of the current special issue, the joint publication with TUP and the open submissions, the Journal is also planning a series of special issues in collaboration with the other ITU departments, being the Development Bureau and the Radiocommunication Bureau.

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