1. Record Nr. UNINA9910734883803321

Autore	Sacchi Claudio
Titolo	A Roadmap to Future Space Connectivity : Satellite and Interplanetary Networks / / edited by Claudio Sacchi, Fabrizio Granelli, Riccardo Bassoli, Frank H. P. Fitzek, Marina Ruggieri
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
ISBN	3-031-30762-3
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (303 pages)
Collana	Signals and Communication Technology, , 1860-4870
Altri autori (Persone)	GranelliFabrizio BassoliRiccardo FitzekFrank H. P RuggieriMarina
Disciplina	621.382
Soggetti	Telecommunication Aerospace engineering Astronautics Communications Engineering, Networks Microwaves, RF Engineering and Optical Communications Aerospace Technology and Astronautics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Part I: Satellite Communication Technology -- Millimeter Waves and high-throughput satellites -- Quantum satellite communications -- The role of satellite in 5G and beyond -- Futuristic satellite scenarios in 6G -- Part II: Systems and Infrastructures -- Hardware platforms for space and interplanetary communication networks -- End-to-end space system engineering considerations -- Technologies and infrastructures for a sustainable Space -- Intelligent Space communication networks -- Part III: Interplanetary networking -- Resilient networking solutions for interplanetary Internet -- Softwarization in Satellite and Interplanetary networks -- Extraterrestrial RAN: the road to broadband connectivity on Mars -- Part IV: New Space Applications -- Integration between Communication, Navigation, and Sensing -- Internet-of-Things,

Internet of Remote Things and Internet of Space Things -- Tactile Internet/Digital twins for the Space -- Roadmap for future -- Conclusion.

Sommario/riassunto

This book provides an overview of the latest R&D advancements in the field of ICT technologies inherent to a New Space vision. The book presents a system-level and technology-level description of future space networking and communications. The authors also expand the vision to interplanetary networks. The book spans hardware and software technologies for future space communication networks, also considering very modern paradigms like quantum technologies and Softwarization. In the book, the word “space” is intended in a wider sense than the usual “satellite communications”, including new and partially unexplored fields like quantum space communications, interplanetary communications, and extra-terrestrial Radio Access Networks (RANs). The book includes applications including Internet of Space Things, Tactile Internet/Digital twins for Space and discusses future challenges like those involved by the concept of “sustainable Space”. Provides an overview of the latest R&D advancements in the field of ICT technologies inherent to a New Space vision; Considers visions and perspectives of space technology, including a through overview of satellite communications; Presents a system-level overview of future space networking and communications.