# **2020 Index IEEE Vehicular Technology Magazine** Vol. 15

This index covers all technical items—papers, correspondence, reviews, etc.—that appeared in this periodical during 2020, and items from previous years that were commented upon or corrected in 2020. Departments and other items may also be covered if they have been judged to have archival value.

The Author Index contains the primary entry for each item, listed under the first author's name. The primary entry includes the coauthors' names, the title of the paper or other item, and its location, specified by the publication abbreviation, year, month, and inclusive pagination. The Subject Index contains entries describing the item under all appropriate subject headings, plus the first author's name, the publication abbreviation, month, and year, and inclusive pages. Note that the item title is found only under the primary entry in the Author Index.

### AUTHOR INDEX

Abdalla, A., see Shang, B., MVT June 2020 104-112

Ai, B., see He, R., MVT March 2020 16-26

Ai, B., see Yan, L., MVT Sept. 2020 59-67

Al-Dulaimi, A., and Hu, R., Interfacing 5G Orchestrator With Data Analytics Functions [From the Guest Editors]; MVT June 2020 18-20

Al-Dulaimi, A., see David, K., MVT Dec. 2020 18-21

Al-Naffouri, T., see Faisal, A., MVT Dec. 2020 33-42

Al-Rubaye, S., see Li, C., MVT Dec. 2020 112-121

Alexaki, S., see Miaoudakis, A., MVT Sept. 2020 20-31

Alexandirs, G., see Miaoudakis, A., MVT Sept. 2020 20-31

**Alouini, M.,** see Celik, A., MVT Dec. 2020 83-92

Alouini, M., see Faisal, A., MVT Dec. 2020 33-42

Alouini, M., see Kishk, M., MVT Dec. 2020 103-111

Antevski, K., see Baranda Hortiguela, J., MVT June 2020 48-57

Au, E., New Standards Initiative for Using Wi-Fi for Sensing [Standards]; MVT March 2020 119

Au, E., A Short Update on 3GPP Release 16 and Release 17 [Standards]; MVT June 2020 160

Au, E., Standards for the Gaming Industry [Standards]; MVT Dec. 2020 148 Avino, G., see Malinverno, M., MVT March 2020 27-35

Aziminejad, A., and He, Y., Radio Communication in Curved Tunnels: MIMO Channel Capacity for Rail Transit Applications; MVT March 2020 99-106

Bader, A., see Kishk, M., MVT Dec. 2020 103-111

Baranda Hortiguela, J., Mangues-Bafalluy, J., Martinez, R., Vettori, L., Antevski, K., Bernardos, C., and Li, X., Realizing the Network Service Federation Vision: Enabling Automated Multidomain Orchestration of Network Services; MVT June 2020 48-57

Bariah, L., see Mohjazi, L., MVT Dec. 2020 62-73

Bassoli, R., Granelli, F., Sacchi, C., Bonafini, S., and Fitzek, F., CubeSat-Based 5G Cloud Radio Access Networks: A Novel Paradigm for On-Demand Anytime/Anywhere Connectivity; MVT June 2020 39-47

Benvenuto, N., see Centenaro, M., MVT June 2020 72-78

Bernardos, C., see Baranda Hortiguela, J., MVT June 2020 48-57

Bi, S., see Liu, Y., MVT March 2020 63-72

Blandino, S., Desset, C., Bourdoux, A., and Pollin, S., Energy Efficiency of Multiple-Input, Multiple-Output Architectures: Future 60-GHz Applications; MVT June 2020 65-71

Boban, M., see He, R., MVT March 2020 16-26

Bogucka, H., see Kliks, A., MVT Sept. 2020 40-50

Bonafini, S., see Bassoli, R., MVT June 2020 39-47

Bou-Harb, E., see Senouci, S., MVT Sept. 2020 5-6

Digital Object Identifier 10.1109/MVT.2020.3042426

Date of current version: 14 December 2020

Bourdoux, A., see Blandino, S., MVT June 2020 65-71 Buttiglieri, A., see Iorio, M., MVT Sept. 2020 77-85

Casetti, C., see Malinverno, M., MVT March 2020 27-35

Celik, A., Chaaban, A., Shihada, B., and Alouini, M., Topology Optimization for 6G Networks: A Network Information-Theoretic Approach; MVT Dec. 2020 83-92

Centenaro, M., Tomasin, S., Benvenuto, N., and Yang, S., Predictive Voice-Over-Internet Protocol Fallback Over Vehicular Channels: Employing Artificial Intelligence at the Edge of 5G Networks; MVT June 2020 72-78

Chaaban, A., see Celik, A., MVT Dec. 2020 83-92

Chen, X., see Ma, Z., MVT Sept. 2020 51-58

Chen, Y., see Qiu, J., MVT Sept. 2020 95-100

Chi, N., Zhou, Y., Wei, Y., and Hu, F., Visible Light Communication in 6G: Advances, Challenges, and Prospects; MVT Dec. 2020 93-102

Chiasserini, C., see Malinverno, M., MVT March 2020 27-35

Cho, H., see Lee, C., MVT March 2020 54-62

Chowdhury, K., see Trotta, A., MVT June 2020 96-103

Chung, J., see Lee, C., MVT March 2020 54-62

Clark, B., see Rice, M., MVT Sept. 2020 68-76

Clemente, A., see Wymeersch, H., MVT Dec. 2020 52-61

Coe, D., Kulick, J., Milenkovic, A., and Etzkorn, L., Virtualized In Situ Software Update Verification: Verification of Over-the-Air Automotive Software Updates; MVT March 2020 84-90

Cui, J., Liu, Y., Ding, Z., Fan, P., Nallanathan, A., and Hanzo, L., Next-Generation mm-Wave Small-Cell Networks: Multiple Access, Caching, and Resource Management; MVT March 2020 46-53

Dahrouj, H., see Faisal, A., MVT Dec. 2020 33-42

Dardari, D., see Guerra, A., MVT June 2020 113-120

David, K., Al-Dulaimi, A., Haas, H., and Hu, R., Laying the Milestones for 6G Networks [From the Guest Editors]; MVT Dec. 2020 18-21

de Amorim, R., Wigard, J., Kovacs, I., Sorensen, T., and Mogensen, P., Enabling Cellular Communication for Aerial Vehicles: Providing Reliability for Future Applications; MVT June 2020 129-135

Debbah, M., see Du, J., MVT Dec. 2020 122-134

Denis, B., see Wymeersch, H., MVT Dec. 2020 52-61

Desset, C., see Blandino, S., MVT June 2020 65-71

Di Felice, M., see Trotta, A., MVT June 2020 96-103

Di Renzo, M., see Gacanin, H., MVT Dec. 2020 74-82

Ding, Z., see Cui, J., MVT March 2020 46-53

Ding, Z., see Zeng, M., MVT June 2020 31-38

Djuric, P., see Guerra, A., MVT June 2020 113-120

Dobre, O., see Zeng, M., MVT June 2020 31-38

Dobre, O., see Mohjazi, L., MVT Dec. 2020 62-73

Dryjanski, M., see Kliks, A., MVT Sept. 2020 40-50

Du, J., Jiang, C., Wang, J., Ren, Y., and Debbah, M., Machine Learning for 6G Wireless Networks: Carrying Forward Enhanced Bandwidth, Massive Access, and Ultrareliable/Low-Latency Service; MVT Dec. 2020 122-134

Du, L., see Qiu, J., MVT Sept. 2020 95-100

Du, X., see Qiu, J., MVT Sept. 2020 95-100

Dupleich, D., see He, R., MVT March 2020 16-26

Dutta, R., see Marojevic, V., MVT June 2020 22-30

E

Etzkorn, L., see Coe, D., MVT March 2020 84-90

F

Faisal, A., Sarieddeen, H., Dahrouj, H., Al-Naffouri, T., and Alouini, M., Ultramassive MIMO Systems at Terahertz Bands: Prospects and Challenges; MVT Dec. 2020 33-42

Fan, P., see Cui, J., MVT March 2020 46-53

Fan, P., see Ma, Z., MVT Sept. 2020 51-58

Fan, P., see Yu, L., MVT Dec. 2020 43-51

Fang, D., and Qian, Y., 5G Wireless Security and Privacy: Architecture and Flexible Mechanisms; MVT June 2020 58-64

Fang, X., see Yan, L., MVT Sept. 2020 59-67

Fiebig, U., see Namuduri, K., MVT June 2020 20-21

Fitzek, F., see Bassoli, R., MVT June 2020 39-47

Flanary, D., see Rice, M., MVT Sept. 2020 68-76

Floyd, B., see Marojevic, V., MVT June 2020 22-30

Fysarakis, K., see Miaoudakis, A., MVT Sept. 2020 20-31

G

Gacanin, H., and Di Renzo, M., Wireless 2.0: Toward an Intelligent Radio Environment Empowered by Reconfigurable Meta-Surfaces and Artificial Intelligence; MVT Dec. 2020 74-82

Gao, X., see Wang, C., MVT Dec. 2020 22-32

Garzon, J., Loiero, R., and Jorreto, F., Mixed ac/dc Electrified Railway Lines: A Study of Grounding; MVT March 2020 91-98

Glickenstein, H., March 2020 Land Transportation News [Transportation Systems]; MVT March 2020 12-13

Glickenstein, H., June 2020 Land Transportation News [Transportation Systems]; MVT June 2020 12-16

Glickenstein, H., December 2020 Land Transportation News [Transportation Systems]; MVT Dec. 2020 14-17

Gozalvez, J., Welcome to the March 2020 issue [From the Editor]; MVT March 2020 3-4

Gozalvez, J., Welcome to the June 2020 Issue [From the Editor]; MVT June 2020 3

Gozalvez, J., Great News for IEEE Vehicular Technology Magazine! [From the

Editor]; *MVT Sept. 2020 3-4* **Gozalvez, J.,** Welcome to the December 2020 Issue of VTM [From the Editor]; *MVT Dec. 2020 3* 

Granelli, F., see Bassoli, R., MVT June 2020 39-47

Guan, K., see Peng, B., MVT June 2020 136-143

Guerra, A., Dardari, D., and Djuric, P., Dynamic Radar Networks of UAVs: A Tutorial Overview and Tracking Performance Comparison With Terrestrial Radar Networks; MVT June 2020 113-120

Guizani, M., see Qiu, J., MVT Sept. 2020 95-100

Guo, W., see Li, C., MVT Dec. 2020 112-121

Guvenc, I., see Marojevic, V., MVT June 2020 22-30

Guvenc, I., see Namuduri, K., MVT June 2020 20-21

Н

Haas, H., see David, K., MVT Dec. 2020 18-21

Hanzo, L., see Liu, Y., MVT March 2020 63-72

Hanzo, L., see Cui, J., MVT March 2020 46-53

Hao, W., see Zeng, M., MVT June 2020 31-38

Hao, Y., see Wang, C., MVT Dec. 2020 22-32

Hari, K., see Namuduri, K., MVT June 2020 20-21

Harrison, W., see Rice, M., MVT Sept. 2020 68-76

He, J., see Wymeersch, H., MVT Dec. 2020 52-61

He, R., Schneider, C., Ai, B., Wang, G., Zhong, Z., Dupleich, D., Thomae, R., Boban, M., Luo, J., and Zhang, Y., Propagation Channels of 5G Millimeter-Wave Vehicle-to-Vehicle Communications: Recent Advances and Future Challenges; MVT March 2020 16-26

+ Check author entry for coauthors

He, Y., see Aziminejad, A., MVT March 2020 99-106

Ho, P., see Naqvi, S., MVT June 2020 79-87

Hu, F., see Chi, N., MVT Dec. 2020 93-102

Hu, R., see Al-Dulaimi, A., MVT June 2020 18-20

Hu, R., see David, K., MVT Dec. 2020 18-21

Huang, J., see Wang, C., MVT Dec. 2020 22-32

Ι

Imran, M., see Mohjazi, L., MVT Dec. 2020 62-73

Ioannidis, S., see Miaoudakis, A., MVT Sept. 2020 20-31

Iorio, M., Buttiglieri, A., Reineri, M., Risso, F., Sisto, R., and Valenza, F., Protecting In-Vehicle Services: Security-Enabled SOME/IP Middleware; MVT Sept. 2020 77-85

Isaksson, M., see Kliks, A., MVT Sept. 2020 40-50

J

Jamalipour, A., VTS: A Success Story That Continues to Grow [President's Message]; MVT June 2020 4-11

Jamalipour, A., VTS Supports Its Members in Innovative Ways [President's Message]; MVT Sept. 2020 7-8

Jamalipour, A., Growing With Technology to Serve Members [President's Message]; MVT Dec. 2020 4-5

Jensen, B., see Rice, M., MVT Sept. 2020 68-76

Ji, H., see Kim, W., MVT Sept. 2020 32-39

Jiang, C., see Du, J., MVT Dec. 2020 122-134

Jin, S., see Xia, W., MVT March 2020 36-45

Jorreto, F., see Garzon, J., MVT March 2020 91-98

Juntti, M., see Wymeersch, H., MVT Dec. 2020 52-61

k

Kantarci, B., see Simsek, M., MVT Sept. 2020 86-94

Karagiannidis, G., see Ma, Z., MVT Sept. 2020 51-58

Katos, V., see Miaoudakis, A., MVT Sept. 2020 20-31

Kim, W., Ji, H., Lee, H., Kim, Y., Lee, J., and Shim, B., Sparse Vector Transmission: An Idea Whose Time Has Come; MVT Sept. 2020 32-39

Kim, Y., see Kim, W., MVT Sept. 2020 32-39

Kirtley, J., see Saponara, S., MVT March 2020 73-83

Kishk, M., Bader, A., and Alouini, M., Aerial Base Station Deployment in 6G Cellular Networks Using Tethered Drones: The Mobility and Endurance Tradeoff; MVT Dec. 2020 103-111

Kliks, A., Kulacz, L., Kryszkiewicz, P., Bogucka, H., Dryjanski, M., Isaksson, M., Koudouridis, G., and Tengkvist, P., Beyond 5G: Big Data Processing for Better Spectrum Utilization; MVT Sept. 2020 40-50

Koudouridis, G., see Kliks, A., MVT Sept. 2020 40-50

Kovacs, I., see de Amorim, R., MVT June 2020 129-135

Kryszkiewicz, P., see Kliks, A., MVT Sept. 2020 40-50

Ku, B., September 2020 Land Transportation News [Transportation Systems]; MVT Sept. 2020 16-19

Kuerner, T., see Peng, B., MVT June 2020 136-143

Kulacz, L., see Kliks, A., MVT Sept. 2020 40-50

Kulick, J., see Coe, D., MVT March 2020 84-90

Kuter, A., see Peng, B., MVT June 2020 136-143

L

Larsson, E., see Yu, L., MVT Dec. 2020 43-51

Lee, C., see Saponara, S., MVT March 2020 73-83

Lee, C., Cho, H., Song, S., and Chung, J., Prediction-Based Conditional Handover for 5G mm-Wave Networks: A Deep-Learning Approach; MVT March 2020 54-62

Lee, H., see Kim, W., MVT Sept. 2020 32-39

Lee, J., see Kim, W., MVT Sept. 2020 32-39

Li, C., Guo, W., Sun, S., Al-Rubaye, S., and Tsourdos, A., Trustworthy Deep Learning in 6G-Enabled Mass Autonomy: From Concept to Quality-of-Trust Key Performance Indicators; MVT Dec. 2020 112-121

Li, X., see Baranda Hortiguela, J., MVT June 2020 48-57

Liu, J., see Senouci, S., MVT Sept. 2020 5-6

Liu, L., see Shang, B., MVT June 2020 104-112

Liu, Y., Bi, S., Shi, Z., and Hanzo, L., When Machine Learning Meets Big Data: A Wireless Communication Perspective; MVT March 2020 63-72

Liu, Y., see Cui, J., MVT March 2020 46-53

Loiero, R., see Garzon, J., MVT March 2020 91-98

Luo, J., see He, R., MVT March 2020 16-26

#### M

Ma, H., see Zhou, L., MVT June 2020 121-128

Ma, Z., Chen, X., Xiao, M., Karagiannidis, G., and Fan, P., Interference Control for Railway Wireless Communication Systems: Techniques, Challenges, and Trends; MVT Sept. 2020 51-58

Maattanen, H., see Namuduri, K., MVT June 2020 20-21

Malandrino, F., see Malinverno, M., MVT March 2020 27-35

Malinverno, M., Avino, G., Casetti, C., Chiasserini, C., Malandrino, F., and Scarpina, S., Edge-Based Collision Avoidance for Vehicles and Vulnerable Users: An Architecture Based on MEC; MVT March 2020 27-35

Mangues-Bafalluy, J., see Baranda Hortiguela, J., MVT June 2020 48-57

Marojevic, V., see Shang, B., MVT June 2020 104-112

Marojevic, V., Guvenc, I., Dutta, R., Sichitiu, M., and Floyd, B., Advanced Wireless for Unmanned Aerial Systems: 5G Standardization, Research Challenges, and AERPAW Architecture; MVT June 2020 22-30

Martinez, R., see Baranda Hortiguela, J., MVT June 2020 48-57

Matolak, D., see Namuduri, K., MVT June 2020 20-21

Miaoudakis, A., Fysarakis, K., Petroulakis, N., Alexaki, S., Alexandirs, G., Ioannidis, S., Spanoudakis, G., Katos, V., and Verikoukis, C., Pairing a Circular Economy and the 5G-Enabled Internet of Things: Creating a Class of "Looping Smart Assets"; MVT Sept. 2020 20-31

Milenkovic, A., see Coe, D., MVT March 2020 84-90

Minucci, F., see Vinogradov, E., MVT June 2020 88-95

Mogensen, P., see de Amorim, R., MVT June 2020 129-135

Mohjazi, L., Zoha, A., Bariah, L., Muhaidat, S., Sofotasios, P., Imran, M., and Dobre, O., An Outlook on the Interplay of Artificial Intelligence and Software-Defined Metasurfaces: An Overview of Opportunities and Limitations; MVT Dec. 2020 62-73

Muhaidat, S., see Mohjazi, L., MVT Dec. 2020 62-73

Muncuk, U., see Trotta, A., MVT June 2020 96-103

### N

Nallanathan, A., see Cui, J., MVT March 2020 46-53

Namuduri, K., Fiebig, U., Hari, K., Matolak, D., Guvenc, I., and Maattanen, H., Communication Support for Unmanned Air Transportation [From the Guest Editors]; MVT June 2020 20-21

Naqvi, S., Ho, P., and Peng, L., Effective Indoor Coverage via Radio-Over-Cable Fronthauls: Analog Fronthauls Come of Age; MVT June 2020 79-87

Nelson, N., see Rice, M., MVT Sept. 2020 68-76

Norman, K., see Rice, M., MVT Sept. 2020 68-76

### p

Patzold, M., Toward Realizing the Full Potential of a 5G-Empowered World [Mobile Radio]; MVT March 2020 5-11

Patzold, M., 5G Unlocks Its Power for Global Mobile Connectivity [Mobile Radio]; MVT June 2020 5-11

Patzold, M., see Peng, B., MVT June 2020 136-143

Patzold, M., Tackling Global Environmental Challenges Through ICT [Mobile Radio]; MVT Sept. 2020 9-15

Patzold, M., The Role of 5G in Limiting the Impact of the COVID-19 Pandemic [Mobile Radio]; MVT Dec. 2020 6-12

+ Check author entry for coauthors

Peng, B., Guan, K., Kuter, A., Rey, S., Patzold, M., and Kuerner, T., Channel Modeling and System Concepts for Future Terahertz Communications: Getting Ready for Advances Beyond 5G; MVT June 2020 136-143

Peng, L., see Naqvi, S., MVT June 2020 79-87

Perrins, E., see Rice, M., MVT Sept. 2020 68-76

Petroulakis, N., see Miaoudakis, A., MVT Sept. 2020 20-31

**Pollin, S.,** see Blandino, S., MVT June 2020 65-71

Pollin, S., see Vinogradov, E., MVT June 2020 88-95

Poor, H., see Zeng, M., MVT June 2020 31-38

#### O

Qian, Y., see Fang, D., MVT June 2020 58-64

Qiu, J., Du, L., Chen, Y., Tian, Z., Du, X., and Guizani, M., Artificial Intelligence Security in 5G Networks: Adversarial Examples for Estimating a Travel Time Task; MVT Sept. 2020 95-100

Quek, T., see Xia, W., MVT March 2020 36-45

#### R

Rehmani, M., see Senouci, S., MVT Sept. 2020 5-6

Reineri, M., see Iorio, M., MVT Sept. 2020 77-85

Ren, Y., see Du, J., MVT Dec. 2020 122-134

Rey, S., see Peng, B., MVT June 2020 136-143

Rice, M., Clark, B., Flanary, D., Jensen, B., Nelson, N., Norman, K., Perrins, E., and Harrison, W., Physical-Layer Security for Vehicle-to-Everything Networks: Increasing Security While Maintaining Reliable Communications; MVT Sept. 2020 68-76

Risso, F., see Iorio, M., MVT Sept. 2020 77-85

Rubinstein, T., IEEE Vehicular Technology Society Bylaw Changes [Society News]; MVT March 2020 120

#### S

Sacchi, C., see Bassoli, R., MVT June 2020 39-47

Saponara, S., Lee, C., Wang, N., and Kirtley, J., Electric Drives and Power Chargers: Recent Solutions to Improve Performance and Energy Efficiency for Hybrid and Fully Electric Vehicles; MVT March 2020 73-83

Sarieddeen, H., see Faisal, A., MVT Dec. 2020 33-42

Scarpina, S., see Malinverno, M., MVT March 2020 27-35

Schneider, C., see He, R., MVT March 2020 16-26

Sedjelmaci, H., see Senouci, S., MVT Sept. 2020 5-6

Senouci, S., Sedjelmaci, H., Liu, J., Rehmani, M., and Bou-Harb, E., AI-Driven Cybersecurity Threats to Future Networks [From the Guest Editors]; MVT Sept. 2020 5-6

Shang, B., Marojevic, V., Yi, Y., Abdalla, A., and Liu, L., Spectrum Sharing for UAV Communications: Spatial Spectrum Sensing and Open Issues; MVT June 2020 104-112

Shi, Z., see Liu, Y., MVT March 2020 63-72

Shihada, B., see Celik, A., MVT Dec. 2020 83-92

Shim, B., see Kim, W., MVT Sept. 2020 32-39

Sichitiu, M., see Marojevic, V., MVT June 2020 22-30

Simsek, M., Kantarci, B., and Zhang, Y., Detecting Fake Mobile Crowdsensing Tasks: Ensemble Methods Under Limited Data; MVT Sept. 2020 86-94

Sisto, R., see Iorio, M., MVT Sept. 2020 77-85

Sjoberg, K., Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]; MVT Sept. 2020 109-112

Sofotasios, P., see Mohjazi, L., MVT Dec. 2020 62-73

Song, S., see Lee, C., MVT March 2020 54-62

Sorensen, T., see de Amorim, R., MVT June 2020 129-135

Spanoudakis, G., see Miaoudakis, A., MVT Sept. 2020 20-31

Sun, S., see Li, C., MVT Dec. 2020 112-121

## Т

**Tengkvist**, **P.**, *see* Kliks, A., *MVT Sept. 2020 40-50* **Thomae**, **R.**, *see* He, R., *MVT March 2020 16-26* 

Tian, Z., see Qiu, J., MVT Sept. 2020 95-100

Tomasin, S., see Centenaro, M., MVT June 2020 72-78

**Touryan, G.,** A Fond Farewell to a VTM Institution [Land Transportation]; MVT Dec. 2020 15

Trotta, A., Muncuk, U., Di Felice, M., and Chowdhury, K., Persistent Crowd Tracking Using Unmanned Aerlal Vehicle Swarms: A Novel Framework for Energy and Mobility Management; MVT June 2020 96-103

Trovao, J., Automotive Electronics Market Evolution [Automotive Electronics]; MVT March 2020 107-118

Trovao, J., Digital Transformation, Systemic Design, and Automotive Electronics [Automotive Electronics]; MVT June 2020 149-159

Trovao, J., Automotive Electronics Under the COVID-19 Shadow [Automotive Electronics]; MVT Sept. 2020 101-108

**Trovao, J.,** Recent Impacts on the Automotive Electronics Industry [Automotive Electronics]; MVT Dec. 2020 139-146

Tsourdos, A., see Li, C., MVT Dec. 2020 112-121

#### U

Uhlemann, E., Every Effort Toward Traffic Safety Counts [Connected and Automated Vehicles]; MVT June 2020 144-148

Uhlemann, E., Peculiar Times Being Used to Analyze and Plan Ahead [Connected and Autonomous Vehicles]; MVT Dec. 2020 135-138

### V

Valenza, F., see Iorio, M., MVT Sept. 2020 77-85

Verikoukis, C., see Miaoudakis, A., MVT Sept. 2020 20-31

Vettori, L., see Baranda Hortiguela, J., MVT June 2020 48-57

Vinogradov, E., Minucci, F., and Pollin, S., Wireless Communication for Safe UAVs: From Long-Range Deconfliction to Short-Range Collision Avoidance; MVT June 2020 88-95

### W

Wang, C., Huang, J., Wang, H., Gao, X., You, X., and Hao, Y., 6G Wireless Channel Measurements and Models: Trends and Challenges; MVT Dec. 2020 22-32

Wang, G., see He, R., MVT March 2020 16-26

Wang, H., see Wang, C., MVT Dec. 2020 22-32

Wang, J., see Du, J., MVT Dec. 2020 122-134

Wang, N., see Saponara, S., MVT March 2020 73-83

Wang, X., see Yan, L., MVT Sept. 2020 59-67

Wei, Y., see Chi, N., MVT Dec. 2020 93-102

Wigard, J., see de Amorim, R., MVT June 2020 129-135

**Wu, J.,** see Yu, L., MVT Dec. 2020 43-51

Wymeersch, H., He, J., Denis, B., Clemente, A., and Juntti, M., Radio Localization and Mapping With Reconfigurable Intelligent Surfaces: Challenges, Opportunities, and Research Directions; MVT Dec. 2020 52-61

### X

Xia, W., Zhang, J., Quek, T., Jin, S., and Zhu, H., Mobile Edge Cloud-Based Industrial Internet of Things: Improving Edge Intelligence With Hierarchical SDN Controllers; MVT March 2020 36-45

Xiao, M., see Ma, Z., MVT Sept. 2020 51-58

### Y

Yan, L., Fang, X., Wang, X., and Ai, B., AI-Enabled Sub-6-GHz and mm-Wave Hybrid Communications: Considerations for Use With Future HSR Wireless Systems; MVT Sept. 2020 59-67

Yang, S., see Centenaro, M., MVT June 2020 72-78

Yang, Z., see Zhou, L., MVT June 2020 121-128

Yi, Y., see Shang, B., MVT June 2020 104-112

You, X., see Wang, C., MVT Dec. 2020 22-32

+ Check author entry for coauthors

Yu, L., Wu, J., Zhou, A., Larsson, E., and Fan, P., Massively Distributed Antenna Systems With Nonideal Optical Fiber Fronthauls: A Promising Technology for 6G Wireless Communication Systems; MVT Dec. 2020 43-51

#### 7

Zeng, M., Hao, W., Dobre, O., Ding, Z., and Poor, H., Massive MIMO-Assisted Mobile Edge Computing: Exciting Possibilities for Computation Offloading; MVT June 2020 31-38

Zhang, J., see Xia, W., MVT March 2020 36-45

Zhang, W., see Zhou, L., MVT June 2020 121-128

Zhang, Y., see He, R., MVT March 2020 16-26

Zhang, Y., see Simsek, M., MVT Sept. 2020 86-94

**Zhong, Z.,** see He, R., MVT March 2020 16-26

**Zhou, A.,** see Yu, L., MVT Dec. 2020 43-51

Zhou, L., Ma, H., Yang, Z., Zhou, S., and Zhang, W., Unmanned Aerial Vehicle Communications: Path-Loss Modeling and Evaluation; MVT June 2020 121-128

Zhou, S., see Zhou, L., MVT June 2020 121-128

Zhou, Y., see Chi, N., MVT Dec. 2020 93-102

Zhu, H., see Xia, W., MVT March 2020 36-45

Zoha, A., see Mohjazi, L., MVT Dec. 2020 62-73

## SUBJECT INDEX

#### Numeric

#### 3G mobile communication

Interference Control for Railway Wireless Communication Systems: Techniques, Challenges, and Trends. Ma, Z., +, MVT Sept. 2020 51-58

# 3GPP

A Short Update on 3GPP Release 16 and Release 17 [Standards]. Au, E., MVT.June 2020 160

Advanced Wireless for Unmanned Aerial Systems: 5G Standardization, Research Challenges, and AERPAW Architecture. *Marojevic, V.*, +, *MVT June 2020 22-30* 

Enabling Cellular Communication for Aerial Vehicles: Providing Reliability for Future Applications. *de Amorim, R.*, +, *MVT June 2020 129-135* 

Prediction-Based Conditional Handover for 5G mm-Wave Networks: A Deep-Learning Approach. *Lee, C.*, +, *MVT March 2020 54-62* 

### 5G mobile communication

5G Unlocks Its Power for Global Mobile Connectivity [Mobile Radio]. *Patzold, M., MVT June 2020 5-11* 

5G Wireless Security and Privacy: Architecture and Flexible Mechanisms. Fang, D., +, MVT June 2020 58-64

AI-Driven Cybersecurity Threats to Future Networks [From the Guest Editors]. Senouci, S., +, MVT Sept. 2020 5-6

Advanced Wireless for Unmanned Aerial Systems: 5G Standardization, Research Challenges, and AERPAW Architecture. *Marojevic, V.*, +, *MVT June 2020 22-30* 

Artificial Intelligence Security in 5G Networks: Adversarial Examples for Estimating a Travel Time Task. *Qiu*, *J.*, +, *MVT Sept. 2020 95-100* 

Beyond 5G: Big Data Processing for Better Spectrum Utilization. *Kliks, A.*, +, *MVT Sept. 2020 40-50* 

Communication Support for Unmanned Air Transportation [From the Guest Editors]. *Namuduri, K.*, +, *MVT June 2020 20-21* 

Interfacing 5G Orchestrator With Data Analytics Functions [From the Guest Editors]. *Al-Dulaimi*, A., +, *MVT June 2020 18-20* 

Laying the Milestones for 6G Networks [From the Guest Editors]. *David, K.*, +, *MVT Dec. 2020 18-21* 

Machine Learning for 6G Wireless Networks: Carrying Forward Enhanced Bandwidth, Massive Access, and Ultrareliable/Low-Latency Service. *Du*, *J.*, +, *MVT Dec. 2020 122-134* 

Pairing a Circular Economy and the 5G-Enabled Internet of Things: Creating a Class of "Looping Smart Assets". *Miaoudakis, A.*, +, *MVT Sept. 2020* 

- Prediction-Based Conditional Handover for 5G mm-Wave Networks: A Deep-Learning Approach. Lee, C., +, MVT March 2020 54-62
- Predictive Voice-Over-Internet Protocol Fallback Over Vehicular Channels: Employing Artificial Intelligence at the Edge of 5G Networks. *Centenaro*, *M.*, +, *MVT June 2020 72-78*
- Realizing the Network Service Federation Vision: Enabling Automated Multidomain Orchestration of Network Services. *Baranda Hortiguela*, *J.*, +, *MVT June 2020 48-57*
- Tackling Global Environmental Challenges Through ICT [Mobile Radio]. Patzold, M., MVT Sept. 2020 9-15
- The Role of 5G in Limiting the Impact of the COVID-19 Pandemic [Mobile Radio]. *Patzold, M., MVT Dec. 2020 6-12*
- Toward Realizing the Full Potential of a 5G-Empowered World [Mobile Radio]. Patzold, M., MVT March 2020 5-11
- Trustworthy Deep Learning in 6G-Enabled Mass Autonomy: From Concept to Quality-of-Trust Key Performance Indicators. *Li*, *C.*, +, *MVT Dec. 2020* 112-121
- Wireless 2.0: Toward an Intelligent Radio Environment Empowered by Reconfigurable Meta-Surfaces and Artificial Intelligence. Gacanin, H., +, MVT Dec. 2020 74-82

#### 6G mobile communication

- 6G Wireless Channel Measurements and Models: Trends and Challenges. Wang, C., +, MVT Dec. 2020 22-32
- Aerial Base Station Deployment in 6G Cellular Networks Using Tethered Drones: The Mobility and Endurance Tradeoff. *Kishk, M.*, +, *MVT Dec.* 2020 103-111
- Beyond 5G: Big Data Processing for Better Spectrum Utilization. *Kliks, A.*, +, *MVT Sept. 2020 40-50*
- Laying the Milestones for 6G Networks [From the Guest Editors]. *David, K.*, +, *MVT Dec.* 2020 18-21
- Machine Learning for 6G Wireless Networks: Carrying Forward Enhanced Bandwidth, Massive Access, and Ultrareliable/Low-Latency Service. *Du*, *J.*, +, *MVT Dec. 2020 122-134*
- Trustworthy Deep Learning in 6G-Enabled Mass Autonomy: From Concept to Quality-of-Trust Key Performance Indicators. *Li*, *C.*, +, *MVT Dec. 2020 112-121*

### A

### Acceleration

Edge-Based Collision Avoidance for Vehicles and Vulnerable Users: An Architecture Based on MEC. *Malinverno, M.*, +, *MVT March 2020 27-35* 

# Accidents

Every Effort Toward Traffic Safety Counts [Connected and Automated Vehicles]. Uhlemann, E., MVT June 2020 144-148

# Aerospace electronics

Wireless Communication for Safe UAVs: From Long-Range Deconfliction to Short-Range Collision Avoidance. *Vinogradov, E.*, +, *MVT June 2020 88-95* 

### Air transportation

Interfacing 5G Orchestrator With Data Analytics Functions [From the Guest Editors]. Al-Dulaimi, A., +, MVT June 2020 18-20

### Aircraft

Wireless Communication for Safe UAVs: From Long-Range Deconfliction to Short-Range Collision Avoidance. *Vinogradov, E.*, +, *MVT June 2020 88-95* 

### Algorithm design and analysis

AI-Driven Cybersecurity Threats to Future Networks [From the Guest Editors]. Senouci, S., +, MVT Sept. 2020 5-6

### Analytical models

Trustworthy Deep Learning in 6G-Enabled Mass Autonomy: From Concept to Quality-of-Trust Key Performance Indicators. *Li*, *C.*, +, *MVT Dec. 2020* 112-121

## Antenna arrays

AI-Enabled Sub-6-GHz and mm-Wave Hybrid Communications: Considerations for Use With Future HSR Wireless Systems. *Yan, L.*, +, *MVT Sept.* 2020 59-67

### + Check author entry for coauthors

- Massively Distributed Antenna Systems With Nonideal Optical Fiber Fronthauls: A Promising Technology for 6G Wireless Communication Systems. *Yu, L.*, +, *MVT Dec. 2020 43-51*
- Radio Localization and Mapping With Reconfigurable Intelligent Surfaces: Challenges, Opportunities, and Research Directions. *Wymeersch, H.*, +, *MVT Dec. 2020 52-61*
- Ultramassive MIMO Systems at Terahertz Bands: Prospects and Challenges. Faisal, A., +, MVT Dec. 2020 33-42

### Antenna measurements

- Channel Modeling and System Concepts for Future Terahertz Communications: Getting Ready for Advances Beyond 5G. *Peng, B.*, +, *MVT June* 2020 136-143
- Radio Localization and Mapping With Reconfigurable Intelligent Surfaces: Challenges, Opportunities, and Research Directions. Wymeersch, H., +, MVT Dec. 2020 52-61

#### Antennas

- Channel Modeling and System Concepts for Future Terahertz Communications: Getting Ready for Advances Beyond 5G. *Peng, B., +, MVT June 2020 136-143*
- Effective Indoor Coverage via Radio-Over-Cable Fronthauls: Analog Fronthauls Come of Age. Naqvi, S., +, MVT June 2020 79-87
- Energy Efficiency of Multiple-Input, Multiple-Output Architectures: Future 60-GHz Applications. *Blandino, S.*, +, *MVT June 2020 65-71*
- Unmanned Aerial Vehicle Communications: Path-Loss Modeling and Evaluation. *Zhou, L.*, +, *MVT June 2020 121-128*

### Array signal processing

Ultramassive MIMO Systems at Terahertz Bands: Prospects and Challenges. Faisal, A., +, MVT Dec. 2020 33-42

## Artificial intelligence

- AI-Driven Cybersecurity Threats to Future Networks [From the Guest Editors]. Senouci, S., +, MVT Sept. 2020 5-6
- AI-Enabled Sub-6-GHz and mm-Wave Hybrid Communications: Considerations for Use With Future HSR Wireless Systems. *Yan, L.*, +, *MVT Sept.* 2020 59-67
- An Outlook on the Interplay of Artificial Intelligence and Software-Defined Metasurfaces: An Overview of Opportunities and Limitations. *Mohjazi, L.*, +, *MVT Dec. 2020 62-73*
- Machine Learning for 6G Wireless Networks: Carrying Forward Enhanced Bandwidth, Massive Access, and Ultrareliable/Low-Latency Service. *Du*, *J.*, +, *MVT Dec. 2020 122-134*
- Sparse Vector Transmission: An Idea Whose Time Has Come. Kim, W., +, MVT Sept. 2020 32-39
- Trustworthy Deep Learning in 6G-Enabled Mass Autonomy: From Concept to Quality-of-Trust Key Performance Indicators. *Li*, *C.*, +, *MVT Dec. 2020* 112-121
- Wireless 2.0: Toward an Intelligent Radio Environment Empowered by Reconfigurable Meta-Surfaces and Artificial Intelligence. *Gacanin*, H., +, MVT Dec. 2020 74-82

### Authentication

Protecting In-Vehicle Services: Security-Enabled SOME/IP Middleware. Iorio, M., +, MVT Sept. 2020 77-85

### Automobiles

- Electric Drives and Power Chargers: Recent Solutions to Improve Performance and Energy Efficiency for Hybrid and Fully Electric Vehicles. Saponara, S., +, MVT March 2020 73-83
- Protecting In-Vehicle Services: Security-Enabled SOME/IP Middleware. Iorio, M., +, MVT Sept. 2020 77-85
- Virtualized In Situ Software Update Verification: Verification of Over-the-Air Automotive Software Updates. Coe, D., +, MVT March 2020 84-90

# Automotive electronics

Recent Impacts on the Automotive Electronics Industry [Automotive Electronics]. *Trovao, J., MVT Dec. 2020 139-146* 

# Automotive engineering

- Automotive Electronics Market Evolution [Automotive Electronics]. Trovao, J., MVT March 2020 107-118
- Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]. Sjoberg, K., MVT Sept. 2020 109-112

Digital Transformation, Systemic Design, and Automotive Electronics [Automotive Electronics]. *Trovao, J., MVT June 2020 149-159* 

Protecting In-Vehicle Services: Security-Enabled SOME/IP Middleware. Iorio, M., +, MVT Sept. 2020 77-85

Virtualized In Situ Software Update Verification: Verification of Over-the-Air Automotive Software Updates. Coe, D., +, MVT March 2020 84-90

#### Autonomous vehicles

AI-Driven Cybersecurity Threats to Future Networks [From the Guest Editors]. Senouci, S., +, MVT Sept. 2020 5-6

Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]. Sjoberg, K., MVT Sept. 2020 109-112

Laying the Milestones for 6G Networks [From the Guest Editors]. *David, K.*, + MVT Dec. 2020 18-21

Peculiar Times Being Used to Analyze and Plan Ahead [Connected and Autonomous Vehicles]. *Uhlemann, E., MVT Dec. 2020 135-138* 

E

# Bandwidth

Radio Localization and Mapping With Reconfigurable Intelligent Surfaces: Challenges, Opportunities, and Research Directions. *Wymeersch, H.*, +, *MVT Dec. 2020 52-61* 

Visible Light Communication in 6G: Advances, Challenges, and Prospects. *Chi*, *N*., +, *MVT Dec.* 2020 93-102

### **Base stations**

5G Wireless Security and Privacy: Architecture and Flexible Mechanisms. Fang, D., +, MVT June 2020 58-64

Aerial Base Station Deployment in 6G Cellular Networks Using Tethered Drones: The Mobility and Endurance Tradeoff. *Kishk, M.*, +, *MVT Dec.* 2020 103-111

Prediction-Based Conditional Handover for 5G mm-Wave Networks: A Deep-Learning Approach. Lee, C., +, MVT March 2020 54-62

### Baseband

CubeSat-Based 5G Cloud Radio Access Networks: A Novel Paradigm for On-Demand Anytime/Anywhere Connectivity. *Bassoli, R.*, +, *MVT June* 2020 39-47

# Batteries

Aerial Base Station Deployment in 6G Cellular Networks Using Tethered Drones: The Mobility and Endurance Tradeoff. Kishk, M., +, MVT Dec. 2020 103-111

Automotive Electronics Market Evolution [Automotive Electronics]. Trovao, J., MVT March 2020 107-118

Persistent Crowd Tracking Using Unmanned Aerlal Vehicle Swarms: A Novel Framework for Energy and Mobility Management. *Trotta, A.*, +, *MVT June 2020 96-103* 

### **Big Data**

Beyond 5G: Big Data Processing for Better Spectrum Utilization. *Kliks, A.*, +, *MVT Sept. 2020 40-50* 

When Machine Learning Meets Big Data: A Wireless Communication Perspective. Liu, Y., +, MVT March 2020 63-72

### Bit rate

Trustworthy Deep Learning in 6G-Enabled Mass Autonomy: From Concept to Quality-of-Trust Key Performance Indicators. *Li*, *C.*, +, *MVT Dec. 2020 112-121* 

## **Boosting**

Detecting Fake Mobile Crowdsensing Tasks: Ensemble Methods Under Limited Data. Simsek, M., +, MVT Sept. 2020 86-94

# Broadband communication

Channel Modeling and System Concepts for Future Terahertz Communications: Getting Ready for Advances Beyond 5G. *Peng, B., +, MVT June* 2020 136-143

### **Business**

Toward Realizing the Full Potential of a 5G-Empowered World [Mobile Radio]. Patzold, M., MVT March 2020 5-11

+ Check author entry for coauthors

### $\mathbf{C}$

#### Cellular networks

Aerial Base Station Deployment in 6G Cellular Networks Using Tethered Drones: The Mobility and Endurance Tradeoff. Kishk, M., +, MVT Dec. 2020 103-111

Enabling Cellular Communication for Aerial Vehicles: Providing Reliability for Future Applications. de Amorim, R., +, MVT June 2020 129-135

Predictive Voice-Over-Internet Protocol Fallback Over Vehicular Channels: Employing Artificial Intelligence at the Edge of 5G Networks. *Centenaro*, M., +, MVT June 2020 72-78

Topology Optimization for 6G Networks: A Network Information-Theoretic Approach. *Celik, A.*, +, *MVT Dec. 2020 83-92* 

# Channel capacity

Radio Communication in Curved Tunnels: MIMO Channel Capacity for Rail Transit Applications. *Aziminejad*, A., +, MVT March 2020 99-106

#### Channel estimation

Machine Learning for 6G Wireless Networks: Carrying Forward Enhanced Bandwidth, Massive Access, and Ultrareliable/Low-Latency Service. *Du*, *J.*, +, *MVT Dec. 2020 122-134* 

### Channel models

Unmanned Aerial Vehicle Communications: Path-Loss Modeling and Evaluation. *Zhou, L.,+, MVT June 2020 121-128* 

# Cognition

Trustworthy Deep Learning in 6G-Enabled Mass Autonomy: From Concept to Quality-of-Trust Key Performance Indicators. *Li*, *C.*, +, *MVT Dec. 2020 112-121* 

### Collision avoidance

Edge-Based Collision Avoidance for Vehicles and Vulnerable Users: An Architecture Based on MEC. Malinverno, M., +, MVT March 2020 27-35

### **Communication cables**

Effective Indoor Coverage via Radio-Over-Cable Fronthauls: Analog Fronthauls Come of Age. *Naqvi*, *S.*, +, *MVT June 2020 79-87* 

#### Communication networks

Laying the Milestones for 6G Networks [From the Guest Editors]. *David, K.*, +, *MVT Dec. 2020 18-21* 

# Communication system security

5G Wireless Security and Privacy: Architecture and Flexible Mechanisms. Fang, D., +, MVT June 2020 58-64

Spectrum Sharing for UAV Communications: Spatial Spectrum Sensing and Open Issues. Shang, B., +, MVT June 2020 104-112

When Machine Learning Meets Big Data: A Wireless Communication Perspective. *Liu*, *Y*, +, *MVT March 2020 63-72* 

# Communications technology

Toward Realizing the Full Potential of a 5G-Empowered World [Mobile Radio]. Patzold, M., MVT March 2020 5-11

## Computer architecture

An Outlook on the Interplay of Artificial Intelligence and Software-Defined Metasurfaces: An Overview of Opportunities and Limitations. *Mohjazi, L.*, +, *MVT Dec. 2020 62-73* 

Edge-Based Collision Avoidance for Vehicles and Vulnerable Users: An Architecture Based on MEC. *Malinverno*, M., +, MVT March 2020 27-35

Interfacing 5G Orchestrator With Data Analytics Functions [From the Guest Editors]. *Al-Dulaimi*, A., +, *MVT June 2020 18-20* 

Predictive Voice-Over-Internet Protocol Fallback Over Vehicular Channels: Employing Artificial Intelligence at the Edge of 5G Networks. *Centenaro*, *M.*, +, *MVT June 2020 72-78* 

Realizing the Network Service Federation Vision: Enabling Automated Multidomain Orchestration of Network Services. *Baranda Hortiguela*, *J.*, +, *MVT June 2020 48-57* 

### Computer crime

Protecting In-Vehicle Services: Security-Enabled SOME/IP Middleware. Iorio, M., +, MVT Sept. 2020 77-85

# Computer hacking

AI-Driven Cybersecurity Threats to Future Networks [From the Guest Editors]. Senouci, S., +, MVT Sept. 2020 5-6

Protecting In-Vehicle Services: Security-Enabled SOME/IP Middleware. Iorio, M., +, MVT Sept. 2020 77-85

### Computer security

AI-Driven Cybersecurity Threats to Future Networks [From the Guest Editors]. Senouci, S., +, MVT Sept. 2020 5-6

Digital Transformation, Systemic Design, and Automotive Electronics [Automotive Electronics]. *Trovao, J., MVT June 2020 149-159* 

Digital Transformation, Systemic Design, and Automotive Electronics [Automotive Electronics]. *Trovao, J., MVT June 2020 149-159* 

### Connected vehicles

Laying the Milestones for 6G Networks [From the Guest Editors]. *David, K.*, +, *MVT Dec. 2020 18-21* 

Peculiar Times Being Used to Analyze and Plan Ahead [Connected and Autonomous Vehicles]. *Uhlemann, E., MVT Dec. 2020 135-138* 

### Corrosion

Mixed ac/dc Electrified Railway Lines: A Study of Grounding. *Garzon, J.*, +, *MVT March 2020 91-98* 

### COVID-19

Automotive Electronics Under the COVID-19 Shadow [Automotive Electronics]. Trovao, J., MVT Sept. 2020 101-108

Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]. Sjoberg, K., MVT Sept. 2020 109-112

The Role of 5G in Limiting the Impact of the COVID-19 Pandemic [Mobile Radio]. *Patzold, M., MVT Dec. 2020 6-12* 

### Crowdsourcing

Detecting Fake Mobile Crowdsensing Tasks: Ensemble Methods Under Limited Data. Simsek, M., +, MVT Sept. 2020 86-94

### CubeSat

CubeSat-Based 5G Cloud Radio Access Networks: A Novel Paradigm for On-Demand Anytime/Anywhere Connectivity. Bassoli, R., +, MVT June 2020 39-47

D

### Data mining

Predictive Voice-Over-Internet Protocol Fallback Over Vehicular Channels: Employing Artificial Intelligence at the Edge of 5G Networks. *Centenaro*, *M.*, +, *MVT June 2020 72-78* 

# Data models

Artificial Intelligence Security in 5G Networks: Adversarial Examples for Estimating a Travel Time Task. *Qiu*, *J.*, +, *MVT Sept. 2020 95-100* 

When Machine Learning Meets Big Data: A Wireless Communication Perspective. Liu, Y., +, MVT March 2020 63-72

# Data transfer

Physical-Layer Security for Vehicle-to-Everything Networks: Increasing Security While Maintaining Reliable Communications. *Rice, M.*, +, *MVT Sept. 2020 68-76* 

### **Databases**

Beyond 5G: Big Data Processing for Better Spectrum Utilization. *Kliks, A.*, +, *MVT Sept. 2020 40-50* 

Realizing the Network Service Federation Vision: Enabling Automated Multidomain Orchestration of Network Services. *Baranda Hortiguela*, J., +, MVT June 2020 48-57

### DC motors

Electric Drives and Power Chargers: Recent Solutions to Improve Performance and Energy Efficiency for Hybrid and Fully Electric Vehicles. Saponara, S., +, MVT March 2020 73-83

# Decision making

Trustworthy Deep Learning in 6G-Enabled Mass Autonomy: From Concept to Quality-of-Trust Key Performance Indicators. *Li*, *C.*, +, *MVT Dec. 2020* 112-121

### Decoding

Sparse Vector Transmission: An Idea Whose Time Has Come. Kim, W., +, MVT Sept. 2020 32-39

### Deep learning

Artificial Intelligence Security in 5G Networks: Adversarial Examples for Estimating a Travel Time Task. *Qiu*, *J*, +, *MVT Sept. 2020 95-100* 

### Delays

Massive MIMO-Assisted Mobile Edge Computing: Exciting Possibilities for Computation Offloading. Zeng, M., +, MVT June 2020 31-38

+ Check author entry for coauthors

Propagation Channels of 5G Millimeter-Wave Vehicle-to-Vehicle Communications: Recent Advances and Future Challenges. *He, R.*, +, *MVT March* 2020 16-26

### **Detectors**

Edge-Based Collision Avoidance for Vehicles and Vulnerable Users: An Architecture Based on MEC. Malinverno, M., +, MVT March 2020 27-35

### Device-to-device communication

Next-Generation mm-Wave Small-Cell Networks: Multiple Access, Caching, and Resource Management. Cui, J., +, MVT March 2020 46-53

Unmanned Aerial Vehicle Communications: Path-Loss Modeling and Evaluation. *Zhou, L.*, +, *MVT June 2020 121-128* 

# Digital-analog conversion

Effective Indoor Coverage via Radio-Over-Cable Fronthauls: Analog Fronthauls Come of Age. Naqvi, S., +, MVT June 2020 79-87

### **Discrete Fourier transforms**

Sparse Vector Transmission: An Idea Whose Time Has Come. Kim, W., +, MVT Sept. 2020 32-39

### Doppler effect

Propagation Channels of 5G Millimeter-Wave Vehicle-to-Vehicle Communications: Recent Advances and Future Challenges. *He, R.*, +, *MVT March* 2020 16-26

# Drones

Aerial Base Station Deployment in 6G Cellular Networks Using Tethered Drones: The Mobility and Endurance Tradeoff. Kishk, M., +, MVT Dec. 2020 103-111

CubeSat-Based 5G Cloud Radio Access Networks: A Novel Paradigm for On-Demand Anytime/Anywhere Connectivity. *Bassoli, R.*, +, *MVT June* 2020 39-47

Wireless Communication for Safe UAVs: From Long-Range Deconfliction to Short-Range Collision Avoidance. *Vinogradov, E.*, +, *MVT June 2020 88-95* 

### **Dual band**

AI-Enabled Sub-6-GHz and mm-Wave Hybrid Communications: Considerations for Use With Future HSR Wireless Systems. *Yan*, *L*., +, *MVT Sept.* 2020 59-67

E

### Eavesdropping

Physical-Layer Security for Vehicle-to-Everything Networks: Increasing Security While Maintaining Reliable Communications. *Rice, M.*, +, *MVT Sept. 2020 68-76* 

# Ecosystems

Pairing a Circular Economy and the 5G-Enabled Internet of Things: Creating a Class of "Looping Smart Assets". *Miaoudakis, A.*, +, *MVT Sept. 2020 20-31* 

### Electric motors

Electric Drives and Power Chargers: Recent Solutions to Improve Performance and Energy Efficiency for Hybrid and Fully Electric Vehicles. Saponara, S., +, MVT March 2020 73-83

### Encoding

Physical-Layer Security for Vehicle-to-Everything Networks: Increasing Security While Maintaining Reliable Communications. *Rice, M.*, +, *MVT Sept. 2020 68-76* 

# **Energy consumption**

Massive MIMO-Assisted Mobile Edge Computing: Exciting Possibilities for Computation Offloading. Zeng, M., +, MVT June 2020 31-38

## Energy efficiency

Energy Efficiency of Multiple-Input, Multiple-Output Architectures: Future 60-GHz Applications. *Blandino, S.*, +, *MVT June 2020 65-71* 

### **Energy resources**

Aerial Base Station Deployment in 6G Cellular Networks Using Tethered Drones: The Mobility and Endurance Tradeoff. *Kishk, M.*, +, *MVT Dec.* 2020 103-111

## Engines

Predictive Voice-Over-Internet Protocol Fallback Over Vehicular Channels: Employing Artificial Intelligence at the Edge of 5G Networks. *Centenaro*, *M.*, +, *MVT June 2020 72-78* 

### Environmental management

Tackling Global Environmental Challenges Through ICT [Mobile Radio].
Patzold, M., MVT Sept. 2020 9-15

F

### **Fading channels**

Propagation Channels of 5G Millimeter-Wave Vehicle-to-Vehicle Communications: Recent Advances and Future Challenges. *He, R.*, +, *MVT March* 2020 16-26

Unmanned Aerial Vehicle Communications: Path-Loss Modeling and Evaluation. Zhou, L., +, MVT June 2020 121-128

# Forward error correction

CubeSat-Based 5G Cloud Radio Access Networks: A Novel Paradigm for On-Demand Anytime/Anywhere Connectivity. Bassoli, R., +, MVT June 2020 39-47

### Frequency measurement

6G Wireless Channel Measurements and Models: Trends and Challenges. Wang, C., +, MVT Dec. 2020 22-32

Channel Modeling and System Concepts for Future Terahertz Communications: Getting Ready for Advances Beyond 5G. *Peng, B.*, +, *MVT June* 2020 136-143

## Frequency-domain analysis

Sparse Vector Transmission: An Idea Whose Time Has Come. Kim, W., +, MVT Sept. 2020 32-39

### FXX

Every Effort Toward Traffic Safety Counts [Connected and Automated Vehicles]. Uhlemann, E., MVT June 2020 144-148

G

### Games

Standards for the Gaming Industry [Standards]. Au, E., MVT Dec. 2020 148 Globalization

5G Unlocks Its Power for Global Mobile Connectivity [Mobile Radio]. Patzold, M., MVT June 2020 5-11

Automotive Electronics Under the COVID-19 Shadow [Automotive Electronics]. Trovao, J., MVT Sept. 2020 101-108

Tackling Global Environmental Challenges Through ICT [Mobile Radio]. Patzold, M., MVT Sept. 2020 9-15

# Grounding

Mixed ac/dc Electrified Railway Lines: A Study of Grounding. *Garzon, J.*, +, *MVT March 2020 91-98* 

Н

## Handover

Prediction-Based Conditional Handover for 5G mm-Wave Networks: A Deep-Learning Approach. *Lee, C., +, MVT March 2020 54-62* 

### Hardware

An Outlook on the Interplay of Artificial Intelligence and Software-Defined Metasurfaces: An Overview of Opportunities and Limitations. *Mohjazi, L.*, +, *MVT Dec. 2020 62-73* 

# **High-speed optical techniques**

Visible Light Communication in 6G: Advances, Challenges, and Prospects. *Chi*, *N*., +, *MVT Dec.* 2020 93-102

## **Human computer interaction**

AI-Driven Cybersecurity Threats to Future Networks [From the Guest Editors]. Senouci, S., +, MVT Sept. 2020 5-6

I

# IEEE 802.11 Standard

New Standards Initiative for Using Wi-Fi for Sensing [Standards]. Au, E., MVT March 2020 119

# **IEEE Standards**

Standards for the Gaming Industry [Standards]. Au, E., MVT Dec. 2020 148 Impedance

Mixed ac/dc Electrified Railway Lines: A Study of Grounding. *Garzon, J.*, +, *MVT March 2020 91-98* 

+ Check author entry for coauthors

#### **Induction motors**

Electric Drives and Power Chargers: Recent Solutions to Improve Performance and Energy Efficiency for Hybrid and Fully Electric Vehicles. Saponara, S., +, MVT March 2020 73-83

### Industrial control

Mobile Edge Cloud-Based Industrial Internet of Things: Improving Edge Intelligence With Hierarchical SDN Controllers. *Xia, W.*, +, *MVT March* 2020 36-45

### **Industrial Internet of Things**

Mobile Edge Cloud-Based Industrial Internet of Things: Improving Edge Intelligence With Hierarchical SDN Controllers. *Xia, W.*, +, *MVT March* 2020 36-45

## Industries

Automotive Electronics Under the COVID-19 Shadow [Automotive Electronics]. Trovao, J., MVT Sept. 2020 101-108

Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]. Sjoberg, K., MVT Sept. 2020 109-112

Realizing the Network Service Federation Vision: Enabling Automated Multidomain Orchestration of Network Services. *Baranda Hortiguela*, *J.*, +, *MVT June 2020 48-57* 

## Information and communication technology

Protecting In-Vehicle Services: Security-Enabled SOME/IP Middleware. Iorio, M., +, MVT Sept. 2020 77-85

Tackling Global Environmental Challenges Through ICT [Mobile Radio].
Patzold, M., MVT Sept. 2020 9-15

### Integrated circuit modeling

Mixed ac/dc Electrified Railway Lines: A Study of Grounding. *Garzon, J.*, +, *MVT March 2020 91-98* 

### Intelligent vehicles

Tackling Global Environmental Challenges Through ICT [Mobile Radio]. Patzold, M., MVT Sept. 2020 9-15

### Interference

Enabling Cellular Communication for Aerial Vehicles: Providing Reliability for Future Applications. de Amorim, R., +, MVT June 2020 129-135

Interference Control for Railway Wireless Communication Systems: Techniques, Challenges, and Trends. Ma, Z., +, MVT Sept. 2020 51-58

Spectrum Sharing for UAV Communications: Spatial Spectrum Sensing and Open Issues. Shang, B., +, MVT June 2020 104-112

Topology Optimization for 6G Networks: A Network Information-Theoretic Approach. *Celik, A.*, +, *MVT Dec. 2020 83-92* 

# Internet of Things

Detecting Fake Mobile Crowdsensing Tasks: Ensemble Methods Under Limited Data. Simsek, M., +, MVT Sept. 2020 86-94

Pairing a Circular Economy and the 5G-Enabled Internet of Things: Creating a Class of "Looping Smart Assets". *Miaoudakis*, A., +, MVT Sept. 2020 20-31

Tackling Global Environmental Challenges Through ICT [Mobile Radio].
Patzold, M., MVT Sept. 2020 9-15

# Interoperability

Pairing a Circular Economy and the 5G-Enabled Internet of Things: Creating a Class of "Looping Smart Assets". *Miaoudakis, A.*, +, *MVT Sept. 2020 20-31* 

# Investment

Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]. Sjoberg, K., MVT Sept. 2020 109-112

# IP networks

Protecting In-Vehicle Services: Security-Enabled SOME/IP Middleware. Iorio, M., +, MVT Sept. 2020 77-85

J

### Jamming

Interference Control for Railway Wireless Communication Systems: Techniques, Challenges, and Trends. Ma, Z., +, MVT Sept. 2020 51-58

 $\mathbf{L}$ 

### Lenses

Radio Localization and Mapping With Reconfigurable Intelligent Surfaces: Challenges, Opportunities, and Research Directions. Wymeersch, H., +, MVT Dec. 2020 52-61

### **Light emitting diodes**

Visible Light Communication in 6G: Advances, Challenges, and Prospects. Chi, N., +, MVT Dec. 2020 93-102

#### Local area networks

Effective Indoor Coverage via Radio-Over-Cable Fronthauls: Analog Fronthauls Come of Age. Naqvi, S., +, MVT June 2020 79-87

### **Long Term Evolution**

Advanced Wireless for Unmanned Aerial Systems: 5G Standardization, Research Challenges, and AERPAW Architecture. *Marojevic*, V., +, MVT June 2020 22-30

Enabling Cellular Communication for Aerial Vehicles: Providing Reliability for Future Applications. de Amorim, R., +, MVT June 2020 129-135

Prediction-Based Conditional Handover for 5G mm-Wave Networks: A Deep-Learning Approach. Lee, C., +, MVT March 2020 54-62

#### Loss measurement

6G Wireless Channel Measurements and Models: Trends and Challenges. Wang, C., +, MVT Dec. 2020 22-32

## Low latency

Interference Control for Railway Wireless Communication Systems: Techniques, Challenges, and Trends. Ma, Z., +, MVT Sept. 2020 51-58

M

## Machine learning

AI-Driven Cybersecurity Threats to Future Networks [From the Guest Editors]. Senouci, S., +, MVT Sept. 2020 5-6

When Machine Learning Meets Big Data: A Wireless Communication Perspective. Liu, Y., +, MVT March 2020 63-72

## Man-machine systems

AI-Driven Cybersecurity Threats to Future Networks [From the Guest Editors]. Senouci, S., +, MVT Sept. 2020 5-6

### Manufacturing

Automotive Electronics Under the COVID-19 Shadow [Automotive Electronics]. Trovao, J., MVT Sept. 2020 101-108

Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]. Sjoberg, K., MVT Sept. 2020 109-112

### Marine vehicles

6G Wireless Channel Measurements and Models: Trends and Challenges. Wang, C., +, MVT Dec. 2020 22-32

### Market opportunities

Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]. Sjoberg, K., MVT Sept. 2020 109-112

Toward Realizing the Full Potential of a 5G-Empowered World [Mobile Radio]. Patzold, M., MVT March 2020 5-11

### Market research

Laying the Milestones for 6G Networks [From the Guest Editors]. *David, K.*, +, *MVT Dec. 2020 18-21* 

Peculiar Times Being Used to Analyze and Plan Ahead [Connected and Autonomous Vehicles]. *Uhlemann, E., MVT Dec. 2020 135-138* 

The Role of 5G in Limiting the Impact of the COVID-19 Pandemic [Mobile Radio]. *Patzold, M., MVT Dec. 2020 6-12* 

Toward Realizing the Full Potential of a 5G-Empowered World [Mobile Radio]. Patzold, M., MVT March 2020 5-11

### Massive MIMO

Massive MIMO-Assisted Mobile Edge Computing: Exciting Possibilities for Computation Offloading. Zeng, M., +, MVT June 2020 31-38

### Matrix converters

Sparse Vector Transmission: An Idea Whose Time Has Come. Kim, W., +, MVT Sept. 2020 32-39

+ Check author entry for coauthors

### Middleware

Protecting In-Vehicle Services: Security-Enabled SOME/IP Middleware. Iorio, M., +, MVT Sept. 2020 77-85

### Millimeter wave propagation

AI-Enabled Sub-6-GHz and mm-Wave Hybrid Communications: Considerations for Use With Future HSR Wireless Systems. *Yan, L.*, +, *MVT Sept.* 2020 59-67

### **MIMO** communication

Radio Communication in Curved Tunnels: MIMO Channel Capacity for Rail Transit Applications. *Aziminejad*, A., +, MVT March 2020 99-106

## Mobile communication

Tackling Global Environmental Challenges Through ICT [Mobile Radio].
Patzold, M., MVT Sept. 2020 9-15

### Mobile handsets

Detecting Fake Mobile Crowdsensing Tasks: Ensemble Methods Under Limited Data. Simsek, M., +, MVT Sept. 2020 86-94

Sparse Vector Transmission: An Idea Whose Time Has Come. Kim, W., +, MVT Sept. 2020 32-39

#### Modulation

Visible Light Communication in 6G: Advances, Challenges, and Prospects. Chi, N., +, MVT Dec. 2020 93-102

### Monitoring

Interference Control for Railway Wireless Communication Systems: Techniques, Challenges, and Trends. Ma, Z., +, MVT Sept. 2020 51-58

Realizing the Network Service Federation Vision: Enabling Automated Multidomain Orchestration of Network Services. *Baranda Hortiguela*, *J.*, +, *MVT June 2020 48-57* 

### Monte Carlo methods

Aerial Base Station Deployment in 6G Cellular Networks Using Tethered Drones: The Mobility and Endurance Tradeoff. Kishk, M., +, MVT Dec. 2020 103-111

## Multicore processing

Virtualized In Situ Software Update Verification: Verification of Over-the-Air Automotive Software Updates. Coe, D., +, MVT March 2020 84-90

# Multiplexing

Ultramassive MIMO Systems at Terahertz Bands: Prospects and Challenges. Faisal, A., +, MVT Dec. 2020 33-42

N

### Navigation

Dynamic Radar Networks of UAVs: A Tutorial Overview and Tracking Performance Comparison With Terrestrial Radar Networks. *Guerra*, A., +, *MVT June 2020 113-120* 

## Network architecture

AI-Enabled Sub-6-GHz and mm-Wave Hybrid Communications: Considerations for Use With Future HSR Wireless Systems. *Yan, L.*, +, *MVT Sept.* 2020 59-67

Mobile Edge Cloud-Based Industrial Internet of Things: Improving Edge Intelligence With Hierarchical SDN Controllers. *Xia, W., +, MVT March* 2020 36-45

# Network function virtualization

Laying the Milestones for 6G Networks [From the Guest Editors]. *David, K.*, +, *MVT Dec. 2020 18-21* 

Realizing the Network Service Federation Vision: Enabling Automated Multidomain Orchestration of Network Services. *Baranda Hortiguela*, *J.*, +, *MVT June 2020 48-57* 

### Network topology

Topology Optimization for 6G Networks: A Network Information-Theoretic Approach. *Celik, A.*, +, *MVT Dec. 2020 83-92* 

### Neural networks

Machine Learning for 6G Wireless Networks: Carrying Forward Enhanced Bandwidth, Massive Access, and Ultrareliable/Low-Latency Service. *Du, J., +, MVT Dec. 2020 122-134* 

## Next generation networking

AI-Enabled Sub-6-GHz and mm-Wave Hybrid Communications: Considerations for Use With Future HSR Wireless Systems. *Yan, L.*, +, *MVT Sept.* 2020 59-67

Next-Generation mm-Wave Small-Cell Networks: Multiple Access, Caching, and Resource Management. Cui, J., +, MVT March 2020 46-53

### Noise measurement

Predictive Voice-Over-Internet Protocol Fallback Over Vehicular Channels: Employing Artificial Intelligence at the Edge of 5G Networks. *Centenaro*, M., +, MVT June 2020 72-78

### **NOMA**

Next-Generation mm-Wave Small-Cell Networks: Multiple Access, Caching, and Resource Management. Cui, J., +, MVT March 2020 46-53

Topology Optimization for 6G Networks: A Network Information-Theoretic Approach. Celik, A., +, MVT Dec. 2020 83-92

### Nonlinear optics

6G Wireless Channel Measurements and Models: Trends and Challenges. Wang, C., +, MVT Dec. 2020 22-32

0

### **OFDM**

Sparse Vector Transmission: An Idea Whose Time Has Come. Kim, W., +, MVT Sept. 2020 32-39

## Optical fiber cables

Effective Indoor Coverage via Radio-Over-Cable Fronthauls: Analog Fronthauls Come of Age. Naqvi, S., +, MVT June 2020 79-87

### Optical fibers

Effective Indoor Coverage via Radio-Over-Cable Fronthauls: Analog Fronthauls Come of Age. Naqvi, S., +, MVT June 2020 79-87

Massively Distributed Antenna Systems With Nonideal Optical Fiber Fronthauls: A Promising Technology for 6G Wireless Communication Systems. *Yu, L.*, +, *MVT Dec. 2020 43-51* 

### Optical network units

Massively Distributed Antenna Systems With Nonideal Optical Fiber Fronthauls: A Promising Technology for 6G Wireless Communication Systems. *Yu.* L., +, *MVT Dec.* 2020 43-51

# Optical receivers

Visible Light Communication in 6G: Advances, Challenges, and Prospects. Chi, N., +, MVT Dec. 2020 93-102

# Optical wavelength conversion

Wireless Communication for Safe UAVs: From Long-Range Deconfliction to Short-Range Collision Avoidance. *Vinogradov, E.*, +, *MVT June 2020 88-95* 

### Optimization

Wireless 2.0: Toward an Intelligent Radio Environment Empowered by Reconfigurable Meta-Surfaces and Artificial Intelligence. Gacanin, H., +, MVT Dec. 2020 74-82

P

### **Pandemics**

Automotive Electronics Under the COVID-19 Shadow [Automotive Electronics]. *Trovao, J., MVT Sept. 2020 101-108* 

Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]. Sjoberg, K., MVT Sept. 2020 109-112

The Role of 5G in Limiting the Impact of the COVID-19 Pandemic [Mobile Radio]. *Patzold, M., MVT Dec. 2020 6-12* 

### Payloads

Aerial Base Station Deployment in 6G Cellular Networks Using Tethered Drones: The Mobility and Endurance Tradeoff. *Kishk, M.*, +, *MVT Dec.* 2020 103-111

Enabling Cellular Communication for Aerial Vehicles: Providing Reliability for Future Applications. de Amorim, R., +, MVT June 2020 129-135

### Personnel

Automotive Electronics Under the COVID-19 Shadow [Automotive Electronics]. *Trovao, J., MVT Sept. 2020 101-108* 

Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]. Sjoberg, K., MVT Sept. 2020 109-112

+ Check author entry for coauthors

### Perturbation methods

Artificial Intelligence Security in 5G Networks: Adversarial Examples for Estimating a Travel Time Task. *Qiu*, *J.*, +, *MVT Sept. 2020 95-100* 

#### Plasmons

Ultramassive MIMO Systems at Terahertz Bands: Prospects and Challenges. Faisal, A., +, MVT Dec. 2020 33-42

### Pollution measurement

Enabling Cellular Communication for Aerial Vehicles: Providing Reliability for Future Applications. de Amorim, R., +, MVT June 2020 129-135

#### Power cables

Effective Indoor Coverage via Radio-Over-Cable Fronthauls: Analog Fronthauls Come of Age. Naqvi, S., +, MVT June 2020 79-87

### Power demand

Energy Efficiency of Multiple-Input, Multiple-Output Architectures: Future 60-GHz Applications. *Blandino, S.*, +, *MVT June 2020 65-71* 

Ultramassive MIMO Systems at Terahertz Bands: Prospects and Challenges. Faisal, A., +, MVT Dec. 2020 33-42

# Privacy

5G Wireless Security and Privacy: Architecture and Flexible Mechanisms. Fang, D., +, MVT June 2020 58-64

Digital Transformation, Systemic Design, and Automotive Electronics [Automotive Electronics]. *Trovao, J., MVT June 2020 149-159* 

# Probability

Spectrum Sharing for UAV Communications: Spatial Spectrum Sensing and Open Issues. Shang, B., +, MVT June 2020 104-112

### Product development

Automotive Electronics Market Evolution [Automotive Electronics]. Trovao, J., MVT March 2020 107-118

### **Production facilities**

Automotive Electronics Under the COVID-19 Shadow [Automotive Electronics]. Trovao, J., MVT Sept. 2020 101-108

Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]. Sjoberg, K., MVT Sept. 2020 109-112

### Propagation losses

Unmanned Aerial Vehicle Communications: Path-Loss Modeling and Evaluation. Zhou, L., +, MVT June 2020 121-128

## Protocols

New Standards Initiative for Using Wi-Fi for Sensing [Standards]. Au, E., MVT March 2020 119

Protecting In-Vehicle Services: Security-Enabled SOME/IP Middleware. Iorio, M., +, MVT Sept. 2020 77-85

### **Public transportation**

Radio Communication in Curved Tunnels: MIMO Channel Capacity for Rail Transit Applications. *Aziminejad*, A., +, MVT March 2020 99-106

Q

# Quality of service

Predictive Voice-Over-Internet Protocol Fallback Over Vehicular Channels: Employing Artificial Intelligence at the Edge of 5G Networks. *Centenaro*, *M.*, +, *MVT June 2020 72-78* 

Topology Optimization for 6G Networks: A Network Information-Theoretic Approach. *Celik, A.*, +, *MVT Dec. 2020 83-92* 

Trustworthy Deep Learning in 6G-Enabled Mass Autonomy: From Concept to Quality-of-Trust Key Performance Indicators. *Li*, *C.*, +, *MVT Dec. 2020 112-121* 

R

# Radar cross-sections

Dynamic Radar Networks of UAVs: A Tutorial Overview and Tracking Performance Comparison With Terrestrial Radar Networks. *Guerra, A.*, +, *MVT June 2020 113-120* 

# Radar tracking

Communication Support for Unmanned Air Transportation [From the Guest Editors]. *Namuduri, K.*, +, *MVT June 2020 20-21* 

Dynamic Radar Networks of UAVs: A Tutorial Overview and Tracking Performance Comparison With Terrestrial Radar Networks. *Guerra, A.*, +, *MVT June 2020 113-120* 

### Radio access networks

Mobile Edge Cloud-Based Industrial Internet of Things: Improving Edge Intelligence With Hierarchical SDN Controllers. *Xia, W.*, +, *MVT March* 2020 36-45

### Radio frequency

Energy Efficiency of Multiple-Input, Multiple-Output Architectures: Future 60-GHz Applications. *Blandino*, S., +, MVT June 2020 65-71

Next-Generation mm-Wave Small-Cell Networks: Multiple Access, Caching, and Resource Management. Cui, J., +, MVT March 2020 46-53

### Radio spectrum management

Beyond 5G: Big Data Processing for Better Spectrum Utilization. *Kliks, A.*, +, *MVT Sept. 2020 40-50* 

Machine Learning for 6G Wireless Networks: Carrying Forward Enhanced Bandwidth, Massive Access, and Ultrareliable/Low-Latency Service. *Du*, *J.*, +, *MVT Dec. 2020 122-134* 

### Radio transmitters

Persistent Crowd Tracking Using Unmanned Aerlal Vehicle Swarms: A Novel Framework for Energy and Mobility Management. *Trotta, A.*, +, *MVT June 2020 96-103* 

Radio Localization and Mapping With Reconfigurable Intelligent Surfaces: Challenges, Opportunities, and Research Directions. *Wymeersch, H.*, +, *MVT Dec. 2020 52-61* 

Wireless 2.0: Toward an Intelligent Radio Environment Empowered by Reconfigurable Meta-Surfaces and Artificial Intelligence. *Gacanin*, H., +, MVT Dec. 2020 74-82

### Rail transportation

AI-Enabled Sub-6-GHz and mm-Wave Hybrid Communications: Considerations for Use With Future HSR Wireless Systems. *Yan, L.*, +, *MVT Sept.* 2020 59-67

December 2020 Land Transportation News [Transportation Systems]. Glickenstein, H., MVT Dec. 2020 14-17

Interference Control for Railway Wireless Communication Systems: Techniques, Challenges, and Trends. Ma, Z., +, MVT Sept. 2020 51-58

June 2020 Land Transportation News [Transportation Systems]. Glickenstein, H., MVT June 2020 12-16

March 2020 Land Transportation News [Transportation Systems]. Glickenstein, H., MVT March 2020 12-13

Mixed ac/dc Electrified Railway Lines: A Study of Grounding. *Garzon, J.*, +, *MVT March 2020 91-98* 

September 2020 Land Transportation News [Transportation Systems]. Ku, B., MVT Sept. 2020 16-19

# Ray tracing

Channel Modeling and System Concepts for Future Terahertz Communications: Getting Ready for Advances Beyond 5G. Peng, B., +, MVT June 2020 136-143

### Real-time systems

Visible Light Communication in 6G: Advances, Challenges, and Prospects. *Chi*, *N*., +, *MVT Dec.* 2020 93-102

### Receiver

Interference Control for Railway Wireless Communication Systems: Techniques, Challenges, and Trends. Ma, Z., +, MVT Sept. 2020 51-58

Persistent Crowd Tracking Using Unmanned Aerlal Vehicle Swarms: A Novel Framework for Energy and Mobility Management. *Trotta, A.*, +, *MVT June 2020 96-103* 

Physical-Layer Security for Vehicle-to-Everything Networks: Increasing Security While Maintaining Reliable Communications. *Rice, M.*, +, *MVT Sept. 2020 68-76* 

Radio Localization and Mapping With Reconfigurable Intelligent Surfaces: Challenges, Opportunities, and Research Directions. *Wymeersch, H.*, +, *MVT Dec. 2020 52-61* 

Wireless 2.0: Toward an Intelligent Radio Environment Empowered by Reconfigurable Meta-Surfaces and Artificial Intelligence. *Gacanin*, H., +, MVT Dec. 2020 74-82

# + Check author entry for coauthors

#### Receiving antennas

Radio Communication in Curved Tunnels: MIMO Channel Capacity for Rail Transit Applications. *Aziminejad, A.*, +, *MVT March 2020 99-106* 

#### Reliability

Enabling Cellular Communication for Aerial Vehicles: Providing Reliability for Future Applications. *de Amorim, R.*, +, *MVT June 2020 129-135* 

Physical-Layer Security for Vehicle-to-Everything Networks: Increasing Security While Maintaining Reliable Communications. *Rice, M.*, +, *MVT Sept. 2020 68-76* 

Prediction-Based Conditional Handover for 5G mm-Wave Networks: A Deep-Learning Approach. *Lee, C.*, +, *MVT March 2020 54-62* 

### Resource management

Massive MIMO-Assisted Mobile Edge Computing: Exciting Possibilities for Computation Offloading. Zeng, M., +, MVT June 2020 31-38

Next-Generation mm-Wave Small-Cell Networks: Multiple Access, Caching, and Resource Management. Cui, J., +, MVT March 2020 46-53

### Road traffic

Every Effort Toward Traffic Safety Counts [Connected and Automated Vehicles]. Uhlemann, E., MVT June 2020 144-148

Propagation Channels of 5G Millimeter-Wave Vehicle-to-Vehicle Communications: Recent Advances and Future Challenges. *He, R.*, +, *MVT March* 2020 16-26

### Robot sensing systems

Sparse Vector Transmission: An Idea Whose Time Has Come. Kim, W., +, MVT Sept. 2020 32-39

### Routing

Protecting In-Vehicle Services: Security-Enabled SOME/IP Middleware. Iorio, M., +, MVT Sept. 2020 77-85

S

# Safety

Automotive Electronics Market Evolution [Automotive Electronics]. Trovao, J., MVT March 2020 107-118

Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]. Sjoberg, K., MVT Sept. 2020 109-112

Digital Transformation, Systemic Design, and Automotive Electronics [Automotive Electronics]. *Trovao, J., MVT June 2020 149-159* 

Edge-Based Collision Avoidance for Vehicles and Vulnerable Users: An Architecture Based on MEC. Malinverno, M., +, MVT March 2020 27-35

Virtualized In Situ Software Update Verification: Verification of Over-the-Air Automotive Software Updates. Coe, D., +, MVT March 2020 84-90

Wireless Communication for Safe UAVs: From Long-Range Deconfliction to Short-Range Collision Avoidance. *Vinogradov, E., +, MVT June 2020* 

### Satellite broadcasting

CubeSat-Based 5G Cloud Radio Access Networks: A Novel Paradigm for On-Demand Anytime/Anywhere Connectivity. *Bassoli, R.*, +, *MVT June* 2020 39-47

# Satellites

6G Wireless Channel Measurements and Models: Trends and Challenges. Wang, C., +, MVT Dec. 2020 22-32

### Security

5G Wireless Security and Privacy: Architecture and Flexible Mechanisms. Fang, D., +, MVT June 2020 58-64

Interfacing 5G Orchestrator With Data Analytics Functions [From the Guest Editors]. *Al-Dulaimi*, A., +, *MVT June 2020 18-20* 

Physical-Layer Security for Vehicle-to-Everything Networks: Increasing Security While Maintaining Reliable Communications. *Rice, M.*, +, *MVT Sept. 2020 68-76* 

Protecting In-Vehicle Services: Security-Enabled SOME/IP Middleware. Iorio, M., +, MVT Sept. 2020 77-85

## Semiconductor device measurement

Channel Modeling and System Concepts for Future Terahertz Communications: Getting Ready for Advances Beyond 5G. *Peng, B., +, MVT June* 2020 136-143

#### Sensors

Automotive Electronics Market Evolution [Automotive Electronics]. Trovao. J., MVT March 2020 107-118

Detecting Fake Mobile Crowdsensing Tasks: Ensemble Methods Under Limited Data. Simsek, M., +, MVT Sept. 2020 86-94

Dynamic Radar Networks of UAVs: A Tutorial Overview and Tracking Performance Comparison With Terrestrial Radar Networks. Guerra, A., +, MVT June 2020 113-120

New Standards Initiative for Using Wi-Fi for Sensing [Standards]. Au, E., MVT March 2020 119

Propagation Channels of 5G Millimeter-Wave Vehicle-to-Vehicle Communications: Recent Advances and Future Challenges. *He, R.*, +, *MVT March* 2020 16-26

Sparse Vector Transmission: An Idea Whose Time Has Come. Kim, W., +, MVT Sept. 2020 32-39

Spectrum Sharing for UAV Communications: Spatial Spectrum Sensing and Open Issues. Shang, B., +, MVT June 2020 104-112

#### Servers

Detecting Fake Mobile Crowdsensing Tasks: Ensemble Methods Under Limited Data. Simsek, M., +, MVT Sept. 2020 86-94

Edge-Based Collision Avoidance for Vehicles and Vulnerable Users: An Architecture Based on MEC. *Malinverno*, M., +, MVT March 2020 27-35

Massive MIMO-Assisted Mobile Edge Computing: Exciting Possibilities for Computation Offloading. Zeng, M., +, MVT June 2020 31-38

# Signal to noise ratio

Topology Optimization for 6G Networks: A Network Information-Theoretic Approach. Celik, A., +, MVT Dec. 2020 83-92

### Simultaneous localization and mapping

Radio Localization and Mapping With Reconfigurable Intelligent Surfaces: Challenges, Opportunities, and Research Directions. *Wymeersch, H.*, +, *MVT Dec. 2020 52-61* 

### SISO communication

Propagation Channels of 5G Millimeter-Wave Vehicle-to-Vehicle Communications: Recent Advances and Future Challenges. *He, R.*, +, *MVT March* 2020 16-26

## Smart phones

Edge-Based Collision Avoidance for Vehicles and Vulnerable Users: An Architecture Based on MEC. Malinverno, M., +, MVT March 2020 27-35

# Social factors

The Role of 5G in Limiting the Impact of the COVID-19 Pandemic [Mobile Radio]. *Patzold, M., MVT Dec. 2020 6-12* 

### Social networking (online)

When Machine Learning Meets Big Data: A Wireless Communication Perspective. Liu, Y., +, MVT March 2020 63-72

### Software

Advanced Wireless for Unmanned Aerial Systems: 5G Standardization, Research Challenges, and AERPAW Architecture. *Marojevic*, V., +, MVT June 2020 22-30

Virtualized In Situ Software Update Verification: Verification of Over-the-Air Automotive Software Updates. Coe, D., +, MVT March 2020 84-90

# Software architecture

Realizing the Network Service Federation Vision: Enabling Automated Multidomain Orchestration of Network Services. *Baranda Hortiguela*, J., +, MVT June 2020 48-57

# Software defined networking

An Outlook on the Interplay of Artificial Intelligence and Software-Defined Metasurfaces: An Overview of Opportunities and Limitations. *Mohjazi, L.*, +, *MVT Dec. 2020 62-73* 

Mobile Edge Cloud-Based Industrial Internet of Things: Improving Edge Intelligence With Hierarchical SDN Controllers. *Xia, W.*, +, *MVT March* 2020 36-45

### Solid modeling

Trustworthy Deep Learning in 6G-Enabled Mass Autonomy: From Concept to Quality-of-Trust Key Performance Indicators. *Li*, *C*., +, *MVT Dec. 2020* 112-121

## Spatiotemporal phenomena

Artificial Intelligence Security in 5G Networks: Adversarial Examples for Estimating a Travel Time Task. *Qiu*, *J.*, +, *MVT Sept. 2020 95-100* 

### + Check author entry for coauthors

#### Special issues and sections

AI-Driven Cybersecurity Threats to Future Networks [From the Guest Editors]. Senouci, S., +, MVT Sept. 2020 5-6

Communication Support for Unmanned Air Transportation [From the Guest Editors]. *Namuduri, K.*, +, *MVT June 2020 20-21* 

Interfacing 5G Orchestrator With Data Analytics Functions [From the Guest Editors]. Al-Dulaimi, A., +, MVT June 2020 18-20

Laying the Milestones for 6G Networks [From the Guest Editors]. *David, K.*, +, *MVT Dec. 2020 18-21* 

## Spectral efficiency

Next-Generation mm-Wave Small-Cell Networks: Multiple Access, Caching, and Resource Management. Cui, J., +, MVT March 2020 46-53

### Standards development

A Short Update on 3GPP Release 16 and Release 17 [Standards]. Au, E., MVT June 2020 160

### Static VAr compensators

Sparse Vector Transmission: An Idea Whose Time Has Come. Kim, W., +, MVT Sept. 2020 32-39

### Stators

Electric Drives and Power Chargers: Recent Solutions to Improve Performance and Energy Efficiency for Hybrid and Fully Electric Vehicles. Saponara, S., +, MVT March 2020 73-83

### Substations

Mixed ac/dc Electrified Railway Lines: A Study of Grounding. *Garzon, J.*, +, *MVT March 2020 91-98* 

### Supervised learning

Wireless 2.0: Toward an Intelligent Radio Environment Empowered by Reconfigurable Meta-Surfaces and Artificial Intelligence. *Gacanin*, H., +, MVT Dec. 2020 74-82

# Supply chain management

Automotive Electronics Under the COVID-19 Shadow [Automotive Electronics]. *Trovao, J., MVT Sept. 2020 101-108* 

Automotive Industry Faces Challenges [Connected and Autonomous Vehicles]. Sjoberg, K., MVT Sept. 2020 109-112

# Supply chains

Pairing a Circular Economy and the 5G-Enabled Internet of Things: Creating a Class of "Looping Smart Assets". *Miaoudakis, A.*, +, *MVT Sept. 2020 20-31* 

# Sustainable development

Tackling Global Environmental Challenges Through ICT [Mobile Radio]. Patzold, M., MVT Sept. 2020 9-15

### **Synchronous motors**

Electric Drives and Power Chargers: Recent Solutions to Improve Performance and Energy Efficiency for Hybrid and Fully Electric Vehicles. Saponara, S., +, MVT March 2020 73-83

# System performance

Beyond 5G: Big Data Processing for Better Spectrum Utilization. *Kliks, A.*, +, *MVT Sept. 2020 40-50* 

T

### Target tracking

Dynamic Radar Networks of UAVs: A Tutorial Overview and Tracking Performance Comparison With Terrestrial Radar Networks. *Guerra, A.*, +, *MVT June 2020 113-120* 

Persistent Crowd Tracking Using Unmanned Aerlal Vehicle Swarms: A Novel Framework for Energy and Mobility Management. *Trotta, A.*, +, *MVT June 2020 96-103* 

### Task analysis

Artificial Intelligence Security in 5G Networks: Adversarial Examples for Estimating a Travel Time Task. *Qiu*, *J*., +, *MVT Sept. 2020 95-100* 

Detecting Fake Mobile Crowdsensing Tasks: Ensemble Methods Under Limited Data. Simsek, M., +, MVT Sept. 2020 86-94

Massive MIMO-Assisted Mobile Edge Computing: Exciting Possibilities for Computation Offloading. *Zeng, M.*, +, *MVT June 2020 31-38* 

## **Technology forecasting**

Peculiar Times Being Used to Analyze and Plan Ahead [Connected and Autonomous Vehicles]. *Uhlemann, E., MVT Dec. 2020 135-138* 

The Role of 5G in Limiting the Impact of the COVID-19 Pandemic [Mobile Radio]. *Patzold, M., MVT Dec. 2020 6-12* 

#### Telecommunication services

Toward Realizing the Full Potential of a 5G-Empowered World [Mobile Radio]. Patzold, M., MVT March 2020 5-11

## Testing

Virtualized In Situ Software Update Verification: Verification of Over-the-Air Automotive Software Updates. Coe, D., +, MVT March 2020 84-90

## Three-dimensional displays

Advanced Wireless for Unmanned Aerial Systems: 5G Standardization, Research Challenges, and AERPAW Architecture. *Marojevic*, V., +, MVT June 2020 22-30

Spectrum Sharing for UAV Communications: Spatial Spectrum Sensing and Open Issues. Shang, B., +, MVT June 2020 104-112

Unmanned Aerial Vehicle Communications: Path-Loss Modeling and Evaluation. *Zhou, L.*, +, *MVT June 2020 121-128* 

### **Throughput**

CubeSat-Based 5G Cloud Radio Access Networks: A Novel Paradigm for On-Demand Anytime/Anywhere Connectivity. Bassoli, R., +, MVT June 2020 39-47

## Topology

Topology Optimization for 6G Networks: A Network Information-Theoretic Approach. Celik, A., +, MVT Dec. 2020 83-92

#### Traffic control

Every Effort Toward Traffic Safety Counts [Connected and Automated Vehicles]. *Uhlemann, E., MVT June 2020 144-148* 

### Training

Detecting Fake Mobile Crowdsensing Tasks: Ensemble Methods Under Limited Data. Simsek, M., +, MVT Sept. 2020 86-94

## Trajectory

Artificial Intelligence Security in 5G Networks: Adversarial Examples for Estimating a Travel Time Task. *Qiu*, *J.*, +, *MVT Sept. 2020 95-100* 

#### Transcoiver

Energy Efficiency of Multiple-Input, Multiple-Output Architectures: Future 60-GHz Applications. *Blandino, S.*, +, *MVT June 2020 65-71* 

# Transient analysis

Interference Control for Railway Wireless Communication Systems: Techniques, Challenges, and Trends. Ma, Z., +, MVT Sept. 2020 51-58

### Transmitting antennas

Radio Communication in Curved Tunnels: MIMO Channel Capacity for Rail Transit Applications. *Aziminejad*, A., +, MVT March 2020 99-106

# Trust management

Trustworthy Deep Learning in 6G-Enabled Mass Autonomy: From Concept to Quality-of-Trust Key Performance Indicators. *Li*, *C.*, +, *MVT Dec. 2020* 112-121

 $\mathbf{U}$ 

### Ultra reliable low latency communication

5G Wireless Security and Privacy: Architecture and Flexible Mechanisms. Fang, D., +, MVT June 2020 58-64

# Unmanned aerial vehicles

Aerial Base Station Deployment in 6G Cellular Networks Using Tethered Drones: The Mobility and Endurance Tradeoff. *Kishk, M.*, +, *MVT Dec.* 2020 103-111

Communication Support for Unmanned Air Transportation [From the Guest Editors]. *Namuduri, K.*, +, *MVT June 2020 20-21* 

Unmanned Aerial Vehicle Communications: Path-Loss Modeling and Evaluation. Zhou, L., +, MVT June 2020 121-128

V

### Vehicle ad hoc networks

Physical-Layer Security for Vehicle-to-Everything Networks: Increasing Security While Maintaining Reliable Communications. *Rice, M.*, +, *MVT Sept. 2020 68-76* 

# + Check author entry for coauthors

### Vehicle safety

Automotive Electronics Market Evolution [Automotive Electronics]. Trovao. J., MVT March 2020 107-118

Every Effort Toward Traffic Safety Counts [Connected and Automated Vehicles]. Uhlemann, E., MVT June 2020 144-148

### Vehicle-to-everything

Physical-Layer Security for Vehicle-to-Everything Networks: Increasing Security While Maintaining Reliable Communications. *Rice, M.*, +, *MVT Sept. 2020 68-76* 

#### Vehicle-to-infrastructure

Physical-Layer Security for Vehicle-to-Everything Networks: Increasing Security While Maintaining Reliable Communications. *Rice, M.*, +, *MVT Sept. 2020 68-76* 

#### Vehicles

Pairing a Circular Economy and the 5G-Enabled Internet of Things: Creating a Class of "Looping Smart Assets". *Miaoudakis, A.*, +, *MVT Sept. 2020 20-31* 

### Vehicular ad hoc networks

Propagation Channels of 5G Millimeter-Wave Vehicle-to-Vehicle Communications: Recent Advances and Future Challenges. *He, R.*, +, *MVT March* 2020 16-26

### Video surveillance

Persistent Crowd Tracking Using Unmanned Aerlal Vehicle Swarms: A Novel Framework for Energy and Mobility Management. *Trotta, A.*, +, *MVT June 2020 96-103* 

# Videos

Tackling Global Environmental Challenges Through ICT [Mobile Radio].Patzold, M., MVT Sept. 2020 9-15

W

### Wireless communication

5G Wireless Security and Privacy: Architecture and Flexible Mechanisms. Fang, D., +, MVT June 2020 58-64

6G Wireless Channel Measurements and Models: Trends and Challenges. Wang, C., +, MVT Dec. 2020 22-32

Advanced Wireless for Unmanned Aerial Systems: 5G Standardization, Research Challenges, and AERPAW Architecture. *Marojevic, V.*, +, *MVT June 2020 22-30* 

AI-Enabled Sub-6-GHz and mm-Wave Hybrid Communications: Considerations for Use With Future HSR Wireless Systems. *Yan, L.*, +, *MVT Sept.* 2020 59-67

Energy Efficiency of Multiple-Input, Multiple-Output Architectures: Future 60-GHz Applications. *Blandino*, S., +, MVT June 2020 65-71

Interference Control for Railway Wireless Communication Systems: Techniques, Challenges, and Trends. Ma, Z., +, MVT Sept. 2020 51-58

Massively Distributed Antenna Systems With Nonideal Optical Fiber Fronthauls: A Promising Technology for 6G Wireless Communication Systems. *Yu.* L., +, *MVT Dec.* 2020 43-51

Next-Generation mm-Wave Small-Cell Networks: Multiple Access, Caching, and Resource Management. Cui, J., +, MVT March 2020 46-53

Persistent Crowd Tracking Using Unmanned Aerlal Vehicle Swarms: A Novel Framework for Energy and Mobility Management. *Trotta, A.*, +, *MVT June 2020 96-103* 

Radio Communication in Curved Tunnels: MIMO Channel Capacity for Rail Transit Applications. *Aziminejad, A.*, +, *MVT March 2020 99-106* 

Ultramassive MIMO Systems at Terahertz Bands: Prospects and Challenges. Faisal, A., +, MVT Dec. 2020 33-42

Visible Light Communication in 6G: Advances, Challenges, and Prospects. Chi, N., +, MVT Dec. 2020 93-102

Wireless Communication for Safe UAVs: From Long-Range Deconfliction to Short-Range Collision Avoidance. *Vinogradov, E.*, +, *MVT June 2020 88-95* 

### Wireless fidelity

New Standards Initiative for Using Wi-Fi for Sensing [Standards]. Au, E., MVT March 2020 119

### Wireless LAN

Energy Efficiency of Multiple-Input, Multiple-Output Architectures: Future 60-GHz Applications. *Blandino, S.*, +, *MVT June 2020 65-71* 

# Wireless networks

An Outlook on the Interplay of Artificial Intelligence and Software-Defined Metasurfaces: An Overview of Opportunities and Limitations. *Mohjazi, L.*, +, *MVT Dec. 2020 62-73* 

Beyond 5G: Big Data Processing for Better Spectrum Utilization. *Kliks, A.*, +, *MVT Sept. 2020 40-50* 

Spectrum Sharing for UAV Communications: Spatial Spectrum Sensing and Open Issues. Shang, B., +, MVT June 2020 104-112

When Machine Learning Meets Big Data: A Wireless Communication Perspective. *Liu*, *Y*., +, *MVT March* 2020 63-72

Wireless 2.0: Toward an Intelligent Radio Environment Empowered by Reconfigurable Meta-Surfaces and Artificial Intelligence. *Gacanin, H.*, +, *MVT Dec. 2020 74-82* 

### Wireless sensor networks

New Standards Initiative for Using Wi-Fi for Sensing [Standards]. Au, E., MVT March 2020 119

Spectrum Sharing for UAV Communications: Spatial Spectrum Sensing and Open Issues. Shang, B., +, MVT June 2020 104-112

<sup>+</sup> Check author entry for coauthors