

LIST OF PUBLICATIONS AND PATENTS

STEFAN VALENTIN

Publications

Citations: 3371

h-index: 27

i10-index: 70

as computed by Google Scholar on Sep. 23, 2024.

Journal Articles and Book Chapters

- [1] F. Wamser, Ö. Alay, F. Metzger, and S. Valentin, "IJNM Special Issue: QoE-centric analysis and management of communication networks," *Int. Journal of Netw. Manag.*, vol. 30, no. 3, May 2020.
- [2] A. Sunny, R. El-Azouzi, E. Altman, S. Poojary, S. Valentin, and D. Tsilimantos, "Enforcing bitrate-stability for adaptive streaming traffic in cellular networks," Apr. 2019.
- [3] L. Wang, H. Gjoreski, M. Ciliberto, S. Mekki, S. Valentin, and D. Roggen, *Human Activity Sensing*. Springer Nature, May 2019, ch. Benchmark performance for the Sussex-Huawei locomotion and transportation recognition challenge 2018. [Online]. Available: <https://www.springer.com/gp/book/9783030130008>
- [4] H. Gjoreski, M. Ciliberto, L. Wang, F. J. O. Morales, S. Mekki, S. Valentin, and D. Roggen, "Enabling reproducible research in sensor-based transportation mode recognition with the Sussex-Huawei Dataset," *IEEE Access*, Jan. 2019. [Online]. Available: <https://ieeexplore.ieee.org/document/8600317>
- [5] —, "The University of Sussex-Huawei Locomotion and Transportation Dataset for multimodal analytics with mobile devices," *IEEE Access*, Jul. 2018.
- [6] P. Ferrand, M. Amara, S. Valentin, and M. Guillaud, "Trends and challenges in wireless channel modeling for evolving radio access," *IEEE Commun. Mag.*, vol. 54, no. 7, pp. 93–99, Jul. 2016.
- [7] I. Malanchini, S. Valentin, and O. Aydin, "Wireless resource sharing for multiple operators: Generalization, fairness, and the value of prediction," *Computer Networks*, vol. 100, pp. 110–123, May 2016.
- [8] K. Dorling, G. G. Messier, S. Valentin, and S. Magierowski, "Minimizing the net present cost of deploying and operating wireless sensor networks," *IEEE Trans. Netw. and Service Management*, vol. 12, no. 3, pp. 511–525, Sep. 2015.
- [9] M. Kasparick, R. Cavalcante, S. Valentin, S. Stanczak, and M. Yukawa, "Kernel-based adaptive online reconstruction of coverage maps with side information," *IEEE Trans. Veh. Technol.*, vol. PP, no. 99, pp. 1–1, Jul. 2015.
- [10] O. Semiari, W. Saad, S. Valentin, M. Bennis, and H. Poor, "Context-aware small cell networks: How social metrics improve wireless resource allocation," *IEEE Trans. Wireless Commun.*, vol. PP, no. 99, pp. 1–1, Jul. 2015.
- [11] H. Abou-zeid, H. S. Hassanein, S. Valentin, and M. Feteiha, "A lookback scheduling framework for long-term quality-of-service over multiple cells," *Wireless Commun. and Mobile Computing*, Oct. 2014.

- [12] H. Abou-zeid, H. S. Hassanein, and S. Valentin, "Energy-efficient adaptive video transmission: Exploiting rate predictions in wireless networks," *IEEE Trans. Veh. Technol.*, vol. 63, no. 5, pp. 2013–2026, Jun. 2014.
- [13] M. Bennis, M. Simsek, S. Valentin, W. Saad, M. Debbah, and A. Czylik, "When cellular and Wi-Fi meet in a small cell network," *IEEE Commun. Mag.*, Jun. 2013,
Fred W. Ellersick Prize of the IEEE Communications Society in 2015.
- [14] M. Proebster, M. Kaschub, T. Werthmann, and S. Valentin, "Context-aware resource allocation for cellular wireless networks," *EURASIP Journal on Wireless Commun. and Networking*, vol. 1, no. 216, Jul. 2012.
- [15] S. Valentin and H. Karl, "Cooperative feedback to improve capacity and error rate in multiuser diversity systems – an OFDM case study," *Euro. Trans. Telecommun.*, vol. 21, no. 8, pp. 714–724, Dec. 2010.
- [16] H. S. Lichte, S. Valentin, and H. Karl, "Expected interference in wireless networks with geometric path loss – a closed-form approximation," *IEEE Commun. Lett.*, vol. 14, pp. 130–132, Feb. 2010.
- [17] —, "Automated development of cooperative MAC protocols: A compiler-assisted approach," *Mobile Networks and Applications*, Sep. 2009.
- [18] S. Valentin, H. S. Lichte, H. Karl, S. Simoens, G. Vivier, J. Vidal, and A. Agustin, *Cognitive Wireless Networks: Concepts, Methodologies and Visions*. Springer, Sep. 2007, ch. Implementing cooperative wireless networks – Towards feasibility and deployment.
- [19] S. Valentin, H. S. Lichte, H. Karl, G. Vivier, S. Simoens, J. Vidal, and A. Agustin, "Cooperative wireless networking beyond store-and-forward: Perspectives in PHY and MAC design," *Wireless Personal Commun.*, vol. 48, no. 1, pp. 49–68, Jan. 2009.
- [20] J. Gross, S. Valentin, H. Karl, and A. Wolisz, "A study on the impact of inband signaling and realistic channel knowledge for an example dynamic OFDM-FDMA system," *Euro. Trans. Telecommun.*, vol. 16, no. 1, pp. 37–49, Jan. 2005.

Conference and Workshop Papers

- [21] M. Varotto, F. Heinrichs, T. Schuerg, S. Tomasin, and S. Valentin, "Detecting 5G narrow-band jammers with CNN, k-nearest neighbors, and support vector machines," in *IEEE Int. Workshop on Inf. Forensics and Security (WIFS)*, Dec. 2024, accepted for publication, preprint at <https://arxiv.org/abs/2405.09564>.
- [22] M. Varotto, S. Valentin, F. Ardizzon, S. Marzotto, and S. Tomasin, "One-class classification and the GLRT for jamming detection in 5G private networks," in *Proc. IEEE Int. Workshop on Signal Processing Advances for Wireless Commun. (SPAWC)*, Sep. 2024, **Invited Paper**, preprint at <https://arxiv.org/abs/2405.09565>.
- [23] M. Varotto, S. Valentin, and S. Tomasin, "Detecting 5G signal jammers using spectrograms with supervised and unsupervised learning," in *Proc. IEEE Int. Conf. on Commun. Workshops (ICC WS)*, Jun. 2024.
- [24] —, "Detecting 5G signal jammers with autoencoders based on loose observations," in *Proc. IEEE Global Telecommun. Conf. Workshops (GLOBECOM WS)*, Dec. 2023.
- [25] F. Loh, F. Wamser, C. Moldovan, B. Zeidler, T. Hoßfeld, D. Tsilimantou, and S. Valentin, "Is the uplink enough? estimating video stalls from encrypted network traffic," in *Proc. IEEE/IFIP Network Operations and Management Symposium (NOMS)*, Oct. 2019.

- [26] —, “From click to playback: A dataset to study the response time of mobile YouTube,” in *Proc. ACM Multimedia Systems Workshops (MMSys WS)*, Jun. 2019.
- [27] R. El-Azouzi, A. Sunny, L. Zhao, E. Altman, D. Tsilimantos, F. de Pellegrini, and S. Valentin, “Dynamic DASH aware scheduling in cellular networks,” in *Proc. IEEE Wireless Commun. and Netw. Conf. (WCNC)*, Apr. 2019.
- [28] R. El-Azouzi, K. Acharya, S. Poojary, A. Sunny, M. Haddad, E. Altman, D. Tsilimantos, and S. Valentin, “Analysis of QoE for adaptive video streaming over wireless networks with user abandonment behavior,” in *Proc. IEEE Wireless Commun. and Netw. Conf. (WCNC)*, Apr. 2019.
- [29] L. Wang, H. Gjoreski, M. Ciliberto, S. Mekki, S. Valentin, and D. Roggen, “Benchmarking the SHL recognition challenge with classical and deep-learning pipelines,” in *Proc. IEEE Int. Symp. on Wearable Computers (ISWC), collocated with UbiComp*, Oct. 2018.
- [30] D. Tsilimantos, T. Karagkioules, and S. Valentin, “Classifying flows and buffer state for YouTube’s HTTP adaptive streaming service in mobile networks,” in *Proc. ACM Multimedia Systems (MMSys)*, Jun. 2018.
- [31] T. Karagkioules, D. Tsilimantos, S. Valentin, F. Wamser, B. Zeidler, M. Seufert, F. Loh, and P. Tran-Gia, “A public dataset for YouTube’s mobile streaming client,” in *Proc. Netw. Traffic Measurement and Analysis Conf. Workshops (TMA WS)*, Jun. 2018.
- [32] M. Seufert, B. Zeidler, F. Wamser, T. Karagkioules, D. Tsilimantos, F. Loh, P. Tran-Gia, and S. Valentin, “A wrapper for automatic measurements with YouTube’s native Android app,” in *Proc. Netw. Traffic Measurement and Analysis Conf. (TMA)*, Jun. 2018.
- [33] S. Poojary, R. El-Azouzi, E. Altman, A. Sunny, I. Triki, M. Haddad, T. Jimenez, S. Valentin, and D. Tsilimantos, “Analysis of QoE for adaptive video streaming over wireless networks,” in *Proc. Int. Symp. on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Netw. (WiOpt)*, May 2018.
- [34] F. Loh, T. Karagkioules, M. Seufert, B. Zeidler, D. Tsilimantos, P. Tran-Gia, S. Valentin, and F. Wamser, “A wrapper for automated measurements with YouTube’s native app,” in *Proc. IEEE/IFIP Network Operations and Management Symposium (NOMS)*, Apr. 2018, demo Session.
- [35] H. Gjoreski, M. Ciliberto, F. Morales, D. Roggen, S. Mekki, and S. Valentin, “A versatile annotated dataset for multimodal locomotion analytics with mobile devices,” in *Proc. ACM Conf. on Embedded Netw. Sensor Systems (SenSys)*, Nov. 2017.
- [36] M. Ciliberto, F. Morales, H. Gjoreski, D. Roggen, S. Mekki, and S. Valentin, “High reliability android application for multidevice multimodal mobile data acquisition and annotation,” in *Proc. ACM Conf. on Embedded Netw. Sensor Systems (SenSys)*, Nov. 2017.
- [37] M. Amara, A. Feki, and S. Valentin, “Channel quality prediction in LTE: How far can we look ahead under realistic assumptions?” in *Proc. IEEE Ann. Int. Symp. on Personal, Indoor and Mobile Radio Commun. (PIMRC)*, Oct. 2017.
- [38] T. Karagkioules, D. Tsilimantos, C. Concolato, and S. Valentin, “A comparative case study of HTTP adaptive streaming algorithms in mobile networks,” in *Proc. ACM Multimedia Systems Workshops (MMSys WS)*, Jun. 2017, **Best Paper Award**.
- [39] S. Mekki, T. Karagkioules, and S. Valentin, “Context-aware adaptive video streaming for mobile users,” in *Proc. Ann. Joint Conf. of the IEEE Computer Societies Workshops (INFOCOM WS)*, May 2017.
- [40] —, “HTTP adaptive streaming with indoors-outdoors detection in mobile networks,” in *Proc. Ann. Joint Conf. of the IEEE Computer Societies Workshops (INFOCOM WS)*, May 2017.

- [41] D. Tsilimantos, A. Nogales-Gomez, and S. Valentin, "Traffic profiling for mobile video streaming," in *Proc. IEEE Int. Conf. on Commun. (ICC)*, May 2017.
- [42] Z. Ye, R. El-Azouzi, T. Jimenez, F. D. Pellegrini, and S. Valentin, "Bitrate adaptation in backward-shifted coding for http adaptive video streaming," in *Proc. IEEE Int. Conf. on Commun. (ICC)*, May 2017.
- [43] L. Rose, E. Quaglia, and S. Valentin, "Increasing the security of wireless communication through relaying and interference generation," in *Proc. IEEE Wireless Commun. and Netw. Conf. (WCNC)*, Mar. 2017.
- [44] N. Barman, S. Valentin, and M. Martini, "Predicting link quality of wireless channel of vehicular users using street and coverage maps," in *Proc. IEEE Ann. Int. Symp. on Personal, Indoor and Mobile Radio Commun. (PIMRC)*, Sep. 2016.
- [45] A. Feki, M. Duarte, S. Valentin, and L. Rose, "Exploiting geographical context in D2D communications," in *Proc. Vehicular Technology Conf. (VTC-Fall)*, Sep. 2016.
- [46] D. Tsilimantos, A. Nogales-Gomez, and S. Valentin, "Anticipatory radio resource management for mobile video streaming with linear programming," in *Proc. IEEE Int. Conf. on Commun. (ICC)*, May 2016.
- [47] M. Duarte, A. Feki, and S. Valentin, "Inter-user interference coordination in full-duplex systems based on geographical context information," in *Proc. IEEE Int. Conf. on Commun. (ICC)*, May 2016.
- [48] Z. Ye, R. El-Azouzi, T. Jimenez, E. Altman, and S. Valentin, "Backward-shifted strategies based on SVC for HTTP adaptive video streaming," in *Proc. IFIP Networking*, May 2016.
- [49] S. Mekki, M. Amara, A. Feki, and S. Valentin, "Channel gain prediction for wireless links with Kalman filters and Expectation-Maximization," in *Proc. IEEE Wireless Commun. and Netw. Conf. (WCNC)*, Apr. 2016.
- [50] S. Chouvardas, S. Valentin, M. Draief, and M. Leconte, "A method to reconstruct coverage loss maps based on matrix completion and adaptive sampling," in *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP)*, Mar. 2016.
- [51] Q. Liao, S. Valentin, and S. Stanczak, "Channel gain prediction in wireless networks based on spatial-temporal correlation," in *Proc. IEEE Int. Workshop on Signal Processing Advances for Wireless Commun. (SPAWC)*, Jun. 2015.
- [52] M. Costa, S. Valentin, and A. Ephremides, "On the age of channel state information for non-reciprocal wireless links," in *Proc. IEEE Int. Symp. on Inf. Theory (ISIT)*, Jun. 2015.
- [53] S. Mekki and S. Valentin, "Anticipatory quality adaptation for mobile video streaming: Fluent video by channel prediction," in *Proc. IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM)*, Jun. 2015, demo paper.
- [54] M. Costa, S. Valentin, and A. Ephremides, "On the age of channel information for a finite-state markov model," in *Proc. IEEE Int. Conf. on Commun. (ICC)*, Jun. 2015.
- [55] W. Bao and S. Valentin, "Bitrate adaptation for mobile video streaming based on buffer and channel state," in *Proc. IEEE Int. Conf. on Commun. (ICC)*, Jun. 2015.
- [56] N. Bui, S. Valentin, and J. Widmer, "Anticipatory quality-resource allocation for multi-user mobile video streaming," in *Proc. Ann. Joint Conf. of the IEEE Computer Societies Workshops (INFOCOM WS)*, Apr. 2015.

- [57] M. Dräxler, J. Blobel, P. Dreimann, S. Valentin, and H. Karl, "Smarterphones: Anticipatory download scheduling for wireless video streaming," in *Proc. Int. Conf. on Networked Systems (NetSys)*, Mar. 2015.
- [58] S. Valentin, "Anticipatory resource allocation for wireless video streaming," in *Proc. IEEE Int. Conf. on Commun. Systems (ICCS)*, Nov. 2014.
- [59] M. Costa, S. Valentin, and A. Ephremides, "First steps to understand the age of channel information," in *Proc. KuVS Workshop on Anticipatory Networks*, Sep. 2014.
- [60] N. Barman and S. Valentin, "Wireless link quality prediction using street and coverage maps," in *Proc. KuVS Workshop on Anticipatory Networks*, Sep. 2014.
- [61] O. Semiari, W. Saad, S. Valentin, and M. Bennis, "On self-organizing resource allocation for social context-aware small cell networks," in *Proc. KuVS Workshop on Anticipatory Networks*, Sep. 2014.
- [62] I. Malanchini, S. Valentin, and O. Aydin, "An analysis of generalized resource sharing for multiple operators in cellular networks," in *Proc. IEEE Ann. Int. Symp. on Personal, Indoor and Mobile Radio Commun. (PIMRC)*, Sep. 2014.
- [63] —, "Generalized resource sharing for multiple operators in cellular wireless networks," in *Proc. Int. Wireless Commun. And Mobile Computing Conf. (IWCMC)*, Aug. 2014, **Invited Paper**.
- [64] N. Namvar, W. Saad, B. Maham, and S. Valentin, "A context-aware matching game for user association in wireless small cell networks," in *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP)*, May 2014.
- [65] O. Semiari, W. Saad, S. Valentin, M. Bennis, and B. Maham, "Matching theory for priority-based cell association in the downlink of wireless small cell networks," in *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP)*, May 2014.
- [66] H. Abou-zeid, H. S. Hassanein, and S. Valentin, "Optimal predictive resource allocation: Exploiting mobility patterns and radio maps," in *Proc. IEEE Global Telecommun. Conf. (GLOBECOM)*, Dec. 2013.
- [67] F. Pantisano, M. Bennis, W. Saad, S. Valentin, and M. Debbah, "Matching with externalities for context-aware cell association in wireless small cell networks," in *Proc. IEEE Global Telecommun. Conf. (GLOBECOM)*, Dec. 2013.
- [68] S. Valentin, W. Jamil, and O. Aydin, "Extending generalized processor sharing for multi-operator scheduling in cellular networks," in *Proc. Int. Wireless Commun. And Mobile Computing Conf. (IWCMC)*, Jul. 2013.
- [69] H. Abou-zeid, H. S. Hassanein, S. Valentin, and M. F. Feteiha, "Lookback scheduling for long-term quality-of-service over multiple cells," in *Proc. Int. Wireless Commun. And Mobile Computing Conf. (IWCMC)*, Jul. 2013.
- [70] X. Chen, F. Mériaux, and S. Valentin, "Predicting a user's next cell with supervised learning based on channel states," in *Proc. IEEE Int. Workshop on Signal Processing Advances for Wireless Commun. (SPAWC)*, Jun. 2013.
- [71] K. Dorling, S. Valentin, G. G. Messier, and S. Magierowski, "Repair algorithms to increase the lifetime of fully connected wireless sensor networks," in *Proc. IEEE Int. Conf. on Commun. (ICC)*, Jun. 2013.
- [72] O. Aydin, W. Jamil, and S. Valentin, "A two-step scheduler for the dynamic sharing of wireless channel resources among operators," in *Proc. Vehicular Technology Conf. (VTC-Spring)*, Jun. 2013.
- [73] R. A. Akl, S. Valentin, G. Wunder, and S. Stańczak, "Compensating for CQI aging by channel prediction: The LTE downlink," in *Proc. IEEE Global Telecommun. Conf. (GLOBECOM)*, Dec. 2012.

- [74] H. Abou-zeid, S. Valentin, and H. Hassanein, "Long-term proportional fairness over multiple cells," in *Proc. IEEE Int. Workshop on Wireless Local Networks (WLN 2012), collocated with IEEE LCN*, Oct. 2012.
- [75] F. Mériaux, S. Valentin, S. Lasaulce, and M. Kieffer, "An energy-efficient power allocation game with selfish channel state reporting in cellular networks," in *Proc. Int. Conf. on Performance Evaluation Methodologies and Tools (VALUETOOLS)*, Oct. 2012.
- [76] K. Dorling, G. G. Messier, S. Magierowski, and S. Valentin, "Improving aerially deployed sensor networks using cooperative communications," in *Proc. IEEE Int. Conf. on Commun. (ICC)*, Jun. 2012.
- [77] T. Werthmann, M. Kaschub, M. Proebster, and S. Valentin, "Simple channel predictors for lookahead scheduling," in *Proc. Vehicular Technology Conf. (VTC-Spring)*, May 2012.
- [78] K. Dorling and S. Valentin, "SNR thresholds to meet a given error rate with practical cooperative relaying," in *Proc. European Wireless (EW)*, Apr. 2012, **Invited Paper**.
- [79] C. Liu, S. Valentin, and M. Tangemann, "Predicting the number of mobile subscribers: An accurate forecasting system and its application," in *Proc. IEEE Wireless Commun. and Netw. Conf. (WCNC)*, Apr. 2012.
- [80] S. Valentin, C. Liu, and M. Tangemann, "Forecasting telecommunication demand: Methods for the crystal ball," in *Proc. Bell Labs Workshop on Science and Fundamentals*, Dec. 2011.
- [81] H. Abou-zeid, S. Valentin, and H. Hassanein, "Context-aware resource allocation for media streaming: Exploiting mobility and application-layer predictions," in *Proc. Capacity Sharing Workshop*, Oct. 2011, extended abstract.
- [82] H. Al Hakim, H. Eckhardt, and S. Valentin, "Decoupling antenna height and tilt adaptation in large cellular networks," in *Proc. IEEE Int. Symp. on Wireless Commun. Systems (ISWCS)*, Nov. 2011.
- [83] M. Proebster, M. Kaschub, and S. Valentin, "Context-aware resource allocation to improve the quality of service of heterogeneous traffic," in *Proc. IEEE Int. Conf. on Commun. (ICC)*, Jun. 2011.
- [84] M. Goldenbaum, R. A. Akl, S. Valentin, and S. Stańczak, "On the effect of feedback delay in the downlink of multiuser OFDM systems," in *Proc. Conf. on Inf. Sciences and Systems (CISS)*, Mar. 2011.
- [85] M. Proebster, M. Kaschub, and S. Valentin, "Self-organizing QoS optimization by context-aware resource allocation," in *Proc. Int. Workshop on Self-Organizing Systems (IWSOS)*, Feb. 2011, poster presentation.
- [86] S. Valentin and T. Wild, "Studying the sum capacity of mobile multiuser diversity systems with feedback errors and delay," in *Proc. Vehicular Technology Conf. (VTC-Fall)*, Sep. 2010.
- [87] S. Valentin, "When do cooperative networks profit from CSI feedback? – an outage capacity perspective," in *Proc. Int. Conf. on Computer Commun. Networks (ICCCN)*, Aug. 2010, **Invited Paper**.
- [88] H. S. Lichte, S. Valentin, H. Karl, I. Aad, and J. Widmer, "Analyzing space/capacity tradeoffs of cooperative wireless networks using a probabilistic model of interference," in *Proc. ACM Int. Conf. on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM)*, Oct. 2009.
- [89] H. S. Lichte, S. Valentin, H. von Malm, H. Karl, A. B. Sediq, and I. Aad, "Rate-per-link adaptation in cooperative wireless networks with multi-rate combining," in *Proc. IEEE Int. Conf. on Commun. (ICC)*, Jun. 2009.
- [90] S. Valentin, D. H. Woldegebreal, T. Volkhausen, and H. Karl, "Combining for cooperative WLANs – A reality check based on prototype measurements," in *Proc. IEEE Int. Conf. on Commun. Workshops (ICC WS)*, Jun. 2009.

- [91] S. Valentin and H. Karl, "Cooperative feedback to improve capacity and error rate in multiuser diversity systems – An OFDM case study," in *Proc. European Wireless (EW)*, May 2009.
- [92] S. Valentin, H. S. Lichte, H. Karl, I. Aad, L. Loyola, and J. Widmer, "Opportunistic relaying vs. selective cooperation: Analyzing the occurrence-conditioned outage capacity," in *Proc. ACM Int. Conf. on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM)*, Oct. 2008.
- [93] S. Valentin, T. Volkhausen, F. Atay Onat, H. Yanikomeroglu, and H. Karl, "Decoding-based channel estimation for selective cooperation diversity protocols," in *Proc. IEEE Ann. Int. Symp. on Personal, Indoor and Mobile Radio Commun. (PIMRC)*, Sep. 2008.
- [94] S. Valentin, H. S. Lichte, D. Warneke, T. Biermann, R. Funke, and H. Karl, "Mobile cooperative WLANs – MAC and transceiver design, prototyping, and field measurements," in *Proc. Vehicular Technology Conf. (VTC-Fall)*, Sep. 2008.
- [95] D. H. Woldegebreal, S. Valentin, and H. Karl, "Incremental network coding in cooperative transmission wireless networks," in *Proc. Vehicular Technology Conf. (VTC-Fall)*, Sep. 2008.
- [96] S. Valentin, T. Freitag, and H. Karl, "Integrating multiuser dynamic OFDMA into IEEE 802.11 WLANs – LLC/MAC extensions and system performance," in *Proc. IEEE Int. Conf. on Commun. (ICC)*, May 2008.
- [97] S. Valentin, T. Volkhausen, F. Atay Onat, H. Yanikomeroglu, and H. Karl, "Enabling partial forwarding by decoding-based one and two-stage selective cooperation," in *Proc. IEEE Int. Conf. on Commun. Workshops (ICC WS)*, May 2008.
- [98] L. Loyola, I. Aad, J. Widmer, H. S. Lichte, and S. Valentin, "Increasing the capacity of IEEE 802.11 wireless LAN through cooperative coded retransmissions," in *Proc. Vehicular Technology Conf. (VTC-Spring)*, May 2008.
- [99] H. S. Lichte, S. Valentin, H. Karl, I. Aad, L. Loyola, and J. Widmer, "Design and evaluation of a routing-informed cooperative MAC protocol for ad hoc networks," in *Proc. Ann. Joint Conf. of the IEEE Computer Societies (INFOCOM)*, Apr. 2008.
- [100] A. Köpke, M. Swigulski, K. Wessel, D. Willkomm, P. T. K. Haneveld, T. Parker, O. Visser, H. S. Lichte, and S. Valentin, "Simulating wireless and mobile networks in OMNeT++: The MiXiM vision," in *Proc. Int. Conf. on Simulation Tools and Techniques for Commun., Networks and Systems Workshops (SIMUTools WS)*, Mar. 2008.
- [101] H. S. Lichte and S. Valentin, "Implementing MAC protocols for cooperative relaying: A compiler-assisted approach," in *Proc. Int. Conf. on Simulation Tools and Techniques for Commun., Networks and Systems (SIMUTools)*, Mar. 2008, **Best Paper Award**.
- [102] D. Woldegebreal, S. Valentin, and H. Karl, "Outage probability analysis of cooperative transmission protocols without and with network coding: Inter-user channels based comparison," in *Proc. ACM Int. Conf. on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM)*, Oct. 2007.
- [103] S. Valentin, H. von Malm, and H. Karl, "Traffic-aware asymmetric cooperation diversity for media streaming in wireless networks," in *Proc. IEEE Ann. Int. Symp. on Personal, Indoor and Mobile Radio Commun. (PIMRC)*, Sep. 2007.
- [104] H. S. Lichte, S. Valentin, F. Eitzen, M. Stege, C. Unger, and H. Karl, "Integrating multiuser dynamic OFDMA into IEEE 802.11a and prototyping it on a real-time software-defined radio testbed," in *Proc. Int. Conf. on Testbeds and Research Infrastructures for the Development of Netw. and Communities (TridentCom)*, May 2007.

- [105] S. Valentin and H. Karl, "Analyzing the effect of asymmetric mobility and channel configurations on the outage performance of coded cooperative systems," in *Proc. European Wireless (EW)*, Apr. 2007, **Invited Paper**.
- [106] —, "Effect of user mobility in coded cooperative systems with joint partner and cooperation level selection," in *Proc. IEEE Wireless Commun. and Netw. Conf. (WCNC)*, Mar. 2007.
- [107] S. Valentin, J. Gross, H. Karl, and A. Wolisz, "Adaptive scheduling for heterogeneous traffic flows in cellular wireless OFDM-FDMA systems," in *Proc. Int. Conf. on Personal Wireless Commun. (PWC)*, Aug. 2005.

Selected Non-Refereed Publications

- [108] M. Dräxler, J. Blobel, P. Dreimann, S. Valentin, and H. Karl, "Anticipatory buffer control and quality selection for wireless video streaming," in *arXiv:1309.5491 [cs.NI]*, <http://arxiv.org/abs/1309.5491>, Sep. 2013.
- [109] S. Sadr and S. Valentin, "Anticipatory buffer control and resource allocation for wireless video streaming," in *arXiv:1304.3056 [cs.MM]*, <http://arxiv.org/abs/1304.3056>, Apr. 2013.
- [110] S. Valentin, H. S. Lichte, H. Karl, G. Vivier, S. Simoens, J. Vidal, A. Agustin, and I. Aad, "Cooperative wireless networking beyond store-and-forward: Perspectives for PHY and MAC design," in *Proc. of the Wireless World Research Forum Meeting (WWRF 17)*, Nov. 2006.
- [111] S. Valentin, H. von Malm, and H. Karl, "Evaluating the GNU Software Radio platform for wireless testbeds," University of Paderborn, Department of Computer Science, Technical Report TR-RI-06-273, Feb. 2006.

Theses

- [112] S. Valentin, "Cooperative relaying and its application – from analysis to prototypes," Dissertation, Faculty for Electrical Engineering, Computer Science and Mathematics, University of Paderborn, Germany, Oct. 2009, defended Mar. 2010.
- [113] —, "Scheduling of heterogeneous data streams in the downlink of a dynamic OFDM-FDMA wireless cell," M.A. Thesis, Telecommunication Networks Group, TU Berlin, Germany, Oct. 2004, defended Oct. 2004.

Selected Patent Applications and Active Patents

- [114] L. Wang, D. Roggen, S. Mekki, and S. Valentin, "Device and method for detecting user activity by parallelized classification," PCT application PCT/EP2018/085809 filed by Huawei Technologies, Dec. 2018.
- [115] M. Sychev, A. Decurninge, D. Tsilimantos, A. Karabutov, S. Valentin, and S. Ikonin, "Apparatus and method for decoding a panoramic video," PCT application PCT/RU2018/000 164 filed by Huawei Technologies, Mar. 2018.
- [116] M. Sychev, A. Decurninge, D. Tsilimantos, A. Karabutov, S. Ikonin, S. Valentin, and Q. Xie, "Apparatus and method for decoding a panoramic video," Patent application US16734080 filed by Huawei Technologies, Jul. 2017.
- [117] D. Tsilimantos, Z. Chao, A. Feki, A. Nogales-Gómez, X. Shi, H. Tang, and S. Valentin, "Transmitter communication device and method for transmitting video data," PCT application PCT/EP2017/064 167 filed by Huawei Technologies, Jun. 2017.

- [118] D. Tsilimantos, S. Valentin, T. Karagkioulos, A. Nogales-Gómez, X. Shi, and Z. Chao, "System, apparatuses and method for traffic profiling of mobile video streaming," PCT application PCT/EP2017/062 170 filed by Huawei Technologies, May 2017.
- [119] X. Shi, Z. Chao, Q. Lou, J. Zhang, S. Valentin, D. Tsilimantos, A. Nogales-Gómez, and J. Yang, "Video service resource allocation method and device," Patent application WO2018010119 filed by Huawei Technologies, Jul. 2016.
- [120] L. Rose, E. Quaglia, and S. Valentin, "An apparatus and method for controlling the secure transmission of a message from a transmitter to a receiver," Patent application WO2017167369 filed by Huawei Technologies, Mar. 2016.
- [121] A. Feki, M. Duarte, S. Valentin, and L. Rose, "A network entity and a method for selecting a communication relay," Patent application WO2017088895 filed by Huawei Technologies, Nov. 2015.
- [122] S. Chouvardas, M. Leconte, S. Valentin, and M. Draief, "A computational efficient method to generate an RF coverage map taken into account uncertainty of drive test measurement data," Patent application WO2017084713 filed by Huawei Technologies, Nov. 2015.
- [123] M. Duarte, A. Feki, and S. Valentin, "Apparatus and method for full-duplex communication," Patent applications EP15748057 and CN107852731 filed by Huawei Technologies, Aug. 2015.
- [124] S. Valentin and Q. Liao, "Method and apparatus for predicting wireless link states," Patent application EP3073776 filed by Alcatel-Lucent, Mar. 2015.
- [125] —, "Predicting the trajectory of mobile users," Patent application EP3073460 filed by Alcatel-Lucent, Mar. 2015.
- [126] S. Saur and S. Valentin, "Method and apparatus for releasing pre-reserved radio resource," Patent EP3035769 filed by Alcatel-Lucent, Dec. 2014.
- [127] S. Valentin, "Apparatuses, base station transceiver, methods and computer programs for providing information related to an assignment of one or more mobile transceivers to at least one out of two or more base station transceivers of a mobile communication system," Patent application EP3016436 filed by Alcatel-Lucent, Oct. 2014.
- [128] —, "Apparatuses, content distribution server, presentation device, methods and computer programs for providing information related to a service configuration for a service provided in a network," Patent application EP3016393 filed by Alcatel-Lucent, Oct. 2014.
- [129] —, "Apparatuses, mobile transceiver, base station, methods and computer programs for providing information related to a predicted channel state of a mobile transceiver," Patent application EP3016434 filed by Alcatel-Lucent, Oct. 2014.
- [130] —, "Apparatus, user equipment, adaptation server, method and computer program for determining information related to a presentation time of buffered media data," Patent application EP3016394 filed by Alcatel-Lucent, Oct. 2014.
- [131] —, "Apparatus, mobile device, base station transceiver, adaptation server, method and computer program for providing information related to a predicted channel state," Patent EP3016458 filed by Alcatel-Lucent, Oct. 2014.
- [132] S. Valentin and I. Malanchini, "Method of analysing information in a communication network and corresponding device," Patent application EP2986069 filed by Alcatel-Lucent, Aug. 2014.
- [133] S. Valentin and K. Dorling, "Electronic device and method of operating an electronic device," Patent application EP2913639 filed by Alcatel-Lucent, Feb. 2014.

- [134] H. Huang, D. Samardzija, I. Kennedy, S. Valentin, D. Chizhik, G. Wright, and S. Singh, "System for globally tracking the location of objects," Patent US9389301 filed by Alcatel-Lucent, Feb. 2014.
- [135] S. Valentin and I. Malanchini, "Multi operator resource management method and device," Patent EP2854436 filed by Alcatel-Lucent, Sep. 2013.
- [136] E. Grinshpun, D. Faucher, and S. Valentin, "Method and apparatus for scheduling adaptive bit rate streams," Patent US9967300 filed by Alcatel-Lucent, Dec. 2012.
- [137] S. Valentin, M. Kaschub, M. Proebster, C. Mueller, and T. Werthmann, "Mobile transceiver, base station transceiver, data server, and related apparatuses, methods, and computer programs," Patent EP2530989 filed by Alcatel-Lucent, May 2012.
- [138] O. Aydin and S. Valentin, "A method for scheduling of radio resources to user terminals of different network operators, and a base station therefor," Patent EP2627140 filed by Alcatel-Lucent, Feb. 2012.
- [139] H. Abou-zeid, S. Valentin, and H. Hassanein, "Apparatuses, methods, and computer programs for a mobile transceiver and for a base station transceiver," Patent EP2582192 filed by Alcatel-Lucent, Oct. 2011.
- [140] C. Mueller, M. Proebster, M. Kaschub, S. Valentin, and T. Werthmann, "A scheduling concept," Patent EP2530988 filed by Alcatel-Lucent, Jun. 2011.
- [141] A. Fonseca dos Santos, S. Valentin, and T. Wild, "Methods and apparatus for simultaneous transmission and reception of a data sequence and channel information for link adaptation," Patent EP2479913 filed by Alcatel-Lucent, Jan. 2011.
- [142] —, "Method and transmitter element for transmitting channel information for link adaptation, method and receiver element for receiving the channel information," Patent EP2479914 filed by Alcatel-Lucent, Jan. 2011.
- [143] S. Valentin, "Coordinated transmissions in communication networks," Patent EP2480026 filed by Alcatel-Lucent, Jan. 2011.
- [144] —, "Method and arrangement for extracting information from signals in receivers," Patent EP2451107 filed by Alcatel-Lucent, Nov. 2010.
- [145] S. Valentin, T. Volkhausen, H. Karl, F. Atay Onat, and H. Yanikomeroğlu, "Method and device for estimating channel parameters," PCT application PCT/DE 2009/000126 filed by University of Paderborn, Jan. 2009.
- [146] S. Valentin, T. Volkhausen, and H. Karl, "Verfahren und Vorrichtung zur Schätzung von Kanalparametern," Patent application DE102008007113 filed by University of Paderborn, Jan. 2008.
- [147] S. Valentin, H. Karl, and I. Aad, "Transceiver apparatus for cooperative wireless network," Patents EP1962456 and JP4629116 filed by NTT DoCoMo Inc., Feb. 2007.

Selected Talks

Invited talks

- [148] S. Valentin, "5 and 6G – new threats and their mitigation through physical layer security," Invited talk at SAP SE, Apr. 2024.
- [149] —, "Detecting smart jammers in 5G networks with machine learning," Invited talk at OpenRhein-Main, Sep. 2023.

- [150] —, “A distributed wireless shield for protecting private 5G networks,” Invited talk at Federal Agency for Disruptive Innovation (SPRIND), May 2023.
- [151] —, “Building 5G networks for the industry: From practical lessons to relevant research problems,” Invited talk at the Department of Information Engineering, University of Padova, Italy, Apr. 2023.
- [152] —, “Fun with narrowband radios! physical layer exploits for opening cars and tracking users with everyday technology,” Guest lecture at the Department of Information Engineering, University of Padova, Italy, Apr. 2023.
- [153] —, “Markovian systems: Analyzing simple queues,” Guest lecture at the Department of Information Engineering, University of Padova, Italy, Apr. 2023.
- [154] —, “Scanner 1: A wireless shield for protecting private 5g networks,” Invited talk at OpenRhein-Main, Sep. 2022.
- [155] —, “Scheduling for latency guarantees and service quality in 5G,” Guest lecture at the Department of Information Engineering, University of Padova, Italy, Dec. 2018.
- [156] —, “Multimedia and 5G: A perfect match, a research challenge, and a killer application,” Invited talk at Technicolor Research and Innovation, Rennes, France, Apr. 2017.
- [157] D. Tsilimantos, T. Karagkioules, and S. Valentin, “Traffic profiling for mobile video streaming: Deep insight without DPI,” Invited presentation at GdR workshop SDN DAY, Orange Labs, Mar. 2016.
- [158] S. Valentin, “Anticipatory resource allocation for mobile streaming,” Invited talk at RWTH Aachen, Mar. 2016.
- [159] —, “Context-aware and anticipatory resource management for the 5G RAN,” Invited talk at the GdR Workshop on Cloud- and fog-based PHY communications in 5G, Nov. 2015.
- [160] —, “Anticipatory video streaming for mobile users,” Invited talk at TU Berlin, Sep. 2015.
- [161] —, “Anticipatory DASH for mobile streaming,” Invited talk at Technicolor Research, San Jose, Jul. 2015.
- [162] —, “Anticipatory video streaming for mobile users,” Invited talk at Hong Kong University of Science and Technology, Apr. 2015.
- [163] —, “Anticipatory video streaming for mobile users,” Invited talk at SUPELEC, Paris and EURECOM, Nice, Feb. 2015.
- [164] S. Valentin and I. Malanchini, “When Dantzig, Shannon, and Jobs meet: Selected optimization challenges in wireless communications,” Invited talk at the HCO workshop on industrial optimization, Heidelberg University, Feb. 2014.
- [165] S. Valentin, “The context-aware radio access,” Keynote at the Workshop “in Memory of Are Hjørungnes”, NTNU, Trondheim, Norway, May 2013.
- [166] —, “Cooperative feedback to improve capacity and energy efficiency of multiuser diversity systems,” Bell Labs, NJ, USA and Associate Institute for Signal Processing (TU Munich, Germany), Oct. 2010.
- [167] —, “Cooperative relaying and its application – from analysis to prototypes,” Invited talk at Vodafone Chair Mobile Communications Systems (TU Dresden), Alcatel-Lucent Bell Labs (Stuttgart), and UMIC Research Centre (RWTH Aachen), Germany, June, Sept., and Nov. 2009.
- [168] —, “Implementing cooperative wireless networks – from theoretical bounds to prototypes,” Invited talk at University of Toronto and Carleton University (Ottawa), Canada, Sep. 2008.
- [169] —, “ChSim – A wireless channel simulator for OMNeT++,” Invited talk at TKN Simulation workshop, TU Berlin, Germany, Sep. 2006.

Tutorial presentations

- [170] S. Mekki and S. Valentin, "Anticipatory HTTP adaptive streaming for mobile users," Demo and Poster Presentation at the Seminar on Modeling, Optimization and Control in Wireless Networks, Telecom ParisTech, Sep. 2015.
- [171] A. N. Gómez, D. Tsilimantos, and S. Valentin, "Anticipatory resource allocation for wireless media streaming," Poster Presentation at the Seminar on Modeling, Optimization and Control in Wireless Networks, Telecom ParisTech, Sep. 2015.
- [172] S. Valentin, "Anticipatory DASH for mobile streaming," Tutorial for Amazon, Seattle, Jul. 2015.
- [173] R. Chrabieh, S. Valentin, and D. Slock, "From network based location estimation to location aided communications," Tutorial 5 at the Int. Symposium on Wireless Communication Systems (ISWCS), Feb. 2015.
- [174] S. Valentin, "The context-aware radio access: A brief tutorial," Tutorial at the 2nd METIS Meeting, Feb. 2013.
- [175] S. Valentin and H. S. Lichte, "Cooperative wireless networks: From theory to practice," Tutorial at ICST Conference on Mobile Networks and Management (MONAMI), Sep. 2011.
- [176] —, "Cooperative relaying and its application – from analysis to prototypes," Tutorial TA-2 at the IEEE Int. Conf. on Commun. (ICC), Sep. 2011.
- [177] —, "Cooperative relaying and its application – from analysis to prototypes," Tutorial 7 at the IEEE Ann. Int. Symp. on Personal, Indoor and Mobile Radio Commun. (PIMRC), Sep. 2011.

Selected Press Coverage and Events

- [178] C. Janssen, "Don't trust any device more complex than a toaster," *impact* <https://impact.h-da.de/en/dont-trust-any-device-more-complex-than-a-toaster>, Nov. 2023.
- [179] SJP Business Media, "Bell Labs, net mobile talk up context-aware video streaming," *Mobile Europe* <http://bit.ly/1mMSIN9>, Jun. 2014.
- [180] NASDAQ, "Alcatel-Lucent, net mobile AG to enhance video on-the-go," *NASDAQ Analyst Report* <http://bit.ly/1jMreBO>, Jun. 2014.
- [181] CercleFinance.com, "Alcatel-Lucent: qualité de retransmission vidéo améliorée." *BFMTV* [http://bit.ly/1mnpn\[v](http://bit.ly/1mnpn[v), Jun. 2014.
- [182] Funkschau, "Alcatel-Lucent und Net Mobile: Video in Verkehrsmitteln," *Funkschau* <http://www.funkschau.de/mobile-solutions/artikel/110244/>, Jun. 2014.
- [183] Network World, "Bell Labs y net mobile incrementan la calidad del streaming de vídeo en vehículos en movimiento," *Network World* <http://bit.ly/1iZUMRx>, Jun. 2014.
- [184] Alcatel-Lucent, "Bell Labs and net mobile AG improve the quality of video streaming in vehicles on the move," Press Release <http://bit.ly/VgPsy0>, Jun. 2014.
- [185] S. Valentin, T. Sizer, and H. P. Mayer, "Context-aware radio access for wireless media streaming," Presentation at the **Mobile World Congress (MWC)**, Feb. 2014.
- [186] S. Valentin, "Wer kooperiert, funkt besser," *Bild der Wissenschaft plus*, pp. 24–27, Oct. 2011, available: <https://klartext-preis.de/content/uploads/2017/08/BDW-KTP-2011.pdf>.

You can find more information about my activities at <https://fbi.h-da.de/en/people/stefan-valentin/>.