

## Publications by Raimo Kantola, Aalto University, Dept of Comnet

### (A) Peer-reviewed scientific articles

#### a.1. Journal articles

1. M Ilvesmäki, M Luoma and R Kantola: Flow Classification in Traffic-based Multi-layer IP switching - Comparison Between Conventional and Neural Approach. Published in September issue of Computer Communications Vol. 21 nr 13, Elsevier, 1998.
2. Raimo Kantola, Jose Costa Requena, Nicklas Beijar, Interoperable routing for IN and IP Telephony, Computer Networks 35 (2001) 597-609.
3. Gonzalo Camarillo, Henning Schulzrinne, Raimo Kantola, Evaluation of Transport protocols for the Session Initiation Protocol, IEEE Network, 2003.
4. Jose Costa Requena, Nicklas Beijar, Raimo Kantola: "Replication of Routing Tables for Mobility Management in Ad Hoc Networks", Wireless Networks, (extended version of the Med Hoc Net 2002 paper) Volume 10, Issue 4, pp. 367-375, July 2004.
5. J. Costa-Requena, T. Vardar, M. Ayyash, and R. Kantola. Scalable hybrid ad hoc routing approach. International Journal of Computer Science and Network Security, 6:82–98, Aug. 2006.
6. Z. Yan, R. Kantola, Y. Shen, "A Generic Solution for Unwanted Traffic Control through Trust Management", New Review of Hypermedia and Multimedia, 2013.
7. Y. Shen, Z. Yan, R. Kantola, Analysis on the Acceptance of Global Trust Management for Unwanted Traffic Control based on Game Theory, Computers & Security.
8. L. Chen, Z. Yan, W. Zhang, R. Kantola, TruSMS: A trustworthy SMS spam control system based on trust management, Future Generation Computer Systems, 7/2014.
9. Z. Yan, X. Li, R. Kantola, Controlling Cloud Data Access Based on Reputation, Mobile Networks and Applications, 3/2015
10. R. Kantola, J. Llorente Santos, N. Beijar, Policy based communications for 5G mobile with customer edge switching, Wiley Security and Communication Networks, 5/2015.
11. L. Zhang, Z. Yan, R. Kantola, Privacy-preserving trust management for unwanted traffic control, in Future Generation Computer Systems, July 2016.
12. R. Kantola, H. Kabir, P. Loiseau, Cooperation and end-to-end in the Internet, International Journal of Communication Systems · February 2017.

#### a.2. Book Chapters

13. N. Beijar, R. Kantola and J. Costa-Requena, A Lightweight Clustering Algorithm for Utilizing Capacity Heterogeneity in Ad Hoc Networks, Challenges in Ad Hoc Networking, Springer, 2006
14. Z. Yan, V. Niemi, Y. Chen, P. Zhang, R. Kantola, "Towards Trustworthy Mobile Social Networking", book chapter in Mobile Social Networking: An Innovative Approach, A. Chin and D. Zhang (ed.), Springer, 2013
15. J. Costa Requena, R. Kantola, J. Llorente Santos, V. Ferrer Guasch, M. Kimmerlin, A. Mikola, J. Manner, LTE Architecture Integration with SDN, in Software Defined Mobile Networks, Wiley Series in Communications Networking & Distributed Systems, 2015.
16. Z. Yan, X. Li, R. Kantola, Heterogeneous Data Access Control Based on Trust and Reputation in Mobile Cloud Computing, • Nov 2017, Advances in Mobile Cloud Computing and Big Data in the 5G Era.

17. Z. Yan, R.Kantola, L. Zhang, Y. Ma, Unwanted Traffic Detection and Control Based on Trust Management, **Chapter**, October 2017 DOI: 10.1007/978-3-319-44257-0\_4 · In book: Information Fusion for Cyber-Security Analytics, pp.77-109.

### **a.3. Conference papers**

18. T. Yletyinen, R. Kantola, Voice Packet Inter-arrival Jitter over IP Switching, ITS '98, Brazil.
19. M Ilvesmäki, R Kantola and M Luoma: Adaptive flow classification in IP switching - the measurement based approach. Paper presented in SPIE Voice, Video and Data Communications '98, Boston, USA.
20. M Ilvesmäki, M Luoma and R Kantola: Learning Vector Quantization in Flow Classification of IP switched networks, GLOBECOM '98, Sydney, Australia.
21. R Kantola and J M Costa Requena: The Server Cache Synchronization Protocol - a component for Directory Enabled Networks, SPIE VVD'99.
22. H. Marjamäki and R. Kantola: Performance evaluation of an IP voice terminal, Smartnet'99, 22-26 November 1999, Asian Institute of Technology, Thailand.
23. R. Kantola, J. Costa Requena, N. Bejar, A Common Numbering Infrastructure for IN and IP Telephony, IN2000, Cape Town, SA.
24. I. Espigares, J. M. Costa Requena and R. Kantola: New Tools for programming IP Telephony Services, IPTel2000, Berlin, 2000.
25. R Kantola, J M Costa Requena, and N Bejar: An Architecture for an SCN/IP Telephony Routing Testbed, IPTel2000, Berlin 2000.
26. P. Zhang, R. Kantola, Building MPLS VPNs with QoS Routing Capability, IW'2000 April 2000.
27. P. Zhang, R. Kantola, Z. Ma, Design and Implementation of A New Routing Simulator", SCS Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS'2K), Vancouver, Canada, July 16-20, 2000.
28. P. Zhang, R. Kantola, Mechanisms for Inter-Domain QoS Routing in Differentiated Service Networks, QoS'2000, Berlin, 2000.
29. Z. Ma, P. Zhang, R. Kantola, Influence of Link State Updating on the Performance and Cost of QoS Routing in an Intranet 2001 IEEE Workshop on High Performance Switching and Routing (HPSR 2001) Dallas, Texas USA, May 29-31, 2001.
30. P. Zhang, Z. Ma, R. Kantola, Designing A New Routing Simulator for DiffServ MPLS Networks, 2001 International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS 2001) July 15-19, Orlando, Texas Florida, USA.
31. J. Costa-Requena, N. Bejar, R. Kantola, Replication of Routing Tables for Mobility management in Ad Hoc Networks, September 4-6, Med Hoc Net 2002, Chia, Italy.
32. J. Costa-Requena, I. Gonzalez Olias, R. Kantola, N. Bejar, Autoconfiguration mechanism for IP Telephony Location Servers, 6<sup>th</sup> International Symposium on Communication Networking, IFIP, TC6, Perth, Western Australia, 2002, University of Western Australia.
33. J. Costa Requena, R. Kantola, N. Bejar, Mobility and Network Management in Ad Hoc Networks, IASTED International Conference, Communication Systems and Networks (CSN 2002), September 9-12, 2002, Malaga, Spain.
34. J. Agustina, P. Zhang, R. Kantola. Performance Evaluation of GSM Handover Traffic in a GPRS/GSM Network. IEEE ISCC2003, Antalya, Turkey. June 30 - July 3, 2003.
35. M. Ilvesmäki, R. Kantola & M. Luoma: Traffic differentiability based on packet and flow per application -analysis, IEEE Globecom 2004, December 2003.

36. W. Zhou, P. Zhang, X. Bai, R. Kantola. A QoS based routing algorithm for multi-class optimization in DiffServ Networks. IEEE HSNMC'2003, Estoril, Portugal. July 23-25, 2003.
37. P. Zhang, X. Bai and R. Kantola, A Routing scheme for optimizing multiple classes in DiffServ networks, in Proceedings of IEEE HPSR'2004, IEEE, 2004.
38. X. Bai, S. Liu, P. Zhang, R. Kantola ICN: Interest-based Clustering Network accepted to The Fourth IEEE International Conference on Peer-to-Peer Computing, 2004.
39. M. Matuszewski, R. Kantola and R. Sarala, OSPF Convergence and Its Impact on VoIP, in Proceedings of ATNAC 2004, 2004.
40. E. Daskalova, M. Ilvesmäki and R. Kantola, Analysis of flow inter-arrival time distributions, in Proceedings of IASTED Euro-IMSA, 2004.
41. J. Costa-Requena J., Jorge Nuevo, R. Kantola and J. Grégoire, "Strategies For Creating A Service Distribution Backbone In Ad Hoc Networks", IASTED 2004, USA, November 2004.
42. J. Costa-Requena, R. Kantola, N. Bejar, J. Gutierrez and J. Creado: "Network architecture for scalable Ad Hoc Networks", ICT 2004, Brasil, August 2004.
43. J. Costa-Requena, M. Ayyash, J. Creado, J. Hakkinen, R. Kantola and N. Bejar: "VoIP Testbed in Ad Hoc Networks", REALMAN05, IEEE ICPS Workshop on Multi-hop Ad hoc Networks: from theory to reality.
44. X. Bai, M. Matuszewski, S. Liu, R. Kantola A Novel Multi-path Routing Protocol, 2005 International Conference on Computer Networks and Mobile Computing (ICCNMC'05), August, 2005.
45. Y. Wang, R. Kantola and S. Liu, Adding Multi-class Routing into the DiffServ Architecture, in Proceedings of the Advanced Industrial Conference on Wireless Technologies (ICW05) Conference, CPS, 2005.
46. J. Costa-Requena, R. Kantola and N. Bejar: "Incentive Problem for Ad Hoc Networks Scalability", ICAS'05 and ICNS'05.
47. R. Kantola, From Initial Competence Building in International Education to Internationalization of most Master's Level Education in Engineering, Conference on Bi-and Multilingual Universities - challenges and future prospects Helsinki 9/2005.
48. N. Bejar, R. Kantola and J. Costa-Requena, A Lightweight Clustering Algorithm for Utilizing Capacity Heterogeneity in Ad Hoc Networks, in The Fourth Annual Mediterranean Ad Hoc Networking Workshop, Med-Hoc-Net 2005, 2005, Île de Porquerolles, France.
49. J. Costa-Requena, R. Kantola and N. Bejar, Ad Hoc Networks Scalability, in ICAS'05 and ICNS'05 Conferences, 2005, Papeete, Tahiti, French Polynesia.
50. V. Holopainen and R. Kantola, End to End Principle in Access Point Selection, in 1st IEEE WoWMoM Workshop on Autonomic Wireless Access 2007 (IWAS07), 2007, Helsinki, Finland.
51. R. Kantola, M. Luoma, O-P. Lamminen, Transport for Carrier Grade Internet, in 1st IEEE Below IP Networking Workshop in conjunction with Globecom 2009, Honolulu, Hawaii, Nov 2009.
52. V. Holopainen, R. Kantola, Tackling the Delay-Cost and Time-Cost Tradeoffs in Computation of Node Protected Multicast Tree Pairs, Asia Pacific Network Operations and Management Symposium, 2009.
53. R. Kantola, Implementing Trust-to-Trust with Customer Edge Switching, in International Workshop on Advances in Mobile Computing and Applications: Security, Privacy and Trust in conjunction with AINA 2010, Perth Australia, April, 2010.
54. R. Kantola, M. Luoma, J. Manner, Future Internet is by Ethernet, IFIP Conference on Future Networks, Australia 2010.

55. V. Holopainen, R. Kantola, T. Taira, O-P. Lamminen, Automatic Link Numbering and Source Routed Multicast. 4th International Conference on Autonomous Infrastructure, Management and Security, AIMS 2010, June 21-25, 2010, University of Zurich, Switzerland.
56. Z. Yan, R. Kantola, Y. Shen, “Unwanted Traffic Control via Global Trust Management”, IEEE TrustCom 2011, pp. 647 – 654, Changsha, China, Nov. 2011.
57. Z. Yan, R. Kantola, P. Zhang, “A Research Model for Human-Computer Trust Interaction”, IEEE TrustCom 2011, pp. 274 – 281, Changsha, China, Nov. 2011.
58. Z. Yan, R. Kantola, P. Zhang, “Theoretical Issues in the Study of Trust in Human-Computer Interaction”, IEEE TrustID 2011, pp. 853 – 856, Changsha, China, Nov. 2011.
59. Z. Yan, R. Kantola, Y. Shen, “Unwanted Traffic Control via Hybrid Trust Management”, IEEE TrustCom 2012, Liverpool, UK, June. 2012.
60. Högfeldt, A-K; Cornell, A.; Cronhjort, M.; Jerbrant, A.; Lyng, R; Kantola, R; Malmi, Lauri; Lundqvist, U.; Malmqvist, J.; Hussmann, P.; Villadsen, J.; Brattebø, H.; Torvatn, T, Program Leadership from a Nordic Perspective – Managing Education Development, 2012, Proceedings of 2012 International CDIO Conference.
61. Y. Shen, Z. Yan, R. Kantola, Implementation of an Evaluation Platform for Unwanted Traffic Control via Trust Management, IEEE iThings 2012.
62. J. Llorente Santos, R. Kantola, N. Beijar, P. Leppäaho, Implementing NAT Traversal with Private Realm Gateway, IEEE ICC 2013.
63. P. Leppäaho, N. Beijar, R. Kantola, J. Llorente Santos, Traversal of Customer Edge with NAT-Unfriendly Protocols, IEEE ICC 2013.
64. Z. Yan, M. Wang, V. Niemi, R. Kantola, “Secure Pervasive Social Networking based on Multi-Dimensional Trust Levels”, IEEE CNS 2013, Washington D.C., USA, Oct., 2013. (28.4%)
65. Z. Yan, P. Zhang, V. Niemi, R. Kantola, “A Research Model for Trustworthy Pervasive Social Networking”, IEEE TrustID 2013, Melbourne, Australia, July, 2013.
66. Z. Yan, R. Kantola, G. Shi, P. Zhang, “Unwanted Content Control via Trust Management in Pervasive Social Networking”, IEEE TrustCom 2013, Melbourne, Australia, July, 2013. (27.7%)
67. Y. Shen, Z. Yan, R. Kantola, “Game Theoretical Analysis of the Acceptance of Global Trust Management for Unwanted Traffic Control”, in Proc. of IEEE HPCC 2013, Zhangjiajie, China, Nov. 2013.
68. L. Chen, Z. Yan, W. Zhang, R. Kantola, “ Implementation of an SMS Spam Control System based on Trust Management”, in Proc. of IEEE CPSCOM 2013, Beijing, China, Aug. 2013.
69. J. Costa Requena, R. Kantola, J. Llorente Santos, S. Tarkoma, Software Defined 5G Mobile Backhaul, 5GU, 2014 Levi, Finland.
70. J. Llorente Santos, R. Kantola, Transition to IPv6 with Realm Gateway 64, ICC 2015.
71. M. Liyanage, I. Ahmed, ... R.Kantola, ... Security for Future Software Defined Mobile Networks, 9th International Conference on Next Generation Mobile Applications, Services and Technologies (NGMAST,2015), Cambridge, UK.
72. H. Kabir, J.Llorente Santos, R. Kantola , Securing the Private Realm Gateway, Proceedings of IFIP Networking, 2016
73. M. Monshizadeh, V. Kathri, R. Kantola, Detection as a Service: An SDN Application, **Proceedings of 19th IEEE International Conference on Advanced Communications Technology (ICACT) February 2017**

**(B) Non-reviewed scientific articles (and position papers)**

74. R. Kantola (editor), Peer-to-peer and Spam in the Internet, Report 1/2004, Networking Laboratory series.
75. R. Kantola, J. Manner, Position Paper: Internet by Ethernet, 3<sup>rd</sup> Japan-EU Symposium on the NGN and Future Internet, 2010 (available at [www.re2ee.org](http://www.re2ee.org) – conf papers).
76. R.Kantola, J. Ott, J. Manner, Position Paper: Directions on Energy Efficient Networking, 3<sup>rd</sup> Japan-EU Symposium on the NGN and Future Internet, 2010 (available at [www.re2ee.org](http://www.re2ee.org) – conf papers).
77. R. Kantola, J. Manner, J. Ott, Position Paper for Internet Design Principles: From End2End to Trust2Trust and End2Cloud, Future Internet Assembly, 2011 (available at [www.future-internet.eu](http://www.future-internet.eu)).
78. R. Kantola, J. Manner, J. Ott, H. Hämmäinen, Horizon network 2020, EU Horizon program preparation, 2012.
79. Raimo Kantola, Position Paper: Evolution Inspired Internet, FP7 Future Internet meeting, Bryssels, 2012.

**(C) Scientific books (monographs)**

80. R. Kantola, Doctor of Science (Tech) thesis: Replicated Computations in a Distributed Switching Environment. Acta Polytechnica Scandinavica, Mathematics and Computing in Engineering Series No. 70, Helsinki 1994, 149 pages. Published by the Finnish Academy of Technology. ISBN 951-666-430-X. ISSN 1237-2404.

**(D) Publications intended for professional communities****d.1. Technical Reports**

81. R. Kantola (editor), IP Telephony protocols, architectures and issues, Report 2/2001, HUT, Networking Laboratory series.
82. R. Kantola, Intelligent Routing Network, Cost 263, Namur, Belgium, 12/2001.
83. P. Zhang, R. Kantola and S. Aalto, QoS Routing for DiffServ Networks: Issues and solutions, Networking Laboratory, Helsinki University of Technology, 2002.
84. M. Ilvesmäki, R. Kantola, M. Luoma, M. Peuhkuri, S. Aalto, P. Lassila and H. Hämmäinen, IRoNet - final technical report, TKK, Networking Laboratory, 2005.
85. R.. Kantola, Steps of Optimizing SIP for narrow band signaling channels, Technical Report, Networking Laboratory, TKK, 2005.
86. R.Kantola, Anita Bisi, Mika Tarvainen, Kansainvälistyvä Teknillinen Korkeakoulu, kehitysprojektin loppuraportti, Tietoliikenne- ja tietoverkkotekniikan laitos, Espoo, 2008.
87. Raimo Kantola, Lotta Timonen, Annual Report, Department of Communications and Networking 2008-09.
88. R. Kantola, L. Timonen, Annual Report, Department of Communications and Networking 2010.
89. R. Kantola, Current research on Routing Edge to Edge and thru Ethernets and on Trust in the Internet in [www.re2ee.org](http://www.re2ee.org), e.g. see the Protocols section.

**d.2. Lecture Notes**

90. R. Kantola, Lecture Notes for 3115 – Signaling Protocols, 5ECTS course at Aalto University.

**d.3. Columns in CSC News/Tieteen tietotekniikka (2007-2013)**

- most articles or their preprints can be found through my www-site: [www.netlab.hut.fi/u/kantola](http://www.netlab.hut.fi/u/kantola) and all on the magazine site under [www.csc.fi](http://www.csc.fi).

91. R. Kantola, Internet IP:n jälkeen, vol.4/2007.
92. R. Kantola, How cosmopolitan are Finnish universities and politechnics? (Kansainvälistyvät korkeakoulut), vol. 1, 2008.
93. R. Kantola, Rolling up the copper network – to be replaced by radio or fiber? (Kupariverkko rullalle – kuitua vai radio tilalle?), vol. 2, 2008.
94. R. Kantola, Ethernet to become the supernet (Ethernetistä verkkojen verkko), vol 3, 2008.
95. R. Kantola, The government’s new telecom policy, (Hallituksen uusi telepolitiikka), vol 4, 2008.
96. R. Kantola, Future Internet – the user’s point of view, (Tulevaisuuden Internet – käyttäjän näkökulma), vol. 1, 2009.
97. R. Kantola, Viewpoints about the IT services of universities, (Näkökulmia yliopistojen tietoteknisiin palveluihin), vol. 2, 2009.
98. R. Kantola, Multi-disciplinary technology research, (Tekniikan monitieteinen tutkimus), vol. 3, 2009.
99. R. Kantola, Energy is a driver, (Energia on ajuri), vol. 4, 2009.
100. R. Kantola, Trust-to-trust in networks, (Luottamus tietoverkoissa), vol. 1, 2010.
101. R. Kantola, Are we in a cloud again? (Olemmeko taas pilvessä?), vol. 2, 2010.
102. R. Kantola, Grand Challenges in network research (Tietoverkkotutkimuksen suuret haasteet, vol. 3, 2010.
103. R. Kantola, Project Funded Research – Catalyst of Creating a Top University? (Projektitutkimuksella huippuyliopistoon?), vol. 4, 2010.
104. R. Kantola, An innovation system of the dreams, (Unelmien innovaatiojärjestelmä), vol. 1, 2011.
105. R. Kantola, About academic leadership, (Akateemisesta johtamisesta), vol. 2, 2011.
106. R. Kantola, Does the Internet help to sustain a free and open society? (Tukeeko Internet vapautta ja avointa yhteiskuntaa?), vol. 3-4, 2011.
107. R. Kantola, Can Science boost Finland’s growth?, (Tieteelläkö Suomi nousuun?), vol. 1, 2012.
108. R. Kantola, Sins of our leaders, (Pomojen paheet), vol. 2, 2012.
109. R. Kantola, Evolution Inspired Internet, (Evoluutiosta inspiraatiota Internetiin), in press, vol. 3, 2012.
110. R. Kantola, Casting Flaw in the New University Law (Valuvika uudessa yliopistolaissa), 4/2012
111. R. Kantola, ”Price of Accelerating Studies(Opintojen nopeuttamisen hinta )”, 1/2013
112. R. Kantola, “Can and Should HE Become an Export Industry for Finland?,” (Voisiko ja pitäisikö korkeakoulutuksesta tulla vientiala Suomelle?) 2/2013
113. R. Kantola, “Internet Politics and Politics in the Internet” (Internet politiikka ja politiikka Internetissä), 3/2013
114. R. Kantola, “University Competition Heats Up” (Yliopistokilpailu kiristyy), 4/2013

**d.4. Invited talks**

115. R. Kantola, Technical problems in Voice over IP, 8<sup>th</sup> Summer School on Telecommunications, 1999.
116. R. Kantola, Gateway Location and Gateway Decomposition, Megaco Conference, Paris, 1999.
117. R. Kantola, Number Portability in the emerging hybrid IN/IP Telephony Network - the Impact on Service Architecture, IN2001, Moscow, Russia, 12/2001.
118. R. Kantola, Intelligent Routing Network, Cost 263, Namur, Belgium, 12/2001.
119. R. Kantola, Service Discovery Integrated with routing in Ad Hoc networks, ESF Workshop in Monterosso, Italy 2002.
120. R. Kantola, International Master's programs at HUT, talk at a Finnish-Canadian seminar organized by the Association of Universities and Collages of Canada and CIMO, Ottawa 2002.
121. R. Kantola, Intelligent Routing Network research, talk at UC Berkeley, 2002.
122. R. Kantola, Laajakaista joka kotiin – hidastavia tekijöitä ja ratkaisuja (Broadband to Every Home – Hindrances and Solutions), Etelä-Pohjanmaan liitto, IT kevätseminaari, Seinäjoki, 13.3.2002.
123. R. Kantola, Avauspuhe ja seminaarin puheenjohtaja ”Laajakaista kotona – mitä laajakaistaan?” (Opening Address and Chair of TEKES/NETS Program Seminar titled Broadband at Home – What to Broadband) TEKESin NETS –ohjelman laajakaistaryhmän järjestämä seminaari, Dipoli 20.11.2003.
124. R. Kantola, Riittääkö laajakaistastrategia nostamaan Suomen johtavaksi laajakaistamaaksi, Teollisuus- ja työnantajat Tietoteollisuusvaliokunta, (Is the Broadband Strategy Enough to turn Finland into one of the Leading Broadband Countries, Industry and Employers IT council), 04.03.2004.
125. R. Kantola, Tietoverkkolaboratorion tulevaisuuden näkymät, puhe laboratorion 60-vuotisjuhlassa, (The Future Outlook of the Networking Laboratory, a speech on 60th Anniversary of the Networking Laboratory), 12.03.2004.
126. R. Kantola, Economics of Network Access, a talk to Teleste management, 4.11.2004.
127. R. Kantola, Mistä laajakaista kiikastaa (What is Slowing Down Broadband Deployment), Teleconnector, Taitotalon Kongressikeskus, Helsinki, 24.11.2004.
128. R. Kantola, Tietoverkokon rakentajan liiketoimintamahdollisuudet (Business Opportunities for Builders of Broadband Networks), a talk to YIT management, 18.1.2005.
129. R. Kantola, Tietoverkkojen kehitysnäkymät (Future Trends of Communication Networks), a talk at Finnet Development days, Dipoli 26.1.2005.
130. R. Kantola, Impact of Coip on Operator Business, talk at FICIX meeting, 15.11.2006, Espoo.
131. R. Kantola, Laajakaistan tulevaisuuden näkymät (Future Trends of Broadband Networks), a talk at Finnet Development days, Pirkkahalli, Tampere 07.02.2007.
132. R. Kantola, Developing International Education at TKK, IESC, St. Petersburg, 2008.
133. R. Kantola, New Transport Architecture for the Future Internet, Oct 1<sup>st</sup>, FP7 Concertation Meeting, Brussel.
134. R. Kantola, Future Internet – in Search for a new Networking Paradigm, Keynote talk at MUM 2007, Oulu.
135. R. Kantola, Future Internet is Trusted and by Ethernet, FRUCT Seminar, TKK 2009.
136. R. Kantola, Verkkopäivät: Evoluutiosta Inspiraatiota Internetiin, 2013.
137. R. Kantola, Invited talk “Putting the Receiver in Charge with Customer Edge Switching”, at St. Petersburg Electrotechnical University, 10/2013.

**d.5. Other publications**

138. R. Kantola, New fault-tolerance design: developments in software system architecture of the Nokia DX 200, Discovery, Volume 22, 1Q 1991
139. R. Kantola, A Routing Protocol Approach to Address Mapping for IP voice/ISDN Interworking, a contribution to ETSI Tiphon project, 1997.

**(E) Publications intended for general public, linked to research**

**e.1. Articles on Telecommunications Policy and the state of ICT industry in Finnish (3<sup>rd</sup> task of the University)**

- all articles or their preprints can be found through my www-site: [www.netlab.hut.fi/u/kantola](http://www.netlab.hut.fi/u/kantola).

140. R. Kantola, "Laajakaistaverkko jokaiseen kotiin?" (Broadband to all the Homes), Mielipide, Helsingin Sanomat, 21/11/2001.
141. R. Kantola, Laajakaistanäpertelyä, (Tinkering with Broadband), Mielipide, Helsingin Sanomat, 12/2003
142. R. Kantola, Tietotalous kriisissä, (Crisis of the Information Economy), Talouselämä, 10/2003.
143. R. Kantola, Nisse Husberg, Pursiainen puolustaa pysähtyneisyyttä (Pursiainen Defends Stagnation), Tietoviikko 14.10, 2004.
144. R. Kantola, Näivettymisestä uuteen telepolitiikkaan (From Atrophy to a New Telecommunications Policy), Helsingin Sanomat, vieraskynä, 15.11.2004.
145. R. Kantola, E-talouksissa ei ole Doping-testejä (Contest for the Most Advanced E-economy has no Doping Tests), Tietoyhteys 4/2004, 8.12.2004.

**e.2. Articles on University Education in Finnish (3<sup>rd</sup> task of the University)**

- all articles or their preprints can be found through my www-site: [www.netlab.hut.fi/u/kantola](http://www.netlab.hut.fi/u/kantola).

146. R. Kantola, "Tutkintojen uudistaminen näpertelyä" (Tinkering with the University Degree reform), Mielipide, Helsingin Sanomat, 08/09/2002.
147. R. Kantola, Yliopistoa kehitettävä kansainvälisiin haasteisiin (Universities to Meet International Challenges), Mielipide, Helsingin Sanomat, 8.10.2004.
148. R. Kantola, Englanninkielinen yliopisto-opetus ei ole arvovalinta, Mielipide, Helsingin Sanomat 04.05.2005.
149. R. Kantola, Yliopistoistako maisteri- ja tohtorikouluja? Helsingin Sanomat, Mielipide, 9.10.2006.
150. R. Kantola, Huippuyliopiston pitää olla autonominen, Helsingin Sanomat, Mielipide, 8.12.2006

**(G) Theses**

151. R. Kantola, Master's thesis: Study on problems of program interface organisation in the maintenance system of an exchange, Lenin Electrical Engineering Institute, Leningrad, Laboratory of Applied Mathematics, (in Russian), 1981.
152. R. Kantola, Doctor of Science (Tech) thesis: Replicated Computations in a Distributed Switching Environment. Acta Polytechnica Scandinavica, Mathematics and Computing in Engineering Series No. 70, Helsinki 1994, 149 pages. Published by the Finnish Academy of Technology. ISBN 951-666-430-X. ISSN 1237-2404.



**(H) Patents**

- 153. EP 0 517 446 A2, R. Kantola, M. Syväniemi, A replicating method for a switching system, in particular a telephone exchange, Suomi No 87716, 1991.
- 154. PCT/FI95/00399, R. Kantola, E. Hartikainen, Method for warming up a spare process in a replicated real-time systems, in particular in a telephone exchange, 1995.
- 155. PCT/FI96/00147, R. Kantola Method of Communication and Connection Control, 1995.
- 156. Suomi No 97009, R. Kantola, T. Vesterinen, Televerkon varmennusjärjestelmä, 1996.

***Ten of my most important publications (to be reviewed)***

- [1] R. Kantola, Doctor of Science (Tech) thesis: Replicated Computations in a Distributed Switching Environment. Acta Polytechnica Scandinavica, Mathematics and Computing in Engineering Series No. 70, Helsinki 1994, 149 pages. Published by the Finnish Academy of Technology. ISBN 951-666-430-X. ISSN 1237-2404.
- [2] Z. Yan, R. Kantola, Y. Shen, "A Generic Solution for Unwanted Traffic Control through Trust Management", New Review of Hypermedia and Multimedia, 2013.
- [3] R. Kantola, J. Llorente Santos, N. Bejar, Policy based communications for 5G mobile with customer edge switching, Wiley Security and Communication Networks, 5/2015.
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- [5] P. Leppäaho, N. Bejar, R. Kantola, J. Llorente Santos, Traversal of Customer Edge with NAT-Unfriendly Protocols, IEEE ICC 2013.
- [6] Y. Shen, Z. Yan, R. Kantola, Analysis on the Acceptance of Global Trust Management for Unwanted Traffic Control based on Game Theory, Computers & Security.
- [7] L. Chen, Z. Yan, W. Zhang, R. Kantola, "Implementation of an SMS Spam Control System based on Trust Management", in Proc. of IEEE CPSCOM 2013, Beijing, China, Aug. 2013.
- [8] R. Kantola, Method of communication and connection control, US Patent 5,878,128.
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- [10] Jose Costa Requena, Nicklas Bejar, Raimo Kantola: "Replication of Routing Tables for Mobility Management in Ad Hoc Networks", Wireless Networks, (extended version of the Med Hoc Net 2002 paper) Volume 10, Issue 4, pp. 367-375, July 2004.

**Contribution claims on publications [1-10]**

- [1] The inventions presented in the thesis saved about 30% of design effort in signaling and call control applications in the digital switching system DX200. Results were patented and embedded into the real time operating system of DX200 control computers and some programming tools allowing handling replication of computation in a declarative manner. The code is still serving about 2 billion mobile network users all over the world in many different network element types (base station controller, switching center, home location register etc) and provides the basis for high availability control applications in a telephone network node.
- [2] The paper is based on my idea of an Internet wide trust management system. The co-authors developed the detailed algorithms etc.
- [3-5] The papers are part of the design of the Customer Edge Switching architecture which is based on my idea. The co-authors developed the detailed algorithms while I provided overall guidance and co-authored the papers.
- [6] I provided overall guidance on the paper from idea to completion.

- [7] This is an experimental version of the ideas behind [2]. I contributed with several rounds of comments.
- [8] This patent is about interworking of something like TINA or some other new services architecture with IN or the legacy telephone network. The patent is one of the results of my being a member of the TINA core-team. It keeps drawing citations in Google Scholar.
- [9] I provided overall guidance to the paper authored mainly by my student X. Bai who later became an Assistant Professor at UMass Dartmouth.
- [10] The paper is on routing in MANET and part of Jose's PhD sthesis. I provided overall guidance.

### Ten of my most cited publications by Google Scholar are (to be updated)

<u>Title / Author</u>	Cited by	<u>Year</u>
<input type="checkbox"/> <a href="#">Evaluation of transport protocols for the session initiation protocol</a> G Camarillo, R Kantola, H Schulzrinne Network, IEEE 17 (5), 40-46	<a href="#">79</a>	2003
<input type="checkbox"/> <a href="#">ICN: Interest-based clustering network</a> X Bai, S Liu, P Zhang, R Kantola Peer-to-Peer Computing, 2004. Proceedings. Proceedings. Fourth International ...	<a href="#">36</a>	2004
<input type="checkbox"/> <a href="#">Influence of link state updating on the performance and cost of qos routing in an intranet</a> Z Ma, P Zhang, R Kantola High Performance Switching and Routing, 2001 IEEE Workshop on, 375-379	<a href="#">25</a>	2001
<input type="checkbox"/> <a href="#">Method of communication and connection control</a> R Kantola US Patent 5,878,128	<a href="#">25</a>	1999
<input type="checkbox"/> <a href="#">Flow classification schemes in traffic-based multilayer IP switching—comparison between conventional and neural approach</a> M Ilvesmäki, M Luoma, R Kantola Computer communications 21 (13), 1184-1194	<a href="#">22</a>	1998
<input type="checkbox"/> <a href="#">Performance Evaluation of GSM Handover Traffic in a GPRS/GSM Network.</a> JV Agustina, P Zhang, R Kantola ISCC, 137-142	<a href="#">15</a>	2003
<input type="checkbox"/> <a href="#">Replication of routing tables for mobility management in Ad Hoc networks</a> J Costa-Requena, N Beijar, R Kantola Wireless Networks 10 (4), 367-375	<a href="#">14</a>	2004
<input type="checkbox"/> <a href="#">AODV-OLSR scalable ad hoc routing proposal</a> J Costa-Requena, T Vadar, R Kantola, N Beijar Wireless Pervasive Computing, 2006 1st International Symposium on, 5 pp.	<a href="#">13</a>	2006
<input type="checkbox"/> <a href="#">Performance evaluation of an IP voice terminal</a> H Marjamäki, R Kantola Intelligence in Networks, 349-362	<a href="#">12</a>	2000
<input type="checkbox"/> <a href="#">A routing scheme for optimizing multiple classes in a DiffServ network</a> P Zhang, X Bai, R Kantola High Performance Switching and Routing, 2004. HPSR. 2004 Workshop on, 141-147	<a href="#">10</a>	2004