HOME NETWORKING

IFIP - The International Federation for Information Processing

IFIP was founded in 1960 under the auspices of UNESCO, following the First World Computer Congress held in Paris the previous year. An umbrella organization for societies working in information processing, IFIP's aim is two-fold: to support information processing within its member countries and to encourage technology transfer to developing nations. As its mission statement clearly states,

IFIP's mission is to be the leading, truly international, apolitical organization which encourages and assists in the development, exploitation and application of information technology for the benefit of all people.

IFIP is a non-profitmaking organization, run almost solely by 2500 volunteers. It operates through a number of technical committees, which organize events and publications. IFIP's events range from an international congress to local seminars, but the most important are:

- The IFIP World Computer Congress, held every second year;
- Open conferences;
- Working conferences.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is small and by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is less rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

Any national society whose primary activity is in information may apply to become a full member of IFIP, although full membership is restricted to one society per country. Full members are entitled to vote at the annual General Assembly, National societies preferring a less committed involvement may apply for associate or corresponding membership. Associate members enjoy the same benefits as full members, but without voting rights. Corresponding members are not represented in IFIP bodies. Affiliated membership is open to non-national societies, and individual and honorary membership schemes are also offered.

HOME NETWORKING

First IFIP WG 6.2 Home Networking Conference (IHN'2007), Paris, France, December 10-12, 2007

Edited by

Khaldoun Al Agha University of Paris XI France

Xavier Carcelle OpenPattern France

Guy Pujolle University of Paris VI France



Library of Congress Control Number: 2007940535

Home Networking

Edited by Khaldoun Al Agha, Xavier Carcelle, and Guy Pujolle

p. cm. (IFIP International Federation for Information Processing, a Springer Series in Computer Science)

ISBN 978-1-4419-4580-8 ISBN 978-0-387-77216-5 (eBook) DOI 10.1007/978-0-387-77216-5

Printed on acid-free paper

Copyright © 2008 by IFIP International Federation for Information Processing.

Softcover reprint of the hardcover 1st edition 2008

All rights reserved. This work may not be translated or copied in whole or in part without the written permission of the publisher (Springer Science-Business Media, LLC, 233 Spring Street, New York, NY 10013, USA), except for brief excerpts in connection with reviews or scholarly analysis. Use in connection with any form of information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed is forbidden.

The use in this publication of trade names, trademarks, service marks and similar terms, even if they are not identified as such, is not to be taken as an expression of opinion as to whether or not they are subject to proprietary rights.

987654321

springer.com

Table of Contents

WiMAX, Wi-Fi

An emission/reception chain modelling of the WiMAX access network, Nicolas Fourty, Thierry Val, Philippe Fraisse	1
IEEE 802.11 Goodput Analysis for Mixed Real Time and Data Traffic, Alex Grote, Walter Grote, Rodolfo Feick	15
An efficient trigger to improve intra-WiFi handover perform- ance, Roberta Fracchia. Guillaume Vivier	29
Very high throughput Home	
Ultra Wide Band over fibre transparent architecture for High Bit-rate Home Networks, Anna Pizzinat, Franck Payoux, Be- noit Charbonnier, Sylvain Meyer	39
Home Networking at 60 GHz: Challenges and Research Issues, Zulkuf Genc, Bao Linh Dang, Jing Wang, Ignas Niemegeers	51
Management, control & energy	
Energy Efficiency in Future Home Environments: A Distributed Approach. Helmut Hlavacs, Karin A. Hummel, Roman Weidlich, Amine Houyou, Andreas Berl, Hermann de Meer	69

Avoiding energy-compromised hotspots in resource-limited wireless networks, Joseph Rahmé, Aline Viana, Khaldoun Al Agha	85
QoS Management in Autonomic Home Networks, Kaouthar Sethom, Nassim Laga, Guy Pujolle	101
Managing collaboration and competition of multiple WAN services in a residential network, Wouter Haerick, Nico Goeminne, Jan Coppens, Filip De Turck and Bart Dhoedt	111
Autonomic management and discovery	
Coherence Bandwidth and its Relationship with the RMS de- lay spread for PLC channels using Measurements up to 100 MHz, Mohamed Tlich, Gautier Avril, Ahmed Zeddam	129
Time/Frequency Analysis of Impulsive Noise on Powerline Channels, Gautier Avril, Mohamed Tlich, Fabienne Moulin. Ahmed Zeddam, Fabienne Nouvel	143
Autonomic and Routing	
New architecture for an Ultra Broadband Home Area Network with spread connectivity and autonomic functions, Pierre Jaf- fré, Romain Insler, Vasilis Freiderikos, Sylvain Meyer, Martial Bellec	151
Group Source Routing Protocol with Selective Forwarding for Mobile Ad Hoc Networks, Hoon Oh and Do Minh Ngoc	163
Intelligent routing scheme in Home Networks, Gérard Nguen- gang, Lionel Molinier, Julien Boite, Dominique Gaïti, Guy Pu- jolle	179

Autonomic and Routing 2

OpenPattern project: a comprehensive modular routing plat- form, Florian Fainelli, Xavier Carcelle, Etienne Flesch, Gwe- naël Saint-Genest, Hossam Afifi	197
A Design of Context aware Smart Home Safety Management using by Networked RFID and Sensor Byunggil Lee and Howon Kim	215
Embedded Script-Driven Home-Automation with Sensor Networks, Thomas Haenselmann, Thomas King, M. Busse, Wolfgang Effelsberg, Markus Fuchs	225
Autonomic management and discovery 2	
Next WSN applications using ZigBee, Xavier Carcelle, Bob Heile, Christian Chatellier, Patrick Pailler	239
Using 802.15.4 to communicate and extend functionality in X10 wired networks, William Wallace, Jose I. Moreno. Ruben Hidalgo	255
Normalization	
IPv6 and Homenetworking, Tayeb Ben Meriem Hand-around on seamless services and mobility in home networking, Pei-Yuan Qiu, Min-Shu Hung, Jen-yi Pan, Kuo-Pao	267
Fan, and Jui-Wen Chen	275

Services

Erratum	E1
Remote Access VPNs Performance Comparison between Windows Server 2003 and Fedora Core 6. Ahmed A. Joha, Fathi Ben Shatwan, Majdi Ashibani	329
Networked Appliances for Home Healthcare and Lifestyle Management, Paul Fergus, David Llewellyn-Jones, Madjid Merabti, Arshad Haroon	313
Goudarzi, P. Goudarzi, M. Adeli, M.M. Azadfar, F. Ayatollahi	295

The original version of this book was revised. An erratum to this book can be found at DOI 10.1007/978-0-387-77216-5_25