



HERVÉ SCHAUER CONSULTANTS

Cabinet de Consultants en Sécurité Informatique depuis 1989

Spécialisé sur Unix, Windows, TCP/IP et Internet

Deploying IPv6 Networks 2003

Upperside

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IPv6 Security Challenges

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- x IPv6 security issues
- x Security practices
- x Auto-configuration security challenges
- x CAMEL
 - x HSC
 - x Goals
 - x Show case
 - x Security
- x Conclusion
- x Resources

- × Security policy application models
- × Current common security model with IPv4
 - × peer -- firewall -- Internet -- firewall -- peer
 - × Security policy enforced by firewalls
 - × Firewalls protect peers
 - × Firewalls owned by organisations, ISPs or end users
 - × Security policy designed by organisations or end users
- × Home networks security model with IPv6
 - × peer – Internet – peer ?
 - × Security policy enforced by peers operating system ?
 - × Security policy designed by peer owner ?
 - × Who owns the peer operating system ?

- × Enterprise networks
 - × Perimeter defense
 - × IP firewalls, HTTP/HTTPS firewalls, content analysis : anti-virus, anti-spam, etc
 - × Defense in depth and network segmentation
 - × DMZ, layered architectures, segmentation of wireless LAN, etc
 - × TLS/SSL based business applications and VPNs for remote access
 - × Including TLS/SSL encrypted traffic content scanning
- × Home networks
 - × Basically no perimeter defense if not outsourced to the ISP
 - × Network access control security is also the first security building block and the common denominator
 - × Existing network access control mechanisms available like IEEE 802.1X
 - × Need to analyze users security needs and imagine solutions

- × Security means trust
- × Trust in who configures your network and appliances
- × How to bring trust to the end user ?
- × And the end user is not aware of the data network or the IP protocol
- × Chicken and egg issue
- × To get consumer acceptance, it must work properly, securely, from the very beginning
- × IPv6 brings auto-configuration to IP networks



Configuration Automatique des Réseaux d'Accès à la Maison et des Équipements de Liaison

- × Automatic configuration of home networks with IPv6
- × RNRT (*french research network*) project labelised in may 2003

<http://www.telecom.gouv.fr/rnrt/projets/CARAMEL.htm>

- × Goal
 - × Study auto-configuration mechanisms for home networks
 - × Design and build a complete show case
- × 10 partners, HSC is the partner for security

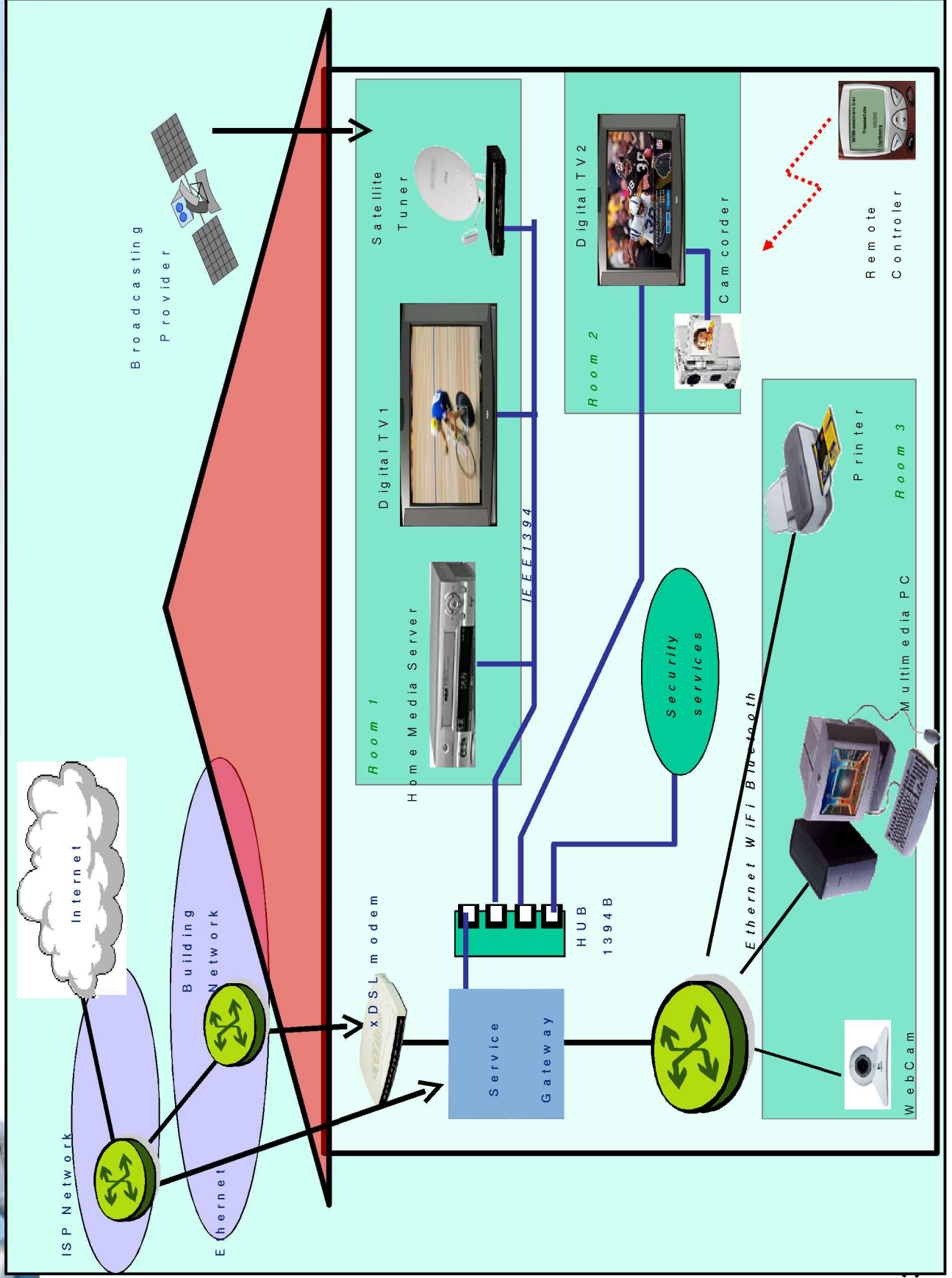


HSC background

- × Security consulting firm for 15 years
- × IETF involvement
 - × HTTP1.1, logging format (syslog), GRIP, Policy, IPsec remote access & IPsec policy
- × Security analysis, audit & expertise
 - × Telecom and IP networks (PBX and phones, GSM/UMTS, DSL, VoIP, etc)
 - × Embedded security
 - × Unix/Linux, Windows & PDAs/phones operating systems
 - × Any applications, any languages (C, C++, Java/J2EE, VB, Perl, PHP, etc)

- × Allow any layer 2 technologies
 - × IEEE 802.3, 802.11b/g, IEEE 802.15
 - × IEEE 1394
- × Enable construction of complex topologies
- × Cover the interface between the ISP and the home network
- × Take in account different aspects of auto-configuration
 - × Layer 3 configurations
 - × Mobile devices such PDAs and phone handset, legacy equipment such as TV set
 - × Security
- × See Laurent Toutain "IPv6 for auto-configuration" talk

CARAMEL : Show case architecture



- × Design security services for home networks
- × Security in the network architecture design
- × Security in all applications and software build for the project
 - × Security analysis at source code level
 - × User interface for security awareness, configuration and alarms toward end-user
- × Access control security to the home network, id IP filtering or equivalent mechanism
- × Security in protocols : Autoconfiguration security
 - × Research challenge of the project
- × CAMEL project planned to start mid-2004 for 24 months



Conclusion

- × CAMEL will try to bring better home networks security
- × Questions ?

www.hsc.fr



- × Implementing Security for IPv6, Cisco, 11/03,

http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123cgcr/ipv6_c/sa_secv6.ht

- × Security Expert Initiative, IST project starting 12/03 :

<http://www.seinit.org>

- × IPv6 Transition/Co-existence Security Considerations, Pekka Savola, CSC/FUNET, IETF57, 07/03,

<http://www.6bone.net/v6ops/minutes/IETF-57-Vienna/v6ops-security.pdf>

- × IPv6 et sécurité, Hervé Schauer, HSC, Cigref, 10/02, *in french*

<http://www.hsc.fr/ressources/presentations/cigref-ipv6>

- × IPv6 Internet Security for Enterprise, Akihiro Inomata, Fujitsu, APNIC Open Policy Meeting, 03/02,

http://www.apnic.net/meetings/13/sigs/docs/4.4_OSG_enterprise.ppt

- × IPv6 Migration and security, Jean-Jacques Bernard, HSC, FIRST, 06/01, <http://www.hsc.fr/ressources/presentations/ipv6mig>



Thanks

- × CARMEL for show case picture
- × Jean-Marc Uze and Frederic Lavecot for corrections