

The Networks Research Laboratory undertakes research and graduate study in the areas of fixed and wireless Networks. The lab develops methodologies for the control, traffic engineering, resource allocation, and analysis of Computer and Communication networks and architectures, such as Internet (IPv4 and IPv6), Mobile Networks (Mobile IP and Mobile MPLS protocols), Ambient networks (Ad-hoc and Sensor networks), Wireless LANs, 3rd Generation and beyond UMTS Mobile Cellular Networks, Heterogeneous Networks, Internet- and Web- of Things.

In our work there is a strong focus on the use of formal techniques, as e.g. Nonlinear Control, Adaptive Control, Game Theory, and Fuzzy Control theory, and concepts of complex systems and intelligence, including nature inspired techniques. Internet Technologies and their applications in Mobile e-Services and security issues, and research infrastructures also form part of our research.

More specifically our research includes:

Flow and Congestion Control	Capacity Planning and Load Control
Mobility Management	Adaptability, Survivability and Fault Tolerance in Networks
Session Management	Research Networking e-Infrastructures
QoS and Resource Allocation	e-Services and Telehealth Care
Topology Control	Smart homes and Smart spaces
Internet and Web of Things	

Collaboration is pursued with a number of research organizations, including the University of Southern California (USA), the Centre for Telecommunications and Information Engineering of Monash University, Melbourne (Australia), the ADETTI (Portugal), the Athens University of Economics and Business (AUEB), the Aristotle University of Thessaloniki (Greece), the Technical University of Lisbon (Portugal), Portugal Telecom Inovacao (PTI), the University of Twente (Netherlands), The University of Praetoria (South Africa) among others.

Research in the Networks Research Laboratory is further enhanced with the use of new equipment and software supported by OPNET, CISCO, and Microsoft, as well as from UCY starting grants, and the Cyprus Research Promotion Foundation. A LINUX based pilot network implementation supporting DiffServ, VoIP, SIP, IPv6 and MIPv6, as well as a pilot sensor network, are already utilized in a number of undergraduate and postgraduate projects. Research infrastructures also forms part of our research, especially in collaboration with the Cyprus Academic and Research Network (CYNET)

Participation in the FP7 ICT Funding Initiatives

The Laboratory participates and is strongly interested in participating in proposals for Integrated Projects, Networks of Excellence and STREPs in networking research projects.

The Laboratory currently consists of 21 personnel: 2 professors, 5 post doctoral scientists and 14 postgraduates.

NetRL key personnel:

Director: Dr. Andreas Pitsillides, andreas.pitsillides@ucy.ac.cy

Co-director: Dr. Vasos Vassiliou, vasosv@ucy.ac.cy

LIST OF PROJECTS WITH NetRL PARTICIPATION







Current EU funded ICT projects include:

	AGILE: Self-tuning, Self-reconfigurable, Nearly-optimal Control Design for Large-Scale Nonlinear Systems http://www.agile-fp7.eu/		GINSENG: FP7 ICT Performance Control in Wireless Sensor Networks http://www.ict-ginseng.eu
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Previous EU funded IST projects include:

	C-CAST: FP7 ICT: Context Casting		C-MOBILE: FP6 IST: Advanced MBMS for the future mobile world
	MOTIVE: FP6 IST Mobile Terminal Information Value addEd Functionality		B-BONE: FP6 IST Broadcasting And Multicasting Over Enhanced UMTS Mobile Broadband Networks
	M-POWER: FP6 IST Middleware platform for eMPowering cognitive disabled and elderly		E-NEXT: FP6 IST Network of Excellence in Emerging Network Technologies
	CRUISE: NoE IST CReating Ubiquitous Intelligent Sensing Environments		HEALTHSERVICE24 (e-TEN): Continuous Mobile Services for Healthcare
	LINKCARE (e-TEN): Linking Health Professionals in Emerging Care Environments		SEACORN: FP5 IST Simulation of Enhanced UMTS Access and Core Networks
	MBNet: A Network of Excellence in Mobile Business Applications and Services		GEANT and GEANT 2: FP5 and FP6 IST: The Next Generation of European Research Networking, and IST FP5


Funded by the Cyprus Research Promotion Foundation:

	MIND2C: Mimicking Nature for Designing Robust Congestion Control Mechanisms in Self-Organized Autonomous Decentralized Networks
	ASPIDA: Security in Sensor Networks
	TRAFICNET: Intelligent Transportation System for the Cyprus Highways
	NET6: Next Generation Research Network
	HRA: Enabling Technologies For Location Based Services
	SKINIKO: Design of secure and robust mobile services in the homecare environment
	TRAFBUS: Modeling and Analysis of Traffic and Impact of dedicated Bus Lanes on Strovolos Avenue
	VIDEO: Video distribution over next generation mobile networks
	POSEIDON: Environmental Monitoring using sensor networks
	ERMES: A Framework for Delivering Quality of Service Guarantees in Communication Networks
	DITIS I: Networked Collaboration Supporting Home Healthcare Teams
	ENDIKTIS: Network Performance Evaluation with QoS provisioning

Funded by the University of Cyprus

	ADAVIDEO: Adaptive Methods for the Transmission of Video Streams in Wireless Networks
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Funded by Cambridge Microsoft Research Labs

	DITIS II: Networked Collaboration Supporting Home Healthcare Teams
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