



General Actions

Coordinating Universities for the Proposal: UCM and UPM

Title of Action	Improvement of the Data and Communications Network		
Participating partners	UCM, UPM	Other participants	
Start date	1-1-2010	End date	31-3-2012
Action	A7		
Areas of action	All		
Location			
Infrastructures involved			
<p>Objectives:</p> <p>To provide greater access and increased bandwidth to enable the production of new services and applications for the university community (new wireless access points), and for the national and international implementation of new R&D initiatives (more demanding in terms of network requirements). All developments and services implemented will take into account the info-accessibility recommendations included in the Fundosa report, Moncloa Campus Accessibility.</p>			
<p>Description of the action:</p> <p>At present, the research data network of the Campus consists of structured network cabling with approximately 20,000 active network points using Ethernet technology and a bandwidth of 10/100 Mbps focused on a Gigabit Ethernet fibre optic backbone. Campus researchers also have available a wireless network with 802.11a/b/g technology, which provides a shared bandwidth of up to 54Mbps.</p> <p>The necessary tools to improve network management and security and to control access to it will be made available. To achieve this objective, the following steps are required:</p> <ul style="list-style-type: none"> • Replacement of existing structured cabling, Category 3 and 5 (not apt for 1,000 Mbps transmissions) by new cabling of Category 5E or higher. • Acquisition of line cards (network switches) with connection ports 10/100/1000 base-TX. • Acquisition of new modular chassis to replace the old chassis that is not compatible with the new cards 10/100/1000. • Expansion of backbone network capacity through the acquisition of new line cards with 10 Gigabit Ethernet connection ports. • Installing new single-mode optical fibre lines to enable 10 Gigabit Ethernet connections between buildings where the current lines are inadequate for such connections. • Acquisition of the necessary electronic equipment (firewall, router, bandwidth manager) to manage the new Internet connection through the Telematic Research Network of Madrid with a 10 Gigabit Ethernet bandwidth. • New 802.11n wireless access points to provide a connectivity of at least 100 Mbps. 			
<p>Rationale for the action:</p> <p>The objective of this project is to provide a higher bandwidth for the production of new applications and services and for the national and international implementation of R&D initiatives, more demanding in terms of network requirements. The new network requirements are to provide connection points to the network cabling using Gigabit Ethernet (10/100/1000 Base-TX ports via RJ45) and provide access to the wireless network at min.100 Mbps (based on 802.11n technology). This network is based on a backbone structure with 10 Gigabit Ethernet links using single-mode optical fibre. Concurrently with this project, the Community of Madrid (in the new agreement) has set a goal to upgrade the campus link to the Telematic Research Network of Madrid from 1 Gigabit Ethernet to 10 Gigabit Ethernet.</p>			



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<p>Planned impact:</p> <p>This project entails the improvement and extension of the research network.</p> <p>The expansion and acquisition of the following elements are also covered by the project:</p> <ul style="list-style-type: none">• Network management tools for the monitoring, configuration management, device inventory, etc., of the new network equipment to be deployed.• Tools for the deployment of NAC (network access control) solutions for defining role-based policies to classify, deny, prioritise, redirect, audit, etc., traffic in the user connection ports.	