

*solid bases that support a vision clearly optimist for solutions in this domain.*

*The proposals based on the TMN technology existent in the market, are scarce and without proven results, with predictable limitations, and with a too high cost.*

*This work tries to identify the framework and the requirements that should be placed to the systems that we should develop today, as well as the existent technologies that to the departure have capacity of appropriate answers to the identified needs.*

*The growing use of the CORBA technology takes us to evaluate in this work, its capacity in the intended context, including tools as OMG IDL that allow the accomplishment of good software architectures, in an integration atmosphere in systems of administration of telecommunications networks. The analysis of the integration of the CORBA technology was made in two complementary ways: integration to the level manager/agent and structural integration at the level of the administration system.*

*At structural level the CORBA technology supplies a uniform mechanism of access to the service that simplifies the problem of the interoperability. Object Services and Common Facilities support the normalisation of services covering the semantic mediation, access to the data, communications, generation of requests and other interoperable areas.*

*In general, this work aims to define the framework and the basic rules for the development of distributed administration systems, based on the TMN technology, and with user interface components. It included the analysis of the components of the workstation being known that naturally will have to have its complementarily in the components of the systems of operations. It was intended above all perspectives the development and the accomplishment of components, defining the basic rules that should be obeyed in the partition of the administration systems, assuming an architecture built in distributed modules.*

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**Título:** Infraestruturas e Serviços em Redes de Tecnologia ATM: Implementações Práticas

**Title:** Infrastructures and Services in ATM Technology Networks: Practical Implementations

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**Palavras Chave:** ATM, comunicações avançadas de banda larga, eventos multimédia distribuídos, rede atm local na Universidade de Aveiro, redes de acesso com ATM

**Key Words:** ATM, advanced broadband communications, distributed multimedia events, local atm network, access networks with ATM technology

**Mestrado/M.S.**

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## Resumo

Esta dissertação apresenta uma visão global dos princípios do ATM, quer em termos das tecnologias de suporte, quer dos protocolos utilizados e, a partir daí, aborda um conjunto de casos concretos de implementação de serviços e aplicações em redes experimentais ATM. Parte do trabalho e aprendizagem aqui descritos decorreu em Aveiro enquanto outra parte decorreu na Suíça, por via de um estágio do autor na empresa ASCOM Tech, de Março a Dezembro de 1995.

Os casos concretos de implementação descritos nesta dissertação foram separados em dois grupos. No primeiro, descrevem-se as experiências que envolveram eventos internacionais, em particular as Escolas de Verão ABC'95 e ABC'96 e outros que foram realizados no âmbito dos programas RACE e ACTS da Comissão Europeia.

No segundo grupo é descrita a experiência do autor na implementação de duas redes que fazem uso da tecnologia ATM, actualmente em fase de implementação na cidade de Aveiro. A primeira constitui um demonstrador de uma rede de acesso pública que está a ser implementada no âmbito do projecto europeu AC038 BBL, do programa ACTS da Comissão Europeia. A segunda é uma rede local ATM que está a ser instalada no Campus Universitário de Aveiro como complemento da Rede Óptica de Banda Larga (ROBL) existente na Universidade de Aveiro.

## Abstract

This dissertation presents the ATM principles in terms of supporting technologies and protocols. A set of experimental cases where ATM was used as supporting technology is also presented. The work carried out during the course of this Master Degree was divided in two parts. One carried out in Aveiro and the other at ASCOM Tech laboratories in Switzerland (March to December 1995).

The events and trials described are divided in two main groups. The first group describes international events, in particular the Summer Schools on Advanced Broadband Communications 95 and 96 (ABC'95 and ABC'96) and other events sponsored by the European Community RACE and ACTS programs.

The second group describes the author experience on the implementation and installation of two ATM networks in Aveiro. One of these networks is an ATM local area network that is currently being installed as an extension of the University of Aveiro Broadband Optical Network (ROBL). The other ATM network being installed in Aveiro is a public access network sponsored by the ACTS BroadBandLoop project (AC038 BBL).

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**Título:** Técnicas Tomográficas e Algoritmos de Reconstrução em Tomografia. O caso de SPECT

**Title:** Tomographic Techniques and Tomography Reconstruction Algorithms. The SPECT Case.

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