PREFACE

This volume of the *CiTR Technical Journal* contains all technical papers written by CiTR staff and published during the past year. This volume reflects CiTR's R&D focus in the past year in the integrated TMN service management and network management area. In particular, it covers the following aspects of research for integrated TMN solutions:

- the research of the enabling technologies for TMN management solutions
- the roles of multiple management technologies in an integrated management environment
- the information model and process flow between different management domains of TMN and different functions of TMN
- the value of the main stream distributed systems technology to the telecommunication service and network management
- the impact of open standards and industrial agreements

CiTR offers software development and consulting services in the telecommunication service management and network management areas. CiTR aims to provide its customers with innovative, open-standards based solutions which will not only satisfy the customers' business requirements but will also survive inevitable technological evolution and migration. The R&D team's main focus is to conduct industry research in order to gain a solid understanding of the industry requirements, the technology and architecture solutions and to help its customers to set long term technology directions.

The experience we gained from this year's research and development has strongly suggested that multiple management technologies do play different roles in the TMN management domain, and a sound integration strategy is required for providing TMN solutions. We also had a much better understanding of the different requirements in the TMN service management area, and a better appreciation of the roles of the distributed object technology in the Telco industry.

This journal consists of the ten following papers.

Building Integrated TMN Solutions Using Multiple Technologies serves as an introduction to this Journal. It summarises CiTR's understanding of the current telecommunication industry requirements on management technology and the trends of integrated solutions to meet these requirements. It proposes an integrated architecture using multiple management technologies and reports, at a high level, CiTR's proof of concept for this architecture and the experiences we gained from this exercise. The other articles of the Journal deal with the specific issues related to this architecture and the proof of concept. This paper was presented at the Network Management Forum's General Meeting in Long Beach April 1997. A long summary of this paper has been published in the Spring 1997 Edition of the NMF Bulletin.

Integrated TMN Service Provisioning and Management Environment further elaborates this integrated architecture and uses service provisioning and management as an example to illuminate the technical issues of the integrated architecture. The paper was presented by the authors to the 5th IFIP/IEEE International Symposium on Integrated Network Management in May 1997 San Diego, California, USA. It was included as a book chapter in *Integrated Management in a Virtual World* published by Chapman & Hall.

Distributed Network Management Using CORBA/TMN deals with the issues involved when integrating CORBA and TMN OSI network management technologies. It presents the value of CORBA in the TMN management domain and a strategy to integrate it with the more traditional OSI management technology. The paper was presented to the 7th IFIP/IEEE International Workshop on Distributed Systems Operation and Management (DSOM) in October 1996 in L'Aquila, Italy and appeared in its proceedings.

Distributed Architecture for IN Service Management discusses the application of the integrated and distributed architecture in the Intelligent Networks Service management applications area. It was presented to the IEEE Intelligent Networks conference in April 1996 in Melbourne, Australia and appeared in its proceedings.

The Integration of CORBA-Based Management with OpenView DM reports CiTR's experience of applying CORBA and OSI integration research into a prototype based on CORBA and HP OpenView Distributed Management (DM) platform. The paper was presented at the International OpenView Forum Conference in June 1996 in St. Louis, USA.

ATM Management Using HP DM CORBA and Java reports our experience of integrating CORBA and Java in the ATM management application. This work further demonstrates the use of Java and CORBA in network management applications as well as our experience of using HP OpenView CORBA platform and Topology Service for building integrated applications. The paper was presented at the International OpenView Forum Conference in June 1997 in Anaheim, USA.

Developing Agents with the Managed Object Toolkit reports our experience of using HP OpenView Managed Object Toolkit (MOT) to develop TMN agents. This paper was presented at the International OpenView Forum Conference in June 1997 in Anaheim, USA.

BURNS: Basic URN Service Resolution for the Internet was also presented to the Asia Pacific World Wide Web Conference in Hong Kong, August 1996. It reports the authors' research work in the internet resource discovery area. This research is conducted in a Cooperative Research Centre, funded by the Federal Government of Australia, of which CiTR is a core member.

The Web as a Legacy Computer System Application Interface investigates the issues of providing a user interface to pre-existing legacy applications via the internet. It was presented to the Second Australian World Wide Web Conference (AusWeb'96) in Gold Coast, Australia in July 1996.

The Design and Application of Parsim—A message PAssing computeR SIMulator describes a general purpose simulator for message passing multiprocessors (Parsim) which facilitates system modelling. It was published in IEE Proceedings: Digital Technology, Vol. 144, No. 1, January 1997.

Some papers involve co-authors from other organisations. I would like to thank them for agreeing to include their joint work in this journal.

I would like to thank all the authors for contributing their work to this journal. CiTR's Research and Development Group has continued to produce most of the work for this edition. I would like to thank the full team for their consistent quality work. CiTR's Technical Communication Group continued to offer its quality service in editing the manuscripts and the design of the art work.

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