

# *DISTRIBUTED DATA BASES*

---

Proceedings of the International Symposium on  
Distributed Data Bases  
Paris, France, March 12-14, 1980

edited by

C. DELOBEL

and

W. LITWIN

Technische Hochschule Darmstadt  
FACHBEREICH INFORMATIK  
**B I B L I O T H E K**  
Inventar-Nr.: 4818  
Sachgebiete: \_\_\_\_\_  
Standort: A.2/80



1980

NORTH-HOLLAND PUBLISHING COMPANY  
AMSTERDAM • NEW YORK • OXFORD

TABLE OF CONTENTS

PREFACE	v
INTRODUCTION	vi
REFEREES	vii
SESSION 1.3 - DDB ARCHITECTURE (Part I)	
Some considerations about distributed data bases on public networks , R. POPESCU-ZELETIN and H. WEBER	1
A data dictionary for distributed databases G. MARTELLA and F.A. SCHREIBER	17
SESSION 1.4 - INTEGRITY, SECURITY, RECOVERY (Part I)	
On the degree of concurrency provided by concurrency control mechanisms for distributed databases D.Z. BADAL	35
Synchronization of concurrent updates in redundant distributed databases M. MILENKOVIĆ	49
SESSION 2.1 - SYSTEM IMPLEMENTATION (Part I)	
POLYPHEME: An experience in distributed database system design and implementation M. ABIDA, J.M. ANDRADE, P. DECITRE, F. FERNANDEZ and NGUYEN GIA TOAN	67
POLYPHEME Project: The DEM distributed execution monitor P. DECITRE and E. ANDRÉ	85
SESSION 2.2 - QUERY DECOMPOSITION	
A multi-query approach to distributed processing in a relational distributed data base management system W. CELLARY and D. MEYER	99
Data distribution criteria and query processing strategy in a small distributed environment C. CARLESI, E. RICCIARDI, C. THANOS and C. PETACCHI	121
SESSION 2.3 - SYSTEM IMPLEMENTATION (Part II)	
SIRIUS-DELTA: Un prototype de système de gestion de bases de données réparties J. LE BIHAN, C. ESCULIER, G. LE LANN and L. TREILLE	137
Concepts for a robust distributed data base system B. WALTER	161

## SESSION 2.4 - INTEGRITY, SECURITY, RECOVERY (Part II)

Realization, synchronization and restart of update transactions in a distributed database system R. MUNZ	173
Ensuring consistency in a distributed database system by use of distributed semaphores F.B. SCHNEIDER	183

## SESSION 3.1 - INTEGRITY, SECURITY, RECOVERY (Part III)

Reconstruction of consistent global states in distributed databases G. SCHLAGETER and P. DADAM	191
A concurrency control mechanism and crash recovery for a distributed database system (DLDBS) C-P. CHOU and M.T. LIU	201

## SESSION 3.2 - DDB ARCHITECTURE (Part II)

Process structure alternatives towards a distributed Ingres R.A.C. THOMAS	215
Design of optimal distributed database systems J. AKOKA	229

## SESSION 3.3 - INTEGRITY, SECURITY, RECOVERY (Part IV)

Specification and validation of two ring-structured synchronization protocols for distributed data systems S.M. MIRANDA	247
Qualitative and quantitative comparison of update algorithms in distributed databases P. WILMS	275

## SESSION 3.4 - PERFORMANCE

Automata models of computer networks A. BACZKO and F. SEREDYŃSKI	295
Problems of developing large registration systems based on distributed data base E. KERTESZ and J. POLGÁR	321

## TUTORIAL

Integrity, consistency, concurrency, reliability in distributed database management systems G. GARDARIN	335
--	-----

## SYSTEMS ON DEMONSTRATION

The Etoile project L. DARGENT and C. GODART	353
Technical outline of the Polypheme demonstration prototype P. DECITRE and J. ANDRADE	357
The distributed interrogation system Freres P. BOSC	361
Sysidore: système de sélection d'information documentaire répartie A. KARMOUCH	365