

# 行政院國家科學委員會專題研究計畫成果報告

計畫編號：NSC 87-2213-E-009-048

執行期限：86年8月1日至87年7月31日

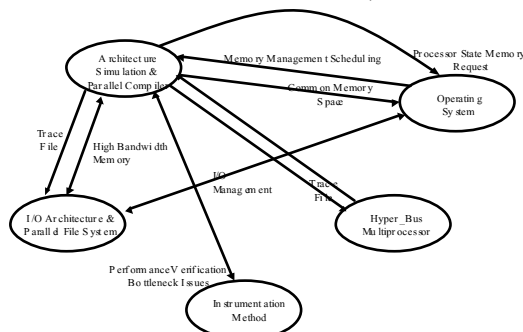
主持人：陳正 Email：cchen@eicpca5.csie.nctu.edu.tw

執行單位：國立交通大學資訊工程研究所

本報告乃國科會支助下「可延伸性多處理機系統架構設計之研究」整合型計畫第三年總計畫之成果報告。本計畫的目的是研製一套可延伸多處理機系統之模擬評估雛形，據以探討系統設計中主要的議題(issues)及相關效能之評估工作，進而提出具體的系統架構設計之規格，以供未來研究單位或業界發展此方面系統之參考。本整合型計畫共包含五項子計畫，其名稱和主持人分別如下：

- 子計畫一：可延伸性多處理機架構模擬評估環境之研製及相關平行編譯技術之探討  
編號：NSC87-2213-E-009-049  
主持人：陳正教授(交通大學)
- 子計畫二：多處理機作業系統設計之研發  
編號：NSC87-2213-E-009-054  
主持人：謝續平教授(交通大學)
- 子計畫三：高性能 I/O 架構與檔案系統設計之研究  
編號：NSC87-2213-E-009-053  
主持人：張明峰 副教授(交通大學)
- 子計畫四：MP 系統效益與量測方法之研究  
編號：NSC87-2213-E-009-  
主持人：林偉教授(中興大學)

此五個子計畫均可自成一單元，卻又深具關連性。其相關性可用下圖簡要表示之：



有關各子計畫的詳細內容分別敘述在各子計畫之報告內。

This is the third year report of the project namely "Study of System Architecture Design for Scalable Multiprocessors" under the support of National Science Council. The project aims to implement a prototype of scalable multiprocessor system for the investigation and evaluation of related issues; finally propose a complete specification for system architecture design. By the means of the result, it may provide reference for both academic and industrial area who are interesting in the development of the system. This project further includes five sub-projects, they are listed below :

- Sub-project 1: Study and Implementation of Simulation Environments for Scalable Multiprocessors and the Investigation of the Parallel Compilation Technique.  
Contact No. : NSC87-2213-E-009-049  
Leader : Professor Cheng Chen (National Chiao Tung University)
- Sub-project 2 : A Study on the Design of Multiprocessor Operating Systems.  
Contact No. : NSC87-2213-E-009-054  
Leader : Professor Shieh, Shiuh-Pyng (National Chiao Tung University)
- Sub-project 3 : The Design of High Performance I/O Architecture and Parallel File System.  
Contact No. : NSC87-2213-E-009-053

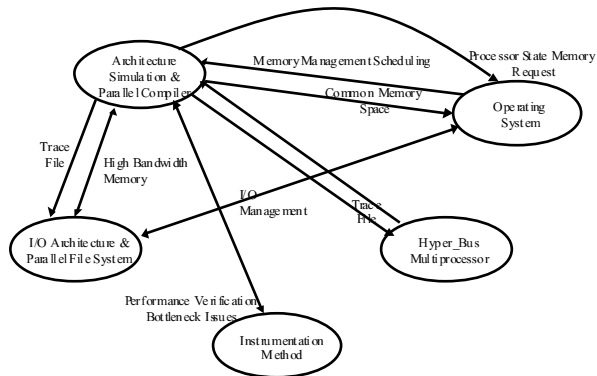
Leader : Professor Chang, Ming-Feng  
(National Chiao Tung University)

- Sub-project 4 : Instrumentation Methods for Multiprocessor Systems.

Contact No. : NSC87-2213-E-009-

Leader : Professor Woei Lin (National Chung Hsing University)

The five sub-projects are closely related, figure below shows their relationship :



Regarding with the detail description of each titles, please refer to individual final report.