



# Requirements for an Advanced Database Transaction Model to Support Design for Manufacturing

Frans J. Faase

`faase@cs.utwente.nl`

University of Twente

Department of Computer Science

FAIM '95

June 28–30, 1995



## Contents

The philosophy behind  
Design for Manufacturing

Information model used

Operations in the information model

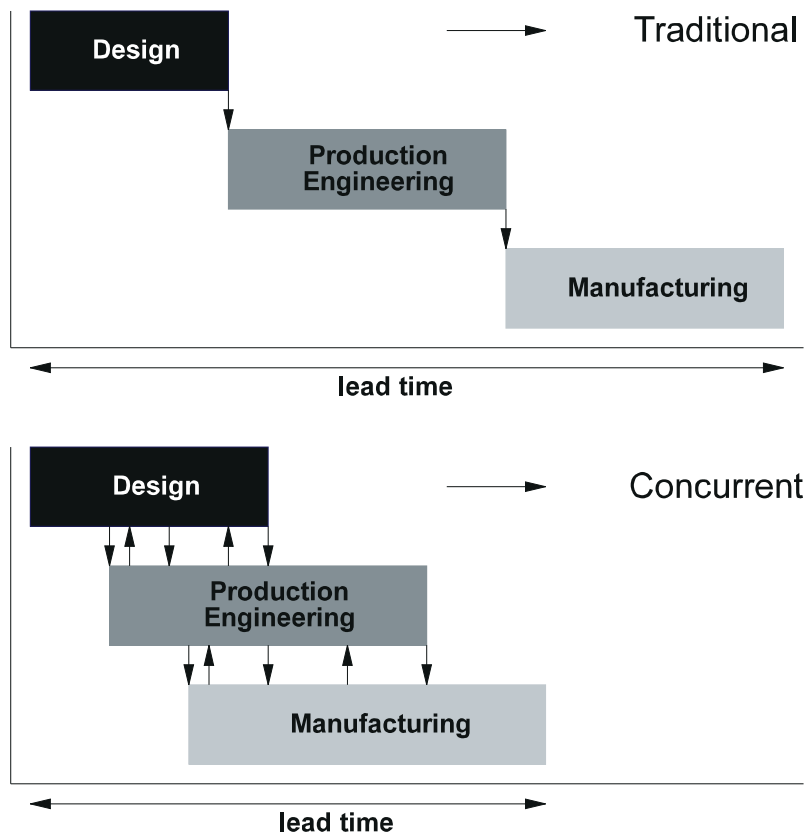
Requirements

Research in the TransCoop project

Discussion

# Design for Manufacturing

Minimal variant of Concurrent Engineering



## The cases

### Philips Medical Systems

- high-quality image handling diagnostic systems

### Cooperation in Aircraft Design

- paper by A.H. Bond and R.J. Ricci

### Fokker Aircraft B.V.

- aeroplanes with 65-130 seats
- Fokker-50 and Fokker-100

## Models used

Step	Model
Design	Functional model
Product engineering	Product model
Manufacturing	Production model

Functional model: constraint based

Product and production models:

1. hierarchical
2. closely related

## Information model

Hierarchical tree with nodes: product model

Explicit relationships

Documents attached to nodes  
and/or explicit relationships

Multiple views

Versioning

Secondary documents

## Operations

### Levels of management

- project level

*Project management*

- task level

*Organisation of the work*

- document level

*The “work”*

## Requirements: activity aspects

Different levels of management

Overview of ongoing scenarios

Hierarchical transactions

History of scenarios

## Requirements: data aspects

Complex data structures

Relationships between data

Constraints

- as engineering data
- as relationships between data

Shared data structures

Version management

## Requirements: user aspects

Single user aspects

User groups

## General requirements

Flexibility

Heterogeneous systems



## TransCoop Project

On Cooperative Database Transactions  
(ESPRIT Basic Research Action 8012)

Work package II:

Analysis of selected applications

- Cooperative Document Authoring
- Design for Manufacturing
- Work-flow

Now working on:

- cooperative transaction model
- specification language

<http://www.transcoop.cs.utwente.nl:8080/>