

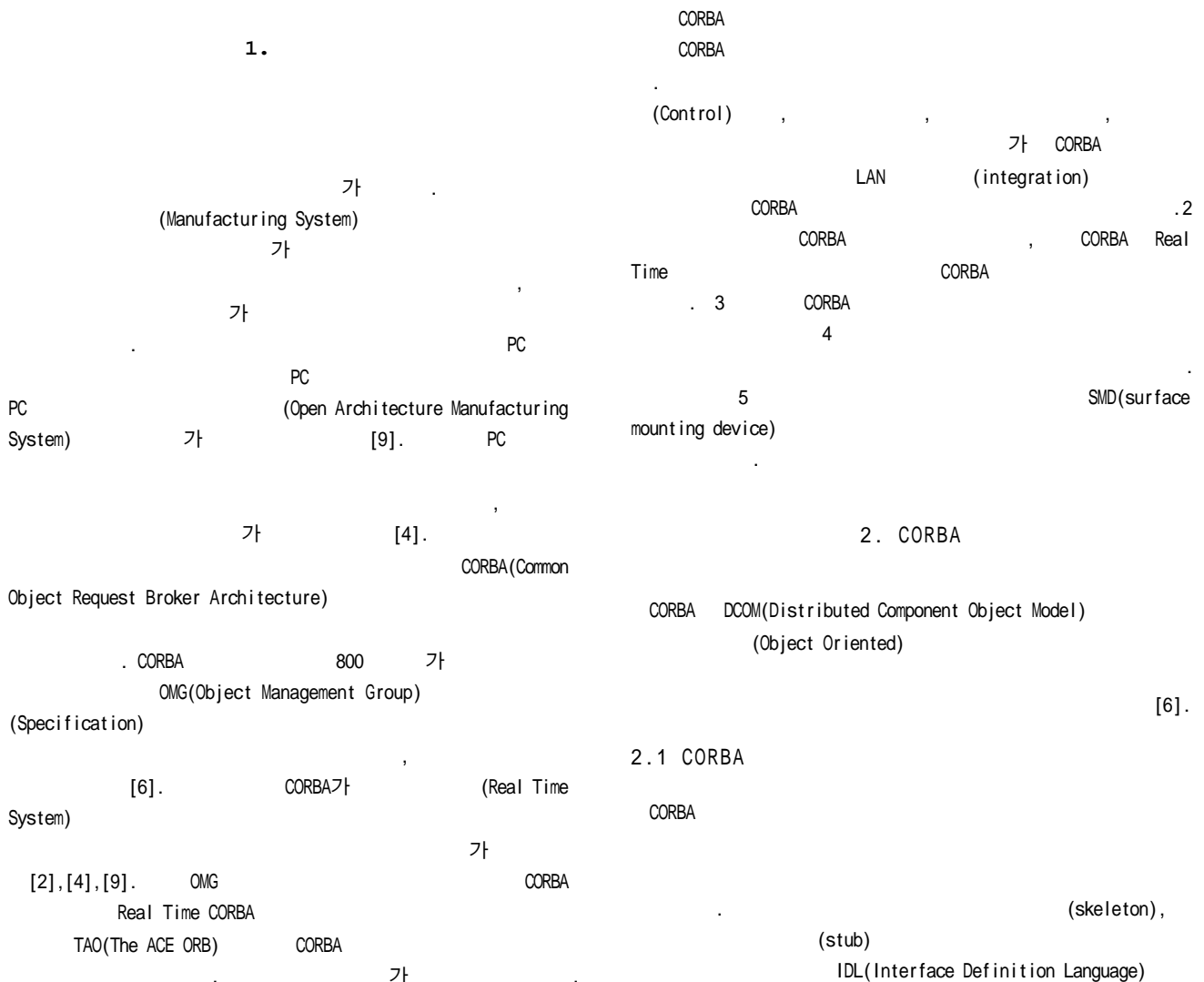
RT CORBA

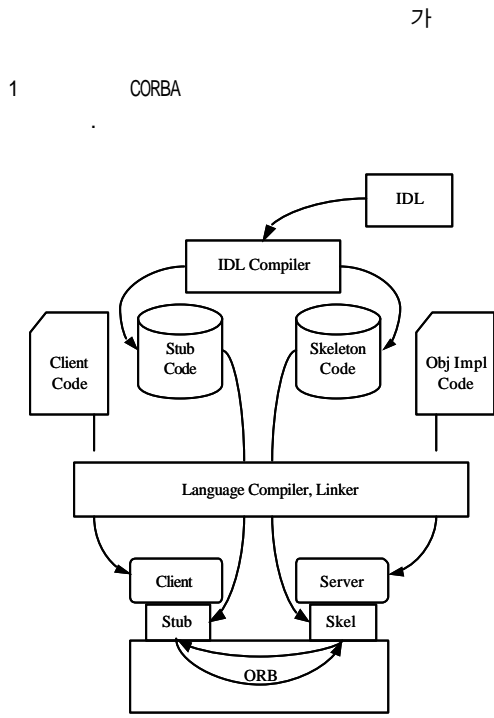
The Design of Open Architected Manufacturing System based on RT CORBA

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Abstract: In this paper we propose a framework of an open architected manufacturing system base on CORBA middleware. The manufacturing system consists of four configurable software modules (machine control module, database module, monitoring module, and operation module). Each module is distributed through the network and integrated with CORBA middleware technology. CORBA Characteristics including independence from programming languages, computing platforms, and networking protocols makes us to easily develop new applications and to effectively integrate new module into existing distributed systems. The CORBA program used in this study is The ACE ORB (TAO) developed by the laboratory in Washington University. TAO is a high performance, RT CORBA 2.0 compliant ORB that runs on a variety of operating system platforms with real-time features. We applied the software framework to the Monitoring system of Surface Mounting Device(SMD) machine.

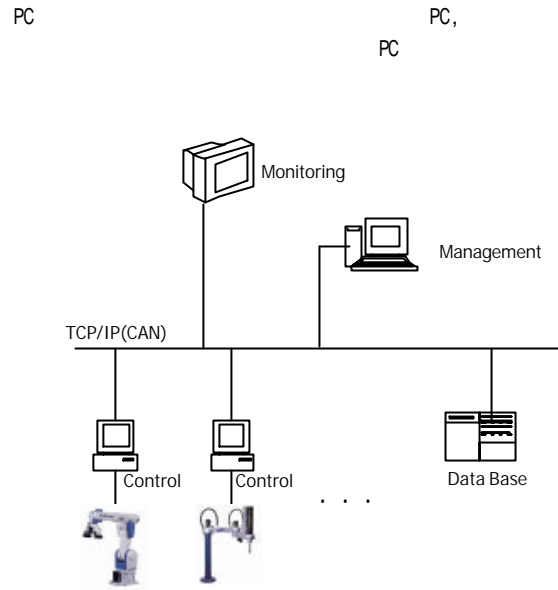
Keywords: CORBA, middleware, open architecture, Monitoring system





1. CORBA
Fig 1. The Architecture and Fundamental of CORBA

[6].



3.
Fig 3. The Hardware architecture of Manufacturing System

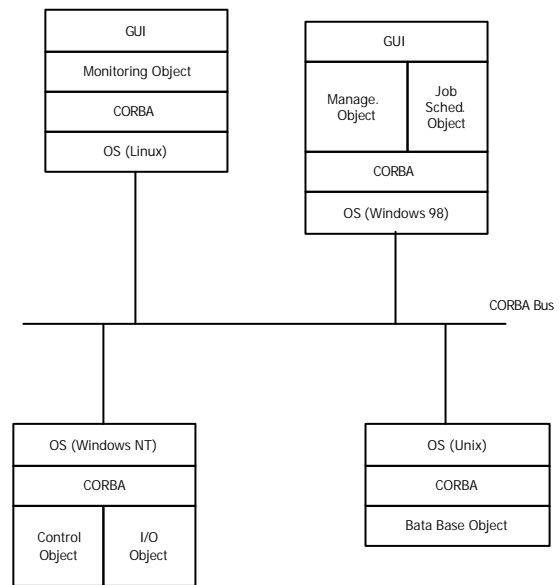
4.

ID (Object Reference) 가 [6].

2.2 Real Time CORBA

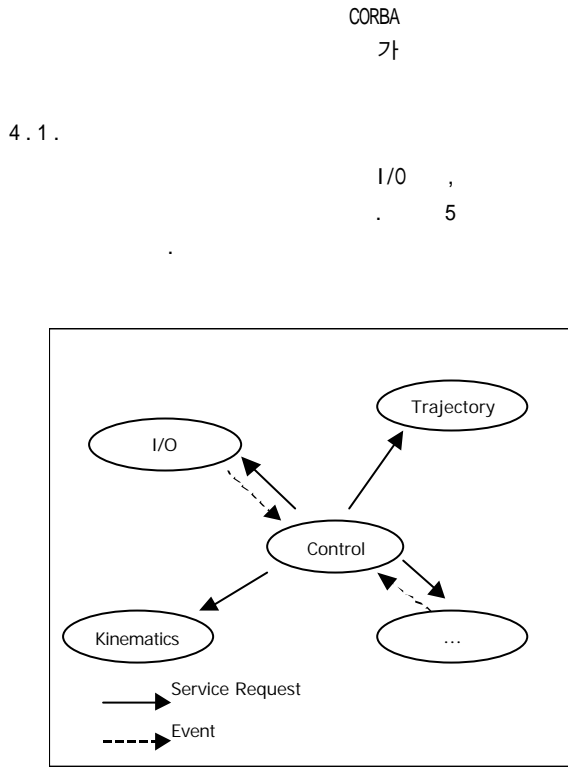
(Deadline) Deadline CORBA 가 1998 OMG CORBA 가 RT CORBA TAO CORBA TAO 1.1 가 [3].

3 (Machine Control), (Process Management), 가 PC CORBA PC ORB

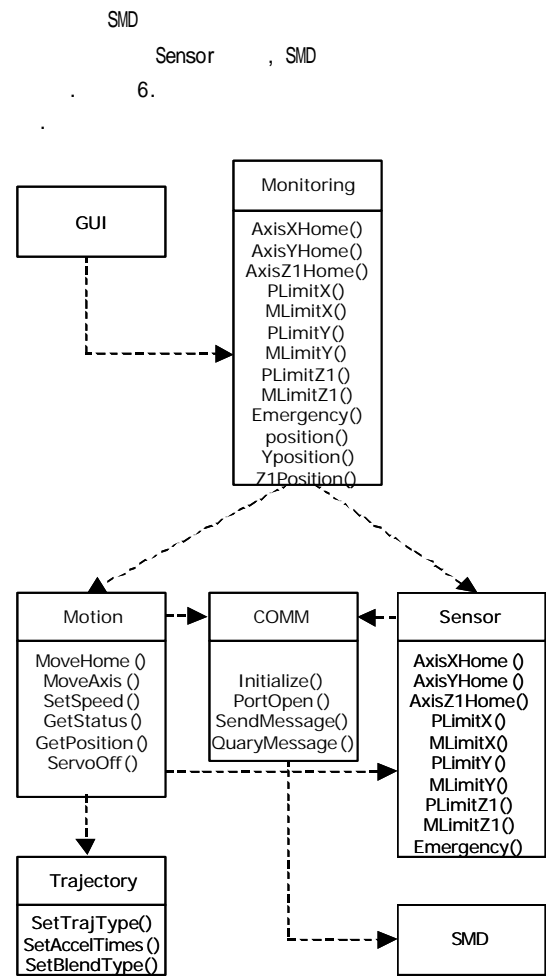
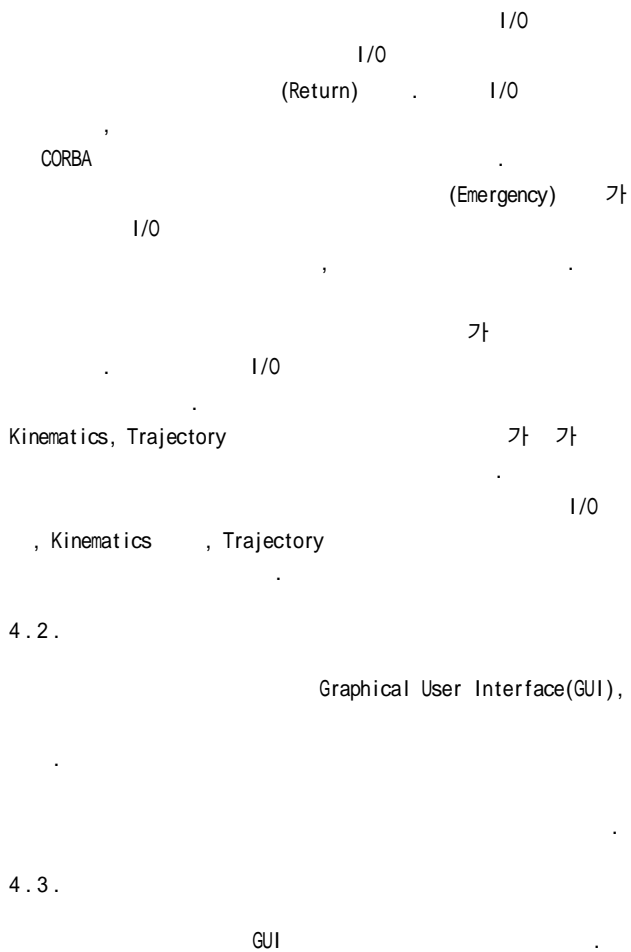
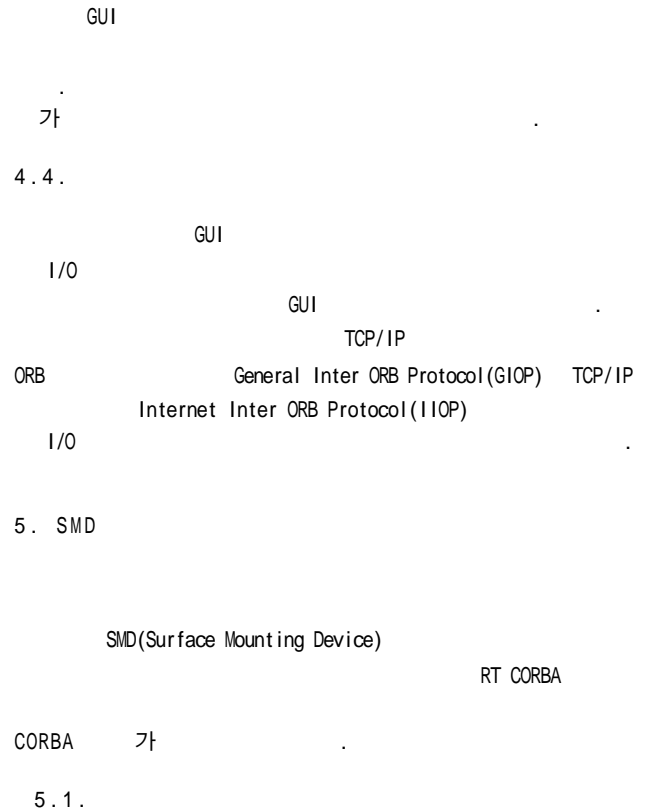


4.
Fig 4. The Software Architecture of Manufacturing System

Windows NT RTX 가 PC



5. Fig 5. The Configuration of Control Module



6. Fig 6. Design of Objects

7

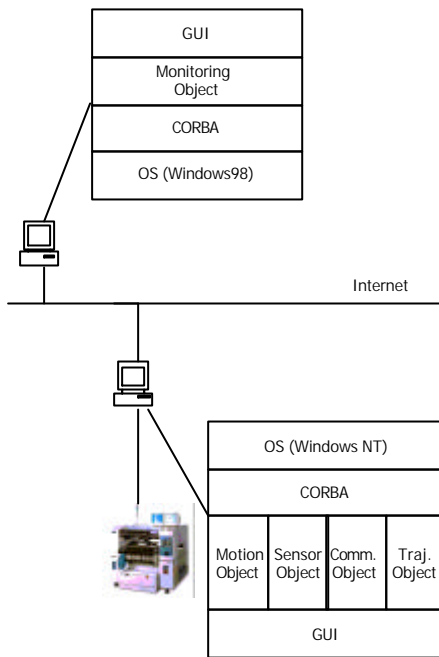
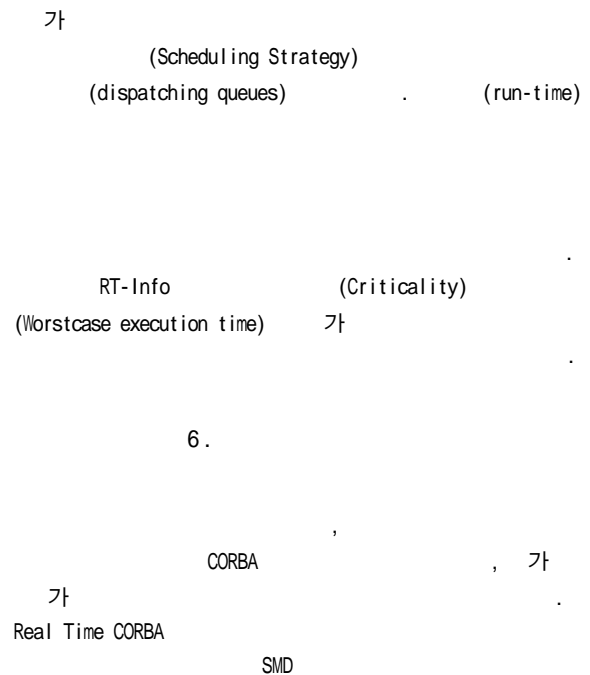


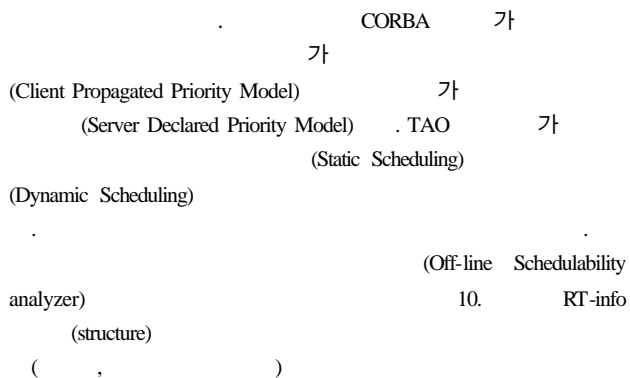
Fig 7. Configuration of monitoring system



7.

5.2

TAO가



```

Struct RT_Info
{
    Criticality Criticality_;
    Time Worstcase_exec_time_;
    Period Period_;
    Importance importance_;
    Dependency_Info dependencies_
};
    
```

10. RT-Info

Fig 10. RT-Info structure

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