SLG Communication Specification

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1 Summary

SLG-LSR system is windows based desktop application that makes responses to automatic warehouse items such as conveyers, cranes, elevators etc. When palette is moved from one element to another then the programmed PLC gives appropriate information for the action performed and on this action the LSR system performs appropriate action and is responsible for in-storage / out-storage / reposition of the warehouse pallets. The system is designed with Microsoft .NET Framework 2.0 and combination with Oracle and MS SQL Server 2000 (Navision system).

2 Introduction

2.1 Databases

The system has two databases. One database is Oracle database and the other one is a Microsoft SQL Server database.

The Oracle database is used from the processes: LVR, Host and Driver. The purpose of the Oracle database is to control SLG using commands form the Navision system.

The SQL database is used from the Navision. It is used from our system to read and update commands issued from the Navision.
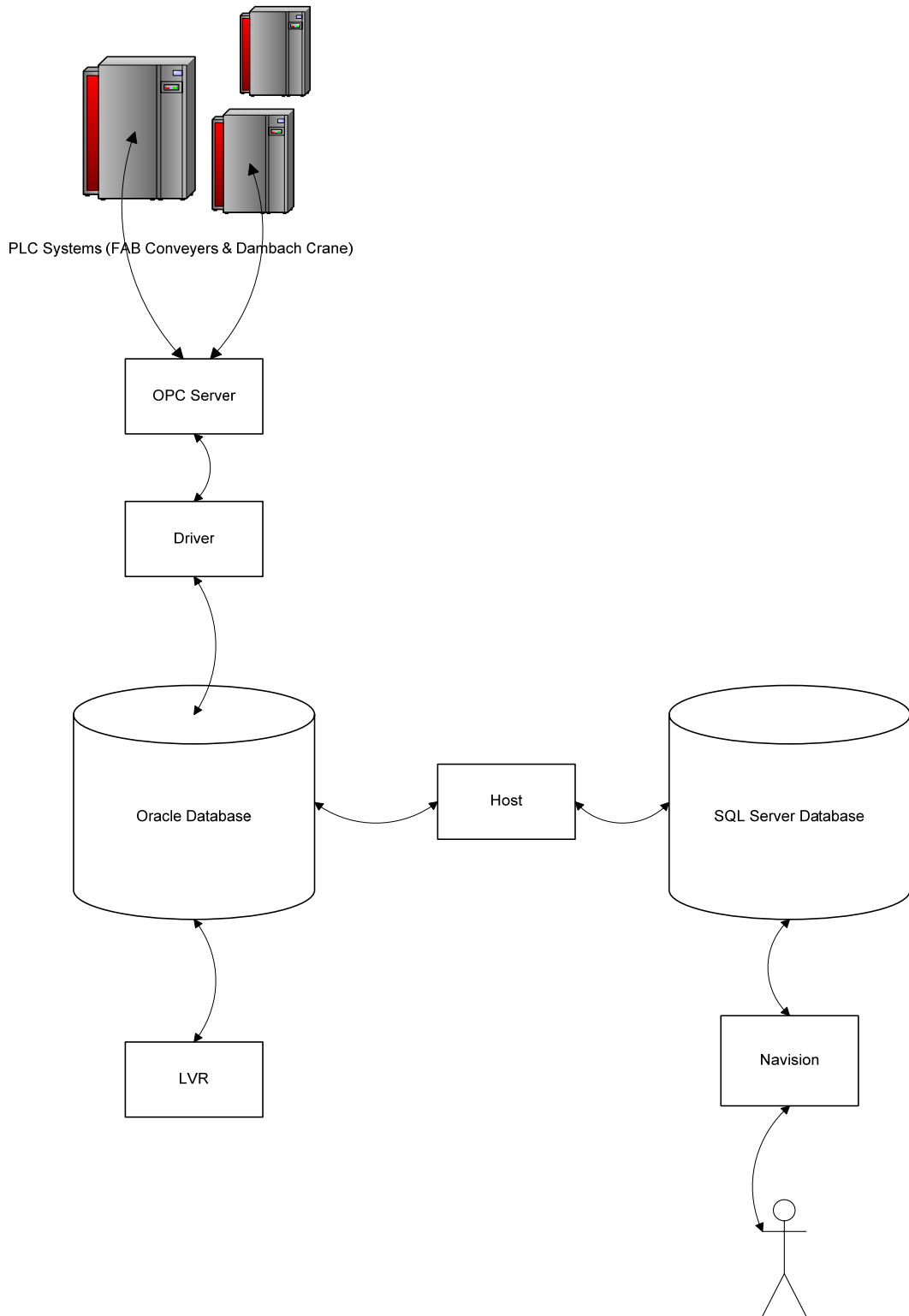
2.2 Processes

The system has these processes:
- LVR
    - It is programmed by Lazarov Consulting Engineering Skopje, previously known as Unilog Skopje.
- Host
    - It is programmed by Lazarov Consulting Engineering Skopje, previously known as Unilog Skopje.
- Driver
    - It is programmed by EQUAL Soft, but the code and the data in the database is configured and maintained by Lazarov Consulting Engineering, previously known as Unilog Skopje.
- OPC Server
    - It is bought from the company Softing. After installing the OPC Server it needs to be configured for usage.
- Navision
    - This process (configuring, maintaining) is not responsibility of the company Unilog Skopje.
- UWM Client
    - It is complete responsibility of the company Unideeds.

2.3 User

The processes programmed and configured by Lazarov Consulting Engineering, previously known as Unilog Skopje, do not have any direct interaction with the user.

2.4 General Communication

PLC Systems (FAB Conveyers & Dambach Crane)

OPC Server

Driver

Oracle Database

Host

SQL Server Database

LVR

Navision

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The communication is normally done using the database. The only direct connection between two processes is between the Driver and the OPC Server.

The user has interaction with the Navision process which inserts some data in the SQL Server database. After the commands are inserted in the SQL Server the Host process transfers the commands into the Oracle database, and changes the status of the commands in the SQL Server database.
The PLC system through the OPC Server sends the telegrams to the Driver which after that inserts the telegrams in the database.
The LVR reads all of the inserted telegrams in the database and responds with an answer if needed and when needed.

After completing or failing a command from the Navision the LVR through the database notifies the Host that a command is completed or failed and then the Host updates the corresponding Navision command in the SQL Server.