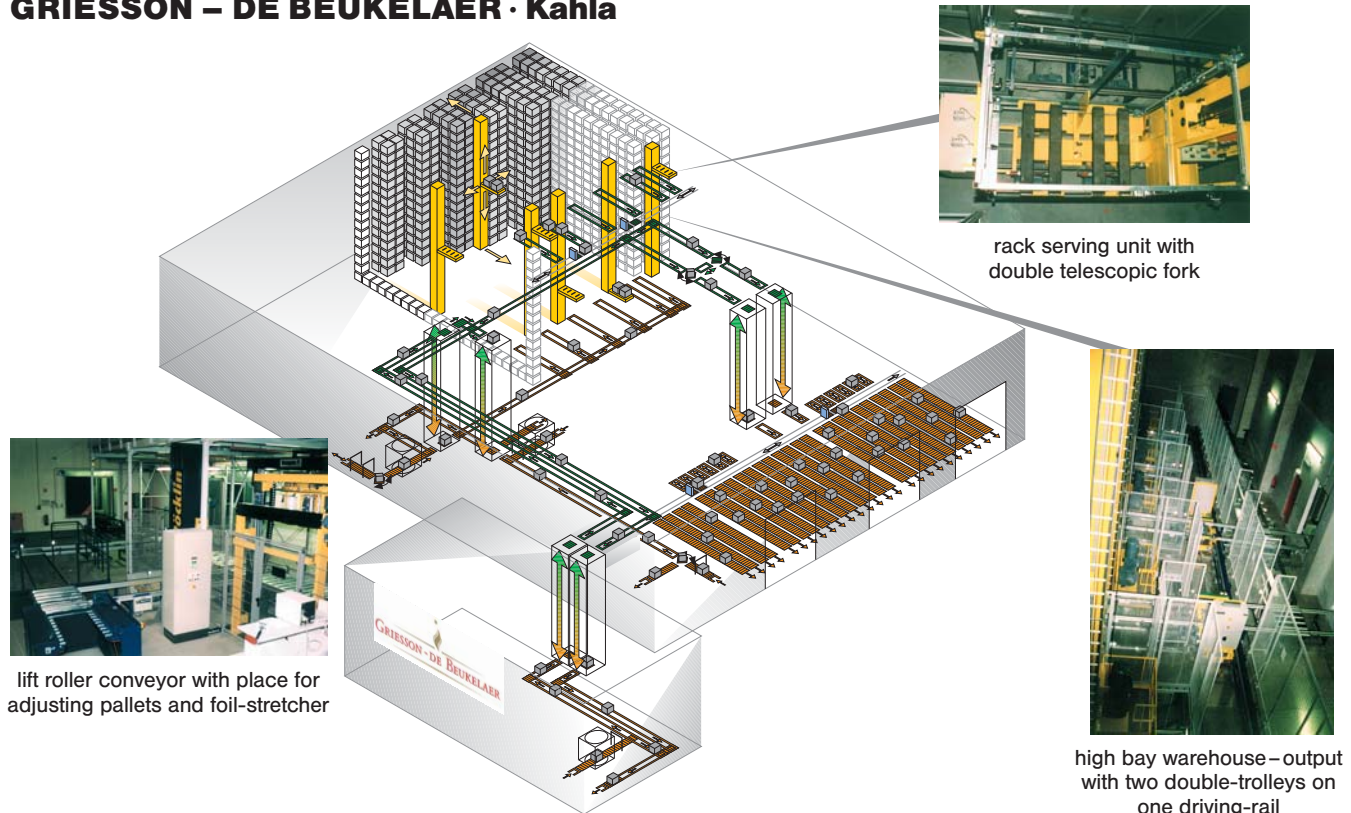


6-lane high bay warehouse with pre-zone and high rack warehouse controls
GRIESSON – DE BEUKELAER · Kahla



Task

GRIESSON – DE BEUKELAER, manufacturer of cookies, is one of the leading companies in food production. The company GRIESSON-DE BEUKELAER has decided to build another plant in Kahla (near Jena) after the locations Polch (near Koblenz), Kempen and Ravensburg with production and high bay warehouse.

At the location Kahla the task was to build a highly automated high bay warehouse with 6 lanes and warehouse pre-zone. The complete system technique was housed in a new building. Beside the HOST-system, the warehouse management and material flow computer (LVR) the automation technique was an integral component of the system solution.

Lead-managed by Stöcklin-SIEMAG the company Aberle got the order to supply the conveyor technique controls, the plant visualization as well as the rack serving unit controls (RBG).

In order to prevent interfering with the starting production, the assembly of the plant technique has to be divided in 3 building phases.

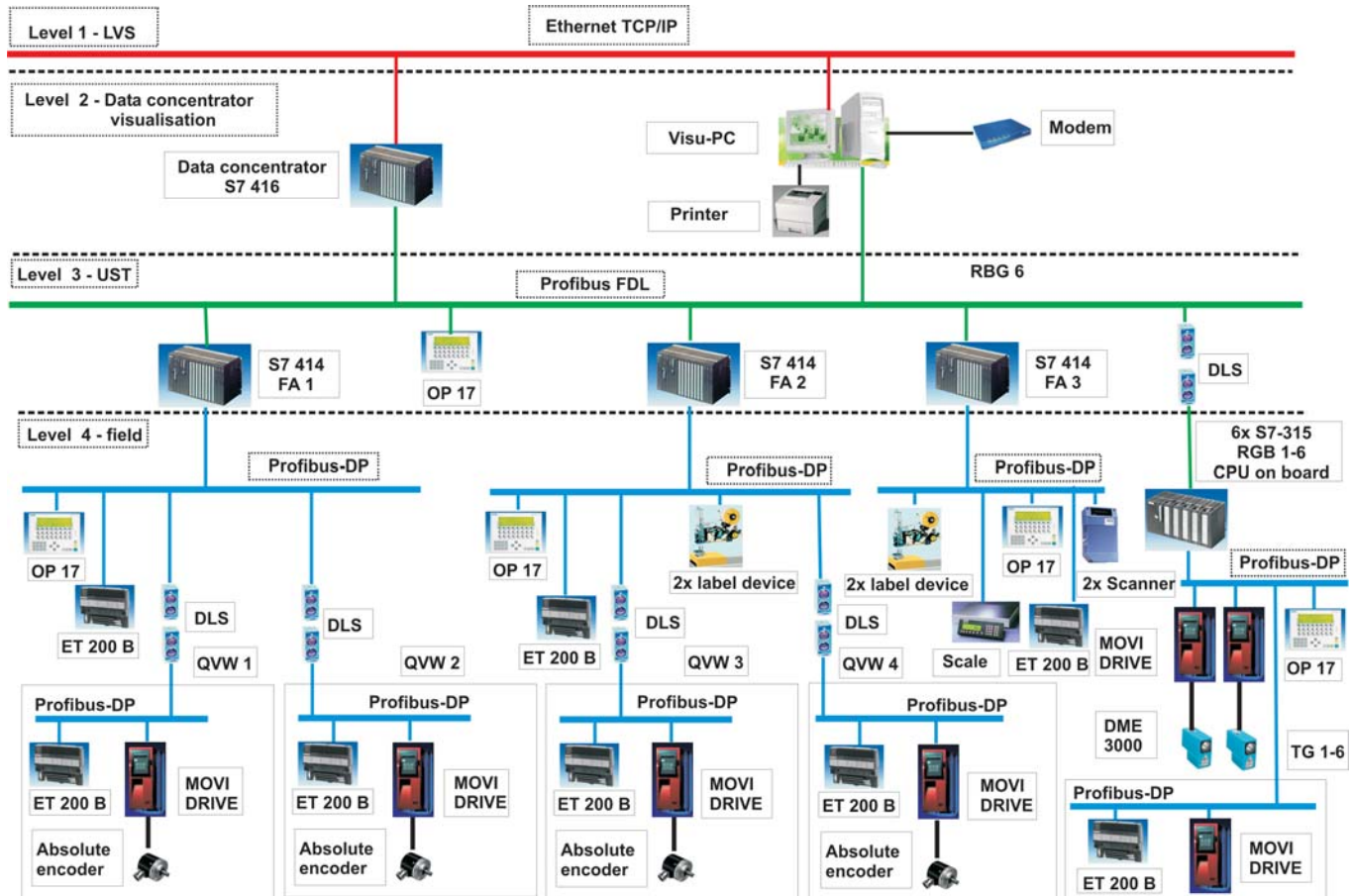
Integrated components

The whole automation technique was equipped with programmable logic controllers (PLC) SIMATIC-S7. While the local group control systems for the conveyor technique have been equipped with SIMATIC S7-400, SIMATIC S7-300 has been used for the running RBG-controls.

For the connection to the LVR the standardised protocol Ethernet TCP/IP has been installed. All group controls have been, above the network Profibus-FDL, connected with the data concentrator (SIMATIC S7-400). The drive-technique of the RBG as well as the trolley in the conveyor technique have been equipped with intelligent drive-regulators.

The drive-visualisation, based on WINDOWS-NT, does have a network wide access to all subordinate group controls and, via modem, makes the service „Remote-Diagnostic“ available.

System configuration



Solution

The system solution, which is set up hierarchically, basically comprises a data concentrator (DK), four expanded group controls for the conveyor technique and six autarkic RBG-controls.

The data concentrator (DK) does make an absolute decoupled start-up of the complete automation level possible. The integration with the redundant built-on LVR thereby could be effected on time.

In this manner partial redundancies of individual system components could be created. Besides a safe procedure for data exchange with LVR, all incidents are buffered after a coupling interference and, after a warm restart of the system, transferred to the management system.

Advantages for the customers

The hierarchical setup and the well thought out emergency concept awards the system a high availability.

The used „Acceptation handling“ enables the operator to drive the system further, also in case the LVR is faulty.

The integrated half automatic operation in the drive visualisation-program enables the input of individual orders.

The procedure for data exchange with the LVR prevents the loss of datas, also under extreme conditions.



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