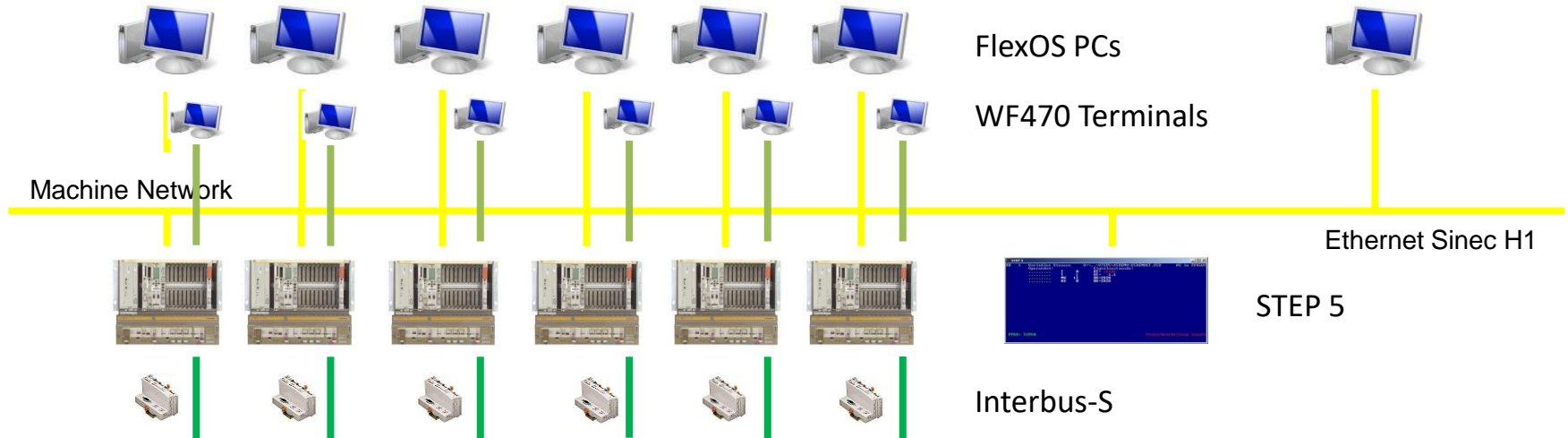


Integration of an analysis and data-management system Plant modernisation with ABC IT Systems

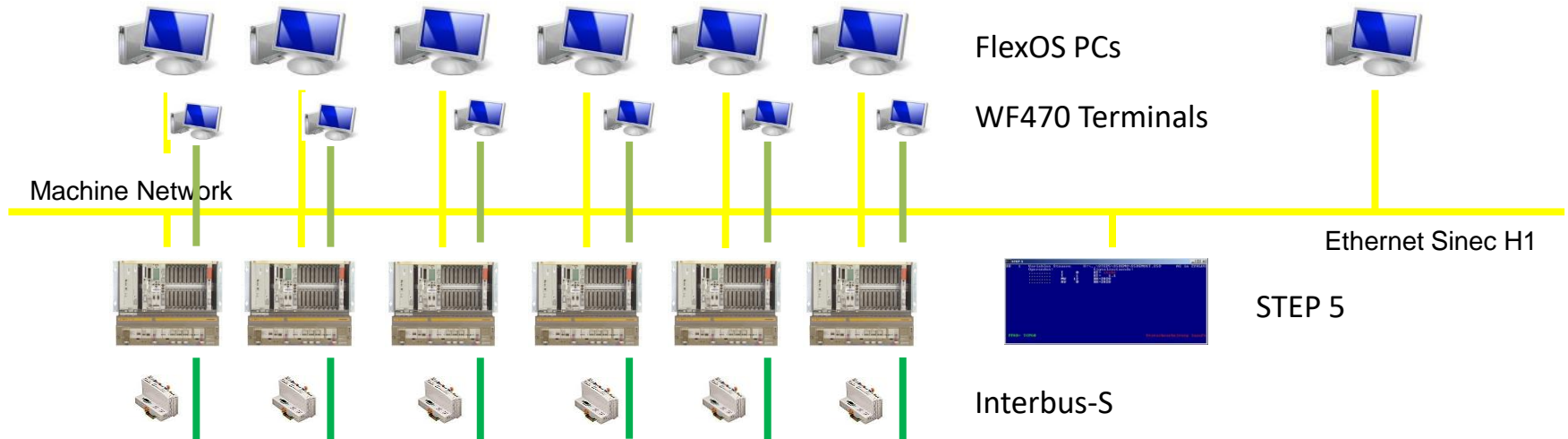
Current Condition

- Simatic S5 PLC Systems
 - WF470 operating terminal
 - Interbus-S
 - IP, WF, digital IOs
 - STEP 5 programming
- Sinec H1 bus system
- Gracis control system
 - Siemens PC with Flex-OS operating system
 - CP1143 (H1 activation) or similar ISA bus



Current Condition - Assessment

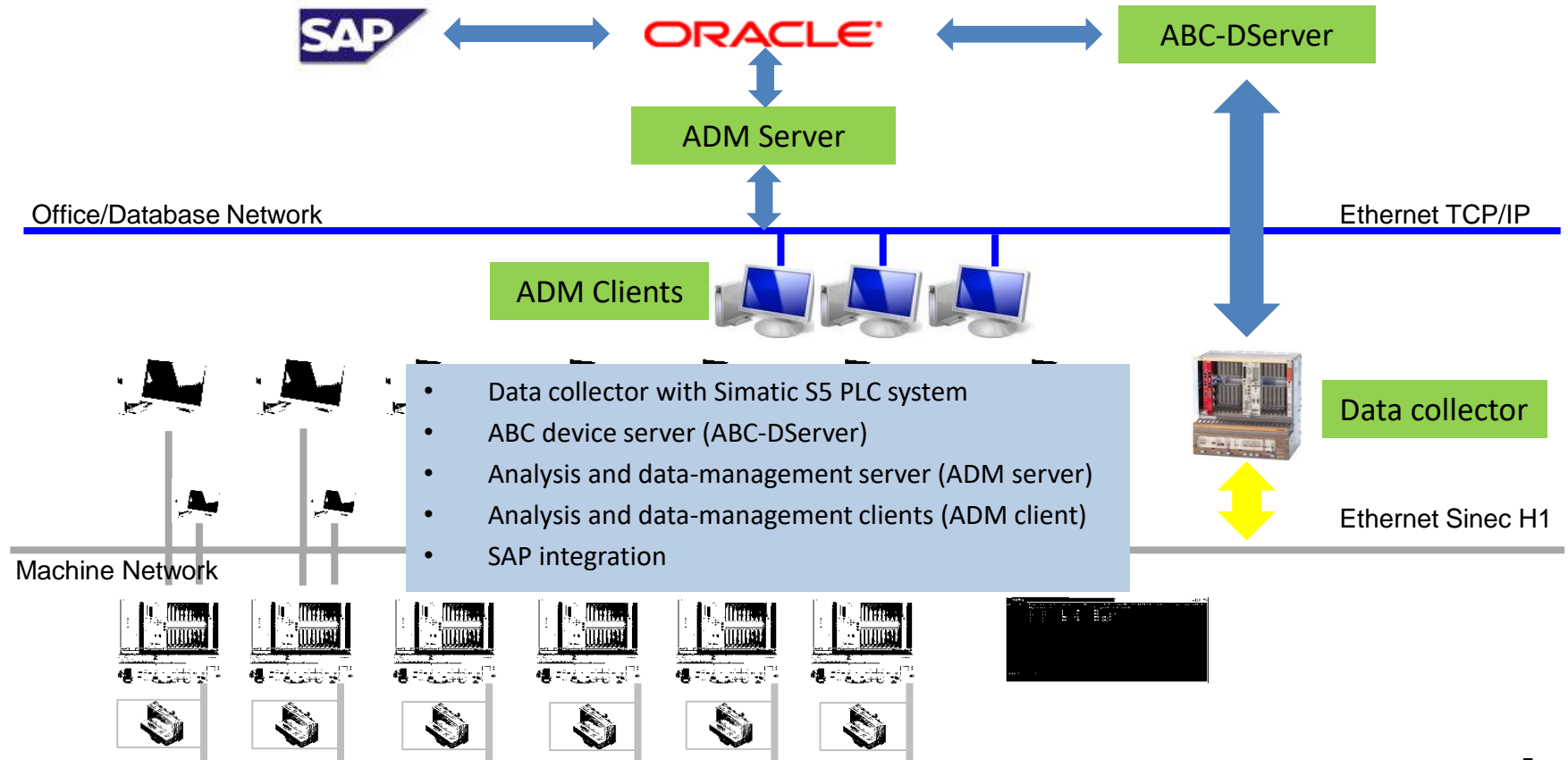
- The integration of an analysis and data-management system is not possible with the existing infrastructure.
- All components used here are out of date, they are being discontinued and spares are only difficult or even impossible to procure.



ABC retrofit - concept

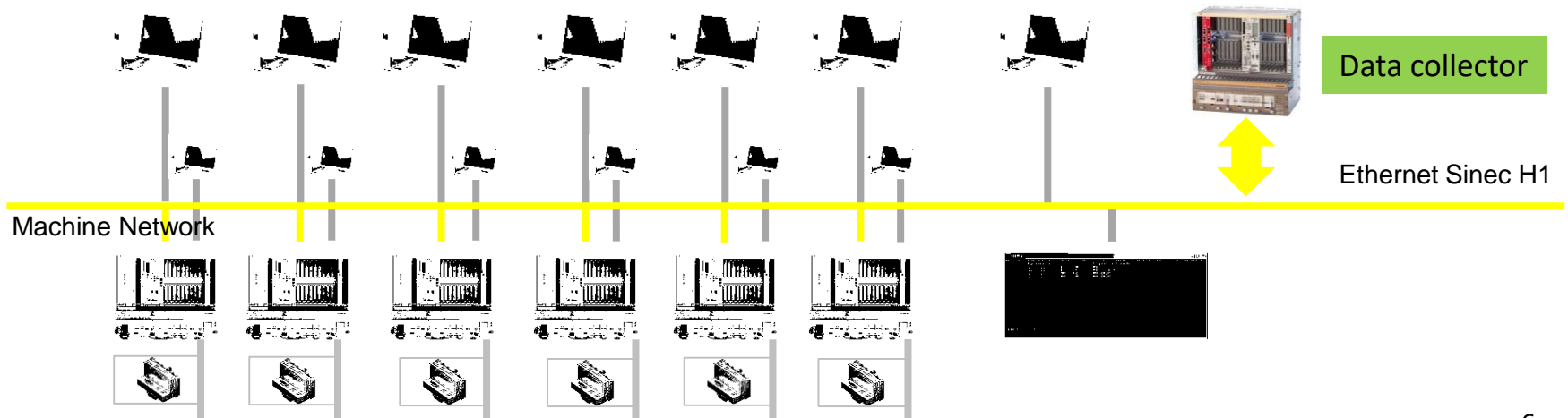
- ✓ The ABC retrofit concept constitutes the basis for the expansion and modernisation of Simatic S5 system controls.
- ✓ The costs for the individual modernisation and conversion phases may be precisely specified (cost control).
- ✓ Systems will be modernised according to the state-of-the-art over a planned period of time (planning reliability).
- ✓ No additional system downtimes during the individual phases of modernisation.

1. Integration of an analysis and data-management system



Step 1.1

- Data collector with Simatic S5 PLC system
 - Simatic S5 rack (from spare parts)
 - ABC-X-CPU (new)
 - CP143 (Sinec H1) (from spare parts)
 - Expansion of the connection project in the individual cells
 - No program customisations necessary
 - Data points must be known



Step 1.2

- ABC device server (ABC-DServer)
 - Central data acquisition from the data collector via ABC-X-CPU and Ethernet TCP/IP.
 - Data is written into an SQL database (e.g. Oracle) for further processing.
 - The server is installed on a Windows XP/ Windows 7 or Windows Server system and started as a service.
 - The connection parameters are set in the database. No additional tools are required to set the parameters.

ORACLE

ABC-DServer

Office/Database Network

Ethernet TCP/IP



Machine Network

Data collector

Ethernet Sinec H1

Step 1.3

- Analysis and data-management server (ADM server)

- The interface with data display and evaluations realised in accordance with the customer's requirements.
- The server is installed on a Windows XP/ Windows 7 or Windows Server system and started as a service.
- Network access to the SQL database (ODBC) and office network (clients) required.

ORACLE

ADM Server

ABC-DServer

Office/Database Network

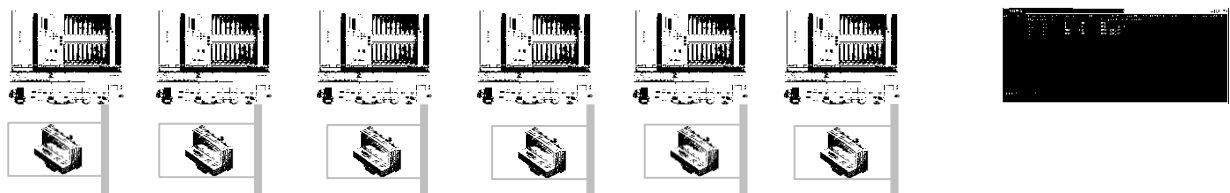
Ethernet TCP/IP



Data collector

Ethernet Sinec H1

Machine Network



Step 1.4

- Analysis and data-management clients (ADM Client)
 - Clients access the ADM server via a Web browser (e.g. Internet Explorer). No additional installation of programs on clients necessary.

ORACLE®

ADM Server

ABC-DServer

Office/Database Network

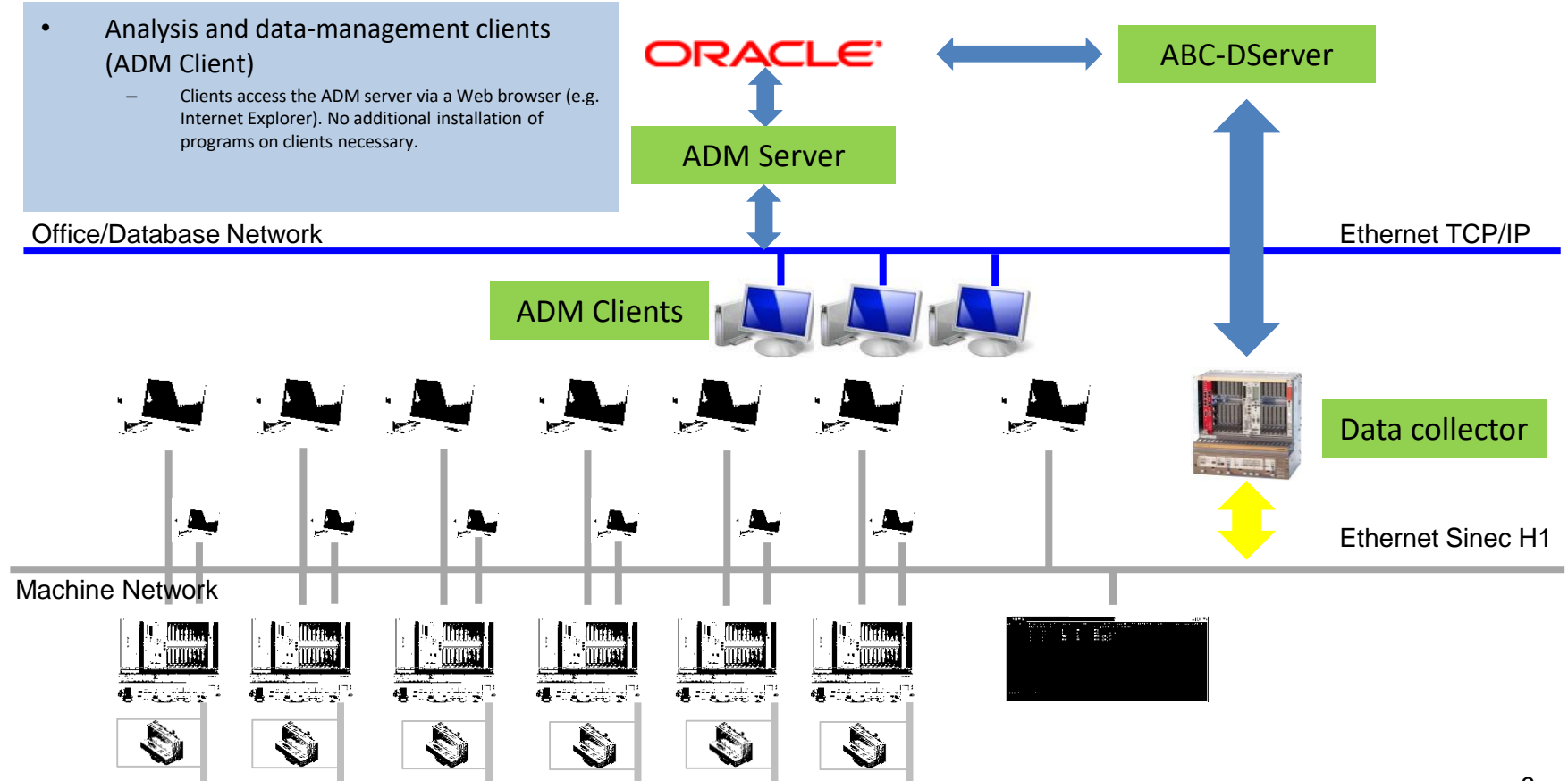
Ethernet TCP/IP

ADM Clients

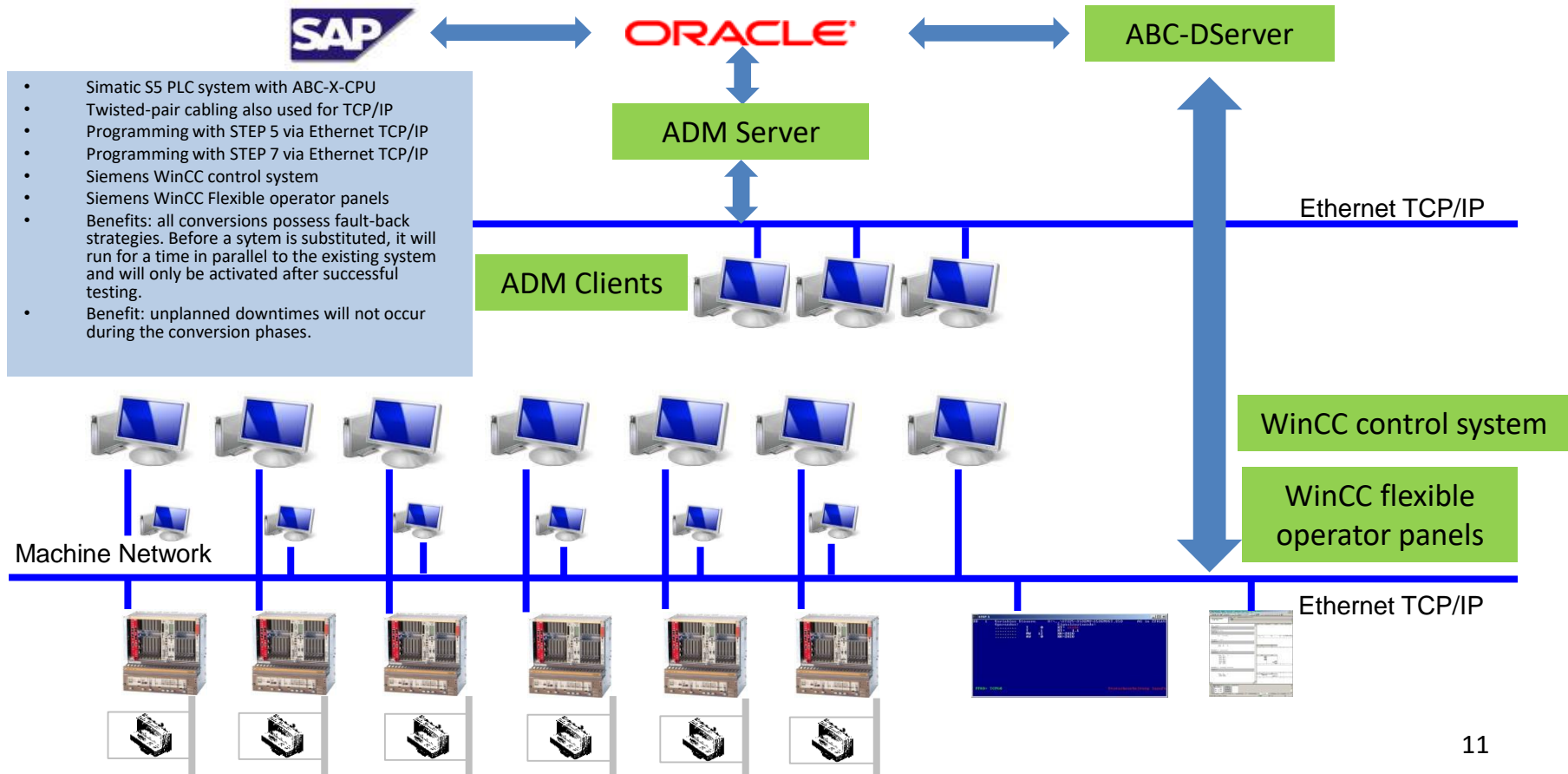
Data collector

Ethernet Sinec H1

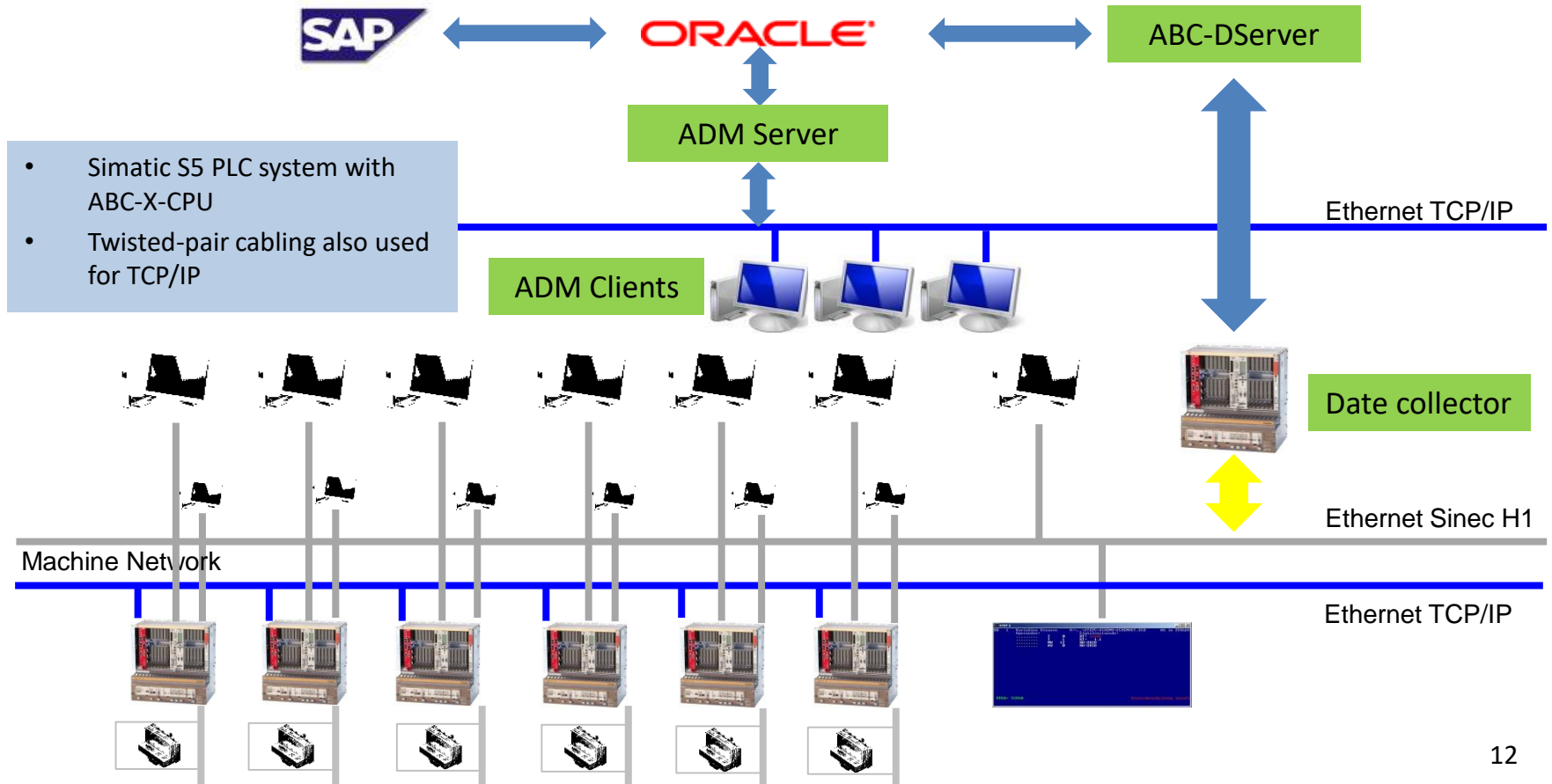
Machine Network



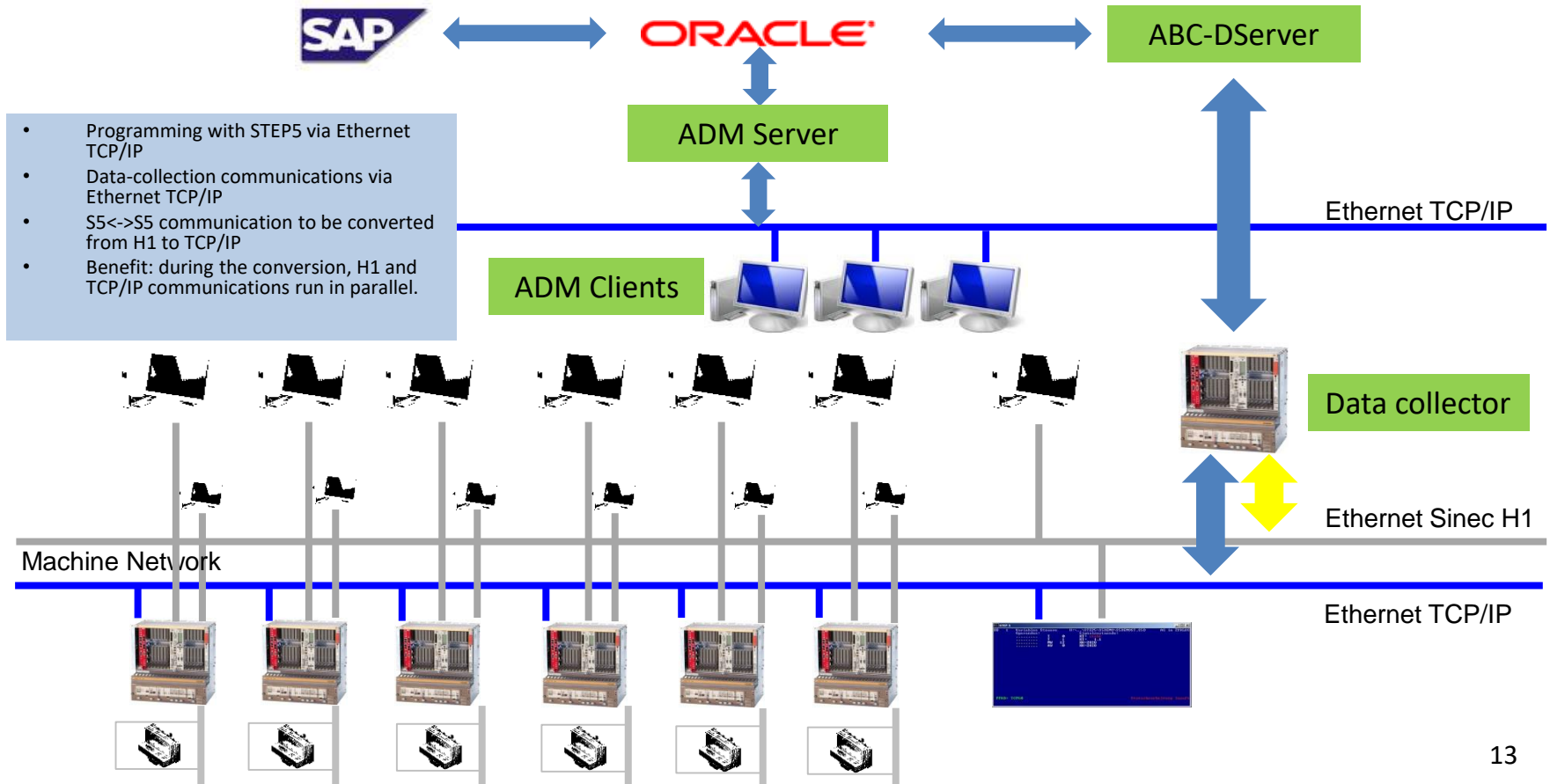
2. Modernisation control level



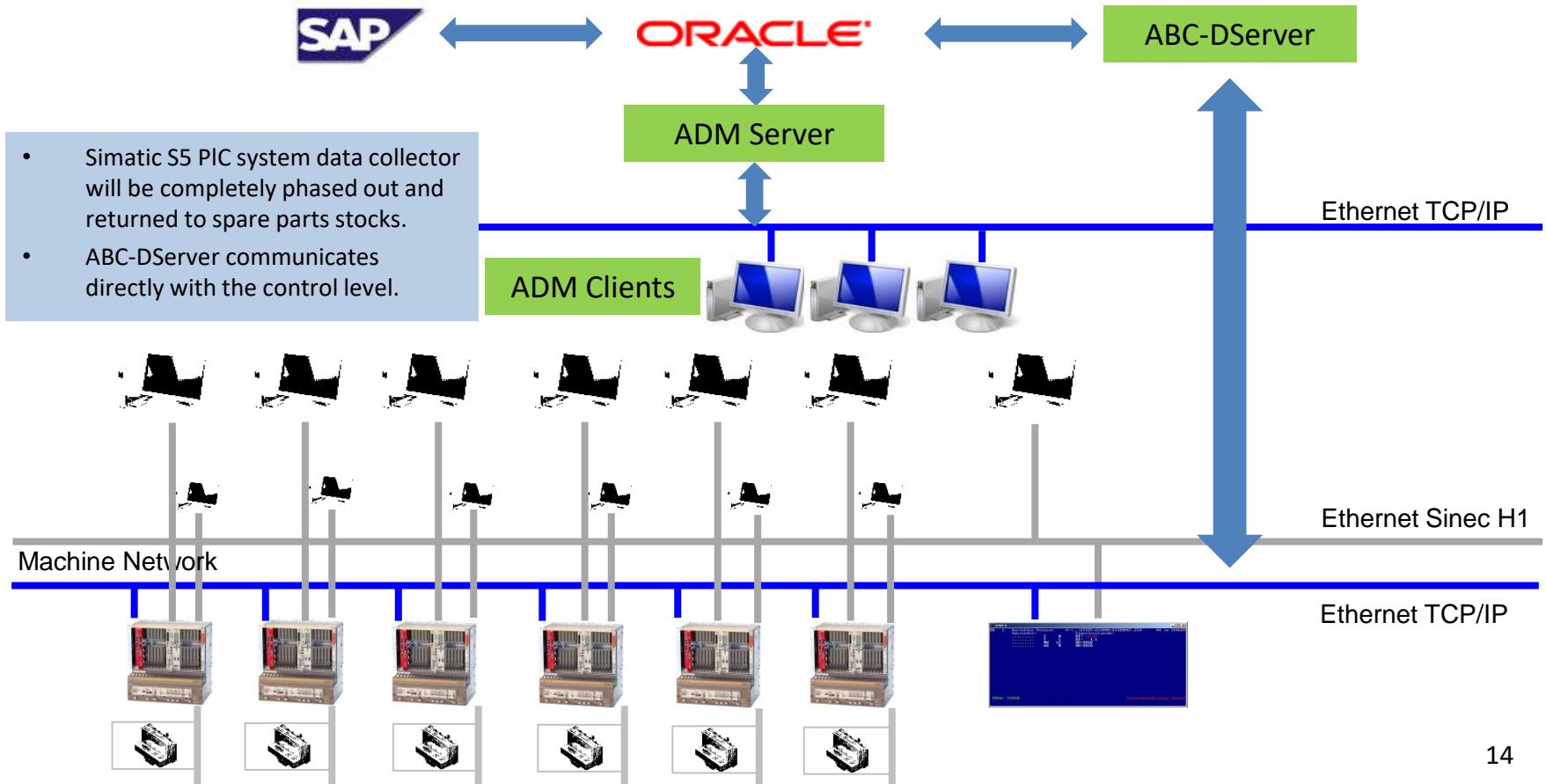
Step 2.1



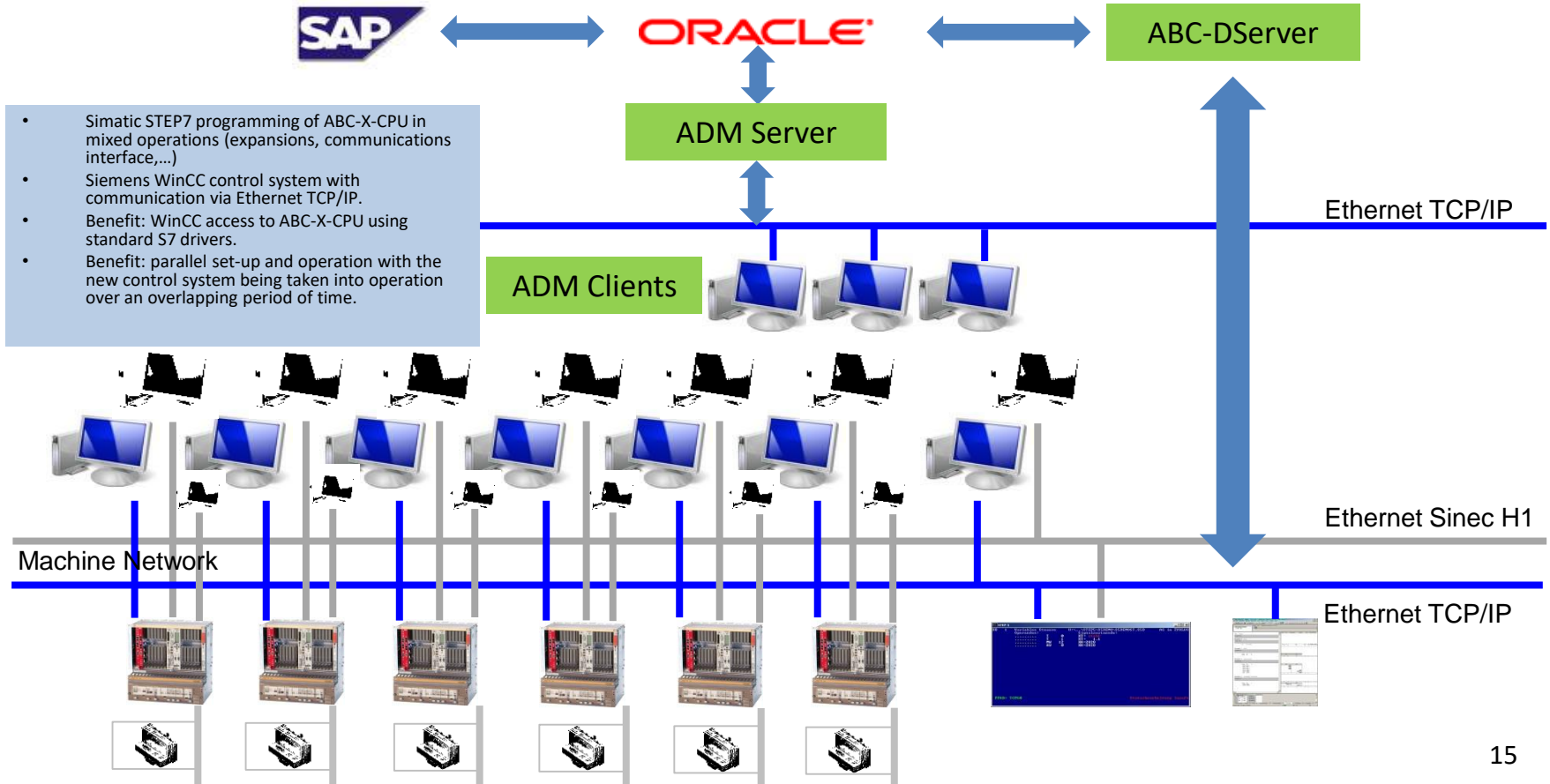
Step 2.2



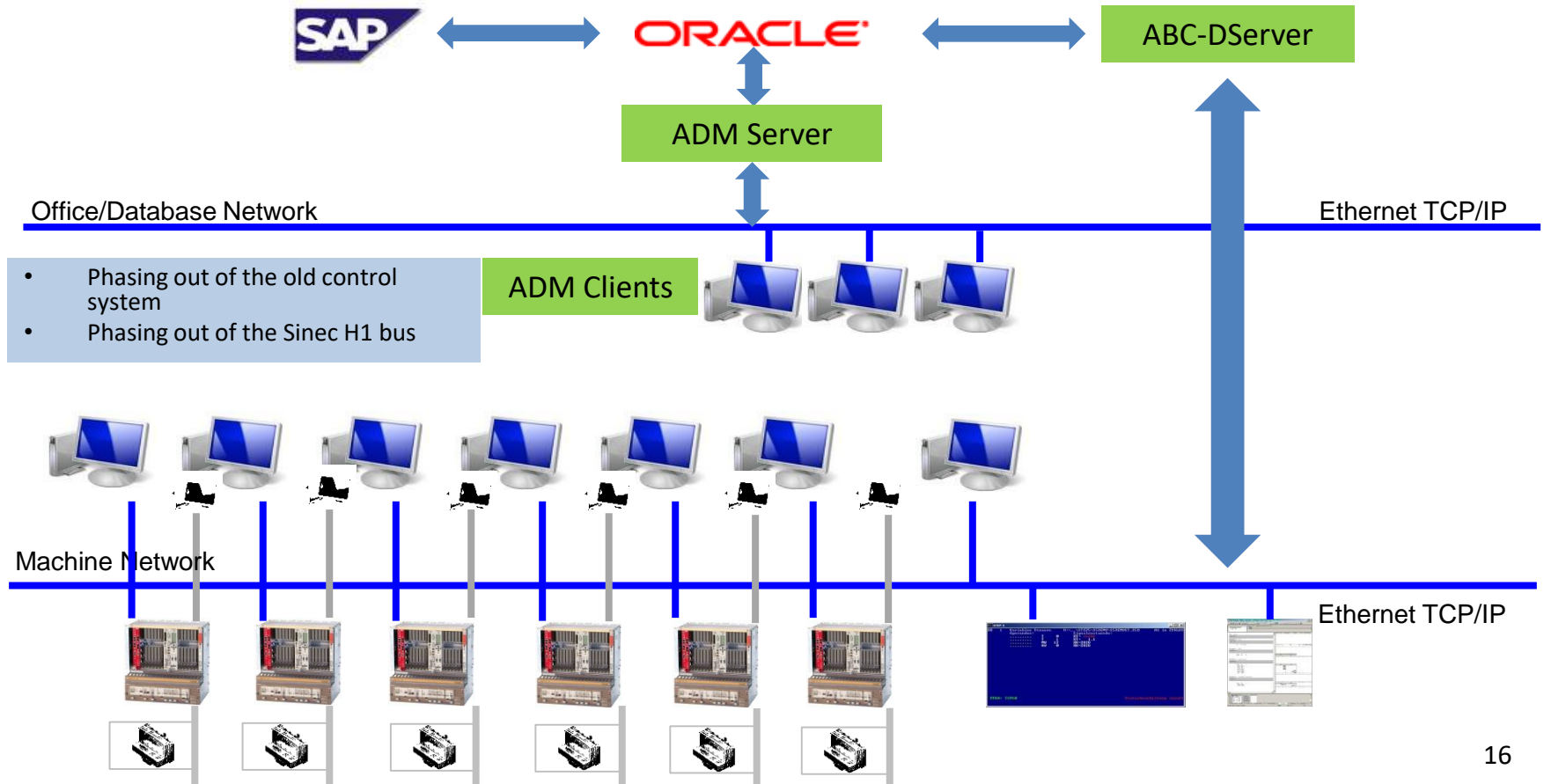
Step 2.3



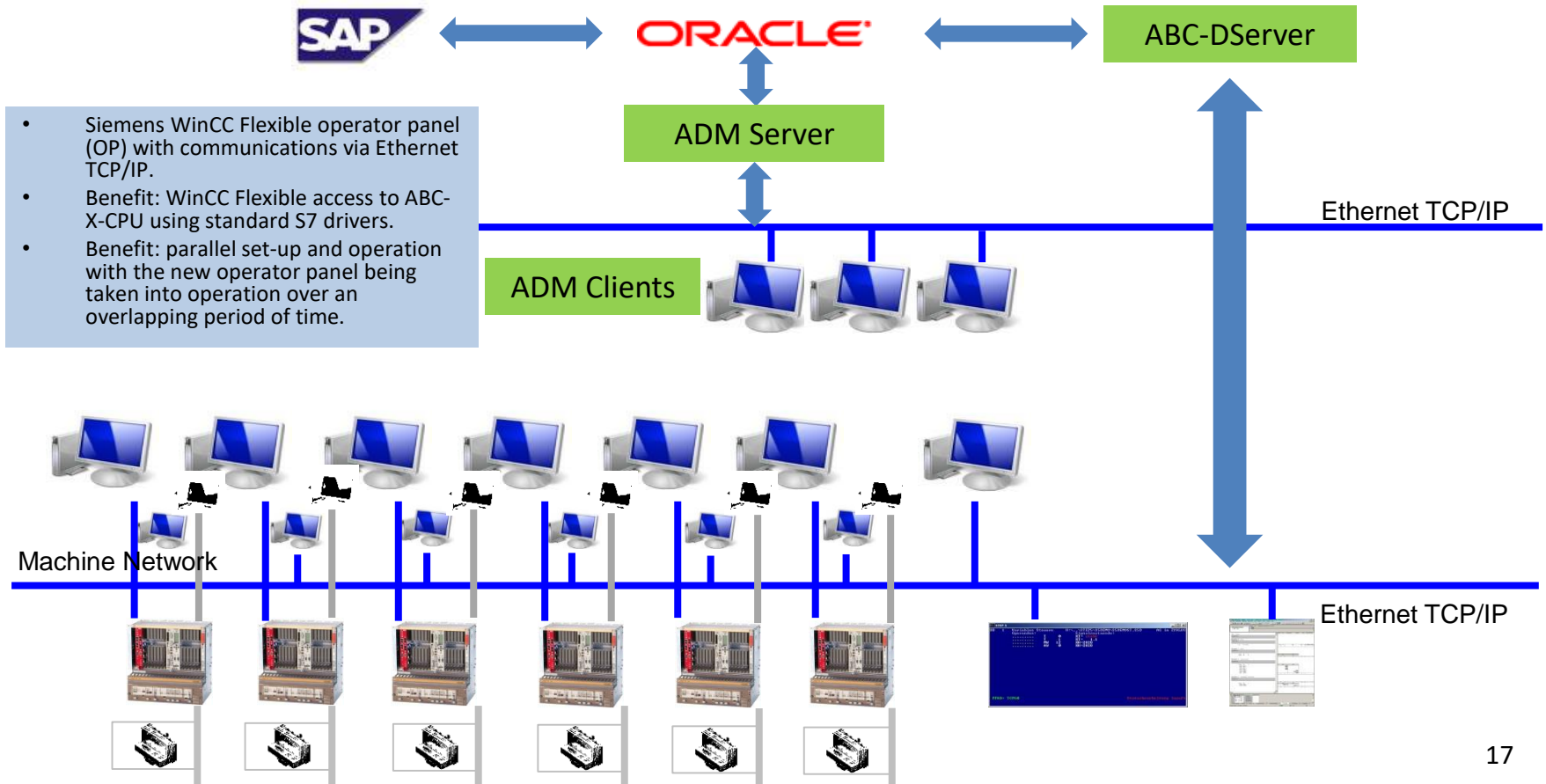
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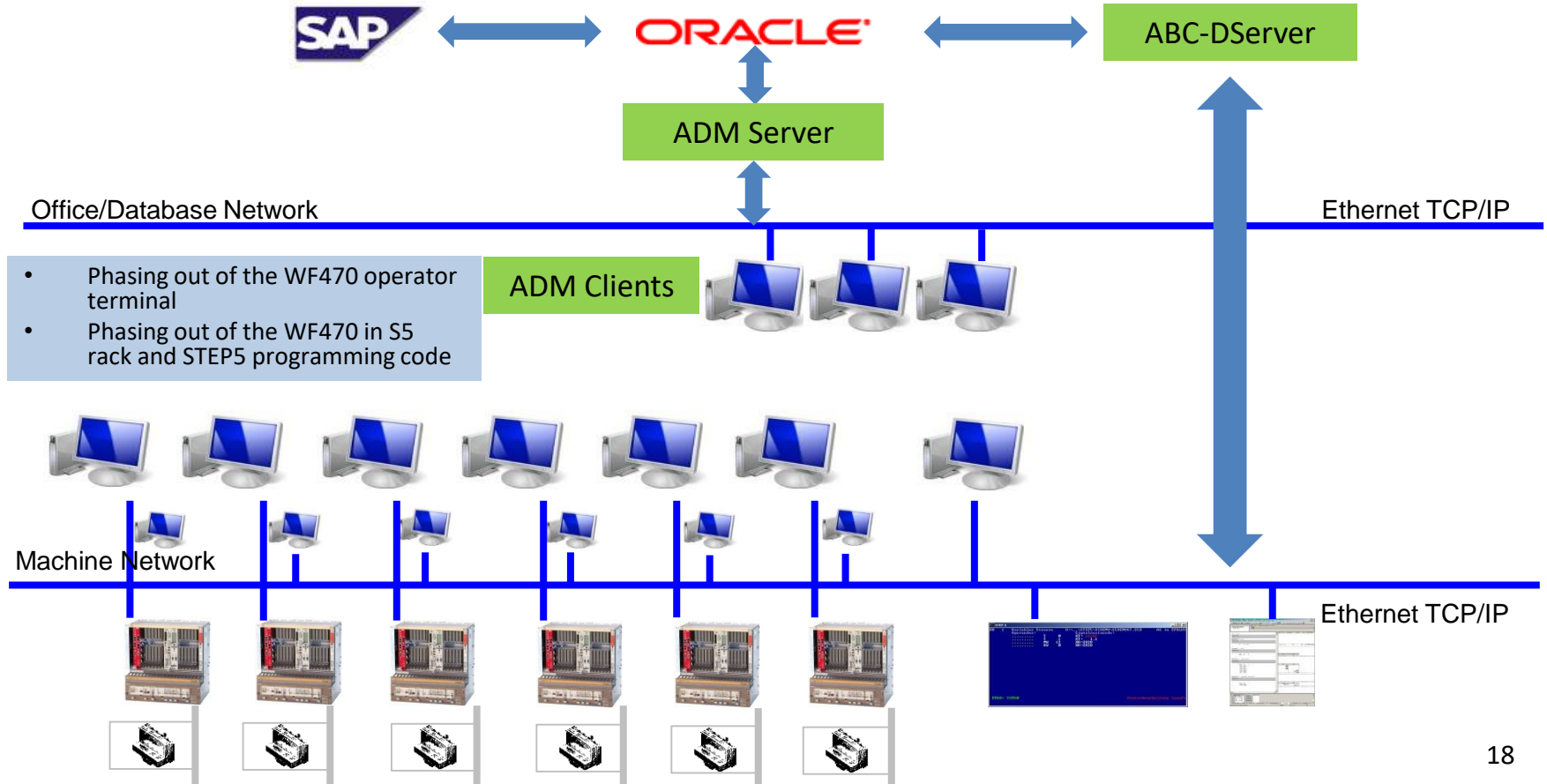
Step 2.5



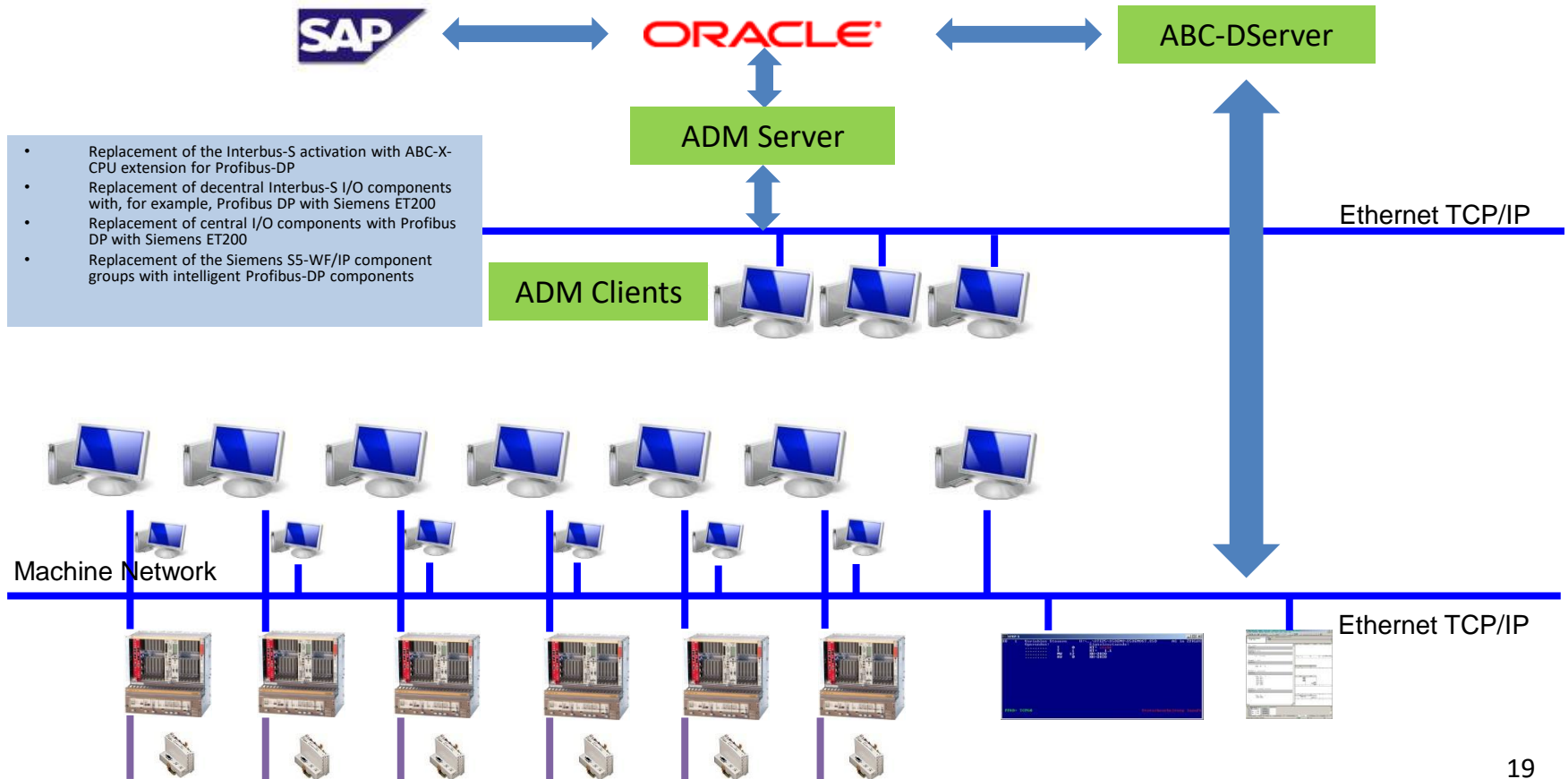
Step 2.6



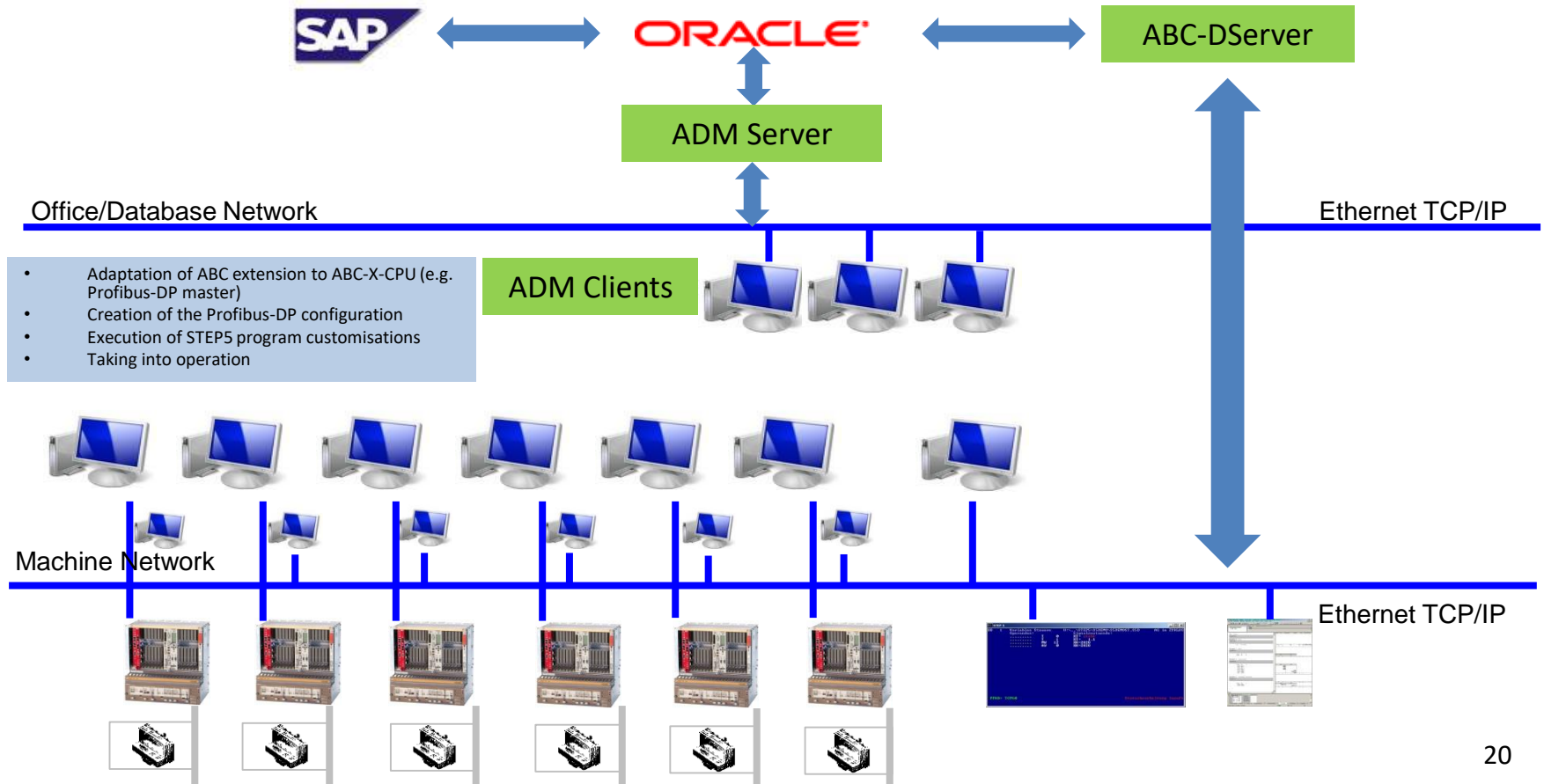
Step 2.7



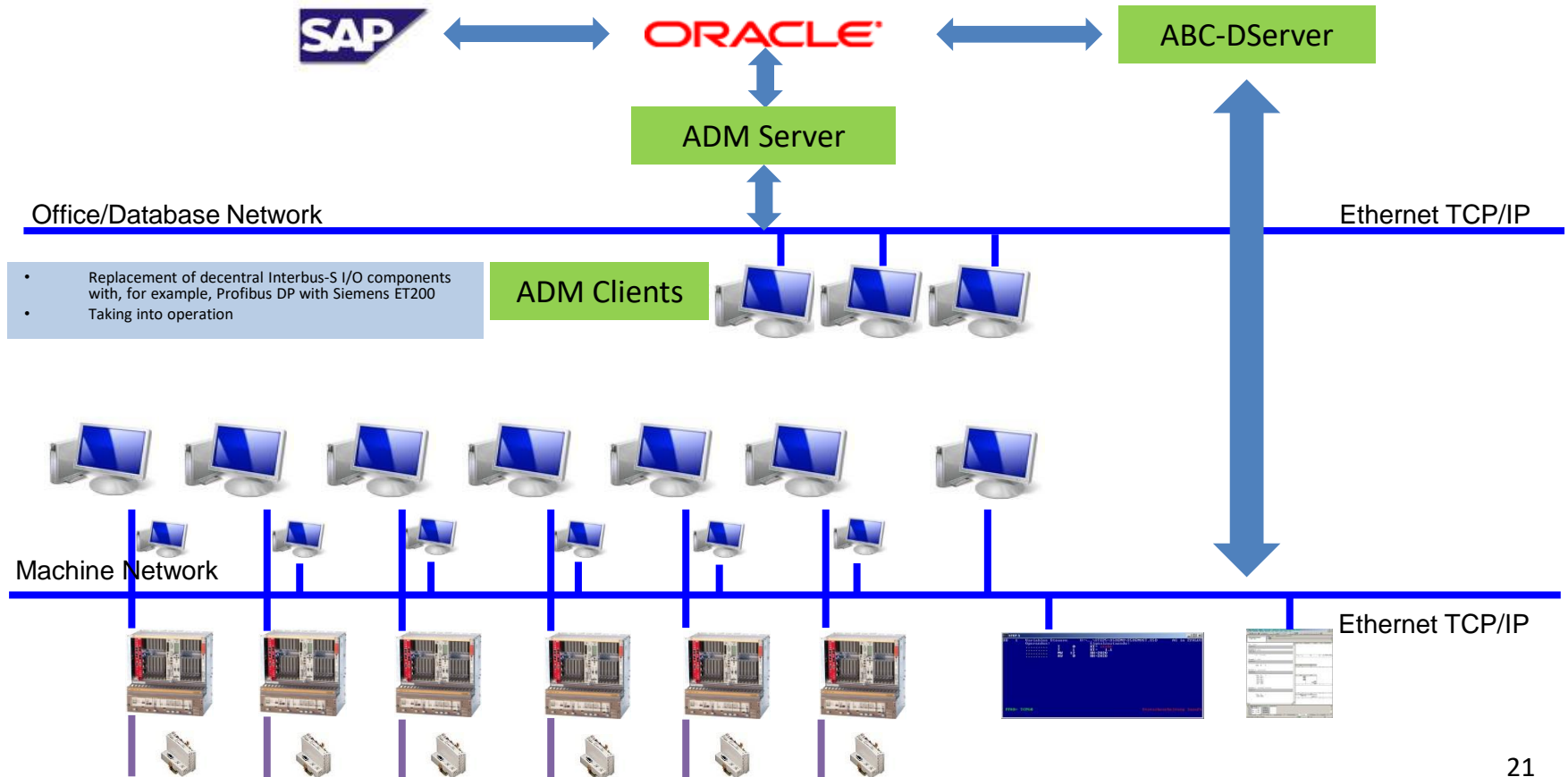
3. Modernisation field bus level



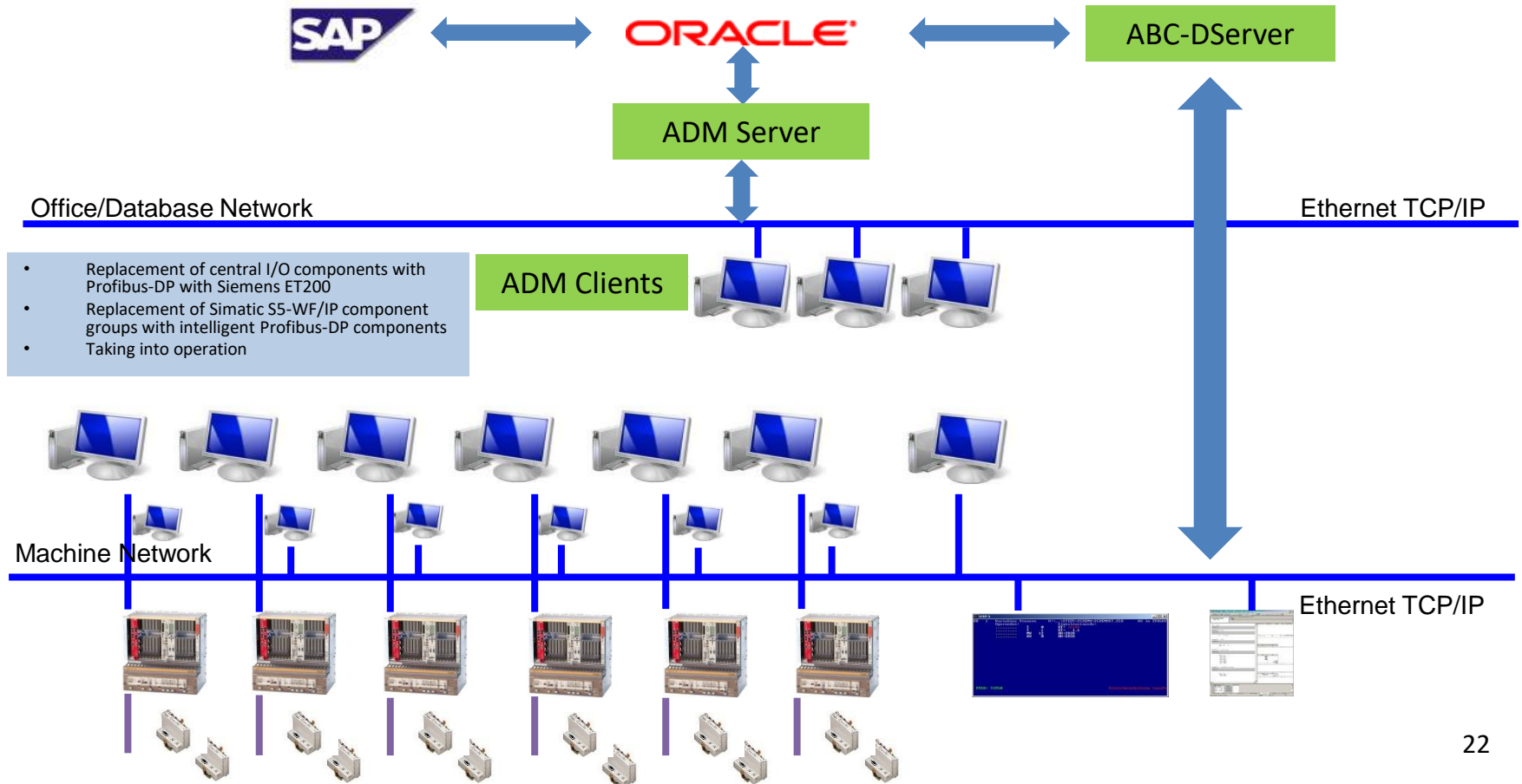
Step 3.1



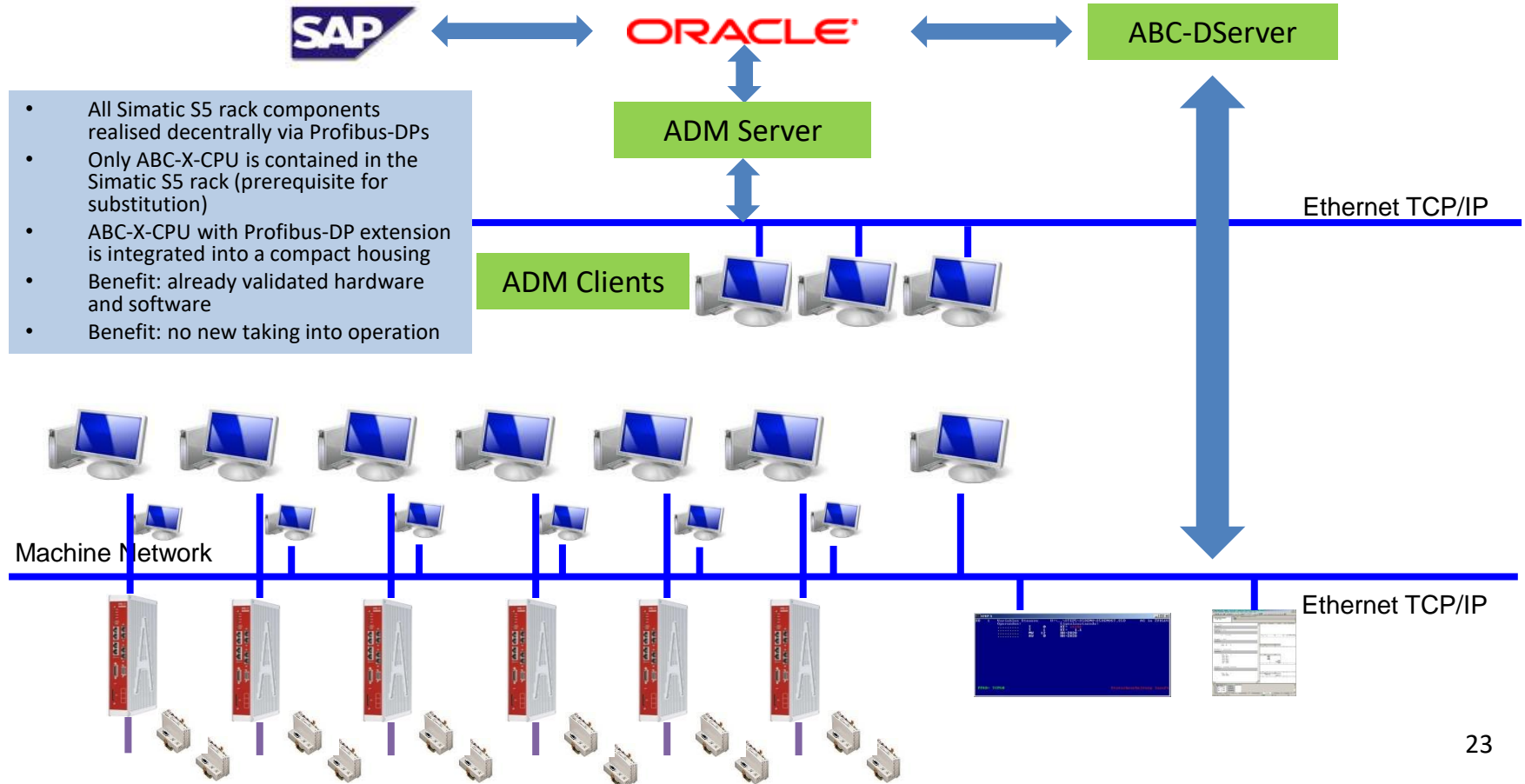
Step 3.2



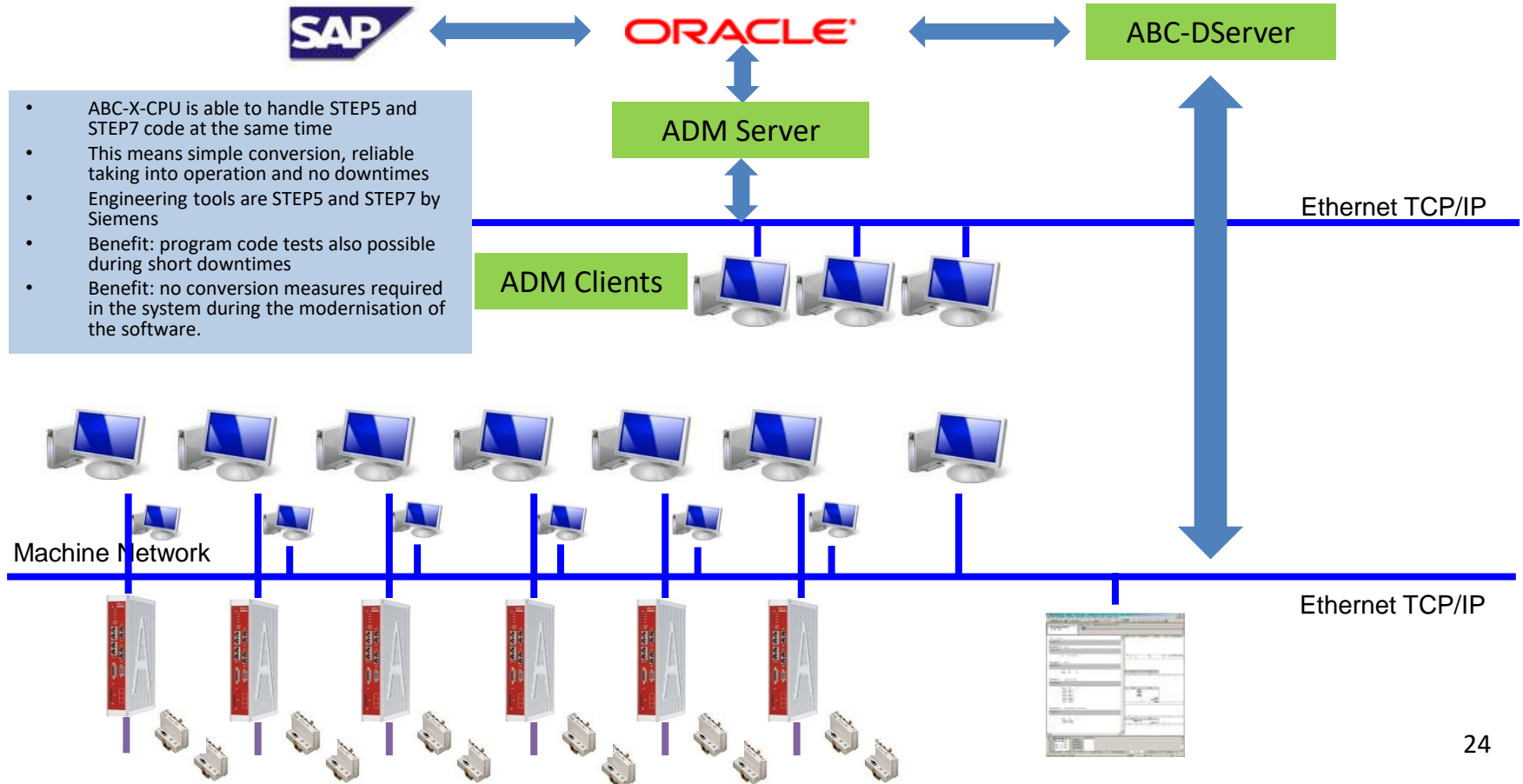
Step 3.3



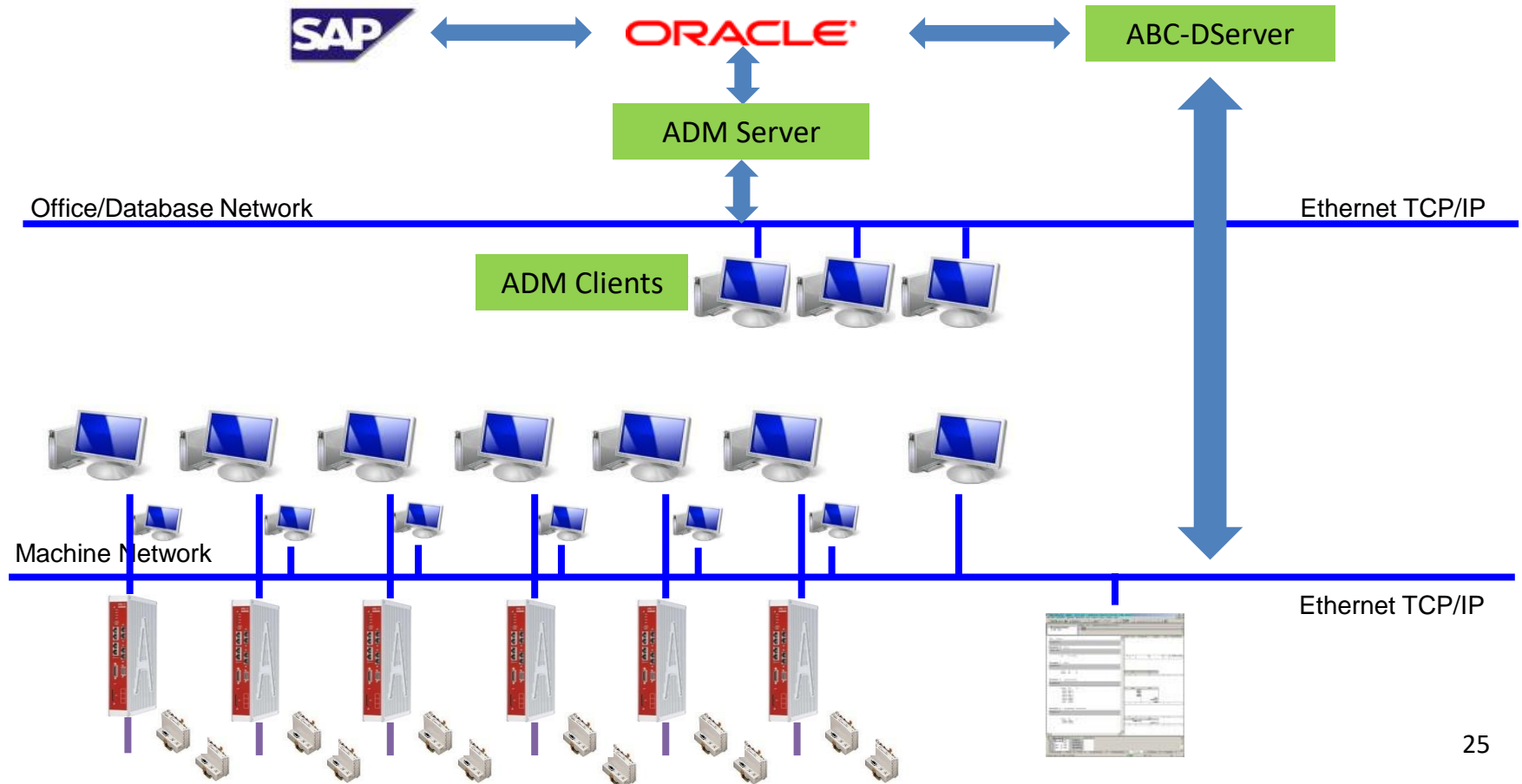
4. Modernisation Simatic – S5 rack



5. Modernisation STEP 5 - software



6. Modernisation implemented in hardware and software

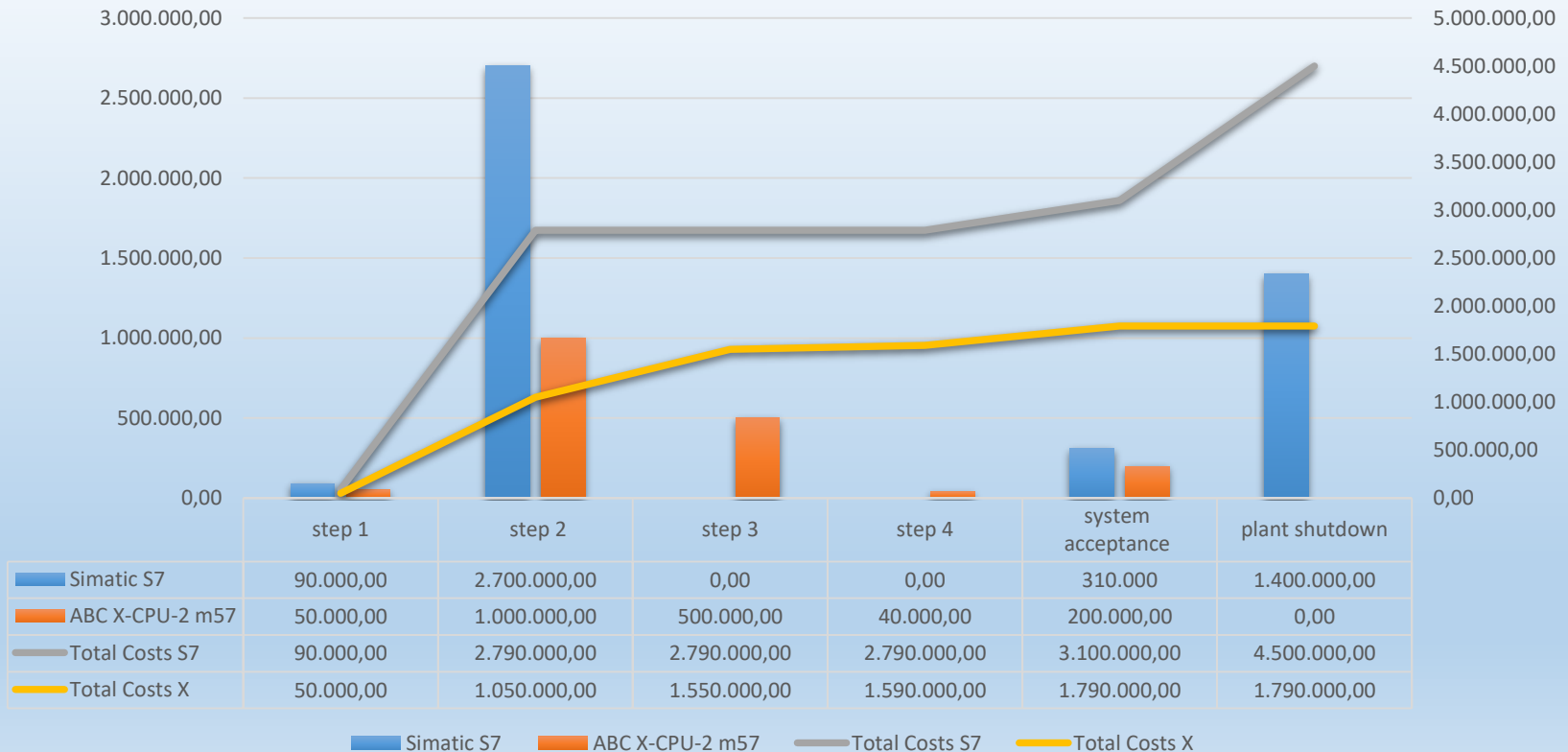


ABC scope of performance

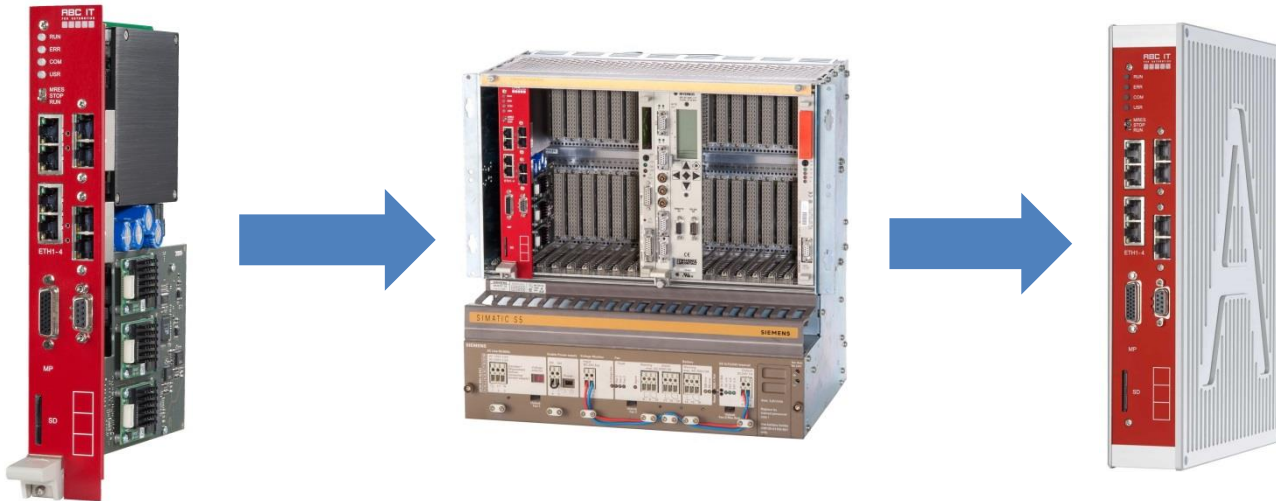
- ✓ System expanded by an analysis and data-management system
 - ✓ ABC IT will assume the handling of the entire project
- ✓ Modernisation of the Simatic S5 controls
 - ✓ The expansion and modernisation periods and times will be defined by the customer
 - ✓ ABC IT will carry out the planning and realisation while accompanying the customer during the modernisation – if desired
 - ✓ ABC IT will work with the system builder / system integrator associated with the customer – if desired
 - ✓ ABC IT will assume the entire handling of the modernisation process – if desired

Cost example

Retrofit variant 3



ABC components



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