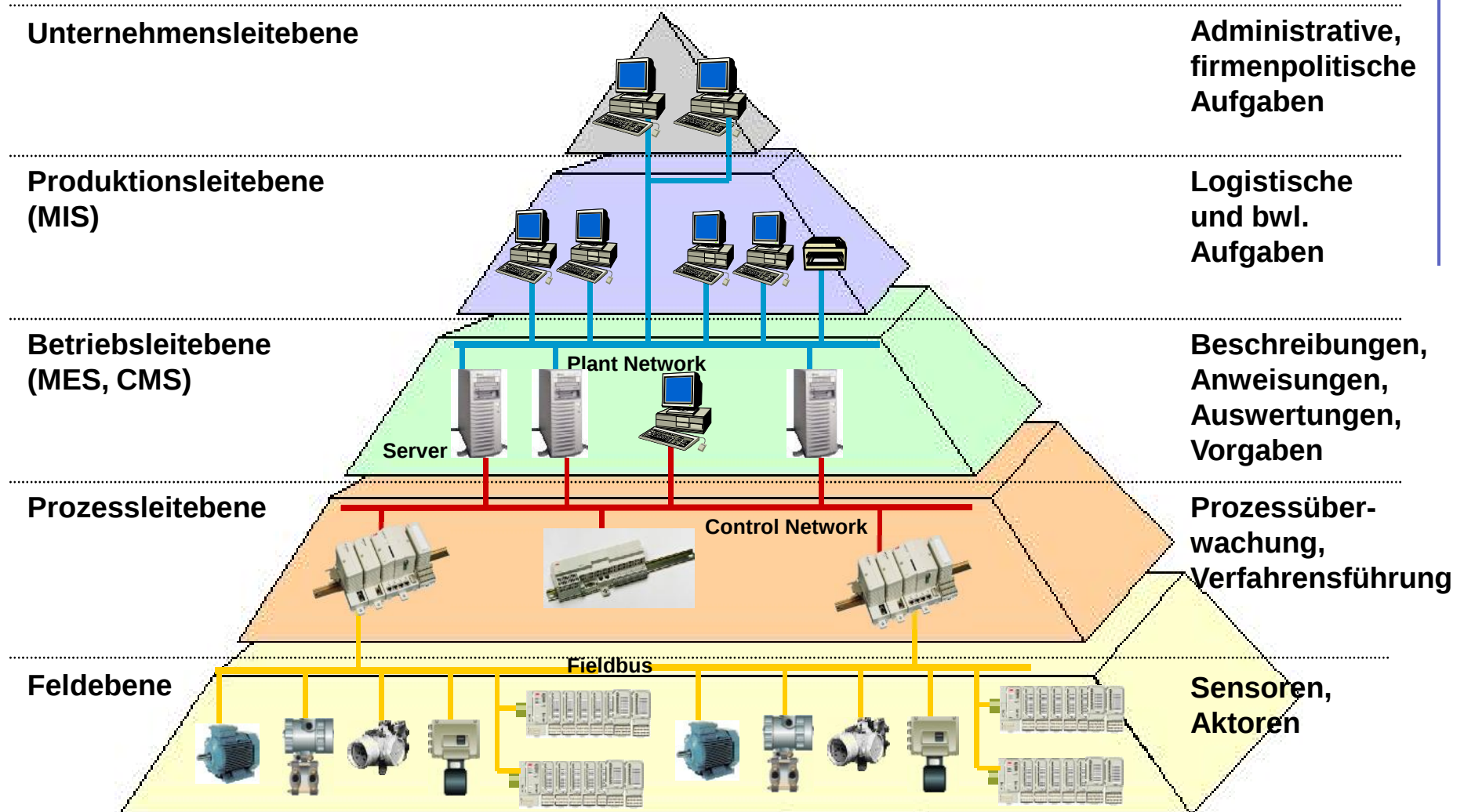


Anlagenmodellierung

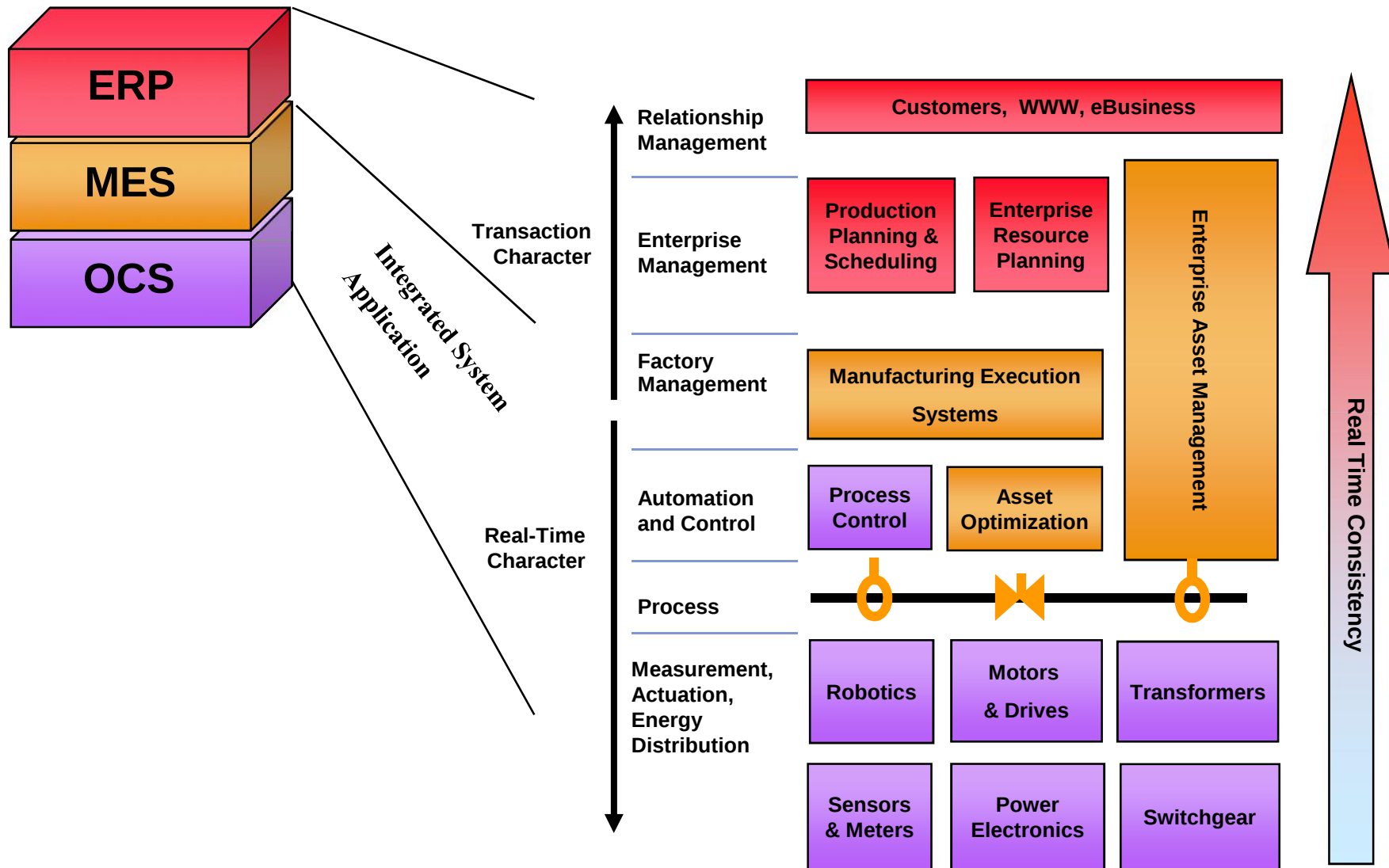
Informationsstrukturen in der AT



Entwicklung der Integrationstiefe

	1995	2000	heute
Relationship Management	Vielfältige, proprietäre Software Plattformen	Vielzahl von - Systemen, - Anwendungen, - Datenbanken, - Datenspeichern, - proprietären Datenformaten, - Protokollen, - Benutzeroberflächen, - Navigationshilfen, - Passwörtern, - Bildschirmen, Tastaturen und Terminals... - Spezialisten	
Unternehmens-Management	Traditionelle ERP Systems		
Anlagen Management	Manufacturing Execution Systems		
Leitebene	Traditionelle Leittechnik		
Feldgeräte & Antriebe	Einzelverdrahtete Verbindungen		
Trends	Isolierte Software-Inseln	Teil – Integration mit Schnittstellen	Voll - Integration

Vertikale Integration



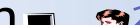
Was heißt Integration?

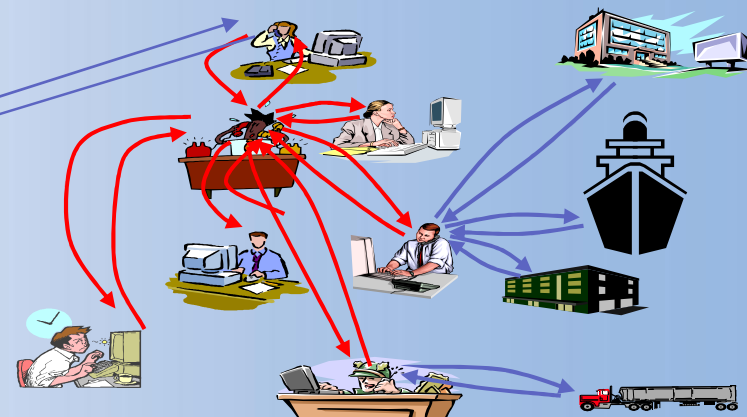
- Informationsverfügbarkeit

- Am richtigen Platz
- Zur rechten Zeit
- Unabhängig von der Quelle



■ Informationsintegrierbarkeit

- Die richtige Information 
- In der richtigen Kombination
- Grenzenlos integriert in Echtzeit



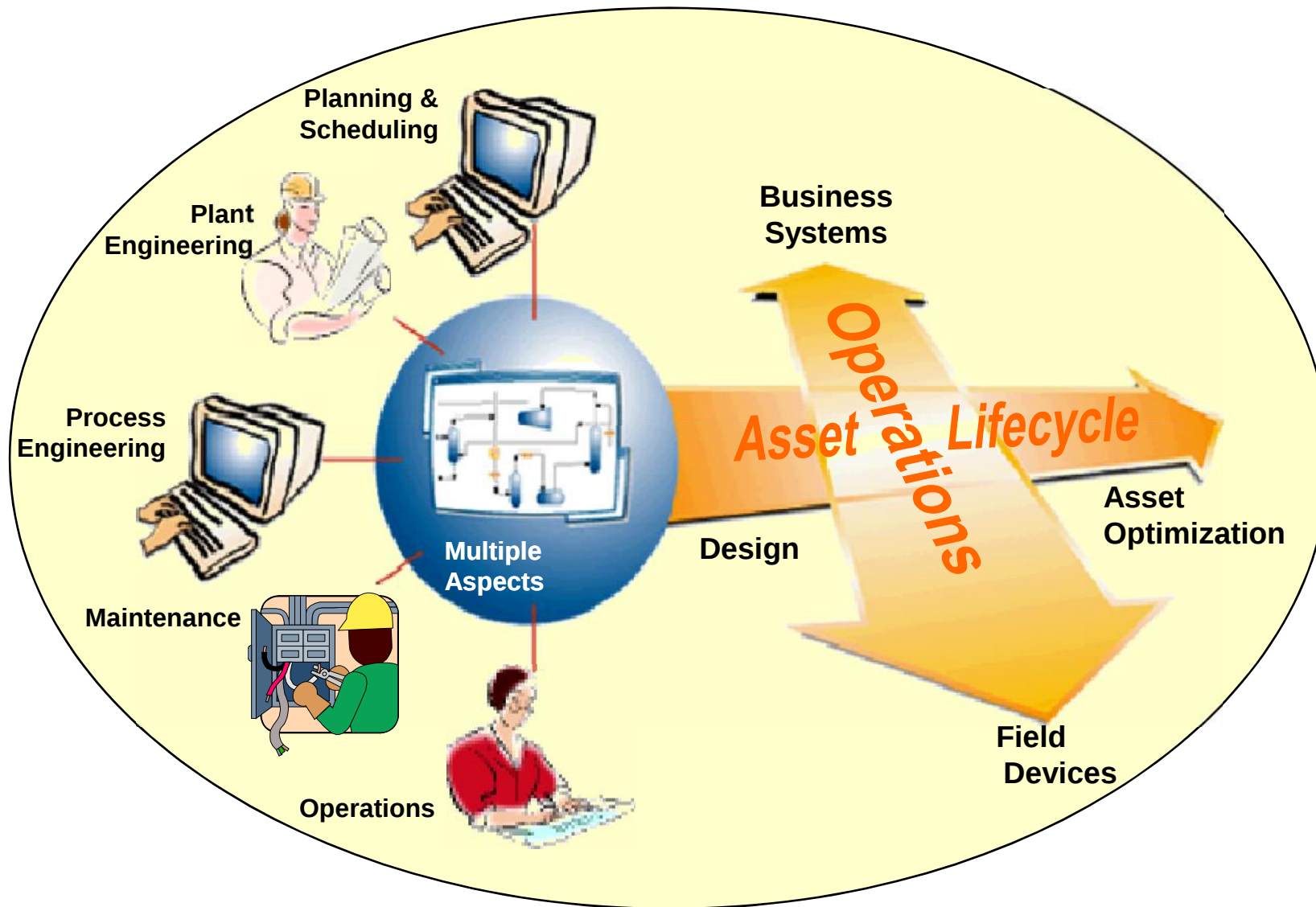
Bill Gates Said ...

*"We have an immense amount to do in graphics, in video, and in bringing a **unified object approach to browsing and storing data**. It's a deep problem in computer science. A deep, deep problem. We have too many stores of data today. We have file systems, message systems, directory systems, database systems and all sorts of different software that optimizes all those things. That is not going to cut it...*

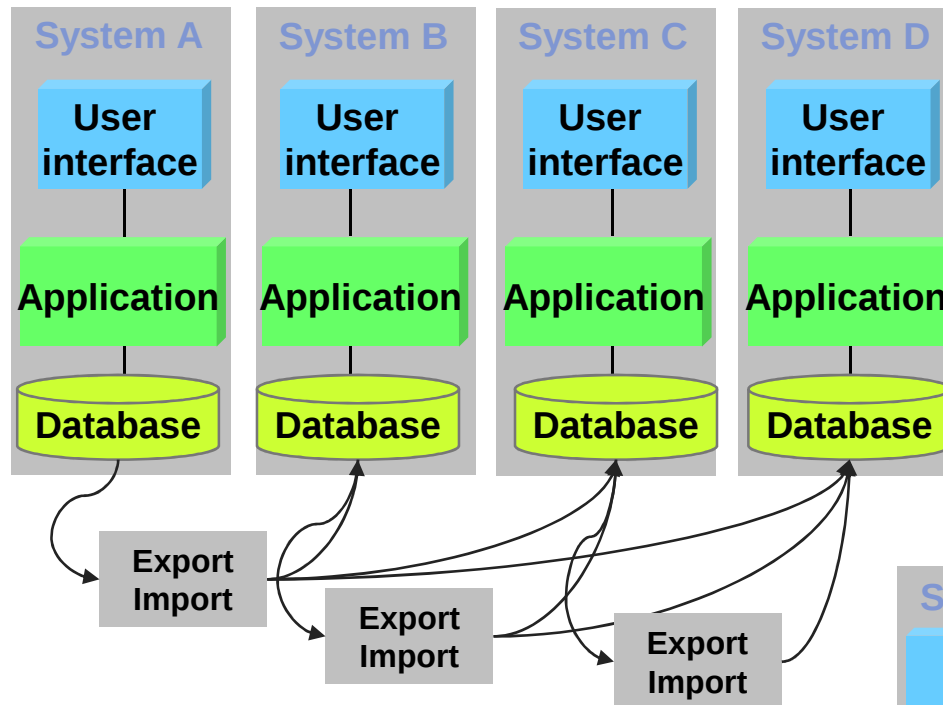
*...Users are going to need **one integrated thing that hides all those differences**."*

-- Bill Gates 1997 (Giants, ISBN 0-07-032934-6)

Zusammenführen der Information

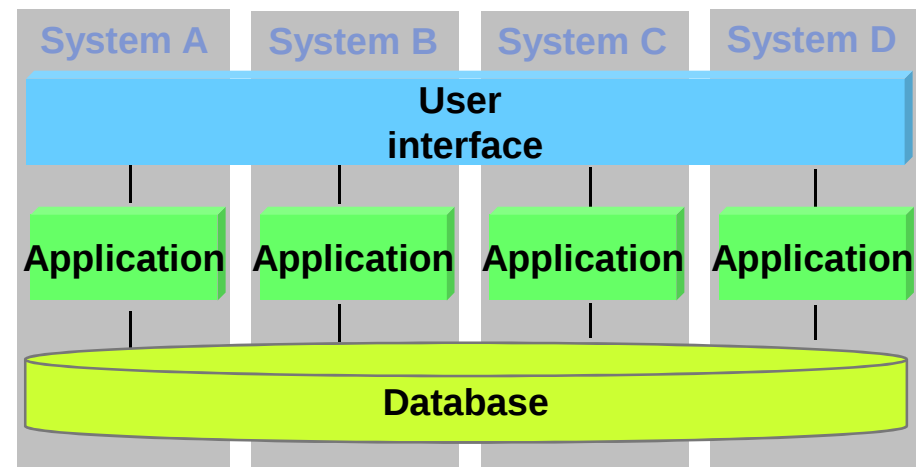


Konventionelle Systemarchitektur

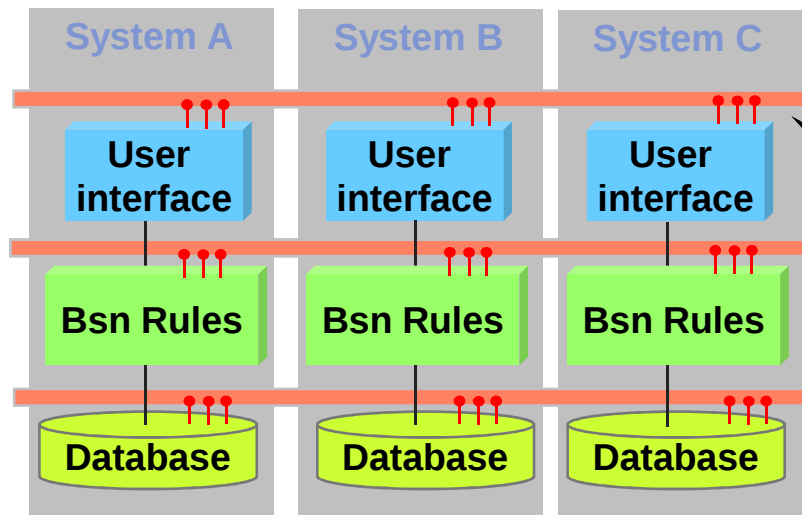


„Daten Inseln“

Zentrale Datenbank



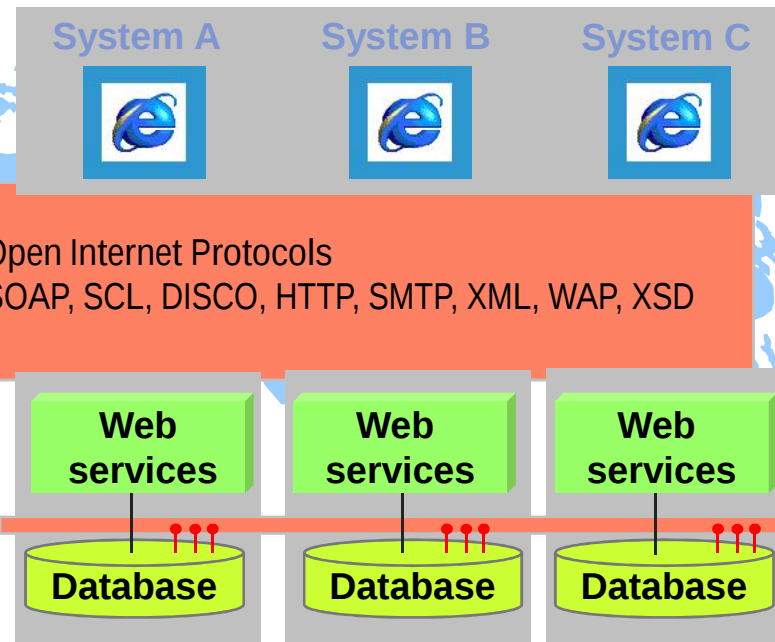
Moderne Systemarchitektur



Co-operative Systeme

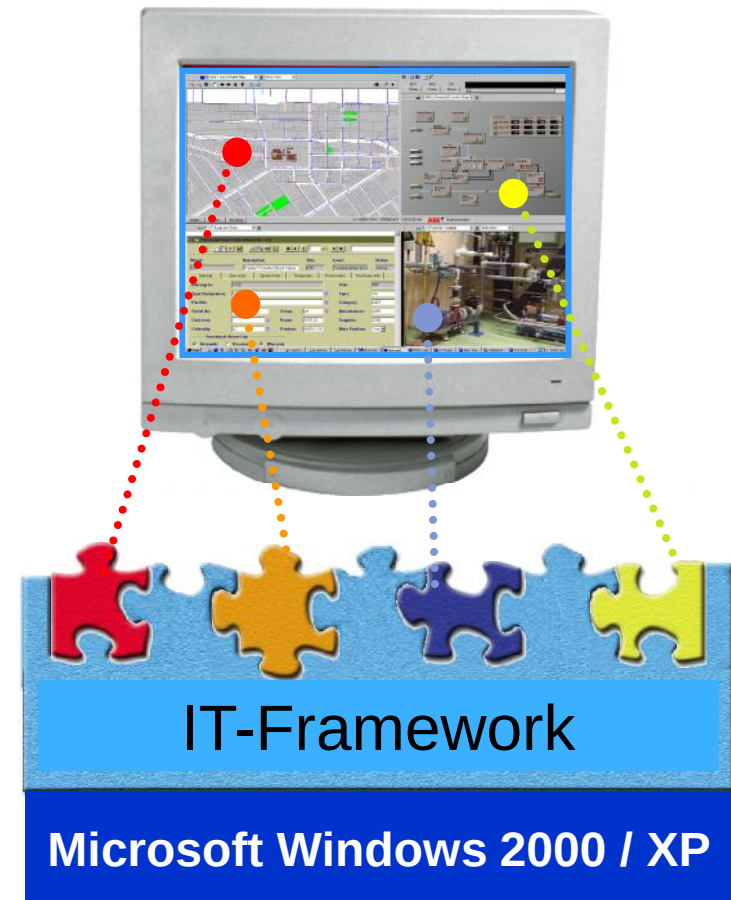
Interfaces

Web-fähige Systeme



Systemarchitektur aus Anwendersicht

- Not just another OCS ...
- Seamless user and software environment
- Intuitive information handling
- One environment
 - Design
 - Operation
 - Maintenance
- ... but an integration platform for Enterprise Wide Information Integration



Aspect Objects



- Temperatur
- Blutdruck
- Atmung
- Anamnese
-

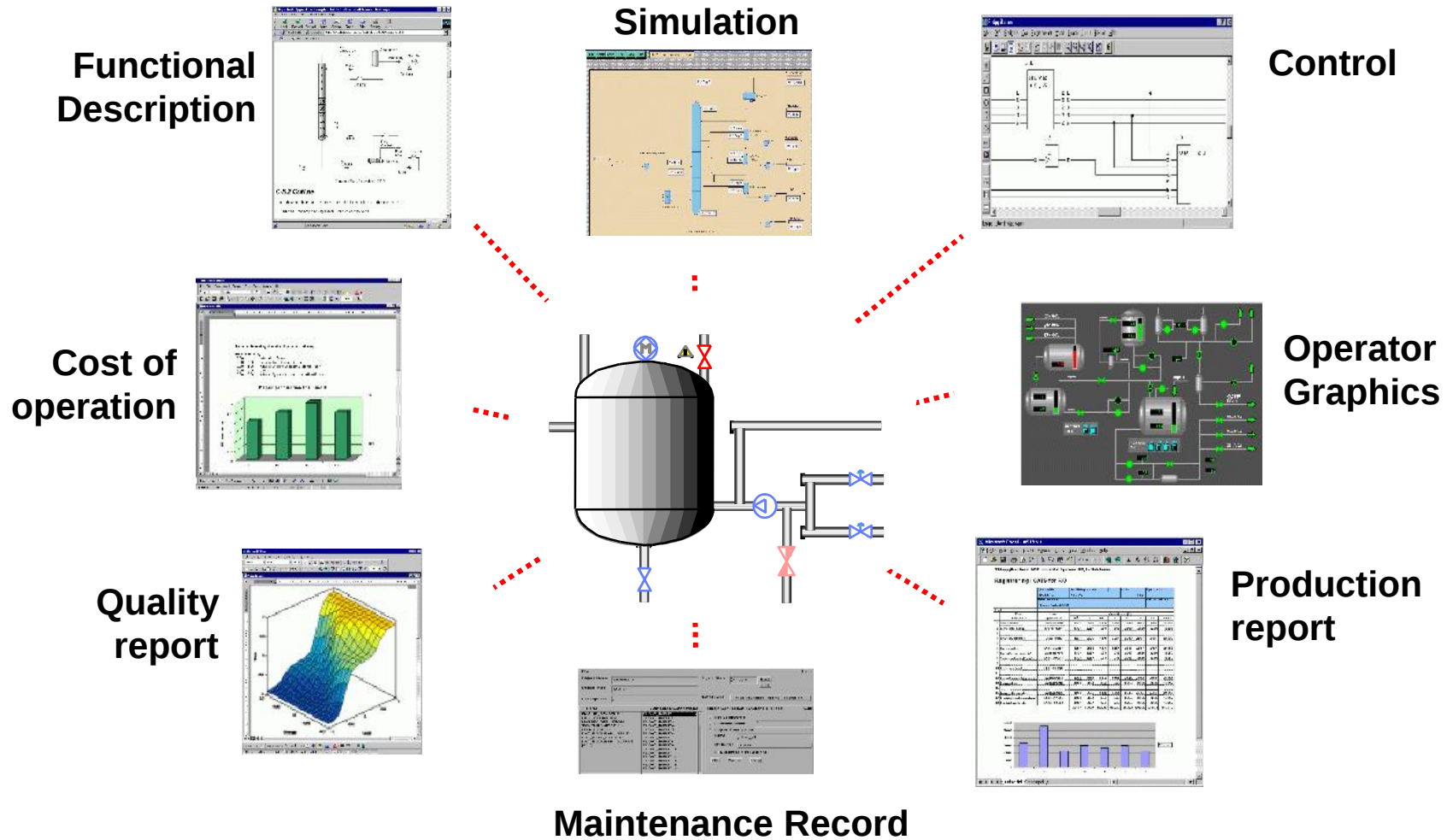
= Objects =



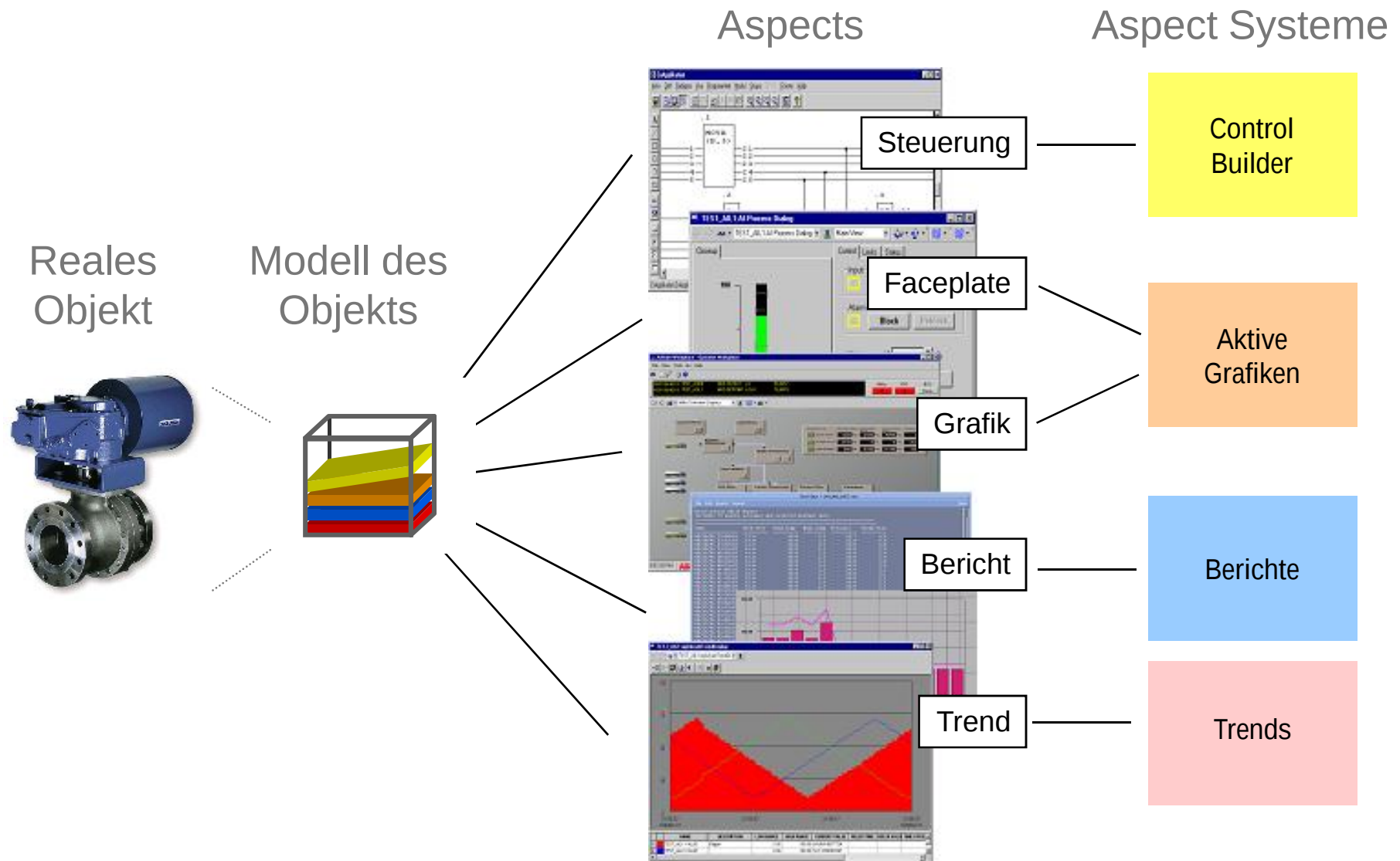
= Aspects =
(Characteristics)

- Konfiguration
- Effizienz
- Kosten
- Wartungs Status
-

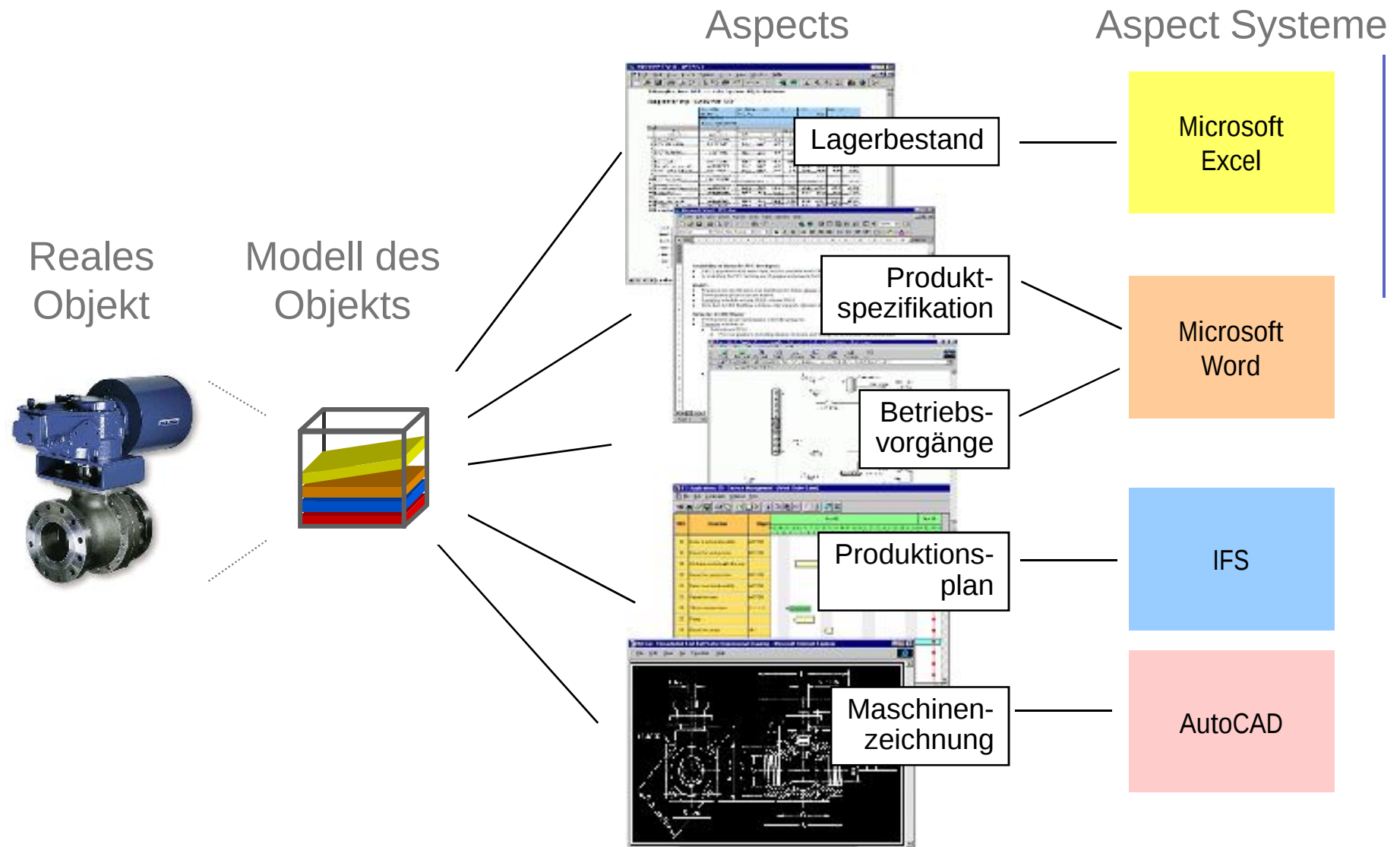
Zusammenführen der Aspekte



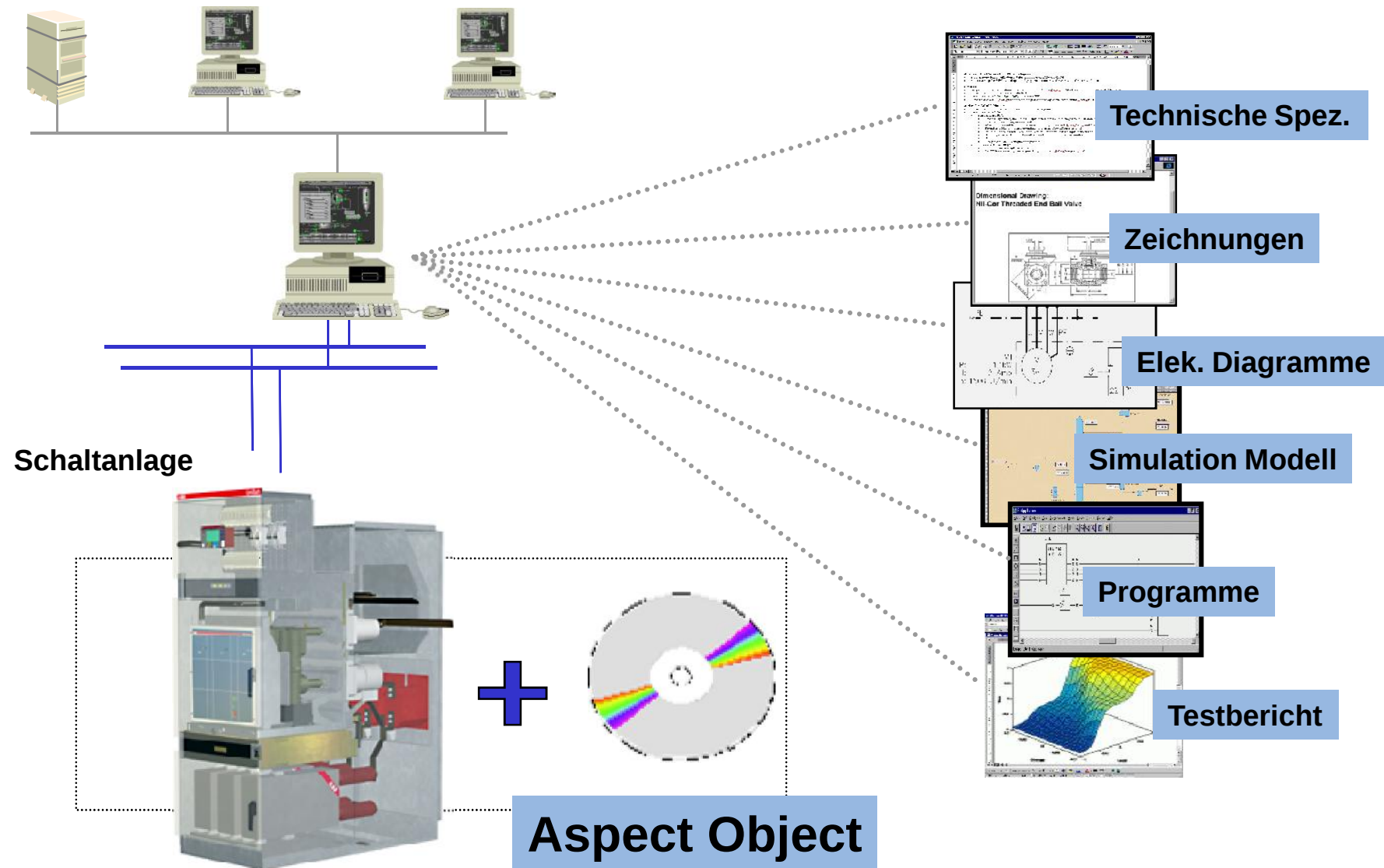
Integrationskonzept



Herausforderung für die Industrie



Beispiel – IT-fähiger Produkte



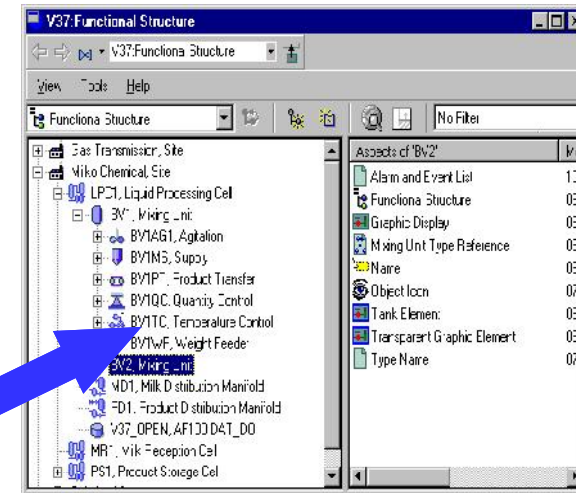
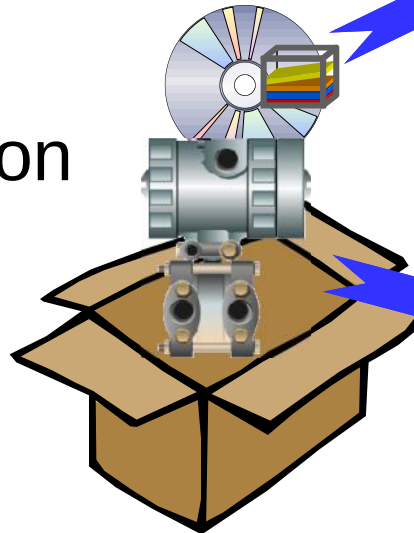
Produkt enthält alle Aspekte

- Vollständiges Produkt enthält

- Software
- Hardware
- Information

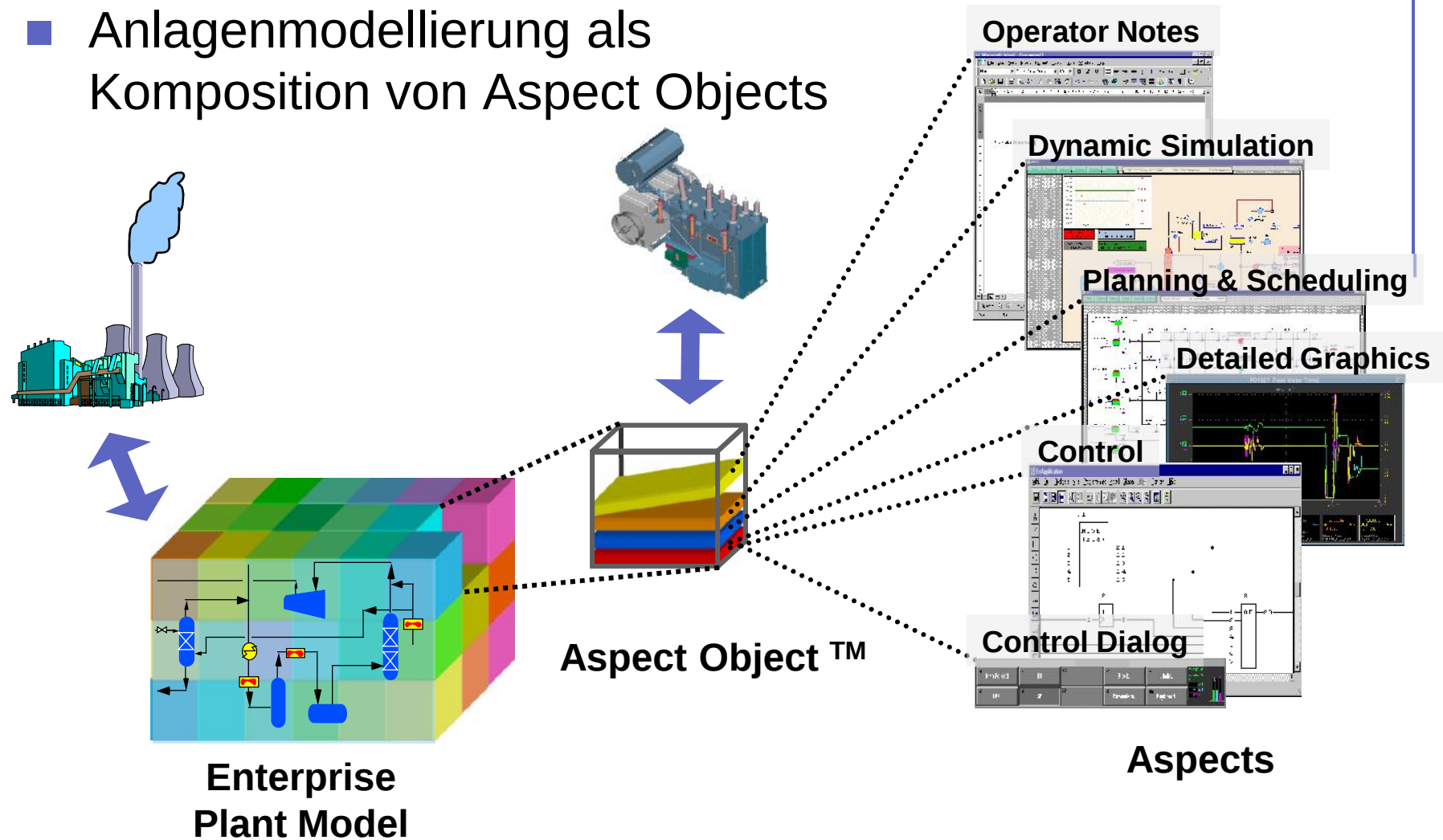
- Einfache Installation

- Plug & Play

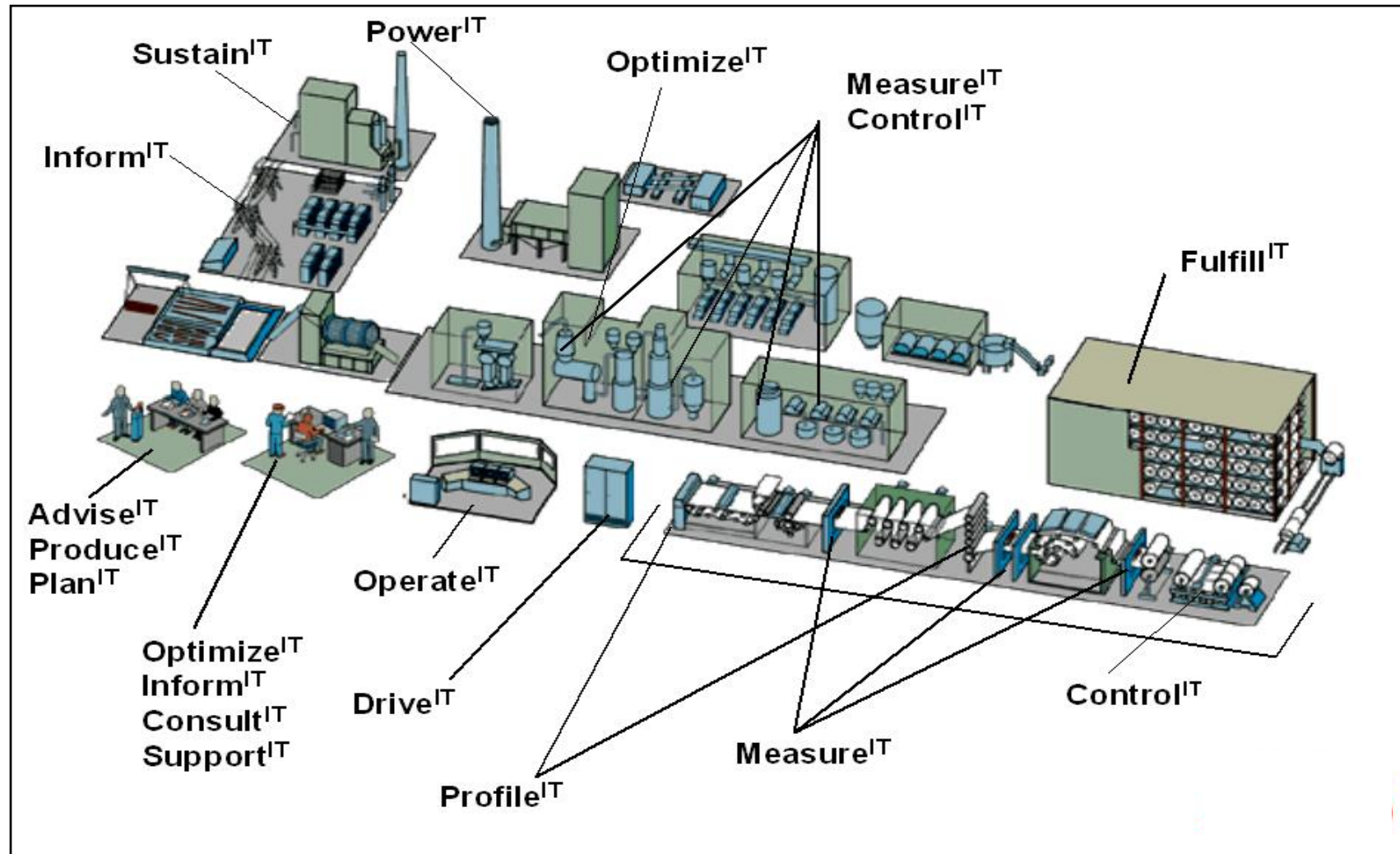


Anlagenmodell

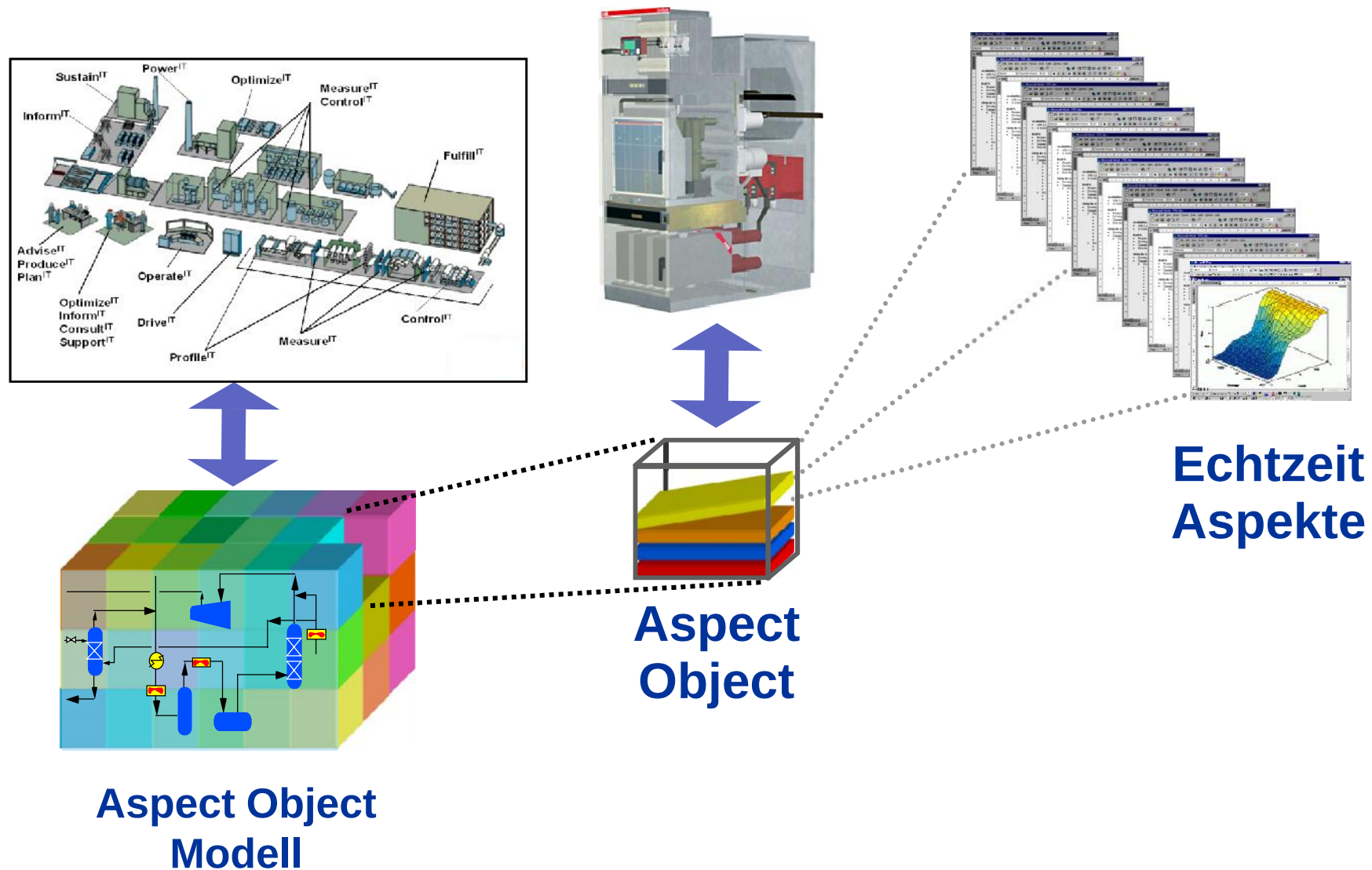
- Anlagenmodellierung als Komposition von Aspect Objects



Horizontale Integration

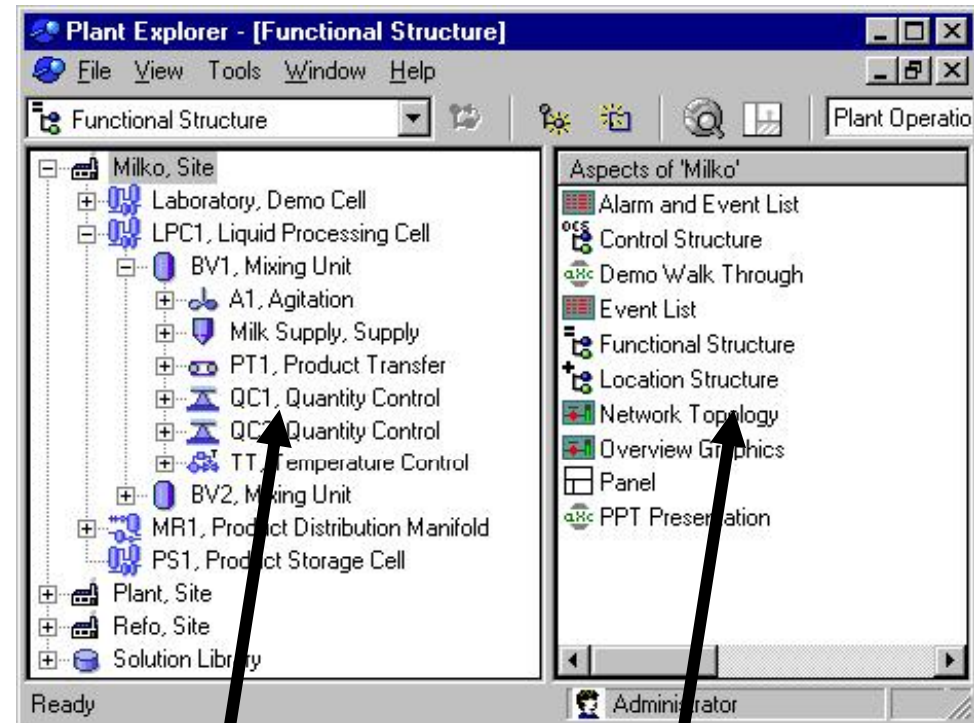


Objektorientierte Navigation



Objektverwaltung - Plant Explorer

- In the Plant Explorer you can maintain, configure and operate your plant
 - Aspect Objects and Aspect
- Build and configure your plant model
- A very easy to use Microsoft Explorer like user interface, extended with functionality for the automation industry



Aspect Objects
(Folders)

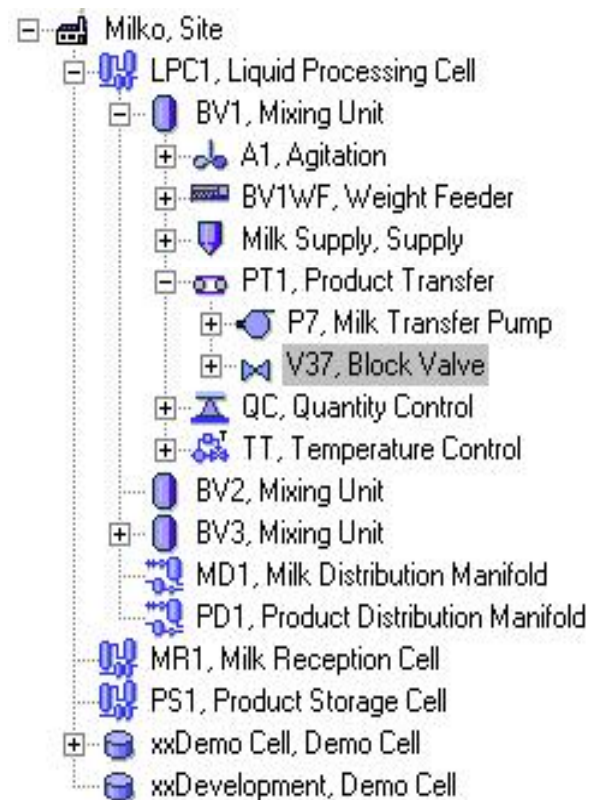
Aspects
(Files)

Verschiedene Sichten auf eine Anlage

■ Object Structures

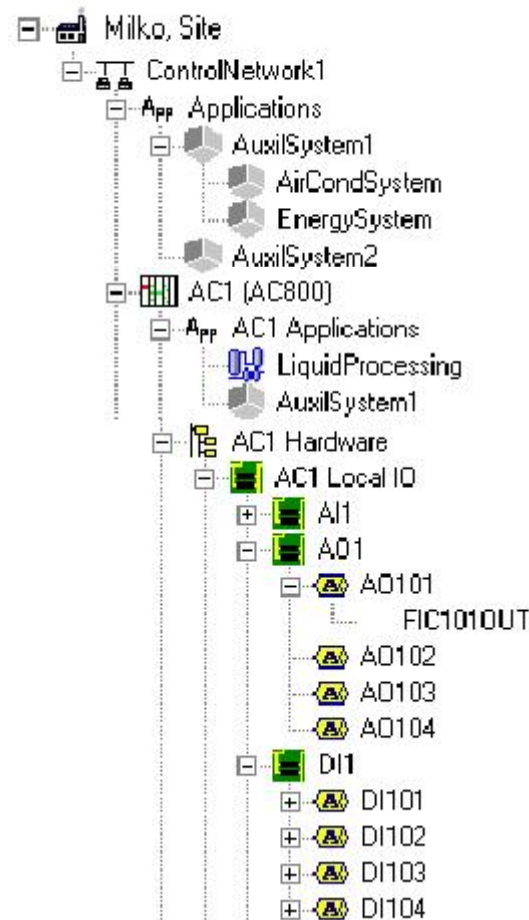
Functional Structure

Process point of view



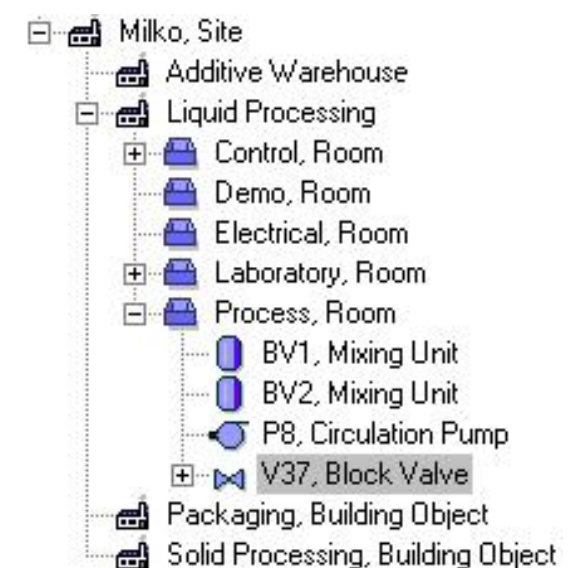
Control Structure

Network Topology



Location Structure

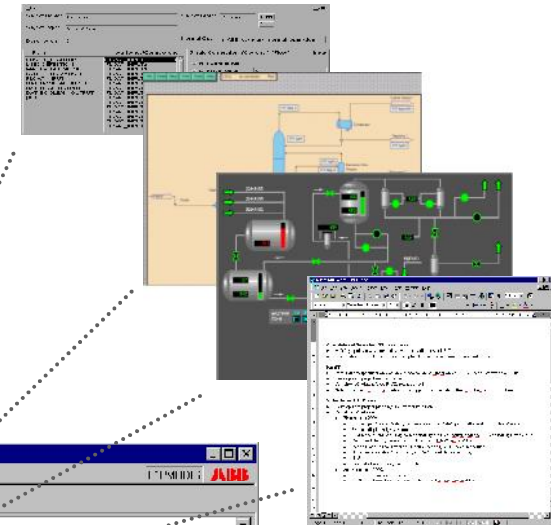
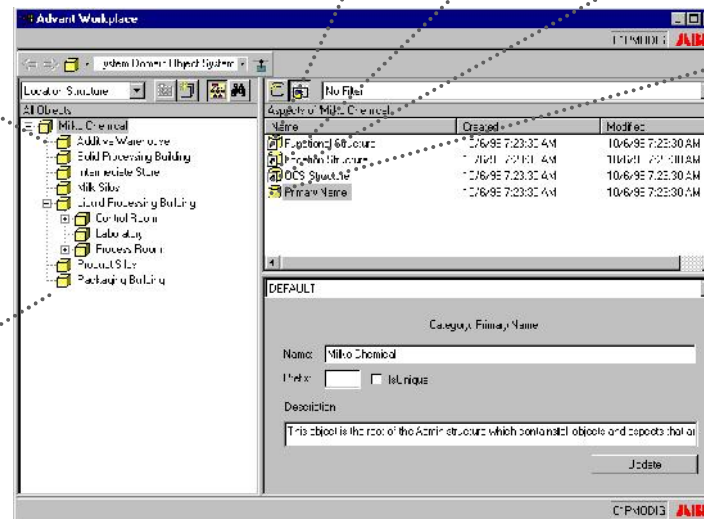
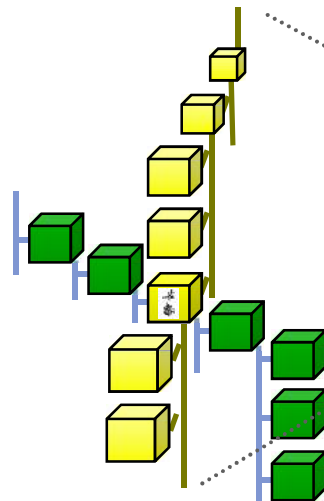
Physical layout



Navigation mit Aspect Objects™

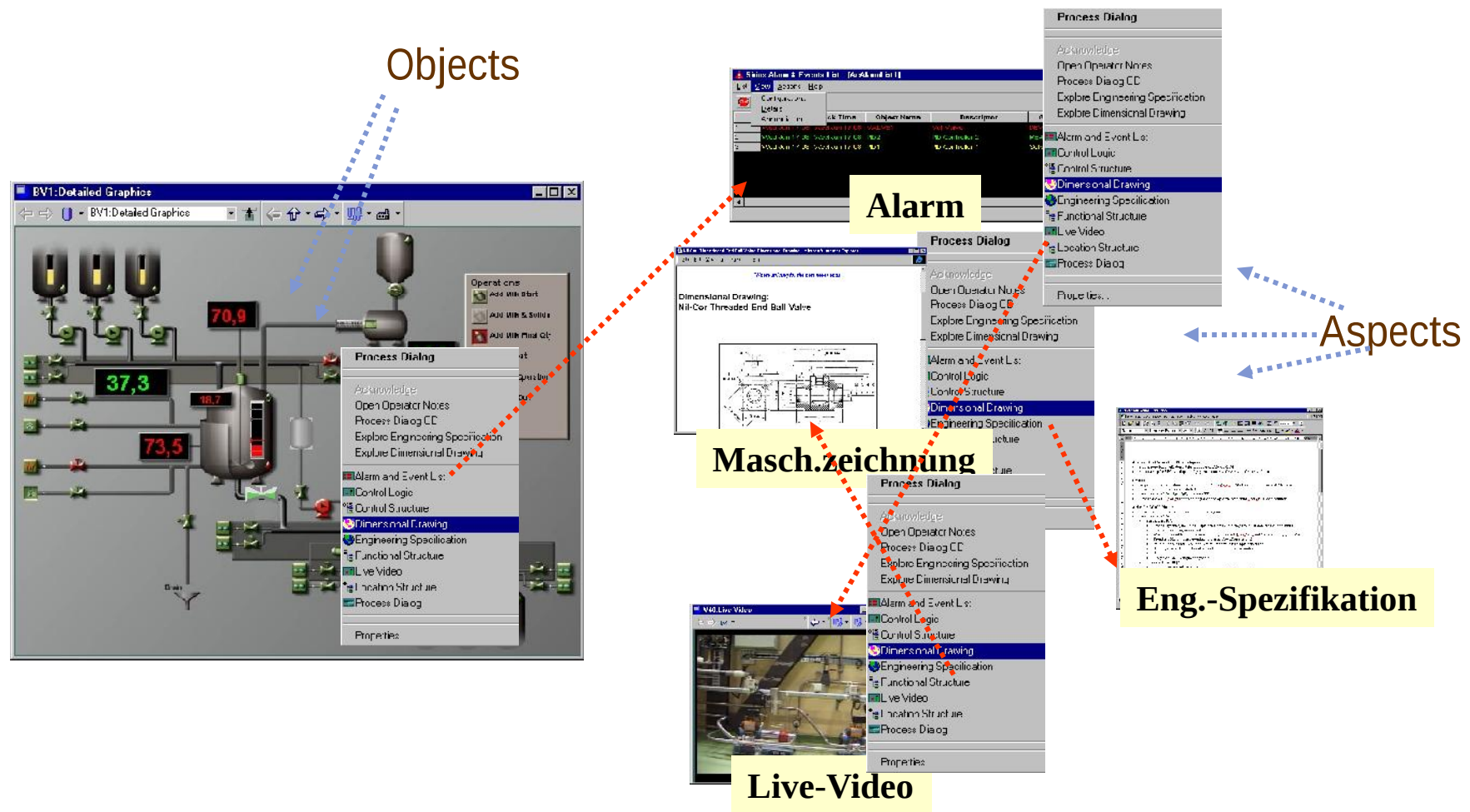
Plant Explorer: Vielseitig strukturierte Navigation und Unterstützung

- Nach Funktion: Betrieb, Service, Wartung . . .
- Nach Ort
- Nach Produkt
- Nach Aufträgen
- ...



Grafische Navigation

Sofortiger Zugriff per Mausklick auf alle relevante Information zu Anlageneinheiten von jedem Kontext aus



Parameter Builder

V37

Function Chart Builder



PlantExplorer



P&I Editor

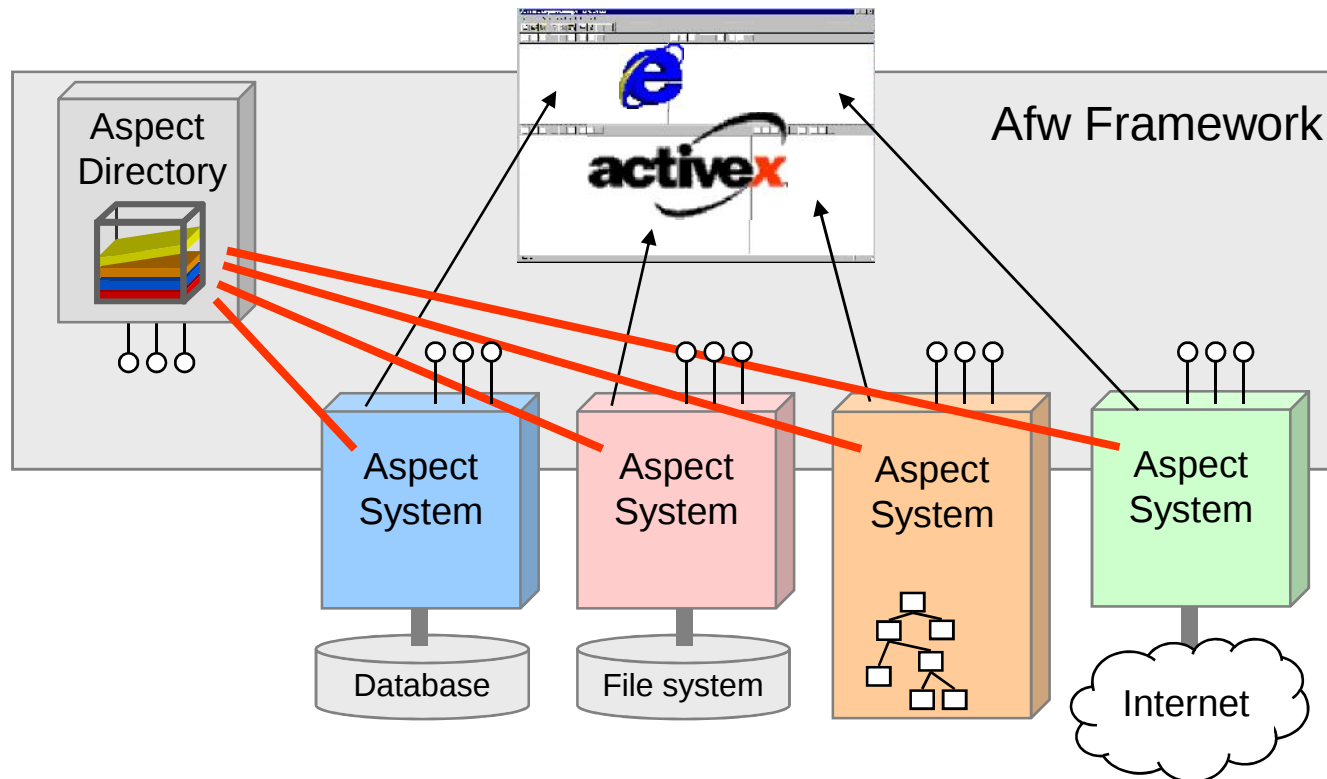


Process Display





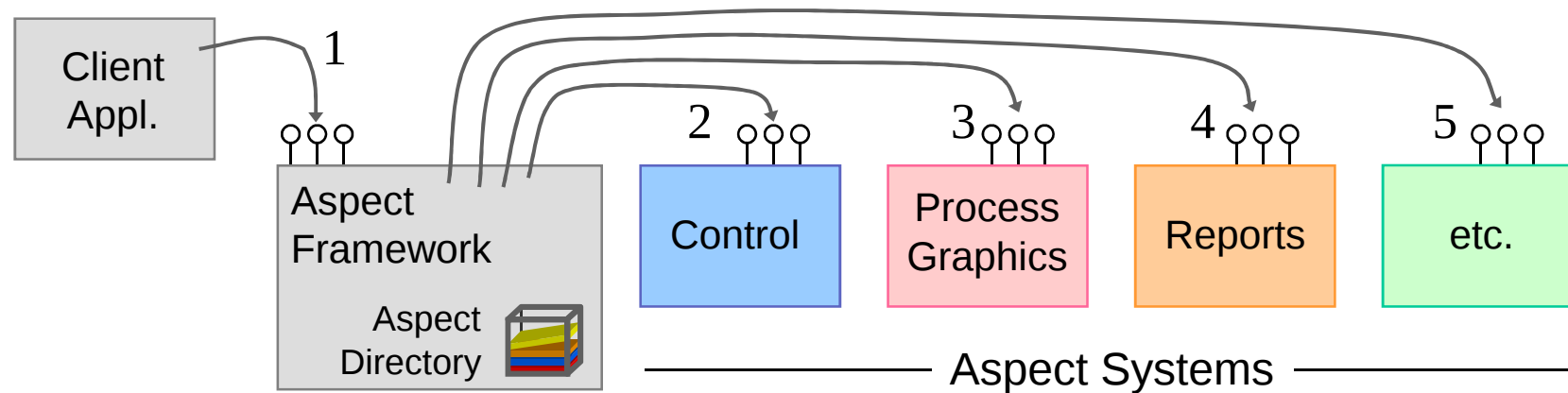
Aspect Object IT Architektur



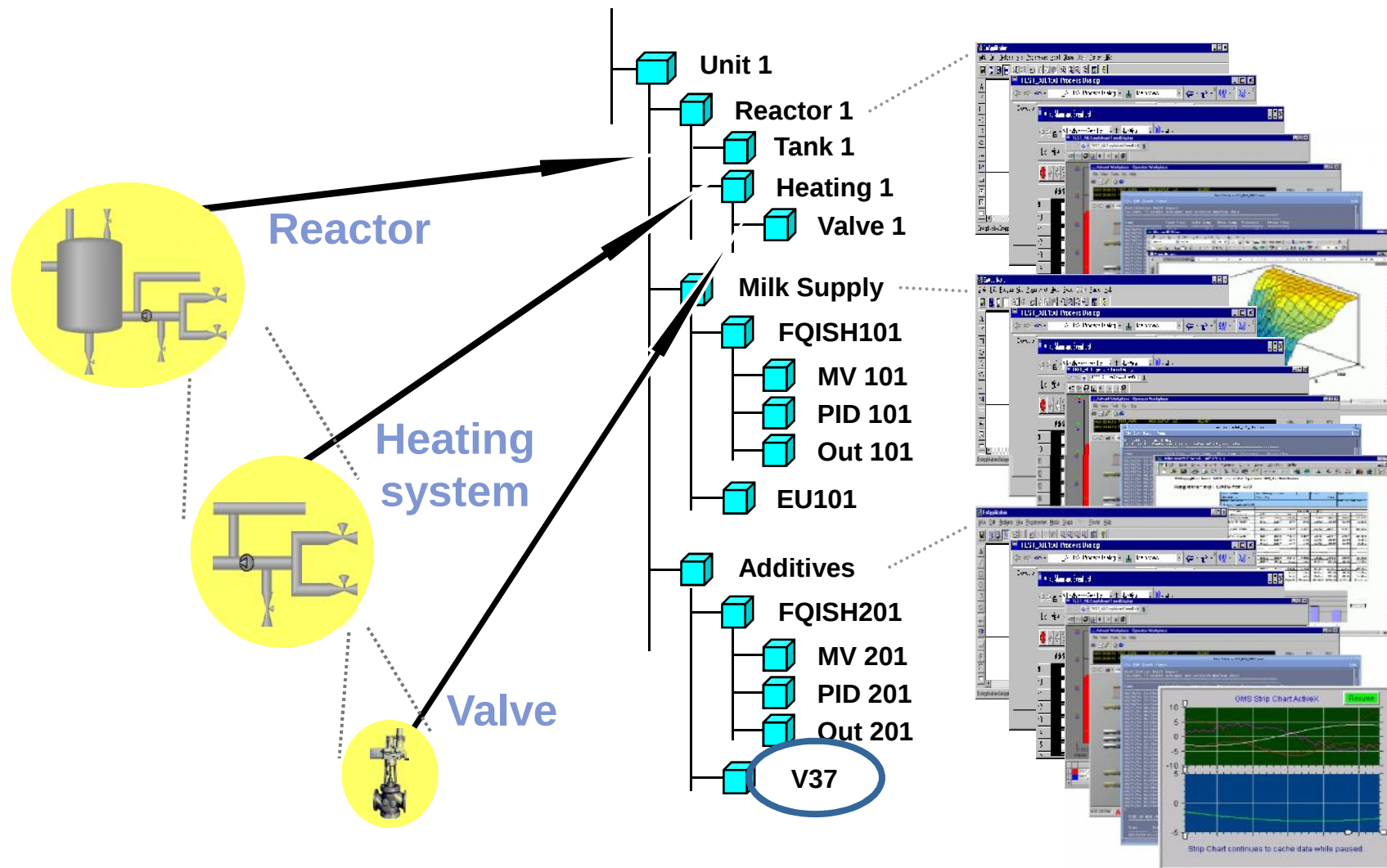
- Independent User Interfaces and data models
- Integration of independent applications
- Allows one time entry and storage of data
- Allows real-time application integration

Aspect Object IT Modell

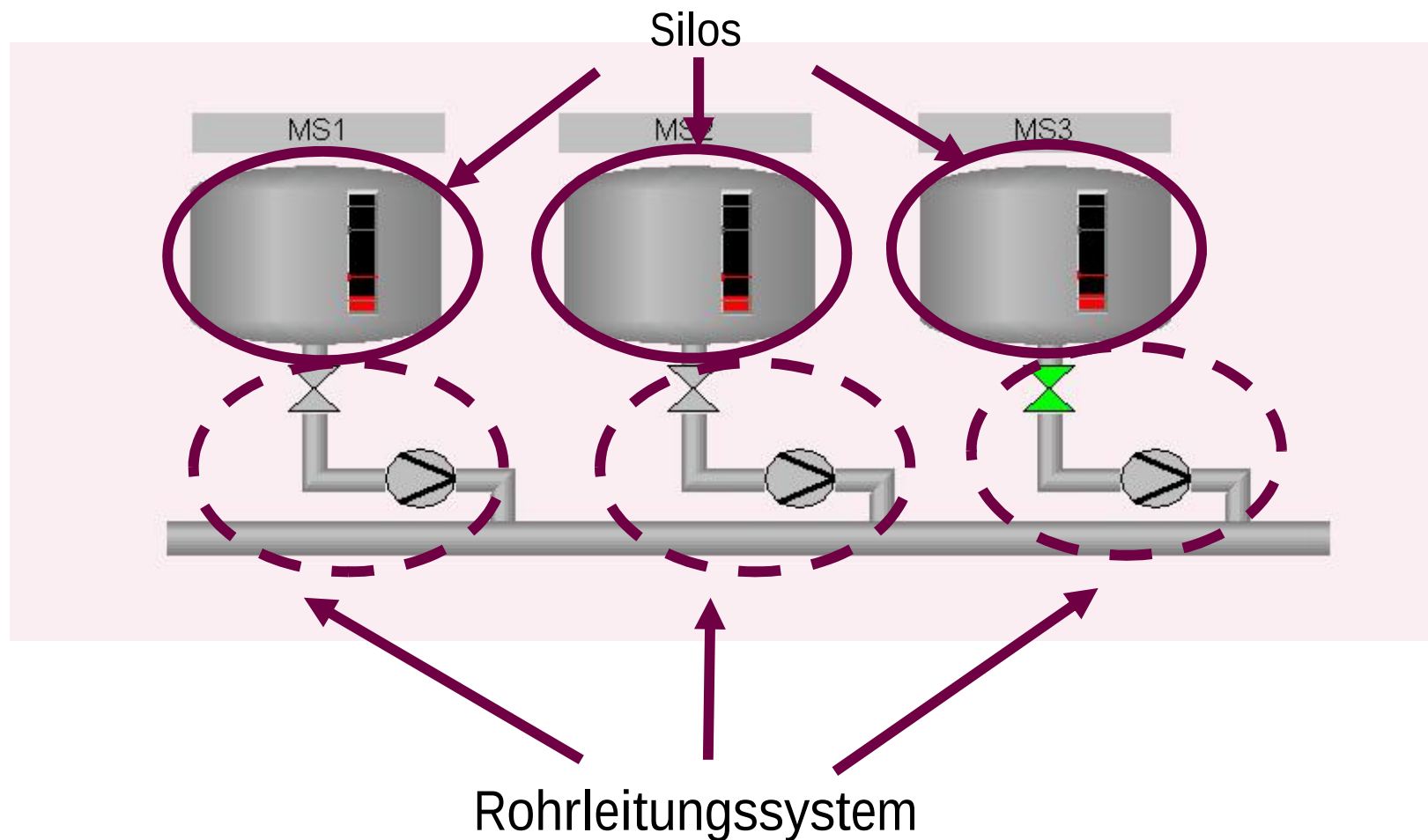
- Aspect Systems interact through the Aspect Framework
- The Aspect Framework provides application independence



Anlagenmodellierung mit Aspect Objects

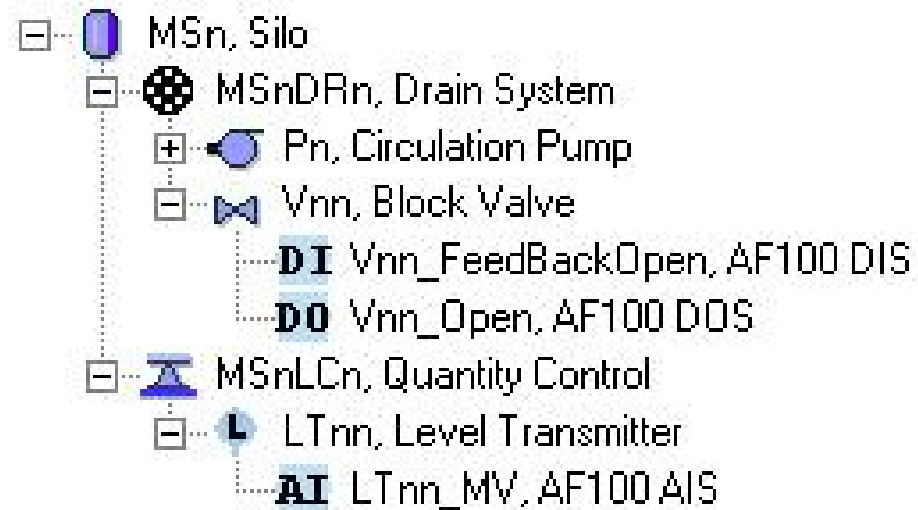


Modularer Lösungsansatz

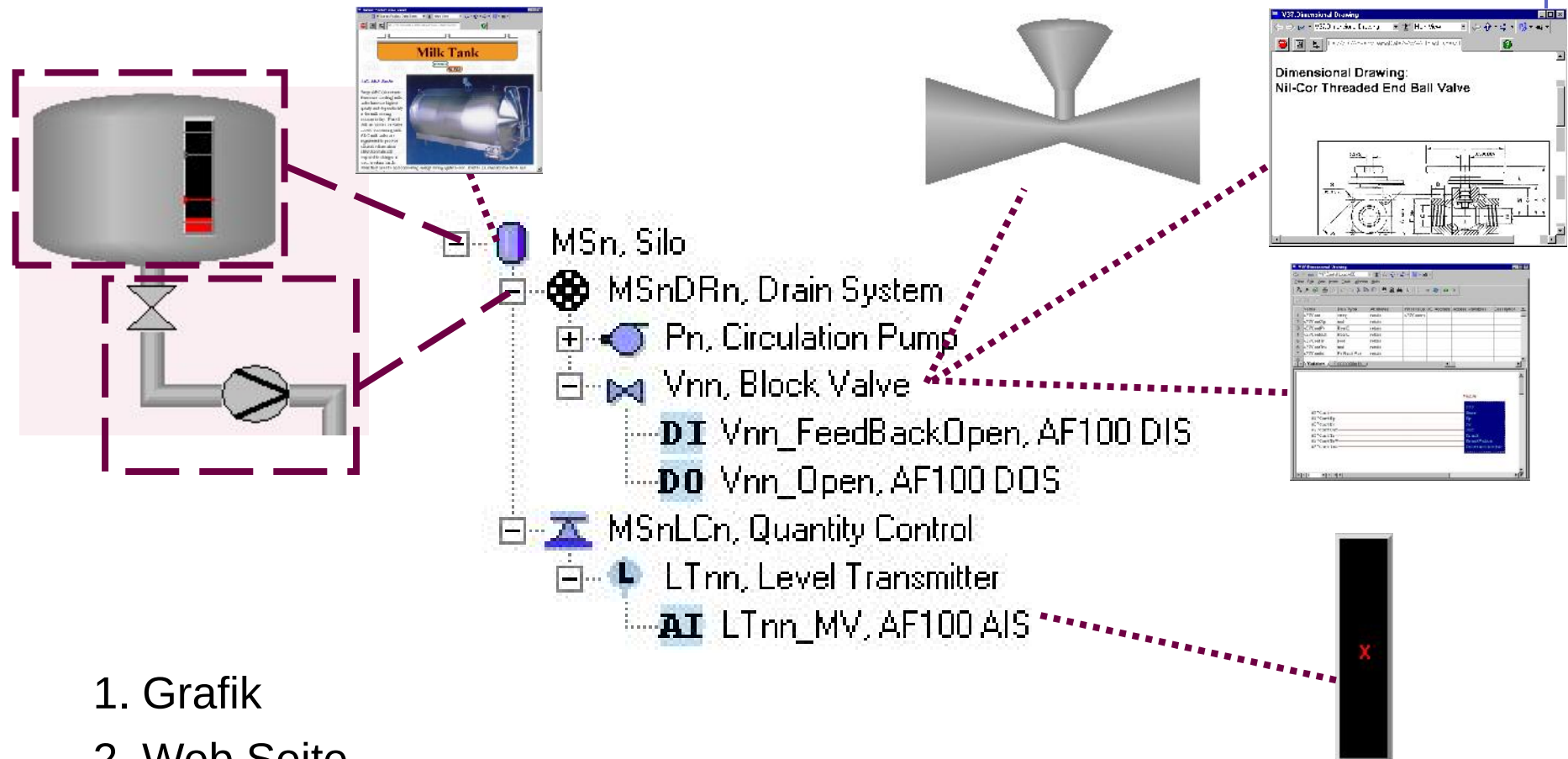


Erstellen eines Object-Types für das Silo und
Rohrleitungssystem!

Erstellen der Object Types

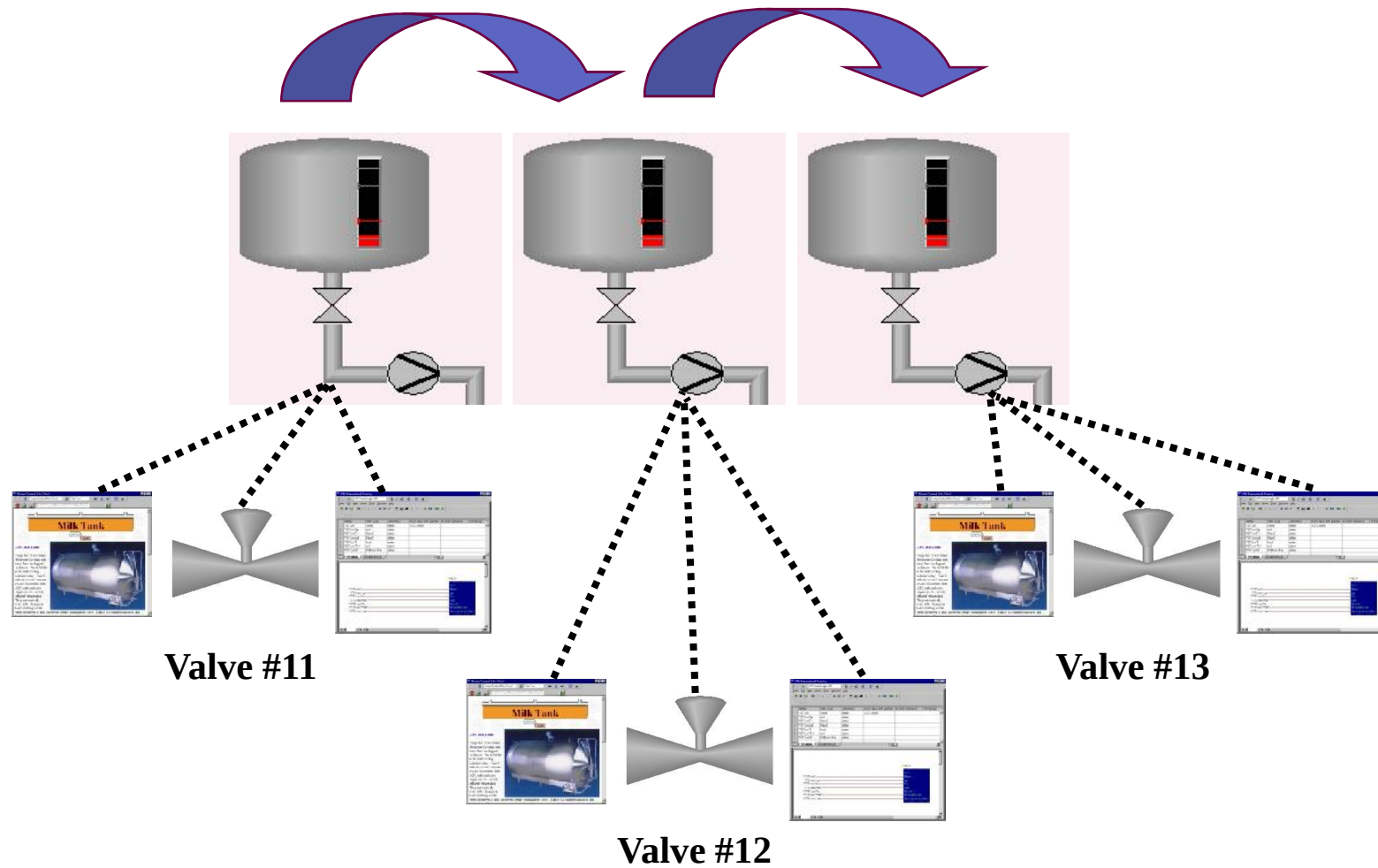


Hinzufügen der Aspekte



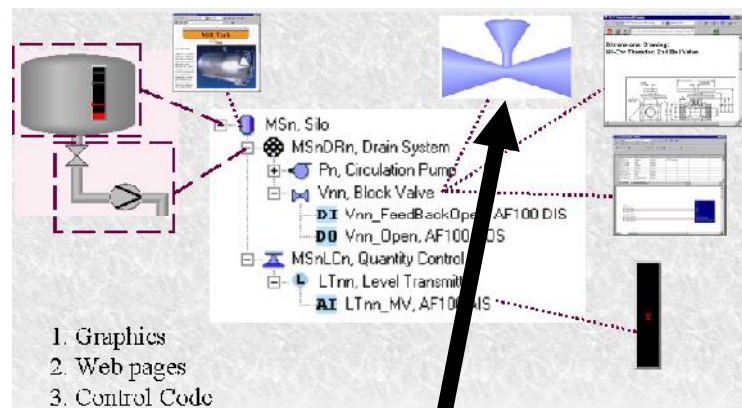
1. Grafik
2. Web Seite
3. Control Code

Wiederverwendung der Objekt Typen

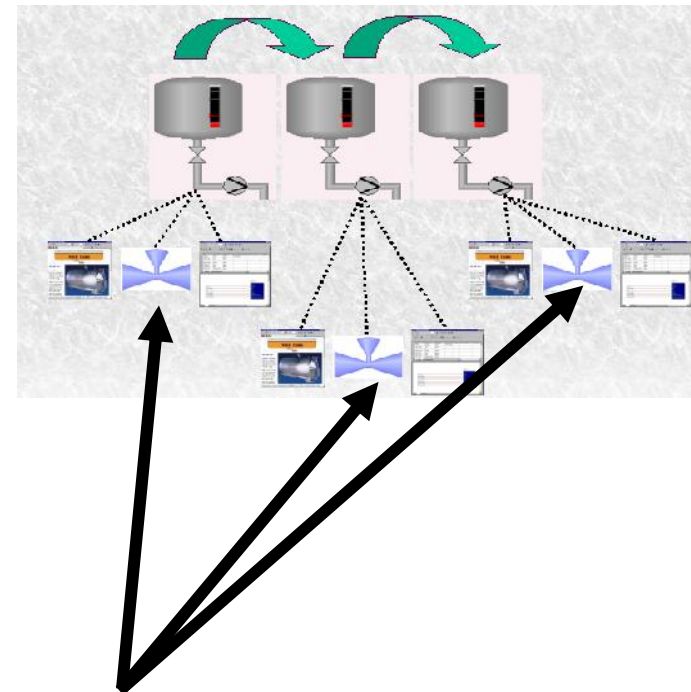


Globales Anpassen der Anlage

- Unter Verwendung von Object Types
 - Einmal verändern, alle anpassen!

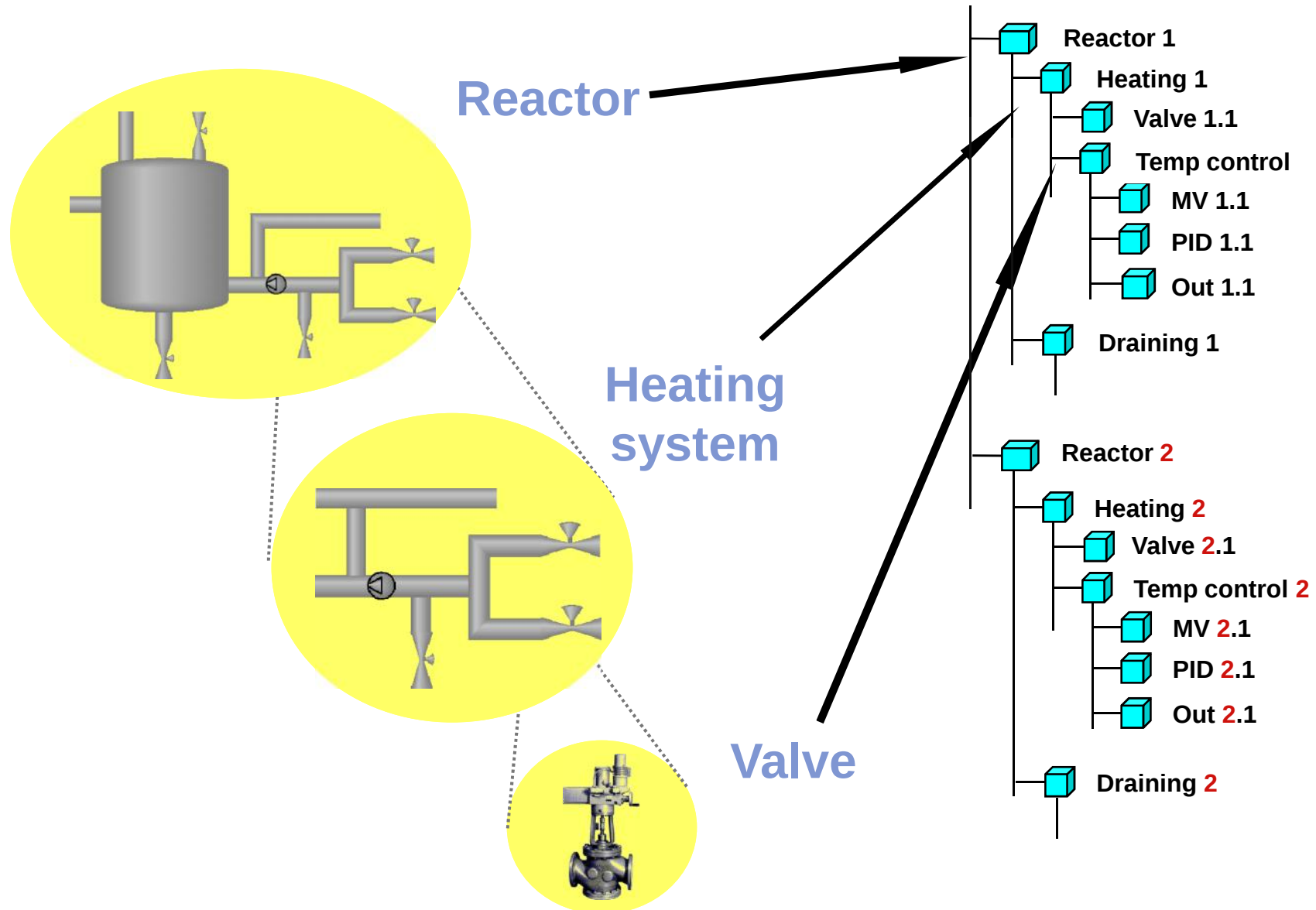


Wechseln der Farbe des
Object Types in blau



Alle Instanzen werden angepasst!

Engineering mit Aspect Objects

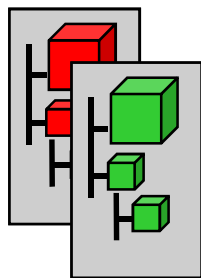


Modulare Anlagenkonfiguration

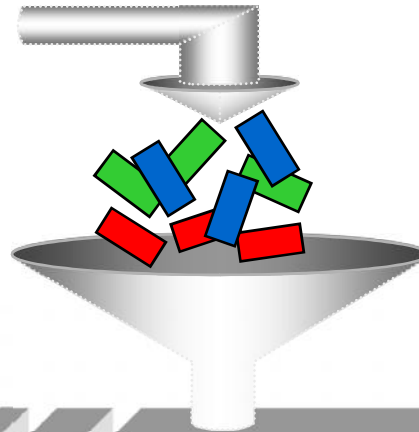


Name	Accession	Unit	Parent
400-VET-1	CONVEYOR	NOTTL	400-402-1
400-VET-2	CONVEYOR	NOTTL	400-402-1
400-VET-3	CONVEYOR	NOTTL	400-402-1
400-VET-4	CONVEYOR	NOTTL	400-402-1
400-VET-5	CONVEYOR	NOTTL	400-402-1
400-VET-6	CONVEYOR	NOTTL	400-402-1
400-VET-7	CONVEYOR	NOTTL	400-402-1
400-VET-8	CONVEYOR	NOTTL	400-402-1
400-VET-9	CONVEYOR	NOTTL	400-402-1
400-VET-10	CONVEYOR	NOTTL	400-402-1
400-VET-11	CONVEYOR	NOTTL	400-402-1
400-VET-12	CONVEYOR	NOTTL	400-402-1
400-VET-13	CONVEYOR	NOTTL	400-402-1
400-VET-14	CONVEYOR	NOTTL	400-402-1
400-VET-15	CONVEYOR	NOTTL	400-402-1
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400-VET-20	CONVEYOR	NOTTL	400-402-1
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400-VET-23	CONVEYOR	NOTTL	400-402-1
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400-VET-89	CONVEYOR	NOTTL	400-402-1
400-VET-90	CONVEYOR	NOTTL	400-402-1
400-VET-91	CONVEYOR	NOTTL	400-402-1
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400-VET-100	CONVEYOR	NOTTL	400-402-1

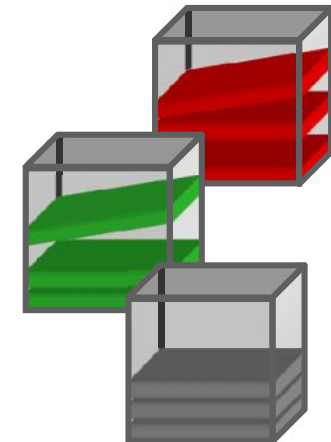
Bulk instance data



Libraries of proven solutions

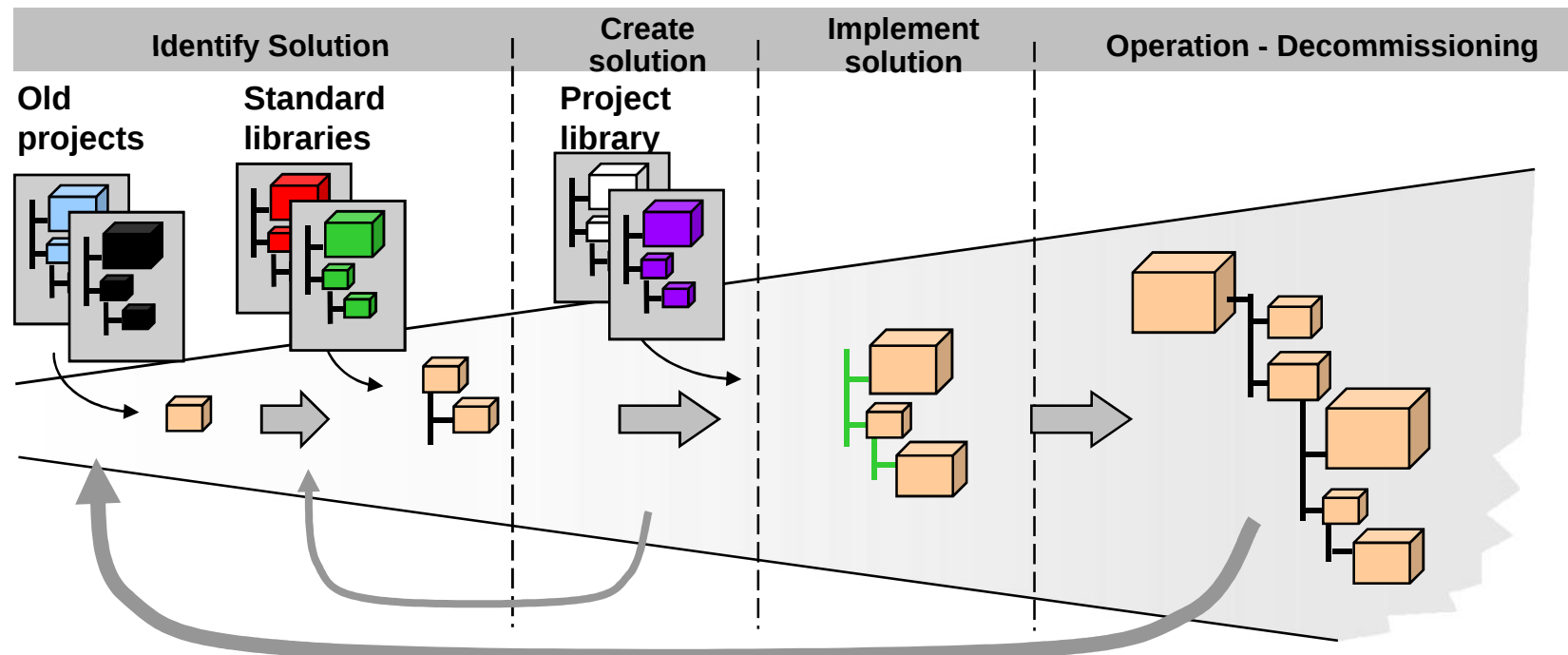


*Start with incomplete data,
refine later*

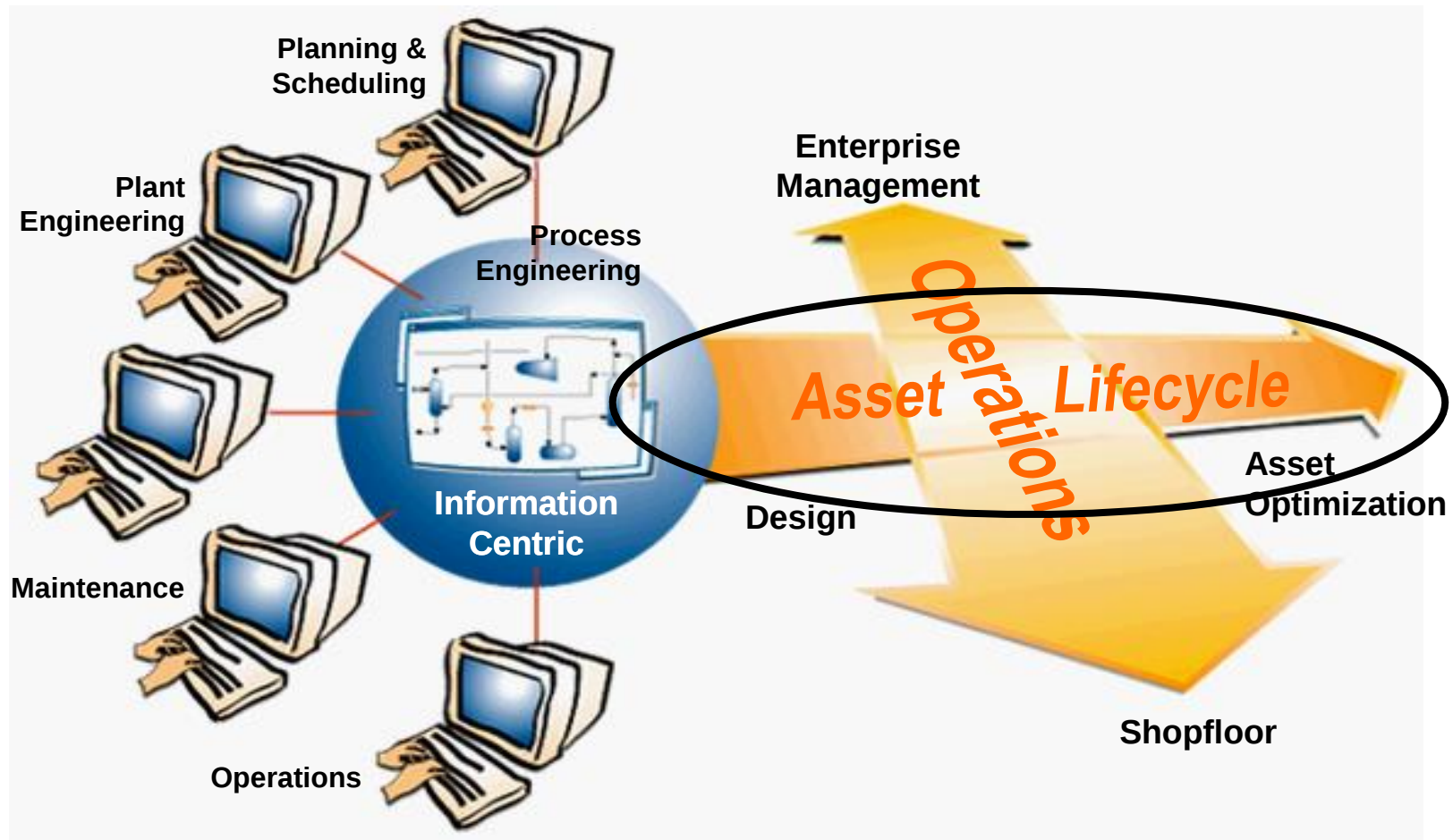


Aspect Engineering Integration

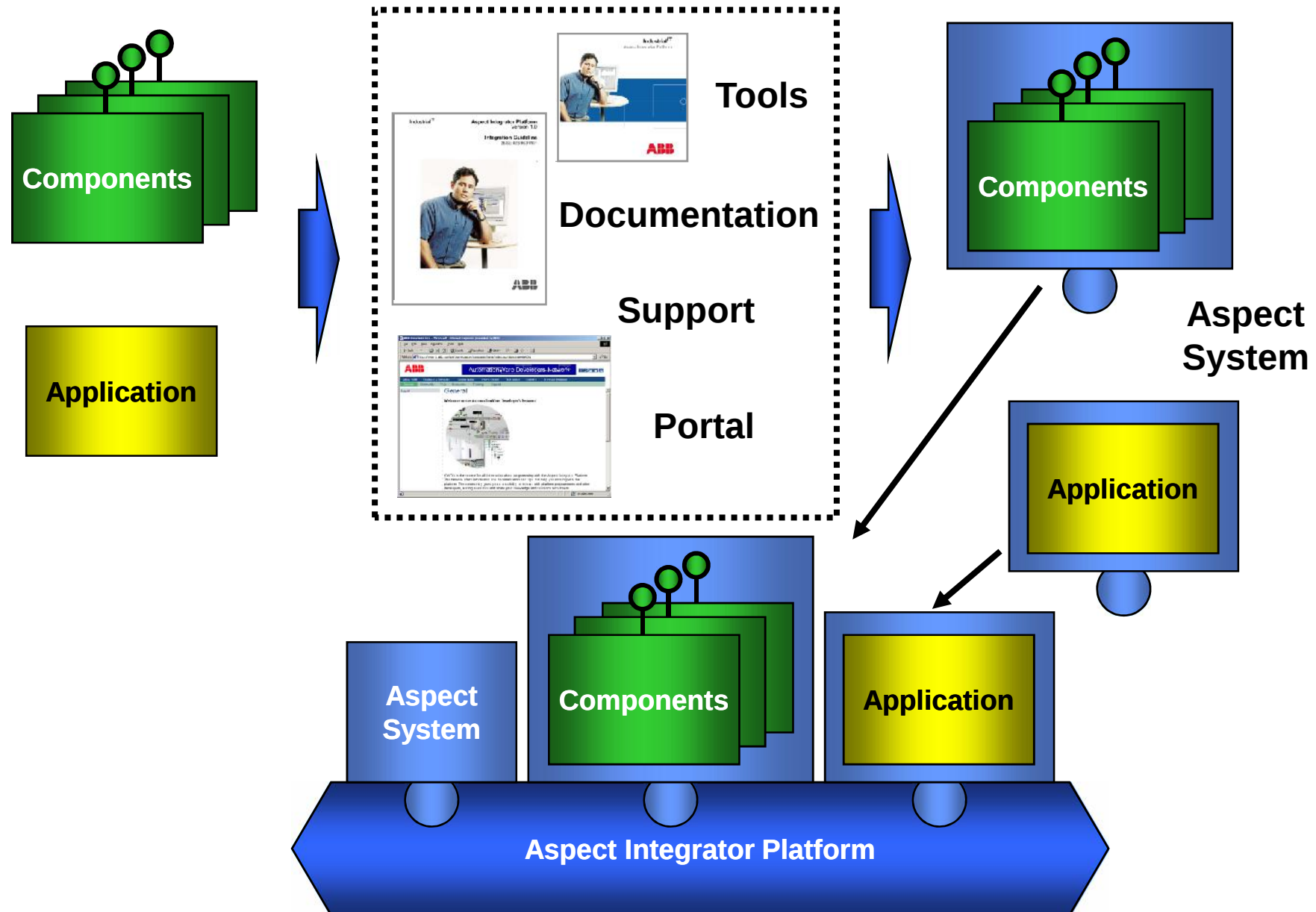
- Engineering Efficiency:
 - Re-use of solutions with ALL Aspects included
 - Libraries of Typical Solutions with ALL Aspects
 - Copy & Paste of complete process areas
 - Inheritance -> Update type and all instances are updated!



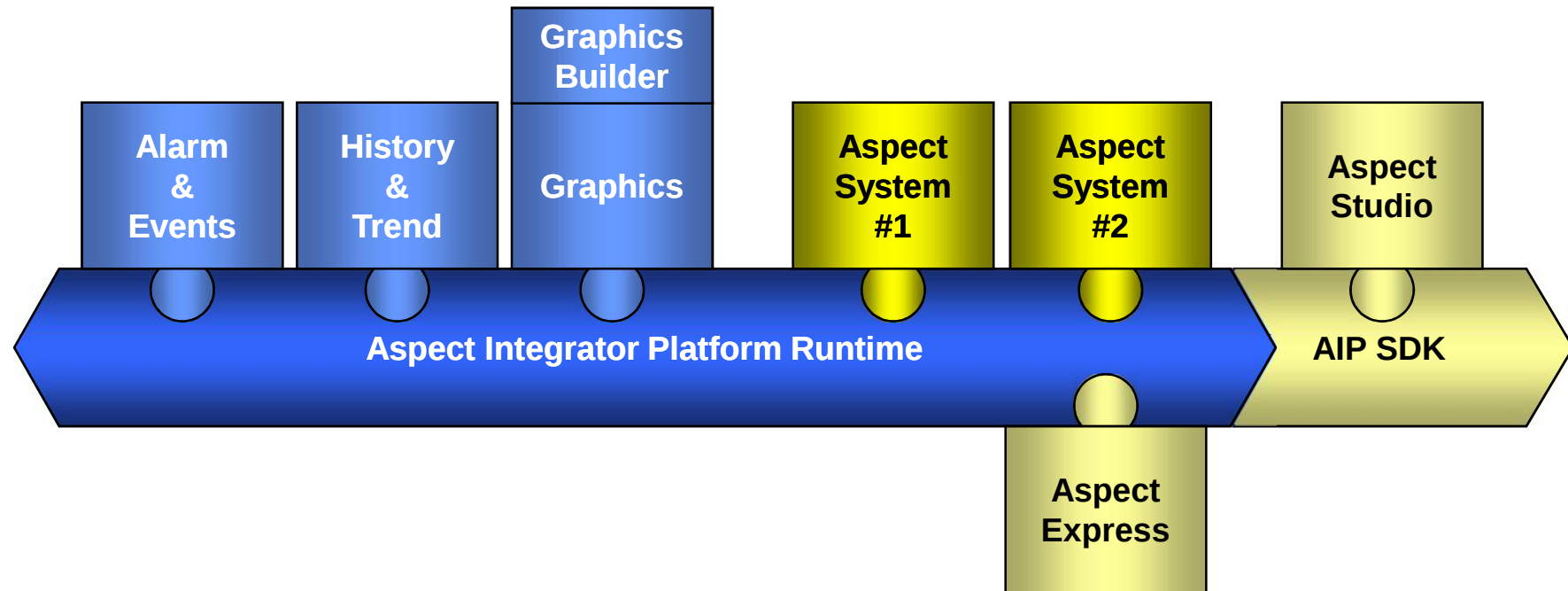
Lifecycle Integration



Infrastruktur



Produktkonzept

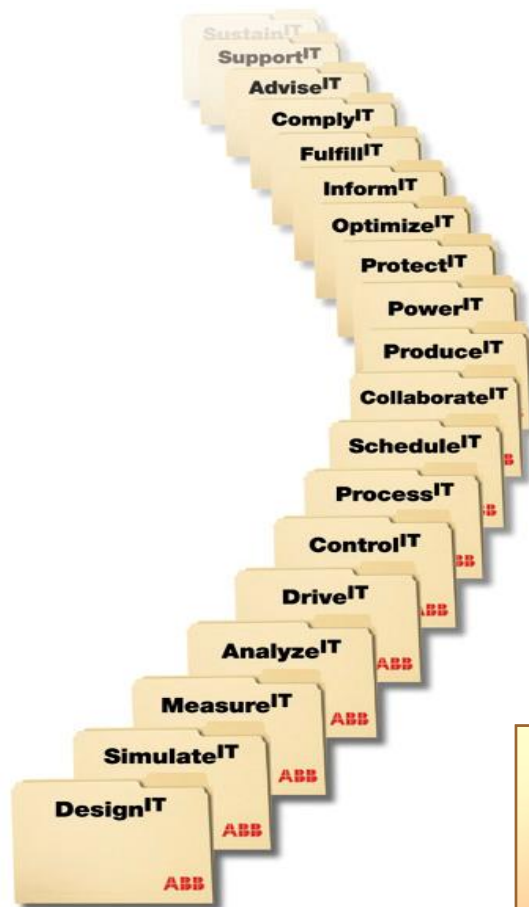


Produkte und Lösungen

Mit Produkten

zu

Lösungen



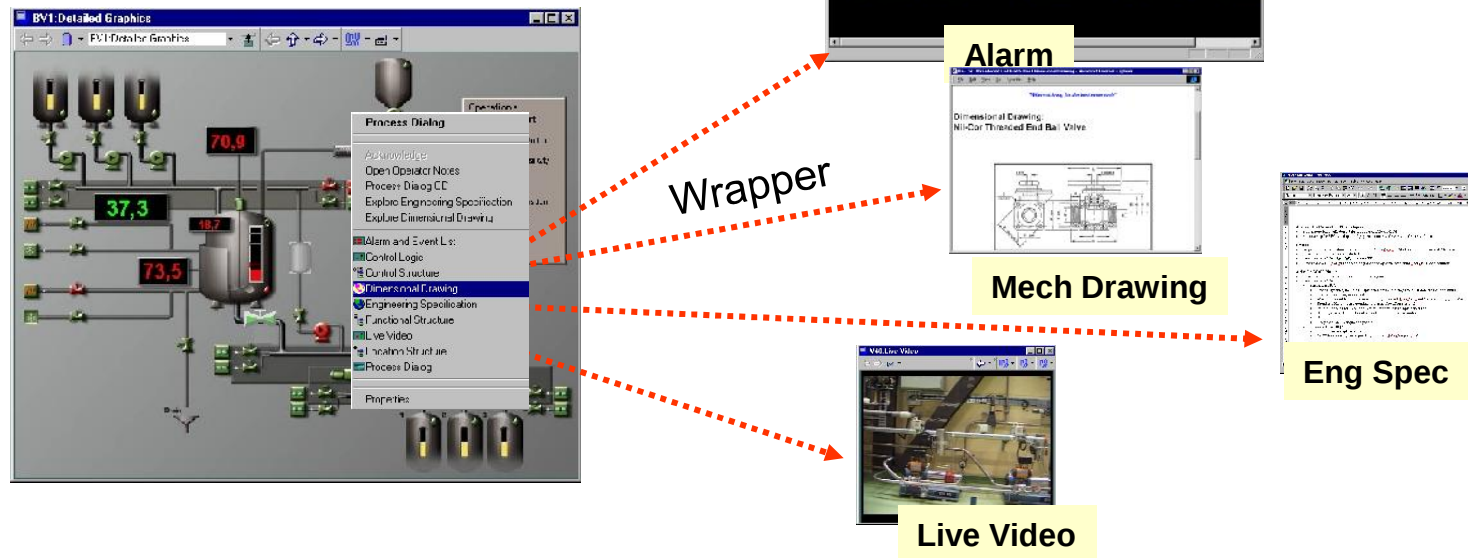
**Pre-Engineered Products
+ Expertise
= Value-Added Solutions**

Aspect Objects™ - Integration Levels

- Level 0 – Aspect User Interface Wrapping
 - Information Access
- Level 1 – Aspect User Interface Integration
 - Information Centric Information Access
- Level 2 – Aspect Navigation Integration
 - Consistent System-Wide Access
- Level 3 – Aspect Engineering Integration
 - Engineering Efficiency
- Level 4 – Aspect Administration Integration
 - Efficient System Administration
- Level 5 – Aspect Data Management Integration
 - Efficient Data Management

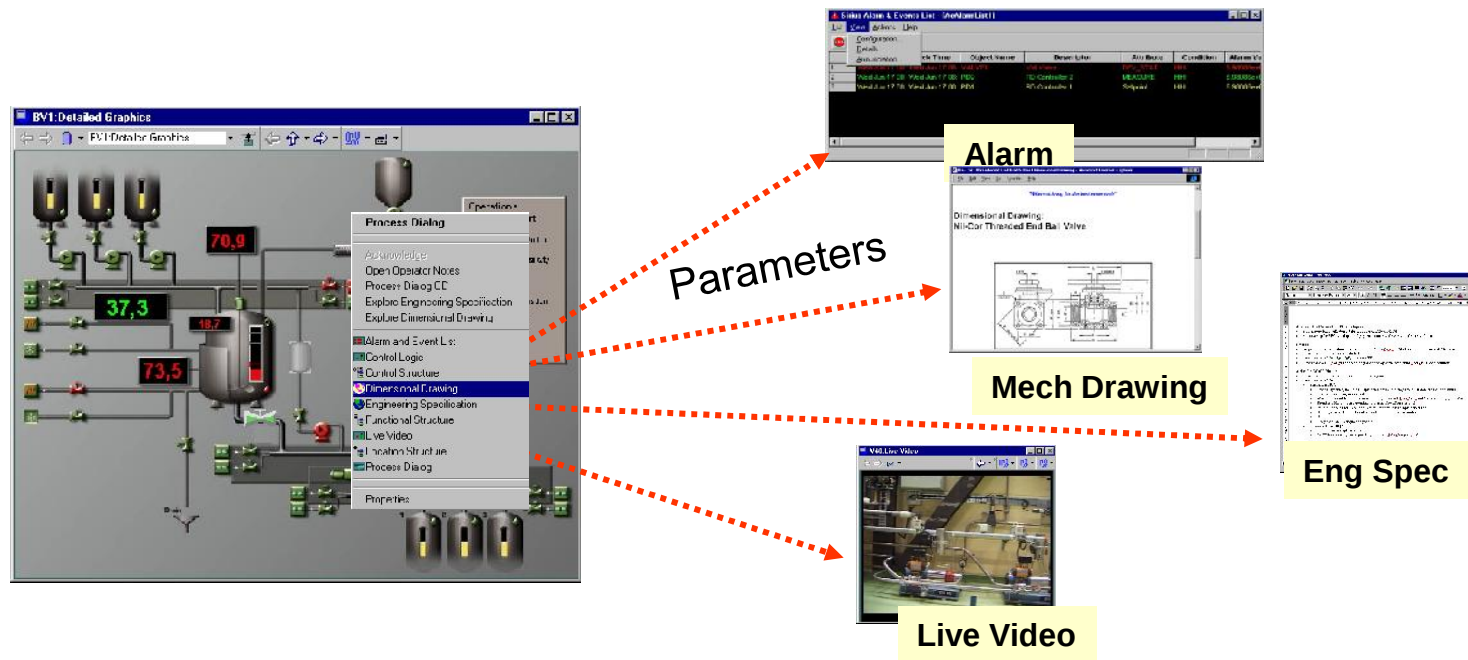
0 - Aspect User Interface Wrapping

- Information centric access
 - Information is one Mouse click away
 - User does not have to know which application to use or where data is stored
 - Basically a link to a document, web page or file per Aspect Object
 - Only configuration required
 - A Wrapper Aspect is normally used



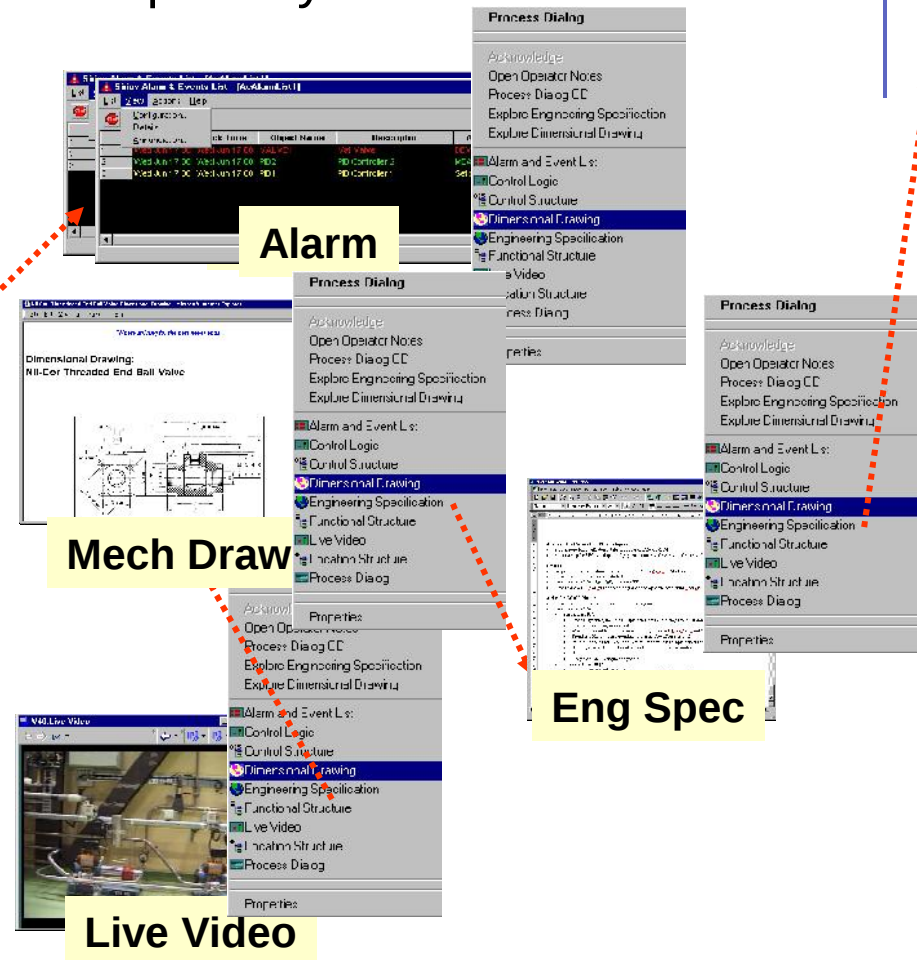
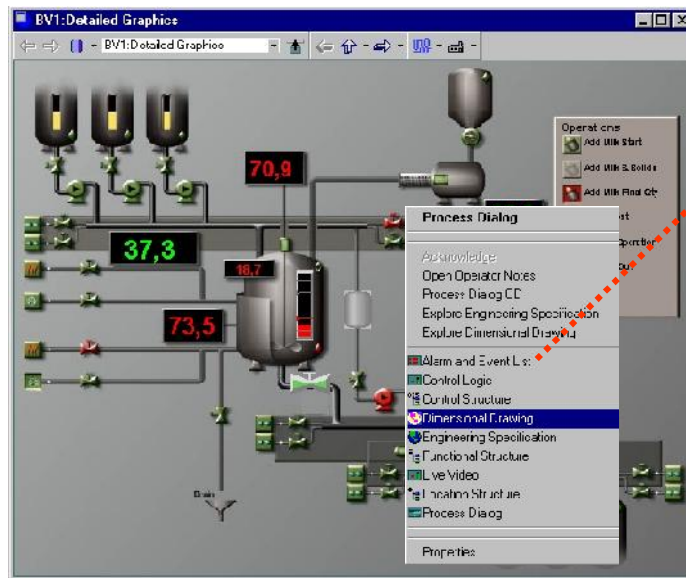
1 - Aspect User Interface Integration

- Information centric information access
 - All information is one Mouse click away
 - User does not have to know which application to use, where data is stored or how to navigate in the application
 - Parameters can be passed to the aspect
 - E.g. a certain page of a Word document can be opened



2 - Aspect Navigation Integration

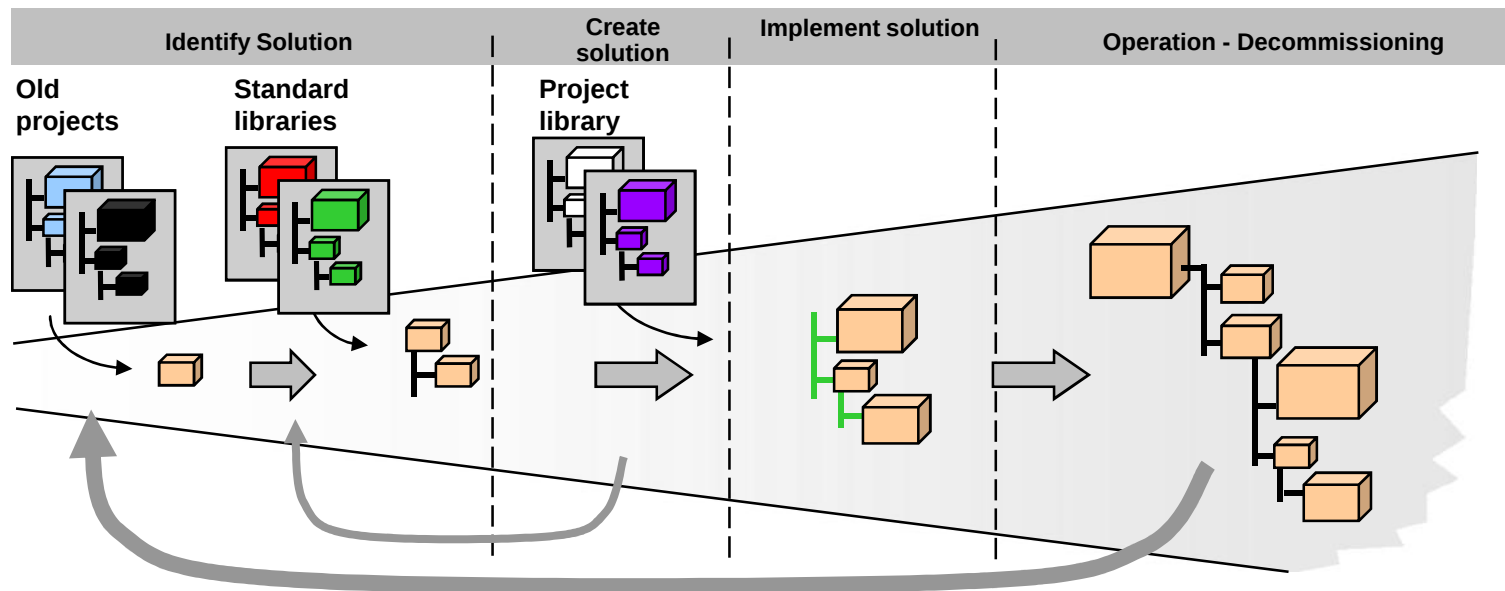
- Consistent system-wide information access and navigation
 - Context menu within the whole application
 - Navigation between objects/views in the application
- The application can interact with other Aspect Systems
 - OPC access
 - Aspect Automation



3 - Aspect Engineering Integration

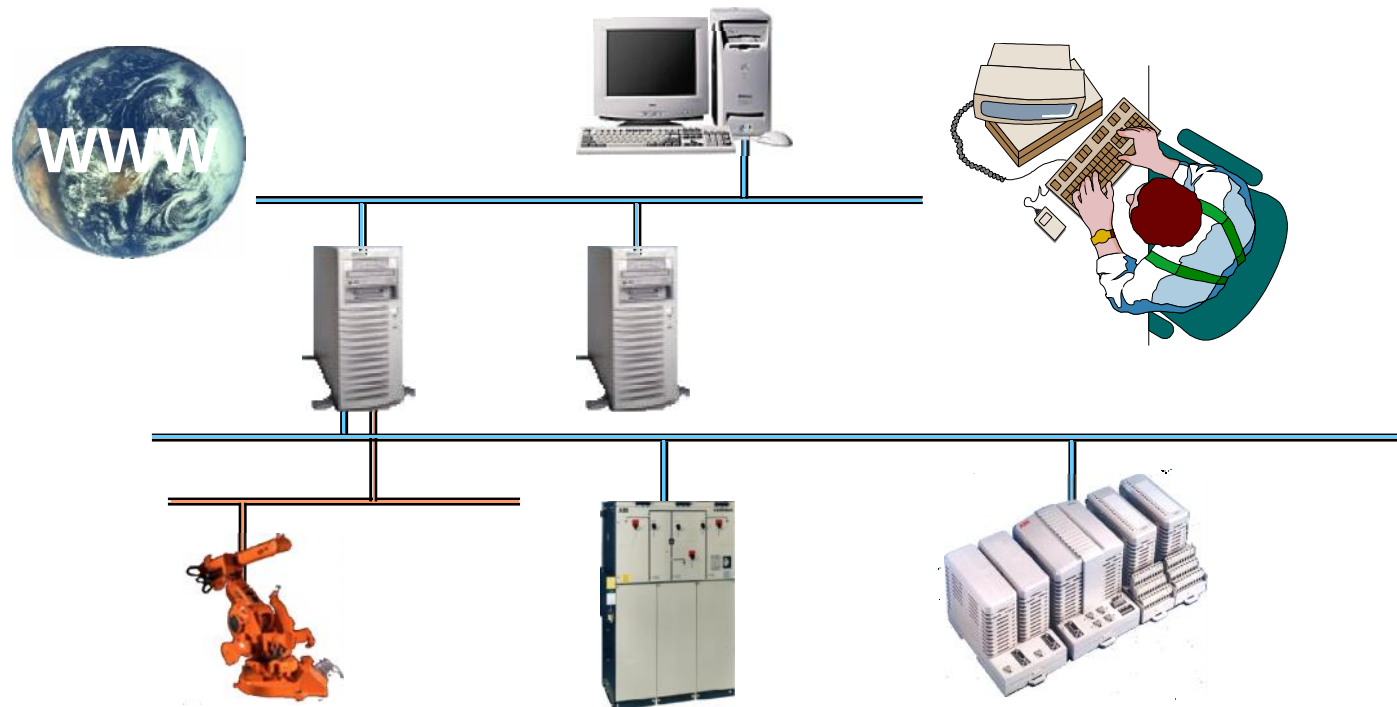
■ Efficient engineering

- Re-use of solutions, with ALL Aspects included, can be utilized and libraries of typical solutions can be built up
- The aspect can be included in an Object Type and instantiated with an instance of the Object Type
- The Aspect can be copied and pasted either by itself or together with the Object it resides in
- Inheritance
 - Change of aspect in an Object Type > All the instances of the aspect will be changed



4 - Aspect Administration Integration

- System administration and handling consistency
 - Central system handling - anywhere!
 - NLS (Native Language Support)
 - Change language for the whole system with one command
 - Backup and restore of process area rather than computers
 - Install or upgrade process area rather than computers



5 - Aspect Data Management Integration

- Transaction handling with rollback
 - Well-defined error handling of complex applications
- Version handling
- Life Cycle Management

