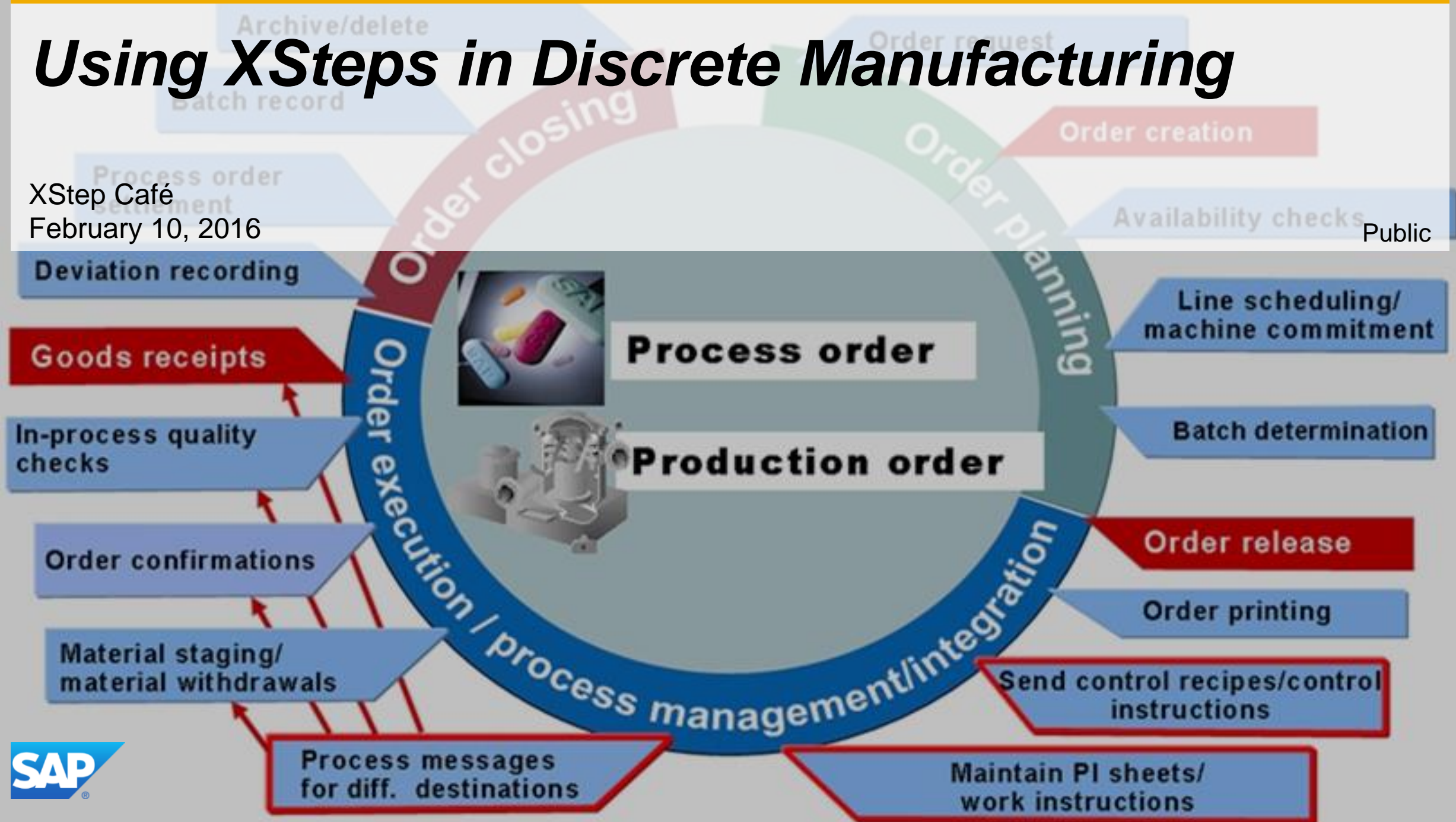# Using XSteps in Discrete Manufacturing

XStep Café
February 10, 2016

Public

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Production Execution and SAP Process Management (PP-PI-PMA)
Main Objectives

"Coordinate the exchange of production-relevant data between ERP system and the independent production level (of an external system)"

Control of production level – Execution of planned production steps:

- Manually (process operator)
- Automated (process control system [PCS])
- Partially automated: (process operator & process control system [PCS])

Source: Process Management (SAP Library)

Production Execution and SAP Process Management (PP-PI-PMA)
Handle Production Relevant Data
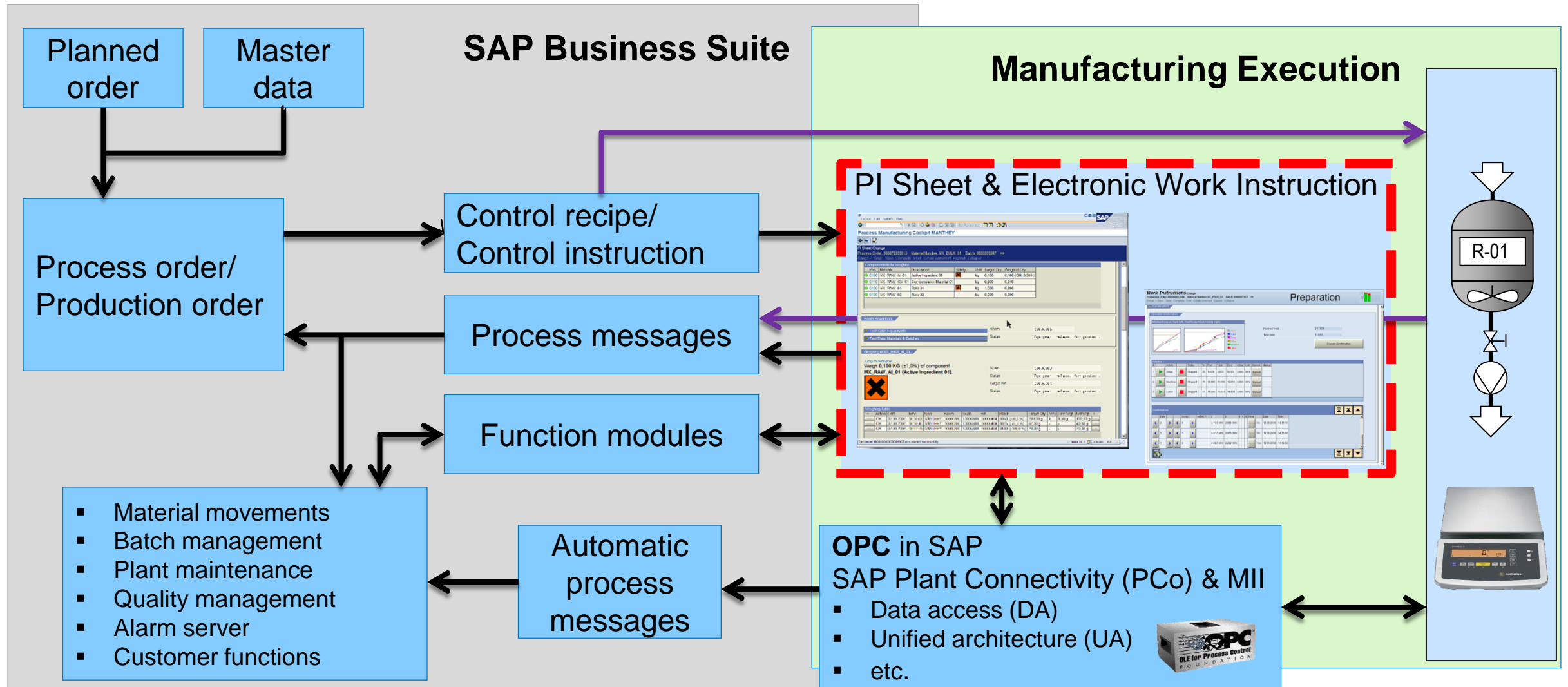
Handling production-relevant data:

- Store it in process instructions (using XSteps)
  - Decide to whom the data is forwarded (operator or process control system?)
- Combine the data using control instructions
- Send the data to process management

Process management:

- receives the sent data (control instructions)
  - Receiver: Process operator -> data prepared as text -> electronic work instruction
  - Process: Process control system -> data sent as parameters
  - …..

Production Execution and SAP Process Management (PP-PI-PMA)
Main Functional Blocks (Discrete & Process)

SAP Business Suite

Manufacturing Execution

- Planned order
- Master data
- Process order/ Production order
- Control recipe/ Control instruction
- Process messages
- Function modules

PI Sheet & Electronic Work Instruction

- Material movements
- Batch management
- Plant maintenance
- Quality management
- Alarm server
- Customer functions

Automatic process messages

OPC in SAP
SAP Plant Connectivity (PCo) & MII
- Data access (DA)
- Unified architecture (UA)
- etc.

R-01

Electronic Work Instructions
Content Definition: User Actions and Activities

User actions and activities

Constant set of user actions since +20 years

- Read data and information
- Enter data and information (including digital signatures)
- Control data
  - Execute calculations
  - Read and write values to data points/tags
    - Weighing system data, data of other work instructions etc.
  - Execute ABAP function calls
  - Trigger commands of the work instruction
    - Complete table line etc.
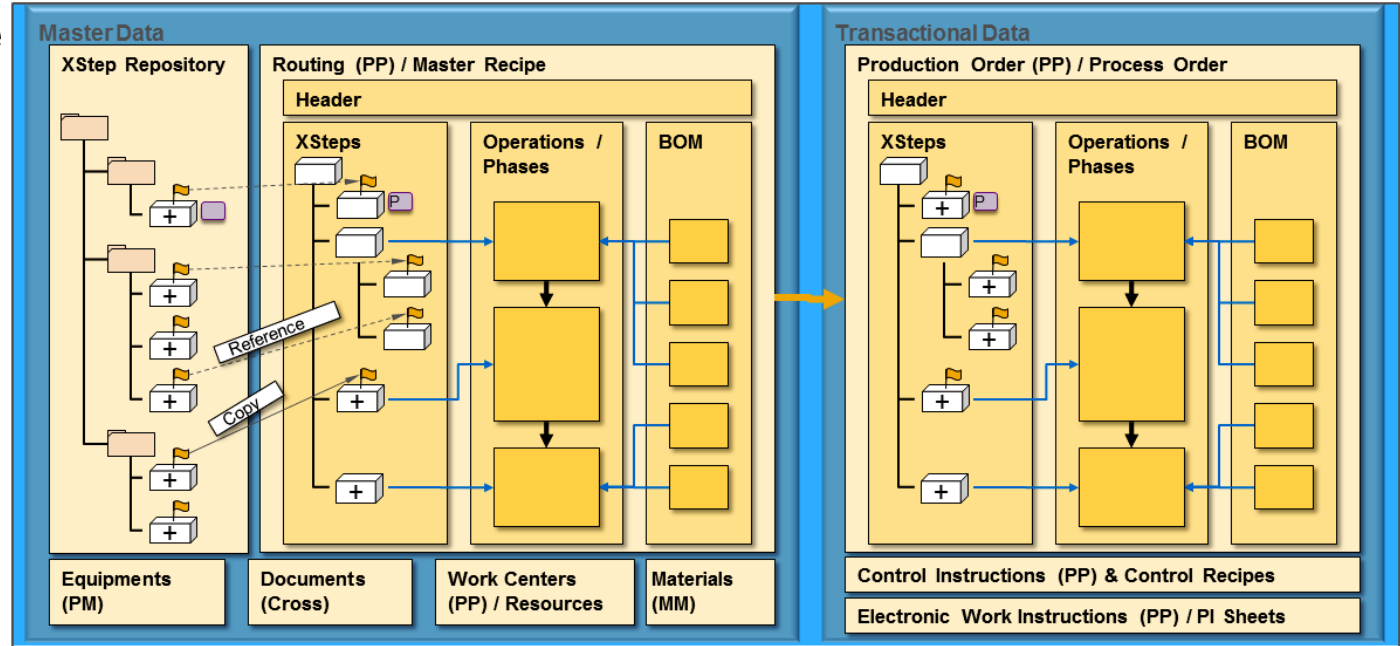
Electronic Work Instructions
Content Definition

Define which part of the content is reusable

- Create reusable building blocks (modelled as Standard XSteps [SXS])
  - Independent from application content

Define the routing-related content part

- Group the content (same control instruction destination)
- Link to reusable building blocks
  - SXS reference nodes

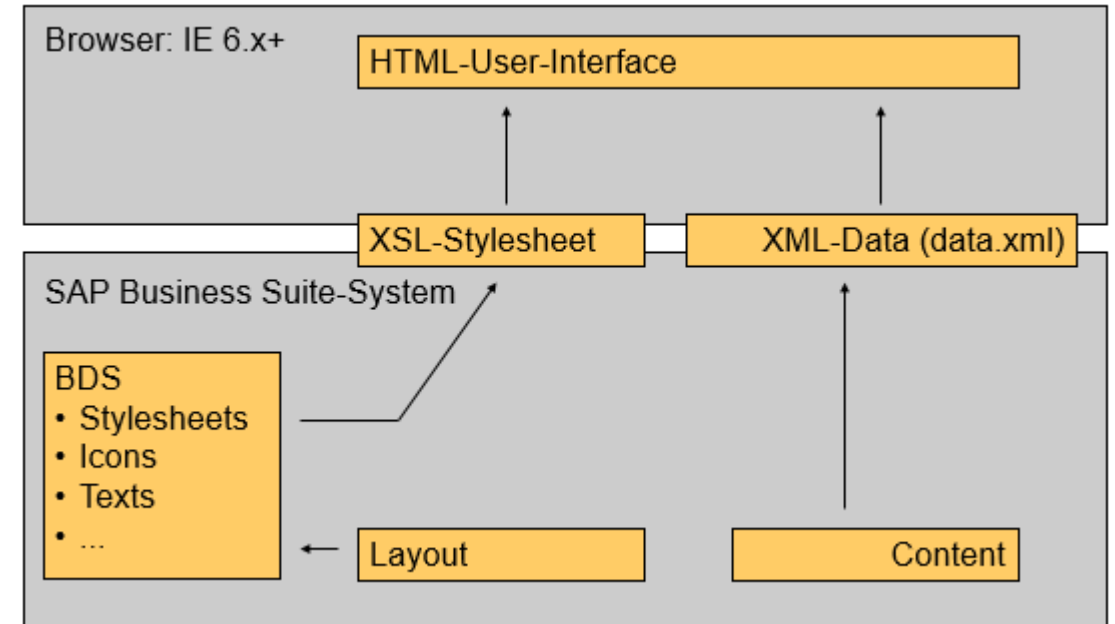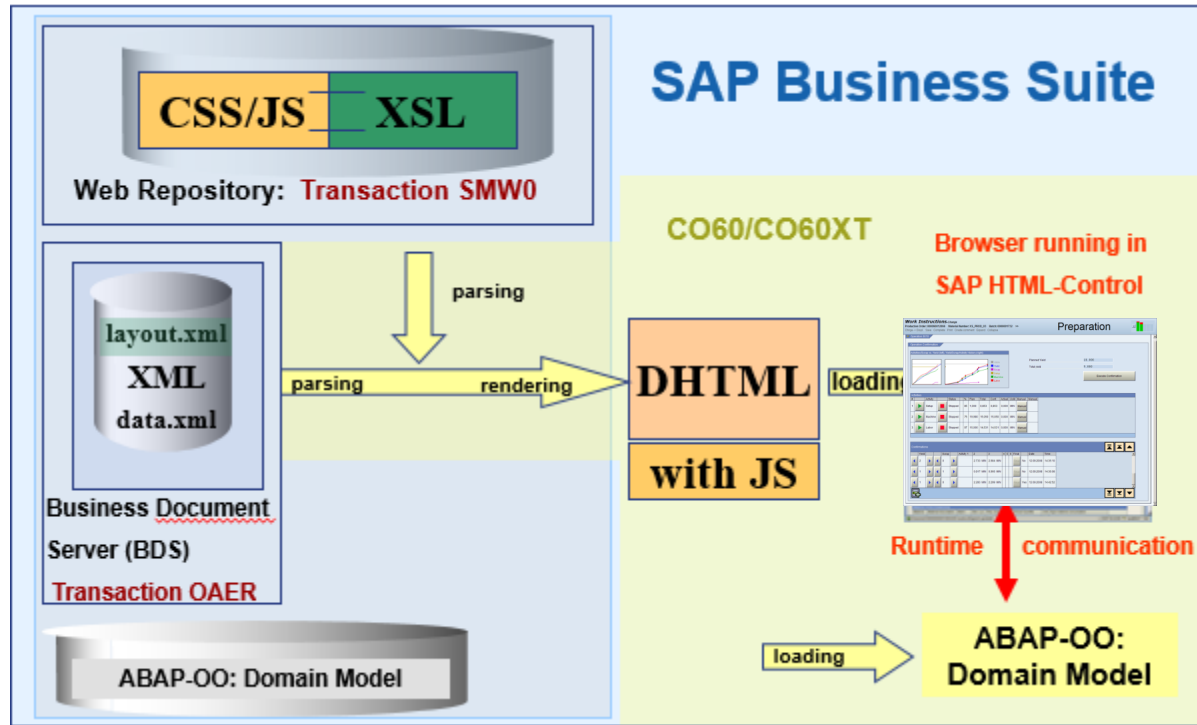If required enhance the defined content in the order
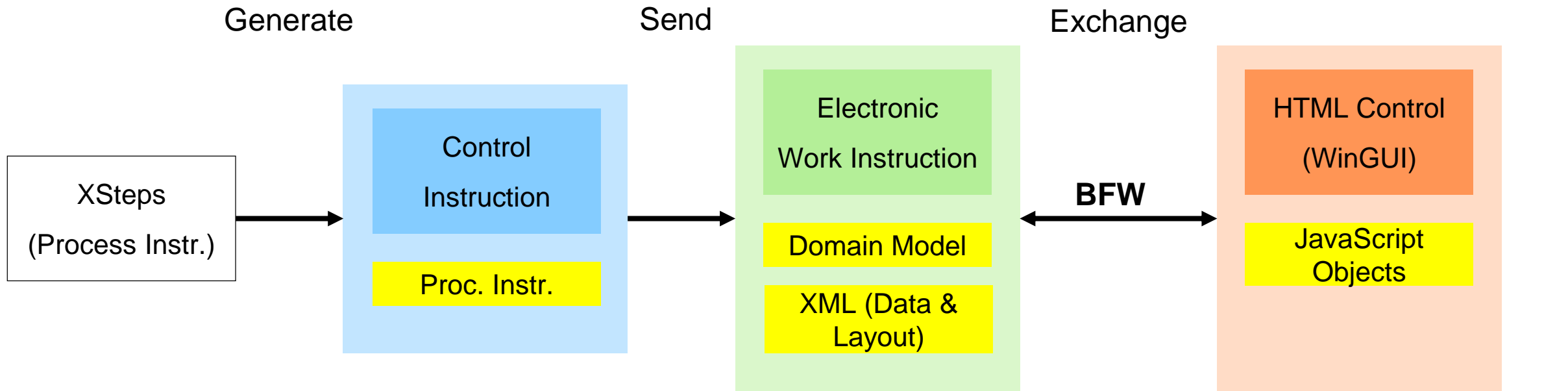
Questions and Answers
Discussion & Next Steps

Electronic Work Instructions
Main Building Blocks & HTML Generation

Electronic Work Instructions
Current Process to Generate and Maintain Work Instructions

Generate   Send   Exchange

XSteps
(Process Instr.) →

Control Instruction

Proc. Instr.

→

Electronic Work Instruction

Domain Model

XML (Data & Layout)

← BFW →

HTML Control (WinGUI)

JavaScript Objects

See how it works -> Demo

BFW: Browser Framework (Channels)

Thank you