

# **IN5140**

## **Smart processes and agile methods in Software Engineering**

### **Group session 3**

# Agenda

## **First hour:**

- Some general info
- A small repetition of BPMN
- Solve weekly task

## **Second hour:**

- Interactive live solving of the weekly task
- Questions about Deliverable 1

# BPMN

Business Process Modelling Notation

“A project process model defines **Who** is doing **What**, **When** and **How** to reach a specific goal”

...this is what we want to visualize with  
BPMN!

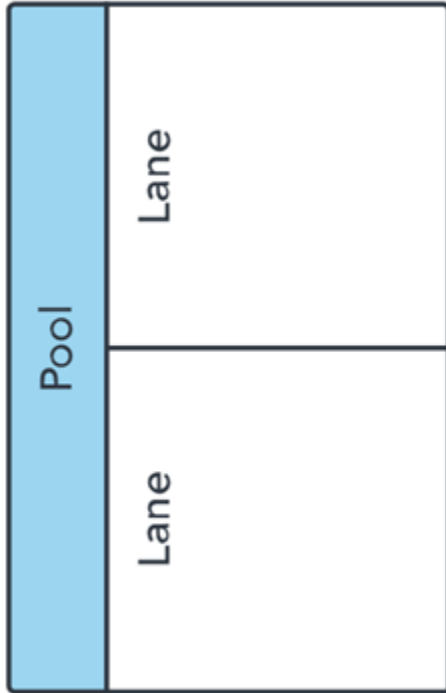
# Why use BPMN?

- BPMN is a flow chart method that models the steps of a planned **business process** from end to end.
- Used for Business Process Management,
- Visually depicts a detailed sequence of **business activities and information flows** needed to **complete a process**.

# BPMN - tools

- Diagrams.net *(previously Draw.io)*
  - <https://www.diagrams.net/>
- **Lucidchart**
  - <https://www.lucidchart.com/>
- yEd Graph Editor
  - <https://www.yworks.com/downloads#yEd>
- Yaoqiang BPMN Editor - Open Source
  - <https://sourceforge.net/projects/bpmn/>
- Signavio
  - <https://www.signavio.com/> (free 30-day trial)
- Pen and paper

# Pools and Swimlanes



- **A pool** represents major participants in a process. A different pool may be in a different company or department but still involved in the process.
- **Swimlanes** within a pool show the activities and flow for a certain role or participant, defining who is accountable for what parts of the process.

# Events



Start



Intermediate



End

- A trigger that starts, modifies or completes a process.
- They are shown by circles containing other symbols based on event type.

# Activities

- A particular activity or task performed by a person or system. It's shown by a rectangle with rounded corners.
- They can become more detailed with for example sub-processes.



# Gateways



Exclusive



Event based



Parallel



Inclusive



Exclusive  
event based



Complex



Parallel  
event based

- Decision point that can adjust the path based on conditions or events. They are shown as diamonds.
- Gateways can also be an empty diamond

# Flow



- **Sequence flow:** shows the order of activities to be performed

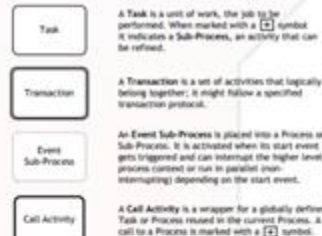


- **Message flow:** depicts messages that flow across “pools,” or organization boundaries such as departments. It shouldn’t connect events or activities within a pool.

# How to engage BPMN

- **Skim through** the textual description
  - Try not to drown in the text
- Note potential **pools**
- Identify the **roles** of each pool
  - Swim lanes
  - What are their tasks
  - What are their dependencies
- Model the **tasks** with metadata
- Check that you are still answering the exercise
- Do not make the BPMN diagram too extensive and complicated

## Activities



### Activity Markers

Markers indicate execution behavior of activities.

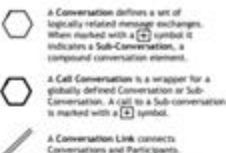


### Task Types

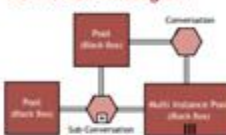
Types specify the nature of the action to be performed.



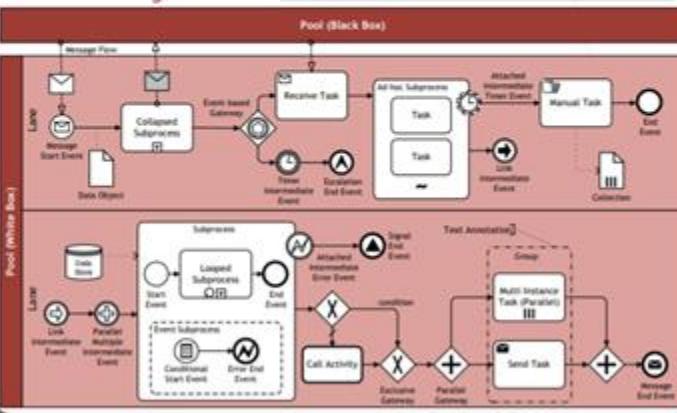
## Conversations



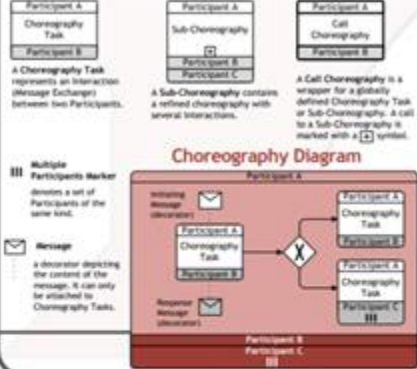
### Conversation Diagram



### Collaboration Diagram



## Choreographies



## Events

Start

Intermediate

End

Standard

Event Sub-Process

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## Gateways



## Swimlanes



## Data



# What we value in your assignments

## Syntax:

- Correct lanes and pools
- Activities vs gateways
- Start and stop event
- Sequence flow
- Collaborations

## In general:

- Your diagram should be readable and understandable

# BPMN modeling

- There are many different ways to model BPMN-diagrams
- No “clear solution” as long as you are answering the exercise

Discuss and solve the weekly exercise in  
groups!

The exercise is published on the course page.

## Exercise in group session

- Read the textual description of the process of developing a new functionality for a web application.
- Use BPMN and create a process model of the process of developing a new functionality for the existing web application.

## Exercise – INF5140: Process Modeling using BPMN

### Background

- Company X uses a web application to support its business. The web application was developed and is currently maintained by Company Y. The two companies work together on improvements and further development; X identifies needs for new functionality and orders this from Y, and Y regularly delivers new versions of the web application with the requested functionality to X.

### The process of developing new functionality

- Company X has a Product owner for the web application who is responsible for identifying new business opportunities, for describing new requirements and for testing. The Product owner regularly hands over a requirement specification to the Delivery manager at Company Y. The Delivery manager is responsible for the successful delivery of new versions of the application. The Delivery manager cooperates with a team of developers in company Y. They discuss the requirements from company X and estimate the tasks. Then the Delivery manager informs the Product owner about the estimates and costs. Based on this information, the Product owner decides which requirements should be prioritized for the new version of the system and communicates this back to the Delivery manager. Then the developers start development. When the new features have been developed, they are deployed to the test environment by the Operation department at Company Y. The Delivery manager requests the Product owner to test that implemented features correspond to the specified requirements. If some of the features do not pass the test, the Product owner makes a list of errors and informs the Delivery manager, who in turn informs the developers of the necessary changes and error corrections. When all tests are passed, the test cases are documented and sent to the Delivery manager, who requests the Operation department to deploy the new version to the production environment. The Operation department deploys the new version.

Live interactive solution!

# Previous Exam Questions

This video saved our exam!



Questions?

Thank you for today!



**Next :**

**Standard software  
process models &  
frameworks for  
process  
improvements**