

IN5140

Smart processes and agile methods in Software Engineering

Group session 2

Agenda

First hour:

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

Second hour:

- Interactive solving of the weekly task

Remember to submit project group

- Size of groups: 3-5 students.

21 Sept: Deliverable 1 – Process Modelling. The deliverable should have a description of the case and a BPMN model of the current process. Note: You should add some text (explanation and assumptions) in addition to the BPMN diagram of the case. Make sure that the main actors are explained in short. Max 3 to 5 pages for Deliverable 1.

- Either you want us to put you in a group, or you want to form group yourselves, you need to submit <https://nettskjema.no/a/356231> .
- The form closes **this Wednesday @ 23:59**.
- If you have not filled out the form by the deadline, you will be placed in an arbitrary group.

Teams is now up!

- The code is: **su62hq1**
- If you have a question, please use the Q&A-channel



But first...MENTI!

5753 1568

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!

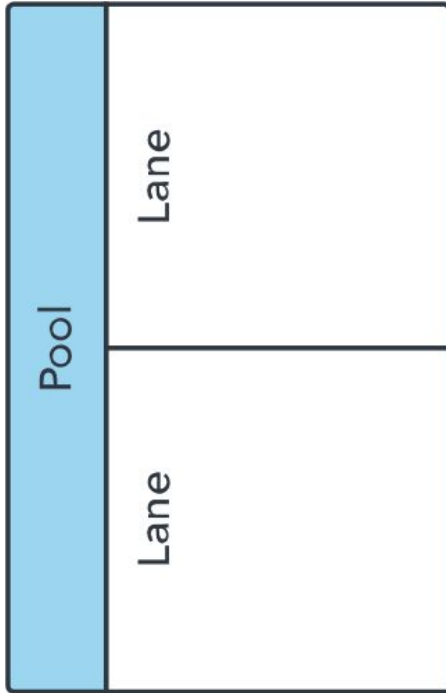
Why use BPMN?

- 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

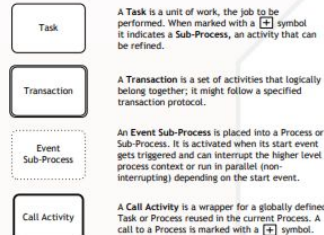


- **Message flow:** depicts messages that flow across “pools,” or organization boundaries such as departments. It shouldn’t connect events or activities within a pool.

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:



Sequence Flow

defines the execution order of activities.

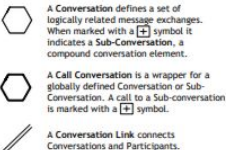
Default Flow

is the default branch to be chosen if all other conditions evaluate to false.

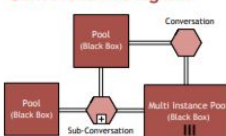
Conditional Flow

has a condition assigned that defines whether or not the flow is used.

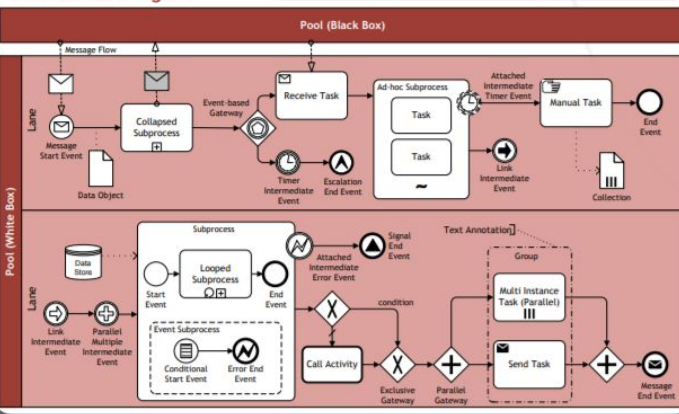
Conversations



Conversation Diagram



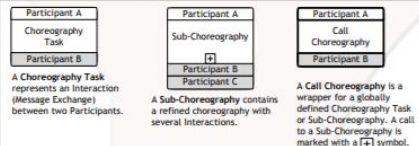
Collaboration Diagram



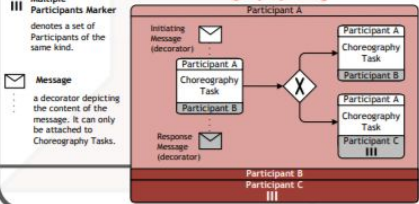
Swimlanes



Choreographies



Choreography Diagram



Events

	Start	Intermediate	End
Standard			
Event Sub-Process Interrupting			
Event Sub-Process Non-Interrupting			
Catching			
Boundary Interrupting			
Boundary Non-Interrupting			
Throwing			
Standard			

None: Untyped events, indicate start point, state changes or final states.

Message: Receiving and sending messages.

Timer: Cyclic timer events, points in time, time spans or timeouts.

Escalation: Escalating to an higher level of responsibility.

Conditional: Reacting to changed business conditions or integrating business rules.

Link: Off-page connectors. Two corresponding link events equal a sequence flow.

Error: Catching or throwing named errors.

Cancel: Reacting to cancelled transactions or triggering cancellation.

Compensation: Handling or triggering compensation.

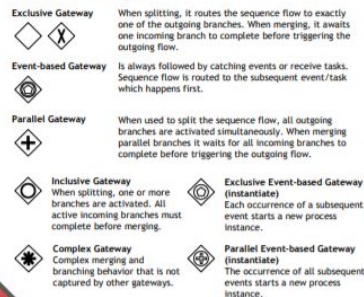
Signal: Signalling across different processes. A signal thrown can be caught multiple times.

Multiple: Catching one out of a set of events. Throwing all events defined.

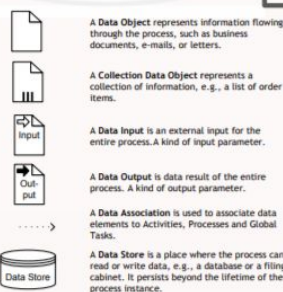
Parallel Multiple: Catching all out of a set of parallel events.

Terminate: Triggering the immediate termination of a process.

Gateways



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!

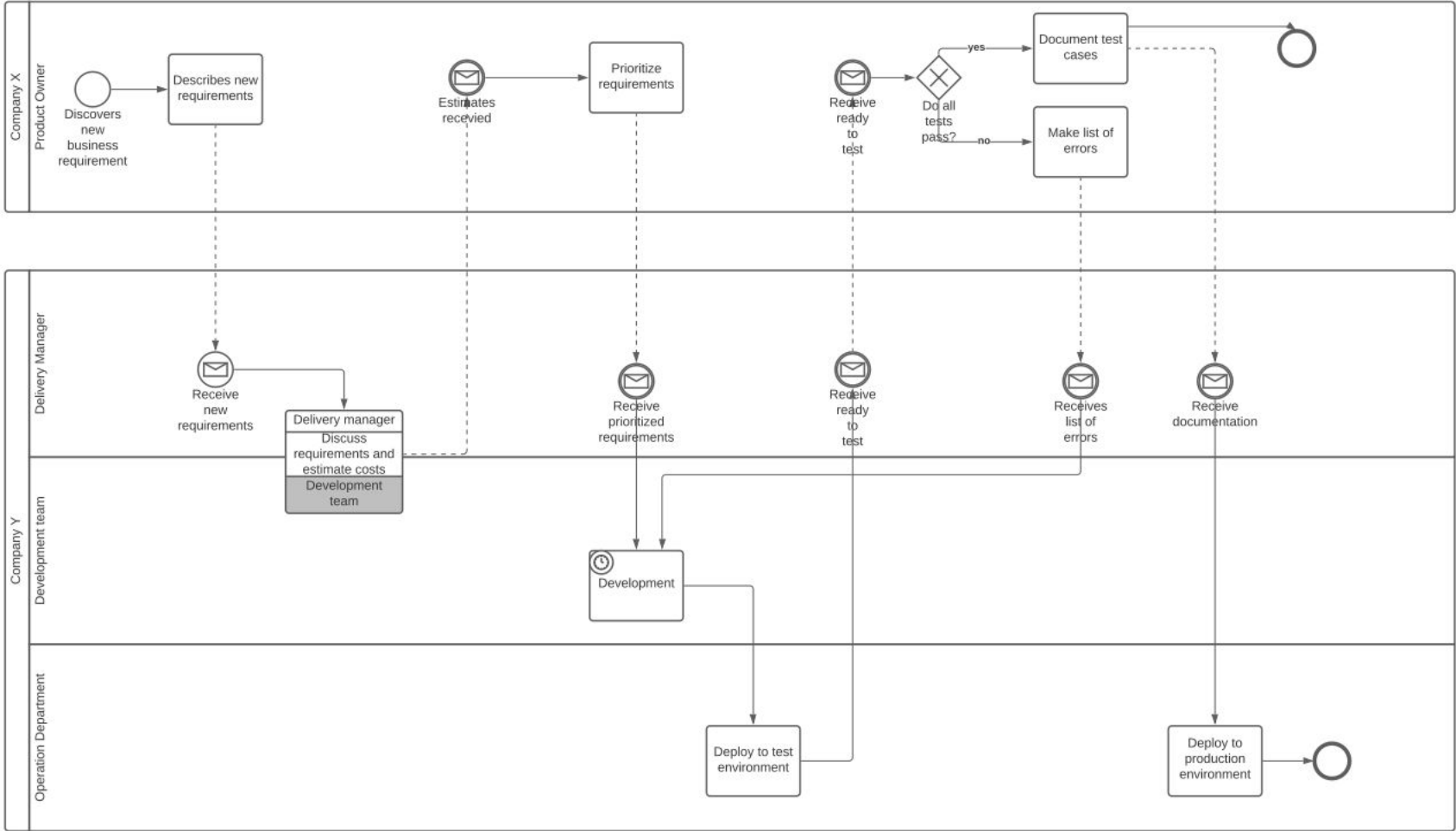
The exercise is published on the course page

<https://www.uio.no/studier/emner/matnat/ifi/IN5140/h23/weekly-task/weekly-tasks---week-02-in5140.pdf>

Break 

We'll start again at 11:15 

**This video very useful to
getting started with BPMN! 🤩**



Questions?