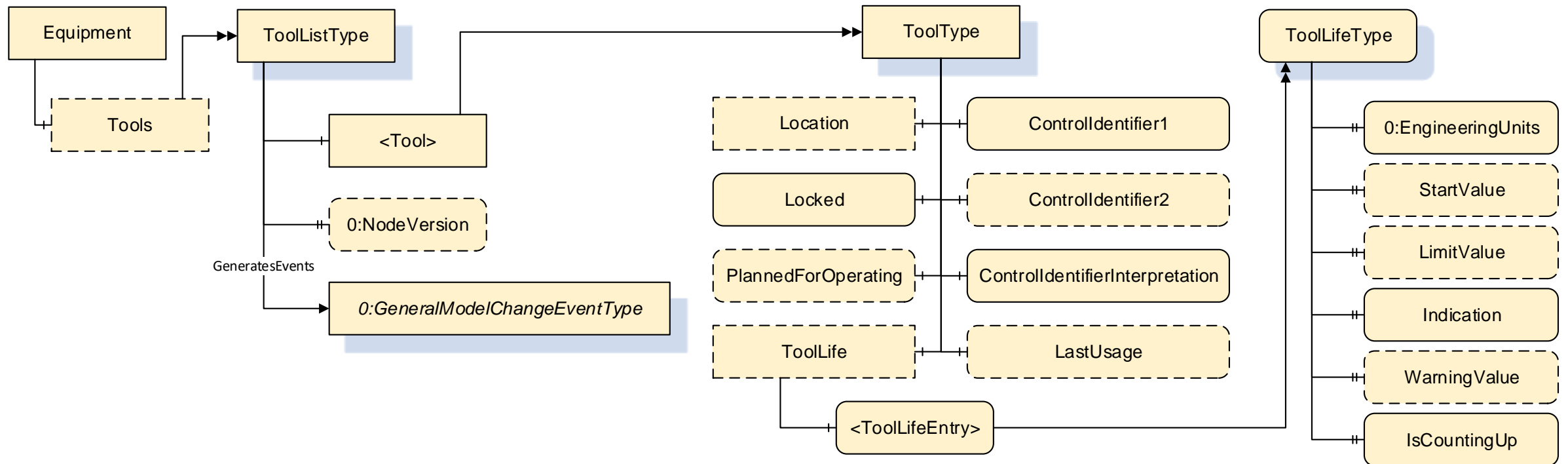


Tools Model Usage in OPC 40501

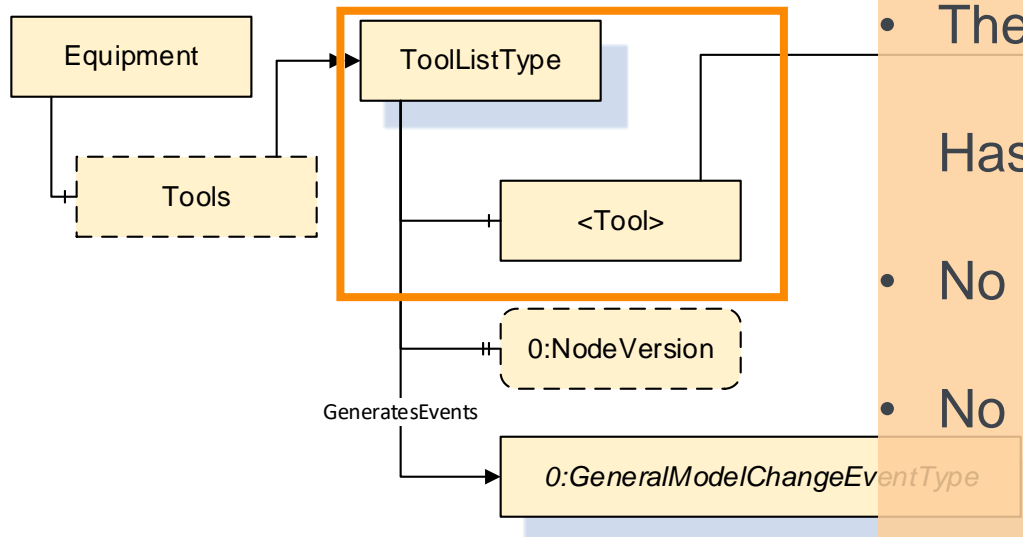
Explanation of Static and Dynamic Usage

Tonja Heinemann

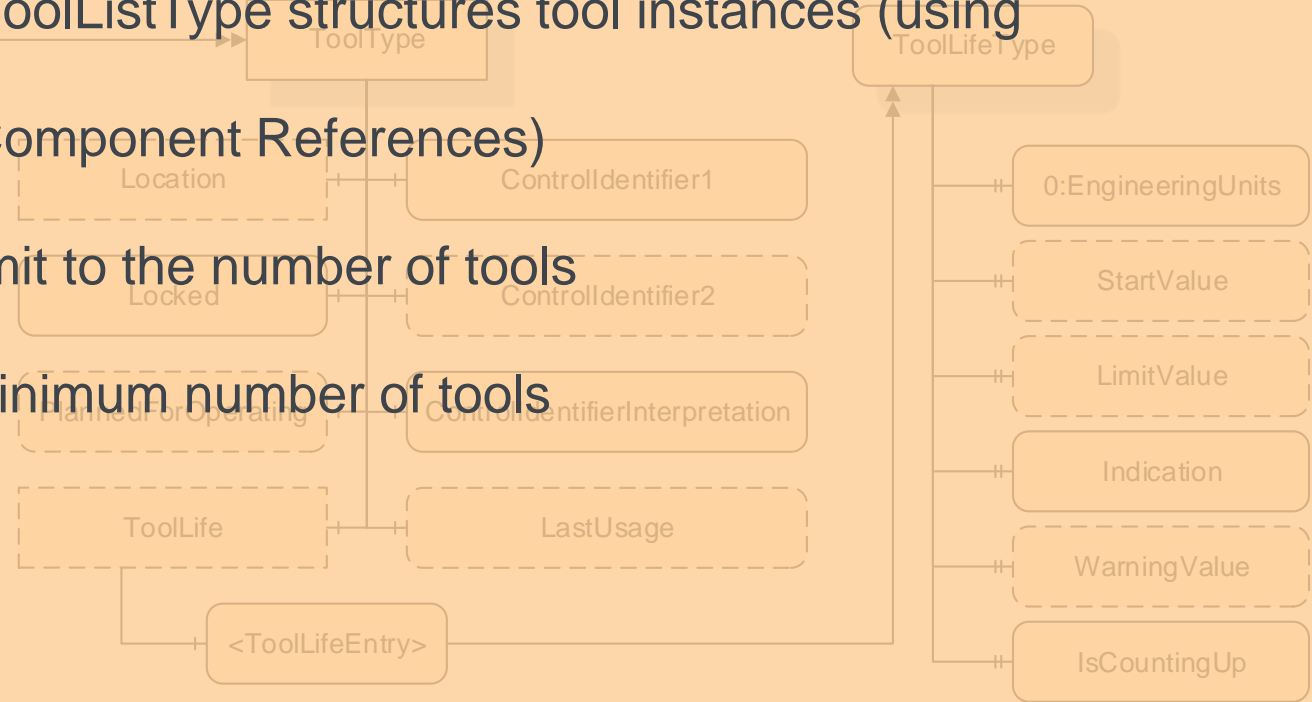
Model View



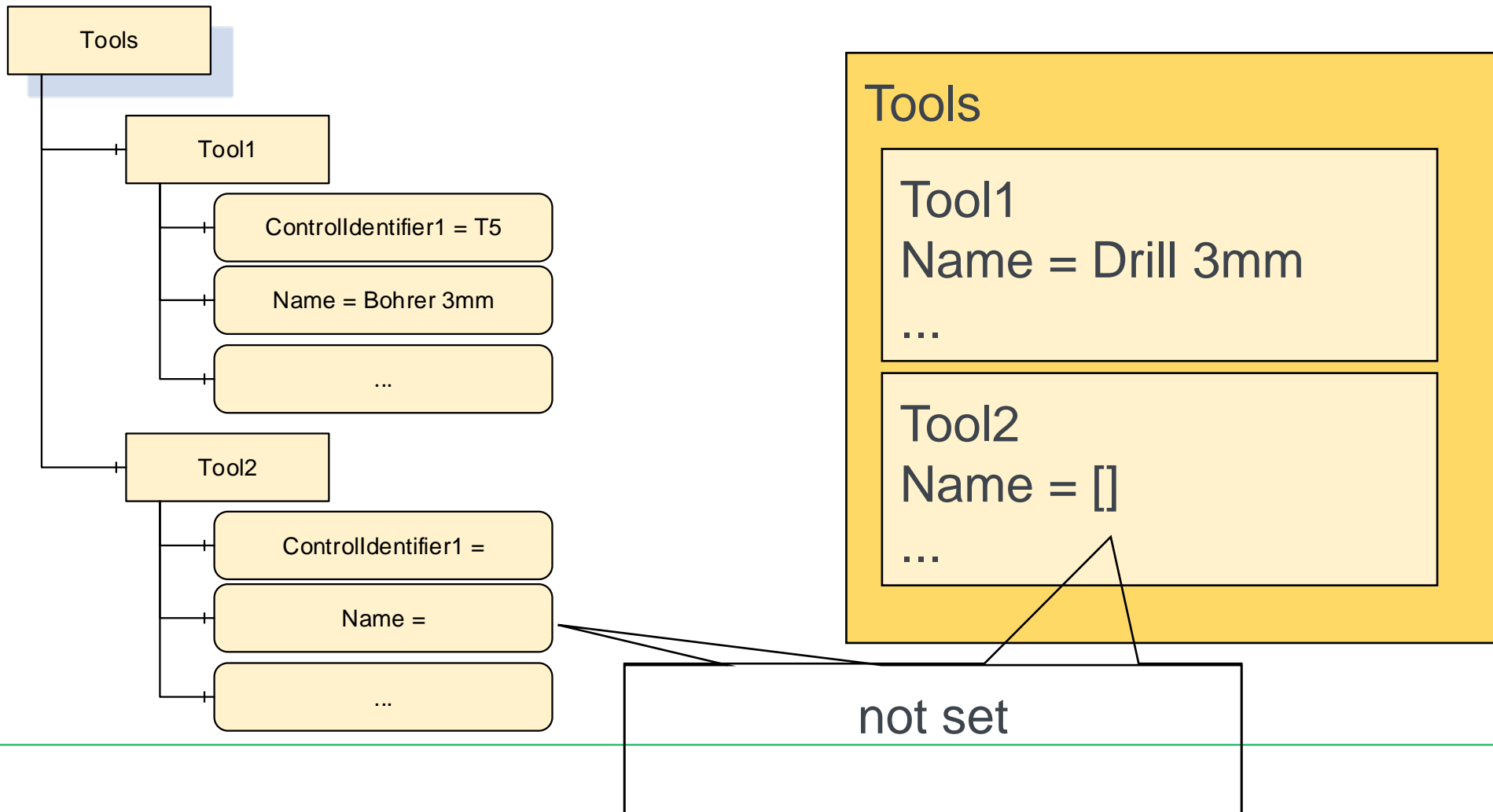
Model View



- The ToolListType structures tool instances (using HasComponent References)
- No limit to the number of tools
- No minimum number of tools

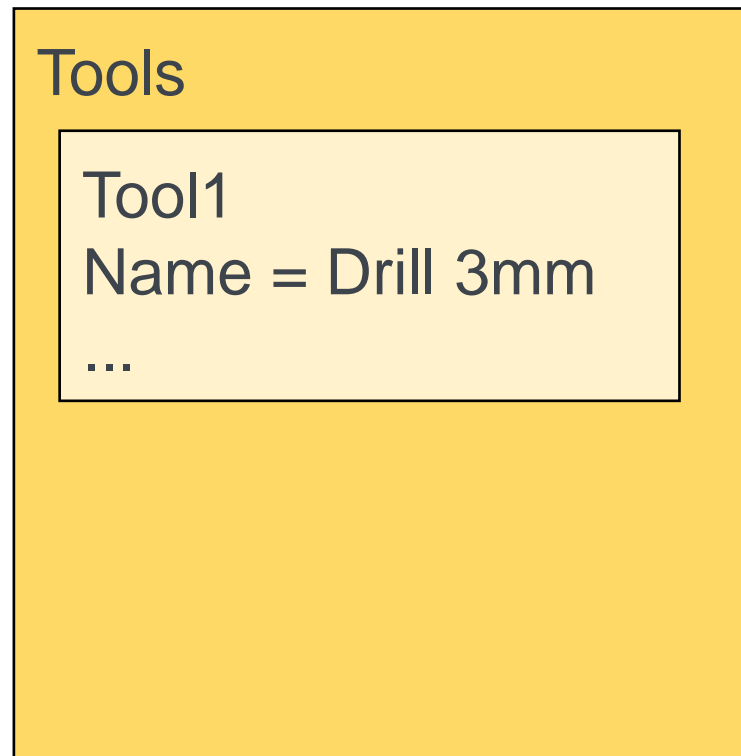


Shorthand for Graphics

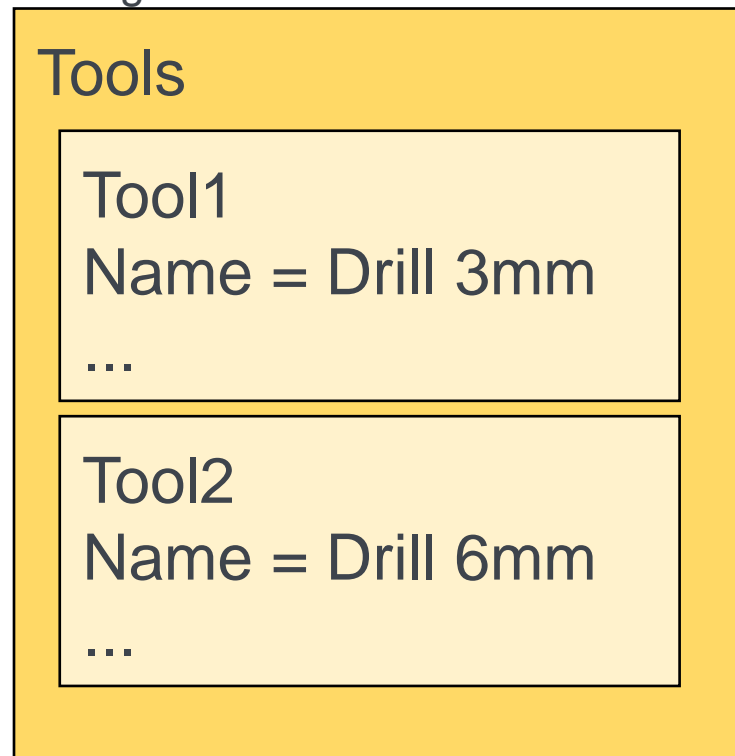


Usage: Dynamic

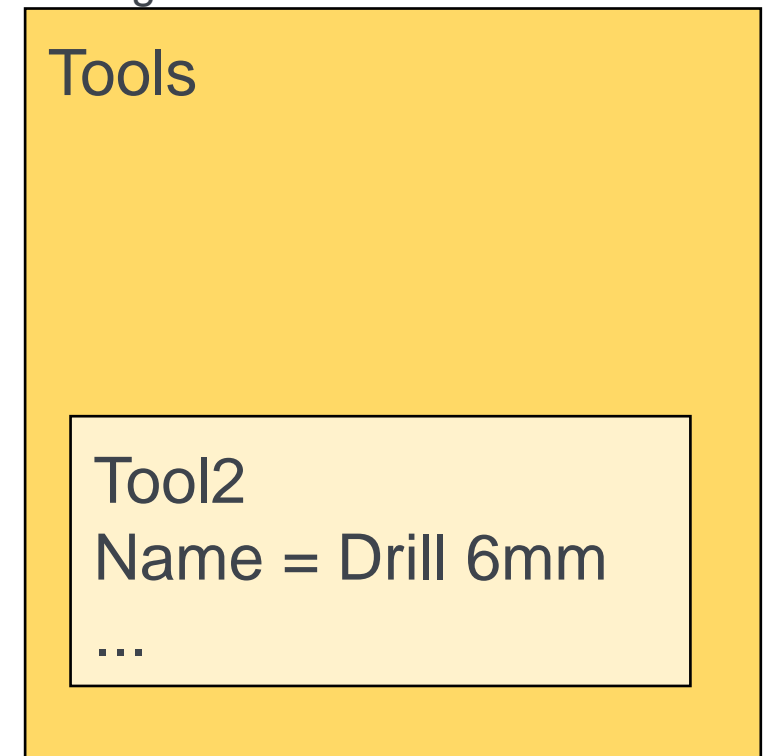
- Initially: one tool in tool magazine



- Drill 6mm is added to the magazine

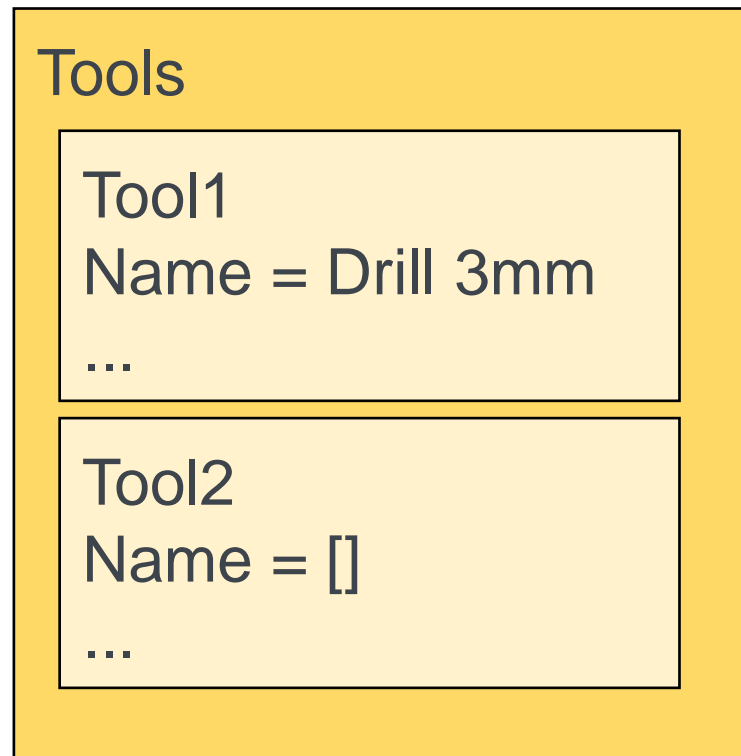


- Drill 3mm is taken out of the magazine

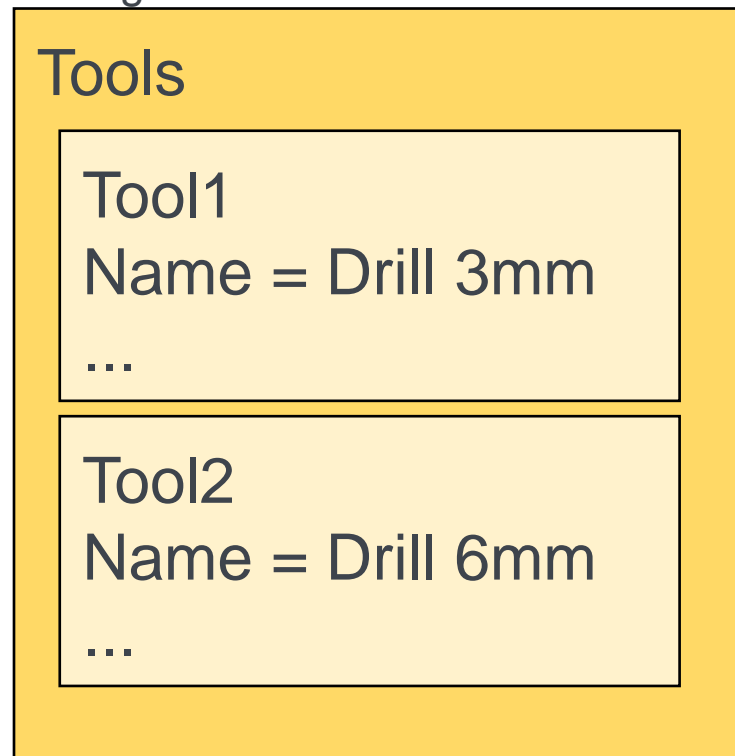


Usage: Static

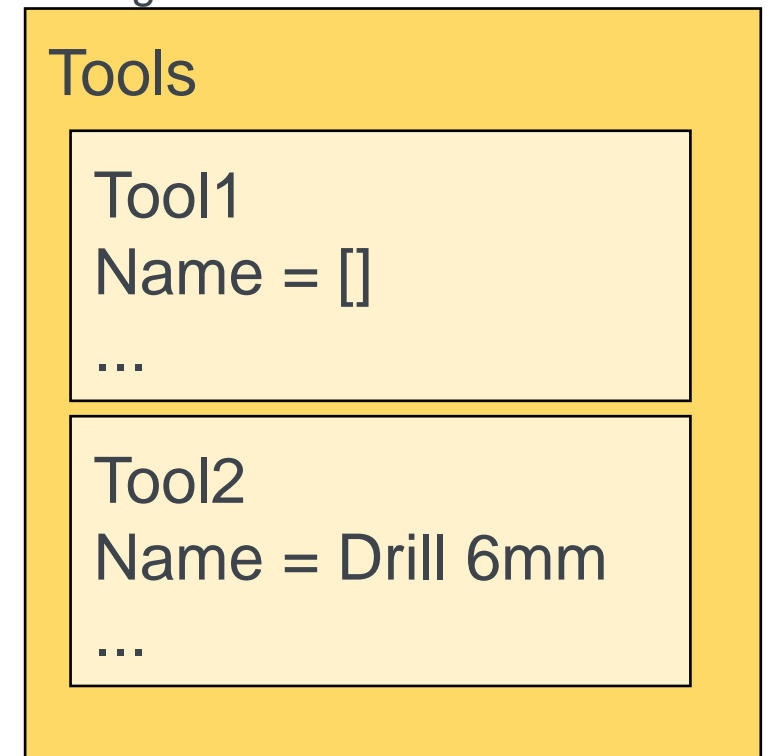
- Initially: one tool in tool magazine



- Drill 6mm is added to the magazine



- Drill 3mm is taken out of the magazine



Comparison of Dynamic and Static Use

DYNAMIC

- Initially: available tools are instantiated as OPC UA Nodes. The list may be empty (contain no elements)
- New tool is added: Node is added
- Tool is taken out: Node is deleted

STATIC

- Initially: The number of OPC UA Nodes corresponds to the maximum tool capacity. For all available tools, the Components are set (Name, ControllIdentifier, ...), in all other Nodes they stay empty
- New tool is added: Values for the Components of the respective Node are set
- Tool is taken out: Component values of the respective node are set to empty values

Support of Tools Server Facet is possible for both options!

Dynamic usage is optional for the Facet

Table 109 – MachineTool Tools Server Facet

Group	ConformanceUnit / Profile Title	M / O
Profile	0:Address Space Notifier Server Facet	M
MachineTool	MachineTool Equipment ToolIdentification	M
MachineTool	MachineTool Equipment Dynamic Tool List	O
MachineTool	MachineTool Event Propagation	O
MachineTool	MachineTool Event Tools	O