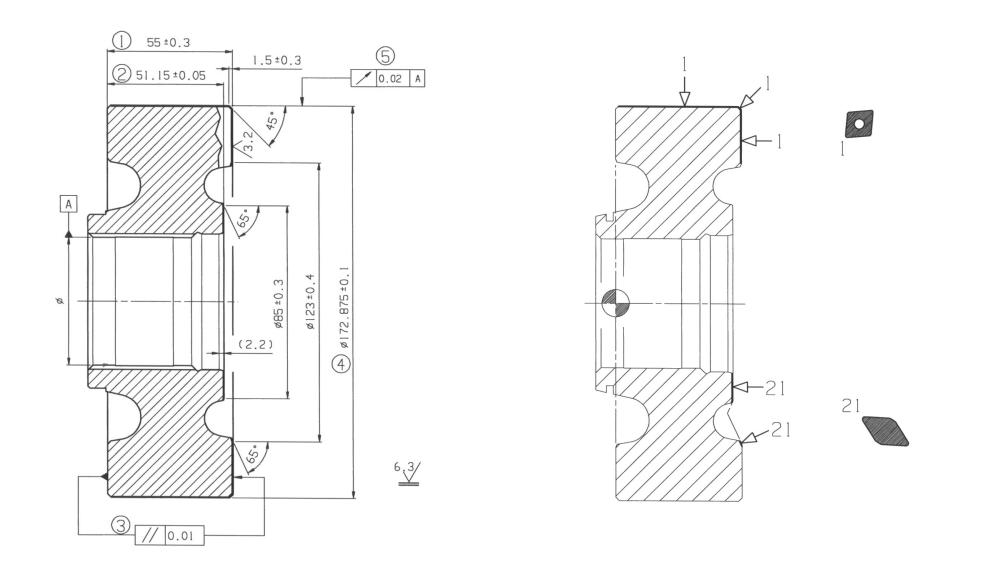
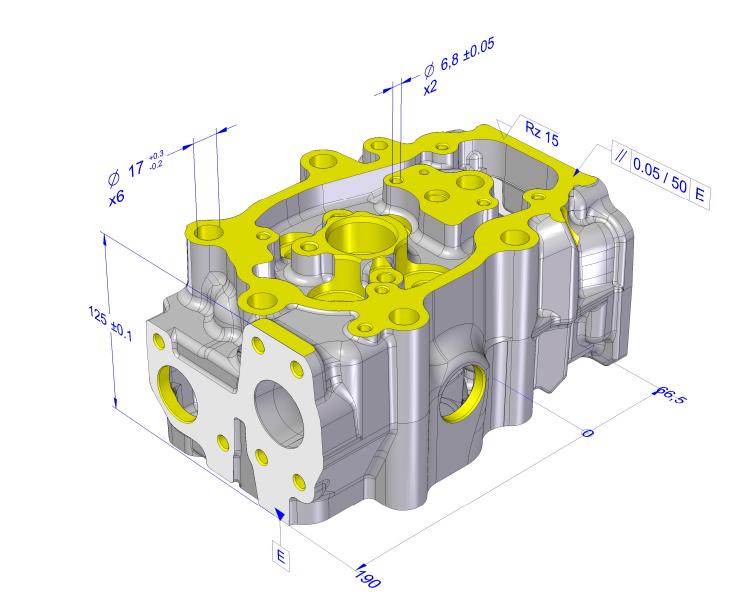
# STEP-NC

## Machining description as a view of STEP-NC data

# Introduction

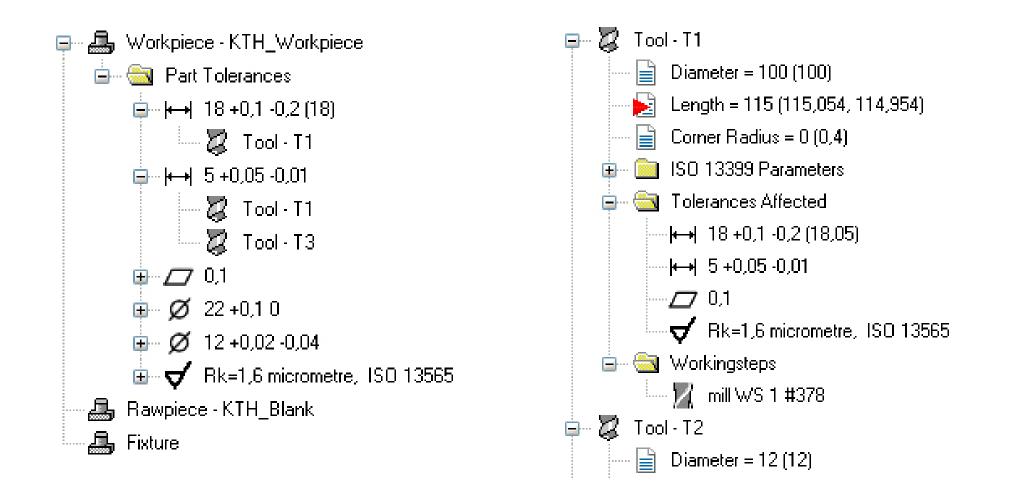
Machining description for a CNC machining process has the purpose of providing information about and relations between product, process and resources. The currently used information model requires time consuming and expensive procedures during the manufacturing preparation process to create such a description.





*Workpiece model with tolerance representation according to STEP AP214 (Edition 3 – draft)* 

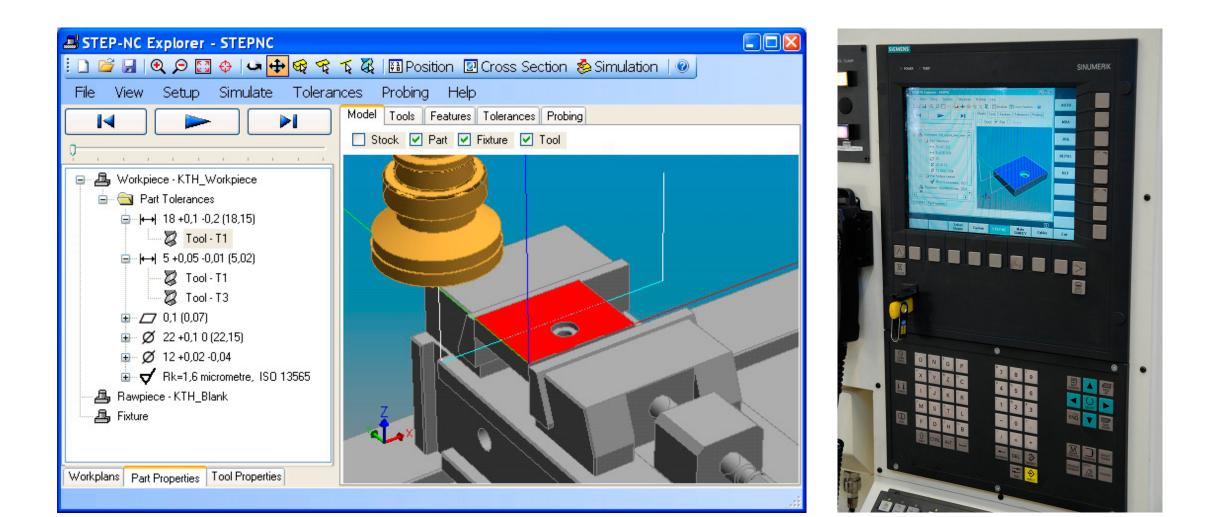
Current commonly used machining descriptions



Machining descriptions as views of STEP-NC data

### Method

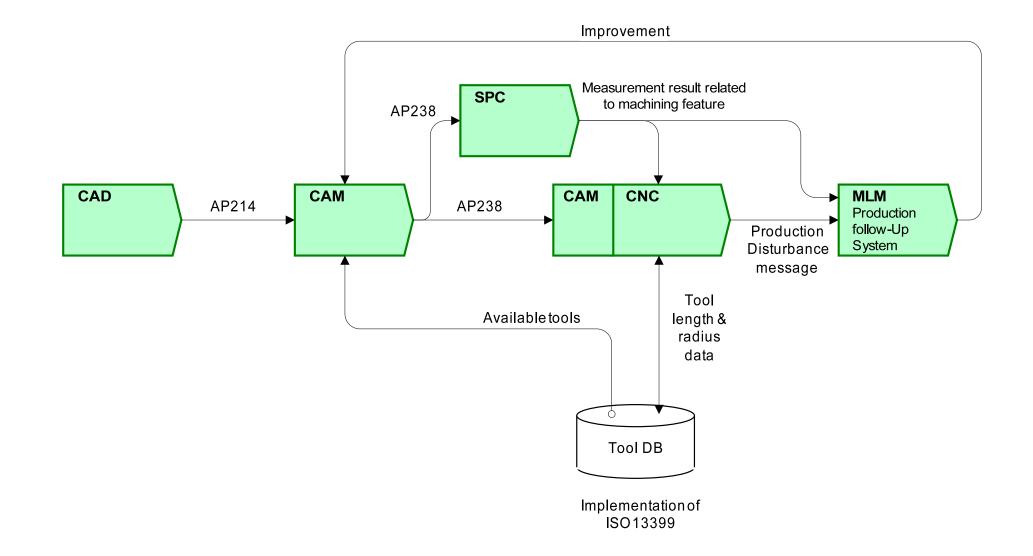
We have studied how the international standard ISO 10303 known as STEP (STandard for the Exchange of Product model data), can be utilized in the manufacturing preparation process. To demonstrate our research result we have developed a prototype system where STEP data models of machining processes, workpieces (with tolerances), fixtures and cutting tools are used and integrated.



#### STEP-NC Explorer integrated in Siemens CNC 810D

#### Results

We present how information requirements for machining descriptions can be met, by defining a relationship between a machined face, its tolerances and the used cutting tool. We have proven that information in the manufacturing preparation process is currently divided unnecessarily early, to create machining descriptions for CNC machining.



Activity model of the scenario of the demonstration

Information on the ModArt project www.modart.iip.kth.se

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