**CNC-Simulator Scoping Document**

**Graphical interface (in Java FX)**

* Workspace GREY
* Drill/mortising machine RED
* Milled area BLACK
* Home GREEN
* Current Position, spindle status (On/Off + sense of rotation), coolant status, speed

**Commands:**

* **Execution of single commands**
  + Automatic counting of commands
  + Checking a command before execution (checking the following command while the first is being executed)
* **Execution of multiple commands**
  + Manual counting of the commands by the user
  + Checking the whole command set before the first execution
  + Input? 🡪 Textarea/Import via JSON/XML
* **Possibility to pause current command or cancel command set**
* **G-Commands (Way-functions):**
  + G00: Verfahrbewegung im Eilgang (only without drilling/milling possible)
  + G01: straight (linear) Interpolation
  + G02: feed with circular arc, clockwise (circle Interpolation)
  + G03: feed with circular arc, anticlockwise
  + G28: return to HOME position
* **M-Commands (Control-functions):**
  + M00: programme stop (spindle, coolant, Vorschub aus)
  + M02: programme end
  + M03: spindle on: clockwise (right)
  + M04: spindle on: anticlockwise (left)
  + M05: spindle stop
  + M08: coolant on
  + M09: coolant off
  + M13: spindle on, clockwise and coolant on
  + M14: spindle on, anticlockwise and coolant on

**Data:**

* Workspace: 1400mm x 1050mm
* HOME-position at 0/0
* Cutting speed:
  + Without coolant 2m/min
  + With coolant 3m/min
* Moving speed: 4-8m/min
* Tool diameter: 15mm
* weight: 89kg without tool

**Programm Taschenkontur**

* N10 M03
* N20 M08
* N30 G01 X0 Y0
* N40 G02 X0 Y0 I0 J5
* N50 G01 X10 Y10
* N60 G02 X10 Y0 I0 J-5
* N70 G28
* N80 M00

**Settings of the mortising machine with a local file (XML or JSON)**

* Cutting Speed (with/without coolant)
* HOME-position
* Colour

**enclosing**

* Focus on 2D
* 5/34 Way-functions
* 5(9)/21 Control-functions

**Documentation**

* Source text signature (Who did what)
* Developer documentation (incl. UML-classdiagramm)
* User documentation (incl. screenshots)

**Handing in**

* Source code (according to demands)
* Documentation
* Programme as package / installation assist