



SOMMACT Self Optimising Measuring MACHine Tools

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SOMMACT

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Technical specification of demonstrator

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1) **R** = Report, **P** = Prototype, **D** = Demonstrator, **O** = Other

2) **PU** = Public, **PP** = Restricted to other programme participants, **RE** = Restricted to a group specified by the consortium, **CO** = Confidential, only for members of the consortium



Executive summary

This report provides the technical specification of the SOMMACT project demonstrator that will be a real machine tool, based on the ALESAMONTI MAF45 boring/milling machine which, from the preliminary tests performed in T1.2, shows good sensitivity to both load variations and ambient temperature variations.

This specification is based on the requirements that derive from the following documents:

1. D1.3 – *Specification of the system required functions;*
2. D1.4 – *Specification of high level system architecture;*
3. D2.4 – *Preliminary metrological specification of the demonstrator.*

The demonstrator shall allow the validation of the significant number of different hardware and software solutions that composes SOMMACT project “tool kit”.

Specifications of logical and physical interfaces between the different sensor(s)/artefact(s) systems and the Self-learning core are documented in Deliverable D1.4.

The IPC system supervisor requirements for reliability and performances are considered in this document only for relevant electrical engineering aspects (e.g.: cabling requirements, space allocation in machine lay-out and in electrical cabinet, etc.). Design and implementation of the IPC are the object of on-going research activities in Task T4.3 that will be documented in Deliverable D4.1 – *Specification of industrial PC* (under preparation).

This document specifies the application of high reliability electro-electronic components like the CNC (including its PLC), drives, servo motors and their interconnections. The application of industrial standard solutions to the demonstrator will allow researchers to concentrate on the validation of newly developed concepts and sensor(s)/artefact(s) systems.

Mechanical interfaces are specified in this document considering the application of the possible compositions of SEM (*S*eparate *E*MBEDDED *M*etrology) and TiLOR (*T*imely *L*ow-*O*rdER *R*ecovery) solutions, proposed in Deliverables D2.2 and D2.3 , with due consideration to findings and on-going research activities documented in Deliverables D3.2 and D3.3.

This document provides specifications at the level that is deemed indispensable for the generation of subsequent executive technical documentation relevant to every single demonstrator system component.



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