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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

1 Executive summary

This document contains the *actual* IMS MATECS Initiative proposal as published on the Intelligent Manufacturing System web site (www.ims.org), with the specific purpose to seek for partners from other IMS regions.

The IMS MATECS-MTP Initiative falls within the *Standardisation* IMS Theme and focuses on three main objectives:

1. Standardisation of machine tool geometric error functions and parameters identification and terminology;
2. Standardisation of error functions representation output from different measuring systems and sensors system;
3. Definition of standard compensation tables to be interpreted by different Computer Numerical Controls (CNCs) to allow uniform implementation of machine tool geometric error functions and parameters compensation strategies.

Very many machine tools are currently equipped with Computer Numerical Control (CNC) which, to different extent, are capable of compensating some (or all) their geometric error functions and parameters thus improving the machined part quality.

Such error functions and parameters are determined (measured) by different measuring systems and sensors systems, each one providing a representation that is specific to the measurement system and sensors system providers.

Different CNC manufacturers apply different strategies to partially compensate for the effect of the same error function on the machined part quality.

There is a strong need to promote, within the International Standard Organization (ISO), a standard covering identification, terminology and compensation table format for data exchange between different measuring systems, sensors systems and CNCs in order to promote interoperability.

The proposed initiative already counts with two IMS Regions (e.g. Europe and Switzerland).

Preliminary contacts with the United States IMS Regional Secretariat are ongoing.

INTELLIGENT MANUFACTURING SYSTEMS IMS

Manufacturing Technology Platform (MTP)

MTP Theme: Standards

GOAL: STANDARDISATION OF MACHINE TOOL ERROR FUNCTIONS REPRESENTATION AND COMPENSATION

- Standardisation of machine tool geometric error functions and parameters identification and terminology;
- Standardisation of error functions representation output from different measuring systems and sensors system;
- Definition of standard compensation tables to be interpreted by different Computer Numerical Controls (CNCs) to allow uniform implementation of machine tool geometric error functions and parameters compensation strategies.

Initiative Title: MATECS – MTP

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Manufacturing Technology Platform (MTP)

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