

- b. Hydrogen isotope storage and purification systems using metal hydrides as the storage, or purification medium.
4508. 5. Platinized catalysts specially designed or prepared for promoting the hydrogen isotope exchange reaction between hydrogen and water for the recovery of tritium from heavy water or for the production of heavy water.
4508. 6. Helium in any form isotopically enriched in the helium-3 isotope, whether or not mixed with other materials or contained in any equipment or device, except products or devices containing less than 1 g of helium-3.
4508. 7. Alpha-emitting radionuclides and equipment containing such radionuclides as follows:  
All alpha-emitting radionuclides having an alpha half-life of 10 days or greater but less than 200 years, including compounds and mixtures containing these radionuclides with a total alpha activity of 1 curie per kilogram (37 GBq/kg) or greater except for devices containing less than 100 millicuries (3.7 GBq) of alpha activity per device.

## ANNEX I

### DEFINITIONS OF TERMS USED IN GROUP 4 - PART II

- "accuracy" -- Usually measured in terms of inaccuracy, defined as the maximum deviation, positive or negative, of an indicated value from an accepted standard or true value.
- "adaptive control" -- a control system that adjusts the response from conditions detected during the operation (Ref. ISO 2806-1980)
- "angular position deviation"  
The maximum difference between angular position and the actual, very accurately measured angular position after the workpiece mount of the table has been turned out of its initial position. (Reference: VID/VDE 2617. Draft: "Rotary table on coordinate measuring machines.")
- "basic scientific research" -- Experimental or theoretical work undertake principally to acquire new knowledge of the fundamental principles of phenomena and observable facts, not primarily directed toward a specific practical aim or objective.
- "camming" (axial displacement) -- Axial displacement in one revolution of the main spindle measured in a plane perpendicular to the spindle faceplate at a point next to the circumference of the spindle faceplate (REF. ISO 230 Part 1-1986, paragraph 5.63)
- "compound rotary table" -- A table allowing the workpiece to rotate and tilt about two non-parallel axes, which can be coordinated simultaneously for "contouring control."
- "contouring control" -- Two or more "numerically controlled" motion operating in accordance with instructions that specify the next required position and the required feed rates to that position. These feed rates are varied in relation to each other so that a desired contour is generated (REF. ISO/DIS 2806-1980).
- "development" -- is related to all phases before "production" and includes:
- design
  - design research
  - design analysis
  - design concepts
  - assembly and testing of prototypes
  - pilot production schemes
  - design data
  - process of transforming design data into a product
  - configuration design
  - integration design
  - layouts
- "digital computer" -- Equipment which can, in the form of one or more discrete variables:
- a. Accept data;
  - b. Store data or instruction in fixed or alterable (writable) storage devices;
  - c. Process data by means of a stored sequence of instructions which is modifiable; and
  - d. Provide output of data.
- N.B.:** Modifications of a stored sequence of instructions include replacement of fixed storage devices, but not a physical change in wiring or interconnections.
- "End-effectors" as described in Item 4501. 6 include grippers, "active tooling units," and any other tooling that is attached to the baseplate on the end of a "robot" manipulator arm.
- "flexible manufacturing unit (FMU)" [sometimes also referred to as "flexible manufacturing system" (FMS)] or "flexible manufac-

turing cell (FMC)"]].

An entity which includes a combination of at least:

- a. A "digital computer" including its own "main storage" and its own related equipment; and
- b. Two or more of the following:
  1. A machine tool described in Section 4501.2;
  2. A dimensional inspection machine described in Section 4501.3;
  3. A "robot" controlled by Section 4501.6.;
  4. Digitally controlled equipment controlled by Section 4503.4.

"in the public domain" -- "In the public domain", as it applies herein, means technology that has been made available without restrictions upon its further dissemination. (Copyright restrictions do not remove technology from being in the public domain.)

"laser" -- An assembly of components which produce coherent light that is amplified by stimulated emission of radiation.

"linearity"

(Usually measured in terms of nonlinearity) is the maximum deviation of the actual characteristic (average of upscale and downscale readings), positive or negative, from a straight line so positioned as to equalize and minimize the maximum deviations.

"main storage" -- The primary storage for data or instructions for rapid access by a central processing unit. It consists of the internal storage of a "digital computer" and any hierarchical extension thereto, such as cache storage or non-sequentially accessed extended storage.

"measurement uncertainty"

The characteristic parameter which specifies in what range around the output value the correct value of the measurable variable lies with a confidence level of 95%. It includes the uncorrected systematic deviations, the uncorrected backlash, and the random deviations (Reference: VDI/VDE 2617).

"microprogram" -- A sequence of elementary instructions, maintained in a special storage, the execution of which is initiated by the introduction of its reference instruction into an instruction register.

"motion control board" -- An electronic assembly specially designed to provide a computer system with the capability to coordinate simultaneously the motion of axes of machine tools for "contouring control."

"numerical control" -- The automatic control of a process performed by a device that makes use of numeric data usually introduced as the operation is in progress (Ref. ISO 2382).

"part program" -- An ordered set of instructions in a language and in a format required to cause operations to be effected under automatic control, which is either written in the form of a machine program on an input medium or prepared as input data for processing in a computer to obtain a machine program (Ref. ISO 2806-1980).

"positioning accuracy"

Of "numerically controlled" machine tools is to be determined and presented in accordance with paragraph 2.13, in conjunction with the requirements below:

a. Test conditions (ISO/DIS/230/2, paragraph 3):

1. For 12 hours before and during measurements, the machine tool and accuracy measuring equipment will be kept at the same ambient temperature. During the premeasurement time, the slides of the machine will be continuously cycled identically to the way they will be cycled during the accuracy measurements;
2. The machine shall be equipped with any mechanical, electronic, or software compensation to be exported with the machine;
3. Accuracy of measuring equipment for the measurements shall be at least four times more accurate than the expected machine tool accuracy;
4. Power supply for slide drives shall be as follows:
  - a. Line voltage variation shall not be greater than  $\pm 10\%$  of nominal rated voltage;
  - b. Frequency variation shall not be greater than  $\pm 2$  Hz of normal frequency;
  - c. Lineouts or interrupted service are not permitted.

b. Test Program (paragraph 4):

1. Feed rate (velocity of slides) during measurement shall be the rapid traverse rate;

**N.B.:**

In the case of machine tools which generate optical quality