

"Q-switched laser"

A "laser" in which the energy is stored in the population inversion or in the optical resonator and subsequently emitted in a pulse.

"Radar frequency agility"

Any technique which changes, in a pseudo-random sequence, the carrier frequency of a pulsed radar transmitter between pulses or between groups of pulses by an amount equal to or larger than the pulse bandwidth.

"Radar spread spectrum"

Any modulation technique for spreading energy originating from a signal with a relatively narrow frequency band, over a much wider band of frequencies, by using random or pseudo-random coding.

"Real time bandwidth"

For "dynamic signal analysers", the widest frequency range which the analyser can output to display or mass storage without causing any discontinuity in the analysis of the input data. For analysers with more than one channel, the channel configuration yielding the widest "real-time bandwidth" shall be used to make the calculation.

"Real time processing"

The processing of data by a computer system providing a required level of service, as a function of available resources, within a guaranteed response time, regardless of the load of the system, when stimulated by an external event.

"Required"

As applied to "technology", refers to only that portion of "technology" which is peculiarly responsible for achieving or exceeding the embargoed performance levels, characteristics or functions. Such "required" "technology" may be shared by different products.

"Resolution"

The least increment of a measuring device; on digital instruments, the least significant bit. (Reference: ANSI B-89.1.12)

"Riot control agents"

Substances which produce temporary irritating or disabling physical effects which disappear within minutes of removal from exposure. There is no significant risk of permanent injury and medical treatment is rarely required.

"Robot"

A manipulation mechanism, which may be of the continuous path or of the point-to-point variety, may use sensors, and has all the following characteristics:

- Is multifunctional;
- Is capable of positioning or orienting material, parts, tools or special devices through variable movements in three dimensional space;
- Incorporates three or more closed or open loop servo-devices which may include stepping motors; and
- Has "user-accessible programmability" by means of the teach/playback method or by means of an electronic computer which may be a programmable logic controller, i.e., without mechanical intervention.

N.B.:

The above definition does not include the following devices:

1. Manipulation mechanisms which are only manually/teleoperator controllable;
2. Fixed sequence manipulation mechanisms which are automated moving devices, operating according to mechanically fixed programmed motions. The programme is mechanically limited by fixed stops, such as pins or cams. The sequence of motions and the selection of paths or angles are not variable or changeable by mechanical, electronic or electrical means;
3. Mechanically controlled variable sequence manipulation mechanisms which are automated moving devices, operating according to mechanically fixed programmed motions. The programme is mechanically limited by fixed, but adjustable stops, such as pins or cams. The sequence of motions and the selection of paths or angles are variable within the fixed programme pattern. Variations or modifications of the programme pattern (e.g., changes of pins or exchanges of cams) in one or more motion axes are accomplished only through mechanical operations;
4. Non-servo-controlled variable sequence manipulation mechanisms which are automated moving devices, operating according to mechanically fixed programmed

motions. The programme is variable but the sequence proceeds only by the binary signal from mechanically fixed electrical binary devices or adjustable stops;

5. Stacker cranes defined as Cartesian coordinate manipulator systems manufactured as an integral part of a vertical array of storage bins and designed to access the contents of those bins for storage or retrieval.

"Rotary Atomisation"

A process to reduce a stream or pool of molten metal to droplets to a diameter of 500 micrometre or less by centrifugal force.

"Run out" (out-of-true running)

Radial displacement in one revolution of the main spindle measured in a plane perpendicular to the spindle axis at a point on the

"Scale factor" (gyro or accelerometer)

The ratio of change in output to a change in the input intended to be measured. Scale factor is generally evaluated as the slope of the straight line that can be fitted by the method of least squares to input-output data obtained by varying the input cyclically over the input range.

"Settling time"

The time required for the output to come within one-half bit of the final value when switching between any two levels of the converter.

"Signal analysers"

Apparatus capable of measuring and displaying basic properties of the single-frequency components of multi-frequency signals.

"Signal analysers" (dynamic) - see "Dynamic signal analysers"

"Signal processing"

The processing of externally derived information-bearing signals by algorithms such as time compression, filtering, extraction, selection, correlation, convolution or transformations between domains (e.g., fast Fourier transform or Walsh transform).

"Simple educational devices"

Devices designed for use in teaching basic scientific principles and demonstrating the operation of those principles in educational institutions.

"Software"

A collection of one or more "programmes" or "microprogrammes" fixed in any tangible medium of expression.

"Source code" (or source language)

A convenient expression of one or more processes which may be turned by a programming system into equipment executable form ("object code" (or object language)).

N.B.:

"Object code" (or object language): An equipment executable form of a convenient expression of one or more processes ("source code" (or source language)) which has been converted by a programming system.

"Spacecraft"

Active and passive satellites and space probes.

"Space qualified"

Products designed, manufactured and tested to meet the special electrical, mechanical or environmental requirements for use in the launch and deployment of satellites or high altitude flight systems operating at altitudes of 100 km or higher.

"Special fissile material"

Plutonium-239, uranium-233, uranium enriched in the isotopes 235 or 233, and any material containing the foregoing.

"Spectral efficiency"

A figure of merit parametrized to characterize the efficiency of transmission system which uses complex modulation schemes such as QAM (quadrature amplitude modulation), Trellis coding, QSPK (Q-phased shift key), etc. It is defined as follows:

"Digital transfer rate"(bits/second)

$$\text{Spectral efficiency} = \frac{\text{Digital transfer rate (bits/second)}}{6 \text{ dB spectrum bandwidth (Hz)}}$$

"Splat Quenching"

A process to "solidify rapidly" a molten metal stream impinging upon a chilled block, forming a flake-like product.

N.B.:

"Solidify rapidly": solidification of molten material at cooling rates exceeding 1,000 K/sec.