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IEEE 100

The Authoritative Dictionary of

IEEE Standards Terms

Seventh Edition

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The Authoritative Dictionary of IEEE Standards Terms

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Support provided by the
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connection-oriented confidentiality The protection of all (N)-service data units from unauthorized disclosure during communications from one (N+1)-entity to one or more (N+1)-entities for which a security association is established for the transfer of data and for the application of confidentiality service between the entities themselves and between each entity and the physical layer. (C/LM) 802.10-1998

connection-oriented integrity A service providing for the integrity of all (N)-service data on a security association and detecting any modification, insertion, deletion, or replay of any data within an entire SDU sequence. (C/LM) 802.10-1998

connection-oriented service A kind of delivery service where different virtual circuit configurations are used to transmit messages. *Synonym:* virtual circuit service. (C) 610.7-1995

connection phase A beat that begins with the assertion of the address synchronization line followed by the release of an address acknowledge line. It is used to broadcast the address and command information. Modules determine whether they wish to take part in the transaction based on this information. (C/BA) 10857-1994, 896.4-1993w, 896.3-1993w

connections In-line and tee splices that are designed to join heating cables or heating cables and power leads. (IA/PC) 515.1-1995

connections of polyphase circuits *See:* star-connected circuit; zig-zag connection of polyphase circuits; mesh-connected circuit.

connector (1) A coupling device employed to connect conductors of one circuit or transmission element with those of another circuit or transmission element. *See also:* auxiliary device to an instrument. (IM/ELM/HFIM) [40], C12.8-1981r

(2) (wires) A device attached to two or more wires or cables for the purpose of connecting electric circuits without the use of permanent splices. (VT/LT) 16-1955w

(3) (splicing sleeve) A metal sleeve, that is slipped over and secured to the butted ends of the conductors in making up a joint. (T&D/PE) [10]

(4) (waveguides) A mechanical device, excluding an adapter, for electrically joining separable parts of a waveguide or transmission-line system. (AP/ANT) [35]

(5) (power cable joints) A metallic device of suitable electric conductance and mechanical strength, used to splice the ends of two or more cable conductors, or as a terminal connector on a single conductor. Connectors usually fall into one of the following types: solder, welded, mechanical, and compression or indent. Conductors are sometimes spliced without connectors, by soldering, brazing or welding. (PE/IC) 404-1986s

(6) (substation grounding) A metallic device of suitable electric conductance and mechanical strength used to connect conductors. (SUB/PE) 837-1989r

(7) (fiber optics) *See also:* optical waveguide connector. 812-1984w

(8) *See also:* connector link. (PE/T&D) 524-1992r

connector base (motor plug) (motor attachment plug cap) A device, intended for flush or surface mounting on an appliance, that serves to connect the appliance to a cord connector. (EEC/PE) [119]

connector insertion loss *See:* insertion loss.

connector link (conductor stringing equipment) A rigid link designed to connect pulling lines and conductors together in series. It will not spin and relieve torsional forces. *Synonyms:* bullet; link; link; slug; connector; connector. (T&D/PE) 524-1992r

connector, precision *See:* precision connector.

connector, rope *See:* rope connector.

connector switch (connector) A remotely controlled switch for connecting a trunk to the called line. (EEC/PE) [119]

connector thermal capacity (substation grounding) The ability of a connector to withstand the amount of current required to produce a specified temperature on the control conductor

without increasing the resistance of the connector beyond that specified in IEEE Std 837-1989. (SUB/PE) 837-1989r

connector, waveguide *See:* waveguide connector.

connect time In time-sharing computer systems, the time that a terminal or user is connected and able to communicate with a computer. *See also:* CPU time. (C) 610.10-1994w

conopulse A tracking radar that uses two simultaneous squinted beams that are rotated around the antenna boresight to produce, on a time-shared basis, monopulse angle-error signals in two orthogonal coordinates (such as azimuth and elevation). *Notes:* 1. Only two receivers are required rather than three as in the usual monopulse tracker. 2. Also called "konopulse" and "scan with compensation." (AES) 686-1997

consecutive Pertaining to the occurrence of two sequential events or items without the intervention of any other event or item; that is, one immediately after the other. (C) 610.12-1990

consecutive sequence computer A type of computer in which instructions are executed in an implicitly defined sequence unless a jump instruction specifies the storage location of the next instruction to be executed. *Contrast:* arbitrary sequence computer. (C) 610.10-1994w

consecutive spill method *See:* linear probing.

consequences The result(s) of (i.e., events that follow and depend upon) a specified event. (PE/NP) 1082-1997

conservation of radiance (fiber optics) A basic principle stating that no passive optical system can increase the quantity Ln^{-2} where L is the radiance of a beam and n is the local refractive index. Formerly called "conservation of brightness" or the "brightness theorem." *See also:* brightness; radiance. (Std100) 812-1984w

conservator (expansion tank system) (power and distribution transformers) A system in which the oil in the main tank is sealed from the atmosphere, over the temperature range specified, by means of an auxiliary tank partly filled with oil and connected to the completely filled main tank. (PE/TR) C57.12.80-1978r

conservator/diaphragm system (power and distribution transformers) A system in which the oil in the main tank is completely sealed from the outside atmosphere, and is connected to an elastic diaphragm tank contained inside a tank mounted at the top of the transformer. As oil expands and contracts within a specified temperature range the system remains completely sealed with an approximately constant pressure. (PE/TR) C57.12.80-1978r

conservator system An oil preservation system in which the oil in the main tank is sealed from the atmosphere, over the temperature range specified, by means of an ancillary tank partly filled with oil and connected to the completely filled main tank. *Synonym:* expansion tank system. (PE/TR) C57.15-1999

consist The makeup or composition (number and specific identity) of individual units on a train. (VT/RT) 1477-1998, 1475-1999, 1474.1-1999

consistency (software) The degree of uniformity, standardization, and freedom from contradiction among the documents or parts of a system or component. *See also:* traceability. (C) 610.12-1990

consistency check A check that verifies that an item of data is compatible with certain rules specified for that data. For example, one might wish to check the consistency between two data elements ORDER-DATE and DELIVER-DATE such that DELIVER-DATE may not be earlier than ORDER-DATE. *See also:* limit check; crossfooting check; range check; validity check. (C) 610.5-1990w

consol (navigation aid terms) A keyed C-W (continuous wave) short-baseline-radio navigation system operating in the L/MF (low- and medium frequency) band, generally useful to about 1500 nmi (nautical miles) (2800 kilometers [km]), and using three radiators to provide a multiplicity of overlapping lobes of dot-and-dash patterns which form equisignal hyperbolic

common winding (power and distribution transformers) (autotransformer) That part of the autotransformer winding that is common to both the primary and secondary circuits. *Synonym:* shunt winding.

(PE/TR) C57.15-1999, C57.12.80-1978r

communication (1) (data transmission) (electric systems) (telecommunications) The transmission of information from one point to another by means of electromagnetic waves.

(PE) 599-1985w

(2) The flow of information from one point, known as the source, to another, the receive. (C) 610.10-1994w

communication access Passive and active attacks on information transmitted over communication channels and on the system's communication services themselves. This threat area assumes that an intruder has access to the communication media or the components (both hardware and software) that provide the communication services. (C/BA) 896.3-1993w

communication channel A facility that permits signaling between terminals. (SUB/PE) 999-1992w

communicational cohesion A type of cohesion in which the tasks performed by a software module use the same input data or contribute to producing the same output data. *Contrast:* coincidental cohesion; functional cohesion; temporal cohesion; sequential cohesion; procedural cohesion; logical cohesion. (C) 610.12-1990

communication band *See:* frequency band of emission.

communication circuits Electrical circuits supplying equipment and systems for voice, sound, or data transmission, such as telephone, engine order telegraph, data communication, interior communication, paging systems, wired music systems, fire and general alarm systems, smoke and fire detection systems, closed circuit television, navigational equipment, and microprocessor based automated alarm and control systems. (IA/MT) 45-1998

communication conductor (measuring longitudinal balance of telephone equipment operating in the voice band) A conductor used in a communication network.

(COM/TA) 455-1985w

communication control character (1) A functional character intended to control or facilitate transmission over data networks. Control characters form the basis for character-oriented communications control procedures.

(LM/COM) 168-1956w

(2) (data management) *See also:* transmission control character. (C) 610.5-1990w

communication facility (data transmission) Anything used or available for use in the furnishing of communication service.

(PE) 599-1985w

communication interface That part of the API devoted to communications with other application software, external data transport facilities, and devices. (C/PA) 14252-1996

communication line *See:* telecommunication line.

communication lines (1) The conductors and their supporting or containing structures that are used for public or private signal or communication service, and which operate at potentials not exceeding 400 V to ground or 750 V between any two points of the circuit, and the transmitted power of which does not exceed 150 W. When operating at less than 150 V, no limit is placed on the transmitted power of the system. Under specified conditions, communication cables may include communication circuits exceeding the preceding limitation where such circuits are also used to supply power solely to communication equipment. *Note:* Telephone, telegraph, railroad-signal, data, clock, fire, police-alarm, cable television and other systems conforming with the above are included. Lines used for signaling purposes, but not included under the above definition, are considered as supply lines of the same voltage and are to be so installed. *See also:* electric supply lines. (NESC/T&D) C2.2-1960

(2) The conductors and their supporting or containing structures that are used for public or private signal or communications service, and which operate at potentials not exceeding

400 V to ground or 750 V between any two points of the circuit, and the transmitted power of which does not exceed 150 W. When operating at less than a nominal voltage of 90 V, no limit is placed on the transmitted power of the system. Under specified conditions, communication cables may include communication circuits exceeding the preceding limitation where such circuits are also used to supply power solely to communications equipment. *Note:* Telephone, telegraph, railroad-signal, data, clock, fire, police-alarm, cable-television, and other systems conforming with the above are included. Lines used for signaling purposes, but not included under the above definition, are considered as supply lines of the same voltage and are to be so installed.

(NESC) C2-1997

communication provider A component of the system that provides the communications service through an endpoint.

(C) 1003.5-1999

communication reliability (mobile communication) A specific criterion of system performance related to the percentage of times a specified signal can be received in a defined area during a given interval of time. *See also:* mobile communication system. (VT) [37]

communications architecture The hardware and software structure that facilitates the communications operations.

(C) 610.7-1995

communication satellite A satellite used for communication between two or more ground points by transmitting the messages to the satellite and retransmitting them to the participating ground station. (COM) [24]

communications-based train control A continuous automatic train control system utilizing high-resolution train location determination, independent of track circuits; continuous, high capacity, bidirectional train-to-wayside data communications; and trainborne and wayside processors capable of implementing vital functions. (VT/RT) 1474.1-1999

communications cable A cable that carries a low level of electric energy used for the transmission of communication frequencies. A telephone-type cable consists of two or more solid, insulated, twisted, paired and/or quadded, shielded or unshielded conductors ranging from No 19 to No 26 AWG, with either a shielded or unshielded sheath.

(PE/PSC) 789-1988w

communications common carrier (1) (data transmission) A company recognized by an appropriate regulatory agency as having a vested interest in furnishing communications services to the public at large. (PE) 599-1985w

(2) In telecommunication, a public utility company that is recognized by an appropriate regulatory agency as having a vested interest in and responsibility for furnishing communications services to the general public. *Synonym:* common carrier. (C) 610.7-1995

communications computer A computer that is specially designed to be an interface between another computer or terminal and a network, or to control data flow in a network. *See also:* switching computer; front-end computer; concentrator. (C/COM) 610.7-1995, 168-1956w, 610.10-1994w

communications controller A dedicated computer that checks and manages data traffic through a network.

(C) 610.7-1995

communication security Protective measures for information transmitted between system components, over telecommunication links, and through networks to provide data confidentiality, integrity, and authenticity. (C/BA) 896.3-1993w

communications endpoint *See:* endpoint.

communication services interface (CSI) The boundary across which access to services for interaction between internal application software entities and application platform external entities is provided. (C/PA) 14252-1996

communications interface equipment (relays and relay systems associated with electric power apparatus) A portion of a relay system that transmits information from the relay logic to a communications link, or conversely to logic, for

(2) The bit of material resulting from punching a hole in a paper card or tape. *Synonym:* chip. (C) 610.10-1994w

chadded Pertaining to the punching of tape in which chad results. (C) [20], [85]

chadless Pertaining to the punching of tape in which chad does not result. (MIL/C) [2], [85], [20]

chadless tape (1) A punched tape wherein only partial perforation is completed and the chad remains attached to the tape. (IA) [61]

(2) Perforated tape that has been punched in such a way that chad is not formed. (C) 610.10-1994w

chaff Strips of lightweight metal or metallized material that are dispensed in large numbers (bundles) so as to simulate a true target, or, more usually, to create a large clutter signal that masks the detection of wanted targets. *Notes:* 1. Each bundle may contain thousands of individual reflectors whose lengths are related to the wavelength of the radar. 2. Chaff for use at HF and VHF frequencies is sometimes called "rope." 3. During WWII, chaff was called "window" in Great Britain and "Dueppel" in Germany. (AES) 686-1997

chafing strip *See:* drive strip.

chain (1) (navigation aids) A network of similar stations operating as a group for determination of position or for furnishing navigational information. (AES/GCS) 172-1983w

(2) (mathematics of computing) A sequence of bits used to construct a binary code. *See also:* chain code. (C) 1084-1986w

(3) (data management) *See also:* linked list. (C) 610.5-1990w

chain binder *See:* binder load.

chain code An arrangement in a cyclic sequence of some or all of the possible different n -bit words in which adjacent words are related such that each word is derivable from its neighbor by displacing the bits one place to the left or right, dropping the leading bit, and inserting a bit at the end. The value of the inserted bit needs only to meet the requirement that a word must not recur before the cycle is complete. For example, 000 001 010 101 011 111 110 100 000. . . (C) [20], 1084-1986w, [85]

chain-drive machine (elevators) An indirect-drive machine having a chain as the connecting means. *See also:* driving machine. (EEC/PE) [119]

chained list (1) (software) A list in which the items may be dispersed but in which each item contains an identifier for locating the next item. *Synonym:* linked list. *See also:* list; identifier. (C/SE) 729-1983s

(2) (data management) *See also:* linked list. (C) 610.5-1990w

chain field *See:* link field.

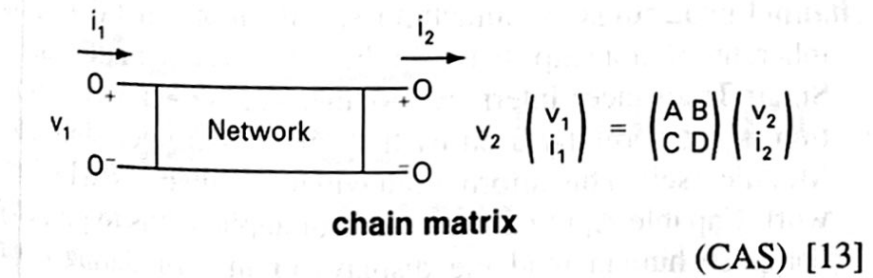
chain hoist *See:* hoist.

chaining (1) A method for storing records in which each record has a link field that is used to access subsequent records. (C) 610.5-1990w

(2) A mode of interaction optionally used by a DSA that cannot perform an directory operation itself; the DSA chains by invoking a directory operation of another DSA and then relaying the outcome to the original requester. (C/PA) 1328.2-1993w, 1326.2-1993w, 1327.2-1993w, 1224.2-1993w

chaining search A search in which each item contains a means for locating the next item to be considered in the search. (C) 610.5-1990w

chain matrix The 2×2 matrix relating voltage and current at one port of a two-port network to voltage and current at the other port.



chain printer An element printer in which the type slugs are carried by the links of a revolving chain, called a print chain. (C) 610.10-1994w

chain tugger *See:* hoist.

chain-type conveyor A conveyor using a driven endless chain or chains, equipped with flights that operate in a trough and move material along the trough. *See also:* conveyor. (EEC/PE) [119]

chair, boatswain *See:* boatswain's chair.

chalking (1) (composite insulators) The powdered surface on weathersheds consisting of particles of filler resulting from ultraviolet exposure. (T&D/PE) 987-1985w

(2) The development of loose removable powder at or just beneath a coating surface. (IA) [59]

(3) The powdered surface on the polymeric insulator consisting of particles of filler resulting from ultraviolet exposure or leakage current activity. (PE/IC) 48-1996

challenge (navigation aids) To cause an interrogator to transmit a signal which puts a transponder into operation. *See also:* interrogation. (AES/GCS) 172-1983w

change control *See:* configuration control.

change control board *See:* configuration control board.

change detection An image processing technique in which the pixels of two registered images are compared to detect differences. (C) 610.4-1990w

change dump A selective dump of those storage locations whose contents have changed since some specified time or event. *Synonym:* differential dump. *See also:* dynamic dump; snapshot dump; static dump; selective dump; memory dump; postmortem dump. (C) 610.12-1990

change-of-frame alignment A state that occurs when an off-line framer realigns the receiver to the proper frame alignment signal. *See also:* out-of-frame condition. (COM/TA) 1007-1991r

change of state (COS) A significant change (as defined by a particular system) in the condition of a point being monitored, for example, a change in flow rate, temperature, voltage, etc. Usually associated with dual-status (that is, alarm/normal conditions). (PE/SUB) 1379-1997

change-over selector A device designed to carry, but not to make or break current, used in conjunction with a tap selector or arcing tap switch to enable its contacts, and the connected taps, to be used more than once when moving from one extreme position to the other. (PE/TR) C57.131-1995

change recording *See:* nonreturn-to-zero (change) recording.

changeover switch A switching device for changing electric circuits from one combination to another. *Note:* It is usual to qualify the term "changeover switch" by stating the purpose for which it is used, such as a series-parallel changeover switch, trolley-shoe changeover switch, etc. *See also:* multiple-unit control. (EEC/PE) [119]

change transaction A transaction that causes information in a master file to be changed. *See also:* delete transaction; add transaction; update transaction; null transaction. (C) 610.2-1987

CHANHI Abbreviation for upper channel corresponding to the half-amplitude point of a distribution. (NPS) 398-1972r

CHANLO Abbreviation for lower channel corresponding to the half-amplitude point of a distribution. (GSD) 200-1975w

Channel A control or data path established between two buses that allows information to flow from one bus to the other. The Channels specific to this standard are the CSR channels, the F2V and V2F data channels, the event channel, and the dual port memory Channel. (C/BA) 1014.1-1994w

channel (1) (A) (electric communication) A single path for transmitting electric signals, usually in distinction from other parallel paths. (B) (electric communication) A band of frequencies. *Note:* The word "path" is to be interpreted in a broad sense to include separation by frequency division or time division. The term "channel" may signify either a one-way path, providing transmission in one direction only, or a

two-way path, providing transmission in two directions.

(EEC/PE) [119], 599-1985

(2) (A) A path along which signals can be sent, for example, data channel, output channel. (B) The portion of a storage medium that is accessible to a given reading station. *See also:* track. (C) 162-1963

(3) A combination of transmission media and equipment capable of receiving signals at one point and delivering related signals at another point. *See also:* information theory.

(IT) 171-1958w

(4) (illuminating engineering) An enclosure containing the ballast, starter, lamp holders, and wiring for a fluorescent lamp, or a similar enclosure on which filament lamps (usually tubular) are mounted. (EEC/IE) [126]

(5) (nuclear power generating station) An arrangement of components and modules as required to generate a single protective action signal when required by a generating station condition. A channel loses its identity where single protective action signals are combined.

(PE/NP) 379-1994, 338-1987r, 603-1998

(6) (metal-nitride-oxide field-effect transistor) A surface layer of carriers connecting source and drain in an insulated-gate field-effect transistor (IGFET). This channel was formed by inversion with the help of a gate voltage, or by the presence of charges in the gate insulator, or by deliberate doping of the region. (ED) 581-1978w

(7) A band of frequencies dedicated to a certain service transmitted on the broadband medium.

(LM/C) 610.7-1995, 802.3u-1995s

(8) (broadband local area networks) The bandwidth required for the transportation of a signal. The bandwidth will vary according to the information being transported. A band of frequencies dedicated to a certain service transmitted on a broadband medium. (LM/C) 802.7-1989r

(9) (speech telephony) A means of one-way or two-way transmission provided by a vendor between two defined interface points. (The customer can realize a connection by connecting together channels from one or more vendors.) *Notes:* 1. "Provided by a vendor" means responsibility for the service and does not necessarily mean ownership of facilities. 2. Channels are provided either dedicated or switched. A dedicated channel may be a non-switched channel for the exclusive use of a customer for a contracted time period. A switched channel may be a channel established (set up and released) under customer control. 3. A channel may consist of two or more equipment items, such as transmission facilities, switching systems, etc. *See also:* connection.

(COM/TA) 823-1989w

(10) A logically independent data path between two Functions. Multiple channels can be used to reach different Functions or to represent independent instances of inter-unit communication (e.g., X.25 connections, I/O operations on different discs, datagrams to different network SAPs, etc.). Channels can either be provided by physically separate queues or by multiplexing a shared queue.

(C/MM) 1212.1-1993

(11) (A) A one-way path for transmission of signals between two or more points; for example, a data channel. *See also:* line; circuit; link. (B) In data transmission, either one-way path, providing transmission in one direction only, or two-way path, providing transmission in two directions. *Synonyms:* path. (C) 610.7-1995

(12) (A) A one-way path for transmission of signals between two or more points; for example, an output channel or a data channel. *Synonyms:* link; path; line. *See also:* circuit. (B) The portion of a storage medium that is accessible to a given reading or writing station, such as a track, or a band. (C) A two-way communications path between the central processor and its peripheral devices. (C) 610.10-1994

(13) The tester electronics associated with a digital input/output (I/O) pin that either drives or senses a particular node on the unit under test (UUT). (SCC20) 1445-1998

(14) The data path from any transmitting MIC to the next downstream receiving MIC. (LM/C) 8802-5-1998

(15) A single flow path for digital data or an analog signal, usually in distinction from other parallel paths. An IEEE 1451.2 channel provides a path for a single commodity or logical state, either real or virtual, using a single data model and a single set of physical units. (IM/ST) 1451.2-1997

(16) An instance of medium use for the purpose of passing protocol data units (PDUs) that may be used simultaneously, in the same volume of space, with other instances of medium use (on other channels) by other instances of the same physical layer (PHY), with an acceptably low frame error ratio due to mutual interference. Some PHYs provide only one channel, whereas others provide multiple channels. Examples of channel types are as shown in the following table:

Single channel	n-channel
Narrowband radio-frequency (RF) channel	Frequency division multiplexed channels
Baseband infrared	Direct sequence spread spectrum (DSSS) with code division multiple access

(C/LM) 8802-11-1999

(17) A physical or logical communication link to a single transducer or to a group of transducers considered as a single transducer. (IM/ST) 1451.1-1999

(18) (overhead power lines) *See also:* frequency band. (T&D/PE) 539-1990

(19) *See also:* communication channel.

(SUB/PE) 999-1992w

channel address The portion of a full data transport address that specifies the channel to which the read or write is directed. (IM/ST) 1451.2-1997

channel-attached terminal A terminal that is connected directly to the computer by wires or cables. *Synonym:* locally-attached terminal. *Contrast:* link-attached terminal. (C) 610.10-1994w

channel bank A device that multiplexes high-speed communication circuits into lower-speed communication channels; used primarily to digitize analog voice transmission. (C) 610.7-1995

channel-busy tone (telephone switching systems) A tone that indicates that a server other than a destination outlet is either busy or not accessible. (COM) 312-1977w

channel calibration The adjustment of channel output such that it responds, with acceptable range and accuracy, to known values of the parameter that the channel measures, and the performance of a functional test. (PE/NP) 338-1987r

channel capacity (1) (data transmission) The maximum possible information rate through a channel subject to the constraints of that channel. *Note:* Channel capacity may be either per second or per symbol. (PE) 599-1985w

(2) (software) The maximum amount of information that can be transferred on a given channel per unit of time; usually measured in bits per second or in baud. *See also:* memory capacity; storage capacity. (C) 610.12-1990

channel check A qualitative assessment of performance carried out at designated intervals to determine if all elements of the channel are operating within their designated limits. (PE/NP) 338-1987r

channel failure alarm (power-system communication) A circuit to give an alarm if a communication channel should fail. *See also:* power-line carrier. (PE) 599-1985w

channel group (data transmission) A number of channels regarded as a unit. *Note:* The term is especially used to designate part of a larger number of channels. (PE) 599-1985w

channel groupings Manufacturer specifications that define the inherent relationships between the channels of a multichannel Smart Transducer Interface Module. This grouping information is not normally used by the Smart Transducer Interface Module itself. This information will normally be used by Network Capable Application Processor applications to properly compose human-readable system technology information.