

**Project MESA;
Service Specification Group - Services and Applications;
Definitions, symbols and abbreviations**

Project
MESA



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Foreword

This Technical Report (TR) has been produced by the Public Safety Partnership Project (MESA).

The contents of the present document are subject to continuing work within the Specification Group (SG) and may change following formal SG approval. Should the SG modify the contents of the present document, it will be re-released by the SG with an identifying change of release date and an increase in version number as follows:

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Introduction

The present document presents a list of the definitions, abbreviations and symbols to be used in the documents prepared by Project MESA. It is intended as an explanatory dictionary, which may assist the MESA Partnership Project in maintaining a common, cross-regional understanding of applied acronyms defining service concepts, technical terms and other commonly used expressions and symbols.

It is the intention to keep the present document updated at regular intervals to support the Technical Specification Groups and Service Specification Groups of Project MESA.

The definitions, abbreviations and symbols given are not intended to be exclusive. Definitions, abbreviations and symbols different from those given within the present document may be found in some Project MESA documents. However, the definitions, symbols and abbreviations given in the present document are generally to be preferred.

1 Scope

The present document defines the basic applied terms, symbols and abbreviations as required by Project MESA to produce MESA Specifications and MESA Reports. It is also intended as a guidance document for other external bodies such that misunderstandings can be minimized in situations of liaison and cooperation.

The present document is applicable to deliverables produced by Project MESA.



2 References

For the purposes of this Technical Report (TR) the following references apply:

- [1] ISO 31-0: "Quantities and units - Part 0: General principles".

NOTE: Details of this and other ISO standards can be found at <http://www.iso.ch/iso/en/ISOOnline.openpage>.

- [2] ITU-T Recommendation Z.100: "Specification and description language (SDL)".

NOTE: Details of this and other Recommendations can be found on the Web page: <http://www.itu.int/ITU-T/publications/index.html>.

- [3] ANSI T1.103: "Synchronous DS3 Format Specifications".

- [4] ANSI T1.105: "Baseline Document - SONET Rates and Formats Specifications".

- [5] ANSI T1.617: "Digital Subscriber System No. 1 DSS1 Signaling Specification for Frame Relay Bearer Service".

NOTE: Documents with a source citation beginning 'T1.' can be found on the Web at <http://www.atis.org>.

- [6] (U.S.) FED-STD-1037C (1996): "Glossary of Telecommunication Terms".

NOTE: This U.S. Federal standard is in the public domain (not copyrighted), and can be accessed at <http://www.its.bldrdoc.gov/fs-1037/> However, for the latest edition of the glossary see <http://www.atis.org/tg2k/t1g-forw.html>.

- [7] T1.523-2001: "Telecom Glossary 2000, 2001".

NOTE: This U.S. and international glossary is copyrighted. The public can view this glossary free on the Web at <http://www.atis.org/tg2k/>.

- [8] NFPA1221: "Standard for the Installation, Maintenance, and Use of Public Emergency Service Communications Systems", 2002 Edition. PASS systems are defined in NFPA 1982, Standard on Personal Alert Safety Systems PASS, 1998 Edition.].

- [9] Code of Federal Regulations 47: "Telecommunications" (rev. Oct. 1, 1987, Oct. 1988 & ff.).

NOTE: One convenient Web reference to 47 CFR is <http://wireless.fcc.gov/rules.html>.

- [10] ITU-T Recommendation E.161: "Arrangement of digits, letters and symbols on telephones and other devices that can be used for gaining access to a telephone network".

NOTE: Details of this and other Recommendations can be found on the Web page:
<http://www.itu.int/ITU-T/publications/index.html>.

- [11] CCIMB-99-031 (V2.1, August 1999): "Common Criteria for Information Technology Security Evaluation; Part 1: Introduction and general model".
- [12] SANCHO (ITU-T Sector Abbreviations and definitions for a telecommunication thesaurus Oriented database) <http://www.itu.int/sancho/>.
- [13] ITU-T Recommendation H.235: "Security and encryption for H-Series (H.323 and other H.245-based) multimedia terminals".
- [14] ITU-T Recommendation X.800: "Security architecture for Open Systems Interconnection for CCITT applications".
- [15] ITU-T Recommendation T.173: "MHEG-3 script interchange representation".
- [16] ITU-T Recommendation T.174: "Application programming interface (API) for MHEG-1".
- [17] ITU-T Recommendation T.175: "Application Programming Interface (API) for MHEG-5".
- [18] ITU-T Recommendation T.176: "Application Programming Interface (API) for Digital Storage Media Command and Control (DSM-CC)".
- [19] ITU-T Recommendation M.60: "Maintenance terminology and definitions".
- [20] ITU-T Recommendation G.841: "Types and characteristics of SDH network protection architectures".
- [21] ITU-T Recommendation F.400/X.400: "Message handling services: Message handling system and service overview".
- [22] ITU-T Recommendation E.417: "Framework for the network management of IP-Based networks".
- [23] ITU-T Recommendation Y.101: "GII Terminology - Terms and definition".
- [24] ITU-T Recommendation Q.931: "Fault and performance management of V5 interface environments and associated customer profiles".
- [25] ITU-T Recommendation J.93: "Requirements for conditional access in the secondary distribution of digital television on cable television systems".
- [26] ITU-T Recommendation J.95: "Copy protection of intellectual property for content delivered on cable television systems".
- [27] ITU-T Recommendation G.703: "Physical/electrical characteristics of hierarchical digital interfaces".
- [28] ITU-T Recommendation Q.9: "Vocabulary of switching and signalling terms".
- [29] ITU-T Recommendation J.112: "Transmission systems for interactive cable television services".
- [30] ITU-T Recommendation J.116: "Interaction channel for local multipoint distribution systems".
- [31] ITU-T Recommendation Y.110: "Global Information Infrastructure principles and framework architecture".
- [32] ITU-T Recommendation I.211: "B-ISDN service aspects".
- [33] ITU-T Recommendation E.212: "The international identification plan for mobile terminals and mobile users".
- [34] ITU-T Recommendation F.116: "Service features and operational provisions in IMT-2000".

- [35] ITU-T Recommendation H.341: "Multimedia management information base".
- [36] ITU-T Recommendation H.323: "Packet-based multimedia communications systems".
- [37] ITU-T Recommendation I.430: "Basic user-network interface - Layer 1 specification".
- [38] ITU-T Recommendation I.431: "Primary rate user-network interface - Layer 1 specification".
- [39] ITU-T Recommendation I.112: "Vocabulary of terms for ISDNs".
- [40] ITU-T Recommendation J.120: "Distribution of sound and television programs over the IP network".
- [41] ITU-T Recommendations J.160: "Architectural framework for the delivery of time-critical services over cable television networks using cable modems".
- [42] ITU-T Recommendation X.642: "Information technology - Quality of service - Guide to methods and mechanisms".
- [43] ITU-T Recommendation Q.1751: "Internetwork signalling requirements for IMT-2000 capability set 1".
- [44] ITU-T Recommendation Q.1711: "Network functional model for IMT-2000".
- [45] ITU-T Recommendation T.180: "Homogeneous access mechanism to communication services".
- [46] ITU-T Recommendation G.994.1: "Handshake procedures for digital subscriber line (DSL) transceivers".
- [47] ITU-T Recommendation F.115: "Service objectives and principles for future public land mobile telecommunication systems".
- [48] ITU-T Recommendation F.851: "Universal Personal Telecommunication (UPT) - Service description (service set 1)".
- [49] ITU-T Recommendation F.852: "Universal personal telecommunication (UPT) - Service description (service set 2)".
- [50] ITU-T Recommendation I.114: "Vocabulary of terms for universal personal telecommunication".
- [51] ITU-T Recommendation I.373: "Network capabilities to support universal personal telecommunication (UPT)".
- [52] ITU-T Recommendation I.570: "Public/private ISDN interworking".
- [53] ITU-T Recommendation X.903: "Information technology - Open distributed processing - Reference Model: Architecture".
- [54] ITU-T Recommendation X.224: "Information technology - Open Systems Interconnection - Protocol for providing the connection-mode transport service".
- [55] ITU-T Recommendation X.634: "Information technology - Open Systems Interconnection - Transport Fast Byte Protocol".
- [56] ITU-T Recommendation X.633: "Information technology - Open systems Interconnection - Network Fast Byte Protocol".
- [57] ANSI X9.52: "Triple Data Encryption Algorithm Modes of Operation".
- [58] ITU-T Recommendation Q.831.1: "Access Management for V5".
- [59] ITU-T Recommendation G.174: "Transmission performance objectives for terrestrial digital wireless systems using portable terminals to access the PSTN".
- [60] ITU-T Recommendation F.850: "Principles of universal personal telecommunication (UPT)".

- [61] ITU-T Recommendation X.200: "Information technology - Open Systems Interconnection - Basic Reference Model: The basic model".
- [62] ITU-T Recommendation X.300: "General principles for interworking between public networks and between public networks and other networks for the provision of data transmission services".
- [63] ITU-T Recommendation T.88: "Information technology - Coded representation of picture and audio information - Lossy/lossless coding of bi-level images".
- [64] ITU-T Recommendation V.253: "Control of voice-related functions in a DCE by an asynchronous DTE".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

12 lead electrocardiogram (ECG): non invasive medical process involving 12 readings from 10 leads attached to a patient to determine various types of Cardiac related conditions

access control: prevention of unauthorized use of a resource, including the prevention of use of a resource in an unauthorized manner

NOTE 1: Also note User Access Point.

NOTE 2: See ITU-T Recommendation H. 235 [13], 3.1; X.800 [14], 3.3.1.

access network: network that provides the link between the terminal function and the access function

NOTE: See T1.103 [3], 3.1. T1.105 [4], 3.1.

adaptive radio frequency modulation: ability of a network system to automatically adjust the rate fallback within the network by changing the error correction and/or modulation scheme to maintain reliable throughput

ad-hoc network: network that is established on a temporary basis in order to respond to a specific series of transaction(s) or emergency activities. Network would normally be torn down at the end of that emergency or operation transaction

Amplitude Modulation (AM): modulation in which the amplitude of a carrier wave is varied in accordance with some characteristic of the modulating signal

NOTE: Amplitude modulation implies the modulation of a coherent carrier wave by mixing it in a nonlinear device with the modulating signal to produce discrete upper and lower sidebands, which are the sum and difference frequencies of the carrier and signal. The envelope of the resultant modulated wave is an analog of the modulating signal. The instantaneous value of the resultant modulated wave is the vector sum of the corresponding instantaneous values of the carrier wave, upper sideband, and lower sideband. Recovery of the modulating signal may be by direct detection or by heterodyning [6].

analog modulation: modulation technique whereby message signal, which is the analog of some physical quantity, is impressed on a carrier signal for transmission through a channel (e.g. FM)

NOTE: See [6].

analog modulation technique: process whereby message signal, which is the analog of some physical quantity, is impressed on a carrier signal for transmission through a channel (e.g. FM)

Application Programming Interface (API): BOUNDARY across which a software application uses facilities of programming languages to invoke software services

NOTE 1: These facilities may include procedures or operations, shared data objects and resolution of identifiers

NOTE 2: See ITU-T Recommendations T.176 [18], 3.1; T.173 [15], 3.1.1, T.174 [16], 3.1.1, and T.175 [17], 3.1.1.

assets: information or resources to be protected by the countermeasures of a TOE

NOTE: See [13].

assignment: specification of an identified parameter in a component

NOTE: See [13].

assurance: grounds for confidence that an entity meets its security objectives

NOTE: See [13].

Asynchronous Transfer Mode (ATM): high-speed multiplexing and switching method utilizing fixed-length cells of 53 octets to support multiple types of traffic

NOTE: ATM, specified in international standards, is asynchronous in the sense that cells carrying user data need not be periodic [6].

attack potential: perceived potential for success of an attack, should an attack be launched, expressed in terms of an attacker's expertise, resources and motivation

NOTE: See [13].

authentication: The network should ensure that a data exchange is established with the addressed peer entity (and not with an entity attempting a masquerade or a reply of a previous establishment) and that the data source is the one claimed. Authentication generally follows identification, establishing the validity of the claimed identity, providing against fraudulent transactions. The network should protect identification, authentication and authorization information. When this requirement is requested in a connection-oriented association, it is known as peer entity authentication; when it supports a connectionless association, it is known as data origin authentication

NOTE: See ITU-T Recommendation M.60 [19], 2030.

authentication data: information used to verify the claimed identity of a user

NOTE: See [13].

authorized user: user who may, in accordance with the TOE security policy, perform an operation

NOTE: See [13].

automatic aid agreement: interlocal agreement between public safety agencies and their sponsoring governments to provide first responder and other resources automatically to incidents or events within a neighbouring jurisdiction

NOTE: The intent of automatic aid agreements is to maximize resource utilization and expedite appropriate responses to emergency incidents.

Base Station (BS):

- 1) A land station in the land mobile service [9].
- 2) In personal communication service, the common name for all the radio equipment located at one fixed location, and that is used for serving one or several cells [6].

bridge: action of transmitting identical traffic on both the working and protection channels

NOTE: See ITU-T Recommendation G.841 [20], 3.15.

Cellular Digital Packet Data (CDPD): open transmission control protocol/Internet protocol (TCP/IP) standard for cellular data communications

NOTE: It offers the capability to use file transfer protocol (FTS) to send files (e.g. documents and images) over the air.

Central Control (CC): In the Project MESA SoR, the 'Central Control' is a centralized point or location within the system or network which has the capability and ability to control, add, change or delete functions, features, or predetermined identifiers, such as subscriber unit, groups or authentication. In a voice network, the term also may be used to define the function of a Public Safety Access Point (PSAP) or centralized dispatch point.

Circuit-switched (CS):

- 1) A method of routing traffic through a switching center, from local users or from other switching centers, whereby a connection is established between the calling and called stations until the connection is released by the called or calling station.
- 2) A process that, on demand, connects two or more data terminal equipments (DTEs) and permits the exclusive use of a data circuit between them until the connection is released [6].

Class: grouping of families that share a common focus

NOTE: See [13].

Code Division Multiple Access (CDMA): coding scheme, used as a modulation technique, in which multiple channels are independently coded for transmission over a single wideband channel.

NOTE 1: In some communication systems, CDMA is used as an access method that permits carriers from different stations to use the same transmission equipment by using a wider bandwidth than the individual carriers. On reception, each carrier can be distinguished from the others by means of a specific modulation code, thereby allowing for the reception of signals that were originally overlapping in frequency and time. Thus, several transmissions can occur simultaneously within the same bandwidth, with the mutual interference reduced by the degree of orthogonality of the unique codes used in each transmission.

NOTE 2: CDMA permits a more uniform distribution of energy in the emitted bandwidth [6].

Code-Excited Linear Prediction (CELP): analog-to-digital voice coding scheme

NOTE: See [6].

Communications security (COMSEC): measures and controls taken to deny unauthorized persons information derived from telecommunications and ensure the authenticity of such telecommunications

NOTE: Communications security includes cryptosecurity, transmission security, emission security, and physical security of COMSEC material [6].

Compatible differential offset Quadrature Phase Shift Keying (CQPSK): form of digital modulation

Component: smallest selectable set of elements that may be included in a PP, and ST, or a package

NOTE: See [13].

Computer security (COMPUSEC):

- 1) Measures and controls that ensure confidentiality, integrity, and availability of information-system (IS) assets including hardware, software, firmware, and information being processed, stored, and communicated [6].
Synonym automated information systems security.
- 2) The protection resulting from all measures to deny unauthorized access and exploitation of friendly computer systems [6].

confidentiality (content confidentiality): This element of service allows the originator of a message to protect the content of the message from disclosure to recipients other than the intended recipient(s). Content Confidentiality is on a per-message basis, and can use either an asymmetric or a symmetric encryption technique.

NOTE: See ITU-T Recommendation F.400/X.400 [21], B.26.

connectivity: property of the TOE that allows interaction with IT entities external to the TOE

NOTE: This includes exchange of data by wire or by wireless means, over any distance in any environment or configuration [13].

content confidentiality: This element of service allows the originator of a message to protect the content of the message from disclosure to recipients other than the intended recipient(s). Content confidentiality is on a per-message basis, and can use either an asymmetric or a symmetric encryption technique.

NOTE: See ITU-T Recommendation F.400/X.400 [21] Amd. 1, B.26.

conventional radio system: non-trunked, similar to telephone party-line in that the user determines availability by listening for an open channel

converged network: IP-based networks that generally make use of various telecommunications technologies to support a range of multimedia services, such as voice, data, still image and video

NOTE: See ITU-T Recommendation E.417 [22], 3.5.

core network: portion of the delivery system composed of networks, systems equipment and infrastructures, connecting the service providers to the access network

NOTE: See ITU-T Recommendation Y.101 [23], 24.

corporate network: term used in the Project MESA SoR to describe a network or system specifically designed and implemented to provide service to a defined group of organizationally related users

NOTE: Access to the network or system by non-corporate users may or may not be authorized at the discretion of the Corporate Network manager.

Corporate Telecommunications Network (CN): consists of sets of equipment [Customer Premises Equipment (CPE) and/or Customer Premises Network (CPN) and/or public network providing VPN services] which are located at geographically dispersed locations and are interconnected to provide networking services to a defined group of users

NOTE 1: The ownership of the equipment is not relevant to this definition.

NOTE 2: Even equipment that is not geographically dispersed (e.g. a single PINX or a Centrex providing service to users at a single location) may form a CN.

NOTE 3: ITU-T Recommendation Q.931 [24], 2.3.13.

coverage: geographic area included within the range of, or covered by, a wireless radio system

NOTE: Two systems cannot be made compatible through patching unless the coverage areas overlap.

Customer Premises Equipment (CPE): terminal and associated equipment and inside wiring located at a subscriber's premises and connected with a carrier's communication channel(s) at the demarcation point ('demarc')

NOTE 1: The demarc is a point established in a building or complex to separate customer equipment from telephone company equipment.

NOTE 2: Excluded from CPE are over-voltage protection equipment and pay telephones [6].

Customer Service Unit (CSU): device that provides an accessing arrangement at a user location to either switched or point-to-point, data-conditioned circuits at a specifically established data signalling rate

NOTE: A CSU provides local loop equalization, transient protection, isolation, and central office loop-back testing capability [6].

Data Circuit-terminating Equipment (DCE): any device that connects a DTE to a communications network

NOTE 1: This Recommendation focuses on DCEs that connect to the General Switched Telephone Network (GSTN). This class of DCEs includes DCEs compatible with V-Series modem Recommendations, facsimile DCEs, and voice DCEs.

NOTE 2: ITU-T Recommendation V.253 [64], 3.2.

Data security: generic term designating methods used to protect data from unauthorized access (e.g. encryption)

Data Terminal Equipment (DTE):

- 1) An end instrument that converts user information into signals for transmission or reconverts the received signals into user information [6].
- 2) The functional unit of a data station that serves as a data source or a data sink and provides for the data communication control function to be performed in accordance with link protocol.

NOTE 1: The data terminal equipment (DTE) may be a single piece of equipment or an interconnected subsystem of multiple pieces of equipment that perform all the required functions necessary to permit users to communicate.

NOTE 2: A user interacts with the DTE, or the DTE may be the user. The DTE interacts with the data circuit-terminating equipment (DCE) [6].

dependency: relationship between requirements such that the requirement that is depended upon must normally be satisfied for the other requirements to be able to meet their objectives

NOTE: See [13].

Differential Global Location System (DGLS): system that will allow the user to accurately identify and locate their capital resource and other inventories

NOTE: Accuracy for all of these requirements depends on the availability of DGLS in any given area since DGLS is provided by many means, including transmission over dedicated public safety frequencies.

digital modulation technique: technique for placing a digital data sequence on a carrier signal for subsequent transmission through a channel

Digital Signal 0 (DS-0): In T-carrier, a basic digital signalling rate of 64 kb/s, corresponding to the capacity of one voice-frequency-equivalent channel.

NOTE 1: The DS-0 rate forms the basis for the North American digital multiplex transmission hierarchy.

NOTE 2: The DS-0 rate may support twenty 2.4-kb/s channels, or ten 4.8-kb/s channels, or five 9.67-kb/s channels, or one 56-kb/s channel, or one 64-kb/s clear channel [6].

Digital Signal 1 (DS-1): A digital signalling rate of 1.544 Mb/s, corresponding to the North American and Japanese T1 designator [6].

Digital Signal 1C (DS-1C): A digital signalling rate of 3.152 Mb/s, corresponding to the North American T1C designator [6].

Digital Signal 2 (DS-2): A digital signalling rate of 6.312 Mb/s, corresponding to the North American and Japanese T2 designator [6].

Digital Signal 3 (DS-3):

- 1) A digital signal rate of 44.736 Mb/s, corresponding to the North American T3 designator [6].
- 2) A digital signalling rate of 32.064 Mb/s, corresponding to the Japanese T3 designator [6].

Digital Signal 4 (DS-4):

- 1) A digital signal rate of 274.176 Mb/s, corresponding to the North American T4 designator [6].
- 2) A digital signalling rate of 97.728 Mb/s, corresponding to the Japanese T4 designator [6].

Digital Subscriber Line (DSL): Equipment that provides full-duplex service on a single twisted metallic pair at a rate sufficient to support ISDN basic access and additional framing, timing recovery, and operational functions.

NOTE: The physical termination of the DSL at the network end is the line termination; the physical termination at the customer end is the network termination [6].

digital voice scrambling: See scrambling.

direct mode – Direct link: term used in the Project MESA SoR to reference the capability to talk directly between two or more subscriber units without using network or system transmitter and receiver support or services

NOTE: Commonly used in both the US (Talk-around) and the European Union (Direct mode) between various types of subscriber units. (See Talk-Around)

Electrocardiogram (ECG) for myocardial infarctions: non-invasive test conducted using a medical measurement device commonly employed in hospitals, emergency rooms, and by emergency medical services field personnel.

Electroencephalogram (EEG): record on a strip of paper, made without opening the skull, that graphically depicts the feeble electric currents generated on the brain

element: indivisible security requirement

NOTE: See [13].

encryption:

- 1) An encoding scheme that produces meaningless information to all observers except those with the decoding key.

NOTE: ITU-T Recommendation Y.101 [23], 32.

- 2) The process of scrambling signals to avoid unauthorized access.

NOTE: ITU-T Recommendations J.93 [25], 3.9; J.95 [26], 4.9.

end-to-end network integrity: fundamental systems management concept that focuses on keeping networked systems and services in a known good state of operation and availability

NOTE: This concept incorporates an understanding of the component, configuration, backup and recovery, and failsafe capabilities of the network. It also incorporates an understanding of how the network may be change over time and the impact on operational effectiveness as result of any changes.

end user (public safety/public protection): The Project MESA SoR uses the 'end user' to describe the providers of public safety/public protection services, such as law enforcement agent or agency, firefighters or fire department, brigade, emergency medical practitioners, and disaster recovery services personnel that have been organizationally established for the protection/preservation of life and property.

evaluation: assessment of a PP, an ST, or a TOE, against defined criteria

NOTE: See [13].

Evaluation Assurance Level (EAL): Package consisting of assurance components from Part 3 that represents a point on the central controller (CC) predefined assurance scale [13].

evaluation authority: body that implements the central controller (CC) for a specific community by means of an evaluation scheme and thereby sets the standards and monitors the quality of evaluations conducted by bodies within that community

NOTE: See [13].

evaluation scheme: administrative and regulatory framework under which the central controller (CC) is applied by an evaluation authority within a specific community

NOTE: See [13].

extension: The addition to a security target (ST) or protection profile (PP) of functional requirements not contained in Part 2 and/or assurance requirements not contained in Part 3 of the central controller (CC) [13].

external IT entity: any IT product or system, untrusted or trusted, outside of the TOE that interacts with the TOE

NOTE: See [13].

family: grouping of components that share security objectives but may differ in emphasis or rigor

NOTE: See [13].

First-In, First-Out (FIFO): queuing discipline in which entities in a queue leave the queue in the same order in which they arrive

NOTE 1: Service, when available, is offered to the entity that has been in the FIFO queue the longest.

NOTE 2: FIFO techniques are used in message switching [6].

formal: Expressed in a restricted syntax language with defined semantics based on well-established mathematical concepts [13].

frame relay: interface protocol for statistically multiplexed packet-switched data communications in which (a) variable-sized packets (frames) are used that completely enclose the user packets they transport, and (b) transmission rates are usually between 56 kb/s and 1.544 Mb/s (the T-1 rate)

NOTE 1: In frame relay, (a) there is neither flow-control nor an error-correction capability, (b) there is information-content independence, (c) there is a correspondence only to the ISO Open systems Interconnection - Reference Model Layers 1 and 2, (d) variable-sized user packets are enclosed in larger packets (frames) that add addressing and verification information, (e) frames may vary in length up to a design limit, usually 1 kilobyte or more, (f) one frame relay packet transports one user packet, (g) implementation of fast-packet technology is used for connection-oriented frame relay services, and (h) there is a capability to handle time-delay insensitive traffic, such as LAN interworking and image transfer.

NOTE 2: Frame relay is referred to as the Local Management Interface (LMI) standard and is specified in ANSI T1.617 [5] and [6].

Fixed Satellite (service) (FS): radiocommunication service between Earth stations at given positions when one or more satellites are used; the given position may be a specified fixed point or any fixed point within specified areas; in some cases this service includes satellite-to-satellite links, which may also be effected in the inter-satellite service, the fixed-satellite service may also include feeder links for other space radiocommunication services

NOTE: See [6].

Fixed Station (FS): A station in the fixed service. The term "fixed station" in the fixed public or fixed public press service includes all apparatus used in rendering the authorized service at a particular location under a single instrument of authorization [6].

Frequency Division Multiple Access (FDMA):

- 1) The use of frequency division to provide multiple and simultaneous transmissions to a single transponder [6].
- 2) A channel access method in which different conversations are separated onto different frequencies. FDMA is employed in narrowest bandwidth, multiple-licensed channel operation.

Frequency Shift Keying (FSK): frequency modulation in which the modulating signal shifts the output frequency between predetermined values

NOTE 1: Usually, the instantaneous frequency is shifted between two discrete values termed the "mark" and "space" frequencies. This is a noncoherent form of FSK.

NOTE 2: Coherent forms of FSK exist in which there is no phase discontinuity in the output signal. Synonyms frequency-shift modulation, frequency-shift signalling [6].

full-motion: In television, a video frame rate that provides the appearance of full motion without smearing or flicker problems.

NOTE: Picture motion appears to be full at greater than 16 fps (frames per second). North American television at broadcasts at 30 fps [7].

gateway:

- 1) In a communications network, a network node equipped for interfacing with another network that uses different protocols.

NOTE 1: A gateway may contain devices such as protocol translators, impedance matching devices, rate converters, fault isolators, or signal translators as necessary to provide system interoperability. It also requires that mutually acceptable administrative procedures be established between the two networks.

NOTE 2: A protocol translation/mapping gateway interconnects networks with different network protocol technologies by performing the required protocol conversions [6].

- 2) A type of network relay that attaches two networks to build a larger network. A translator of message formats and addresses, gateways typically make connections through a modem to other mail systems or services.

Geographic Information System (GIS): computer system capable of assembling, storing, manipulating, and displaying geographically referenced information, i.e. data identified according to their locations

NOTE: Practitioners also regard the total GIS as including operating personnel and the data that go into the system <http://www.usgs.gov/research/gis/title.html>.

Global Location System (GLS): system that will allow the user to accurately identify and locate their capital resource and other inventories

NOTE: Accuracy for all of these requirements depends on the availability of DGLS in any given area since DGLS is provided by many means, including transmission over dedicated public safety frequencies.

high speed data: The term 'high-speed data' in the Project MESA SoR is used to describe data rates greater than 2Mbs per second which is intended to describe the minimum level of data transport speed that would be necessary to achieve the Project MESA SoR objectives.

human user: person who interacts with TOE

NOTE: See [13].

identity: representation (e.g. a string) uniquely identifying an authorized user, which can either be the full or abbreviated name of that user or a pseudonym

NOTE: See [13].

informal: expressed in natural language

NOTE: See [13].

Infrared (IR): region of the electromagnetic spectrum bounded by the long-wavelength extreme of the visible spectrum (approximately 0.7 μm) and the shortest microwaves (approximately 0.1 mm)

NOTE: See [6].

Integrated Services Digital Network (ISDN):

- 1) An integrated digital network in which the same time-division switches and digital transmission paths are used to establish connections for different services.

NOTE 1: ISDN services include telephone, data, electronic mail, and facsimile.

NOTE 2: The method used to accomplish a connection is often specified: for example, a switched connection, a nonswitched connection, an exchange connection, an ISDN connection [6].

- 2) A network that provides or supports a range of different telecommunication services and provides digital connections between user-network interfaces [12].

Intelligent Network (IN):

- 1) A network that allows for network functionality to be distributed among a variety of nodes on and off the network. This network will allow the architecture to be modified to control the services.
- 2) In North America, an advanced network concept that is envisioned to offer such things as (a) distributed call-processing capabilities across multiple network modules, (b) real-time authorization code verification, (c) one-number services, and (d) flexible private network services [including (1) reconfiguration by subscriber, (2) traffic analyses, (3) service restrictions, (4) routing control, and (5) data on call histories]. Levels of IN development are identified below:
 - **IN/1** A proposed intelligent network targeted toward services that allow increased customer control and that can be provided by centralized switching vehicles serving a large customer base.
 - **IN/1+** A proposed intelligent network targeted toward services that can be provided by centralized switching vehicles, e.g. access tandems, serving a large customer base.
 - **IN/2** A proposed, advanced intelligent-network concept that extends the distributed IN/1 architecture to accommodate the concept called "service independence".

NOTE: Traditionally, service logic has been localized at individual switching systems. The IN/2 architecture provides flexibility in the placement of service logic, requiring the use of advanced techniques to manage the distribution of both network data and service logic across multiple IN/2 modules [6].

Intelligent Transportation System/Intelligent Transport System (ITS): The Project MESA SoR uses the term 'Intelligent Transportation Systems' to generally describe public and private transportation systems and networks that take full advantage of wireless, wire line, fiber optic, video, computer technology and other electronic and electro-mechanical technologies to improve the movement, operational efficiencies and safety of any transportation system. ITS is a system that seeks to apply advanced communications and computer technologies to transportation systems.

interface:

- 1) A shared boundary: for example, the boundary between two subsystems or two devices.
- 2) A shared boundary between two functional units, defined by specific attributes, such as functional characteristics, common physical interconnection characteristics, and signal characteristics.
- 3) A point of communication between two or more processes, persons, or other physical entities.
- 4) A point of interconnection between user terminal equipment and commercial communications facilities.
- 5) To interconnect two or more entities at a common point or shared boundary [6].

NOTE 1: An interface is used to specify the interconnection between the two sides of different systems or devices. The specification includes the type, quantity and function of the interconnecting means and the type, form and sequencing order of the signals to be interchanged via those means.

NOTE 2: ITU-T Recommendation G.703 [27], as an example, refers to physical, functional and electrical characteristics of interfaces that are necessary to interconnect digital network components to form a digital path or connection.

NOTE 3: ITU-T Recommendation Q.9 [28], 4001.

NOTE 4: A number of ITU definitions exist.

Interim Standard, International Standard (IS): categories of standards development and maturity used by [U.S.] ANSI and/or ISO

internal communication channel: communication channel between separated parts of TOE

NOTE: See [13].

internal TOE transfer: communicating data between separated parts of the TOE

NOTE: See [13].

Internet Protocol (IP): standard protocol designed for use in interconnected systems of packet-switched computer communication networks

NOTE: The internet protocol provides for transmitting blocks of data called datagrams from sources to destinations, where sources and destinations are hosts identified by fixed-length addresses. The internet protocol also provides for fragmentation and reassembly of long datagrams, if necessary, for transmission through small-packet networks [7].

Internet Service Provider (ISP): commercial firm or organization that provides connections to the Internet to companies or individuals via dial-up, cable, ISDN, T1, or other connection

NOTE: See [7].

interoperability:

- 1) The ability of network management products and services from different suppliers to work together to manage communications between managed object classes.
- 2) The ability of systems, units, or forces to provide services to and accept services from other systems, units or forces and to use the services so exchanged to enable them to operate effectively together.
- 3) The condition achieved among communications-electronics systems or items of communications-electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users. The degree of interoperability should be defined when referring to specific cases [6].

interoperability (systems interoperability): The ability of network management products and services from different suppliers to work together to manage communications between managed object classes.

NOTE: See ITU-T Recommendation M.60 [19], 2088.

interoperability standards: established protocols that provide common interface

inter-TSF transfers: communicating data between the TOE and the security functions of other trusted IT products

NOTE: See [13].

iteration: use of a component more than once with varying operations

NOTE: See [13].

key management: generation, storage, distribution, archiving, accountability, destruction/deletion, revocation, registration, and de-registration of cryptographic keys

NOTE: See ITU-T Recommendations H.235 [13], 3.11; X.800 [14], 3.3.33.

laptop: small portable computer

latency: delay between an action and the corresponding reaction time, expressed in quantity of symbols, taken for a signal element to pass through a device

NOTE 1: Latency is very much implementation specific, and may vary with system load.

NOTE 2: See ITU-T Recommendations J.112 [29], 3.55; J.116 [30], 3.1.31.

Local Area Network (LAN): data communications system that (a) lies within a limited spatial area, (b) has a specific user group, (c) has a specific topology, and (d) is not a public switched telecommunications network, but may be connected to one

NOTE 1: LANs are usually restricted to relatively small areas, such as rooms, buildings, ships, and aircraft.

NOTE 2: An interconnection of LANs within a limited geographical area, such as a military base, is commonly referred to as a campus area network. An interconnection of LANs over a city-wide geographical area is commonly called a Metropolitan Area Network (MAN). An interconnection of LANs over large geographical areas, such as nationwide, is commonly called a Wide Area Network (WAN).

NOTE 3: LANs are not subject to public telecommunications regulation [6].

location systems: any system, either terrestrial or extraterrestrial that pinpoints the specific location of either people, personnel or equipment, e.g. GPS

logical interface: full specification of the interactions between two functions, including the format of information passed between the two functions and the computational aspects of each function that determine the response of a function when information is passed to it from the other function

NOTE: See ITU-T Recommendation Y.110 [31], 8.1.2.3.

MESA technology: technology built to comply with MESA specifications and/or standards

messaging: term used in the Project MESA SoR to describe and represent short, bursts of data that are transmitted to and from subscriber units to indicate predefined status conditions or control functions

messaging services: offer user-to-user communication between individual users via storage units with store-and-forward, mailbox and/or message handling (e.g. information editing, processing and conversion) functions

NOTE 1: Examples of broadband messaging services are message-handling services and mail services for moving pictures (films), high-resolution images and audio information.

NOTE 2: See ITU-T Recommendation I.211 [32], 1.3.

mobile satellite service: service for land mobile radio systems that use satellites in a geosynchronous orbit to communicate with mobile units

Mobile Terminal (MT) & Mobile Data Terminal (MDT): A mobile terminal or subscriber unit is a piece of system equipment providing the interface between the humans (users) and the hardware and applications that make up a system. The MT & MDTs include, among other things, the functions and protocols necessary to provide and handle the communication to the WL network, Corporate Intranet, as well as against other networks, services, and applications.

NOTE: See ITU-T Recommendations E.212 [33], 4.8; F.116 [34], 4.1.

mobility (service): seamless and transparent telecommunication service that supports mobility for terminals or users by providing access to and from the public network via a home network and/or visited network(s)

modulation scheme: technical process used for transmitting messages through a wireless radio channel

Multipoint Controller (MC): H.323 entity on the network, which provides for the control of three or more terminals participating in a multipoint conference

NOTE 1: It may also connect two terminals in a point-to-point conference, which may later develop into a multipoint conference. The MC provides for capability negotiation with all terminals to achieve common levels of communications. It may also control conference resources, such as who is multicasting video. The MC does not perform mixing or switching of audio, video and data.

NOTE 2: See ITU-T Recommendations H.341 [35], 4.3; H.323 [36], 3.35.

mutual aid channel: national or regional channel that has been set aside for use only in mutual aid interoperability situations, usually with restrictions and guidelines governing usage

National Crime Information Center (NCIC): computerized index of criminal justice information available to United States and Canadian criminal justice agencies at local, state, and federal levels provided by the U.S. Federal Bureau of Investigation

National Law Enforcement Telecommunications System (NLETS): message switching system for the U.S. criminal justice community providing inter- and intra-state information transmission

Network Termination (NT): functional group on the network side of a user-network interface

NOTE: In ITU-T Recommendations I.430 [37] and I.431 [38], 'NT' is used to indicate network terminating layer 1 aspects of NT1 and NT2 functional groups. (ITU-T Recommendation I.112 [39], 418.

NPSPAC guidelines: National Public Safety Planning Advisory Committee's nationwide public safety plan in the United States for the 821-824 MHz and 866-869 MHz bands.

object: entity within the TOE security functions that contains or receives information and upon which subjects perform operations

NOTE: See [13].

office of the future: In the Project MESA SoR, this term is commonly used to reference the capability an officer in the field would have in electronic management and control of day-to-day and operational and special operations-support activities. These may include, but not be limited to, access and control of criminal history files, court files, floor plans, remote chemical analysis, access and control on medical files, electrical schematics and dynamic road or structural engineering.

on net: For the purpose of defining terms in the Project MESA SoR, 'On net' describes the state of a wireless terminal when it is in operation on a predefined system or network.

open interface: interface between dissimilar devices or networks whose specifications are public and that may rely on existing technical standards

open system architecture: architecture that is open and not proprietary, available for any manufacturer to use through publicly available resources and or reasonable terms and conditions

organizational security policies: one or more security rules, procedures, practices, or guidelines imposed by an organization upon its operations

NOTE: See [13].

Over-the-Air Rekeying (OTAR): changing traffic encryption key or transmission security key in remote crypto-equipment by sending new key directly to the remote crypto-equipment over the communication path it secures

NOTE: See [6].

package: reusable set of either functional or assurance components (e.g. an EAL), combined together to satisfy a set of identified security objectives

NOTE: See [13].

pager: one-way communications device in which the intended receiver is altered to receive a message or return a phone call

paging: one-way communications service from a base station to mobile or fixed receivers that provide signaling or information transfer by such means as tone, tone-voice, tactile, optical readout, etc.

NOTE: See [6].

patch: control center subsystem that permits a mobile or portable radio on one channel to communicate with one or more radios on a different channel through the control center console

Personal Alert Safety Systems (PASS): devices that are certified as being compliant with this standard, that sense movement or lack of movement, and that automatically activate an audible alarm signal (which can also be manually activated) to alert and to assist others in locating a fire fighter or emergency services person who is in danger

NOTE: See [8].

Personal Communications Service (PCS):

- 1) A set of capabilities that allows some combination of terminal mobility, personal mobility, and service profile management.

NOTE 1: The flexibility offered by PCS can supplement existing telecommunications services, such as cellular radio, used for NS/EP missions.

NOTE 2: PCS and UPT are sometimes mistakenly assumed to be the same service concept. UPT (Universal Personal Telecommunications) service allows complete personal mobility across multiple networks and service providers. PCS may use UPT concepts to improve subscriber mobility in allowing roaming to different service providers, but UPT and PCS are not the same service concept [6].

- 2) Mobile radio technology used in cellular, advanced digital wireless services.

physical interface:

- 1) An interface where the physical characteristics of signals, used to represent information, and the physical characteristics of channels, used to carry the signals, are defined;
- 2) A formal statement of the mechanical, electrical, electromagnetic and optical characteristics of the interconnections and interactions between two associated equipments, at their interface.

NOTE: See ITU-T Recommendations I.112 [39], 413; Q.9 [28], 4004.

port: abstraction used by transport protocols to distinguish among multiple destinations associated with particular applications running on a host computer; an application can specify the ports it wants to use; some ports are reserved for standard applications/services, such as e-mail (also known as well-known ports)

NOTE: See ITU-T Recommendation J.120 [40], 3.3.

pre-emption (dynamic, forced or ruthless): immediate disconnection of a low-priority user when a completely busy system is needed for high-priority use

privacy: way to ensure that information is not disclosed to any one other than the intended parties. Information is usually encrypted to provide confidentiality

NOTE 1: Also known as "confidentiality".

NOTE 2: See ITU-T Recommendation J.160 [41], II.1.29.

Private Branch eXchange (PBX):

- 1) A subscriber-owned telecommunications exchange that usually includes access to the public switched network.
- 2) A switch that serves a selected group of users and that is subordinate to a switch at a higher level military establishment.
- 3) A private telephone switchboard that provides on-premises dial service and may provide connections to local and trunked communications networks.

NOTE 1: A PBX operates with only a manual switchboard; a Private Automatic eXchange (PAX) does not have a switchboard, a Private Automatic Branch eXchange (PABX) may or may not have a switchboard.

NOTE 2: Use of the term 'PBX' is far more common than 'PABX,' regardless of automation [6].

product: package of IT software, firmware, and/or hardware, providing functionality designed for use or incorporation within a multiplicity of systems

NOTE: See [13].

Project 25 (P25): The P25 suite of documents developed under TIA engineering committee provide for P25-compliant systems and equipment interoperability and compatibility requirements. Specifically, P25 systems involve digital Land Mobile Radio (LMR) services for local, state, federal, etc. public safety organizations and agencies. The P25 series enables compliant radios to communicate in analog mode with legacy analog radios and in either digital or analog mode with other P25 radios. In addition, P25 systems can be maintained and upgraded cost effectively over the system's life cycle, thus meeting user requirements, achieving interoperability and security, promoting committed manufacturers to provide compliant products, fostering competition and achieving cost-effective emergency/safety and PPDR solutions. <http://www.project25.org>

NOTE: For more information see:

<http://www.tiaonline.org/standards/star/tr8.cfm> and
[http://www.tiaonline.org/standards/sfg/committee.cfm?comm=tr_D8&name=Mobile and Personal Private Radio Standards](http://www.tiaonline.org/standards/sfg/committee.cfm?comm=tr_D8&name=Mobile_and_Personal_Private_Radio_Standards)

Project MESA: collaborative forum, developed by PSPP, composed of key players from the public safety industry with the goal of producing specifications for an advanced digital mobile broadband standard

Protection Profile (PP): implementation-independent set of security requirements for a category of TOEs that meet specific consumer needs

NOTE: See [13].

protocol: message formats (semantic, syntactic, and symbolic rules) and the rules for message exchange between peer layer entities (which messages are valid when)

NOTE: See ITU-T Recommendation M.60 [19], 2143.

public protection: act of protecting the public from the likelihood of harm

NOTE: It involves such activities as hazard and risk identification, bush fire hazard reduction and flood mitigation works (planning and prevention) and response to situations (response). Disaster relief is the process of returning the community to normal (recovery).

Public Protection and Disaster Relief (PPDR): In the Project MESA SoR, the term 'Public Protection' is used to describe critical public services that have been created to provide primary law enforcement, firefighting, emergency medical, and disaster recovery services for the citizens of the political sub-division of each country. These individuals help to ensure the protection and preservation of life and property. Note that the term Public Safety and Disaster Response, within certain regions, can also be construed as PPDR.

public safety: In the Project MESA SoR, the term public safety is used to define a public service that focuses primarily on law enforcement, firefighting, emergency medical, and disaster recovery services for the citizens of a pre-defined political sub-division of a country. These services help to ensure the protection and preservation of life and property. Note that the term PPDR, within certain regions, can also be construed as Public Safety and Disaster Response.

public safety organization: Federal, State, or local organization that helps furnish, maintain, and protect the infrastructures (e.g. highways and utilities) that promote the public's safety and welfare

Public Safety Partnership Project (PSPP): A partnership between the European Telecommunications Standards Institute (ETSI) and Telecommunications Industry Association (TIA) to develop future wireless networking standard to fulfill the needs of the Public Safety and Law Enforcement Authorities for very high bit-rate applications. The final partnership agreement was signed in Mesa, Arizona, USA, 2001.

public service: secondary services that support public safety/public protection services

NOTE: See ITU-T Recommendation F.400/X.400 [21], A.105.

public service organization: Federal, State, or local organization that helps furnish, maintain, and protect the infrastructures (e.g. highways and utilities) that promote the public's safety and welfare.

Public Switched Telephone Network (PSTN): domestic telecommunications network usually accessed by telephones, key telephone systems, private branch exchange trunks, and data arrangements

NOTE: Completion of the circuit between the call originator and call receiver in a PSTN requires network signaling in the form of dial pulses or multifrequency tones [6].

Q interface Signalling protocol (QSIG): signaling protocol used at the Q-interface between two switches in a private network. ECMA/ISO have defined a set of QSIG standards

Quality of Service (QoS) & Quality of Service Classes: best effort, interactive, streaming, broadcast; a set of qualities related to the collective behaviour of one or more objects

NOTE: See ITU-T Recommendation X.642 [42], 3.2.

Radio Frequency (RF): frequency within the electromagnetic spectrum normally associated with radio wave propagation

NOTE: See [6].

Receiver (Rx): sink or terminator of any signal on a transmission medium

NOTE: See [7].

refarming: FCC effort to develop a strategy for using Private Land Mobile Radio (PLMR) spectrum allocations more effectively so as to meet future communications requirements

NOTE: This is to be accomplished primarily by dividing channel bandwidths (i.e. narrow banding).

reference monitor: concept of an abstract machine that enforces TOE access control policies

NOTE: See [13].

reference point:

- 1) A set of interfaces between any two related blocks through which information flows from one block to the other. A reference point comprises one or more logical (non-physical) information-transfer interfaces, and one or more physical signal-transfer interface;
- 2) In an inter- or intra-network functional model, the point of reference refers to the relationship between two functional entities for exchanging signalling messages and operations transactions.

NOTE: See ITU-T Recommendation Q.1751 [43], 3.2.

reference validation mechanism: implementation of the reference monitor concept that possesses the following properties: it is tamperproof, always invoked, and simple enough to be subjected to thorough analysis and testing

NOTE: See [13].

relay:

- 1) To retransmit a received message from one station to another station [6].
- 2) An electromechanical or semiconductor switch (i.e. solid-state relay) in which a current or voltage applied across one port or terminal controls electrical currents or voltages that appear across another terminal or terminals [6].
- 3) A base station receiver that typically receives signals on one frequency, processes, and retransmits them out on another frequency, in order to extend talk-out range.

roaming: ability of the network to readily access, transfer/download, and modify, the user's service profile from anywhere, subject to business and security considerations

NOTE: See ITU-T Recommendation Q.1711 [44], 3.2.27.

role: predefined set of rules establishing the allowed interactions between a user and the TOE

NOTE: See [13].

Satellite communications (SATCOM):

- 1) A telecommunications service provided via one or more satellite relays and their associated uplinks and downlinks [6].
- 2) The organization providing such services.

scrambling: method of converting an input waveform to a digital representation, which is then encrypted and transmitted

NOTE: The receiver decrypts the received data and regenerates the original analog signal. Synonym digital voice scrambling.

secret: information that must be known only to authorized users and/or the TSF in order to enforce a specific SFP

NOTE: See [13].

security:

- 1) A broad term that includes, but is not limited to, the protection of information and systems through encryption, privacy, redundancy, and physical protection/security.
- 2) A condition that results from the establishment and maintenance of protective measures that ensure a state of inviolability from hostile acts or influences.
- 3) With respect to classified matter, the condition that prevents unauthorized persons from having access to official information that is safeguarded in the interests of national security.
- 4) Measures taken by a military unit, an activity or installation to protect itself against all acts designed to, or which may, impair its effectiveness [6].
- 5) (An aspect of service that) involves functions like: authentication, encryption, levels, privacy, SIM card.

Security Function (SF): part or parts of the TOE that have to be relied upon for enforcing a closely related subset of the rules from the TSP

NOTE: See [13].

Security Function Policy (SFP): security policy enforced by an SF

NOTE: See [13].

security objective: statement of intent to counter identified threats and/or satisfy identified organization security policies and assumptions

NOTE: See [13].

Security Target (ST): set of security requirements and specifications to be used as the basis for evaluation of an identified TOE

NOTE: See [13].

selection: specification of one or more items from a list in a component

NOTE: See [13].

semiformal: expressed in a restricted syntax language with defined semantics

NOTE: See [13].

server:

- 1) In the Project MESA SoR, a server is any service distribution point that provides access to and from a network and the automated platforms and applications that serve that network.
- 2) A network device that provides service to the network users by managing shared resources.

NOTE 1: The term is often used in the context of a client-server architecture for a local area network (LAN).

NOTE 2: Examples are a printer server and a file server [6].

Service Specification Group (SSG): subcommittee of the Project MESA organization that is charged with the creation, approval, and maintenance of the Statement of Requirements (SoR) and related reports

session: peer-to-peer or multi-peer relationship between application entities which are communicating via an application connection. In general, a session brings into focus a specific topic of discussion

NOTE: See ITU-T Recommendation T.180 [45], 3.3.19.

session control:

- 1) The session control is responsible for establishing and terminating the environment in which an application will operate. This environment may include the quality of service requirements for both the application and product entities.
- 2) A G.994.1 session comprises a start-up procedure, one or more transactions, and a clear-down procedure (except as noted in clause 12).

NOTE: See ITU-T Recommendation G.994.1 [46], 3.11.

session mobility (Terminal mobility):

- 1) The possibility of geographically moving a terminal, from which different TCP sessions have been established, and maintaining those sessions irrespective of the terminal move (or in other words, without the need for releasing those sessions due to the moving of the terminal);
- 2) The ability of a terminal to access telecommunication services from different locations and while in motion, and the capability of the network to identify and locate that terminal.

NOTE: See ITU-T Recommendations F.115 [47], 4.2; F.851 [48], 1.3.9; F.852 [49], 3.9; I.114 [50], 101; I.373 [51], I.

Short Message Service (SMS): service in GSM mobile telephony systems that allows the user to send and receive short (maximum 160-character) messages independently of voice calls; a nearly real-time service that stores messages in message centers if the receiving mobile telephone cannot be contacted

NOTE: See [7].

slow scan video (One way and two-way): 'Still video,' i.e. a slow progression of freeze-frame pictures (delivered at less than 1 or 2 per second). Criteria are subject to change based on international compatibility.

socket: communications transport API that provides applications inter-process communication services using the underlying services provided by TCP/IP; the API allows an application to open a socket, request delivery services, and bind the socket to the desired destination and then send or receive data

SOF-basic: strength of function-basic: A level of the TOE (target of evaluation) strength of function where analysis shows that the function provides adequate protection against casual breach of TOE security by attackers possessing a low attack potential

NOTE: See [13].

SOF-medium: strength of function-medium: A level of the TOE (target of evaluation) strength of function where analysis shows that the function provides adequate protection against casual breach of TOE security by attackers possessing a moderate attack potential

NOTE: See [13].

SOF-high: strength of function-high: A level of the TOE (target of evaluation) strength of function where analysis shows that the function provides adequate protection against casual breach of TOE security by attackers possessing a high attack potential

NOTE: See [13].

special operations: The term may apply to all functions or activities that are not considered day-to-day operations.

Specialized Mobile Radio System (SMRS): radio system in which licensees provide land mobile communications services in the 800 MHz and 900 MHz bands on a commercial basis

spectrum: usable radio frequencies in the electromagnetic distribution

Strength of Function (SOF): qualification of a TOE security function expressing the minimum efforts assumed necessary to defeat its expected security behavior by directly attacking its underlying security mechanisms

NOTE: See [13].

sub-network: functional abstraction of a set of one or more intermediate systems which provide relaying and through which end systems may establish network connection, only related to the lower three layers of the OSI model

NOTE: See ITU-T Recommendations X.200 [61], X.300 [62], 3.2. 17.

subject: entity within the TSC that causes operations to be performed

NOTE: See [13].

symbol: bitmap produced by a symbol dictionary decoding procedure

NOTE: See ITU-T Recommendation T.88 [63], 3.38.

Synchronous Optical Network (SONET): interface standard for synchronous 2.46-Gb/s optical-fiber transmission, applicable to the Physical Layer of the OSI Reference Model

NOTE 1: SONET uses a basic data rate of 51.840 Mb/s, called OC1 (optical carrier 1). The SONET hierarchy is defined in multiples of OC1, up to and including OC48, for a maximum data rate of 2.48832 Gb/s.

NOTE 2: SONET was developed by the Exchange Carriers Standards Association (ECSA) [6].

Supervisory Control and Data Acquisition (SCADA): set of procedures to monitor various types of systems and provide control functions to these systems

NOTE: SCADA is used in a variety of public/government systems such as water and wastewater control systems, traffic signalization management systems, electrical power distribution, and management systems.

system: collection of equipment and/or software modules which would normally work together as a single entity

NOTE 1: For example, a line system is a system comprising line terminal equipments, regenerator equipments, optic fiber cable 'equipment,' and management software modules.

NOTE 2: See ITU-T Recommendation Y.110 [31], 9.1.2.7.

system integration: progressive linking and testing of [system](#) components to merge their functional and technical characteristics into a comprehensive, interoperable system

NOTE: Integration of [data](#) systems allows data existing on disparate systems to be shared or accessed across functional or system boundaries

system interoperability: ability of network management products and services from different suppliers to work together to manage communications between managed object classes

NOTE: See ITU-T Recommendation M.60 [19], 2088.

tactical communications architecture: intent of tactical communications systems architecture is to provide an "always available" system for mission critical communications

talk-around: In the Project MESA SoR, Talk-Around is used to describe the capability of two or more mobiles or portables (subscriber units) to intercommunicate without the use of a system or network infrastructure. Talk-around may also apply to one or more conventional, fixed base stations intercommunicating without going through a system, network or repeater. (See Direct-Mode).

Terminal Equipment (TE):

- 1) Represents the customer's access equipment used to request and terminate network associated connectivity services [12].
- 2) Equipment that can exchange coded bit combinations by means of telecommunication or by physical interchange of storage media [12].
- 3) Represents the customer's access equipment used to request and terminate network associated connectivity services [12].
- 4) This functional group includes functions belonging to the functional group TE, and which are connected to a Private Telecommunication Network (PTN) via an S reference point as defined in ITU-T Recommendation I.570 [52].

NOTE 1: Terminals connected to Private Telecommunication Networks (PTNs) via an S interface are called TEs in ITU-T Recommendation I.570 [52] and not E1s [12].

5) The functional group on the user side of a user-network interface.

NOTE 2: In ITU-T Recommendations I.430 [37] and I.431 [38], 'TE' is used to indicate terminal terminating layer 1 aspects of TE1, TA and NT2 functional groups [12].

Terrestrial Trunked Radio (TETRA): narrowband digital technology for Private Mobile Radio (PMR) and Public Access Mobile Radio (PAMR)

NOTE: The TETRA standard has been developed with emphasis on supporting the needs of emergency services. TETRA uses Time Division Multiple Access (TDMA) technology with 4 user channels on one radio carrier and 25 kHz spacing between carriers. For more information see: <http://portal.etsi.org/tetra>.

Time Division Multiple Access (TDMA): multiple access technique whereby users share a transmission medium by being assigned and using (one at a time) for a limited number of time division multiplexed channels; implies that several transmitters use one channel for sending several bit streams

NOTE: See [6].

Target of Evaluation (TOE): IT product or system and its associated administrator and user guidance documentation that is the subject of an evaluation

NOTE: See [13].

TOE resource: anything usable or consumable in the TOE

NOTE: See [13].

TOE Security Functions (TSF): set consisting of all hardware, software, and firmware of the TOE that must be relied upon for the correct enforcement of the TSP

NOTE: See [13].

TOE Security Functions Interface (TSFI): set of interfaces, whether interactive (man-machine interface) or programmatic (application programming interface), through which TOE resources are accessed, mediated by the TSF, or information is obtained from the TSF

NOTE: See [13].

TOE Security Policy (TSP): set of rules that regulate how assets are managed, protected, and distributed within a TOE

NOTE: See [13].

TOE security policy model: structured representation of the security policy to be enforced by the TOE

NOTE: See [13].

transfers outside TSF control: communicating data to entities not under control of the TSF

NOTE: See [13].

Transmission Control Protocol/Internet Protocol (TCP/IP): two interrelated protocols that are part of the Internet protocol suite

NOTE: TCP operates on the OSI Transport Layer and breaks data into packets. IP operates on the OSI Network Layer and routes packets [6].

Transmission Security (TRANSEC): component of communications security that results from the application of measures designed to protect transmissions from interception and exploitation by means other than cryptanalysis

NOTE: See [6].

transparency:

- 1) The property of an entity that allows another entity to pass through it without altering either of the entities;
- 2) In telecommunications, the property that allows a transmission system or channel to accept, at its input, unmodified user information, and deliver corresponding user information at its output, unchanged in form or information content;

NOTE: The user information may be changed internally within the transmission system, but it is restored to its original form prior to the output without the involvement of the user.

- 3) The quality of a data communications system or device that uses a bit-oriented link protocol that does not depend on the bit sequence structure used by the data source;
- 4) An image fixed on a clear base by means of a photographic printing, chemical, or other process, especially adaptable for viewing by transmitted light.

transparent access (access transparency): distribution transparency which masks differences in data representation and invocation mechanisms to enable inter-working between objects

NOTE: See ITU-T Recommendation X.903 [53], 4.4.1.1.

transparent data:

- 1) TS-user data that is transferred intact between transport entities and which is unavailable for use by the transport entities.

NOTE: ITU-T Recommendations X.224 [54], 3.2.27, X.634 [55], 3.2.10.

- 2) NS-user data that is transferred intact between network entities and which is unavailable for use by the network entities.

NOTE: ITU-T Recommendation X.633 [56], 3.2.10.

transparent information: information that is not significant semantically to an object used to transport the information

transparent interface: interface that allows the connection and operation of a system, subsystem, or equipment with another without modification of system characteristics or operational procedures on either side of the interface

transport system: protocol stack comprising some or all the OSI layer 1 (physical layer) to 4 (transport layer)

NOTE: See ITU-T Recommendation T.180 [45], 1.2.3.2.

trusted channel: means by which a TSF and a remote trusted IT product can communicate with necessary confidence to support the TSP

NOTE: See [13].

trusted path: means by which a user and a TSF can communicate with necessary confidence to support the TSP

NOTE: See [13].

TSF data: data created by and for the TOE, which might affect the operation of the TOE

NOTE: See [13].

TSF Scope of Control (TSC): set of interactions that can occur with or within a TOE and are subject to the rules of the TSP

NOTE: See [13].

TSP: See TOE security policy.

Type I, Type II, Type III, Triple DES: Triple Data Encryption Algorithm (TDEA): An encryption algorithm whose key consists of three DES (Data Encryption Standard) keys, which is also referred to as a key bundle.

NOTE 1: A DES key consists of 64 binary digits ('0's or '1's) of which 56 bits are randomly generated and used directly by the algorithm. (The other 8 bits, which are not used by the algorithm, may be used for error detection.)

NOTE 2: Each TDEA encryption/decryption operation (as specified in ANSI X9.52 [57]) is a compound operation of DES encryption and decryption operations [6].

Type 1 product: classified or controlled cryptographic item for securing classified and sensitive U.S. Government information, when appropriately keyed

NOTE: The term refers only to products, and not to information, key, services, or controls. Type 1 products contain classified algorithms. They are available to U.S. Government users, their contractors, and federally sponsored non-U.S. Government activities subject to export restrictions in accordance with International Traffic in Arms Regulation [6].

Type 2 product: unclassified cryptographic equipment, assembly, or component, endorsed by the National Security Agency, for use in national security systems as defined in Title 40 U.S.C. Section 1452

NOTE: The term refers only to products, and not to information, key, services, or controls. Type 2 products may not be used for classified information, but contain classified National Security Agency algorithms that distinguish them from products containing the unclassified data algorithm. Type 2 products are subject to export restrictions in accordance with the International Traffic in Arms Regulation [6].

Type 3 algorithm: cryptographic algorithm that has been registered by the National Institute of Standards and Technology (NIST) and published as a Federal Information Processing Standard (FIPS) for use in protecting unclassified sensitive, information or commercial information

NOTE: See [6].

Type 4 algorithm: unclassified cryptographic algorithm that has been registered by the National Institute of Standards and Technology (NIST), but not published as a Federal Information Processing Standard (FIPS)

NOTE: See [6].

User Access Point (UAP): location to where a service is requested and is necessary for service invocation

NOTE: See ITU-T Recommendation Q.831.1 [58], 1.3.8.

User Identity Module (UIM): standard device or functionality providing secure procedures in support of user or terminal registration, authentication, and privacy for wireless access to IMT-2000

NOTE: It may also contain application data to be used to facilitate telecom services and other services (e.g. UPT, banking) [12].

Universal Personal Telecommunications service (UPT): telecommunications service that provides personal mobility and service profile management

NOTE 1: UPT service involves the network capability of identifying uniquely a UPT user by means of a UPT number.

NOTE 2: The general principles of UPT are given in ITU-T Recommendation F.850 [60].

NOTE 3: UPT and PCS are sometimes mistakenly assumed to be the same service concept. UPT allows complete personal mobility across multiple networks and service providers. PCS may use UPT concepts to improve subscriber mobility in allowing roaming to different service providers, but UPT and PCS are not the same service concept [6].

user:

- 1) Any entity (human user or external IT entity) outside the TOE that interacts with the TOE [13].
- 2) A person, organization, or other entity (including a computer or computer system), that employs the services provided by a telecommunication system, or by an information processing system, for transfer of information.

NOTE: A user functions as a source or final destination of user information, or both. Synonym subscriber [6].

User Access Point (UAP): location to where a service is requested and is necessary for service invocation

NOTE: See ITU-T Recommendation Q.831.1 [58], 1.3.8.

user data: data created by and for the user, which does not affect the operation of the TSF

NOTE: See [13].

User Terminal (UT):

- 1) In the Project MESA SoR, a user terminal is a system component, that is accessible and controllable by the officer in the field, that accepts the input of RF data (information) from the system or network and presents the output of information in a definable form that can be interpreted and translated into a useable format. The same device is generally capable of transmitting a similar signal for use by either the network or system or some other subscriber unit.
- 2) A system component that accepts the input of information from and presents the output of information to a human operator.
- 3) The terminal that a user actually utilizes to participate in multimedia conferences.

wetlands: Inland wetlands most commonly found on floodplains along rivers and streams with isolated depressions surrounded by dry land, along the margins of lakes and ponds, and in other low-lying areas.

wireless device type: general term used for any mobile station, personal station or personal terminal, with which non-fixed access to the network is used

NOTE: See ITU-T Recommendation G.174 [59], 3.

wireless node: In the Project MESA SoR, the 'Wireless Node' is an IP-based wireless ad-hoc infrastructure used to transmit, receive and distribute various forms of data.

Wireless Terminal (WT): general term used for any mobile station, personal station or personal terminal, with which non-fixed access to the network is used

NOTE: See ITU Recommendation G. 174 [59], 3.

3.2 Symbols

For the purposes of the present document, the following symbols apply:

* This is known as the Star on the standard 3x4 keypad array. It is also known as an asterisk

NOTE: ITU-T Recommendation E.161 [10].

The Square is the sign on the standard 3x4 keypad array. This may also be known as the hash, sharp, or number sign ('pound' in the USA)

NOTE: ITU-T Recommendation E.161 [10].

Ω The omega symbol is the symbol for resistance.

dBm Absolute power level expressed in decibels relative to 1 mW.

dBV Absolute voltage level expressed in decibels relative to 1 volt.

NOTE 1: Within Project MESA's documents, the symbols used within Specification and Description Language (SDL) figures or diagrams are defined in ITU-T Recommendation Z.100 [2].

NOTE 2: In Project MESA's documents, the symbols and abbreviations defined by ISO 31-0 [1] for units in the international system of units and measures, SI, are used. They are, therefore, not included in the above list.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AFIS	Automated Fingerprint Information System
AGILE	Advanced Generation of Interoperability Equipment for Law Enforcement http://www.agileprogram.org/justnet.html
AM	Amplitude Modulation
ANSI	American National Standards Institute http://www.ansi.org/
APCO	Association of Public Safety Communications Officials, International, Inc. http://www.apcointl.org/
API	Application Programming Interface
APT	Asia-Pacific Telecommunity http://www.aptsec.org/
ATF	U.S. Department of Treasury's Bureau of Alcohol, Tobacco, and Firearms
ATIS	Alliance for Telecommunications Industry Solutions http://www.atis.org
ATL	Attempt To Locate
ATM	Asynchronous Transfer Mode
AVL	Automatic Vehicle Location
BAPCO	British Association of Public Safety Communications Officers http://www.bapco.org.uk/
BS	Base Station
CC	Central Control
CDMA	Code Division Multiple Access
CDMV	Canadian Department of Motor Vehicles
CDPD	Cellular Digital Packet Data
CELP	Code-Excited Linear Prediction
CEPT	Conférence Européenne des administrations des Postes et des Télécommunications (European Conference of Postal and Telecommunications Administrations) http://www.cept.org/
CITEL	Comisión Interamericana de Telecomunicaciones (Inter-American Telecommunications Commission) http://citel.oas.org/
CN	Corporate Telecommunications Network
COMPUSEC	Computer security
COMSEC	Communications security
CPE	Customer Premises Equipment
CPN	Customer Premises Network
CQPSK	Compatible differential offset Quadrature Phase Shift Keying
CS	Circuit-switched
CSU	Customer Service Unit
CTIA	Cellular Telecommunications and Internet Association http://www.wow-com.com/
DCE	Data Circuit-terminating Equipment
DEC	Decisions - CEPT ERC/DEC - CEPT
DES	Data Encryption Standard
DGLS	Differential Global Location System
DMAT	Disaster Medical Assistance Team
DMV	Department of Motor Vehicles (US)
DOD	Department of Defense (US)
DOT	Department of Transportation (US)
DS-0	Digital Signal 0
DS-1	Digital Signal 1
DS-1C	Digital Signal 1C
DS-2	Digital Signal 2
DS-3	Digital Signal 3
DS-4	Digital Signal 4
DSL	Digital Subscriber Line
DTE	Data Terminal Equipment
EAL	Evaluation Assurance Level
ECG	Electrocardiogram
ECMA	European Computer Manufacturers Association http://www.ecma.ch/

ECSA	Exchange Carriers Standards Association
EEG	Electroencephalogram
EIA	Electronic Industries Alliance http://www.eia.org
EMS	Emergency Medical Services
EPP	ETSI Partnership Project
EPRF	Electronic Patient Report Form
ERCC	European Radio Communications Committee
ETSI	European Telecommunications Standards Institute http://www.etsi.org
EU	European Union http://www.europa.eu.int/
EUROPOL	European Police Office http://www.europol.eu.int/home.htm
FBI	Federal Bureau of Investigation (US) http://www.fbi.gov
FCC	Federal Communications Commission (US) http://www.fcc.gov
FD	Fire Department
FDD	Frequency Division Duplex (Fiber Distributed Data)
FDMA	Frequency Division Multiple Access
FIFO	First-in, first-out
FIPS	Federal Information Processing Standard
FM	Frequency Modulation
FS	Fixed Satellite (service)
FS	Fixed Station
FSK	Frequency Shift Keying
FTP	File Transfer Protocol
GIS	Geographical Information System
GLS	Global Location System
GPS	Global Positioning System
GSM	Global System for Mobile Communications
GSTN	General Switched Telephone Network
HAZMAT	Hazardous Materials
HF	High Frequency (from 3 MHz to 30 MHz)
HPR	Hand Portable Radio
HSDLA	High Speed Down Link Architecture
IACP	International Association of Chiefs of Police http://www.theiacp.org
IAFIS	Integrated Automated Fingerprint Identification System http://www.fbi.gov/hq/cjisd/iafis.htm
ICEA	Insulated Cable Engineers Association http://www.icea.net/
ID	Identification
IDWCS	Integrated Digital Wireless Communications System
IEC	International Electrotechnical Commission http://www.iec.ch
IEEE	Institute of Electrical and Electronics Engineers http://www.ieee.org
IETF	Internet Engineering Task Force http://www.ietf.org
IFAST	International Forum on AMPS Standards Technology http://www.atis.org
IMT	International Mobile Telecommunications (IMT-2000) http://www.itu.int/home/imt.html
IN	Intelligent Network
INFOSEC	Information Systems Security
INTERPOL	International Police Organization http://www.interpol.int/
IP	Internet Protocol
IR	Infra Red
IS	Information System
ISDN	Integrated Services Digital Network
ISO	International Organization for Standardization http://www.iso.org
ISP	Internet Service Provider
IST	Incident Support Team
ISTEA	Intermodal Surface Transportation Efficiency Act (US)
IT	Information Technology
ITS	Intelligent Transportation System / Intelligent Transport System
ITU	International Telecommunications Union http://www.itu.int
LAN	Local Area Network
LLC	Logical Link Controller
LMI	Local Management Interface
LMR	Land Mobile Radio
LS	Location System
MAC	Media Access Control
MAN	Metropolitan Area Network

Mbps	Megabits per second
MC	Multipoint Controller
MDT	Mobile Data Terminal
MESA	Mobility for Emergency and Safety Applications
MIB	Management Information Base
MPEG	Motion Picture Experts Group
MRA	Mutual Recognition Agreements
MRI	Magnetic Resonance Imaging
MT	Mobile Terminal
NAFTA	North American Free Trade Agreement http://www.nafta-sec-alena.org
NATO	North Atlantic Treaty Organization http://www.nato.int/
NCC	National Coordination Committee (US) http://wireless.fcc.gov/publicsafety/ncc.html
NCIC	National Crime Information Center (US) http://www.fbi.gov/hq/cjisd/ncic.htm
NEMA	National Electrical Manufacturers Association (US) http://www.nema.org
NENA	National Emergency Number Association (US) http://www.nena9-1-1.org
NHS	National Health Service (UK)
NIJ	National Institute of Justice (US) http://www.ojp.usdoj.gov/nij
NIST	National Institute of Standards and Technology (US) http://www.nist.gov/
NLETS	National Law Enforcement Telecommunications System (US) http://www.nlets.org/
NPSPAC	National Public Safety Planning Advisory Committee (US)
NT	Network Termination
NTIA	National Telecommunications and Information Administration (US) http://www.ntia.doc.gov/
OP	Organizational Partners
OS	Operating System
OSA	Open System Architecture
OSI	Open System Interconnection
OTAR	Over-the-air-rekeying
P25	Project 25 http://www.project25.org/
P34	Project 34 (see APCO)
PABX	Private Automatic Branch eXchange
PAMR	Public Access Mobile Radio
PAN	Personal Area Network (example: Bluetooth)
PASS	Personal Alert Safety Systems
PAX	Private Automatic eXchange
PBX	Private Branch eXchange
PC	Personal Computer
PCCA	Portable Computer Communications Association http://www.pcca.org
PCS	Personal Communications Service
PD	Police Department
PDA	Personal Digital Assistant
PHY	Physical Layer
PINX	Private Integrated Services Network Exchange
PLMR	Private Land Mobile Radio
PMR	Private Mobile Radio
PP	Protection Profile
PPDR	Public Protection and Disaster Relief
PPP	Point-to-Point Protocol
PSAP	Public Safety Answering Point
PSPP	Public Safety Partnership Project
PSTN	Public Switched Telephone Network
PSWAC	Public Safety Wireless Advisory Committee http://ntiacsd.ntia.doc.gov/iopwhit2/white2.htm
PSWN	Public Safety Wireless Network http://www.pswn.gov
PTN	Private Telecommunication Network
PTS	Patient Transport Services
QAP	Qualified Ambulance Paramedic
QoS	Quality of Service
QSIG	Q interface Signalling protocol
RA	Radio Access
RCC	Rescue Coordination Centers http://www.sarsat.noaa.gov/rcc.html
RF	Radio Frequency
Rx	Receiver
SAE	Society of Automotive Engineers http://www.sae.org

SaR	Search and Rescue
SATCOM	Satellite Communications
SC	Steering Committee
SCADA	Supervisory Control and Data Acquisition
SDO	Standards Development Organization
SENTRY	the Federal Bureau of Prisons' "SENTRY" database (US)
SF	Security Function
SFP	Security Function Policy
SG	Specification Group
SIR	Signal to Interference Ratio (S/I)
SMPTE	Society of Motion Picture and Television Engineers http://www.smpte.org
SMRS	Specialized Mobile Radio System
SMS	Short Message Service
SNR	Signal to Noise Ratio (S/N)
SOF	Strength Of Function
SONET	Synchronous Optical Network
SoR	Statement of Requirements
SRD	System Reference Document
SSG	Services Specification Group
ST	Security Target
TBD	To be defined (determined)
TCP	Transmission Control Protocol
TCP/IP	Transmission Control Protocol / Internet Protocol
TDEA	Triple Data Encryption Algorithm
TDMA	Time Division Multiple Access
TE	Terminal Equipment
TETRA	TErrestrial TRunked RADio
TIA	Telecommunications Industry Association http://www.tiaonline.org
TOE	Target Of Evaluation
TR	Technical Report
TRANSEC	Transmission Security
TS	Technical Specification
TSC	TSF Scope of Control
TSF	TOE Security Functions
TSFI	TOE Security Functions Interface
TSG	Technical Specification Group
TSP	TOE Security Policy
UAP	User Access Point
UDP	User Datagram Protocol
UIM	User Identity Module
UPT	Universal Personal Telecommunications
URL	Uniform Resource Locator
US&R	Urban Search and Rescue
USAR/TSAR	Urban Search and Rescue/Technical Search and Rescue
UT	User Terminal
VPN	Virtual Private Network
WAN	Wide Area Network
WL	Wireless
WRC	World Radio Communication Conference
WT	Wireless Terminal
WWRF	Wireless World Research Forum http://www.wireless-world-research.org/

History

Document history		
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