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# Standard Terminology for Homeland Security Applications<sup>1</sup>

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<sup>ε1</sup> NOTE—Editorially transferred terms in January 2014.

<sup>ε2</sup> NOTE—Editorially transferred terms in January 2017.

## 1. Scope

1.1 This terminology provides definitions and abbreviations of terms used in ASTM International standards pertaining to homeland security applications.

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

D638 Test Method for Tensile Properties of Plastics

D747 Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam

D790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

D882 Test Method for Tensile Properties of Thin Plastic Sheeting

D883 Terminology Relating to Plastics

D1129 Terminology Relating to Water

D5219 Terminology Relating to Body Dimensions for Apparel Sizing

E1765 Practice for Applying Analytical Hierarchy Process (AHP) to Multiattribute Decision Analysis of Investments Related to Projects, Products, and Processes

E2411 Specification for Chemical Warfare Vapor Detector (CWVD) (Withdrawn 2014)<sup>3</sup>

E2413 Guide for Hospital Preparedness and Response

E2458 Practices for Bulk Sample Collection and Swab Sample Collection of Visible Powders Suspected of Being Biothreat Agents from Nonporous Surfaces

E2520 Practice for Measuring and Scoring Performance of Trace Explosive Chemical Detectors

E2521 Terminology for Evaluating Response Robot Capabilities

E2541 Guide for Stakeholder-Focused, Consensus-Based Disaster Restoration Process for Contaminated Assets

E2542 Specification for Portable Water Heaters Used at Personnel Decontamination Stations

E2543 Specification for Portable Air Heaters Used at Personnel Decontamination Stations and Shelters

E2601 Practice for Radiological Emergency Response

E2639 Test Method for Blast Resistance of Trash Receptacles

E2640 Guide for Resource Management in Emergency Management and Homeland Security

E2668 Guide for Emergency Operations Center (EOC) Development

E2677 Test Method for Determining Limits of Detection in Explosive Trace Detectors

E2731 Specification for Materials to Mitigate the Spread of Radioactive Contamination after a Radiological Dispersion Event

E2732 Practice for Responder Family Support Service

E2739 Specification for Personnel Decontamination System to be Used During a Chemical Event

E2740 Specification for Trash Receptacles Subjected to Blast Resistance Testing

E2770 Guide for Operational Guidelines for Initial Response to a Suspected Biothreat Agent

E2800 Practice for Characterization of *Bacillus* Spore Suspensions for Reference Materials

E2831/E2831M Guide for Deployment of Blast Resistant Trash Receptacles in Crowded Places

E2842 Guide for Credentialing for Access to an Incident or Event Site

E2851/E2851M Specification for Ruggedness Requirements for HAZMAT Instrumentation

E2852 Guide for Acquisition, Maintenance, Storage, and Use of Hazardous Material Detection Instrumentation

E2866 Test Method for Determination of Diisopropyl Methylphosphonate, Ethyl Methylphosphonic Acid, Isopropyl Methylphosphonic Acid, Methylphosphonic Acid

<sup>1</sup> This terminology is under the jurisdiction of ASTM Committee E54 on Homeland Security Applications and is the direct responsibility of Subcommittee E54.92 on Terminology.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).

and Pinacolyl Methylphosphonic Acid in Soil by Pressurized Fluid Extraction and Analyzed by Liquid Chromatography/Tandem Ma

**E2885** Specification for Handheld Point Chemical Vapor Detectors (HPCVD) for Homeland Security Applications

**E2915** Guide for Emergency Operations Center (EOC) Management

**E2951** Guide for Community Emergency Preparedness for Persons with Disabilities

**E2952** Specification for Air-Purifying Respiratory Protective Smoke Escape Devices (RPED)

**E3002** Practice for Assessing the Comparative Efficacy of Products Used for the Decontamination of Chemical Warfare Agents (CWAs) on Skin

**E3003** Practice for Body Armor Wearer Measurement and Fitting of Armor

**E3004** Specification for Preparation and Verification of Clay Blocks Used in Ballistic-Resistance Testing of Torso Body Armor

**E3005** Terminology for Body Armor

**E3062** Specification for Indoor Ballistic Test Ranges for Small Arms and Fragmentation Testing of Ballistic-resistant Items

**F1731** Practice for Body Measurements and Sizing of Fire and Rescue Services Uniforms and Other Thermal Hazard Protective Clothing

#### 2.2 Government Standards:

**18 U.S.C. 175** Prohibitions with Respect to Biological Weapons<sup>4</sup>

**CPL 02-02-071** Technical Enforcement and Assistance Guidelines for Hazardous Waste Site and RCRA Corrective Action Clean-up Operations<sup>5</sup>

**DOD 4145.26 M** Department of Defense: DOD Contractors' Safety Manual for Ammunition and Explosives<sup>6</sup>

**FEMA US&R-2-FG** Urban Search and Rescue Response System Field Operations Guide<sup>8</sup>

**FIPS 201** Personal Identity Verification (PIV) of Federal Employees and Contractors<sup>7</sup>

**NIMS 2008** National Incident Management System<sup>8</sup>

**NIMS Guide 0002** National Credentialing Definition and Criteria<sup>8</sup>

#### 2.3 IAEA Standards:<sup>9</sup>

**IAEA 2006** International Atomic Energy Agency Annual Report 2006

2.4 *NCRP Standards*:<sup>10</sup>

**NCRP Report 165** Responding to a Radiological or Nuclear Terrorism Incident: A Guide for Decision Makers

2.5 *NFPA Standards*:<sup>11</sup>

**NFPA 472** Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents

**NFPA 1561** Standard on Emergency Services Incident Management System and Command Safety

**NFPA 1600** Standard on Disaster/Emergency Management and Business Continuity Programs

2.6 *NIJ Standards*:<sup>12</sup>

**NIJ 0101.06** Ballistic Resistance of Body Armor

### 3. Significance and Use

3.1 In this terminology, definitions used in other ASTM International standards are indicated by following the definition with the designation of the standard.

### 4. Terminology

4.1 *Definitions*:

**30-minute Acute Exposure Guideline Levels for Selected Airborne Chemicals, (30-min AEGL value), *n***—represent exposure limits for the general public and are applicable to emergency exposure periods for 30 minutes. **E2885**

**abstain, *v***—robot manufacturer or designated operator declaring not to perform a particular test or not to have the test result disseminated. **E2521**

**accessory, *n***—a body armor component that is detachable or removable from the body armor and is intended to provide extended area of coverage protection against threats that may include ballistic threats, stabbing, fragmentation, blunt impact, or a combination of threats. **E3005**

DISCUSSION—Accessories are typically attachments to tactical body armor providing protection to areas not covered by the vest, such as the shoulders, upper arms, neck, sides, pelvis, and groin. See *tactical body armor*. See *vest*.

**accessory, *n***—item that may be provided with an RPED that does not affect its ability to meet the requirements of this specification. **E2952**

**add-on, *n***—in sensors and detectors for homeland security applications, any additional parts that provide tailoring of a personal detector's functionality for specific applications. **E2411**

**AEGL-1, *n***—airborne concentration (expressed as ppm or mg/m<sup>3</sup>) of a substance above which it is predicted that the general population, including susceptible individuals, could experience transient health effects. **E2885**

**AEGL-2, *n***—airborne concentration (expressed as ppm or mg/m<sup>3</sup>) of a substance above which it is predicted that the

<sup>4</sup> Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, <http://www.access.gpo.gov>.

<sup>5</sup> Available from Occupational Safety and Health Administration (OSHA), 200 Constitution Ave., NW, Washington, DC 20210, <http://www.osha.gov>.

<sup>6</sup> Available from the Defense Technical Information Center, 8725 John J. Kingman Road, Suite 0944, Ft. Belvoir, VA 23060-6128.

<sup>8</sup> Available from Federal Emergency Management Agency (FEMA), 500 C St., SW, Washington, DC 20472, <http://www.fema.gov>.

<sup>7</sup> Available from National Institute of Standards and Technology (NIST), 100 Bureau Dr., Stop 1070, Gaithersburg, MD 20899-1070, <http://www.nist.gov>.

<sup>9</sup> Available from International Atomic Energy Agency, Vienna International Centre, PO Box 100, 1400 Vienna, Austria, <https://www.iaea.org>.

<sup>10</sup> Available from National Council on Radiation Protection and Measurements, 7910 Woodmont Ave., Suite 400, Bethesda, MD 20814-3095, <http://www.ncrponline.org>.

<sup>11</sup> Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169-7471, <http://www.nfpa.org>.

<sup>12</sup> Available from National Institute of Justice (NIJ), 810 7th St., NW, Washington, DC 20531, <http://nij.gov>.

general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape. **E2885**

**AEGL-3**, *n*—airborne concentration (expressed as ppm or mg/m<sup>3</sup>) of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death. **E2885**

**affected stakeholder**, *n*—any individual, group, company, organization, government, tribe, or other entity which may be directly affected by the outcome of the specific restoration planning process. **E2541**

**affiliation**, *adj*—the association of a non-credentialed individual or group of individuals under the supervision of an AHJ-compliant credentialed responder for the purpose of gaining access to accomplish a specific incident or event mission. **E2842**

**agreements**, *n*—advance written (preferred) and/or oral arrangements between and among entities that provide a mechanism to share resources and obtain assistance. **E2640** from **NFPA 1600/NIMS 2008**

**air-purifying respiratory protective smoke escape device, RPED**, *n*—air-purifying respirator used to protect a person while escaping from a fire by removing certain contaminants of fire-generated products of combustion from the inhaled air. **E2952**

**ALARA (as low as reasonably achievable)**, *n*—a principle of radiation protection philosophy that requires that exposures to ionizing radiation should be kept as low as reasonably achievable, economic and social factors being taken into account; the ALARA principle is satisfied when the expenditure of further resources would be unwarranted by the reduction in exposure that would be achieved. **E2601** from **NCRP Report No. 165**

**alarm**, *n*—sound, light, vibration, and/or data communication signal to the operator(s) indicating that the handheld point chemical vapor detector (HPCVD) has detected the presence of a chemical vapor of interest at or above the alarm threshold value. **E2885**

**alarm**, *n*—visual or audible response, or both, from an ETD that signifies the detection of an explosive. **E2520**

**alarm rule**, *n*—user-selectable explosive trace detector (ETD) response requirements that, if met during an analysis, result in a detection alarm for a particular compound. **E2601**  
**DISCUSSION**—An alarm rule is a logistical pattern in the detection response matrix for an analysis. The simplest alarm rule would require only a single positive detection response, whereas a more selective rule (useful for minimizing alpha risk) may require two positive responses in any of three channels and perhaps a negative response in another channel.

**alarm threshold**, *n*—*see* detection threshold. **E2677**

**alarm threshold value**, *n*—vapor concentration corresponding to an AEGL value (AEGL-1, AEGL-2, or AEGL-3) that activates an HPCVD alarm. **E2885**

**alias**, *n*—a false low-frequency component that appears when reconstructing analog data that are sampled at an insufficient rate. **E2639**

**all-hazards**, *adj*—hazard is an inherent property of an event, product, or object that represents a threat to human life, property, or the environment. In this context, all-hazards refers to any incident or event that could pose such a threat. **E2413**

**DISCUSSION**—These may include special equipment and processes that are used less frequently on a daily basis and require routine training to be most effective during a major incident.

**alpha, α, risk**, *n*—probability of obtaining a positive detection outcome, or alarm, when analyzing a process blank in a properly-operating ETD. **E2677**

**ambient background**, *n*—particular mixture of environmental substances (dust, dirt, etc.) that is collected during swab sampling. **E2520**

**DISCUSSION**—The chemical background collected on swabs is expected to be highly variable, compositionally and temporally, comprised of a nearly unlimited number of possible chemical species and formulations. Background challenge materials (BCMs) should mimic important types of chemical background found in ETD deployment areas.

**ammunition**, *n*—one or more loaded cartridges consisting of case, primer, propellant, and one or more projectiles. **E3005**

**analyte**, *n*—the particular chemical compound under consideration. **E2677**

**DISCUSSION**—Pure analyte is used to make reference solutions by quantitative dissolution into a known amount of solvent. Quantitative depositions of reference solutions are subsequently used to prepare reference swabs containing known amounts of analyte.

**analytical column**, *n*—the particles of the solid stationary phase fill the whole inside volume of a tube (column) that the mobile phase passes through using the pressure generated by the liquid chromatography system. **E2866**

**angle of incidence**, *n*—the angle between the test threat line of aim and the line normal to a reference plane based on the front surface of the backing assembly. (Adapted from NIJ 0101.06). *See also obliquity.* **E3005**

**DISCUSSION**—Some standards have used the terms *angle of incidence* and *obliquity* as synonyms, but in this standard, they are defined differently.

**apex**, *n*—the greatest protrusion of the breast as seen from the side. **E3003** from Terminology **D5219**

**applicant**, *n*—an individual applying for a credential. **E2842**

**approved**, *adj*—acceptable to the authority having jurisdiction. **E2952**

**areal density**, *n*—a measure of the mass of the armor panel per unit area, usually expressed in kilograms per square meter (kg/m<sup>2</sup>) or pound-mass per square foot (lbm/ft<sup>2</sup>). **E3005**

**armhole**, *n*—in garment construction, the area of a garment through which the arm passes or into which a sleeve is fitted. **E3003** from Practice **F1731**

- armor carrier, n**—See *carrier*. **E3005**
- armor panel, n**—a component of soft body armor consisting of protective materials, typically enclosed in a panel cover. See *ballistic panel, blunt impact panel, stab panel*. See also *panel cover*. **E3005**
- aseptic technique, n**—operation or performance of a procedure or method under carefully controlled conditions to reduce the risk of exposure and prevent the introduction of unwanted material/matter (contamination) into a sample. **E2770**  
**E2458**
- aspect ratio, n**—ratio of width to height of an image produced by a camera system. **E2521**
- asset, n**—property of a community to which (for purposes of this standard) a high monetary, ecological, or socio-cultural, or a combination thereof, value can be assigned, but which has no essential service or critical infrastructure function within the community. (There would be no need for this consensus-based restoration process in cases where complete restoration of critical infrastructure is obligatory.) **E2541**
- DISCUSSION—Some examples of assets include statues and monuments, historical landmarks, forests and nature preserves, watersheds, parks and recreational areas, cultural and archaeological sites, sports and entertainment pavilions, tourist attractions, government facilities, roads, streets, bridges, utilities, dams, and infrastructure.
- attribute, n**—a qualification, certification, authorization, or privilege of the credential holder. **E2842**
- authority having jurisdiction (AHJ), n**—the organization, office, or individual responsible for enforcing the requirements of a code or standard, or approving equipment, materials, an installation, or a procedure. **E2770** from NFPA  
**E2732** from NFPA 1600  
**E2951** from NFPA 1600  
**E2842** from NFPA 1600
- authority having jurisdiction (AHJ), n**—the organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure. **E2668** from NFPA 1561  
**E2915** from NFPA 1561  
**E2601** from NFPA 472  
**E2952**
- back break-point, n**—the location on the back of the torso where the arm separates from the body. **E3003** from Terminology **D5219**
- back width, n**—the horizontal distance straight across the back of the torso at the level of the back break-points; for the purposes of this practice, the back width measurement is defined to be the same value as the chest width measurement. **E3003**
- backface deformation (BFD), n**—the indentation in the backing material caused by a projectile impact on the test item during testing. Synonymous with *backface signature*. **E3005**
- DISCUSSION—Details necessary for making BFD measurements are specified in individual test methods.
- backface signature, n**—See *backface deformation*. **E3005**
- background challenge material, BCM, n**—a standard natural matrix material applied on a test swab to challenge the detection performance of an ETD. **E2520**
- DISCUSSION—A BCM should be a well-documented material that closely mimics the ambient background typically collected during swab sampling. Many certified reference materials, derived from a variety of natural matrices and processed to offer stable and reproducible characteristics, are internationally available from standards suppliers. The BCMs recommended here are Standard Reference Materials (SRMs). While these represent a limited number of natural matrices, they are compositionally complex and offer fair detection challenges to ETDs.
- background chemical vapors, n**—incidental chemical vapors present in the environment at vapor concentrations lower than the 30-minute AEGL-1 values. **E2885**
- backing assembly, n**—a backing fixture filled with backing material. For example, a clay block is a type of a backing assembly. **E3004**  
**E3005**
- backing fixture, n**—any apparatus designed to hold or contain the backing material(s) for a specific test. **E3004**
- backing fixture, n**—any apparatus designed to hold the backing material(s) for a specific test. **E3005**
- backing material, n**—the substance placed behind the test item during testing which is intended to be a witness material and which may provide a measurable indication of test item performance. **E3004**
- backing material, n**—the substance placed behind the test item during testing. **E3005**
- DISCUSSION—The backing material typically provides support for the test item, and it may act as a witness material and may provide a measurable indication of the test item performance.
- ballistic panel, n**—a type of armor panel intended to provide ballistic resistance. **E3005**
- ballistic resistance, n**—a characteristic of protective equipment or materials describing their ability to provide protection from projectiles. **E3005**
- bare charge, n**—explosive charge that is either not encased or is encased by a material, such as a cardboard tube, that will not produce primary fragments. **E2740**
- base home, n**—the main or primary place of residence for the responder’s household and family. **E2732**
- basic plane, n**—plane through the centers of the external ear openings and the lower edges of the eye sockets. **E2952**
- basic societal functions, n**—those basic functions within a community that provide services for public health, health care, water/sanitation, shelter/clothing, food, energy supply,

public works, environment, logistics/transportation, security, communications, economy, and education. **E2413**

**beta, β, risk, n**—probability of obtaining a negative detection outcome, or non-alarm, in a properly operating ETD when analyzing a swab containing analyte at the mass level corresponding to the limit of detection. **E2677**

**biothreat agent, n**—any microorganism, virus, infectious substance, or biological product that may be engineered as a result of biotechnology, or any naturally occurring or bioengineered component of any such microorganism, virus, infectious substance, or biological product, capable of causing: (1) death, disease or other biological malfunction in a human, an animal, a plant, or another living organism; (2) deterioration of food, water, equipment, supplies, or material of any kind; (3) or, deleterious alteration of the environment. **E2770 from 18 USC 175**  
**E2458 from 18 USC 175**

**blank, n**—sample swab devoid of analyte. **E2677**  
DISCUSSION—If a swab is prepared using the same procedures used in preconditioning the reference swabs and only pure solvent or a chemical background is deposited, this swab is called a process blank.

**blast resistance, n**—for purposes of this standard specification, the non-numerical attribute of a trash receptacle that is established when the results of explosive testing of the submitted specimens meet all performance requirements given in this specification. **E2740**

**blast resistance, n**—the non-numerical attribute of a trash receptacle that is established when the results of explosive testing of the submitted specimens meet all performance requirements given in Specification **E2740**.  
**E2831/E2831M**

**blast resistant trash receptacle, n**—a trash receptacle that conforms to the requirements given in Specification **E2411**.  
**E2831/E2831M**

**blunt impact panel, n**—a type of armor panel intended to provide protection against impact from a blunt object. **E3005**

**blunt impact resistance, n**—a characteristic of protective equipment or materials describing their ability to provide protection against impact from a blunt object. **E3005**

**body armor, n**—an item of personal protective equipment intended to protect the wearer from threats that may include ballistic threats, stabbing, fragmentation, or blunt impact. **E3003 from Terminology E3005**

DISCUSSION—Law enforcement and corrections officers typically refer to body armor as a *vest*.

**body armor, n**—an item of personal protective equipment intended to protect the wearer from threats that may include ballistic threats, stabbing, fragmentation, or blunt impact. **E3005**

DISCUSSION—Law enforcement and corrections officers typically refer to body armor as a *vest*. See *vest*.

**body-worn, adj**—a HAZMAT instrument that typically weighs no more than 5.4 kg [12 lb] and is no larger than 65 cm (sum of the sides). **E2851/E2851M**

**bridge gauge, n**—an assembly used for measuring that consists of a depth gauge and supports that rest on opposite sides of the backing fixture. **E3004**

**bulk powder, n**—a visible powder, at least approximately 1 tsp or 5 mL in volume amassed or dispersed over a limited area (optimally, area should be less than 20 by 20 cm (approximately 8 by 8 in.)). **E2770**  
**E2458**

**bullet, n**—a projectile fired from a firearm or testing apparatus. **E3005**

DISCUSSION—The SAAMI definition considers bullets to be projectiles fired from rifled barrels, which differentiates bullets from shot, slugs, fragment simulators, and other projectiles.

**business impact analysis (BIA), n**—management level analysis that identifies the impacts of losing the entity's resources by measuring the effect of the resource loss and escalating losses over time to provide the entity with reliable data upon which to base decisions concerning hazard mitigation, recovery strategies, and continuity planning. **E2413**

**bust point to bust point, n**—the horizontal distance from apex to apex. **E3003 from Terminology D5219**

**bust point to side seam, n**—on either side of the body, the horizontal distance from apex to the midpoint between front break-point and back break-point. **E3003**

**cache, n**—stock of tools, equipment, and supplies stored in a designated location. **E2521 from FEMA US&R-2-FG**

**calibrate**—to correlate the reading of an instrument or system of measurement with a standard. **E2852 from NFPA**

**capacity, adj**—capability at a given time for a hospital to provide a given service that is distinct from capability, which defines an ability to provide a service under normal operating conditions. **E2413**

DISCUSSION—A facility may have the capability to treat acute major incident patients in a cath lab, but if a critical resource is missing at the time of a disaster (for example, personnel, equipment, space, or electricity), the facility would not have the capacity to care for such a patient at that time when there is a need.

**caregiver**—a person or entity charged with or one who assumes the responsibility for rendering support to persons with disabilities. **E2951**

**carrier, n**—a garment whose primary purpose is to retain the armor panel(s) or plate(s) and provide a means of supporting and securing the armor panel(s) or plate(s) to the wearer. **E3005**

**cartridge, n**—a single assembled unit consisting of a bullet, propellant, primer, and casing. Synonymous with *round*. **E3005**

**categorizing resources, n**—the process of organizing resources by category, kind, and type, including size, capacity, capability, skill, and other characteristics to facilitate more efficient resource ordering among providers and users during an incident. **E2640 from NIMS 2008**

**certification organization, n**—independent third-party organization that determines product compliance with the requirements of this specification with a labeling/listing/follow-up program. **E2952**

**certification/certify, n/adj**—system whereby an organization determines that a manufacturer has demonstrated the ability to produce a product that complies with the requirements of this specification, authorizes the manufacturer to use a label on listed products that comply with the requirements of this specification, and establishes a follow-up program conducted by the organization as a check on the methods the manufacturer uses to determine continued compliance of labeled and listed products with the requirements of this specification. **E2952**

**cervicale, n**—the superior palpable point of the spine of the seventh cervical (C7) vertebra. (Anthropometric Survey (ANSUR) II Pilot Study: Methods and Summary Statistics); the most protruding vertebrae at the back of the base of the neck. **E3003**

**chain of custody, n**—set of procedures and documents to account for the integrity of sample by tracking its handling and storage from point of sample collection to final disposition of the sample. **E2458**  
**E2770**

**chemical background, n**—particular mixture of environmental and ambient substances that may be sampled by a swab during normal operation of an ETD in a deployment area. **E2677**

DISCUSSION—The presence of certain substances on a sample or reference swab may interfere with or suppress expected ETD responses for particular analytes, hence influencing the effective limit of detection (LOD<sub>90</sub>) values for those analytes and changing the alpha and beta risks for the detection process.

**Chemical Warfare Agents (CWA), n**—toxic chemicals that have been used as chemical weapons, or have been developed for use as chemical weapons. **E3002**

DISCUSSION—The most common chemical warfare agents are:<sup>13,14</sup> (a) nerve agents—tabun (GA), sarin (GB), soman (GD), cyclosarin (GF), VX; and (b) blister agents (or vesicants)—mustard and lewisite.

**chest width, n**—the horizontal distance straight across the chest between the front break-points. **E3003**

**chest width, shooting stance, n**—the horizontal distance straight across the chest between the front break-points, taken while the wearer is in the preferred handgun shooting stance. See *shooting stance*. **E3003**

**chest/bust girth, n**—the horizontal circumference around the torso, taken under the arms and at the level of the apex. **E3003** from Terminology **D5219**

<sup>13</sup> Schwartz, M. D., Hurst, C. G., Kirk, M. A., Reedy, S. J. D., and Braue Jr., E. H. "Reactive Skin Decontamination Lotion (RSDL) for the Decontamination of Chemical Warfare Agent (CWA) Dermal Exposure," *Current Pharmaceutical Biotechnology*, Vol 13, pp. 1971–1979, US Army Medical Research Institute Chemical Defense, University of Virginia, Department of Homeland Security, 2012.

<sup>14</sup> Fatah, A. A., Barrett, J. AS., Arcilesi Jr., R. D., Ewing K. J., Lattin, C. H., Helinski, M. S., and Baig, I. A., *Guide for the Selection of Chemical and Biological Decontamination Equipment for Emergency First Responders*, NIJ Guide 103-00, Vol 1, 2001.

**civilians, n**—persons who are members of the general public and who are not fire service or law enforcement personnel, or other emergency services personnel performing their official duties during emergency incident operations. **E2952**

**clavicle, n**—the long curved bone that connects the upper part of the breastbone with the shoulder blade at the top of each shoulder; the clavicle may also be referred to as the collarbone. **E3003**

**clay block, n**—a type of backing assembly in which the backing material is *ROMA Plastilina No. 1*® modeling clay. **E3004**

**clay package, n**—the smallest unit of wrapped and labeled clay as received from the supplier. **E3004**

**clear-down, n**—the process of allowing an ETD to recover from an alarm through a repeated sequence of automated cleansing to clear out the residual sample from the instrument until the signal is reduced below a set threshold. **E2520**

DISCUSSION—May also be used as a verb, for example: "Enough time was allowed to clear-down the ETD."

**cold zone, n**—the uncontaminated area where workers are unlikely to be exposed to hazardous substances or dangerous conditions; also known as Clean Zone or Support Zone. **E2458** from CPL 02-02-071 Directive  
**E2770** from CPL 02-02-071 Directive

**collapse hazard zone, n**—area established by the responsible official for the purpose of controlling all access to an area that could be impacted or affected by building collapse, falling debris, or other associated types of hazards including electrical, chemical, water, and aftershocks. **E2521** from FEMA US&R-2-FG

**colony forming unit (CFU), n**—units for the number of viable particles present in a solution. A CFU can result from a single viable bacterial cell or from a clump of cells. **E2800** from **D1129**

**combination armor, n**—a type of body armor intended to protect the wearer from both ballistic threats and stabbing. **E3005**

DISCUSSION—Combination armor is sometimes called dual-threat armor or multiple-threat armor.

**committed effective dose equivalent (CEDE)**—committed effective dose equivalent is the sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to these organs or tissues. **E2601**

**Communications Access Real time Translation (CART)**—a stenographic device that captures input and transfers it to computer assisted captioned communications on a screen for use by persons who are hard of hearing or deaf. **E2951**

**communications systems, n**—those processes and resources (physical, procedural, and personnel related) that provide

information exchange during an identified major incident. **E2413**

**community**, *n*—group or groups of individuals, who live or work in specific neighborhoods, areas, or regions. **E2541**

**community/region**, *n*—that area in which a hospital provides health services and basic societal functions. **E2413**

**community asset mapping**, *v*—documenting the tangible and intangible resources of a community where assets are to be preserved and enhanced. **E2541**

**complete penetration**, *n*—the result of a test threat impact if one or more of the following conditions are met: (1) any portion of a test threat, a fragment of a test threat, or a fragment of the test item passes through the wear face of the test item; (2) a hole is created through the test item; (3) the presence of a test threat, a fragment of a test threat, or a fragment of the test item is embedded or passes into the backing material; or (4) a hole is created through the witness panel. Synonymous with *perforation*. **E3005**

DISCUSSION—The conditions for complete penetration are specified in individual test methods.

**compliance/compliant**, *n/adj*—meeting or exceeding all applicable requirements of this specification. **E2952**

**compound identity calibration (CIC)**, *n*—act of providing the detector with a known substance so that the internal software parameters may be adjusted to identify explosive compounds correctly. **E2520**

DISCUSSION—Manufacturers of explosives detectors often provide so-called calibration media. In an IMS instrument, CIC allows the instrument to adjust the present values of the mobility (or drift) time of the calibrant to the most current conditions. For explosives detectors based on MS, CIC is often called tuning. Some IMS and MS explosives detectors may have built-in materials and software to perform CIC automatically.

**concealable armor**, *n*—vest designed to be worn under the shirt (uniform or undercover) or in a carrier that looks like a uniform shirt so that it is not easily seen. **E3003** from Terminology **E3005**

**concealable body armor**, *n*—a vest designed to be worn under the shirt (uniform or undercover) or in a carrier that looks like a uniform shirt so that it is not easily seen. **E3005**

DISCUSSION—Concealable body armor is also called concealable armor.

**conditioning**, *n*—a process that exposes an item, prior to testing, to a specified controlled environment or physical stresses, or both. **E3005**

**confirmatory analysis**, *n*—a test or a series of assays that definitively identifies the presence of a suspected substance or agent. **E2458**

DISCUSSION—Confirmatory analysis of a biothreat for public health action can be performed only by an LRN national or reference laboratory.

**confirmatory analysis**, *n*—a test or a series of assays that definitively identifies the presence of a suspected substance or agent. **E2770**

DISCUSSION—Confirmatory analysis of a biothreat for public health action can only be performed by a LRN national or reference laboratory.

**congregation center**—the primary location to which the public and a responder’s family will be taken in the event that it is necessary to relocate the family from their base home. **E2732**

**consumables**, *n*—HPCVD components that require periodic replacement. **E2885**

**continuity of essential services**, *n*—services that hospitals provide as a vital daily function that must be maintained as long as possible and then restored at the earliest opportunity after managing the necessary elements of the emergency incident. This is a business continuity planning focus. **E2413**

**counts per minute (cpm)**, *n*—the number of radiological transformations detected by a radiation instrument in one minute. **E2852**

**credential**, *n*—a credential is an attestation of the identity, qualification, and authorization of an individual to allow access to an incident or event site. **E2842**

**credentialing**, *n*—the administrative process for validating the qualifications of personnel and assessing their background, for authorization and permitting/granting access to an incident (site or event). **E2842** from **NIMS Guide 0002**

**credentialing process**, *n*—the objective evaluation and documentation of an individual’s current certification, license, or degree; training and experience; and competence or proficiency to meet applicable standards, provide particular services and/or functions, or perform specific tasks under specific conditions during an incident. **E2640** from **NIMS 2008**

**critical value, CV**, *n*—instrumental response amplitude at which there is particular confidence that the signal may be attributed to a particular analyte. **E2677**

DISCUSSION—The CV is defined by the desired alpha and beta risks of detection and is a response somewhat below the mean response of samples prepared at the limit of detection. A realistic CV is the optimal basis of a single-channel detection threshold.

**crowded places**, *n*—public areas where groups of people may concentrate for a continuous or limited period of time. **E2831/E2831M**

DISCUSSION—Examples of public areas that may be crowded include:

- (1) buildings and related structures such as parking garages, including their access and egress points,
- (2) entertainment and event venues,
- (3) transportation terminals such as airports, train stations, and other public transportation stations,
- (4) ticket counters, concession stands, retail stores, and dining establishments, and
- (5) pedestrian walkways, sidewalks, streets, alleys, parks, plazas, playgrounds, schoolyards or other similar areas.

**damage assessment**, *n*—appraisal or determination of the effects of the disaster on human, structural, economic, and natural resources. **E2413**

**decision points**, *n*—predefined exposure rates or doses at which a decision-maker must determine a path forward to maximize responder safety and public protection. **E2601**

**decontamination**—(1) the removal of radionuclide contaminants from surfaces (for example, skin) by cleaning and washing (NCRP Report No. 165); (2) the physical or chemical process of reducing and preventing the spread of contaminants from people, animals, the environment, or equipment involved at hazardous materials/weapons of mass destruction (WMD) incidents.

**E2601** from the 2013 Edition of **NFPA 472 3.3.17**

**decontamination**, *n*—the physical or chemical process, or both, of reducing and preventing the spread of contaminants from people, animals, the environment, or equipment involved at hazardous materials/weapons of mass destruction (WMD) incidents. **E2458** from **NFPA E2770** from **NFPA**

**decontamination**, *n*—process of reducing or eliminating the hazards associated with chemical, biological, or radiological contamination.

**E2543**

**E2542**

DISCUSSION—The means of decontaminating personnel, equipment, or areas include absorption, neutralization, weathering, and physical removal of the contaminant and hazards associated with nuclear, biological, or chemical (NBC) agents.

**decontamination**, *n*—process of reducing or eliminating the hazards associated with chemical contamination for personnel to include absorption, neutralization, and physical removal of the chemical contaminant. **E2739**

**decontamination**, *n*—the process of physical removal or chemical neutralization, or both, of CWAs to decrease or prevent health effects due to a dermal contamination. **E3002**

**decontamination system**, *n*—all of the equipment required to reduce the chemical contamination on personnel leaving the contaminated area to below levels that could cause harm to themselves, others, or the environment. **E2739**

**defensive operation(s)**, *n*—emergency response measures taken from a safe distance (for example, outside the hot zone) to prevent or limit radiation exposure or the spread of hazardous material; life-safety operations are not a concern if defensive operations are the only operations supporting the response. **E2601**

**depth gauge**, *n*—instrument (for example, caliper) used to measure the indentations in the backing material caused by the impactor. **E3004**

**detection outcome**—binomial (yes/no) response of an analysis within a particular channel (or spectral window) in an ETD. **E2677**

DISCUSSION—The channel response is “positive” when the signal in the channel meets or exceeds all detection thresholds; otherwise, the channel response is “negative.”

**detection threshold**, *n*—set of signal characteristics, often user selected, for a particular channel (or spectral window) in an ETD. **E2677**

DISCUSSION—These characteristics usually include the peak amplitude (optimally, the critical value) but may also include the peak shape, onset time, duration, and position within a detection window. If the measured signal in that channel meets or exceeds the detection threshold settings, the detection outcome is designated as “positive;” otherwise, the response is “negative.” One or more position detections are needed within the alarm rules to elicit an alarm for a particular analyte. The alarm threshold for a particular analyte is the same as the detection threshold if the alarm rule uses only one channel. If the alarm rule requires two or more positive responses, or negative responses in certain channels, the alarm threshold is a logistical function of the channel signals involved.

**detect**—to discover or determine the existence of a material or item of interest. **E2852**

**detonation**, *n*—(1) a violent chemical reaction within a chemical compound or mechanical mixture resulting in heat and pressure; (2) a reaction that proceeds through the reacted material toward the unreacted material at a supersonic velocity. **E2740** from **DOD 4145.26 M E2639** from **D4145.26M**

DISCUSSION—The result of the chemical reaction is exertion of extremely high pressure on the surrounding medium forming a propagating shock wave that is originally of supersonic velocity.

**disaster**, *n*—sudden calamity, with or without casualties, so defined by local, county, state, or federal guidelines; before a disaster declaration, a disaster is an event that exceeds (or might exceed) the resources for patient care at that time, for a community, a hospital, or both. **E2413**

DISCUSSION—The definition of casualty is expansive and could include acute injuries, illnesses, or deaths, exacerbation of chronic medical conditions as a result of poor access to primary care following the disaster (disaster-related acute major incident), and post-traumatic stress disorders. A disaster could also include sustained infrastructure incapacity and the inability to access necessary external resources and supplies.

**disaster emergency management**—an ongoing process to prevent, prepare for, mitigate the effects of, respond to, or recover from an incident that threatens life, property, operations, or the environment. **E2951** from **NFPA 1600**

**donning time**, *n*—time for equipment in hand to be placed over the head of the wearer and become functional. This time shall include the removal of an operational packaging. **E2952**

**dose**—radiation absorbed by an individual’s body; general term used to denote mean absorbed dose, equivalent dose, effective dose, or effective equivalent dose, and to denote dose received or committed dose; see Total Effective Dose Equivalent (TEDE). **E2601** from **CRCPD 2006**<sup>15</sup>

**dose rate**—the radiation dose delivered per unit of time. Measured for example, in “rem per hour.” **E2852**

<sup>15</sup> Available from [www.crcpd.org/RDD\\_Handbook/RDD-Handbook-ForWeb.pdf](http://www.crcpd.org/RDD_Handbook/RDD-Handbook-ForWeb.pdf).



**dosimeter**—a portable device used to measure and record the total accumulated exposure to ionizing radiation by an individual. **E2852**

**dosimeter**—a small portable instrument (such as a film badge, thermoluminescent dosimeter, or pocket dosimeter) used to measure and record the total accumulated personal dose of ionizing radiation. **E2601** from **U.S. NRC Glossary**<sup>16</sup>

**duty belt, n**—a belt worn around the waist by law enforcement and corrections personnel to which essential equipment is attached. **E3003**

**emergency decontamination**—the physical process of immediately reducing contamination of individuals in potentially life-threatening situations with or without the formal establishment of a decontamination corridor. A goal of emergency decontamination is reducing dose to a lower level; however it may not be possible to completely eliminate contamination. **E2601**

**emergency management program**—a program that implements the mission, vision, and strategic goals and objectives as well as the management framework of the program and organization. **E2951** from **NFPA 1600**

**emergency management/response personnel**—includes Federal, State, territorial, tribal, sub-state regional, and local governments, Non-Governmental Organizations (NGOs), private sector-organizations, critical infrastructure owners and operators, and all other organizations and individuals who assume an emergency management role. (Also known as *emergency responder*.) **E2732** from **NIMS 2008**

**emergency medical services (EMS)**—the provision of treatment, support, and other pre-hospital procedures, including ambulance transportation, to patients. **E2732**

**emergency operations center (EOC), n**—the physical location at which the coordination of information and resources to support domestic incident management activities normally takes place. An EOC may be a temporary facility or may be located in a more central or permanently established facility, perhaps at a higher level of organization within a jurisdiction. EOCs may be organized by major functional disciplines (for example, fire, law enforcement, and medical services), by jurisdiction (for example, Federal, State, regional, county, city, tribal), or some combination thereof. **E2770** from **NIMS**

**emergency operations center (EOC), n**—the physical location at which the coordination of information and resources to support incident management activities normally takes place. An EOC may be a temporary facility or in a permanently established location in a jurisdiction. **E2601** from **NIMS 2007**

**emergency operations center (EOC), n**—the physical location at which the coordination of information and resources to support incident management (on-scene operations) ac-

tivities normally takes place. An EOC may be a temporary facility or may be located in a more central or permanently established facility, perhaps at a higher level of organization within a jurisdiction. EOCs may be organized by major functional disciplines (for example, fire, law enforcement, medical services), by jurisdiction (for example, Federal, State, regional, tribal, city, county), or by some combination thereof. **E2732** from **NIMS 2008**

**emergency responder, n**—includes state, local, and tribal emergency public safety, law enforcement, emergency response, emergency medical (including hospital emergency facilities), and related personnel, agencies, and authorities. See Section 2 (6), Homeland Security Act of 2002, Pub. L. 107-296, 116 Stat. 2135 (2002).<sup>17</sup> Also known as Emergency Response Provider. **E2770** from **NIMS**

**emergency responder, n**—emergency response providers include federal, state, and local government, fire, law enforcement, emergency medical, and related personnel, agencies, and authorities. **E2601** from **Homeland Security Act of 2002**<sup>17</sup>

**emergency responder, n**—same as *emergency management/response personnel*. **E2732**

**emergency response, n**—the performance of actions to mitigate the consequences of an emergency for human health and safety, quality of life, the environment and property. It may also provide a basis for the resumption of normal social and economic activity. **E2770**

**emergency response**—immediate and ongoing activities and tasks, programs, and systems to manage the effects of an incident that threatens life, property, operations, or the environment. **E2951** from **NFPA 1600**

**emergency response**—the performance of actions to mitigate the consequences of an emergency for human health and safety, quality of life, the environment and property. It may also provide a basis for the resumption of normal social and economic activity. **E2601** from **IAEA 2006**  
**E2732** from **IAEA 2006**

**emergency response robot or response robot, n**—deployable sensing and control device intended to perform tasks at operational tempos to assist the operator with handling the involved task. **E2521**

**emergency response team (ERT), n**—team assembled by involved organization in response to the occurrence of a disaster. **E2521** from **FEMA US&R-2-FG**

**entity, n**—governmental agency or jurisdiction, private or public company, partnership, nonprofit organization, or other organization that has emergency management and continuity of operations responsibilities. **E2668** from **NFPA 1600**  
**E2951** from **NFPA 1600**

**entity**—a governmental agency or jurisdiction, private or public company, partnership, nonprofit organization, or other

<sup>16</sup> Available from [www.nrc.gov/reading-rm/basic-ref/glossary.html](http://www.nrc.gov/reading-rm/basic-ref/glossary.html).

<sup>17</sup> Available from <https://www.dhs.gov/homeland-security-act-2002>.

organization that has disaster/emergency management and continuity of operations responsibilities.

**E2640** from **NFPA 1600**  
**E2842** from **NFPA 1600**

**EOC Coordinator**, *n*—individual with responsibility for managing the EOC facility, systems, and procedures during activation of the EOC. **E2915**

**EOC Planner**, *n*—individual with responsibility for managing and developing the EOC facility, systems, and procedures prior to activation of the EOC (that is, during day-to-day operations). **E2915**

**EOC team**, *n*—the staff occupying the EOC for the purpose of coordinating response and recovery operations. **E2915**

**established EOC**, *n*—facility temporarily created to manage or coordinate emergency operations or like functions. **E2668**  
**E2915**

**evacuation**, *n*—organized, phased, and supervised withdrawal, dispersal, or removal of civilians from dangerous or potentially dangerous areas, and their reception and care in safe areas. **E2770** from **NIMS**

**E2601** from **NIMS 2007**  
**E2732** from **NIMS 2008**

**evacuation**—supervised phased withdrawal, dispersal, or removal of all civilians from dangerous or potentially dangerous areas, and their reception and care in safe areas. **E2951**

**event**—a planned occurrence or large-scale gathering that requires planning, coordination, and support from the emergency management community, such as a National Special Security Event (NSSE) or the Superbowl. **E2842**

**explosion**, *n*—a chemical reaction of any chemical compound (or mechanical mixture) that, when initiated, undergoes a very rapid combustion or decomposition releasing large volumes of highly heated gases that exert pressure on the surrounding medium. **E2639** from **DOD 4145.26 M**

**E2740** from **DOD 4145.26 M**  
**E2831/E2831M**

**explosive**, *n*—any chemical compound (or mechanical mixture) that, when subjected to heat, impact, friction, detonation, or other suitable initiation, undergoes a very rapid chemical change with the evolution of large volumes of highly heated gases that exert pressures in the surrounding medium. **E2639** from **DOD 4145.26 M**

**E2740**  
**E2831/E2831M**

**explosive trace detector (ETD)**, *n*—a system designed to detect trace amounts (micrograms or less) of explosive compounds. **E2520**

**DISCUSSION**—In the context of this practice, an ETD under test will require the use of sample swabs. Some ETDs may sample vapors or particles directly from air or surfaces without swabs. This type of sample introduction involves environmental sampling procedures that this practice does not consider.

**explosive trace detector, ETD**, *n*—device used to identify the presence of small amounts of explosive compounds. **E2677**

**DISCUSSION**—ETDs are commonly used at airports by security screeners, who wipe a surface with a swab to collect residues, and then analyze the swab in the ETD. Explosive vapor detectors (EVDs) are a subset of ETDs that sample air to detect vapors indicative of explosives.

**explosive vapor detector, EVD**, *n*—used to sample air—indoors, outdoors, or within containers—to identify vapors indicative of the presence of explosives. **E2677**

**DISCUSSION**—Detected vapors may be explosive compounds or other chemicals in patterns suggestive of particular explosive formulations.

**facility**—a hospital, recreation center, school, sports complex, etc. designated to provide shelter during emergencies. **E2951**

**fair hit**, *n*—a test threat impact (on a test item) that meets all specified requirements in a particular test method. **E3005**

**false negative**, *n*—the HPCVD fails to alarm in the presence of a chemical of interest when the vapor concentration is at or above the indicated alarm threshold value. **E2885**

**false positive alarm**, *n*—the HPCVD indicates the presence of a chemical of interest when none is present or if the chemical is present at vapor concentrations less than 50 % of the indicated alarm threshold value. **E2885**

**family leader**—the designated person in the family, usually the responder, who serves as the key contact with the Support Service Agency (SSA) before any incident. **E2732**

**family support**—the type and degree of family assistance, which will vary depending upon the nature, extent, and duration of the emergency. Certain emergencies may require evacuation or medical assistance, or both. Circumstances may occur where relocation is impractical or not prudent. In such situations, support may take the form of delivering necessary services, supplies, and equipment, as well as providing communications to a family. Family assistance providers will need to develop, in conjunction with the respective emergency management organization and individual responders, appropriate protocols for a variety of covered events (for example, fire, flood, hurricanes, terrorist acts, mutual aid assignments in other jurisdictions) that will define family support. **E2732**

**fatality management**, *n*—processes designated by existing plans or local officials overseeing fatalities from an incident (medical examiner or coroner) to organize, coordinate, manage, and direct manage incident fatalities and identify temporary morgue facilities. **E2413**

**DISCUSSION**—Fatalities that occur during the time of the incident are managed in uniform fashion, whether the deaths appear connected to the incident or not.

**fault condition**, *n*—certain situation or occurrence during response robot testing or training whereby the robot either cannot continue operating without human intervention or has performed some defined rules infraction. **E2521**

**field screening**—field measurements utilized early in the site assessment process to define and delineate the contaminants

present, support tactical decision making and address operational safety measures. **E2458**

DISCUSSION—Field screening does not include measurements of biological properties which is termed on-site biological assessments (see **E2458 – 10 3.1.12**).

**E2770**

**E2770**

**filter unit, n**—in this standard, a filter that is supported with an inert housing to the solvents as described in Section 7 of this standard. **E2866**

**filtration device, n**—a device used to remove particles from the extract that may clog the liquid chromatography system. Described in section 7.3 of this standard. **E2866**

**fireball, n**—a highly luminous, intensely hot cloud of dust, gas, and or vapor generated by an explosion. **E2639**

**E2831/E2831M**

**fit, n**—the quality, state, or manner in which the length and closeness of clothing, when worn, relates to the human body. **F1731**

**fit, n**—a characteristic of an individual body armor relative to the wearer that encompasses coverage, comfort, and functionality. **E3003**

**flat-floor terrain element, n**—flat surface with nominal overall dimensions of 1.2 by 1.2 m [4 by 4 ft] and elevation of 10 by 10 cm [4 by 4 in.]. **E2521**

**flux**—a term referring to the amount of some type of radiation crossing a certain area per unit time. **E2852**

**focal length, n**—equivalent distance in free air between the point at which rays of light entering the optical system are first collimated and the focal point of the camera. **E2521**

**follow-up program, n**—sampling, inspections, tests, or other measures conducted by the certification organization on a periodic basis to determine the continued compliance of listed products that are being produced by the manufacturer to the requirements of this specification. **E2952**

**force protection, n**—numerical level of blast resistance of a trash receptacle expressed in the mass of trinitrotoluene (TNT) explosive. **E2740**

**force protection, n**—numerical level of blast resistance of a trash receptacle expressed in the mass equivalent of trinitrotoluene (TNT) explosive. **E2831/E2831M**

**foveated vision or foveated vision system, n**—camera system that has higher resolution (provides more information) at the center of the image than at the edges. **E2521**

**fragment, n**—solid material propelled from an explosion as a result of fragmentation. **E2639**

**E2740**

**E2831/E2831M**

*primary fragment, n*—a fragment produced from the explosive device itself. **E2639**

**E2740**

**E2831/E2831M**

*secondary fragment, n*—a fragment produced from the container or environment where the container is placed; a piece of receptacle broken off as a result of the charge being detonated inside of it. **E2639**

**E2740**

**E2831/E2831M**

**fragmentation, n**—breaking up of the confining material of a chemical compound (or mechanical mixture) when an explosion takes place. **E2639** from **DOD 4145.26 M**

**E2740** from **DOD 4145.26 M**

**E2831/E2831M** from **D882**

**front break-point, n**—the location on the front of the torso where the arm separates from the torso. **E3003** from Terminology **D5219**

**front center length, n**—the vertical distance from the bottom of the suprasternal notch to the top of the duty belt. **E3003**

**front lateral length, n**—the vertical distance from the top of the clavicle over the bust point to the top of the duty belt. See Fig. 5 and Fig. 6 for the location of this measurement. **E3003**

**full-ramp terrain element, n**—inclined surface with nominal overall dimensions of 1.2 by 1.2 m [4 by 4 ft] and slope of 15°. **E2521**

**functional tests**—tests performed to verify the ability of an element or component of an element to continue to be used for its intended purpose. **E2852** modified from **NFPA**

**gas, n**—fluid that has neither independent shape nor volume and tends to expand indefinitely. **E2952**

**glass fiber filter, n**—A porous glass fiber material onto which solid particles present in the extraction fluid, which flows through it, are largely caught and retained, thus removing them from the extract. **E2866**

**half-ramp terrain element, n**—inclined surface with nominal overall dimensions of 0.6 by 1.2 m [2 by 4 ft] and slope of 15°. **E2521**

**hand-carried**—a HAZMAT instrument that typically weighs no more than 2.3 kg [5 lb] and is no larger than 40 cm (sum of the sides). **E2851/E2851M**

**hard armor plate, n**—See *hard armor*. **E3005**

**hard armor, n**—an item of personal protective equipment that is constructed of rigid materials and is intended to protect the wearer from threats that may include ballistic threats, stabbing, fragmentation, or blunt impact, or combinations thereof; synonymous with *hard armor plate and plate*. **E3005**

**hazard, n**—something that is potentially dangerous or harmful, often the root cause of an unwanted outcome; a danger or peril. **E2458** from **NIMS**

**E2770** from **NIMS**

**hazard vulnerability analysis (HVA), *n***—process by which a hospital’s personnel identify real or potential hazards that would affect hospital operations, particularly those with negative implications for health care, and identify internal capabilities and community preparedness to address those hazards and, in a region of health care providers, this may include a needs assessment as a preliminary survey of real or potential hazards to a specific group of hospitals. **E2413**

**DISCUSSION**—This will be accomplished with a systematic approach to the probability and consequence of hazards and events that threaten the continuity of a hospital’s business operations. This would normally consist of determination of the likely and potential hazards to the operations of the hospital, an evaluation of the vulnerability of the hospital to those hazards, and determination of the resources necessary to reduce those hazards and vulnerability. The analysis provides the basis for establishing relevant major incident management plans and should be coordinated with local or state authorities, or both, and regional health care facilities as appropriate.

**haze, *n***—percent of incident light that is not transmitted in a straight line through the lens but forward scattered, greater than 2.5° diverging. **E2952**

**HAZMAT responder, *n***—a trained and certified individual who is a member of a hazardous material response team or qualified to respond to incidents involving toxic industrial chemicals, chemical warfare agents and other weapons of mass destruction, or both. A HAZMAT response specialist will have additional training to respond to specific weapons of mass destruction. **E2770**

**high exposure rate**—exposure rate beyond which emergency response is not recommended for rescue operations unless the incident commander (IC) determines it can be carefully controlled for a short duration for priority operations such as life-saving, and the emergency responder is informed of the hazards and consents to performing the operation(s); the recommendation of this standard practice is for a high exposure rate less than or equal to 100 R/h (1 Sv/h). For the purposes of this standard practice, the term “high dose rate” is equivalent to “high exposure rate.” **E2601**

**hospital, *n***—health care institution with an organized medical and professional staff and inpatient beds available around the clock, whose primary function is to provide inpatient medical, nursing, and other health-related service to patients for both surgical and nonsurgical conditions and that usually provides some outpatient services, particularly emergency care, for licensure purposes. **E2413**

**DISCUSSION**—Each state has its own definition of hospital, which affects licensing under laws of that state.

**hospital emergency operations center (HEOC), *n***—(also known as a command center) designated area of the hospital that serves as a meeting area, with strategic and tactical support for the incident command system/incident management system. **E2413**

**DISCUSSION**—Reference to the HEOC will avoid confusion with the community/county EOC. The EOC must have adequate technical capability and personnel to support the operation of the incident and the hospitals response.

**hospital evacuation, *n***—evacuation of a hospital refers to those actions by medical staff to remove inpatients,

outpatients, and staff physically from the location of a hazard, thus interrupting the pathway of exposure and includes evacuation within the facility (horizontal or vertical) and away from the facility. **E2413**

**DISCUSSION**—Evacuation is a short-term or long-term protection strategy. An alternative short-term protection technique may be sheltering, but in some circumstances (earthquake-damaged hospital), it would need to be to another safe structure.

**hospital major incident, *n***—major incident is any event that approaches or exceeds the capability of a hospital or health care organization to maintain operations or requires significant disruption to the routine operations of the facility to address. **E2413**

**DISCUSSION**—The definition may be institution-specific since hospitals on a daily basis operate with different resources and capabilities to respond to different crises.

**hospital management (group supervisors/leaders/managers), *n***—qualified personnel who control a specific department, unit, area, or task assignment. **E2413**

**hospital mutual aid, *n***—coordination of resources, including but not limited to: facilities, personnel, vehicles, equipment, supplies, pharmaceuticals, and services, pursuant to an agreement between hospitals and other health care organizations, providing for such interchange on a reciprocal basis in responding to a major incident or disaster. **E2413**

**hospital surge capacity, *n***—ability of a hospital to expand rapidly and augment services in response to one or multiple incidents. **E2413**

**DISCUSSION**—This response is under the control of the facility’s emergency management plan and may include integration with regional authorities responsible for processes to manage and provide logistical and resource support to manage the patient influx.

**hot line**—the line of demarcation that may become a decision point to control the hot zone; for a radiological response, the hot line shall correspond to a previously established exposure rate (for example, the low exposure rate) or contamination level above which personnel shall be trained and protected appropriately by personal protective equipment (PPE) to operate. The location of the hot line may not be determined based on radiation exposure rate or contamination level if a higher hazard associated with the incident presents greater risk. **E2601**

**hot zone, *n***—the area, located on the site where contamination is either known or expected and where potential for greatest exposure exists; also known as Exclusion Zone or ExZ. **E2458** from CPL 02-02-071 Directive **E2770** from CPL 02-02-071 Directive

**hot zone**—the control zone immediately surrounding a hazardous materials incident, which extends far enough to prevent adverse effects from hazardous materials releases to personnel outside the zone. **E2601** from NFPA 472

**human robot interaction/interface (HRI), *n***—(1) physical activities that users engage with robots to perform assigned tasks; (2) physical devices that facilitate the aforementioned activities; (3) logical design and description of planned and

anticipated interactions between the robot and the user.  
**E2521** from **NIST Special Publication 1011<sup>18</sup>**

**DISCUSSION**—Also referred to as or human system interaction/interface (HSI).

**human-scale**, *adj*—used to indicate that (1) the concerned objects, terrains, or other environmental features are, individually, in volumetric and weight scales typically handled by humans, although possibly compromised or collapsed enough to limit human access; (2) the concerned robots are suitable for operating within these contexts; and (3) the robot tasks are identifiable, perceivable, and controllable with human interaction. **E2521**

**hypodermic syringe**, *n*—in this standard, a luer-lock-tipped glass syringe capable of holding a syringe-driven filter unit as described in section 7.3 of this standard. **E2866**

**identical respiratory protective escape device**, *n*—RPED that is produced to the same engineering and manufacturing specifications. **E2952**

**image**, *n*—two-dimensional matrix of values with each of the two dimensions representing angular deviation (possibly nonlinear) in orthogonal directions from the sensor’s optical axis. **E2521**

**image acuity or acuity**, *n*—measure of the resolving capability of the robot’s camera system. **E2521**

**image field of view or field of view**, *n*—measure of the extent of a scene that may be observed in a single visual image, measured in terms of degrees in the horizontal and vertical directions. **E2521**

**image resolution**, *n*—measure of the level of detail of a scene that the robot’s camera system is capable of capturing, measured as the number of horizontal scan lines per image height in the horizontal, vertical, and diagonal directions. **E2521**

**imager**, *n*—sensory, or system of sensors, that produces an image. **E2521**

**immobilize**, *v*—to fix in place; to prevent movement or reaerosolization of particulates due to mechanical or environmental forces such as by tracking, precipitation, or wind. **E2731**

**impactor**, *n*—cylindrical device, used during verification of the backing material, having specified dimensions and one hemispherical end. **E3004**

**improvised nuclear device (IND)**—a device incorporating fissile materials designed or constructed outside of an official government agency and that has, or appears to have, or is claimed to have the capability to produce a nuclear explosion. It also may be a nuclear weapon that is no longer in the custody of competent authority or custodian, or has been modified from its designated firing sequence, or it may have

been assembled from illegally obtained nuclear weapons components or special nuclear materials.

**E2601** from **CTOS 2014**

**in conjunction with armor**, *n*—soft or hard armor that is designed to provide a specific level of ballistic protection only when layered with a specified model(s) of body armor. **E3005**

**incident action plan**—a verbal or written plan, or combination of both, developed by the incident commander, that is updated throughout the incident and reflects the overall incident strategy, tactics, risks, and strategy tactics, risk management, and member safety. **E2951** from **NFPA 1600**

**incident command system (ICS)**, *n*—resource management system identified by a chain of command that adapts to an emergency event; the system adopted by the hospital should follow accepted ICS processes and be compatible with the National Incident Management System. **E2413**

**DISCUSSION**—ICS contains common terminology, individual ICS position responsibilities, integrated communications, modular composition of resources, unified command structure, manageable span of control, consolidated action plans and resource management, and plans for termination and restoration of business continuity. The system allows emergency responders from hospitals and other emergency response organizations to coordinate activities with familiar management concepts and request and implement mutual aid.

**incident command system (ICS)**—a standardized on-scene emergency management construct specifically designed to provide an integrated organizational structure that reflects the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. ICS is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to aid in the management of resources during incidents. It is used for all kinds of emergencies and is applicable to small as well as large and complex incidents. ICS is used by various jurisdictions and functional agencies, both public and private, to organize field-level incident management operations.

**E2732** from **NIMS 2008**

**incident commander (IC)**, *n*—the individual responsible for all incident activities, including the development of strategies and tactics and the ordering and release of resources.

**E2458** from **NIMS**

**E2770** from **NIMS**

**E2601** from **NIMS 2007**

**DISCUSSION**—The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

**incident commander**, *n*—individual responsible for the overall management and coordination of personnel and resources involved in a major incident. **E2413**

**DISCUSSION**—With a hospital event, the hospital incident commander is that official within an entity (for example, hospitals or group of hospitals) who serves as the EOC executive and coordinates the assets of the entity in the response to an event. The hospital incident commander should be the best qualified depending on the nature of the incident. This may be the senior physician on site, a department head, a nursing or house supervisor, or a hospital administrator. If the scope

<sup>18</sup> Autonomy Levels for Unmanned Systems Framework, Volume I: Terminology, Version 1.1, NIST Special Publication 1011, Huang, H., Ed., National Institute of Standards and Technology, Gaithersburg, MD, September 2004.

of the incident involves more than the hospital alone, the community official responsible for community response may be the incident commander of record.

**incident**—an occurrence, natural or man-made, that requires a response to protect life or property. Incidents can, for example, include major disasters, emergencies, terrorist attacks, terrorist threats, civil unrest, wildland and urban fires, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tropical storms, tsunamis, war-related disasters, public health and medical emergencies, and other occurrences requiring an emergency response. **E2732 from NIMS 2008**

**incident**—an occurrence, natural or man-made, that requires a response to protect life or property. **E2842 from NIMS 2008**

**incident management**—the broad spectrum of activities and organizations providing effective and efficient operations, coordination, and support applied at all levels of government, utilizing both governmental and nongovernmental resources to plan for, respond to, and recover from an incident, regardless of cause, size, or complexity. **E2732 from NIMS 2008**

**incident management system (IMS), *n***—in emergency management applications, the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure with responsibility to accomplish stated objectives pertinent to an incident effectively. **E2413**

**DISCUSSION**—The system identifies management responsibilities and establishes policies and procedures for coordinating emergency response, business continuity, and recovery activities across hospital departments, outside agencies, and jurisdictions and that maintains compliance with state or federal regulations. The incident command system is an integral component of the incident management system.

**indicator, *n***—information other than an alarm provided to the operator by the HPCVD. **E2885**

**informed consent, *n***—agreement reached between the responsible party(ies) and the affected stakeholders, which is obtained by a process by which affected stakeholders (1) are informed about the issues, concerns and priorities of all other affected stakeholders; (2) are directly involved in developing criteria for selecting solution(s); and (3) consider the balancing of trade-offs to achieve procedurally defined consensus on specific initiatives and actions identified through the restoration planning process. **E2541**

**DISCUSSION**—Multi-criteria decision analysis methods can be useful in sorting through and resolving differences among stakeholders with diverse opinions to help reach informed consent. (See Practice E1765 for help in multi-criteria decision analysis.)

**insert, *n***—a removable unit of protective material (soft armor or hard armor) intended to be placed into a special pocket on a carrier to enhance protection in a localized area. **E3005**

**installed**—a HAZMAT instrument that is permanently mounted at a location. **E2851/E2851M**

**interested party, *n***—any individual, group, company, organization, or other entity which is not an “affected

stakeholder” but which is interested in the outcome of the particular restoration planning process. **E2541**

**inventory, *n***—(v) a dynamic accounting of resources available to an entity in order to ensure timely delivery; (*n*) resources being accounted for in the process. **E2640**

**in-vitro study, *n***—study or protocol performed outside of a living organism, either with or without the use of a biological material. **E3002**

**in-vivo study, *n***—study using a whole living organism. **E3002**

**ion mobility spectrometry, IMS, *n***—detection technology commonly used in commercial ETDs. **E2677**

**DISCUSSION**—Typically, samples are heated to vaporize trace analytes of interest, which are then selectively ionized, separated on the basis of ion mobility through air in an analyzer tube, and detected using a Faraday cup. Raw responses are processed to enhance the chemical signals.

**issuer**—the organization that is issuing a credential to an applicant. Typically, this is an organization for which the applicant is working. **E2842 from FIPS 201**

**jig**—device used to position a test source and/or the instrument such that calibration or functional checks are repeatable. **E2852**

**jurisdiction, *n***—a range or sphere of authority. Public agencies have jurisdiction at an incident within their area of responsibility. Jurisdictional authority at an incident can be political, geographic (for example, city, county, tribal, State, or Federal boundary lines) or functional (for example, law enforcement, public health). **E2770 from NIMS E2601 from NIMS 2007**

**jurisdiction**—a range or sphere of authority. Public agencies have jurisdiction at an incident related to their legal responsibilities and authority. Jurisdictional authority at an incident can be political or geographical (for example, Federal, State, tribal, local boundary lines) or functional (for example, law enforcement, public health). **E2732 from NIMS 2008**

**labeled, *adj***—equipment or material to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner. **E2952**

**laboratory challenge stream, *n***—a synthesized chemical vapor mixture used to verify in the laboratory the chemical detection capabilities of an HPCVD. **E2885**

**Landolt C, *n***—optotype consisting of a black circular ring with a gap on white background; all the dimensions are specified. **E2521**

**light transmission, *n***—ratio of the luminous (approximately 380- through 760-mm) radiant power transmitted by an object to the incident luminous radiant power. **E2952**

**limit of detection (LOD), *n***—the lowest quantity of a substance that can be distinguished from the absence of that substance within a stated confidence limit. **E2520**

DISCUSSION—The LOD90A is the limit of detection for alarm, the mass of a particular analyte that elicits a detection alarm 90 % of the time (90 % CL) in a particular ETD, while process blanks elicit alarms less than 10 % of the time.

DISCUSSION—LOD90A values will be dependent on the alarm rules and response thresholds set in an ETD for each analyte. By default, these rules and thresholds are normally established by the manufacturer, but may be changed by the users.

DISCUSSION—LOD90A values are distinguished from LOD90 values (the subject of Test Method E2677) in that the latter are 90 % limits of detection for channel signals, intrinsic to the ETD, and independent of alarm rules and alarm thresholds.

DISCUSSION—LOD90A values are usually higher than LOD90 values, since the alarm rules and thresholds in ETDs are normally set to avoid false alarms from a wide range of ambient background substances.

DISCUSSION—LOD90A or LOD90 values may be calculated from appropriate measurement data through the website <http://pubapps.nist.gov/loda>.

**limit of detection, LOD, *n***—commonly accepted as the smallest amount of a particular substance that can be reliably detected in a given type of medium by a specific measurement process. **E2677**

DISCUSSION—May be defined either in terms of the instrumental signal response or the analyte mass that elicits the signal response. Here, the limit of detection (LOD90) is defined to be the lowest mass of an analyte deposited on a reference swab for which there is 90 % confidence that a single measurement in particular ETD will have a true detection probability of at least 90 % and a true nondetection probability of at least 90 % when measuring a process blank sample. Values of LOD90 are performance measures of a deployed detection system and provide guidance for setting optimal ETD detection thresholds in that system.

**line-of-sight communication, *n***—propagating signal-carrying electromagnetic energy between a transmitting and a receiving radio antennas using paths that are in direct visual contact without obstructions between them. **E2521**

**liquid chromatography (LC) system, *n***—in this standard, a separation system using liquid as the mobile phase and a stationary phase packed into a column. The use of small particles packed inside a column and a high inlet pressure enables the separation of components in a mixture. **E2866**

**listed, *adj***—equipment, materials, or services included in a list published by the certification organization. **E2952**

**LOD90, *n***—*see* limit of detection. **E2677**

**low exposure rate**—the radiation exposure rate that marks the hot line if the radiation exposure hazard poses the greatest risk at an incident. It is recommended that the low exposure rate not exceed 10 mR/h (milliR/h) (0.1 mSv/h (milliSv/h)) at 1 m (3.3 ft) from the object or at 1 m (3.3 ft) above the ground or surface. For the purposes of this standard practice, the term “low dose rate” is equivalent to “low exposure rate.” **E2601**

**major incident, *n***—this is defined within the context of all-hazards preparedness as any event that approaches or

exceeds the capacity of a hospital or health care organization to maintain operations or requires significant disruption to the routine operations of the facility. **E2413**

DISCUSSION—A major incident may be defined differently for an individual hospital, a system of hospitals operating as one entity, or a group of independent hospitals that have a regional responsibility for planning and response. It is essential that each hospital plan for incidents that could occur at any of these levels.

**major multiple casualty incident, *n***—(also known as a mass casualty incident) incident producing large numbers of casualties approaching or beyond local health care capacities. **E2413**

**manmade emergency**—an emergency that results from technological or other human causes not associated with weather or natural events. Examples include HAZMAT incidents, fires, train derailments, acts of terror, etc. **E2951**

**maze, *n***—network of mobility passages interconnected without any repetitive order of opening and closing directions. **E2521**

**mean time between failures, *n***—estimate of the elapsed time between inherent failures of a system during operation, one measure of system reliability. **E2885**

**medical disaster, *n***—type of significant medical incident that exceeds the patient care capacity of local resources and routinely available regional or multi-jurisdictional medical mutual aid. **E2413**

**melt, *v***—to change from solid to liquid or become consumed by action of heat in a manner that could injure the user. **E2952**

**mission planning, *n***—process used to generate tactical goals, routes, tasks, commanding structures, coordination, and timing.

**E2521** from *Autonomy Levels for Unmanned Systems Framework, Volume I: Terminology, Version 1.1, NIST Special Publication 1011*, Huang, H., Ed., National Institute of Standards and Technology, Gaithersburg, MD, September 2004

**mitigation, *n***—structural and non-structural activities taken to eliminate or reduce the probability of the event or reduce its severity or consequences, either before or following a disaster or emergency. **E2413**

**mixed initiative control, *n***—type of control for robotic systems with which both the operator and the robot can take the initiative to perform the assigned missions or tasks. **E2521**

**mobile**—a HAZMAT instrument that is larger than a man-portable, which is mounted to a mobile device to permit relocation of the instrument as necessary for monitoring of HAZMAT. The instrument may be operational while in motion. **E2851/E2851M**

**mobilization**—processes and procedures used by all entities—Federal, State, tribal, territorial, non-governmental organizations (NGOs), private sector, and local—for activating, assembling, and transporting all resources that have been

requested to respond to or support an incident.

**E2640** from NFPA 1600/NIMS 2008

**model**, *n*—term used to identify an RPED, including all variants to its design. **E2952**

**multiagency coordination system (MACS)**—a system that provides the architecture to support coordination for incident prioritization, critical resource allocation, communications systems integration, and information coordination. The elements of the MACS include facilities, equipment, personnel, procedures, and communications. An EOC is a commonly used element. These systems assist agencies and organizations responding to an incident. **E2601** from NIMS 2007

**multiagency coordination system (MACS)**, *n*—a system that provides the architecture to support coordination for incident prioritization, critical resource allocation, communications systems integration, and information coordination. MACS assist agencies and organizations responding to an incident. The elements of a MACS include facilities, equipment, personnel, procedures, and communications. Two of the most commonly used elements are Emergency Operations Centers and MAC Groups. **E2770** from NIMS

**multiple casualty incident (MCI)**, *n*—type of significant medical incident for which local medical resources are available and adequate to provide for field medical triage and stabilization and for which appropriate local facilities are available and adequate for diagnosis and treatment. **E2413**

**mutual aid**, *n*—prearranged agreement developed between two or more entities to render assistance to the parties of the agreement. **E2413**

DISCUSSION—Mutual aid agreements between entities are an effective means to obtain resources in emergency situations and augment surge capacity.

**mutual aid agreement**, *n*—cooperative assistance agreements, intergovernmental compacts, or other documents commonly used for the sharing of resources. **E2413**

**mutual aid agreements**—a prearranged agreement between two or more entities to share resources in response to an incident. **E2951** from NFPA 1600

**National Incident Management System (NIMS)**—a set of principles that provides a systematic, proactive approach guiding government agencies at all levels, the private sector, and NGOs to work seamlessly to prepare for, prevent, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life or property and harm to the environment. **E2842** from NIMS 2008

**nondetection probability**, *n*—see beta risk. **E2677**

**Non-Governmental Organization (NGO)**—an entity with an association that is based on the interests of its members, individuals, or institutions. It is not created by government, but it may work cooperatively with government. Such organizations serve a public purpose, not a private benefit. Examples of NGOs include faith-based charity organizations

or organizations such as the American Red Cross.

**E2842** from NIMS 2008, NFR

**non-line-of-sight communication**, *n*—propagating signal-carrying electromagnetic energy between a transmitting and receiving radio antennas through paths that are not in direct visual contact because of obstructions between them. **E2521**

**nonplanar**, *adj*—having features that would prevent the test item from making full contact with a flat surface; typically used to describe curved plates and armor designed for female wearers. **E3005**

**obliquity**, *n*—the angle between the test threat line of aim and the line normal to a reference plane based on features of the test item at the point of aim. (Adapted from MIL-STD-3027.) See also angle of incidence. **E3005**

DISCUSSION—Some standards have used the terms angle of incidence and obliquity as synonyms, but in this standard, they are defined differently.

**OEM disabilities coordinator**—a person designated by the local Office of Emergency Management to oversee preparedness and response for those with disabilities. **E2951**

**offensive operation(s)**—emergency response measures taken to reduce or minimize exposure from hazardous circumstances and materials to responders and civilians (for example, operations required within the hot zone); life-safety operations are top priority in offensive operations however evidence preservation shall be considered. **E2601**

**on-site biological assessment**, *n*—emergency response measures taken to reduce or minimize exposure from hazardous circumstances and materials to responders and civilians (for example, operations required within the hot zone); life-safety operations are top priority in offensive operations however evidence preservation shall be considered. **E2458**  
**E2770**

**operator station**, *n*—apparatus for hosting the operator and her/his operator control unit (OCU) to teleoperate the robot. **E2521** from U.S. DOD OUSD (AT&L) FY2005 Joint Robotics Program Master Plan

**operator**—person that controls the robot to perform specified tasks. **E2521**

**optotype**, *n*—standardized symbol used to test visual capabilities. **E2521**

**Organophosphate Agent (OP)**, *n*—the general name for esters of phosphoric acid that are toxic through inhibition of the enzyme acetylcholinesterase. **E3002**

**organophosphonates (OPs)**, *n*—in this test method, Diisopropyl Methylphosphonate (DIMP), Ethyl Methylphosphonic Acid (EMPA), Isopropyl Methylphosphonic Acid (IMPA), Methylphosphonic Acid (MPA) and Pinacolyl Methylphosphonic Acid (PMPA) collectively. **E2866**

**orphan source**—a radioactive source that is not under regulatory control, either because it has never been under



- regulatory control, or because it has been abandoned, lost, misplaced, stolen, or transferred without proper authorization. **E2601** from **ICRP Publication 96**
- over velocity**, *n*—velocity that is greater than the upper limit of a specified range. **E3005**
- overpressure**, *n*—pressure, exceeding the ambient pressure, manifested in the shock wave of an explosion. **E2831/E2831M** from **DOD 4145.26 M E2639** from **DOD 4145.26 M**
- panel cover**, *n*—a covering, typically nonremovable, that encloses the protective materials and protects them from environmental factors, such as moisture, ultraviolet light, debris, and dust. **E3005**
- partial penetration**, *n*—any result of a test threat impact that is not a complete penetration; synonymous with *stop*. **E3005**
- perforation**, *n*—See *complete penetration*. **E3005**
- personal emergency radiation detector (PERD)**—an alarming electronic radiation measurement instrument used to manage exposure by alerting the emergency responders when they are exposed to gamma radiation. The instrument provides rapid and clear indication of the level of radiation exposure (dose) or exposure rate (dose rate), or both, and readily recognizable alarms. The alarms are both audible and visual, and distinguishable between exposure rate and exposure. **E2601** from **CTOS 2014**
- personal protective equipment (PPE)**, *n*—equipment provided to shield or isolate a person from the chemical, biological, physical, and thermal hazards that can be encountered at hazardous materials/weapons of mass destruction (WMD) incidents. **E2458** from **NFPA E2770** from **NFPA**
- personal protective equipment (PPE)**, *n*—ensembles and ensemble elements to protect health care workers from contact with dangerous agents, including chemicals, biologic agents, blood, and body fluids, when providing victim or patient care during emergency medical operations; levels of PPE are defined in NFPA 1994. Also refer to Centers for Disease Control HICPAC Isolation Guidelines. **E2413**  
DISCUSSION—This equipment would meet minimum design, performance, testing, and certification requirements for use during emergency operations, as identified from the HVA.
- personal protective equipment (PPE)**—the equipment provided to shield or isolate a person from hazards (TRACEM) that can be encountered at hazardous materials/WMD incidents. **E2601** from **NFPA 472**
- personal radiation detector (PRD)**—a pocket-sized detection instrument worn by an operator to detect the presence of radiological/nuclear material in a limited area in the vicinity of the operator. PRDs detect small increases in gamma radiation above background levels and alert the operator. Some models have additional capabilities to measure gamma radiation exposure rate levels, measure the accumulated gamma radiation dose, or a limited capability to detect neutron radiation, or combinations thereof. **E2601** from **CTOS 2014**
- plate**, *n*—See *hard armor*. **E3005**
- portable**—a HAZMAT instrument that physically weighs no more than 16 kg [35 lb] and is no larger than 120 cm (sum of the sides). **E2851/E2851M**
- preparedness**, *adj*—encompasses those actions taken before an incident to improve the capability and capacity to respond to a major incident within the hospital, community, or region. Preparedness efforts include, but are not limited to: assessments of hazards, risks, response needs, and vulnerabilities; planning functions; interagency collaboration; education and training functions; exercise activities; attaining minimal capacities; and necessary engineering controls or structural changes to facilities and do not include mobilization of response resources under circumstances other than simulated events. **E2413**
- preparedness**—a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response. Within the National Incident Management System, preparedness focuses on the following elements: planning; procedures and protocols; training and exercises; personnel qualification and certification; and equipment certification. **E2732** from **NIMS 2008**
- preparedness**—activities, tasks, programs, and systems developed and implemented prior to an emergency that are used to support the prevention of, mitigation or response to, and recovery from emergencies. Activities, tasks, and programs specific to persons with disabilities include, but are not limited to: assessment of hazards and risks that may have an impact due to a person’s disability; specific response needs and vulnerabilities unique to persons with disabilities; advance planning; interagency collaboration among organizations focused on persons with disabilities; education and training for persons with disabilities and those who administer care; practicing through exercising; attaining adequate capacities and necessary engineering controls/structural changes to facilities to entry and use by persons with disabilities. **E2951**
- pressurized fluid extraction**, *n*—the process of transferring the analytes of interest from the solid matrix, a soil, into the extraction solvent using pressure and elevated temperature. **E2866**
- presumptive test**, *n*—non-definitive test used to evaluate a material for the presence of a substance or agent, or the presence of signatures of a substance or agent. **E2458 E2770**
- preventive radiological/nuclear detection (PRND) or Radiological/Nuclear Detection (RND)**—capability to detect, illicit radiological/nuclear materials and radiological/nuclear WMDs at the points of manufacture, transportation, and use, and to identify the nature of material through adjudication or resolution of the detection alarm. This does

not include actions taken to respond to the consequences of the release of radiological/nuclear materials (such as response to the detonation of a Radiological Dispersal Device). Also called Preventative Radiological/Nuclear Detection (PRND). **E2601** from **CTOS 2014**

**probability of detection**, *n*—under specific conditions, the probability that the HPCVD will activate an alarm when a chemical of interest is present at or above the alarm threshold values. **E2885**

**process blank swab**, *n*—sample swab that has been dosed with the chosen BCM. **E2520**

**process blank**, *n*—*see* blank. **E2677**

**product label**, *n*—marking affixed to the RPED by the manufacturer containing general information, warnings, care, maintenance, or similar data. **E2952**

DISCUSSION—This product label is not the certification organization’s label, symbol, or identifying mark; however, the certification organization’s label, symbol, or identifying mark may be attached to it or be part of it. *See* labeled.

**projectile**, *n*—an object launched by external force. **E3005**

**propellant**, *n*—in ammunition, the chemical mixture which, when ignited by a primer, generates gas that propels the projectile from the firearm or testing apparatus. **E3005**

**Protective Ratio (PR)**, *n*—the LD<sub>50</sub> of the decontaminated animals divided by the LD<sub>50</sub> of the positive control (exposed to CWAs and not decontaminated) animals (3-5). **E3002**

**public area**, *n*—a space or place that is open and accessible to all people, regardless of whether it is publicly or privately owned. **E2831/E2831M**

**public health surge capacity**, *n*—ability of a defined community and its health care system to rapidly expand beyond normal services to meet the increased demand for medical care and public health that would be required to care for the casualties and fatalities resulting from a large-scale public health emergency or disaster; included are the resources for mass care, mass prophylaxis or vaccination, laboratory services, public information, mental health support, epidemiologic investigation, and law enforcement support. **E2413**

DISCUSSION—Initially, the response is coordinated by local public health/regional authorities. In some incidents, control will pass to regional, state, or federal authorities when outside assets begin arriving. This response facilitates actions to augment triage, treatment, isolation, fatality management, and resource flow to maximize the outcome of involved persons.

**public information officer (PIO)**, *n*—individual designated by the incident commander or the hospital incident commander for the preparation and dissemination of factual and timely report to the community, usually through the news media. **E2413**

DISCUSSION—This individual will benefit from training and appropriate qualifications.

**quality control**—a system of actions that keep the quality of goods or services at the level expected by their users. **E2852**

**radiation exposure device (RED)**—a device intended to cause harm by exposing people to radiation without spreading radioactive material. An example of a RED is unshielded or partially shielded radioactive material placed in any type of container and in a location capable of causing a radiation exposure to one or more individuals. Also called a “Radiological Exposure Device (RED).” **E2601** from **CTOS 2014**

**radio interference**—adverse effect on electromagnetic transfer of data when unrelated signals are received by either a transmitting or receiving radio antenna or both. **E2521**

**radiological dispersal device (RDD)**—any device that intentionally spreads radioactive material across an area with the intent to cause harm, without a nuclear explosion occurring. An RDD that uses explosives for spreading or dispersing radioactive material is called an “explosive RDD.” The term “dirty bomb” is used by media, government, and others as a well-known, non-technical term for an explosive RDD. Non-explosive RDDs could spread radioactive material using common items such as pressurized containers, fans, building air-handling systems, sprayers, crop dusters, or even spreading by hand. **E2601** from **CTOS 2014**

**radionuclide (nuclide)**—radioactive form of an element. **E2852**

**ready-to-use configuration**, *n*—RPED in its final packaging state before use that, immediately upon opening or removing this operational package, allows the user to don the RPED. **E2952**

**reference swabs**, *n*—*see* swabs. **E2677**

**regulator**, *n*—local, regional, state/provincial, or federal government agency or person employed therein for the purpose of administering or enforcing compliance with laws and regulations, which may be a stakeholder, a decision-maker, or an advisor to the responsible party’s(ies’) lead Stakeholder Committee. **E2541**

**rem**—a unit of biological/risk equivalent dose; not all radiation produces the same biological effect, even for the same amount of absorbed dose; rem relates the absorbed dose in human tissue to the effective biological damage of the radiation. For the purpose of this standard practice, the 1 rem of dose is equal to 10 mSv. **E2601**

**remote control**, *n*—continuously controlling a robot from an off-robot separate location and under direct observation. **E2521**

**reporting range**, *n*—the quantitative concentration range for an analyte in this standard. **E2866**

**residual velocity**, *n*—the velocity at which a projectile exits the rear surface of a test item. **E3005**

**resolution wedge**, *n*—series of co-planar lines that, in a consistent pattern, show decreases in the spacing between the lines and in individual line thicknesses. **E2521**

**resolve**, *v*—act of visually discerning the presence of a marking or an object. **E2521**

**resource management**—(n) an operational process model for identifying, categorizing, ordering, mobilizing, tracking, recovering, and demobilizing resources, as well as a process for reimbursement of resources, as appropriate; (v) application of the process. **E2640** from **NFPA 1600/NIMS 2008**

**resource management**—a system for identifying available resources to enable timely and unimpeded access to resources needed to prevent, mitigate, respond to, or recover from an incident. **E2951** from **NFPA 1600**

**resource tracking**—a process to record, account for, monitor, and report the status of resources. **E2640**

**resources**—personal service animals or equipment, supplies, services, and facilities available or potentially available for assignment or allocation to incident operations or coordination. **E2951**

**resources**—personnel and major items of equipment, supplies, and facilities available or potentially available for assignment to incident operations and for which status is maintained. Resources are described by kind and type and may be used in operational support or supervisory capacities at an incident or at an Emergency Operations Center. **E2732** from **NIMS 2008**

**resources**—personnel, materiel, and services available or potentially available for assignment or allocation to incident operations or coordination, and for which status is maintained. Resources are categorized by kind and type, and may be used in operational support or supervisory capacities at an incident. **E2640** from **NIMS 2008**

DISCUSSION—The following definitions are subsets to the term “resources”:

*material resources*—equipment, apparatus, animals, and supplies used by an entity that generally can be ordered from inventory or can be rapidly produced to meet the needs of the incident. Examples include building materials, household goods, consumables, and commodities needed for subsistence, such as water, food, clothing, ice, shelter, childcare products, medical and fire supplies, etc. (This term is often referred to by various entities within the resource management community as “material resources.”) **E2640** from **NIMS 2008**

*personnel resources*—all of the people who are needed to support the incident, including the knowledge, skills, and abilities they possess. Personnel may be full- or part-time, in-house, or outsourced. **E2640** from **NIMS 2008**

*services resources*—material and personnel resource functions that are assembled to support missions or operational needs. Services can be categorized or typed to facilitate meeting-specific requirements. **E2640** from **NIMS 2008**

**responder family (family)**—spouses, domestic partners, resident children, parents, dependents, co-habitants, and pets/animals normally residing with or in the care of the responder. This definition may be expanded at the option of the AHJ or SSA. **E2732**

**response activities**, *n*—those actions necessary to minimize negative effects of an incident and lead to recovery and restoration of essential hospital services. **E2413**

**response time**—time for the HPCVD to detect and activate an alarm when exposed to a chemical of interest at vapor concentrations at or above the alarm threshold value. **E2885**

**responsible party(ies)**, *n*—specific Federal, State, local, or tribal government, private sector or non-governmental organization(s) designated to be responsible for the restoration of an asset that was contaminated in a disastrous event. **E2541**

DISCUSSION—specific Federal, State, local, or tribal government, private sector or non-governmental organization(s) designated to be responsible for the restoration of an asset that was contaminated in a disastrous event.

**restoration**, *n*—returning the assets of a community to a normal, natural, or healthy condition as determined through a structured framework of decision making and community action. **E2541**

**rigid plastic**, *n*—for purposes of general classification, a plastic that has a modulus of elasticity, either in flexure or in tension, greater than 700 MPa (100 000 lbf/in<sup>2</sup>) at 23°C (73°F) and 50 % relative humidity when tested in accordance with Test Method **D747**, Test Methods **D790**, Test Method **D638**, or Test Method **D882**. **D883** from **D882**  
**E2740** from **D882**  
**E2831/E2831M** from **D882**

**risk**, *n*—the probability of suffering a loss or harm or injury; peril. **E2458**  
**E2770**

**robot**, *n*—mechanical system designed to be able to control its sensing and acting for the purpose of achieving goals in the physical world. **E2521**

**roentgen (R)**—a unit of exposure to ionizing radiation. It is the primary standard of measurement used in the emergency responder community in the United States. For the purpose of this standard practice, 1 R of exposure is equal to 1 rem and 10 mSv of dose to the human body. **E2601**

1000 micro-roentgen (microR or uR) = 1 milli-roentgen (mR)  
1000 milli-roentgen (mR) = 1 roentgen (R), thus  
1 000 000 microR = 1 roentgen (R)

DISCUSSION—To improve clarity in communications, the unit roentgen may be spoken as “R” instead of pronouncing “roentgen.” The SI prefix “micro” (one millionth) may be written as a lower case “u” or the phrase “micro” instead of the lower case Greek letter mu (μ) and may be spoken as either “micro” or “U.” Similarly, the SI prefix “milli” (one thousandth) may be written as either “milli” or “m” and spoken as either “milli” or “M.” For example, the value of 25 μR may be written as “25 uR” or “25 microR” and pronounced as “25 U-R” or “25 micro-R.” Likewise, the value of 2 mR could be spoken as “2 M-R” or “2 milli-R.”

**roentgen per hour (R/h)**—a unit used to express exposure per unit of time (exposure rate). For the purpose of this standard practice, the roentgen unit of exposure is assumed to be equivalent to the sievert unit of dose and “1 R = 10 mSv” will be applied as the basis for comparison of traditional and SI units. For the purpose of this standard practice, the term “dose rate” is equivalent to “exposure rate.” **E2601**

**round, n**—See *cartridge*. **E3005**

**safety management, n**—function that identifies real or potential hazards, unsafe environment or procedures, and appropriate workforce protective measures at the incident, and ensures the appropriate corrective or preventive actions under the authority of the incident commander or the hospital incident commander to ensure the safety of all hospital personnel and patients. **E2413**

**saturation, n**—a condition in which the detector response no longer increases with increased vapor concentration. **E2885**

**scene**—the geographical area(s) of an incident with boundaries and access points. There may be multiple levels of a scene that may require multiple access points based upon security, risk, or other factors as defined by the AHJ where different levels of credentialing may be assigned. **E2842**

**secondary threats, n**—any object designed, or person(s) with an intent, to cause harm to persons responding to an incident (emergency responders) or to increase the number of civilian casualties. Secondary threats are normally devised to cause harm after persons have responded to an incident scene. **E2770**

**secondary threats**—any object or person(s) designed to cause harm to persons responding to an incident (emergency responders) or to increase the number of civilian casualties. Secondary threats are normally designed to cause harm after persons have responded to the scene. **E2601**

**selectivity, n**—ability of an HPCVD to distinguish one or more chemicals of interest in the presence of background chemical vapors. **E2885**

**sensitivity, n**—ability to detect one or more chemicals of interest at the alarm threshold values within the specified response team. **E2885**

**sensor fusion, n**—process that combines, integrates, or correlates, or a combination thereof, data generated by multiple sensory sources to create information that fits the needs, including decision-making and display for user. **E2521**

**service life, n**—the manufacturer-declared duration of protection provided by the RPED for escape once the operational packaging is opened or removed from an RPED in a ready-to-use configuration. **E2952**

**service profile**—the data file maintained on a responder family unit. **E2732**

**shall, v**—indicates a mandatory requirement. **E2952**

**shelf life, n**—duration that an RPED can be stored under proper conditions in its ready-to-use configuration and remain suitable for use. **E2952**

**shelter in place, n**—(also referred to as in-place protection) temporary short-term protection strategy in which the pathway from the hazard to the individual is interrupted by isolating the interior of a space from the exterior hazard. **E2413**

**DISCUSSION**—While evacuation can be maintained for days, sheltering typically becomes ineffective after a few hours. Once sheltering is implemented, a hazard assessment should be conducted to determine when any risks to occupants of the interior environment are expected to exceed those posed by exterior hazard(s).

**shelter in place, v**—taking shelter inside a structure and remaining there until the danger passes. Sheltering in-place is used when evacuating the public would cause greater risk than staying where they are, or when an evacuation cannot be performed. **E2601**

**shoot pack, n**—a test item prepared with materials, or with materials and construction features, utilized in body armor, but not intended to be worn as body armor or an accessory. **E3005**

**DISCUSSION**—The shape, dimensions, or area of a shoot pack, or combinations thereof, may be specified by the test method.

**DISCUSSION**—A shoot pack may be designed to simulate a body armor or an accessory.

**shooting stance, n**—body and arm positioning of a shooter relative to the target when preparing to fire a handgun; four types of shooting stances are typical for law enforcement. **E3003**

*isosceles stance, n*—a shooting stance in which the individual is directly facing or squared up to the target, with feet shoulder width apart, and is aiming the handgun with both arms held toward the target and parallel to the ground. **E3003**

*modern isosceles stance, n*—a stance in which the individual is directly facing or squared up to the target, with feet shoulder width apart, and aiming the handgun with both arms straight and both shoulders rolled forward. **E3003**

*modified Weaver stance, n*—a stance in which the individual is directly facing or squared up to the target, with feet shoulder width apart and is aiming the handgun with the primary arm held straight toward the target and parallel to the ground and the support arm elbow bent toward the ground. **E3003**

*Weaver stance*—a stance in which the individual faces the target at an angle with the primary foot back and is aiming the handgun with the primary arm held straight toward the target and parallel to the ground and the support arm elbow bent toward the ground. **E3003**

**shotshell, n**—a single, assembled unit consisting of propellant, primer, wad, shell (that is, casing), and either multiple pellets or one slug, for use in a shotgun. **E3005**

**shot-to-edge distance, n**—the distance from the center of the projectile impact to the nearest test item edge. **E3005**

**shot-to-shot distance, n**—the distance from the center of the projectile impact to the center of any other projectile impact on the test item. **E3005**

**significant mass level, SML, n**—lowest mass in a series of prepared mass levels that elicits significantly higher mean responses in an ETD compared to the mean responses from process blanks. **E2677**

**DISCUSSION**—The SML is a crude estimate of the LOD90.

**silhouette, n**—witness panel that is constructed in the approximate shape of a human. **E2639**  
**E2740**

**small arms, n**—portable firearms, typically including handguns, shotguns, rifles, and light machine guns. **E3005**

DISCUSSION—There is no universally accepted definition of small arms. Some military organizations do not consider handguns to be small arms.

**soft armor, n**—an item of personal protective equipment constructed of pliable/flexible materials intended to protect the wearer from threats that may include ballistic threats, stabbing, fragmentation, or blunt impact. **E3005**

**soft body armor, n**—See *soft armor*. **E3005**

**sponsor**—individual or entity endorsing the applicant to receive the credentials. **E2842**

**SSA support member**—the individual from the SSA assigned to a family unit. **E2732**

**stab panel, n**—a type of armor panel intended to provide stab resistance. **E3005**

**stab resistance, n**—a characteristic of protective equipment or materials describing their ability to provide protection from sharp or pointed objects, or both, which may include edged blades, spikes, and ice picks. **E3005**

**stabilizer, n**—film-forming product used to physically or chemically hold or bind radioactive particulates. In the case of a multi-part material (for example, compounded) or multi-step process, the term stabilizing system may be used interchangeably with stabilizer. **E2731**

DISCUSSION—Stabilization does not mean affecting the radioactivity or the decay process of the radioactive contamination.

**stabilizing agent, n**—active ingredient or compound within the stabilizer that immobilizes radioactive particulates. **E2731**

**stabilizing film, n**—material that results from the application of the stabilizer. **E2731**

**stabilizing system, n**—one or more products or procedures, or both, that, when used together, form a stabilizing film to hold or bind particulates that may be radioactive. **E2731**

**stakeholder committee, n**—entity lead by the responsible party(ies) which is directly involved in the decisions made within the restoration planning process. **E2541**

DISCUSSION—It is composed of affected individuals or representative(s), or both, selected from each group of stakeholders. Members of the Stakeholder Committee are responsible to act as liaisons with their respective stakeholder groups.

**stakeholder consensus on disaster restoration planning process, n**—responsible party(ies)-led and stakeholder-involved, community-specific process to help assess, prioritize, and select restoration actions to be implemented with the goal of optimizing the restoration of an affected asset following a disastrous event, which considers and balances the full spectrum of human health, ecological, socio-cultural, and economic impacts. **E2541**

DISCUSSION—In the National Response Plan example given above, the Joint Field Office would serve as the central coordination point among Federal, State, local, and tribal agencies and voluntary organizations for this restoration planning process as well as for delivering recovery assistance programs.

**standing EOC, n**—existing fixed facility that serves as a location for entities to manage or coordinate emergency operations or like functions. **E2915**  
**E2668**

**stationary point chemical vapor detector (SPCVD), n**—a unit which samples air from immediate surroundings and is comprised of one or more detectors using one or more chemical detection technologies. An SPCVD also includes air sampling system(s), power system(s), computer(s), data storage, data network communication interface(s), and an enclosure, see Fig. 1. (E2885-13) An SPCVD may be integrated into a larger monitoring system, as depicted in Fig. 2. **E2852**

**stepfield terrain element, n**—discontinuous terrain type completely formed using an array of wood posts standing on end with nominal dimensions of 10- by 10-cm [4- by 4-in.] for the cross section and elevations of 10, 20, 30, 40, and 50 cm [4, 8, 12, 16, and 20 in.]; the posts may be arranged to form specified topologies. **E2521**

**stop, n**—See *partial penetration*. **E3005**

**strike face, n**—the surface of an armor panel or plate intended to face the incoming threat. **E3005**

**striking device, n**—a device used on a clay block to establish an appropriate, flat surface on the clay backing material with respect to the backing fixture edges. **E3004**

**substrates, n**—see swabs. **E2677**

**support service agency (SSA) executive**—the SSA Manager designated to head and lead the SSA family support operations. **E2732**

**support service agency (SSA)**—the program or organization providing responder family support, as delineated in this practice. **E2732**

**suprasternal notch**—the depression in the top of the sternum between its articulations with the two clavicles; called also jugular notch (Merriam-Webster); the notch at the top of the sternum. **E3003**

**surge capability, n**—ability of a hospital or health care system to manage patients that require specialized health interventions as a result of one or multiple incidents, as may occur with contamination, irradiation burn, chemical exposures, or injuries from natural, environmental, or terrorist-related events. **E2413**

**surge capacity, n**—term defining the resources and processes to manage an influx of patients, from one or multiple incidents, that would present for health care evaluation and treatment. **E2413**

**survey instrument**—a handheld device used to measure the amount and locate hazardous material, hazardous material contamination, and hazardous conditions. **E2851/E2851M**

**swab support**, *n*—holder for a swab that prevents contact of the back side of the EA with any surface that might contaminate the swab or wick away solution. **E2520**

**swabs**, *n*—also known as substrates, swipe media, traps, and wipes, swabs are special fabrics made of such materials as cotton, fiberglass, or polymers and are designed for wiping sample surfaces and holding residues collected from those surfaces. **E2677**

**DISCUSSION**—Distributed by ETD manufacturers and consumable suppliers, swabs have particular properties and shapes designed to fit into the sampling inlets of ETDs. Each type of swab has a “sweet spot” for sampling where the detection of analyte is optimized (Practice **E2413**). This is generally an area about 1 cm in diameter. Please consult with the manufacturer to confirm the location of the sweet spot. Swabs containing known amounts of analyte deposited in the sweet spot are called reference swabs.

**swabs**, *n*—sampling media that are made from various types of materials, including fabric and paper, that are supplied by the equipment manufacturer or second parties. **E2520**

**DISCUSSION**—Also referred to as sample traps, sample tickets, swipes, wipes, coupons, filters, tokens, and substrates by some manufacturers of ETDs.

**DISCUSSION**—Swabs are used either manually (held with gloved fingers) or placed in wands to collect sample residues for analysis in ETDs.

**DISCUSSION**—With manual or wand use, swabs have an active area where sample is collected. Additionally, swabs have an interrogated area that is analyzed by the ETD, either through thermal desorption, scanning, or other means. These two areas are not always spatially congruent. The intersection of the active sampling area and the ETD interrogation detection area is called the effective area (EA).

**DISCUSSION**—After swab sampling, the only collected sample that is effectively analyzed is in the EA, so a larger EA is beneficial to trace detection and therefore factored into the scoring criteria. The location and size of the EA may vary considerably in different ETDs, and may be identified by the manufacturer of the ETD.

**swipe media**, *n*—see swabs. **E2677**

**table of organization equipment (TOE)**—equipment, materials, or services included in a list published by the responder family support organization that is acceptable to the AHJ. The equipment, materials, or services on such a list needs to meet designated standards of the AHJ or have been tested and found suitable for a specified purpose by the AHJ. **E2732**

**tactical body armor**, *n*—a vest designed to be worn over the uniform shirt in a load bearing carrier that accepts various equipment. **E3005**

**DISCUSSION**—Equipment may include holsters, magazines, radios, or accessories.

**tandem mass spectrometer**, *n*—an arrangement in which ions are subjected to two sequential stages of analysis according to the quotient mass/charge. **E2866**

**technical decontamination**—the process designed to remove hazardous contaminants from responders and their equipment and victims. It is intended to minimize the spread of contamination and ensure responder safety. Technical decontamination is normally established in support of emergency

responder entry operations at a hazardous materials incident, with the scope and level of technical decontamination based upon the type and properties of the contaminants involved. In non life-threatening contamination incidents, technical decontamination can also be used on victims of the initial release. **E2601** from NFPA 472

**teleoperation**, *v*—controlling a distant robot on a continuous basis and being provided with sensory or control information, or both, through means other than direct observation. **E2521** from U.S. DOD OUSD (AT&L) **FY2005 Joint Robotics Program Master Plan**

**termination**, *n*—termination of the incident in the context of this standard is the end of life safety operations, investigative work, and assurance of protective measure implementation. This will include documentation of hazards present and conditions found. **E2770**

**termination**—in the context of this standard, is the end of an incident’s emergency response operations or mutual aid support assignment, indicating the cessation of family support services for that incident or assignment. **E2732**

**termination**—termination in the context of this standard practice is the end of life safety operations, investigative work, and assurance of protective measure implementation. This will include documentation of hazards present and conditions found. **E2601**

**test administrator, or, administrator**, *n*—person that conducts a test or role that was played to conduct such a test. **E2521**

**test event or event**, *n*—set of testing activities that are planned and organized by the test sponsor to be held at one or multiple designated test site(s). **E2521**

**test form**, *n*—collection of data fields or graphics or both used to record the testing results along with the associated information. **E2521**

**test item mounting system**, *n*—an assembly consisting of a test standard and the test item fixture, backing assembly, witness panel, or any combination thereof. The system allows rotation of the test item around one or more axes and allows translation of the test item. **E3062**

**test item**, *n*—a single article intended for testing. **E3005**  
**DISCUSSION**—Examples may include one panel, one plate, or one shoot pack.

**test item**, *n*—a single article intended for testing. Examples may include one panel, one plate, or one shoot pack. **E3004**

**test repetition or repetition**, *n*—robot’s completion of the task as specified in the test method and readiness for repeating the same task when required. **E2521**

**test score**, *n*—a metric of general detection performance for an ETD, which combines factors of scope, measurement sensitivity, selectivity, repeatability, and EA throughput. **E2520**

DISCUSSION—There is no maximum limit to a test score; improvements in scope, SSRs, and ESRs will result in higher scores.

**test solution**, *n*—dilute solution of a single explosive compound dissolved in a semivolatile solvent. **E2520**

**test sponsor**, *n*—organization or individual that commissions a particular test event and receives the corresponding test results. **E2521**

**test stand**, *n*—a rigid or massive component of the test item mounting system that supports other components. **E3062**

**test suite**, *n*—designed collection of test methods that are used collectively to evaluate the performance of or to identify the capability of a response robot's particular subsystem or functionality. **E2521**

**test swab**, *n*—a sample swab that has been dosed with the BCM and target compound within the EA. **E2520**

**test threat**, *n*—the projectile, edged blade, spike, or other object that is used in laboratory testing to impact the test item at a specific velocity or energy to assess performance of body armor. **E3005**

**testing target or target**, *n*—physical feature identified or designed and specified in respective standard test methods for exercising or evaluating robot subsystem capabilities to full extents. **E2521**

**testing task or task**, *n*—activities well defined and specified according to an identified metric or an identified set of metrics for the testing robots and operators to perform in order for the robot's capabilities to be evaluated. **E2521**

**threat**, *n*—an indication of possible violence, harm, or danger and may include an indication of intent and capability. **E2458** from NIMS  
**E2770** from NIMS

**torso girth**, *n*—the largest horizontal circumferential measurement around the torso below the rib cage near the waist; this measurement is not necessarily the wearer's belt size or waist size. **E3003**

**torso**, *n*—the human trunk. **E3003** from **F1731**

**total effective dose equivalent (TEDE)**—*for the purpose of this standard practice*, TEDE is the sum of the dose to the body from external radiation plus the total eventual risk equivalent dose from intakes of radionuclides. Note that where the term "dose" is used in this document, it is understood to be used as a synonym of TEDE. **E2601**

**traceable**—in reference to a calibration standard, the properties of which can be related back to a national standard. **E2852**

**transport index**—the dimensionless number (rounded up to the next tenth) placed on the label of a package to designate the degree of control to be exercised by the carrier during transportation. The transport index is determined by multiplying the maximum radiation level in millisieverts (mSv) per hour at 1 m (3.3 ft) from the external surface of the

package by 100 (equivalent to the maximum radiation level in millirem per hour (mrem/h) at 1 m (3.3 ft)).

**E2601** from **49 CFR 173.403**

**transportable**—a HAZMAT instrument that typically weighs no more than 22.7 kg [50 lb] and is no larger than 200 cm (sum of the sides). **E2851/E2851M**

**transportation section**, *n*—person or persons designated by the IC or the HIC responsible for the transportation of patients both within the facility and transfer external to the hospital. **E2413**

**traps**, *n*—see swabs. **E2677**

**trash receptacle lid**, *n*—a removable or hinged cover that fits over the open hollow of the receptacle. **E2639**  
**E2740**

DISCUSSION—A lid component is normally fitted to the configuration of the top opening of the trash receptacle and is manufactured by means of a molding process using a rigid plastic having a relatively low tensile or flexural modulus, 1000 MPa (150 000 lbf/in.<sup>2</sup>) maximum. The thickness of a section (for example, top) of a typical lid generally does not exceed 5 mm (3/16 in.).

**trash receptacle liner**, *n*—a removable lining that is provided within a trash receptacle to retain liquids and fluid-like materials that seep from trash. **E2639**  
**E2740**

DISCUSSION—This component is normally fitted to the configuration of the interior of the trash receptacle and is manufactured by means of a molding process using a rigid plastic having a relatively low tensile or flexural modulus, 1000 MPa (150 000 lbf/in.<sup>2</sup>) maximum. The wall thickness of a typical liner generally does not exceed 5 mm (3/16 in.).

**trash receptacle**, *n*—a public- or commercial-use refuse bin that holds discarded items until collected. **E2639**  
**E2740**  
**E2831/E2831M**

DISCUSSION—The capacity of a trash receptacle specimen subjected to the test procedure described in this standard is typically less than 200 L (50 gal).

**trash receptacle lid**, *n*—a removable or hinged cover that fits over the open hollow of the receptacle. **E2639**  
**E2740**

DISCUSSION—A lid component is normally fitted to the configuration of the top opening of the trash receptacle and is manufactured by means of a molding process using a rigid plastic having a relatively low tensile or flexural modulus, 1000 MPa (150 000 lbf/in.<sup>2</sup>) maximum. The thickness of a section (for example, top) of a typical lid generally does not exceed 5 mm (3/16 in.).

**trash receptacle liner**, *n*—a removable lining that is provided within a trash receptacle to retain liquids and fluid-like materials that seep from trash. **E2639**  
**E2740**

DISCUSSION—This component is normally fitted to the configuration of the interior of the trash receptacle and is manufactured by means of a molding process using a rigid plastic having a relatively low tensile or flexural modulus, 1000 MPa (150 000 lbf/in.<sup>2</sup>) maximum. The wall thickness of a typical liner generally does not exceed 5 mm (3/16 in.).

**trash receptacle rubbish bag**, *n*—a removable, replaceable container that is provided within a trash receptacle to allow collected trash (that is, rubbish) to be removed from the

receptacle and moved to a disposal location. **E2639**  
**E2740**

DISCUSSION—This bag is normally of a volume capacity to fit the configuration of the interior of the trash receptacle. It is manufactured from a plastic film generally having a thickness of less than 0.16 mm (0.006 in.).

**trash receptacle, n**—a public- or commercial-use refuse bin that holds discarded items until collected. **E2639**

DISCUSSION—The capacity of a trash receptacle specimen subjected to the test procedure described in this standard is typically less than 200 L (50 gal).

**trash receptacle, n**—public or commercial use refuse bin that holds discarded items until collected. **E2740**  
**E2831/E2831M**

DISCUSSION—The capacity of a trash receptacle specified according to this standard is typically less than 200 L (50 gal).

**trauma pack, n**—a soft insert intended to reduce backface deformation due to a ballistic impact. **E3005**

**trauma plate, n**—a hard insert intended to reduce backface deformation due to a ballistic impact. **E3005**

**treatment section, n**—person or persons responsible for the definitive hospital medical treatment of patients in the hospital. **E2413**

**triage section, n**—person or persons designated by competent authority that is responsible for triage and preliminary treatment of casualties. **E2413**

**triage, n**—process of sorting and prioritizing emergency medical care of the sick and injured on the basis of urgency and type of condition present and the number of patients and resources and the goal of triage shifts to “doing the most good for the most people” when patient care resources are exceeded. **E2413**

DISCUSSION—This differs from the day-to-day definition of triage in an emergency department, which is a fixed-site process for moving patients into the treatment area of the emergency department.

**trial, n**—number used to identify a series of repetitions that a testing robot is required to succeed in a standard test method for the results to meet the required statistical significance. **E2521**

**under velocity, n**—velocity that is less than the lower limit of a specified range. **E3005**

**underarm vertical length, adjusted, n**—the measured underarm vertical length minus approximately 3 in. (7.6 cm). **E3003**

**underarm vertical length, n**—the vertical distance between the armpit and the top of the duty belt measured while the wearer is seated. **E3003**

**under-bust girth, n**—the horizontal circumference around the torso under the arms and bust. **E3003** from Terminology **D5219**

**unfair hit, n**—a test threat impact that does not meet the specified requirements in a particular test method for impact location and spacing, velocity, obliquity, or yaw. **E3005**

**universal receiver, n**—a heavy duty mechanical device into which chambered barrels are secured for testing ammunition. **E3062** from SAAMI

**vesicant agent**—a chemical agent that causes burns and destruction of tissue. **E3002**

**vest, n**—a type of body armor intended to protect the wearer’s torso. **E3005**  
**E3003** from Terminology **E3005**

**volunteer**—an individual accepted by the lead agency in an emergency that has the authority to perform volunteer services. Normally, volunteers provide assistance without compensation. When referred to in this guide, the term volunteer includes affiliated and unaffiliated volunteers and groups. **E2951**

**volunteer**—any individual accepted to perform services by the lead agency (which has authority to accept volunteer services) when the individual performs services without promise, expectation, or receipt of compensation for services performed. Within this guide, the term “volunteer” when referenced solely will be inclusive of affiliated and unaffiliated volunteers and convergent groups. **E2640** from NIMS 2008

DISCUSSION—The following definitions are subsets to the term “volunteer” as defined and endorsed by the National Volunteer Organizations Active in Disaster (NVOAD):

*affiliated volunteers*—volunteers who are attached to a recognized voluntary or nonprofit organization and are trained for specific disaster response activities. Their relationship with the organization precedes the immediate disaster, and they are invited by that organization to become involved in a particular aspect of emergency management.

*unaffiliated volunteers*—also known as spontaneous, emergent, and/or convergent volunteers, individuals who offer to help or self-deploy to assist in emergency situations without fully coordinating their activities with emergency management at the local, State, territorial, tribal, or Federal levels. They are considered “unaffiliated” in that they are acting independently, as individuals, outside of the recognized coordination system of the impacted jurisdiction(s).

*convergent groups*—group of individuals that may have a distinguishable identity, organizational structure, and a collective desire to assist. These groups do not have an affiliation with emergency management at the local, State, territorial, tribal, or Federal levels. They are considered “convergent” in that they are self-deployed, acting independently, as a group, outside of the recognized coordination of the impacted jurisdiction(s).

**volunteer**—for purposes of the National Incident Management System, and this practice, any individual accepted to perform services by the lead agency (which has authority to accept volunteer services) when the individual performs services without promise, expectation, or receipt of compensation for services performed. See 16 U.S.C. 742f(c) and 29 CFR 553.101. **E2732**



**vortex mixing, *v***—applying a tube containing a liquid sample to a special laboratory mixer that establishes a vigorous circular motion in the bottom of the tube. **E2800**

DISCUSSION—The circular mixing motion results in a vortex in the tube that ensures the complete suspension of the entire tube contents.

**$V_x$ , *n***—the velocity at which *x* % of the impacts by a specified test threat are expected to completely penetrate nominally identical test items when tested according to a specified test method. **E3005**

**$V_0$ , *n***—the maximum velocity at which 0 % of the impacts by a specified test threat are expected to completely penetrate nominally identical test items when tested according to a specified test method. **E3005**

**$V_{05}$ , *n***—the velocity at which 5 % of the impacts by a specified test threat are expected to completely penetrate nominally identical test items when tested according to a specified test method. **E3005**

**$V_{50}$ , *n***—the velocity at which 50 % of the impacts by a specified test threat are expected to completely penetrate nominally identical test items when tested according to a specified test method. **E3005**

**waist, *n***—in anatomy, the part of the body at the location between the lowest rib and hip identified by bending the body to the side. **E3003** from **F1731**

**warm zone, *n***—the transition area between the Exclusion Zone (ExZ or hot zone) and the Support Zone (SZ or cold zone) used to reduce and limit the amount of contamination on people and equipment, and in the air, water, and soil that may be transferred into nonhazardous areas; the CRZ contains decontamination facilities, and functions as a buffer zone surrounding the ExZ; also known as the contamination reduction zone or CRZ.

**E2458** from **CPL 02-02-071 Directive**

**E2770** from **CPL 02-02-071 Directive**

**weapon of mass destruction (WMD), *n***—any weapon or device that is intended, or has the capability, to cause death or serious bodily injury to a significant number of people through the release, dissemination, or impact of (1) toxic or poisonous chemicals or their precursors; (2) a disease organism; or (3) radiation or radioactivity. **E2458**

**E2770**

**weapon of mass destruction (WMD)**—defined in U.S. law (18 USC §2332a) as a weapon meeting one or more of the following four categories: (1) any “destructive device” (such as explosives, incendiary material, or poison gas in a bomb, grenade, rocket, missile, or mine); (2) any weapon that is designed or intended to cause death or serious bodily injury

through the release, dissemination, or impact of toxic or poisonous chemicals, or their precursors; (3) any weapon involving a biological agent, toxin, or vector; (4) any weapon that is designed to release radiation or radioactivity at a level dangerous to human life. **E2601**

DISCUSSION—WMD is often referred to by the collection of categories that make up the set of weapons; chemical, biological, radiological, nuclear, and explosive (CBRNE). These are weapons that have a relatively large-scale impact on people, property, or infrastructure, or combinations thereof.

**wear face, *n***—the surface of an armor panel or plate that is intended to be placed against or proximal to the wearer’s body. **E3005**

**wipes, *n***—*see* swabs. **E2677**

**witness panel, *n***—a sheet of material placed in a specific location and orientation to determine complete or partial penetration of the test item or to determine other performance characteristics of the test item or projectile. **E3005**

DISCUSSION—The requirements for the witness panel are specified in individual test methods.

**witness panel, *n***—flat, rectangular sheet-construction mounted upright within the explosion test arena for purposes of determining whether fragments are produced during the detonation of the specimen. **E2740**

**world model, *n***—robot’s internal representation of the world it is aware of. **E2521**

**yaw, *n***—the angular deviation between the projectile’s axis of symmetry and its line of travel. **E3005**

#### 4.2 Abbreviations:

**GA**—nerve agent—common name: tabun, IUPAC name: O-Ethyl N,N-dimethyl phosphoramidocyanidate

**GB**—nerve agent—common name: sarin, IUPAC name: Propan-2-yl methylphosphonofluoridate

**GD**—nerve agent—common name: soman, IUPAC name: 3,3-Dimethylbutan-2-yl methylphosphonofluoridate

**GF**—nerve agent—common name: cyclosarin, IUPAC name: Cyclohexyl methylphosphonofluoridate

**HD**—blister agent—common name: distilled mustard, IUPAC name: Bis(2-chloroethyl) sulfide

**L**—blister agent—common name: lewisite, IUPAC name: 2-Chloroethenylarsonous dichloride

**RPED**—Respiratory Protective Smoke Escape Device

## 5. Keywords

5.1 body armor; decontamination; detection; emergency preparedness; homeland security; preparedness

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