

## SECTION 01 42 13 – ACRONYMS AND UNITS

**1.01 REFERENCES:** <sup>A17</sup>In cases where multiple meanings are given for an abbreviation, the context should help determine the meaning. In the event of any ambiguity or discrepancy, the Employer's Representative will provide an explanation. Similar meanings for the same abbreviation are shown together, while separate entries of the abbreviation are used for distinction among meanings that are not related.<sup>A17</sup>

### A. Abbreviations and Symbols for Measurement Units:

'	Foot (feet)
"	Inch(es)
%	Percent
‰	Per mille
A	Ampere(s)
Ah	Ampere-hour(s)
bps	Bit(s) per second
Btu/h	British thermal unit(s) per hour
°C	Degree(s) Celsius
<sup>A17</sup> cd/m <sup>2</sup>	Candela(s) per square meter <sup>A17</sup>
cm	Centimeter(s)
dB	Decibel(s)
dBA	A-weighted decibel(s)
dBm	Decibel(s) with respect to a milliwatt
dBRL	Decibel(s) of return loss
dBnC	Decibels above reference noise with C-message weighting
dpi	Dot(s) per inch
°F	Degree(s) Fahrenheit
fc	Footcandle(s)
fps	Frame(s) per second
ft	Foot (feet)
ft <sup>2</sup>	Square foot (feet)
g	Gravitational force
Gbps	Gigabit(s) per second
g/cm <sup>3</sup>	Gram(s) per cubic centimeter
gpm	Gallon(s) per minute
hr	Hour(s)
Hz	Hertz
in	Inch(es)
kbps	Kilobit(s) per second
kg	Kilogram(s)
kHz	Kilohertz
km	Kilometer(s)
km/h	Kilometer(s) per hour
kN	Kilonewton(s)
kPa	Kilopascal(s)
kV	Kilovolt(s)
kVA	Kilovolt-ampere(s)
kVAR	Kilovolt-ampere(s) reactive
kW	Kilowatt(s)
kWh	Kilowatt-hour(s)

lb	Pound(s)
m	Meter(s)
m <sup>2</sup>	Square meter(s)
m <sup>3</sup>	Cubic meter(s)
Mbps	Megabits per second
mi/h	Mile(s) per hour
mK	Millikelvin(s)
mm	Millimeter(s)
MPa	Megapascal(s)
mrad	Milliradian(s)
ms	Millisecond(s)
m/s	Meter(s) per second
MW	Megawatt(s)
MWh	Megawatt-hour(s)
N	Newton(s)
ng/s·m <sup>2</sup> ·Pa	Nanogram(s) per second per square meter per Pascal
Pa	Pascal(s)
ppm	Part(s) per million
psi	Pound(s) per square inch
psig	Pound(s) per square inch gage
rpm	Revolution(s) per minute
V	Volt(s)
VA	Volt-ampere(s)
VAR	Volt-ampere(s) reactive
Vpp	Volts peak to peak

**B. Acronyms and Abbreviations:**

1-D	One-dimensional
1E	Single East (culvert-operation label)
1W	Single West (culvert-operation label)
2-D	Two-dimensional
3-D	Three-dimensional
AAA	Authentication, authorization, and accounting
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
ABF	Auto back focus
ABMA	American Bearing Manufacturers Association
ABS	Acrylonitrile butadiene styrene (plastic type)
AC	Alternating current
[AC]	Air compressor (room)
ACI	American Concrete Institute
ACL	Access-control list
ACP	Autoridad del Canal de Panamá (Panama Canal Authority) <a href="http://www.pancanal.com">www.pancanal.com</a>
ACP	Alarm-control panel
ACQPA	Association for Certification and Qualification of Anticorrosive Paintwork
ACS	Access-control system
ADA	Audio-distribution amplifier

ADA	Americans with Disabilities Act
AES	Advanced Encryption Standard
AFBMA	Anti-Friction Bearing Manufacturers Association
AGA	American Galvanizers Association
AGC	Automatic gain control
AGMA	American Gear Manufacturers Association
AI	Analog input (point)
AIS	Automatic Identification System
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute <a href="http://www.steel.org">www.steel.org</a>
ALERT	Automatic local evaluation in real time (hydrometeorological system)
AMCA	Air Movement and Control Association International
ANAM	(Panamá) Autoridad Nacional del Ambiente (National Environmental Authority) <a href="http://www.anam.gob.pa">www.anam.gob.pa</a>
ANSI	American National Standard Institute <a href="http://www.ansi.org">www.ansi.org</a>
AO	Analog output (point)
AOR	Area of responsibility
API	Application program interface
API	American Petroleum Institute
APWA	American Public Works Association <a href="http://www.apwa.net">www.apwa.net</a>
ARI	Air Conditioning and Refrigeration Institute
ASCE	American Society of Civil Engineers
ASCII	American Standard Code for Information Interchange
ASE	(Panamá) Autoridad Nacional de los Servicios Públicos (National Authority for Public Services)
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASIS	American Society for Industrial Security <a href="http://www.asisonline.org">www.asisonline.org</a>
ASME	American Society of Mechanical Engineers
ASNT	American Society of Non-destructive Testing
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials (International) <a href="http://www.astm.org">www.astm.org</a>
ATIS	Alliance for Telecommunications Industry Solutions <a href="http://www.atis.org">www.atis.org</a>
ATM	Asynchronous-transfer mode
ATM	Automatic-teller machine
AVA	Automatic virtual local-area network assignment
<sup>A8</sup> AVC	Advanced video coding <sup>A8</sup>
AVI	Audio/video interleave
AWG	American wire gauge
AWPA	American Wood Preservers Association
AWS	American Welding Society <a href="http://www.aws.org">www.aws.org</a>
AWWA	American Water Works Association (system)
AZI	American Zinc Institute
BCP	Business continuity plan
BER	Bit error rate
BHMA	Builders Hardware Manufacturers Association (U.S.)
BICSI	Building Industry Construction Services International <a href="http://www.bicsi.org">www.bicsi.org</a>

BIFMA	Business and Institutional Furniture Manufacturer’s Association <a href="http://www.bifma.org">www.bifma.org</a>
BIM	Building-information modeling
BIOS	Basic input/output system
BNC	Bayonet Neill-Concelman, Baby Neill-Concelman, Baby N connector, British Naval Connector, or Bayonet Nut Connector (professional video connector)
BOCA	Building Official Conference of America
BPVC	Boiler and Pressure Vessel Code (American Society of Mechanical Engineers)
BSI	British Standards Institute <a href="http://www.bsi-global.com">www.bsi-global.com</a>
B&W	Black and white
CAD	Computer-aided design
CADD	Computer-aided design and drafting
CB	Circuit breaker
[CB]	Main control building
CBEMA	Computer and Business Equipment Manufacturing Association
CBR	Major Steel Bridge (American Institute of Steel Construction classification)
CBS	Cost Breakdown Structure
CCSS	Communications, control, security, and safety
CCTV	Closed -circuit television
CCVS	Closed-circuit video system
CD	Compact disk
CD-ROM	Compact disk – read-only memory
CENELEC	European Committee for Electrotechnical Standardization <a href="http://www.cenelec.org">www.cenelec.org</a>
[CER]	Crossunder elevator room
CETMEF	Centre d’Etudes Techniques Maritimes et Fluviales (Technical Center for Maritime and River Studies)
CFC	Chlorofluorocarbon
CFOM	Fiber-optic modem for ControlNet Network
CFR	Code of Federal Regulations
CGA	Compressed Gas Association
CGPM	General Conference on Weights and Measures
CHSP	Construction health and safety plan
CIF	Common Intermediate Format (4CIF = 704 x 480 = full frame resolution)
CIP	Common Industrial Protocol
CIPM	Comité International des Poids et Mesures (International Committee for Weights and Measures)
CIQP	Construction and installation quality plan
CISCA	Ceilings and Interiors Systems Construction Association <a href="http://cisca.org">http://cisca.org</a>
CLFMI	Chain Link Fence Manufacturers Institute (U.S.)
cmd	Command
CMF	Common-mode fault
CMMS	Computerized maintenance-management system
CNET	ControlNet
CNI	ControlNet International <a href="http://www.controlnet.org">www.controlnet.org</a>
COPANIT	Comisión Panameña de Normas Industriales y Técnicas

	(Panamanian Industrial and Technical Standards Commission)
CP	Concrete pipe
CPM	Critical Path Method
CPP	Consorcio Post Panamax (Post-Panamax Consortium)
CPR	Cardiopulmonary resuscitation
CPTED	Crime prevention through environmental design
CPU	Control processor unit (programmable logic controller) or central processing unit (data-processing equipment)
CQAM	Construction quality-assurance manager
CQCM	Construction quality-control manager
CRC	Cyclic redundancy check
CRF	Condensation resistance factor
CRI	Color-rendering index
CS	Circulation space
CSA	Canadian Standards Association <a href="http://www.csa.ca">www.csa.ca</a>
CSCS	Centralized security control system
CSI	Construction Specifications Institute <a href="http://www.csinet.org">www.csinet.org</a>
C-side	Continental side
CSMA/CD	Carrier sense multiple access with collision detection (networking)
CT	Current transformer
CTAN	Communications, Tracking, and Navigation (a subsystem of the vessel traffic management system)
CWP	Cable & Wireless Panama <a href="http://www.cwpanama.com">www.cwpanama.com</a>
D	Double (culvert-operation label)
DACR	Digital-alarm communicator receiver
DACT	Digital-alarm communicator transmitter
DB	Dry bulb (temperature)
DC	Direct current
DCE	Data-communications equipment
DDE	Digital detail enhancement
DDE	Dynamic data exchange (server)
DES	Data Encryption Standard
DGNTI-COPANIT	Dirección General de Normas y Tecnología Industrial – Comisión Panameña de Normas Industriales y Técnicas (General Directorate for Standards and Industrial Technology – Panamanian Commission for Industrial and Technical Standards)
DHTML	Dynamic Hypertext Markup Language
DI	Digital input (point)
DIASP	(Panamá) Dirección Institucional de Asuntos de Seguridad Pública (Institutional Directorate for Public Security Matters)
DIN	Deutsches Institut für Normung (German Institute for Standardization)
DIP	Ductile iron pipe
DIPRA	Ductile Iron Pipe Research Association
DLP	Digital light processing <a href="http://www.dlp.com">www.dlp.com</a>
DNP	Distributed Network Protocol
DNR	Digital noise reduction
DO	Digital output (point)
DOD	(U.S.) Department of Defense <a href="http://www.dod.gov">www.dod.gov</a>
DOL	(U.S.) Department of Labor <a href="http://www.dol.gov">www.dol.gov</a>

DoS	Denial of service
DPE	Data-processing equipment
DPI	Differential pressure-to-current (transducer)
DPP	Disaster prevention plan
DQCM	Design quality-control manager
DQP	Design quality plan
DRACAS	Defects, reliability, availability, and corrective actions system
DRI	Detection, recognition, and identification
DRP	Disaster recovery plan
DSR	Designated safety representative
DTCS	Document tracking and control system
DUG	Digital noise reduction user group
DV	Digital video
DVC	Dynamic volt-ampere reactive compensation or dynamic volt-ampere reactive compensator
DVD	Digital versatile disk or digital video disk
DVI	Digital video input
dwg	Drawing file format (AutoCad)
EAA	(ACP) División de Agua (Water Division)
EAC	(ACP) División de Ambiente (Environmental Division)
EACR	(ACP) Sección de Recursos Hídricos (Hydraulic Resources Section)
EAE	(ACP) División de Energía (Energy Division)
EAEG	(ACP) Sección de Generación (Generation Section)
EAL	Evaluation-assurance level
EAMS	Enterprise Asset Management System
EAP	Extensible Authentication Protocol
EAU	Empfehlungen des Arbeitsausschusses Ufereinfassungen (Recommendations of the Committee for Waterfront Structures)
EDCS	Electrical distribution control system
EFOM	Fiber-optic modem for Ethernet network
EIA	Electronic Industries Alliance <a href="http://www.eia.org">www.eia.org</a>
[ELR]	Electrical room
E&M	Electrical and mechanical
E&M	Ear and mouth (signaling)
EMC	Electromagnetic compatibility
EMI	Electromagnetic interference
<sup>A8</sup> EMI	Enterprise manufacturing intelligence <sup>A8</sup>
EMS	Energy management system
EMS	Environmental management system
EMT	Electrical metallic tubing
EMT	Emergency medical technician
EOL	End of line
EOLR	End-of-line resistor
EPA	(U.S.) Environmental Protection Agency <a href="http://www.epa.gov">www.epa.gov</a>
ESD	Electrostatic discharge
EtherNet/IP	Ethernet Industrial Protocol
EVTMS	Enhanced vessel traffic-management system
FAA	(U.S.) Federal Aviation Administration <a href="http://www.faa.gov">www.faa.gov</a>
FAA	(ACP) División de Compras, Almacenes e Inventarios (Purchases, Storehouses and Inventories Division)

FACP	Fire alarm control panel
FCC	(U.S.) Federal Communications Commission <a href="http://www.fcc.gov">www.fcc.gov</a>
FC/PC	Ferrule (fiber-optic) connector for physical contact
<sup>A3</sup> FDC	Fire Department Connection <sup>A3</sup>
F-E	Filling and emptying
FED	Federal standards
FEM	Finite element model
FEMA	Federal Emergency Management Agency
[FER]	Fire-fighting equipment room
FFC	Flat-field correction
FFCS	Fire-fighting control system
FFE	Fire-fighting equipment
FFIT	Final field inspection tests
FFT	Fast Fourier Transform
FHWA	(U.S.) Federal Highway Administration
FIDS	Fence-intrusion detection system
FIFO	First-in, first-out
FIM	Facility information modeling
FIPS	Federal Information Processing Standards (National Institute of Standards and Technology)
FIT	Factory inspection tests
FM	Factory Mutual (Engineering and Research Corporation) <a href="http://www.fmglobal.com">www.fmglobal.com</a>
FMECA	Failure mode, effects, and criticality analysis
FO	Fiber optics
FOCIS	Fiber Optic Connector Intermateability Standard
FOM	Fiber-optic modem
FQCT	Factory quality control tests
FRD	Fire Resistance Directory (Underwriters Laboratories)
FS	Federal specifications
FSTC	Field sound transmission class
FTL	Field transmission loss
[GB]	Guard booth
GFD	Ground fault detector
GGBFS	Ground Granulated Blast Furnace Slag (concrete)
[GH]	Guardhouse
GIF	Graphics Interchange Format
GLONASS	(Russian) global navigation satellite system
GNSS	Global navigation satellite system
GPS	Global Positioning System (U.S. global navigation satellite system)
[GR]	Generator room
GTE	General Telephone and Electronics <a href="http://www.gte.com">www.gte.com</a> , <a href="http://www.verizon.com">www.verizon.com</a>
GUI	Graphical User Interface
HART	Highway Addressable Remote Transducer (protocol) <a href="http://www.hartcomm.org">www.hartcomm.org</a>
HAZCOM	Hazardous communications
HAZMAT	Hazardous material
HDLM	High-command dynamic link manager (Hitachi storage-area network)

HDMI	High-definition multimedia interface
HDPE	High-density polyethylene
HDTV	High-definition television
HID	High-intensity discharge
HIPAA	(U.S.) Health Insurance Portability and Accountability Act
HMI	Human-machine interface
HML	High-mast lighting
HPL	High-pressure laminate
HPS	High-pressure sodium
HSM	Health and safety manager
HSMS	Health and safety management system
HTML	Hypertext Markup Language
http	Hypertext Transfer Protocol
HTTPS	Secure Hypertext Transfer Protocol
HVAC	Heating, ventilating, and air conditioning
IA	(ACP) Departamento de Ingeniería y Administración de Programas (Engineering and Programs Management Department)
IACS	International Association of Classification Societies
IAI	(ACP) División de Ingeniería (Engineering Division)
IAIT-HID	(ACP) Unidad de Hidrografía (Hydrographic Unit)
<sup>A5</sup> IANA	Internet Assigned Numbers Authority ( <a href="http://www.iana.org">www.iana.org</a> ) <sup>A5</sup>
IARH	Industrial hygiene team
IBC	International Building Code
IBM	International Business Machines
<sup>A5</sup> ICANN	Internet Corporation for Assigned Names and Numbers ( <a href="http://www.icann.org">www.icann.org</a> ) <sup>A5</sup>
ICBO	International Conference of Building Officials
ICC	International Code Council (created by the Building Official Conference of America, International Conference of Building Officials, and Southern Building Code Congress International) <a href="http://www.iccsafe.org">http://www.iccsafe.org</a>
ICCC	Integrated central control center
ICE	Institution of Civil Engineers (U.K.)
ICEA	Insulated Cable Engineers Association <a href="http://www.icea.net">www.icea.net</a>
ICSA	International Computer Security Association (formerly called the National Computer Security Association or NCSA) <a href="http://www.trusecure.net">www.trusecure.net</a>
ID	Identification
IDAAN	(Panamá) Instituto de Acueductos y Alcantarillados Nacionales (Institute for National Aqueducts and Sewerage)
IDE	Integrated Drive Electronics
IDP	Installation design package
IDS	Intrusion-detection system
IEC	International Electrotechnical Commission <a href="http://www.iec.ch">www.iec.ch</a>
IED	Intelligent electronic device
IEEE	Institute of Electrical and Electronic Engineers <a href="http://www.ieee.org">www.ieee.org</a>
IESNA	Illuminating Engineering Society of North America <a href="http://www.iesna.org">www.iesna.org</a>
IETF	Internet Engineering Task Force <a href="http://www.ietf.org">www.ietf.org</a>
I/F	Interface



IFB	Invitation for bid
IFOV	Instantaneous field of view
IGBT	Isolated gate bipolar transistor
IGMP	Internet Group Management Protocol
IME	Institute of Makers of Explosives
IMO	International Maritime Organization <a href="http://www.imo.org">www.imo.org</a>
INADEH	(Panamá) Instituto Nacional de Formación Profesional y Capacitación para el Desarrollo Humano (National Institute for Professional Formation and Human Development Training) <a href="http://www.inadeh.edu.pa">www.inadeh.edu.pa</a>
I/O	Input/output
IOC	Input/output concentrator
IP	Internet Protocol
IP	(IEC) ingress protection (rating)
IP#	Employee-identification number
IPS	Intrusion-prevention system
IPT	Internet Protocol telephony
IR	Infrared
IR	Insulation resistance
IRCA	International Association of Certified Auditors
IRIG	Inter-Range Instrumentation Group (time-code format)
ISA	Instrument Society of America <a href="http://www.isa.org">www.isa.org</a>
ISAKMP	Internet Security Association and Key Management Protocol
ISEA	International Safety Equipment Association
I-side	Island side
ISM	Incremental software management (Nortel Networks)
ISO	International Organization for Standardization <a href="http://www.iso.org">www.iso.org</a>
ISPS	International Ship and Port Facility Security Code <a href="http://www.imo.org">www.imo.org</a>
ITIC	Information Technology Industry Council <a href="http://www.itic.org">www.itic.org</a>
ITIL	Information Technology Infrastructure Library <a href="http://www.itil.org">www.itil.org</a>
ITP	Inspection and test plan
ITU	International Telecommunication Union <a href="http://www.itu.int">www.itu.int</a>
ITU-R	International Telecommunication Union - Radiocommunications Sector <a href="http://www.itu.int">www.itu.int</a>
ITU-T	International Telecommunication Union - Telecommunication Standardization Sector <a href="http://www.itu.int">www.itu.int</a>
JHA	Job hazard analysis
JPEG	Joint Photographic Experts Group
JPG	Joint Photographic Experts Group image file format
JTIA	(Panamá) Junta Técnica de Ingeniería y Arquitectura (Technical Board for Engineering and Architecture)
KBD	Keyboard
KPI	Key performance indicator
KPD	Keypad
KVM	Keyboard-video-mouse
LAN	Local-area network
LASER	Light amplification by stimulated emission of radiation
LCC	Local central console
LCD	Liquid crystal display
LD	Ladder diagram
LED	Light-emitting diode

LIDAR	Light detection and ranging
LIDM	LAN and Internetworking Design Manual (Building Industry Construction Services International)
LIW	Load indicator washer
LMCS	Locks machinery control system
LOA	Length overall
LOI	Limiting oxygen index
LPC	Lightning Protection Code
LPI	<a href="http://www.lightning.org">Lightning Protection Institute www.lightning.org</a>
LVBD	<a href="#">Low voltage battery disconnect</a>
MAC	Media-access control
<sup>A8</sup> MACC	Maintenance automation control center <sup>A8</sup>
MACP	Master alarm control panel
MARPOL	Marine pollution (convention)
[MB]	<a href="#">Maintenance building</a>
MCBF	<a href="#">Mean cycles between failures</a>
MCC	Motor-control center
MCE	Maximum credible earthquake
[MCR]	<a href="#">Main control room</a>
MCS	Machinery control station
MDE	Maximum design earthquake
MDF	Main distribution frame
MDFB	Medium-density fiberboard
MDS	Machinery diagnostics station
MFQP	Manufacturing quality plan
MG	Miter gate (existing locks)
MH	Manhole
MLL	Mean lake level
MLW	Mean low water
MLWS	Mean low water springs
MNS	Mass-notification system
MOP	(Panamá) Ministerio de Obras Públicas (Ministry of Public Works)
MOTEMS	Marine Oil Terminal Engineering and Maintenance Standards
MOV	<a href="#">Metal oxide varistor</a>
MP4	<a href="#">MPEG4 (standard used primarily to compress audio and video)</a>
MPEG	Motion Pictures Experts Group
MPLS	Multi-Protocol Label Switching
[MR]	Machinery room
[MR-G]	Machinery room – gates
[MR-V]	Machinery room – valves
<sup>A17</sup> [MR-WSB]	Machinery room – Water-Saving Basins <sup>A17</sup>
MS	Master station
MSDS	Material safety data sheet
MSE	Mechanically stabilized earth
MSS	Manufacturer’s Standardization Society of the Valve and Fittings Industry Publication
MS-SQL	Microsoft Software Query Language
MT	Multiplex transponder
MTBF	Mean time between failures
MTCC	Marine traffic control center

MTCS	Marine traffic control system
MTTR	Mean time to repair
MUTCD	Manual on Uniform Traffic Control Devices (Federal Highway Administration)
MV	Medium voltage
MW	Microwave
N/A	Not applicable
NAAMM	National Association of Architectural Metal Manufacturers
NAC	Network Admission Control (Cisco)
NACE	National Association of Corrosion Engineers
NAS	Network-attached storage
NAT	Network-address translation
NBS	National Bureau of Standards
NC	Noise criteria
NC	Normally closed
NCR	Non-conformity report
NDT	Non-destructive testing
NEBB	National Environmental Balancing Bureau <a href="http://www.nebb.org">www.nebb.org</a>
NEBS	Network Equipment Building System
NEC	National Electrical Code (National Fire Protection Association)
NEMA	National Electrical Manufacturers Association <a href="http://www.nema.org">www.nema.org</a>
NERC	North American Electric Reliability Corporation <a href="http://www.nerc.com">www.nerc.com</a>
NESC	National Electrical Safety Code (American National Standard Institute / Institute of Electrical and Electronic Engineers)
NETA	International Electrical Testing Association
NFLPA	National Fluid Power Association
NFPA	National Fire Protection Association <a href="http://www.nfpa.org">www.nfpa.org</a>
NFRC	National Fenestration Rating Council
NIC	Noise Isolation Class
NIC	Network interface card
NIC	Not in Contract
NIJ	National Institute of Justice <a href="http://www.nijrs.gov">www.nijrs.gov</a>
NIST	(U.S.) National Institute of Standards and Technology <a href="http://www.nist.gov">www.nist.gov</a>
NO	Normally open
NOC	Network operations center
NPDES	National Pollution Discharge Elimination System (Environmental Protection Agency)
<sup>A5</sup> NSF	National Sanitation Foundation ( <a href="http://www.nsf.org">www.nsf.org</a> ) <sup>A5</sup>
NSTA	(National Pollution Discharge Elimination System) Support and Technical Assistance
NTP	Network Time Protocol
NTSC	National Television Systems Committee
NUC	Non-uniformity correction
NZDS	Non-Zero Dispersion Singlemode (fiber-optic cable type)
OBE	Operating basis earthquake
ODF	Optical distribution frame
ODVA	Open DeviceNet Vendors Association <a href="http://www.odva.org">www.odva.org</a>
OEE	Overall equipment effectiveness
OILR	Outdoor/indoor (sound) level reduction
OLE	Object linking and embedding

OLED	Organic light-emitting diode
O&M	Operation and maintenance
OP	(ACP) Departamento de Operaciones (Operations Department)
OPC	Open Connectivity or OLE for Process Control
OPE	(ACP) División de Esclusas y Mantenimiento de Instalaciones (Locks and Installation Maintenance Division)
OPP	(ACP) División de Protección y Respuesta a Emergencias (Protection and Emergency Response Division)
OPT	(ACP) División de Operaciones de Tránsito (Transit Operations Division)
OS	Operating system
[OSC]	Oil-spill control (room)
OSHA	(U.S.) Occupational Safety and Health Administration <a href="http://www.osha.gov">www.osha.gov</a>
OSI	Open-systems interconnection
OSIRM	Open-systems interconnection reference model (International Organization for Standardization)
OSP	Outside plant
OTS	Operator-training simulator
OVP	Over-voltage protection
OWASP	Open Web Application Security Project <a href="http://www.owasp.org">www.owasp.org</a> <a href="http://www.cgisecurity.com/owasp">www.cgisecurity.com/owasp</a>
P2P	Peer-to-peer
PA	Public address
PABX	Private automatic branch exchange
PAC	Pacific approach channel
PACT	Physical access control terminal
PAP	Password Authentication Protocol
PAS	Public-address system
PAT	Port Address Translation
[PB]	Personnel building
[PBR]	Personnel break room
PC	Personal computer
PCB	Polychlorinated biphenyl
PCCC	Programmable Controller Communications Commands (Allen-Bradley legacy protocol)
PCI	Precast/Prestressed Concrete Institute
PCRC	Panama Canal Railway Company
PCS	Process control system
PCS	Personal communications service
PDA	Personal data assistant or personal digital assistant
PDI	Plumbing and Drainage Institute
PDM	Precedence diagramming method
PDS	Power distribution station
PECI	Portland Energy Conservation, Inc. <a href="http://www.peci.org">www.peci.org</a>
PERT	Program evaluation and review technique
PF	Power factor
PGA	Peak Ground Acceleration
PH	Pull hole
pH	Potential of hydrogen
PHY	Physical

PIANC	Permanent International Association of Navigation Congresses <a href="http://www.pianc-aipcn.org">www.pianc-aipcn.org</a>
PID	Process Integration Diagram
PIM	Personal information manager
PING	Packet Internet Grouper
PIR	Passive infrared
PIV	Personal identity verification
PKCS	Public Key Cryptography Standard
PKI	Public key infrastructure
PLC	Programmable logic controller
<sup>A17</sup> PLD	Precise Level Datum <sup>A17</sup>
[PLE]	Employee parking lot
[PLV]	Visitor parking lot
PMA	Parts maintenance agreement
PMD	Programmable metal detector
PMF	Probable maximum flood
PMI	Project Management Institute <a href="http://www.pmi.org">www.pmi.org</a>
<sup>A17</sup> PMP	Project Management Plan <sup>A17</sup>
PNG	Portable Network Graphics
POC	Point of contact
PoE	Power over Ethernet
POL	Petroleum, oil, and lubricants
PP	Patch panel
PPC	Post-Panamax Consortium
PPE	Personal protective equipment
PPI	Process pressure-to-current (transducer)
PPX	Post-Panamax
PQR	Procedure qualification record
PS	Particular specifications
PSK	Pre-shared key
PSS	Perimeter security system
PSTN	Public switched telephone network
PT	Potential transformer
PTI	Post Tensioning Institute
PTR	Printer
PTT	Push to talk
PTZ	Pan / tilt / zoom
PVC	Polyvinyl chloride
PWL	Paint with lead
PWM	Pulse-width modulation
QA	Quality assurance
QC	Quality control
QCP	Quality control program
QDS	Quality management system document schedule
QM	Quality manager
QMS	Quality management system
QoS	Quality of service
QP	Quality plan
R	Resistance (electrical or thermal)
RA	Return air
RAB	Rising arm barrier

RADIUS	Remote authentication dial-in user service
RAID	Redundant array of inexpensive disks or redundant array of independent disks
RAM	Random-access memory
RAM	Reliability, availability, and maintainability
RAMS	Reliability, availability, maintainability, and safety
RB	Road blocker
RCC	Remote central <a href="#">control</a> (console)
RCC	Roller compacted concrete
<sup>A10</sup> RCDD	Registered communications distribution designer (ref. BICSI) <sup>A10</sup>
<sup>A16</sup> RCM	Reliability centered maintenance <sup>A16</sup>
RCSC	Research Council on Structural Connections <a href="http://www.boltcouncil.org">www.boltcouncil.org</a>
REP	(Junta Técnica de Ingeniería y Arquitectura) Reglamento Estructural de Panamá (Panama Structural Regulations)
REX	Request to exit
RF	Radio frequency
RFC	Request for comments
RFI	Request for information
RFI	Radio-frequency interference
<a href="#">RFID</a>	<a href="#">Radio frequency identification</a>
<a href="#">RFQ</a>	<a href="#">Request for qualifications</a>
RG	Rolling gate
RGB	Red - green - blue
RGSC	Rigid galvanized steel conduit
RH	Relative humidity
RHSS	(ACP) Sección de Salud, Bienestar y Seguridad Ocupacional (Occupational Health, Welfare and Safety Section)
RIE	(Junta Técnica de Ingeniería y Arquitectura de Panamá) Reglamento de Instalaciones Eléctricas (Electrical Installation Regulations)
RIM	Rotating interlock mechanism
RIM <a href="#">Ltd.</a>	Research In Motion <a href="http://www.blackberry.com">Limited www.blackberry.com</a>
<sup>A8</sup> RIP	Routing information protocol <sup>A8</sup>
RIO	Remote input/output
RIV	Radio influence voltage
R/L	Raise/lower
rm	Righting moment
<a href="#">RMOCP</a>	<a href="#">Reglamentos Marítimos para la Operación del Canal de Panamá (Maritime Regulations for the Operation of the Panama Canal)</a>
RMS	Root-mean-square
ROM	Read-only memory
ROSA	Recommandations pour le calcul aux états-limites des ouvrages en site aquatique (recommendations for calculating the stated limits of water openings for aquatic infrastructure)
RP	Republic of Panama
RPP	Regulations and permits programme
RSI	Repetitive stress injuries
RS-SQL	Rockwell Software – Software Query Language
RTCCS	Radio-telephone communications console system
RTD	Resistance temperature detector
RTF	Rich Text Format

RTU	Remote terminal unit
RTVC	Real-time voltage-ampere reactive compensator
RUS	Rural utilities service
SA	Supply air
SADT	Structured analysis and design technique
SAE	Society of Automotive Engineers
SAN	Storage-area network
SAT	Site acceptance test
SATA	Serial Advanced Technology Attachment
SBCCI	Southern Building Code Congress International
SC	<a href="#">Simeon connector, standard connector, simplex connector, or subscriber (channel) connector.</a>
SCADA	Supervisory control and data acquisition
SCC	Security Control Center, (Building 741, Corozal West)
SC/PC	<a href="#">SC (connector) for physical contact</a>
SCR	Silicon-controlled rectifier
SC/UPC	<a href="#">SC (connector) with ultra polish qualities for physical contact</a>
SDE	Ship-detection equipment
SDH	Synchronous digital hierarchy
SDLC	System development lifecycle
SDM	Software development methodology
SE	Southeast
SED	Surface-conduction electron-emitter display
SFF	Small Form Factor (connector)
SFTP	Secure File Transfer Protocol
<sup>A3</sup> SGML	Standard Generalized Markup Language <sup>A3</sup>
SHR	Self-healing ring
SI	International System of Units (metric system)
SIA	Security Industry Association
SIF	Safety instrumented functions
SIL	Safety integrity level
SIP	Session Initiating Protocol
<sup>A8</sup> SIS	Safety instrumented system <sup>A8</sup>
SLC	Single-line circuit
SLS	Signaling line circuit
SMACNA	Sheet Metal & Air Conditioning Contractors' National Association
SMC	Secure multimedia controller
SMS	Short message service
S/N	Signal-to-noise ratio
SNMP	Simple Network Management Protocol
SOCKS	Sock-Et-S (Internet protocol)
SOE	Sequence of events
SOLAS	Safety of Life at Sea (convention)
SONET	Synchronous optical network
SOQ	Statement of qualifications
SOURIAU	Connector technology <a href="http://www.souriau.com">www.souriau.com</a>
SP	Surge protector
SP1	Customer contact space
SP2	Occupant work space
SP3	Equipment-utilization space

SP6	Meeting and instruction space
SPD	Surge-protection device
SPG	Single-point ground
SPI	Stateful Packet Inspection (firewall)
SPIA	Sociedad Panameña de Ingenieros y Arquitectos (Panamanian Society of Engineers and Architects) <a href="http://www.spia-pma.org">www.spia-pma.org</a>
SPL	Sound-pressure level
SPST	Single pole, single throw
SPT	Standard penetration test
SQA	Software quality assurance
SQL	Software Query Language
SR	Occupant services space
SRS	Software release subscription
SS	Storage space
[SS]	<a href="#">Spares storage building</a>
SSADM	<a href="#">Structured systems analysis and design methodology</a>
SSID	Service set identifier
SSO	Single sign-on
SSPC	Society for Protective Coatings
STC	Sound transmission class
STP	Shielded Twisted Pair
SU1	Building services space
SU2	Utility equipment space
SUNTRACS	(Panamá) Sindicato Único Nacional de Trabajadores de la Industria de la Construcción y Similares (National Labor Union for Workers in the Construction and Similar Industries) <a href="http://www.suntracs.org">www.suntracs.org</a>
SUV	Sport-utility vehicle
SV2	Automotive space
SVC	Switched virtual circuit
SW	Southwest
S/W	Software
SWC	Surge withstand capability
SWOT	Strengths, weaknesses, opportunities, and threats analysis
SWP	Safe work plan
SX	Unused outdoor space
TAB	Testing, adjusting, and balancing
TBD	To be determined
TCO	Total cost of ownership
TCP	Transmission Control Protocol
TDMM	Telecommunications Distribution Methods Manual (Building Industry Construction Services International)
TEM	Transverse electromagnetic (wave propagation)
TETRA	Terrestrial trunked radio
TEU	Twenty-foot equivalent unit
TFW	Tropical freshwater
<sup>A5</sup> THA	Time History Acceleration <sup>A5</sup>
THD	Total harmonic distortion
TIA	Telecommunications Industry Association <a href="http://www.tiaonline.org">www.tiaonline.org</a>
TIF	Tagged Image Format
TIP	Testing and inspection program



TMP	Traffic management plan
TOEFL	Test of English as a Foreign Language
TOV	Transient over-voltage
TRS	Time Reporting System
TSB	Telecommunications Systems Bulletin (Telecommunications Industry Association)
TT	Telcordia Technologies Inc. <a href="http://www.telcordia.com">www.telcordia.com</a>
TTL	Transistor-to-transistor logic
TVSS	Transient voltage surge suppressor
TWA	Time-weighted average concentration
<sup>A17</sup> UCC	Uniform Color Code <sup>A17</sup>
UDP	User Datagram Protocol
<sup>A10</sup> UFC	Unified Facilities Criteria (ref. USACE) <sup>A10</sup>
UHF	Ultrahigh frequency
UHMWPE	Ultrahigh molecular weight polyethylene
UHP	Ultrahigh performance (high-intensity discharge lamp)
UL	Underwriters Laboratories <a href="http://www.ul.com">www.ul.com</a>
ULCC	Ultralight crude carrier
UMP	Utility management plan
UMS	Universal Measurement System
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNI	User Network Interface
UPC	Ultra-physical contact
UPS	Uninterruptible power supply
URL	Universal Resource Locator (internet address)
U.S.	United States (used as an adjective)
USA	United States of America
USACE	United States Army Corps of Engineers
USB	Universal serial bus <a href="http://www.usb.org">www.usb.org</a>
USBM	United States Bureau of Mines
USCG	United States Coast Guard
USCS	Unified Soil Classification System (American Society for Testing and Materials)
USD	U.S. dollars
UTM	Unified threat management
UTM	Universal Transverse Mercator
UTP	Unshielded Twisted Pair
UV	Ultraviolet radiation
VAC	Volts – alternating current
VC	Visitor center
VCP	Visual comfort probability
VCS	Vehicular control system
VDA	Video distribution amplifier
VDC	Volts – direct current
VDS	Vessel-detection system
VDT	Video-display terminal
VDU	Video-display init
VF	Vault File (Engineering Division)
VFD	Variable frequency drive
VHF	Very-high frequency

VLAN	Virtual local-area network
VM	Video monitor
VMD	Video motion detector
<sup>A9</sup> VMI	Vendor Managed Inventory <sup>A9</sup>
VMux	Video multiplexer
VoIP	Voice over Internet Protocol
VPM	Vibrations per minute
VPN	Virtual private network
VRLA	Valve-regulated lead acid
VRS	Video recording system
VSWR	Voltage standing wave ratio
WAN	Wide-area network
<sup>A17</sup> WBS	Work Breakdown Structure <sup>A17</sup>
WEF	Water Environment Federation
<sup>A3</sup> WHATWG	Web Hypertext Application technology Working Group <sup>A3</sup>
WHO	World Health Organization <a href="http://www.who.int">www.who.int</a>
WiFi	Wireless Fidelity
WiMAX	Worldwide interoperability for microwave access
WIR	Work inspection request
WLAN	Wireless local-area network
WLD	Water-level display
WLG	Water-level graphics
WLT	Water-level transducer
WMP	Windows Media Player (Microsoft)
WMV	Windows Media Video
WPA2	WiFi Protected Access 2
(Deleted text)	
WPQ	Welder performance qualification
WPS	Welding procedure specification
WRE	Water-resources equipment
<sup>A17</sup> WSB	Water-Saving Basin <sup>A17</sup>
WTCS	Wastewater treatment control system
(Deleted text)	
WWTP	Wastewater treatment plant
XHEZ	Through-penetration fire stop system (Underwriters Laboratories classification)
XLPE	Cross-linked thermosetting polyethylene
XML	Extensible Markup Language

## END OF SECTION