

**CUSTOMER CONTRACT REQUIREMENTS**  
**Flight Test Support**  
**CUSTOMER CONTRACT 17-C-8369**

**CUSTOMER CONTRACT REQUIREMENTS**

The following customer contract requirements apply to this contract to the extent indicated below. If this contract is for the procurement of commercial items under a Government prime contract, as defined in FAR Part 2.101, see Section 3 below.

**1. FAR Clauses** The following contract clauses are incorporated by reference from the Federal Acquisition Regulation and apply to the extent indicated. In all of the following clauses, "Contractor" and "Offeror" mean Seller.

**52.203-6 Restrictions on Subcontractor Sales to the Government** (SEP 2006). This clause applies only if this contract exceeds (i) \$100,000 if included in Buyer's customer RFP or customer contract issued before October 1, 2010 or (ii) \$150,000 if included in Buyer's customer RFP issued on or after October 1, 2010, or if the prime contract was issued prior to October 1, 2010 but was amended after October 1, 2010 to increase the Simplified Acquisition Threshold.

**52.203-7 Anti-Kickback Procedures** (MAY 2014). Buyer may withhold from sums owed Seller the amount of any kickback paid by Seller or its subcontractors at any tier if (a) the Contracting Officer so directs, or (b) the Contracting Officer has offset the amount of such kickback against money owed Buyer under the prime contract. This clause, excluding subparagraph (c)(1), applies only if this contract exceeds \$150,000.

**52.203-8 Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity** (MAY 2014). This clause applies to this contract if the Seller, its employees, officers, directors or agents participated personally and substantially in any part of the preparation of a proposal for this contract. The Seller shall indemnify Buyer for any and all losses suffered by the Buyer due to violations of the Act (as set forth in this clause) by Seller or its subcontractors at any tier.

**52.203-10 Price or Fee Adjustment for Illegal or Improper Activity** (MAY 2014). This clause applies only if this contract exceeds (i) \$100,000 if included in Buyer's customer RFP or customer contract issued before October 1, 2010 or (ii) \$150,000 if included in Buyer's customer RFP issued on or after October 1, 2010, or if the prime contract was issued prior to October 1, 2010 but was amended after October 1, 2010 to increase the Simplified Acquisition Threshold. If the Government reduces Buyer's price or fee for violations of the Act by Seller or its subcontractors at any tier, Buyer may withhold from sums owed Seller the amount of the reduction.

**52.203-12 Limitation on Payments to Influence Certain Federal Transactions** (OCT 2010). This clause applies only if this contract exceeds \$150,000. Paragraph (g)(2) is modified to read as follows: "(g)(2) Seller will promptly submit any disclosure required (with written notice to Boeing) directly to the PCO for the prime contract. Boeing will identify the cognizant Government PCO at Seller's request. Each subcontractor certification will be retained in the subcontract file of the awarding contractor."

**52.203-13 Contractor Code of Business Ethics and Conduct** (OCT 2015). This clause applies only if this contract is in excess of \$5,500,000 and has a period of performance of more than 120 days.

**52.203-17 Contractor Employee Whistleblower Rights and Requirement to Inform Employees of Whistleblower Rights** (APR 2014). This clause applies only if this contract exceeds \$150,000.

**52.204-13 System for Award Management Maintenance** (JUL 2013).

**52.204-21 Basic Safeguarding of Covered Information Systems** (JUN 2016).

**52.209-6 Protecting the Government's Interests When Subcontracting With Contractors Debarred, Suspended or Proposed**

**for Debarment** (OCT 2015). Seller agrees it is not debarred, suspended, or proposed for debarment by the Federal Government. Seller shall disclose to Buyer, in writing, whether as of the time of award of this contract, Seller or its principals is or is not debarred, suspended, or proposed for debarment by the Federal Government. This clause does not apply to contracts where Seller is providing commercially available off-the shelf items.

**52.211-15 Defense Priority and Allocation Requirements** (APR 2008). This clause is applicable if a priority rating is noted in this contract.

**52.215-2 Audit and Records - Negotiation** (OCT 2010). This clause applies only if this contract exceeds \$150,000 and (i) is cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any combination of these types; (ii) Seller was required to provide cost or pricing data, or (iii) Seller is required to furnish reports as discussed in paragraph (e) of the referenced clause. Notwithstanding the above, Buyer's rights to audit Seller are governed by the Financial Records and Audit article of the General Provisions incorporated in the Contract.

**52.215-10 Price Reduction for Defective Certified Cost or Pricing Data** (AUG 2011). This clause applies only if this contract exceeds the threshold set forth in FAR 15.403-4 and is not otherwise exempt. In subparagraph (3) of paragraph (a), insert "of this contract" after "price or cost." In Paragraph (c), "Contracting Officer" shall mean "Contracting Officer or Buyer." In Paragraphs (c)(1), (c)(1)(ii), and (c)(2)(i), "Contracting Officer" shall mean "Contracting Officer or Buyer." In Subparagraph (c)(2)(i)(A), delete "to the Contracting Officer." In Subparagraph (c)(2)(ii)(B), "Government" shall mean "Government or Buyer." In Paragraph (d), "United States" shall mean "United States or Buyer."

**52.215-12 Subcontractor Certified Cost or Pricing Data** (OCT 2010). This clause applies only if this contract exceeds the threshold set forth in FAR 15.403-4 and is not otherwise exempt. The certificate required by paragraph (b) of the referenced clause shall be modified as follows: delete "to the Contracting Officer or the Contracting Officer's representative" and substitute in lieu thereof "to The Boeing Company or The Boeing Company's representative (including data submitted, when applicable, to an authorized representative of the U.S. Government)."

**52.215-14 Integrity of Unit Prices** (OCT 2010). This clause applies except for contracts at or below \$150,000; construction or architect-engineer services under FAR Part 36; utility services under FAR Part 41; services where supplies are not required; commercial items; and petroleum products.

**52.215-15 Pension Adjustments and Asset Reversions** (OCT 2010). This clause applies to this contract if it meets the requirements of FAR 15.408(g).

**52.215-18 Reversion or Adjustment of Plans for Post-Retirement Benefits (PRB) Other Than Pensions** (JUL 2005). This clause applies to this contract if it meets the requirements of FAR 15.408(j).

**52.215-19 Notification of Ownership Changes** (OCT 1997). This clause applies to this contract if it meets the requirements of FAR 15.408(k).

**52.215-21 Requirement for Certified Cost or Pricing Data or Information Other Than Certified Cost and Pricing Data - Modifications** (OCT 2010). This clause applies only if this contract exceeds the threshold set forth in FAR 15.403-4. The term "Contracting Officer" shall mean Buyer. Insert the following in lieu of paragraph (a)(2): "Buyer's audit rights to determine price reasonableness shall also apply to verify any request for an exception under this clause. For items priced using catalog or market prices, or law or regulation, access does not extend to cost or profit information or other data relevant solely to the Contractor's determination of the prices to be offered in the catalog or marketplace."

**52.215-23 Limitations on Pass-Through Charges.** (OCT 2009). This clause applies to all cost-reimbursement subcontracts that exceeds (i) \$100,000 if included in Buyer's customer RFP or customer contract issued before October 1, 2010 or (ii) \$150,000 if included in Buyer's customer RFP issued on or after October 1, 2010, or if the prime contract was issued prior to October 1, 2010 but was amended after October 1, 2010 to increase the Simplified Acquisition Threshold. If the contract is with DoD, then this clause applies to all cost-reimbursement subcontracts and fixed-price subcontracts, except those identified in 15.408(n)(2)(i)(B)(2), that exceed the threshold for obtaining cost or pricing data in accordance with FAR 15.403-4. In paragraph (c), "Contracting Officer" shall mean Buyer.

**52.219-8 Utilization of Small Business Concerns** (OCT 2014).

**52.219-9 Small Business Subcontracting Plan Alternate III Deviation** (AUG 2016). This clause applies only if this contract exceeds \$700,000 and Seller is not a small business concern. Seller shall adopt a subcontracting plan that complies with the requirements of this clause. In addition, Seller shall submit to Buyer Form X31162, Small Business Subcontracting Plan Certificate of Compliance. In accordance with paragraph (d)(10)(iv), Seller agrees that it will submit the SF 294 in accordance with paragraph (l) of the clause, and will submit the SSR in accordance with paragraph (l) of this clause using eSRS, and, in accordance with paragraph (d)(10)(vi), Seller agrees to provide the prime contract number, its own DUNS number, and the email address of Seller's official responsible for acknowledging or rejecting the ISRs, to its subcontractors with subcontracting plans.

**52.219-9 Small-Business Subcontracting Plan** (OCT 2015). This clause applies only if this contract exceeds \$700,000 and Seller is not a small business concern. Seller shall adopt a subcontracting plan that complies with the requirements of this clause. In addition, Seller shall submit to Buyer Form X31162, Small Business Subcontracting Plan Certificate of Compliance. In accordance with paragraph (d)(10)(iv), Seller agrees that it will submit the ISR and/or SSR using eSRS, and, in accordance with paragraph (d)(10)(vi), Seller agrees to provide the prime contract number, its own DUNS number, and the email address of Seller's official responsible for acknowledging or rejecting the ISRs, to its subcontractors with subcontracting plans.

As required by subparagraph (d)(10)(v), the following information is provided: (1) the prime contract number is 17-C-8369; (2) Buyer's DUNS number is 149879157, and (3) the email address of Buyer's official responsible for acknowledging receipt of or rejecting ISR reports is (contact Buyer's Authorized Procurement Representative).

**52.219-28 Post-Award Small Business Program Representation** (JUL 2013). In paragraph (b), delete "...or, if applicable paragraph (g) of this clause..." Delete paragraph (c) and insert the following paragraph (c) in lieu thereof: "Seller shall represent its size status in accordance with SBA's size code standards in effect at the time of this representation to Buyer. The size status shall correspond to the North American Industry Classification System (NAICS) code applicable to Seller's contract." Delete paragraphs (d) and (g). Delete paragraph (e) and insert the following paragraph (e) in lieu thereof: "Seller shall make the representation required by paragraph (b) of this clause by submitting an updated Buyer Form F70102 or updating Seller's profile information on line in Buyer's BEST system."

**52.222-21 Prohibition of Segregated Facilities** (APR 2015).**52.222-26 Equal Opportunity** (APR 2015).

**52.222-35 Equal Opportunity for Veterans.** (OCT 2015). This clause applies only if this contract is \$150,000 or more.

**52.222-36 Equal Opportunity for Workers with Disabilities** (JUL 2014). This clause applies only if this contract exceeds \$15,000.

**52.222-37 Employment Reports on Veterans** (FEB 2016). This clause applies if this contract is \$150,000 or more, unless exempted by rules, regulations, or orders of the Secretary of Labor.

**52.222-40 Notification of Employee Rights Under the National Labor Relations Act.** (DEC 2010).

**52.222-50 Combating Trafficking in Persons** (MAR 2015). The term "contractor" shall mean "Seller", except in the paragraph (a) definition of Agent, and except when the term "prime contractor" appears, which shall remain unchanged. The term "Contracting Officer" shall mean "Contracting Officer, Buyer's Authorized Procurement representative" in paragraph (d)(1). Paragraph (d)(2) shall read as follows: "If the allegation may be associated with more than one contract, the Seller shall inform the Buyer's Authorized Procurement Representative for each affected contract." The term "the Government" shall mean "the Government and Buyer" in paragraph (e). The term "termination" shall mean "Cancellation" and "Cancellation for Default", respectively, in paragraph (e)(6). The term "Contracting Officer" shall mean "Contracting Officer and Buyer" in paragraph (f), except in paragraph (f)(2), where it shall mean "Contracting Officer or Buyer". Paragraph (h)(2)(ii) shall read as follows: "To the nature and scope of the activities involved in the performance of a Government subcontract, including the number of non-United States citizens expected to be employed and the risk that the contract or subcontract will involve services or supplies susceptible to trafficking in persons." The term "Contracting Officer" shall mean "Contracting Officer or Buyer" in paragraph (h)(4)(ii). The term "Contracting Officer" shall mean "Buyer" in paragraph (h)(5).

**52.222-54 Employment Eligibility Verification** (OCT 2015). This clause applies to all subcontracts that (1) are for (i) commercial or noncommercial services (except for commercial services that are part of the purchase of a COTS item, or an item that would be a COTS item, but for minor modifications performed by the COTS provider and are normally provided for that COTS item), or (ii) construction; (2) has a value of more than \$3,500; and (3) includes work performed in the United States.

**52.223-18 Encouraging Contractor Policies To Ban Text Messaging While Driving** (AUG 2011).

**52.225-13 Restriction on Certain Foreign Purchases** (JUN 2008).

**52.227-1 Authorization and Consent** (DEC 2007).

**52.227-1 Authorization and Consent Alternate I** (APR 1984).

**52.227-2 Notice and Assistance Regarding Patent and Copyright Infringement** (DEC 2007). A copy of each notice sent to the Government shall be sent to Buyer.

**52.227-10 Filing of Patent Applications - Classified Subject Matter** (DEC 2007).

**52.227-11 Patent Rights -- Ownership by the Contractor** (MAY 2014). This clause applies only if this contract is for experimental, developmental, or research work and Seller is a small business firm or nonprofit organization. In this clause, "Contractor" means Contractor, references to the Government are not changed and the subcontractor has all rights and obligations of the Contractor in the clause.

**52.230-6 Administration of Cost Accounting Standards** (JUN 2010). Add "Buyer and the" before "CFAO" in paragraph (m). This clause applies if clause H001, H002, H004 or H007 is included in this contract.

**52.232-39 Unenforceability of Unauthorized Obligations** (JUN 2013).

**52.232-40 Providing Accelerated Payments to Small Business Subcontractors.** (DEC 2013). This clause applies to contracts with small business concerns. The term "Contractor" retains its original meaning.

**52.244-6 Subcontracts for Commercial Items** (JUN 2016). Clauses in paragraph (c) (1) are applicable to Seller for commercial items ordered by Buyer from Seller under this contract.

**52.245-1 Government Property** (APR 2012). This clause applies if Government property is acquired or furnished for contract performance. "Government" shall mean Government throughout except the first time it appears in paragraph (g)(1) when "Government" shall mean the Government or the Buyer.

**52.253-1 Computer Generated Forms** (JAN 1991).

**2. DoD FAR Supplement Clauses** DoD Contracts. The following contract clauses are incorporated by reference from the Department of Defense Federal Acquisition Regulation Supplement and apply to the extent indicated. In all of the following clauses, "Contractor" and "Offeror" mean Seller except as otherwise noted.

**252.203-7001 Prohibition on Persons Convicted of Fraud or Other Defense-Contract-Related Felonies** (DEC 2008). This clause applies only if this contract exceeds (i) \$100,000 if included in Buyer's customer RFP or customer contract issued before October 1, 2010 or (ii) \$150,000 if included in Buyer's customer RFP issued on or after October 1, 2010, or if the prime contract was issued prior to October 1, 2010 but was amended after October 1, 2010 to increase the Simplified Acquisition Threshold and is not for the purchase of commercial items or commercial components. Except in paragraph (a), "this contract" and "the contract" mean the contract between Buyer and Seller. In subparagraph (d)(2), delete the words "or first-tier subcontractor." In paragraph (e), the remedies described in subparagraphs (2) and (3) are available to Buyer, not the Government. In paragraph (f), "through the Buyer" is inserted after "Contracting Officer." Paragraph (g) is deleted.

**252.203-7002 REQUIREMENT TO INFORM EMPLOYEES OF WHISTLEBLOWER RIGHTS** (SEP 2013).

**252.204-7012 Safeguarding Covered Defense Information and Cyber Incident Reporting** (OCT 2016). This clause applies if the Contract is for operationally critical support or where performance will involve a covered contractor information system. The term "contractor" retains its original meaning wherever the word is not capitalized. In the terms "Contractor attributional/proprietary information," "Contractor information system" and "covered contractor information system," the term "contractor" also retains its original meaning. In paragraphs (d) and (g), "Contracting Officer" shall mean "Contracting Officer or Buyer." In paragraph (m)(2), the term "prime Contractor" retains its original meaning. Reporting to Buyer shall be accomplished via [abuse@Boeing.com](mailto:abuse@Boeing.com) with a copy to the Buyer's Authorized Procurement Representative. The Boeing 1st tier subcontractor shall rapidly report lower tier subcontractor information it receives.

**252.215-7000 Pricing Adjustments** (DEC 2012). This clause applies only if this contract exceeds the threshold set forth in FAR 15.403-4.

**252.219-7003 Small Business Subcontracting Plan (DoD Contracts) Deviation** (AUG 2016). Paragraph (e) is deleted.

**252.219-7003 Small Business Subcontracting Plan (DoD Contracts)** (MAR 2016). Paragraph (e) shall be deleted.

**252.225-7012 Preference for Certain Domestic Commodities** (AUG 2016).

**252.225-7048 Export-Controlled Items** (JUN 2013).

**252.227-7013 Rights In Technical Data -- Noncommercial Items** (FEB 2014). This clause applies when technical data for noncommercial items or for commercial items developed in any part at Government expense, is to be obtained from Seller or Seller's subcontractors for delivery to the Government.

**252.227-7016 Rights in Bid or Proposal Information** (JAN 2011).

**252.227-7027 Deferred Ordering of Technical Data or Computer Software** (APR 1988). This clause applies only if technical data or computer software may be generated as part of the performance of this contract.

**252.227-7030 Technical Data -- Withholding of Payment** (MAR 2000). In this clause, "Government" and "Contracting Officer" shall mean Buyer. This clause applies only if the delivery of technical data is required under this contract.

**252.227-7037 Validation of Restrictive Markings on Technical Data** (SEP 2016).

**252.227-7038 Patent Rights—Ownership By The Contractor (Large Business)** (JUN 2012). This clause applies only if this contract is for experimental, developmental, or research work and Seller is not a small business firm or nonprofit organization.

**252.231-7000 Supplemental Cost Principles** (DEC 1991).

**252.245-7001 Tagging, Labeling, and Marking Of Government-Furnished Property** (APR 2012).

**252.245-7004 Reporting, Reutilization, and Disposal** (SEP 2016). This clause applies if this contract contains FAR 52.245-1, Government Property. The term "Contracting Officer" shall mean "Buyer".

**252.246-7003 Notification of Potential Safety Issues** (JUN 2013). This clause applies only if this subcontract is for: (i) parts identified as critical safety items; (ii) systems and subsystems, assemblies and subassemblies integral to a system; or (iii) repair, maintenance, logistics support, or overhaul services for systems and subsystems, assemblies, subassemblies and parts integral to a system. The notification required by paragraph (c) of this clause will be provided to Buyer and to the administrative contracting officer (ACO) and the procuring contracting officer (PCO) if Seller is aware of the ACO and PCO for the prime contract.

**52.247-7023 Transportation of Supplies by Sea-Basic** (APR 2014). This clause applies if this contract is for supplies that are of a type described in paragraph (b)(2) of this clause. In paragraph (d), "45 days" is changed to "60 days." If this contract exceeds the simplified acquisition threshold, paragraphs (a)-(h) apply. In paragraph (g) "Government" means Buyer. If this contract is at or below the simplified acquisition threshold, paragraphs (f) and (g) are excluded.

**52.247-7024 Notification of Transportation of Supplies by Sea** (MAR 2000). Contracting Officer and, in the first sentence of paragraph (a), Contractor mean Buyer. This clause applies only if the supplies being transported are noncommercial items or commercial items that (i) Seller is reselling or distributing to the Government without adding value (generally, Seller does not add value to items that it contracts for f.o.b. destination shipment); (ii) are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or (iii) are commissary or exchange cargoes transported outside the Defense Transportation System in accordance with 10 U.S.C. 2643.

**3. Commercial Items** If goods or services being procured under this contract are commercial items and Clause H203 is set forth in the purchase order, the foregoing Government clauses in Section 1 above are deleted and the following FAR clauses are inserted in lieu thereof:

**52.203-13 Contractor Code of Business Ethics and Conduct** (OCT 2015). This clause applies only if this contract is in excess of \$5,500,000 and has a period of performance of more than 120 days.

**52.203-15 Whistleblower Protections Under the American Recovery and Reinvestment Act of 2009** (JUN 2010). This clause applies if this contract is funded in whole or in part with Recovery Act funds.

**52.204-21 Basic Safeguarding of Covered Information Systems** (JUN 2016).

**52.209-6 Protecting the Government's Interests When Subcontracting With Contractors Debarred, Suspended or Proposed for Debarment** (OCT 2015). Seller agrees it is not debarred, suspended, or proposed for debarment by the Federal Government. Seller shall disclose to Buyer, in writing, whether as of the time of award of this contract, Seller or its principals is or is not debarred, suspended, or proposed for debarment by the Federal Government. This clause does not apply to contracts where Seller is providing commercially available off-the shelf items.

**52.219-8 Utilization of Small Business Concerns** (OCT 2014).

**52.222-21 Prohibition of Segregated Facilities** (APR 2015).

**52.222-26 Equal Opportunity** (APR 2015).

**52.222-35 Equal Opportunity for Veterans.** (OCT 2015). This clause applies only if this contract is \$150,000 or more.

**52.222-36 Equal Opportunity for Workers with Disabilities** (JUL 2014). This clause applies only if this contract exceeds \$15,000.

**52.222-37 Employment Reports on Veterans** (FEB 2016). This clause applies if the Contract is \$150,000 or more.

**52.222-40 Notification of Employee Rights Under the National Labor Relations Act.** (DEC 2010).

**52.222-50 Combating Trafficking in Persons** (MAR 2015). The term "contractor" shall mean "Seller", except in the paragraph (a) definition of Agent, and except when the term "prime contractor" appears, which shall remain unchanged. The term "Contracting Officer" shall mean "Contracting Officer, Buyer's Authorized Procurement representative" in paragraph (d)(1). Paragraph (d)(2) shall read as follows: "If the allegation may be associated with more than one contract, the Seller shall inform the Buyer's Authorized Procurement Representative for each affected contract." The term "the Government" shall mean "the Government and Buyer" in paragraph (e). The term "termination" shall mean "Cancellation" and "Cancellation for Default", respectively, in paragraph (e)(6). The term "Contracting Officer" shall mean "Contracting Officer and Buyer" in paragraph (f), except in paragraph (f)(2), where it shall mean "Contracting Officer or Buyer". Paragraph (h)(2)(ii) shall read as follows: "To the nature and scope of the activities involved in the performance of a Government subcontract, including the number of non-United States citizens expected to be employed and the risk that the contract or subcontract will involve services or supplies susceptible to trafficking in persons." The term "Contracting Officer"

shall mean "Contracting Officer or Buyer" in paragraph (h)(4)(ii). The term "Contracting Officer" shall mean "Buyer" in paragraph (h)(5).

**52.222-54 Employment Eligibility Verification** (OCT 2015). This clause applies to all subcontracts that (1) are for (i) commercial or noncommercial services (except for commercial services that are part of the purchase of a COTS item, or an item that would be a COTS item, but for minor modifications performed by the COTS provider and are normally provided for that COTS item), or (ii) construction; (2) has a value of more than \$3,500; and (3) includes work performed in the United States.

**52.222-55 Minimum Wages Under Executive Order 13658** (DEC 2015). This clause applies if this contract is subject to the Service Contract Labor Standards statute or the Wage Rate Requirements (Construction) statute, and is to be performed in whole or in part in the United States. "Contracting Officer" shall mean "Buyer".

**52.225-26 Contractors Performing Private Security Functions Outside the the United States** (JUL 2013).

**52.232-40 Providing Accelerated Payments to Small Business Subcontractors.** (DEC 2013). This clause applies to contracts with small business concerns. The term "Contractor" retains its original meaning.

**52.244-6 Subcontracts for Commercial Items** (JUN 2016). Clauses in paragraph (c) (1) are applicable to Seller for commercial items ordered by Buyer from Seller under this contract.

**52.245-1 Government Property** (APR 2012). This clause applies if Government property is acquired or furnished for contract performance. "Government" shall mean Government throughout except the first time it appears in paragraph (g)(1) when "Government" shall mean the Government or the Buyer.

**52.247-64 Preference for Privately Owned U.S.-Flag Commercial Vessels** (FEB 2006). This clause does not apply if this contract is for the acquisition of commercial items unless (i) this contract is a contract or agreement for ocean transportation services; or a construction contract; or (ii) the supplies being transported are (a) items the Seller is reselling or distributing to the Government without adding value (generally, the Seller does not add value to the items when it subcontracts items for f.o.b. destination shipment); or (b) shipped in direct support of U.S. military (1) contingency operations; (2) exercises; or (3) forces deployed in connection with United Nations or North Atlantic Treaty Organization humanitarian or peacekeeping operations.