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SCIENTIFIC EQUIPMENT AND SERVICES - Test and Measurement Equipment, Unmanned Scientific Vehicles; Laboratory Instruments, Furnishings and LIMS; Geophysical and Environmental Analysis Equipment; and Mechanical, Chemical, Electrical, and Geophysical Testing Services

Geophysical and Environmental Analysis Equipment

Category	Description
66 1015	Introduction of New Services/Products (INSP) - This SIN includes new or improved commercial services or products, or services or products that perform new tasks or procedures not currently available under any GSA contract.
66 501	Equipment Leasing - This solution offers customers an additional choice to purchasing. Examples of leasing programs available include but not limited to: Lease to Ownership (Capital Lease); Lease with Option to Own (Operating Lease); Lease of a Solution.
66 502	Equipment Maintenance and Repair - This PSO offers customers the choice between hourly repair and annual service agreements. Examples of such PSO's include time and material service and fixed price per incident repair service.
66 503	Services and Product Support Options to Include Pre-Purchase Calibration, Post-Purchase Calibration, Extended Warranty and Service Agreements - The pre-purchase calibration category offers customers the option to upgrade standard calibration. Normally, all instruments are calibrated before shipment. Examples of such options include calibration to a military standard with or without test data and calibrations to a commercial standard with test data. The post-purchase calibration category offers customers the option of calibration services after purchasing and using the instrument. Examples of such options include standard calibration to manufacturer's own specifications and calibration for compliance with certain military or commercial standards with before and after data. The extended warranty category offers the customer an option to extend original equipment warranty for additional time periods.
66 507	Technical Training and Support - This PSO offers the customer an option to receive training in the use of the purchase equipment, and technical support to questions and problems. Examples of such PSO include on site or off site training, basic operator training, hardware and/or software training, installation training, and applications development training.
66 508	Technical Application Development Support - This PSO offers the customer an option to receive technical support or application development support. Examples of such PSO may include but not limited to systems integration and application development.
66 601	Water Current Meters, Seawater sampling and Salinity Measuring

Equipment (SMALL BUSINESS SET ASIDE) - Water current meters are primarily used to measure water flow in open channels, streams, and weirs. Because they are typically used in the field, the equipment is designed to withstand outdoor conditions. Includes directly related options and accessories. Examples include Water current meters and Water velocity meters.

66 602 **Seawater Sampling And Salinity Measuring Equipment (SMALL BUSINESS SET ASIDE)** - Seawater samplers collect seawater for subsequent analysis in laboratories. Manual samplers usually collect water by means of bailers, ladles or scoops. Automatic samplers commonly draw water samples into jars or specimen bottles for later retrieval and analysis. Salinity measuring equipment measures the salt content of seawater samples. Includes directly related options and accessories. Examples include Seawater sampling equipment, Salinity measuring equipment, Physical water parameter measuring equipment.

66 603 **Seismic Measuring and Recording Instruments** - Seismic instruments are typically used to detect earthquakes and earth vibrations. Sub-surface profiling systems are commonly used to map underground strata and water depths. Both types of instrument are primarily used in applications such as geophysical research and seismic monitoring. Includes directly related options and accessories. Examples include Subsurface (water and land) profiling systems and Seismic measuring and recording instruments.

66 604 **Underwater Releases, Transponders, Buoys, & Platforms and Oceanographic Analysis and Display Systems (SET ASIDE FOR SMALL BUSINESS)** - Underwater releases keep instruments rigidly attached to either stationary or moving platforms, but allow the instruments to be released when desired. Underwater transponders are devices that receive, amplify and then re-transmit signals on different frequencies. In underwater applications, the signals are typically acoustic signals that are used to measure depth or position. Buoys are used to keep instruments afloat. Platforms are used to anchor instruments in place. Includes directly related options and accessories. Underwater releases. Underwater transponders. Underwater acoustic communications equipment. Oceanographic buoys. Oceanographic platforms. Oceanographic mooring devices.

66 606 **Soil Temperature And Moisture Measuring Instruments, Plant Moisture Analysis Instruments (SMALL BUSINESS SET ASIDE)** - Soil moisture analyzers allow the water content of soil samples to be determined. Plant moisture analyzers allow the water content of plant specimens to be determined. Both types of instrument are primarily used in applications such as agricultural research and engineering analysis of solid materials. Includes directly related options and accessories. Examples included Soil temperature measuring instruments, Soil moisture measuring instruments, and Moisture analyzers for plants.

66 607 **Air Temperature Measuring Instruments, Solar Radiation Measuring Instruments, Barometric Pressure Measuring Instruments** - Air temperature measurement instruments measure ambient air temperature. Solar radiation measuring instruments measure the amount of incident solar radiation. Barometric pressure measurement instruments

measure atmospheric pressure. All of these instruments are used to measure weather-related phenomena. Includes directly related options and accessories. Examples include Air temperature measuring and recording instruments, Solar radiation measuring and recording instruments, Barometric pressure measuring and recording instruments.

- 66 608 [Humidity, Precipitation and Wind Measuring Instruments](#) - Humidity measuring instruments measure either the relative humidity or humidity content of ambient air. Precipitation measuring instruments measure the amount of precipitation which has fallen during a given time period. Wind measuring instruments measure parameters related to the motion of ambient air, such as wind speed or wind direction. All of these instruments are used to measure weather-related phenomena. Includes directly related options and accessories. Examples include Humidity measuring and recording instruments, Precipitation measuring and recording instruments, Wind measuring and recording instruments.
- 66 609 [Atmospheric & Video Computer Display System, Video Computer Weather Displays \(SMALL BUSINESS SET ASIDE\)](#) - This equipment allows data taken from weather stations to be displayed on a computer screen. Typically, it consists of specially designed data communications hardware and software. Optional software modules may allow data to be analyzed, plotted or imported into software application programs such as spreadsheets or databases. Includes directly related options and accessories. Examples include Atmospheric visibility measuring instruments and Video/computer weather display and analysis systems.
- 66 610 [Atmospheric, Meteorological Platforms, Enclosures & Souds](#) - Meteorological platforms and enclosures are designed to either house or mount meteorological instruments. Meteorological sondes gather meteorological data from locations above the Earth's surface. Balloons are commonly used to raise the sondes into position, and data is typically transmitted back via radio signals. Includes directly related options and accessories. Examples include Meteorological platforms and enclosures and Atmospheric sondes (including radiosondes and tethered sondes).
- 66 611 [Multiparameter Environment & Flood Data Acquisition Systems](#) - Flood data acquisition systems are used to record fluctuations in water levels in streams, rivers, lakes or other bodies of water, which may cause flooding of land areas. They are typically designed to withstand outdoor use and may utilize specially designed hardware, software, cabling/connectors and power sources. Includes directly related options and accessories. Multiparameter environmental, meteorological and flood data acquisition systems.
- 66 612 [Environmental Data Loggers & Communication Equipment](#) - Environmental data logging equipment is used to record the output of various environmental sensors/instruments. It is typically designed to withstand outdoor use and may utilize specially designed hardware, software, cabling/connectors and power sources. Data is sometimes sent to a centralized point via a radio link or dedicated line. Portable units typically store data on a magnetic disk or cartridge. Includes directly related options and accessories. Examples include Communication equipment specialized for use with environmental data acquisition and

Data logging equipment specialized for use with environmental data acquisition.

- 66 613 [Electronic Distance Measuring Equipment, Theodolites, Engineering and Surveying Level Instruments, Planimeters](#) - Surveying equipment is used to accurately measure and record relative altitudes, angles and distances of points on, above or below land surfaces. The data obtained from this equipment can then be used to create maps or plots of a surface. Examples of such equipment are: Electronic distance measuring equipment, total stations, laser-leveling systems, theodolites and surveying levels. Includes directly related options and accessories. Examples include Electronic distance measuring instruments, Planimeters, Theodolites, Total stations (surveying), Engineering and surveying level instruments, and Surveying laser reference instruments.
- 66 614 [Global Positioning Systems \(GPS\)](#) - Global Positioning Systems provide highly accurate position, velocity, and time information from a constellation of 24 satellites orbiting the Earth. Applications of this technology are numerous and include surveying, mapping, forestry, and navigation. Includes directly related options and accessories.
- 66 615 [Noise Analyzers](#) - Noise analyzers detect and/or monitor noise sources in the workplace or laboratory. Examples of such instruments are sound level meters, noise dosimeters and audiometers. Includes directly related options and accessories.
- 66 616 [Liquid/ Gas Flow Measuring Instruments, Liquid Level Measuring Instruments](#) - Liquid/gas flow instruments measure the flow of liquids or gases in pipes, ducts, or tubes. Level instruments measure the fluid level within a containing vessel. Liquid/gas flow instruments are commonly used in applications such as laboratory research, ventilation airflow measurement, industrial fluid flow, and process flow. Level instruments are commonly used in applications such as laboratory research, process control, and industrial tank level monitoring. Includes directly related options and accessories.
- 66 617 [Water Monitors \(SMALL BUSINESS SET ASIDE\)](#) - Water monitors measure and/or record parameters related to water quality (such as pH, turbidity or conductivity) over a given time period. They are typically designed to withstand outdoor use and may utilize specially designed hardware, software, cabling/connectors and power sources. Portable units with data storage capabilities typically store data on a magnetic disk or cartridge. Includes directly related options and accessories.
- 66 618 [Multi-Parameter Water Quality Instruments, Meters and Analyzers](#) - Water samplers collect water for subsequent analysis in laboratories. Manual samplers usually collect water by means of bailers, ladles or scoops. Automatic samplers commonly draw water samples into jars or specimen bottles for later retrieval and analysis. Water quality meters are portable instruments that are primarily used in the field to measure aqueous contaminants in streams, lakes or other bodies of water. Water analyzers are laboratory instruments used to measure parameters such as pH, temperature, dissolved oxygen, total dissolved solids and conductivity in water samples. All of the instrument types listed above are typically used

in applications such as quality control, analysis of water-born pollutants and laboratory research. Includes directly related options and accessories. Examples include Water quality meters, Water analyzers, Multiparameter water quality instruments, and Water samplers.

- 66 619 [Stack Emission Measuring Equipment, Gas Analyzers, Monitors, Particle Analyzers/Detectors](#) - Gas analyzers measure or monitor parameters such as concentration or composition of gases. Particle analyzers detect and analyze airborne particulate matter. Examples of gas analyzers are electrochemical, catalytic, metal oxide semiconductor, non-dispersive infrared, and colorimetric analyzers. Examples of particle analyzers are gravimetric, chemical, electrostatic and optical particle analyzers. Includes directly related options and accessories. Examples include Stack emission measuring equipment, Gas analyzers, monitors, and Particle analyzers, detectors.
- 66 620 [Air Sampling Equipment, Automatic Gas Alarms \(SMALL BUSINESS SET ASIDE\)](#) - Air sampling equipment is designed to sample air in enclosed spaces in order to determine if hazardous gases are present. Gas alarms are designed to detect and signal that a predetermined hazard level has been met or exceeded. Both types of equipment are typically used in building air monitoring and industrial hygiene applications. Includes directly related options and accessories.
- 66 621 [Radioactivity Detectors](#) - Radioactivity detectors detect, monitor and analyze radioactive sources of airborne radioactive particles. Examples of such instruments are survey meters, ionization chambers, neutron detectors, radon monitors, radiation dosimeters and alpha, beta and gamma detectors. These instruments are typically used for hazard detection in the field and laboratory, and in industrial hygiene applications. Includes directly related options and accessories.

Laboratory Instruments, Furnishings and LIMS

Category	Description
540 11	Reusable Laboratory Plastic Ware - Laboratory ware includes general and special purpose graduated and non-graduated laboratory ware used to contain, measure and transfer laboratory samples and solutions. This category includes reusable laboratory plastic ware. Examples are flasks, beakers, funnels, pipettes, burettes, cylinders, bottles, dishes, slides, test tubes, trays, pestles and mortars. Includes chemical, heat and impact resistant high-density polypropylene, polycarbonate and polymethylpentene plasticware.
540 12	Disposable Laboratory Plastic Ware - Laboratory ware includes general and special purpose graduated and non-graduated laboratory ware used to contain, measure and transfer laboratory samples and solutions. This category includes disposable laboratory plastic ware commonly used to contain and process hazardous and contaminated samples such as bodily wastes, bacterial, viral and cell cultures. Examples are flasks, beakers, funnels, pipettes, burettes, cylinders, bottles, dishes, slides, test tubes, trays, pestles and mortars. Disposable plastic-ware is composed of polystyrene, polypropylene and polyethylene.
540 16	Non-Plastic and Non- Glass Laboratory Ware - Laboratory ware includes

general and special purpose graduated and non-graduated laboratory ware used to contain, measure and transfer laboratory samples and solutions. This category includes reusable and disposable laboratory ware. Examples are flasks, beakers, funnels, pipettes, burettes, cylinders, bottles, dishes, slides, test tubes, pestles, trays and mortars. Non-Plastic and Non- Glass Laboratory ware is fabricated from materials including ceramic, metal, fiberglass and rubber.

- 540 19 **Laboratory Water Purification Devices, Systems** - Laboratory water purification devices and systems remove organic and inorganic contaminants from limited quantities of laboratory waste water. Water is purified to NCCLS Type I, Type II and pyrogen (fever producing) standards. Systems combine technologies such as pretreatment activated charcoal cartridges to remove chlorine and dissolved organics, pretreatment filtration to remove suspended solids, pretreatment ion exchange to remove minerals and soften water, reverse osmosis to remove microorganisms, electrodeionization to remove dissolved inorganics and ultraviolet radiation to remove bacteria. Applications include provision of glassware rinse water, reagent grade water, chemical and cell culture media. Excludes all systems designed for the continuous production of potable water.
- 540 2 **Labware Support Apparatus, Thermometers, Contact Heating Sensing Devices** - Lab ware support apparatus is general and special purpose equipment that supports and manipulates laboratory equipment. Included in this category are pipette support racks, epoxy coated lead ring holders, ring stands, drying racks, motorized, remote, manual screw type jacks and multi-jacks, labware holders, clamping devices, multiple sample trays, tongs and clamps. Includes laboratory bulb and dial temperature reading thermometers.
- 540 21 **Filter elements** - Filter elements include all filter paper, polymer filter elements, filtering units, cartridges and disposable membranes, including those formerly on Federal Supply Schedule 66 II O, SIN 66-145. Includes ceramic filters, composite membranes, micro-filtration membranes, ultra-filtration equipment, gas separation, polycarbonate membranes, polyester membranes, reverse osmosis filters and nano-filtration filters. Applications are for pharmaceutical, bio-technical, wastewater, food and beverage chemical and industrial processes.
- 540 3 **Reusable Laboratory Glassware** - Laboratory ware includes general and special purpose graduated and non-graduated laboratory ware used to contain, measure and transfer laboratory samples and solutions. This category includes reusable laboratory glassware. Examples are flasks, beakers, funnels, pipettes, burettes, cylinders, bottles, dishes, slides, test tubes, pestles and mortars. Includes autoclavable, high impact, temperature and chemical resistant borosilicate, soda lime and quartz glassware.
- 540 7 **Disposable Laboratory Glassware** - Laboratory ware includes general and special purpose graduated and non-graduated laboratory ware used to contain, measure and transfer laboratory samples and solutions. This category includes disposable laboratory glassware commonly used to

contain and process hazardous and contaminated samples such as bodily wastes, bacterial, viral and cell cultures. Examples are flasks, beakers, funnels, pipettes, burettes, cylinders, bottles, dishes, slides, test tubes, pestles and mortars. Includes soda lime glass and flint quality glass with minimum amounts of silicate additives.

566 1 **Modular Laboratory Furniture Systems** - This SIN includes general-purpose laboratory furniture such as cabinets, tables, sinks and work surfaces. Modular furniture requires external support when installed. Includes cabinets, cases, lockers, chemically resistant work surfaces, tables, sinks and other laboratory furniture designed to be installed into group configurations where installation, removal and relocation is required without disturbing adjacent components. Wall mounted or free standing cores, rails and panels provide support structures for workstations where flexibility in the installation and arrangement is required.

566 2 **Individual Non-modular Laboratory Tables, Cabinets, Benches, Laboratory Carts** - This SIN includes general-purpose free standing laboratory furniture such as cabinets, tables, sinks and desks. This SIN also includes portable workstations and carts for the transportation and storage of laboratory equipment.

The following types of non-modular laboratory furniture are included in this SIN:

free standing laboratory furniture, mobile ovens, cabinets, benches and instrument carts, with chemically resistant work surfaces.

Laboratory sinks, cup sinks and related plumbing fixtures.

Free standing laboratory base wood cabinets and base metal cabinets with drawers, hinged doors and adjustable shelves.

Mobile work benches, chemical workstations with pipeting drawers, storage and seating areas.

Mobile oven cabinet benches and cases.

Self contained casework and task workstations.

566 3 **Special-Purpose Laboratory Furniture (SMALL BUSINESS SET ASIDE)** - This SIN includes workstations and furniture designed for specific laboratory and medical applications such as dental work, operating room storage, and vibration isolation, inspection and blood collection stations. Self - contained dental workstations can be ordered with dust collectors, overhead task lights, duplex, grounded electrical receptacles, dust collectors, gas valves and air blowguns. Microscope desks are available with motorized, elevating desktops and electrical outlets. Operating room consoles are available with self -contained cabinets and cases for organized storage of equipment and supplies. Double -walled, fiberglass - insulated, solution warming cabinets with internal heating elements are available. Stone balance tables can be ordered to isolate sensitive instruments from vibrations. Other self-contained workstations include shipping and receiving, infection control, specimen preparation and emergency eyewash stations, casting and soldering, dust collection, finishing and polishing stations. Adjustable height blood collection, instrument and microscope tables, which conform to ADA (Americans with Disabilities Act) requirements are available. The motorized tops can be elevated with a foot switch.

566 5 **Workstation Design/Installation** - This SIN includes services for the design

layout and installation of furniture in laboratories. The SIN also includes furniture disassembly, reinstallation and workstation repair. Workstation Design/ Layout Option includes the design/ redesign of furniture installations to accommodate the implementation of agency programs. Professional designers develop furniture and equipment layouts, which meet the government's functional and special requirements. Services include the inspection of proposed laboratory spaces, observation and interview of personnel, development of a wire and utility management plan (a set of drawings which identify all wiring and utility services associated with the laboratory furniture, equipment, fittings and fixtures); development, coordination and delivery of acceptable layouts, including floor plans and elevations based on the laboratory site conditions and the requirements of the using agency; development of parts/ inventory lists specified by manufacturers name and part number. Workstation furniture and equipment installation includes delivery coordination of furniture and related equipment, unpacking, inspection, inventory and assembly of furniture components into workstation configurations which meet agency requirements for form and function. Installation is in accordance with final design drawings and specifications. Workstation disassembly and reinstallation option includes the taking down of installed furniture and related hardware for the purpose of packing and moving or storage; inspection and inventory of existing furniture and related equipment; the re-assembly and installation of existing or new furniture components into the same or revised workstation configurations. Workstation repair option includes repair and/ or replacement of damaged furniture and related hardware. Replacement includes testing to assure conformance with the original design function.

581 1 [Convertible Vertical Laminar Airflow, Biological Hazard Safety Cabinets - \(SMALL BUSINESS SET ASIDE\)](#) - This SIN includes Type A, Type A/B3, and Type B1 biological hazard safety cabinets. The cabinets remove and contain biologically hazardous vapors and particles from the cabinet work surface. Biological hazard safety cabinets use uniform blower powered airflow through HIGH EFFICIENCY AIR (HEPA) filters to trap disease causing spills, airborne microorganisms and particulate which are harmful to personnel. The cabinets prevent exposure to the spills and airborne disbursements that are released when laboratory personnel work on hazardous agents contained within the laboratory workspace. Type A cabinets exhaust HEPA filtered air back into the laboratory when the cabinet is not connected to the building air exhaust system. Type A/ B3 cabinets can be converted to connect the HEPA filtered air to the building air exhaust system. Type B2 cabinets connect the HEPA filtered air to the building exhaust system. Type B1 cabinets re-circulate HEPA filtered air into the cabinet work space. Includes the following models: Type A, A/ B3, floor models, 4' and 6' widths. Type A, A/ B3, bench top models, 3', 4' and 6' widths. Type B1, floor models, 4' and 6' widths.

581 2 [Externally Exhausted, Vertical Laminar Airflow, Biological Hazard Safety Cabinets](#) - This SIN includes Type B1 and Type B2 biological hazard safety cabinets. The cabinets remove and contain biologically hazardous vapors and particles from the cabinet work surface. Biological hazard safety cabinets use uniform blower powered airflow through HIGH EFFICIENCY AIR (HEPA) filters to trap disease causing spills, airborne microorganisms

and particulate which are harmful to personnel. The cabinets prevent exposure to the spills and airborne disbursements which are released when laboratory personnel work on hazardous agents contained within the cabinet workspace. Type B2 cabinets connect the HEPA filtered air to the building exhaust system. Type B1 cabinets re-circulate HEPA filtered air into the cabinet work space. Includes the following models: Type B1, floor models, 4' and 6' widths. Type B2, floor models, 4' and 6' widths.

- 603 1 **Ph and Ion-Selective Meters** - Ion-selective and pH meters are designed to determine the concentration of hydrogen ions (as pH) in a chemical solution. PH meters are used to measure the acidity or alkalinity of chemical solutions. Ion selective meters can detect the concentration of selected ions in water, food, electroplating and photographic solutions.
- 603 10 **Microscopes: Metallographic, Multipurpose & Electron** - Metallographic microscopes that use reflected illumination from the specimen surface to observe the chemical composition and crystalline structure of metals are included in this category. The category of multipurpose microscopes includes components and subassemblies that can be configured in modular formats into microscopes and microscope systems suitable for specific scientific and industrial applications. Components include video image equipment, photographic attachments, subassembly eyepieces, lens stages, arms, optical carriers/bases and nosepieces. Also available are application specific microscope based workstations and video systems. The component hardware assembles into or modifies conventional upright microscopes, inverted type microscopes and other microscope configurations such as laser scanning confocal microscopy systems not listed in other SINs. The industrial and scientific applications include routine tasks, research and advanced research. Configured and modified microscopes are suitable for tasks that include measurement, analysis, processing, observation, photography, video imaging recording, displaying and computer processing. Electron microscopes in this SIN category focus electron beams into specimens producing hyper magnified images on video screens. Includes both scanning and transmission types. Features include variable pressure specimen chambers to neutralize specimen charging, motorized specimen stages and optional large sample chambers. Environmental scanning electron microscopes are available for analysis of hydrated samples, biological cells, plants, non-conducting specimens and porous materials with little or no sample preparation.
- 603 13 **Borescopes and Fiberscopes** - Rigid borescopes and flexible fiberscopes for non-medical applications are included in this SIN. Borescopes are rigid, direct view instruments that are inserted through holes for a straight line inspection of inaccessible internal areas without destroying the item under inspection. Fiberscopes are visual inspection instruments with flexible fiber optic bundles to maneuver around obstacles and sharp corners into inaccessible remote interior areas. The flexible light guide is articulated by a lever attached to the eye piece. The instruments in this SIN are for non-medical applications only.
- 603 2 **Titration and Titration Systems** - Titrators are either acid-base or oxidation-reduction titration devices which will automatically determine the endpoint of a chemical reaction. Titration systems automatically dispense reagents into solutions producing changes in color and electrical

potential related to the concentration of substances in the solution.

- 603 3 [Laboratory Centrifuges](#) - Laboratory centrifuges are designed to place suspended gravity environments by spinning, which separates substances of different densities in mixtures. Included in this category are micro, general purpose, clinical types and ultracentrifuges.
- 603 4 [Microtomes and Microtom Cryostats](#) - Microtomes and microtome cryostats are devices used to produce thin sections of paraffin embedded tissue samples in preparation for microscopic analysis. Manual, semi-automatic and automatic units are available with automatic feeds, slide and rotary slicing mechanisms. Cryomicrotomes incorporate refrigeration units to quick-freeze tissue specimens.
- 603 5 [Laboratory Shakers and Mixers, Accessories and Options](#) - Laboratory Shakers and Mixers include rocker, unregulated, temperature regulated and environmental shaking devices; also included in this category are propeller, magnetic, and hot plate type mixers and stirrers. Shakers are used to homogenize and suspend separated substances from the surrounding material.
- 603 7 [Tissue Embedding Equipment](#) - Tissue embedding equipment is used to prepare and inject paraffin and other embedding media into tissue samples. The media facilitates the handling of the sample for thin sectioning and ultimate microscopy. Tissue embedding and tissue processing stations are available with microprocessor controlled automatic sample processing. The systems can be programmed to automatically perform some or all of the following processes: tissue stabilizing, tissue dehydration, dehydration extraction, media infiltration, media embedding, sectioning and storage. Some stations have sample cassette enclosures to contain solvent vapors, solvent and media stirring mechanisms, cooling and heated work surfaces and vacuum systems to facilitate sample infiltration and sample embedding.
- 603 8 [Microscopes, Conventional Upright Type](#) - This SIN includes conventional upright type microscopes with the specimen platform and illumination located below the objective (image gathering) lens. Upright microscopes are used to observe transparent specimens.
- 603 9 [Microscopes, Inverted Type](#) - Inverted type microscopes with the illumination and specimen platform located above the objective (image gathering) lens are included in this SIN. Inverted microscopes are used to observe large opaque specimens.
- 615 1 [Biomolecule Analyzers Synthesizers](#) - The devices located in this category are intended to either analyze or synthesize biomolecules such as peptides or nucleic acid chains. Specifically excluded from this category are sequencing apparatus found under the Electrophoresis category.
- 615 1010 [Introduction of New Services/Products \(INSP\)](#) - This SIN includes new or improved commercial services or products, or services or products that perform new tasks or procedures not currently available under any GSA contract.
- 615 18 [Biomedical and Industrial Particle Counting and Sorting Apparatus and Systems](#) - This category includes biomedical and environmental particle

counting and sorting apparatus and systems. Also, includes bacteriological colony counting and identifying apparatus.

- 615 19 [Blood Cell Analyzers for Clinical Hematology](#) - This category includes automated devices and systems for the identification and quantification of human blood cell types and classes.
- 615 2 [Elemental Analyzers](#) - These devices are used to determine one or more elements contained within a compound or unknown substance. The most common type is the carbon analyzer, but other types are known and acceptable under this category. Excluded from this category are devices which are more appropriately classified elsewhere, such as those under the categories of X-Ray, Atomic Absorption and Emission, and Emission Spectrometers.
- 615 3 [Thermal Analysis](#) - Several categories of these devices exist, and are commonly known as Differential Thermal Analyzers (DTA), Thermogravimetric Analyzers (TGA), Thermomechanical Analyzers (TMA), and various combinations of these instruments. They are used to determine chemical and/or mechanical changes in molecular structure due to the controlled application of heat to a substance.
- 615 4 [Gas Chromatograph \(GC\) and Chromatograph/Mass Spectrometer \(GC-MS\) Systems](#) - These are instruments and systems intended to be used in the performance of separations by gas liquid interface chromatography for research chemistry and biochemistry research applications, and in addition the identification of substances by mass spectrometry in the GC/MS systems. Further included in this category are the automatic samplers, detectors, columns, and miscellaneous accessories, options and integrators formerly identified by separate special item numbers. Gas analyzers tuned for the detection and identification of specific substances are excluded.
- 615 5000 [Product Support Options to Include Equipment Maintenance; Repair and Service; Calibration and Calibration Traceability Certificate; Extended Warranties; Technical Training, Technical Support and Application Development Support; and Equipment Leasing](#) - Service agreement options include hourly repair or annual service, required labor, parts and materials or fixed price per incident. Service covers purchased hardware and related software. Emergency service and engineering hardware and software modifications are offered. Prior to purchase, and if no other options are requested, the manufacturer's standard calibration is provided with a certificate of calibration and a calibration sticker. Available options include post-purchase calibration, and calibration in accordance with military, customer or commercial standards and calibration with test data. Calibration can be upgraded to traceable National Reference Standards with certification. The Product Support Option of extended warranty offers customers an option to extend original equipment warranty for additional time periods. Examples include extending product repair support for additional years, and/or extending calibration support for additional years.
- 615 9 [Liquid Chromatographer \(LC\) and Liquid Chromatographer/ Mass Spectrometer \(LC-MS\) Systems](#) - These are instruments and systems intended to be used in the performance of chemical separations by liquid

chromatography, supercritical fluid extraction (SFE), supercritical fluid chromatography (SFC) and ion chromatography, along with their mass spectrometry analogs intended for additional identification in research chemistry and biochemistry applications. Further included in this category are the automatic samplers, column monitors and detectors, columns and guard columns, specific LC and SFE/SFC pumps, miscellaneous accessories, options and integrators formerly identified by separate special item numbers.

- 632 10 **Atomic Absorption, Atomic Emission, and Atomic Fluorescence Spectrometers, including Inductively Coupled Plasma (IPC) and Inductively Coupled Plasma Mass Spectrometers (IPC/MS) Systems** - These are research instruments, which either utilize systems by which ions produced by various methods are promoted to the atomic state and from which spectroscopic studies may be promulgated. Includes emission spectroscopy instruments based upon plasma, arc, and spark atomization. Also includes inductively coupled plasma (ICP) and inductively coupled plasma/mass spectrometer (ICP/MS) systems.
- 632 2 **Liquid Scintillation Systems and Gamma Counters, Accessories and Options** - These devices are intended as chemical or biochemical detection and/or testing devices utilizing mildly radioactive reagents as marker compounds.
- 632 5 **Infrared Spectrometers** - These devices are research instruments which are designed for the Infrared (IR) and/or Raman spectroscopic analysis of substances utilizing the infrared range of the electromagnetic spectrum. Excluded are devices which use the infrared spectroscopic technology but are "tuned" to be receptive to and identify specific substances in limited environments, such as the gas analyzers.
- 632 6 **Ultraviolet, Visible, Infrared, and Near Infrared Spectrophotometers** - These devices are research instruments which are designed for Ultraviolet (UV), Visible (VIS), and Near Infrared (NEAR IR) spectroscopic analysis of substances utilizing one or a combination of regions from the electromagnetic spectrum, alone or in combination instruments. Excluded are devices that use the listed spectroscopic technologies but are "tuned" to be receptive to and identify specific substances in limited environments, such as the gas analyzers.
- 632 7 **Fluorescence Spectrometers** - The intent of this category is to include research grade, full spectrum instruments, and excludes instruments that are "tuned" to be receptive to and identify specific substances in limited environments, such as the gas analyzers.
- 632 9 **X-Ray Spectrometers, Diffractometers, Emission Spectrometers, Including Flame, Spark, Arc and Laser Types, Mass Spectrometers** - The devices identified as X-Ray Spectrometers and Diffractometers, Accessories and Options utilize the X-Ray portion of the electromagnetic spectrum for research chemical and surface analysis studies. The emission spectrometers, including flame, spark, arc and laser types, accessories and options are research instruments utilizing emission technology by energy input and the emission of discrete quanta. Excludes flame emission devices intended for the determination of Sodium, Potassium

and/or Lithium ions in urine samples, which are considered "tuned" and are preferentially classified in SIN 66-102. Mass spectrometers, accessories and options are specialized mass spectrometers, such as time-of-flight (TOF) spectrometers, which would not normally be coupled with either gas chromatographs (GC/MS), Liquid chromatographs (LC/MS), or inductively couple plasma (ICP/MS) spectrometers.

- 66 100 [Blood Serum, Urine and Fecal Chemical Analysis, Instruments](#) - These devices are used to determine specific multiple chemical and biochemical parameters of human active fluid and waste products. They may be used for therapeutic drug monitoring and routine screening. They may be of the multi-test, batch, random access, or other operating mode, and may be expandable to further tests as they become available. Excluded from this category are electrolyte analyzers, blood coagulation analyzers and timers, and single test analyzers. Also excluded are blood cell analyzers used in clinical hematology to identify and quantify human blood cell types and classes. This category excludes devices to test for either consumed alcohol or drugs of abuse on location, which may be found on Federal Supply Schedule 65 VI.
- 66 102 [Blood Gas Analyzers, Electrolyte Analyzers, Blood Coagulation Analyzers and Timers, and Single Test Analyzers](#) - These devices are specialized blood analyzers for the testing of specific parameters of blood or serum for therapeutic monitoring and routine screening.
- 66 107 [Electrophoresis, including Capillary Electrophoresis and Electrophoration Devices and Systems, Nucleic Acid and Amino Acid Sequencing Systems](#) - These devices are intended for separations of biomolecules or molecular fragments through differentiation by electronegativity, responding to a strong electric field. Included in this category are capillary electrophoresis, electrophoresis power supplies, developing, viewing and reading apparatus, and the gel casting, drying and transfer apparatus.
- 66 113 [Hand Operated pipettors, and Pipetting, Diluting and Dispensing Devices](#) - These devices are intended for the precise delivery of fluids in the scientific laboratory environment. Included are the single and multiple tip hand-held type, motorized hand-actuated types, and diluting and dispensing devices and systems, as well as accessories and options including tips and filling wells formerly procured under separate special item numbers.
- 66 117 [Automated Pipetting and Dispensing Systems, and Laboratory Robotic Labware Handling Devices, Systems](#) - These devices are intended the fully automated loading of such items as microplates, microtube strips, and other containers for long term, high throughput operations. Also includes diluting and dispensing devices and systems with accessories such as tips and filling wells.
- 66 118 [Microplate Readers and Washers, and Cell Harvesting Apparatus](#) - These items are used in biomedical research for the isolation and identification of cellular components or biochemical reactions including immunoassays. Includes multi-well microplates and other ancillary items.
- 66 122 [Video Image Analyzers And Analysis Systems](#) - These consist of the hardware, software and optics necessary for the isolation and

manipulation of macroscopic and microscopic images by acquiring data in digital form.

- 66 136 **Animal Caging Equipment** - Animal cages and caging systems are intended for the care, study and storage of animals that are used in the research biomedical laboratory environment. Included in this SIN may be food and water delivery systems, but not the food or water to be provided, since such items fall under other Federal Supply Classes. Those items referred to as "metabolic cages" are also included, but devices for animal restraint, surgery or dissection are excluded.
- 66 137 **Laboratory Refrigerators and Freezers** - Laboratory refrigerators and freezers include reach-in and walk-in configurations suitable for blood banking, chromatography, mortuary and other special-use cooling or freezing requirements. Excludes all household, commercial or display case refrigerators and freezers classifiable in other Federal Supply Classes.
- 66 139 **Environmental Chambers and Plant Growth Chambers (SMALL BUSINESS SET ASIDE)** - Environmental chambers and plant growth chambers provide precise control of temperature, humidity and light for agricultural and life science research. Various airflow patterns include up flow and down flow adjustable patterns. Both reach in and walk-in chambers are available. Plant production chambers, dew rooms, tissue and bacteria culture chambers are available for plant pathology studies. Controlled environment rooms and biological workstations are available with features that combine the functions of incubators, refrigerators and freezers; applications include tissue or cell incubation, culture preparation and the storage of cultures in the dormant state. Also available are cold rooms, dry rooms and warm rooms.
- 66 141 **Miscellaneous Laboratory Equipment to Include Laboratory Baths; Freeze Drying Apparatus; Tissue Grinding, Processing, Cell Disruption Apparatus; Waste Recovery Systems; Laboratory Pumps; Ware Washers; Dryers; Laboratory Ovens and Furnaces (SET ASIDE FOR SMALL BUSINESS)**
- 66 147 **Laboratory Fume Hoods** - Fume hoods are available for nonmedical applications such as processing corrosive chemicals, explosive and radioactive substances. Laboratory fume hoods include bench-top, floor consoles or walk-in models with variable air volume, constant air flow designs; stainless steel perchloric acid hoods with built-in wash down systems, stationary and portable hoods, radio isotope hoods and glove boxes are available. Accessories are also available including fume scrubbers, air ejectors and high-pressure blowers. Excludes Vertical Laminar Flow Biological Safety Cabinets.
- 66 148 **Laboratory Incubators** - Laboratory incubators are designed to accurately maintain moderate temperatures for chemical reactions or the optimization of biological cell growth. Hybridization incubators in this category process nucleic acid and protein blots; DNA sequences are detected with labeled nucleic acid and probes. Hybridization incubators have microprocessor controls and forced air circulation. . Freezer/Incubators are available for research on poikilothermic (Body temperature regulated by surrounding atmosphere) organisms, drug stability tests , serum studies and enzyme assays; designs include over

/under temperature safety limits , forced air circulation, automatic defrost cycles and compressor overload safety cut-offs. Anaerobic incubators provide oxygen free environments for tests on samples that are damaged or degraded by the presence of oxygen. Environmental incubators are available for BOD (biological oxygen demand) and COD (chemical oxygen demand) organic matter measurement tests.

- 66 200 **Laboratory Information Management System (LIMS)** - These software packages and services allow customers to utilize computerized automation of laboratory sample processing. Packages include general LIMS for routine laboratory data management and specialized LIMS when customer requirements dictate customized software design. Sample tracking, sample analysis, test organization and test reports are generated using the laboratory's database on customer or supplier servers using operating systems such as Microsoft's Access, Oracle, Sybase, Informix or SQL Server. Basic system managed workflow functions include data capture, data entry, data organization, data analysis, report generation, workload assignment, quality analysis, audit trails and test archiving. The supplier analyzes the customer's needs regarding the laboratory operation, technology, personnel assignments, test and data management, LIMS installation, security and administration. Packages and services are then formulated, designed and fabricated to meet the customer's needs.
- 66 231 **Laboratory Scales, Balances** - Includes analytical balances with under hook options to determine density, specific gravity, weigh magnetic materials and large objects. Moisture balances with heating and automatic stop modes are available to determine moisture and residue content in foods and other materials; multiple functions and interfaces for computers, printers and remote displays which allows data storage, data processing and printing; balances can also internally store data, weigh in multiple modes and provide printouts; External and /or internal self calibration is available. Top loading precision balances are available for counting, inspection and checkweighing. Mechanical multiple beam balances are available for classroom instruction and laboratory work; portable mechanical balances with cases are available for field work.
- 66 318 **Vehicular Scales, Balances** - Vehicular scales in this category include portable digital battery powered wheel pads, concrete and steel bridge deck type truck scales, wheel and load cell aircraft scales. Truck scales and weighing systems are suitable for mining, landfills, law enforcement, truck terminals and fleet operators. Truck wheel scales are designed for use on rough surfaces. Software is available with aircraft scales to compute individual wheel weights, moment arm total, total gross weight, and CG in inches. Scales with low profile, ramp style platforms are supplied to eliminate jacking the vehicle or airplane.
- 66 320 **Industrial Scales, Balances** - Industrial scales and balances include general-purpose industrial counting scales, programmable production check weighers, crane scales, dial and digital hanging scales, postal scales, bench scales, mechanical beam and mechanical dial scales, floor, drum scales, balances and scales approved for use in explosive and hazardous environments.

Category	Description
873 1	<p>Mechanical Testing and Analysis - Services for mechanical testing and analysis include, but are not limited to, material strength testing (compression, ductility, fracture, fatigue, shear, torsion, and metallography); calibration and testing of mechanical equipment; acoustic/vibration testing(noise, shock resistance); hydraulic/pneumatic testing; Metrology(time, length, mass, volume, pressure, etc.); non-destructive evaluation(x-ray, radiographic, ultrasonic, leak); environmental simulation/climatic testing; forensic, failure analysis, and expert testimony; building and welding inspection (site monitoring, field surveys, quality assurance, certification; and related training.</p>
873 2	<p>Chemical Testing and Analysis Services - Services for chemical testing and analysis include, but are not limited to, wet chemistry and associated physical tests; viscosity/density testing; electrochemistry testing; chromatography (GC,LC,SFC,SFE,HPLC,GS/MS,LC/MS,GPC,GFC,IC, column, thin layer, paper); spectroscopy (AA, FT-IR,UV/VIS,XRD,NMR,ICP,MS, fluorescence, Raman); thermal analysis (DSC,DTA,TGA, TMA); surface analysis/microscopy(SAM, SEM, TEM,SIMS, ion); Optic/photometry testing(appearance, color, reflectance, gloss, transmittance, luminance); occupational/drug testing (monitor or measure employees exposure to hazardous substance abuse screening); biological Testing (biochemical, toxicological, pharmacological, bacteriological); environmental and hazardous waste analysis(priority pollutants, pesticides, herbicides, metals, PCB's, petroleum); water analysis; food testing(taste, odor, texture); and related training.</p>
873 3	<p>Electric Testing and Analysis Services - Services for electrical testing and analysis include, but are not limited to, qualification, inspection, safety, performance, certification, and compliance testing of manufactured goods to nationally and internationally recognized reliability standards and regulatory requirements and directives (UL,CSA,FCC,ANSI,MIL-STD, etc.); marking services; circuit testing of semiconductors and microprocessors; EMI/EMC testing; dielectric strength and dielectric constant; dissipation factor; electrical insulating materials testing; electrostatic discharge testing; arc resistance testing; hi-pot testing, electrical power system components testing (transformers, dielectric oil, relays, circuit breakers, switchboards, power plants, substations, etc.) screening and destructive analysis of electronic components; and related training.</p>
873 4	<p>Geotechnical and Thermal/Fire Testing and Analysis - Services for geophysical and thermal/fire testing and analysis include, but are not limited to, construction material testing (concrete, roof, asphalt, etc.); geological material testing (soil, rock, etc.); geophysical testing; geosynthetic testing, seismographic testing, oceanographic testing; metrological testing; thermal/heat testing(temperature, fire, flammability, smoke/toxicity, conductivity); and related training.</p>
873 99	<p>Introduction of New Testing and Analysis Services - Laboratory testing and analysis services not covered above include, but are not limited to, specialized or customized tests, telecom/datacom line and equipment testing and analysis; and mobile laboratory services.</p>

Test and Measurement Equipment, Unmanned Scientific Vehicles

Category	Description
602 4000	<p>Aircraft Components, Maintenance, Repair Services, Extended Warranties, and Maintenance Agreements - This PSO offers customers the choice between hourly repair and annual service agreements. Examples of such PSOs include time and material service, and fixed price per incident repair service. This SIN for maintenance and repair services relates specifically to equipment acquired under this schedule and does not include research and development projects or Professional Engineering Services unrelated to the existing product offerings.</p>
602 41	<p>Navigational and Flight Instruments - Navigational instruments to include but not limited to Azimuths, Sextants, Octants, Compasses, Plotting Boards, Underwater Log Equipment, Air Position Indicators, Drift Meters. Flight instruments to include but not limited to air speed indicators, rate of climb indicators, bank and turn indicators, pilot tubes, gyro horizon indicators, and altitude gyro indicators.</p>
602 42	<p>Automatic Pilot Mechanisms and Airborne Gyro Components - Automatic pilot mechanisms and Airborne gyro components to include but not limited to automatic pilot regulators, directional, vertical, bank and turn, and hydraulic surface gyro controls, airborne and ship borne automatic pilot mechanisms, helicopter automatic stabilization equipment.</p>
602 43	<p>Aviation Engine Instruments - Aviation Engine Instruments includes but is not limited to fuel pressure gages, manifold pressure gages, oil pressure gages, fuel mixture indicators, engine oil and fuel warning devices.</p>
627 55	<p>Unmanned Submersible Vehicle Systems and Control Segments - A fully integrated and operable system that includes all components necessary for the Unmanned Submersible Vehicle to perform its intended function. A system normally includes, but is not limited to, the submersible vehicles, the control station(s), payload, data link, launch and recovery subsystems if applicable, and all ancillary items needed to operate the system. In addition, the power plant, mission payload, guidance and control equipment, data links receivers/transmitters, manned control station, launchers, autopilots, navigation/guidance subsystems, automatic landing subsystems, and similar equipment items.</p>
627 56	<p>Unmanned Submersible Vehicle Operations Support - Government Owned/Leased Equipment and Contractor Owned/Leased Equipment - Vendor provided team containing all manpower and personal equipment/tools necessary to operate and maintain a complete government or contractor owned/leased Unmanned Submersible Vehicle system for a specific period of time. Location of such support can be inside and/or outside the continental United States (CONUS and OCONUS).</p>
627 57	<p>Unmanned Terrestrial Vehicle Systems and Control Segments - A fully integrated and operable system that includes all components necessary for the Unmanned Terrestrial Vehicle to perform its intended function. A system normally includes, but is not limited to, the submersible vehicles, the control station(s), payload, data link, launch and recovery subsystems if applicable, and all ancillary items needed to operate the system. In addition, the power plant, mission payload, guidance and control</p>

equipment, data links receivers/transmitters, manned control station, launchers, autopilots, navigation/guidance subsystems, automatic landing subsystems, and similar equipment items.

- 627 58 [Unmanned Terrestrial Vehicle Operations Support - Government Owned/Leased Equipment and Contractor Owned/Leased Equipment](#) - Vendor provided team containing all manpower and personal equipment/tools necessary to operate and maintain a complete government or contractor owned/leased Unmanned Terrestrial Vehicle system for a specific period of time. Location of such support can be inside and/or outside the continental United States (CONUS and OCONUS).
- 602 1 [Microwave/Millimeter Wave Antennas](#) - MW and MMW antennas are used to radiate waves generated by a transmitter. Examples of such equipment include broadband antennas, feeds, and accessories including gain standards, parabolic reflectors and feeds, log periodic and dual polarized antennas; standard gain horn and dipole antennas; parabolic antenna reflectors; linear, log periodic, dual polarized, orthomode, and compact range feeds. Also include antenna pattern measurement systems used for determining radiation transmission patterns of antennas.
- 602 10 [Pressure Standards And Calibration Instruments \(SMALL BUSINESS SET ASIDE\)](#) - Component testers and analyzers used to test or to determine operating characteristics of primary electronic components as opposed to component assemblies/circuits. Examples of such testers and analyzers include transistor and vacuum tube checkers/testers, component test switchers, component curve tracers, and CRT analyzers. Includes Automated Test Equipment (ATE) for component testing, but excludes resistance, conductance, capacitance, and Inductance meters not having automated test features.
- 602 30 [Vibration, Acoustic And Ultrasonic Testers and Analyzers](#) - Includes non-destructive test and analysis instruments, which detect and analyze vibrations and shock in a specimen or machine element. Typically used in applications such as applied research, and the preventive maintenance of rotating machinery.
- 602 35 [Cables, Buried Pipes and other Conducting Object Locators](#) - These locators are used to detect underground pipes or cables. Typically used in applications such as locating underground utilities, cable faults or rebars in concrete.
- 602 40 [Avionics Test Equipment](#) - This equipment is used to test the electronic circuitry of aircraft black boxes and navigational systems. Examples of such equipment include radar test sets, aircraft navigation signal analyzers. Includes avionics equipment such as flight data recorders, cockpit voice recorders, and videocassette tape recorders/producers used aboard the aircraft.
- 627 1007 [Introduction to New Services/Products \(INSP\)](#) - This SIN includes new or improved commercial services or products, or services or products that perform new tasks or procedures not currently available under any GSA contract.

- 627 2000 [Equipment Maintenance and Repair](#) - This PSO offers customers the choice between hourly repair and annual service agreements. Examples of such PSO's include time and material service, fixed price per incident repair service.
- 602 14 [Chart Recorders, Data Acquisition and Data Logging Systems](#) - These systems are used to collect and record output data from a large number of transducers into electronic memory for automatic processing. Includes design-mated control, sampling, multiplexing, logging (recording), and signal conditioning modules. Includes integral analysis equipment and self-contained data loggers. Excludes general purpose equipment designed for magnetic tape recording, chart recording, communications, telemetry, data processing and environmental data specialized systems. Excludes generic signal sources/sensors. Excludes systems designed for data acquisition of specific sets of fixed parameters such as power monitoring systems, flood monitoring systems, medical patient monitors.
- 602 2 [Microwave/Millimeter Wave Instrumentation Subcomponents](#) - MW and MMW instrumentation subcomponents include waveguides and waveguide accessories such as adapters, directional couplers, isolators, mixers, attenuators, tuners, and terminators, and component amplifiers, filters and detectors. Includes MW and MMW signal sources and modulators. Includes filters, detectors, and component amplifiers.
- 602 21 [Load Pressure And Vacuum Transducers \(SET ASIDE FOR SMALL BUSINESS\)](#) - These transducer devices convert the applied mechanical quantity (force, torque, or pressure) to a deflection or strain. Deflection sensors or strain gages are then used to give an electrical signal proportional to the mechanical quantity. Examples of such devices include load cells, torque cells, compression and tension transducers, barometric/atmospheric sensors, submersible/level sensors, absolute and differential pressure, vacuum sensors, and pressure scanning arrays.
- 627 2001 [Pre-Purchase Calibration or Calibration Traceability Certificate](#) - This PSO offers customers the option to upgrade standard calibration. Normally, all instruments are calibrated before shipment. Examples of such PSO's include calibration to a military standard with or without test data and calibration to a commercial standard with test data.
- 627 4000 [UAV Operations Support - Government Owned/Leased Equipment and Contractor Owned/Leased Equipment](#) - Vendor provided team containing all manpower and personal equipment/tools necessary to operate and maintain a complete government or contractor owned/leased UAV system for a specific period of time. Location of such support can be inside and/or outside the continental United States (CONUS and OCONUS).
- 602 17 [Laboratory Bench And Rack Power Supplies, Mount Type, Programmable](#) - Laboratory power supplies used on lab benches and automated test systems as sources of precise and controlled power and for the measurement of voltage, current and power. Examples of such instruments include voltage sources, current sources, source swatters and components, power controllers, switching and high voltage power supplies. Excludes uninterruptible power supplies and supplies designed for line power conditioning and isolation. Excludes supplies designed for

dedicated use with a specific type of laboratory instrument or designed for installation in an instrument or other apparatus.

- 627 2002 **Post Purchase Calibration or Calibration Traceability Certificate** - This PSO offers customers the option of calibration services after purchasing and using the instrument. Examples of such PSO's include standard calibration to manufacturer's own specifications, calibration for compliance with certain military or commercial standards with before and after data.
- 602 18 **Transducer Signal Conditioning Devices (SET ASIDE FOR SMALL BUSINESS)** - These devices used to convert, compensate, or manipulate the output from the transducer into an electrical quantity. Examples of such instruments include amplifying, conditioning, and conversion devices designed specifically for use with transducers such as transducer (sensor) signal amplifiers, and filters. Includes transducers signal transmitters when separated from transducers.
- 627 2003 **Extended Warranty** - This PSO offers the customer an option to extend original equipment warranty for additional time periods. Examples of such PSO's include extending product repair support for additional years, and extending calibration support for additional years.
- 627 50 **Unmanned Aerial Vehicles (UAV) Systems, Airborne Segment, Ground Control Segment, And Critical Components** - A fully integrated and operable system that includes all components necessary for the UAV to perform its intended function. A system normally includes, but is not limited to, the air vehicles, the ground control station(s), payload, data link, launch and recovery subsystems if applicable, and all ancillary items needed to operate the system. In addition, the power plant, mission payload, guidance and control equipment, data links receivers/transmitters, manned control station, launchers, autopilots, navigation/guidance subsystems, automatic landing subsystems, and similar equipment items.
- 602 32 **Temperature/Heat Imaging Instruments; Humidity Standards and Calibrators, Heat Energy Measuring Instruments & Temperature Controlling Instruments** - The temperature/heat imaging instruments are used to measure and visually display the temperature gradients in a specimen. Areas of different temperature are displayed in differing colors on the display device (usually a CRT). Typically used in applications such as applied research, process control, preventive maintenance and security. The humidity standards and calibrator equipment is used to calibrate test and measurement for humidity. Examples of such equipment include chilled mirror dew/frost point hygrometers, humidity transfer standards, standard hygrometers, chilled mirror standards, humidity/relative humidity generator chamber standards. The heat energy-measuring instruments are used to measure the heat flux or heat content of a specimen.
- 627 2004 **Service Agreement** - This PSO offers the customer an option to receive services; all labor, parts and materials necessary to maintain the equipment in good operating condition will be provided. Examples of such PSO include emergency service, engineering hardware and software modifications, operator training, telephone service agreements,

application assistance, software support, and instrument certification.

- 602 22 **Acceleration Transducers (Accelerometers)** - Accelerometers convert a kinematics quantity such as acceleration into an electrical signal proportional to acceleration through a sensing element. Examples of such accelerometers are amplified, piezoelectric, miniature, and submersible accelerometers.
- 627 2005 **Technical Training and Support (TTS)** - This PSO offers the customer an option to receive training in the use of the purchase equipment, and technical support to questions and problems. Examples of such PSO include on site or off site training, basic operator training, hardware and/or software training, installation training, and applications development training.
- 602 23 **Vibration, Acoustic, And Ultrasonic Transducers (SET ASIDE FOR SMALL BUSINESS)** - These transducers convert sound and frequency of mechanical vibrations into an electrical signal proportional to the mechanical vibrations. Examples of such transducers include ultrasonic detection systems/guns, and microphones. Excludes microphones designed for communication.
- 627 2006 **Technical/Application Development Support (TADS)** - This PSO offers the customer an option to receive technical support or application development support. Examples of such PSO may include but not limited to systems integration and application development.
- 602 24 **Panel Meters (SET ASIDE FOR SMALL BUSINESS)** - Panel meters are display devices designed for panel mounting and for displaying transducer signal output and other signal sources. Includes panelized counters and frequency display devices, and configurable multiple parameter display devices.
- 627 5001 **Leasing of Equipment** - This solution offers customers an additional choice to purchasing. Examples of leasing programs available include, but not limited to: Lease to Ownership (Capital Lease); Lease with Option to Own (Operating Lease); Lease of Solution
- 602 3 **Amplifiers And Filters (SET ASIDE FOR SMALL BUSINESS)** - Self-contained and modular plug-in type electronic signal amplifiers, amplifier systems, DC instrumentation amplifiers and active filters for laboratory and testing applications. Electronic amplifiers and amplifier systems include audio, video, LF, HF, VHF, UHF, power, digital, pulse and operational amplifiers and conditioning components. DC amplifiers include signal, differential, transducer, wide-band and thermocouple conditioner amplifiers. Filters include Chepachet, Bessel, digital, liner, active, and pass filters.
- 602 5 **Microwave/Millimeter Wave Amplifiers** - Self-contained amplifiers designed to increase output power from microwave sources. Typically used for laboratory and testing applications. Includes high-power amplifier test systems.
- 602 6 **Electrical/Electronic Parameter, Standards And Calibration Instruments** - This equipment is used to correct variation in accuracy between the instruments being compared. Examples of such instruments include precession voltage, current, and resistance sources and multifunction,

vibration, and oscillator calibrators. Also include resistance boxes, primary resistance ovens, resistance standards, decade transfer resistance standards, and precession amplifier accessories.

- 602 7 [Time and Frequency Standards And Calibration Instruments](#) - Includes receivers, signal generation and distribution components for time and frequency signals derived from oscillators, transponders and other sources of time and frequency generation and distribution. Includes time code generators and translators generating time codes and pulse rates.
- 602 8 [Sound and Vibration Standards And Calibration Instruments](#) - Includes sound and ultra-sound standards and calibration equipment such as microphone calibration equipment, (e.g., standard microphones, sound level and sound intensity calibrators, acoustic calibrators, and piston phone). Also, includes vibration transducer calibration equipment such as standard reference accelerometers.
- 627 1 [Oscilloscopes and Video Signal Monitors and Analyzers](#) - Instruments designed to measure voltage, frequency and other factors and display wave shapes of input signals on CRT or similar display devices including PC-based oscilloscopes, hand-held, and portable scope meters. Examples of such oscilloscopes include dual trace, dual time, digital real time, digital storage, and LCD digital oscilloscopes. Instruments designed to analyze video equipment. Examples of such equipment include VCR and computer monitor analyzers. Also, include instruments designed to determine waveform and characteristics of video signals. Examples of such equipment include NTSC/PAL/SECAM video signal analyzers/monitors, video vector scopes, and Veda level meters.
- 627 10 [Component Analyzers And Testers](#) - Component testers and analyzers used to test or to determine operating characteristics of primary electronic components as opposed to component assemblies/circuits. Examples of such testers and analyzers include transistor and vacuum tube checkers/testers, component test switchers, component curve tracers, and CRT analyzers. Includes Automated Test Equipment (ATE) for component testing, but excludes resistance, conductance, capacitance, and Inductance meters not having automated test features.
- 627 11 [Circuit \(PC Board And IC\) Testers](#) - Circuit testers used primarily to perform quality acceptance tests on printed circuit boards and integrated circuits. Includes matrix switchers, switching/multiplexer cards, and scanner cards. Includes Automated Test Equipment (ATE) for circuits, which are generally designed to use pre-programmed tests as opposed to operator interactive analysis. Excludes more general-purpose analog and digital signal analyzers.
- 627 12 [Telecommunication Line Testers And Analyzers](#) - Equipment specialized for describing general line/network condition in terms of analog parameters (attenuation, distortion, etc.) and in terms of switching and digital modulation/demodulation parameters (jitters, delay, etc.). Examples of such equipment include microwave telephone system transmission test sets, telecommunication test equipment such as breakout boxes; modem and fax testers and digital circuit encoding/decoding test equipment, cable/line performance test equipment

such as cable fault locators, time domain reflectometer TDR's, subscriber line analyzers, loop responders, and talk sets; trunk line performance test equipment such as trunk responders and line simulators/emulators, and transmission impairment measurement sets (TIMS), etc. Includes modulation/demodulation equipment.

- 627 13** [Data Communication Equipment Testers And Analyzers](#) - Equipment used to observe, analyze, and simulate the interactions between network devices and LANs and WANs. Examples of such equipment include LAN/WAN protocol analyzers, ISDN analyzers, and ISDN line/bus simulators/emulators, token ring analyzers, and Ethernet analyzers. Include bit error rate test (BERT) sets.
- 627 14** [LightWave Test Instruments](#) - Lightwave test instruments include lightwave signal sources and laser source accessories, lightwave analyzers, lightwave polarization analyzers, optical spectrum analyzers, optical power meters, optical time domain reflectometer OTDR's, fiber optic cable test sets/fault detectors, fiber optic talk test sets, fiber network analyzers, and laser source accessories.
- 627 15** [Signal Generators](#) - Signal generators used to produce sinusoidal waveforms and/or electronic signal patterns. Examples of such instruments include sine-wave oscillators, RF signal generators, function generators, frequency synthesizers, arbitrary waveform synthesizers, and sweep signal generators.
- 627 17** [Audio and Video Signal Generators](#) - These signal generators are specialized instruments designed to produce audio signals and video signal such as NTSC, PAL, and CCTV signals. Include test pattern generators.
- 627 18** [Microwave Signal Generators](#) - These signal generators are specialized instruments designed to produce microwave signals (1 GHz to 300 GHz) and millimeter waves (10⁻²m to 10⁻⁴m). An example of such instrument is microwave sweep frequency synthesizers. Also includes signal generator modulators designed to modulate signal generator signals.
- 627 2** [Signal Analyzers](#) - General-purpose instruments used to measure signal characteristics such as harmonics, phase noise, carrier level, amplitude, frequency, jitters, distortion, etc. Include general-purpose spectrum analyzers for RF through optical bands. Examples of signal analyzers include: frequency spectrum, Fourier, phase, real time, and signal distortion analyzers; RF signal surveillance analyzers and optical spectrum signal analyzers). Excludes oscilloscopes and specialized analyzers for audio, noise, video, radio transmission, and telecommunication signals.
- 627 22** [Electronic Counters And Frequency Meters](#) - These instruments used for measurement of frequency, time interval, and phase, event counting and other special parameters. Examples of such instruments include frequency meters, frequency and time interval analyzers, universal counters, microwave and pulsed microwave counters.
- 627 23** [Voltsmeters, Ammeters and Multi-Meters](#) - Voltmeters measure voltage, ammeters measure current, and multimeters measure voltage, current and other electrical parameters such as resistance, frequency, etc.

Examples of such instruments include digital multi-meters (DMM's), analog display meters, bar graph display meters, Kilovolt (kV) meters, volt detectors, and clamp-on meters.

- 627 25 [Field Strength/Intensity Meters](#) - Field strength and intensity meters and recorders used measure the level of magnetic field emitted from power lines, appliances and other equipment. Examples of such instruments include electromagnetic field strength meters, ELF/power frequency, EMF survey meters, magnetic field monitors, and Gauss/Tesla meters. Includes sub-infrared radiation hazard detection meters.
- 627 27 [Line Power & Signal Power Meters and Line Power Consumption Meters](#) - These meters are used to measure power of signal and power sources including RF and wideband power meters. Examples of such equipment include line power meters, watt meters, RF and wideband power meters. Excludes line power consumption meters, line power quality analyzers, and optical power meters. Meters and recorders specialized for measuring electrical energy consumption in such as kilowatt-hours or similar units. Examples of such meters include kilowatt-hour meters, watt-hour meters, and energy meters.
- 627 29 [Resistance And/Or Conductivity Meters And Bridges](#) - Self-contained portable and bench style meters and recorders specialized for measuring resistance and conductance of electrically conductive materials and devices including insulation and leakage testers. Examples of such meters include ohmmeters, conductivity meters, Mho meters, insulation testers, leakage testers, and resistance testers and bridges.
- 627 3 [RF Communication Monitors, Testers and Analyzers and Global Positioning System \(GPS\) Receiver Test Sets](#) - Instruments designed to determine carrier and modulation parameters of radio, microwave and millimeter wave transmission signals in terms of waveform, power, amplitude, frequency, phase, noise, distortion, etc. Examples of such equipment include: AM, FM, PM, FSK, and ASK, monitors and modulation analyzers, microwave signal analyzers, vector signal analyzers, radio communication test sets, communication service monitors, and modulation meters. Excludes instruments specialized for analysis of television signals, telephone and data telecommunications line signals. Test sets designed to test GPS receivers. Examples of such test sets include GPS satellite simulators/satellite signal generators, and GPSTs.
- 627 30 [Reactance And Impedance Meters And Bridges](#) - Self-contained portable and bench style meters and bridges specialized for measuring reactance and/or impedance. Examples of such meters include impedance meters, inductance reactance meters, capacitance reactance meters, vector impedance meters, SWR bridges, and dielectric test sets.
- 627 31 [Inductance And Capacitance Meters And Bridges](#) - Self-contained portable and bench style meters specialized for measuring inductance and/or capacitance. Examples of such meters include capacitance meters, and inductance meters and bridges.
- 627 32 [AC Wiring Analyzers](#) - Self-contained portable instruments specialized for line power wiring analysis. Includes neutral and ground fault detectors and wiring safety analyzers, phase sequence indicators, and motor wiring

sequence indicators. Other examples include AC power outlet testers, GFCI testers, continuity testers, and branch current analyzers. Excludes telephone line analyzers/tracers.

- 627 33 [Modular Instruments, Mainframes](#) - Instruments and systems, which utilize plug-in modules or cards in a mainframe to achieve a multiple instrument configuration, designed to measure/analyze general electronic signal and power parameters, and electronic devices. Examples of such instruments include VXI-based test systems, and modular measurement systems(MMSs).
- 627 35 [Relay And Circuit Breaker Test Sets And Soldering, Desoldering, And Repair Equipment](#) - These test sets are used to: (1) test motor over-load relays and molded-case circuit breakers, (2) calibrate, time and troubleshoot protective relays, (3) test electrical insulation. Examples of such test sets include overload test sets, protective relay test sets, and power factor test sets. The soldering, desoldering, and repair equipment is temperature and microprocessor controlled used to solder, desolder, and rework/repair of surface mount, thru-hole, ball grid array and other electronic components. Examples of such equipment include microprocessor-controlled soldering/desoldering systems, convective and conductive heat systems, fume extraction systems, and process monitors.
- 627 5 [Audio/Distortion Signal Analyzers](#) - Instruments specialized to determine waveform and characteristics of audio signals. Examples of such instruments include audio, audio distortion, acoustic, noise, sound, and stereo analyzers; wow, flutter and drift meters; audio frequency measuring amplifiers; and spectrum analyzers specialized for audio frequencies. Excludes modulation analyzers and vibration analyzers.
- 627 6 [Electronic Noise Analyzers/Meters](#) - These instruments are used to measure electronic noise of signals and devices. Examples of such instruments include signal to noise ratio S/N analyzers/meters and noise analyzers/meters.
- 627 7 [Network Analyzers](#) - Network analyzers are instruments and systems used to measure linear and nonlinear behavior of devices in terms of changes in amplitude, phase, frequency and noise, or to determine input/output conditions including impedance, S-parameters, transmission and reflection coefficients, and transfer functions. Examples of such equipment include vector and scalar network analyzers/ measurement systems, microwave test sets and measurement receivers , Z meters, and S-parameter measurement sets. Excludes logic analyzers, telecommunications lines/networks analyzers, fiber optics lines testers, and component curve tracers.
- 627 8 [Voltage, Current and Line Power Recorders and Analyzers](#) - These analyzers and recorders used to describe or determine the content of line power in terms of waveform, voltage, current, power, frequency, phase, noise, distortion, and other factors. Examples of such instruments include power monitors and analyzers, line voltage scanners and recorders, power quality analyzers, power harmonic analyzers, power line disturbance monitors/ analyzers.
- 627 9 [Digital Logic Generators and Analyzers](#) - Logic analyzers used to analyze

the internal and input/output states and timing of digital logic circuitry of data processing equipment, PC boards and assemblies. Examples of such equipment include logic analyzers, emulators, bus exercisers and monitors. Also, includes general-purpose digital data pattern generators such as sequential and algorithmic pattern generators. Excludes instruments specialized for testing data communications equipment and instruments designed for IC and PC board quality acceptance testing.