

## BILAG 1: PRODUCT SUPPORT PROVIDER NETWORK (PSPN) – DANMARK

### OVERSIGT OVER KOMPETENCEOMRÅDER OG EKSEMPLER PÅ OPGAVER

#### Forkortelser og definitioner

Forkortelser	Definitioner
OBS	Obsolescent/Obsolete
DMS	Diminishing Manufacturing Sources
DEV	Development
Prod	Production
MRO	Maintenance, Repair, and Overhaul
T&V	Test and Verification
T&M	Time and Material(s)
PBL	Product Baseline
FFP	Fixed Fee Procurement
NDI	Non-Destructive Inspection
PPM	Program Performance Measure
OTD	On Time Delivery
CoC	Certificate Of Conformance

#### Kompetenceområder og eksempler på opgaver

Løbenr.	Kompetenceområde	Eksempler på opgaver	Påkrævede standarder	Bemærkninger
1	Hydraulic	Hydraulic repair capabilities should include but not be limited to cylinder replacement and cylinder repair, supply line replacement, port repair, rod polishing, straightening, re-chrome rods, total rod replacement complete with rod end, complete seal replacement, honing cylinders, thread repair, and pressure testing on equipment with operating system systems pressures as	IAW NFPA T2.12.10-1993.	Udstyr markeret med gul anskaffes ifm. det danske F-35 indkøb.

		<p>high as 5000 psi (hydrostatic/pneumatic) Pump repair capabilities should include but not be limited to: Vane, piston, gear, and gerotor pumps. Valve repair capabilities should include all low medium and high pressure valves, both manual and actuated. Valves should be tested to at least their maximum working pressure when repaired. Servo valve repairs should be to OEM published specs or with parts that meet or exceed those specs. Post repair tests should include input signal flow linearity, flow symmetry, null bias, and pressure gain. Internal leakage, external leakage, stability and coil resistance.</p> <p><u>Equipment Examples:</u></p> <ul style="list-style-type: none"> <li>• <b>Hydraulic Servicing Unit:</b> Portable pump used for supplying aircraft reservoir with small amounts of fluid (Low complexity).</li> <li>• <b>Aircraft Jacks:</b> Elevates aircraft for maintenance (Low complexity).</li> <li>• <b>Component Lift Jacks:</b> Facilitates maintenance on aircraft systems (Low complexity).</li> <li>• <b>Disabled Wheel Dolly:</b> Used for towing aircraft with damaged wheel assembly (Low complexity).</li> <li>• <b>Electric and Diesel Hydraulic Cart:</b> Provides pressurized fluid to aircraft to facilitate movement of airframe assemblies and servicing (High complexity).</li> </ul>		
2	Pneumatic	Evaluate, repair, and rebuild on welded, NFPA tie rod, and telescopic pneumatic cylinders. Repair or replace for flat body cylinders and hollow bore cylinders. Repair or replace Vane type and rack and pinion type rotary actuators. Repair or replace pneumatic cylinders. New replacements for	IAW NFPA T2.12.10-1993 (Hydrostatic testing of cylinders).	Udstyr markeret med gul anskaffes ifm. det danske F-35 indkøb.

		<p>NFPA, welded, and multi-stage cylinders. Barrel honing up to 16" diameter x 28" long. Pneumatic operating system pressures are as high as 5000 psi. Cylinder repair or replacement components including but not limited to: Tie rods, induction hardened chrome rods, glands, pistons, rod eyelets, and high grade fasteners. Coatings and plating: High nickel chromes, tungsten, HVOF, and standard chrome. Multistage cylinder testing with counterbalance load testing.</p> <p><u>Equipment Examples:</u></p> <ul style="list-style-type: none"> <li>• <b>Two Bottle Oxygen Servicing Cart</b> (Low complexity)</li> <li>• Servicing BOS container for aircraft ejection seat.</li> <li>• Six (6) Bottle Nitrogen Cart: Provide pressurized nitrogen for servicing aircraft systems.</li> <li>• <b>Self-Generating Nitrogen Servicing Cart</b> (SGNTS) Provides pressurized nitrogen for servicing aircraft systems (High complexity).</li> <li>• <b>Oxygen Servicing Equipment</b> (Low complexity).</li> <li>• <b>Oxygen Mask test Set</b> (Low complexity).</li> </ul>		
3	Electrical	<p>Repair capabilities should include but not be limited to: AC power regulators, AC/DC servos, actuators/control motors, amplifiers, cables, cable ends, plugs, printed circuit boards, digital indicators, electric motor drives, hi-pots, indicators, input/output modules, inverter drives, linear transducers, logic control cards, multi axis drives, motors, power supplies, relays, servos, switches, tachometers, thermometers, transducers, wire harnesses.</p>	<p>Industry standards should include AS9100/ISO-9001 Quality standard, IC J-STD-001D Standard for Soldered Electrical and Electronic Assemblies, ANSI/ESD S20.20-2014, and/or applicable IEC Standards.</p>	<p>Udstyr markeret med <b>gul</b> anskaffes ifm. det danske F-35 indkøb.</p>

		<p><u>Equipment Examples:</u></p> <ul style="list-style-type: none"> <li>• <b>Electronic Control and Test:</b> Tests aircraft systems.</li> <li>• <b>Electric &amp; Diesel Motors used for Power Distribution Units:</b> Aircraft and support equipment cart power distribution</li> <li>• <b>270/28 VDC power generation equipment</b></li> </ul>		
4	Diesel Engine	<p>Repair capabilities should include but not be limited to: Engine removal and replacement, reconditioning/repairs of cylinder heads and liners, exhaust valve assembly, fuel equipment (pumps, liners, injectors, tanks, fuel quantity metering), lube oil, water pumps, pistons and connecting rods, rocker gears and vibration dampers. Re-habbing bearings, honing of liners and grinding of tablatures, polishing of crankshaft bearing journals, and engine block machining, precision horizontal boring and milling, engine mount and support interface, welding, engine exhaust system, engine cooling systems, engine electrical system, harness repair/replace, control system diagnostics and troubleshooting.</p> <p><u>Equipment Examples:</u></p> <ul style="list-style-type: none"> <li>• Prime mover for support equipment and diesel powered carts: All maintenance of diesel engines to include: Overhaul; fault analysis; remove and replace.</li> </ul>	Reference Industry standards include ISO9001:2008, ISO 1940, ANSI/ACDE 01-2009 and sight any Engine OEM licensing, certifications or training.	Forsvaret anskaffer elektrisk drevne bugseringskøretøjer og elektrisk/dieseldrevne flybugseringskøretøjer gennem udbud via FMI, og ikke som del af PSPn/via LM: "Prime mover for support equipment and diesel powered carts". Vedligeholdelsen af vognen vil dermed ikke nødvendigvis være en del af PSPn.
5	Air Conditioning and Refrigeration	<p>Repair capabilities should include but not be limited to: Run capacitor, temperature control board, control board, thermistor, thermostat, compressor, condenser coils, R-134a refrigerant replacement, sensors, relays, cabling, and hoses by an EPA Section 608 Type I, II, III, or Universal certified technician. Industry standards include</p>		Udstyr markeret med gul anskaffes ifm. det danske F-35 indkøb.

		<p>ISO9001:2008.</p> <p><u>Equipment Examples:</u></p> <ul style="list-style-type: none"> <li>• Repair of <b>Air Conditioning Units</b> using both diesel and electric drive motors (High complexity).</li> <li>• <b>PAO cart</b> with air conditioning cooling system (High complexity).</li> <li>• <b>Power cart</b> with air conditioning cooling system (High complexity).</li> <li>• Hand Held Pilot Cooling Unit.</li> </ul>		
6	Running Gear	<p>Repair capabilities should include but not be limited to: Wheels, axles, casters, tie rod bushings, tow bars, hub bolts, spindles, surge brakes, brake lines, parking brakes (mechanical and hydraulic), tires, roller bearings, and suspension systems.</p> <p><u>Equipment Examples:</u></p> <ul style="list-style-type: none"> <li>• Systems for cart and trailers to include: Tow bar, brake, tire\wheel, bearings, axles, transmissions\ differentials.</li> </ul>	Industry standards include ISO9001:2008.	Forskellige opgaver relateret til undervogne på støtteudstyr.
7	Structure - Metal	<p>Repair capabilities should include but not be limited to: Structural inspection and evaluation of critical areas with emphasis on fatigue and fracture, welding, heat treat, and conversion coatings. Sheet metal fabrication, sheet metal repair, frame structure (tube and beam), fasteners, weldments.</p>	Industry standards include ISO9001:2008, American Welding Society (AWS) quality standards (AWS D1.1, AWS D1.1M).	Standard reparationspladearbejde på støtteudstyr.
8	Structure - Composite	<p>Repair capabilities should include but not be limited to: Fiberglass and composite repair, honeycomb core, patch repair, stepped co-bonded repair, tapered-scarf co-bonded repair, bolted doubler repairs, vacuum bag processing, temperature and pressure controlled curing, gel coat repair, fill and fair, foam adhesion, insulation sound barrier adhesion.</p>	Industry standards include ISO9001:2008, AS7118/3A, AS7118/3, AS7118/2, AS7118/2A, AMS2980/5A, and AMSSTD401A.	

9	Paint and Corrosion Control	<p>Repair capabilities should include but not be limited to: Application of MIL-PRF-85582 Type I, Class N (One coat of primer/two topcoats) or MIL-PRF-23377 Type I, Class N as an alternative paint and primer, corrosion removal, sanding, grinding, media blasting, surface preparation, water-break. Facilities: Controlled temperature and humidity environment.</p> <p><u>Equipment Examples:</u></p> <ul style="list-style-type: none"> <li>• Paint and corrosion control repairs affect a wide range of Equipment including Air Conditioning Units, Hydraulic Servicing Units, and PAO Servicing units both self-propelled and towable. Additionally, a wide selection of Adapters, Slings, Jacks, Tow Bars, and Special tooling, etc. All equipment required to support aircraft flight/maintenance operations, training devices and ALIS could be affected.</li> </ul>	<p>Industry standards include ISO9001:2008, NAVAIR 01-1A-509-2, TO 1-1-691, and MIL-STD-7179.</p>	
10	PAO (Polyalpha-Olefin coolant)	<p>Repair capabilities should include but not be limited to: Air pump, check valves, diffusers, pressure gages, pressure relief valves, tires, hoses, and QD fittings.</p> <p><u>Equipment Examples:</u></p> <ul style="list-style-type: none"> <li>• <b>PAO Portable Servicing Unit:</b> Portable pump used for supplying aircraft reservoir with small amounts of fluid (Low complexity).</li> <li>• <b>PAO Electric and Diesel Cart:</b> Used for conditioning, removing, and resupplying fluid used for aircraft avionics cooling (High complexity).</li> </ul>	<p>Industry standards include ISO9001:2008.</p>	<p>Udstyr markeret med gul anskaffes ifm. det danske F-35 indkøb.</p>
11	Load Test - Proof Load	<p>Capability to Load Test / Proof Load Jacks. Lifting Devices and Slings.</p> <p><u>Equipment Examples:</u></p>	<p>Industry standards include ISO9001:2008.</p>	<p>Udstyr markeret med gul anskaffes ifm. det danske F-35 indkøb.</p>

		<ul style="list-style-type: none"> <li>• Aircraft Axle Jack, Aircraft Tri-Pod Jack, Installation Slings. (Low complexity).</li> </ul>		
12	IT Systems and Services	<p>Repair capabilities should include but not be limited to: Blade servers, zero clients, clear cubes, server racks, storage area network, switches, and power supplies.</p> <p><u>Equipment Examples:</u></p> <ul style="list-style-type: none"> <li>• Repair, maintenance and set-up of servers, server systems, networks, consoles and computer hardware.</li> <li>• Troubleshooting services for computer systems.</li> </ul>		Udstyr markeret med gul anskaffes ifm. det danske F-35 indkøb.
13	Flight Simulator Repair	<p>Repair capabilities should include but not be limited to: Host Computer- Computer system repair services, Visual- Mylar mirror wash, Mylar mirror re-skins, change and repair of projectors, change and repair of CRT's, repair of image generators, back projection screen replacement, integration with the host computer, calibration, regression testing, visual System tuning. Motion &amp; Control Loading- Servo valves, sensors, motion legs, nitrogen cylinders, HPU reservoirs, pumps, cooling systems, control units, control loading system parts (power units, force jacks etc.) Scheduled maintenance.</p> <p><u>Equipment Examples:</u></p> <ul style="list-style-type: none"> <li>• The installation, repair, and maintenance of flight simulator hardware (examples include consoles, electrical, computer systems and other training devices).</li> <li>• Troubleshooting services for flight simulator systems.</li> </ul>	Industry standards include ISO9001:2008.	Udstyr markeret med gul anskaffes ifm. det danske F-35 indkøb.
14	Calibration - Proof Load	Capabilities should include but not be limited to: Pressure/Vacuum- gauges and	Industry standards include ISO9001:2008.	Udstyr markeret med gul anskaffes ifm. det danske

		<p>transducers, Manometers, Barometers, Temperature/Humidity, Thermometers (PRT, RTD, T/C), and IR Thermometers  RF/Microwave- Network Analyzers, Calibration Kits, Signal Generators, Spectrum Analyzers, Power Meters, Power Sensors (Agilent &amp; Boonton), Noise Sources, Signal Sources, and Counters and Oscillators.  Electrical- High Precision Digital, Multimeters, Precision Resistors, Electrical Calibrators, AC Measurement Standards, Capacitance, Inductance, LCR Meters, Oscilloscopes, and VXI/PXI Cards. Dimensional/Mechanical-Electrical Balances/Scales, Weights, Torque, Wrenches/Transducers, Force Gauges, Height Gages, Calipers/Micrometers, and Indicators.</p> <p><u>Equipment Examples:</u></p> <ul style="list-style-type: none"> <li>• Calibration (CAL) the capability to calibrate <b>various support equipment</b>, and training device assemblies and subassembly components to meet defined requirements.</li> <li>• Proof load of <b>aircraft jacks</b> rated between 10,000 psi and 44,000 psi.</li> <li>• Proof <b>load lifting systems</b> rated between 3,000 lbs. and 24,000 lbs. lifting capacity.</li> </ul>		F-35 indkøb.
15	Non Destructive Inspection (NDI)	<p>Capabilities should include but not be limited to: Radiography (RT), Magnetic Particle (MT), Liquid Penetrant or Dye Penetrant Inspection, Ultrasonic Inspection (UT), Eddy Current Inspection, Visual Inspection (VT), and Positive Material Identification (PMI). All inspections should be completed by a LM Approved ASNT certified inspector.</p>	Industry standards include ISO9001:2008, ISO/IEC Guide 17025 or ISO 9002.	