

Technical Specifications of Workstations & Computing Equipment

Situation Room — IT Device Specifications

1. High-Performance Desktop Computer — Quantity: 3

High-Performance Desktop Computer	
Processor	Min. current-generation high-performance processor, up to 4.8 GHz with turbo boost, min. 8 cores / 8 threads, min. 12 MB cache, or equivalent
Graphics	Min. integrated graphics, or equivalent
RAM	Min. 16 GB
Storage	Min. 1 TB PCIe NVMe M.2 SSD
Operating System	Min. Windows 11 Pro
Communications	Min. 10/100/1000/2500 GbE wired NIC; Wi-Fi 6 (2x2); Bluetooth 5.x
Display	Min. 31.5" diagonal, Full HD (1920 x 1080), IPS panel, narrow-bezel design
Webcam	Min. 5 MP camera with noise reduction and integrated microphone array
External I/O Ports	Min. USB Type-C, USB Type-A (3.1/3.0), microphone/headphone jack, RJ-45
Input Power	220 V, 50 Hz AC

Reference model: HP EliteOne 870 G9 All-in-One, Dell OptiPlex All-in-One Plus (7420), or Comparable.

2. GIS (Geographic Information System) Workstation — Quantity: 1

GIS (Geographic Information System) Workstation	
Processor	Min. Dual core Intel Xeon processor or equivalent
Graphics	Min. 4 professional graphics cards (PCI Express x16 Gen 3 or higher)
RAM	Min. 256 GB
Storage	Min. 16 TB
Operating System	Min. Windows Server 2022
Display	Min. 27" diagonal, Full HD (1920 x 1080), IPS
External I/O Ports	Min. USB, HDMI, RJ-45
Input Power	Min. dual power supply, 220 V, 50 Hz AC

Reference model: ell Precision 7960 Tower Workstation, or comparable.

3. Network-Attached Storage (NAS) for Backup and Secure Data Access — Quantity: 1

Network-Attached Storage (NAS) for Backup and Secure Data Access	
Processor	Min. quad-core embedded processor, or equivalent
Memory	Min. 8 GB
Storage	Min. 20 TB, 2.5" SATA SSD
External Ports	Min. 2x RJ-45 1GbE LAN port, USB 3.2
Storage Management	Max. single volume size up to 122.88 TB; support institutional backup retention and data growth needs; SSD read/write cache; supports RAID 1, 5, 6 and 10; supports ext4, ext3, NTFS and exFAT file systems; supports SMB, NFS, FTP and WebDAV protocols; supports storage provisioning for virtualized server environments (e.g., via iSCSI and/or NFS) compatible with common enterprise hypervisor platforms.
Input Power	Min. 220 V, 50 Hz AC

Reference model: Synology DiskStation DS620slim, or comparable.

4. Uninterruptible Power Supply (UPS) — approx. 750 VA class — Quantity: 12

Smart Uninterruptible Power Supply (UPS) — approx. 750 VA class	
Output Power Capacity	Min. 750 VA
Nominal Output Voltage	Min. 220 V
Number of Output Connections	Min. 6
Input Voltage Range	Min. 220 V $\pm$ 30% variation, for utility operation
Input Frequency	Min. 50 Hz
Typical Backup Time at Full Load	At least 15 minutes
Typical Recharge Time	Max. 4.5 hours
Interface Port	Min. RS-232 / USB communications port
Control Panel	Min. output-power-on LED indicator, overload indicator
Audible Alarm	Min. alarm when on battery; distinctive low-battery alarm
Protection	Min. overload, short-circuit, surge and spike protection, with built-in automatic voltage regulation
Accessories	Min. input/output power cables, battery-charging manual
Input Voltage	Min. 220 V AC, 50 Hz

Reference model: Synology DiskStation DS620slim, or comparable.

5. Display & Visualization Equipment of Large video wall or LED screens for real-time monitoring —
Quantity: 1

Large-Format Interactive Display / Video Wall for Real-Time Monitoring	
Refresh Rate	Min. 60 Hz
Screen Size	Min. 86 inch diagonal
Built-in Camera	Min. 13 MP
Built-in Microphones	Min. 6-array, pickup range up to 8 m
Accessories	Min. wireless presentation dongle, camera with microphone
Wall Mount	Min. 800 x 600 mm (VESA compatible)
Power Consumption	Max. 550 W
Power Standby	Max. 0.5 W
Operating Humidity	10% to 90% RH
Operating Temperature	0 °C to 40 °C
RAM	Min. 8 GB
Storage	Min. 128 GB
Embedded OS Version	Min. Android 13, or equivalent
Touch Points	Min. 40-point multi-touch
Touch Technology	Min. infrared
Touch Response Time	Max. 5 ms
Surface Protection	Min. 4 mm toughened glass
Communications	Min. 2x Gigabit LAN (RJ45), Wi-Fi 6, dual-band (2.4G/5G), Bluetooth 5.2
Serial Port	Min. 1x RS232
OPS PC Slot	Optional
Touch USB Port	Min. 1x USB-B (touch)
Audio Out / Audio In	Min. 1x each
Type-C Port	Min. 1x USB-C, supporting display / touch / power delivery up to 65 W
Input and Output Ports	Input: Min. 1xVGA, 1x HDMI, 1x USB-A 2.0, 4x USB-A 3.0 Output: Min. 1x HDMI
Speaker Output	Min. 2x 16 W built-in speakers
Brightness	Min. 400 cd/m ²
Display Colour Depth	Min. 10-bit
Resolution	Min. 3840 x 2160 (4K UHD)
Viewing Angle	Min. 178° (H) / 178° (V)
Backlight	Min. D-LED

Reference model: 86" 4K UHD interactive flat panel (e.g. Specktron UDX-86S2 or equivalent class), or comparable.

6. Network Shared Printer (Multi-Function) — *Quantity: 2*

Network Shared Printer (Multi-Function)	
Functions	Min. print, scan, copy
Print Speed	Up to 52 ppm
Duty Cycle	At least 30,000 pages per month
Print Technology	Min. laser
Resolution	Print: Up to 1200 x 1200 dpi Scan: up to 600 dpi
Processor Speed	Min. 1.2 GHz
Memory	Min. 2.5 GB
Scanner Type	Min. flatbed, ADF (automatic document feeder) with duplex scanning
Included Print Cartridge	Compatible with the supplied device or Manufacturer approved equivalent black toner cartridge, min. 10,000-page yield
Connectivity	Min. Hi-Speed USB device port; Gigabit Ethernet 10/100/1000 network port
Input Power	220 V, 50 Hz AC

Reference model: enterprise-grade monochrome laser multi-function printer (e.g. HP LaserJet Enterprise MFP M635dn), or comparable.

7. Scanner — *Quantity: 2*

Scanner	
Color Scanning	Min. yes
Scan Speed	Up to 50 ppm
Scan Type	Min. flatbed, ADF / Charge Coupled Device (CCD) sensor
Scan Resolution	Hardware up to 600 x 600 dpi; optical up to 600 dpi
Scan Size	Min. ADF up to 8.5 x 34 in (max.), 2.75 x 5.8 in (min.); flatbed up to 8.5 x 14 in
Duplex ADF Scanning	Min. yes
Connectivity	Min. USB
Input Power	220 V, 50 Hz AC

Reference model: Epson workforce DS-60000

8. 70-Inch Smart TV Screen (for Display System) — *Quantity: 2*

70-Inch Smart TV Screen (for LivMon System)	
Screen Size	Min. 70 inch, measured diagonally
Colour Processing	Min. 4K colour drive
Speaker Type	Min. 2-channel, with bass reflex

70-Inch Smart TV Screen (for LivMon System)	
Wireless Connectivity	Min. Wi-Fi
Other Features	Min. quad-core processor, UHD dimming, smart-TV platform with apps and full web browser, Bluetooth pairing
Inputs and Outputs	Min. 2x HDMI, 2x USB, Ethernet, AV, digital audio out
Power	Min. energy-efficiency certified, AC 220 V, 50 Hz
Accessories	Min. remote control with battery, wall mount, manual

Reference model: 70" 4K UHD Smart TV (e.g. Samsung Crystal UHD class), or comparable.

9. Paper Shredder (Standard Duty) — Quantity: 2

Paper Shredder (Standard Duty)	
Sheet Capacity	At least 12 sheets of 80 gsm paper
Shreds	Min. paper, credit cards, CDs, staples
Cut Type	Min. micro-cut
Bin Size	Min. 30 liters
Noise Level	Max. 60 dB
Full-Bin Alarm	Min. yes
Input Voltage	220 V AC, 50 Hz

10. Colour LaserJet Printer (Multi-Function) — Quantity: 2

Colour LaserJet Printer (Multi-Function)	
Functions	Min. print, scan, copy
Print Speed	Up to 28 ppm
Duty Cycle	Up to 50,000 pages per month
Print Technology	Min. laser
Resolution	Print: Min. 600 x 600 dpi (black and colour), up to 38,400 x 600 enhanced dpi Scan: Up to 600 dpi
Processor Speed	Min. 1.2 GHz
Memory	Min. 2 GB
Scanner Type	Min. flatbed, ADF (automatic document feeder) with duplex scanning
Included Print Cartridges	Min. 4 cartridges (1 each: black, cyan, magenta, yellow)
Connectivity	Min. Hi-Speed USB 2.0 port; built-in Gigabit Ethernet 10/100/1000 network port
Input Power	220 V, 50 Hz AC
Additional Cartridges	Min. 6 units per colour (black, cyan, magenta, yellow)

Reference model: Colour laser multi-function printer (e.g. HP Color LaserJet Pro MFP M479fdw), or comparable.

11. Workstation (All-in-One) — Quantity: 3

Workstation (All-in-One)	
Processor	Min. Intel® Core™ (Intel vPro® platform enabled) or equivalent
Graphics	Min. integrated graphics suitable for professional productivity, design and multimedia workloads, or equivalent
RAM	Min. 64 GB DDR5
Storage	Min. 2 TB NVMe SSD
Operating System	Min. Windows 11 Home
Communications	Min. integrated Ethernet (LAN), Wi-Fi and Bluetooth
Display	Min. 32-inch external monitor, high-resolution
Webcam	Min. external or integrated webcam support
External I/O Ports	Min. USB-A, USB-C, HDMI, DisplayPort, audio jack, Ethernet (exact configuration may vary)
Input Power	220–240 V AC

Reference model: all-in-one desktop workstation bundled with a 32" monitor (e.g. Lenovo ThinkCentre Neo Ultra Gen 2), or comparable.

12. Workstation — High-Performance Unified-Memory Architecture — Quantity: 2

Workstation — High-Performance Unified-Memory Architecture	
Processor	Min.16 - 24-core CPU with hardware-accelerated media processing.
Graphics	Min. integrated 40 - 76-core GPU, or equivalent demonstrated graphics performance, with hardware acceleration for video editing, motion graphics and visual effects.
RAM	Min. 48 - 128 GB high-bandwidth memory by both CPU and GPU.
Storage	Min. 4 TB internal SSD, configurable up to 8 TB; sequential read speed min. 5,000 MB/s.
Operating System	Latest vendor-supported operating system, natively compatible with the customer's existing applications, project files, fonts, plug-ins and device-management environment. Must be able to handle complex digital media software applications such as Adobe Premiere, Adobe Illustrator, Canva, Final Cut Pro
Communications	Min. Wi-Fi 6E, Bluetooth 5.3 and 10 Gb Ethernet.
Display	Min. 27 - 32-inch display, at least 4500 x 2700 resolution, minimum 200ppi, Tilt – Height Adjustable Stand.
Webcam	Min 8mp external webcam with min. 1080p resolution.
External I/O Ports	Min. four USB-C ports supporting 40 Gb/s data transfer and display output; HDMI and 10 Gb Ethernet included directly or through supplied adapters.
Input Power	100–240 V AC, 50/60 Hz; compatible power cable included.
Warranty Period	Min. 3-year manufacturer or authorized-partner warranty covering parts and labour.

13. High-Performance 16-inch Laptop — Quantity: 2

Laptop — High-Performance Mobile Workstation	
Processor	Min. 16- 24 core CPU based with hardware-accelerated media processing.
Graphics	Min. integrated 32 - 40-core GPU, or equivalent demonstrated graphics performance, with hardware acceleration for video editing, motion graphics and visual effects.
RAM	Min. 64 GB high-bandwidth, configurable up to 128 GB.
Storage	Min. 2 TB internal SSD, configurable up to 8 TB; sequential read speed min. 5,000 MB/s.
Operating System	Latest vendor-supported operating system, natively compatible with the customer’s existing applications, project files, fonts, plug-ins and device-management environment. Must be able to handle complex digital media software applications such as Adobe Premiere, Adobe Illustrator, Canva, Final Cut Pro
Communications	Min. Wi-Fi 6E and Bluetooth 5.3.
Display	Min 15.0 –16.3-inch display; min. 3270 x 21804 resolution, minimum 190 ppi with at least adaptive fresh rate min. 120 Hz; min.
Webcam	Min 8mp Integrated camera with at least 1080p resolution.
External I/O Ports	Min. three USB-C ports supporting charging, data and display output; HDMI; SDXC memory-card slot; 3.5 mm headphone jack.
Input Power	USB-C fast-charging adapter included; battery capacity min. 95 Wh.
Warranty Period	Min. 3-year manufacturer or authorized-partner warranty covering parts and labour.

14. Colour Printer (High-Volume Multi-Function) — Quantity: 1

Colour Printer (High-Volume Multi-Function)	
Functions	print, copy, scan, send, store (fax optional)
Print Speed	Min. 50 ppm, up to 70 ppm (A4, colour and black & white)
Duty Cycle	Up to 300,000 pages per month
Print Technology	Min. laser (electrophotographic)
Resolution	Print: Up to 1200 x 1200 dpi Scan: Up to 600 x 600 dpi
Processor	Min. dual-core processor
Memory	Min. 4.5 GB RAM; min. 256 GB SSD storage (expandable)
Scanner Type	Min. colour contact image sensor (CIS), dual-scan document feeder
Included Print Cartridges	Min. starter toner cartridge set (black, cyan, magenta, yellow)
Connectivity	Min. USB 2.0, Ethernet (10/100/1000 Base-T), Wi-Fi
Input Power	220–240 V AC, 50/60 Hz
Additional Cartridges	Min. 10 sets of consumable toner cartridges

Reference model: high-volume colour laser multi-function printer (e.g. Canon imageRUNNER ADVANCE DX C5850i / C5870i), or comparable.

15. Uninterruptible Power Supply / Portable Power Station (High Capacity) — Quantity: 3

Uninterruptible Power Supply / Portable Power Station (High Capacity)	
Output Power Capacity	Min. 1800 W continuous (up to 3600 W surge)
Nominal Output Voltage	Min. 230 V AC (pure sine wave)
Number of Output Connections	Min. 4x AC outlets, 2x USB-C (up to 140 W), 2x USB-A, 2x DC outputs
Input Voltage Range	Min. AC 220–240 V AC Solar input up to 1000 W (MPPT)
Input Frequency	Min. 50 Hz / 60 Hz (auto-adaptive)
Typical Backup Time at Full Load	Min: 30 minutes at 1800 W (min. 1000 Wh capacity)
Typical Recharge Time	Min. ~56 minutes (0–100% via AC fast charging)
Interface	Min. USB, Wi-Fi, Bluetooth, for monitoring and control via EcoFlow app
Control Panel	Min. integrated display with real-time power, battery and status indicators
Features	Protection Min. overload, over-temperature, over-voltage, short-circuit, low-battery and surge protection Accessories: Min. AC charging cable, solar charging cable, user manual
Warranty Period	Min. 5 years (standard for LiFePO ₄ -type battery models)

Reference model: high-capacity portable power station (e.g. EcoFlow DELTA 3 Plus Portable Power station), or comparable.

16. Paper Shredder (Heavy Duty) — Quantity: 2

Paper Shredder (Heavy Duty)	
Sheet Capacity	Min. auto-feed up to 120 sheets; manual feed 6–8 sheets
Shreds	Min. paper, credit cards, staples, and small paper clips (via manual slot)
Cut Type	Min. micro-cut (high security)
Bin Size	Min. 6 gallons (approx. 23 litres), pull-out waste bin
Particle Size	Max. approx. 4 x 12 mm
Security Level	Min. P-4 (suitable for sensitive and confidential documents)
Noise Level	Max. 60 dB
Features	Full-Bin Alar, 12 month Warranty Period
Input Voltage	220 V AC, 50 Hz

Reference model: heavy-duty micro-cut, P-4 security shredder (e.g. Aurora AU120MA), or comparable.

17. DSLR / Professional Mirrorless Camera — Quantity: 1

DSLR / Professional Mirrorless Camera	
Sensor & Image Processing	Type: Min. Full-frame (FX-format) stacked CMOS sensor or equivalent Resolution: Approx. 45.7 megapixels Processor: Min. EXPEED 7 image-processing engine ISO Range: Min. 64–25,600 (expandable)
Autofocus & Shooting	Min. hybrid autofocus with subject detection; wide-coverage, intelligent tracking AF; continuous shooting up to 30 fps with full AF/AE
Video	Min. 8K UHD video recording up to 60p; min. 4K video up to 120p; supports professional log and high-efficiency video formats
Viewfinder & Display	Min. high-resolution electronic viewfinder (OLED); min. 3.2" tilting touchscreen; real-time live-view exposure preview
Stabilization & Connectivity	Min. in-body image stabilization, up to approx. 6 stops; ports for HDMI, USB-C, microphone/headphone, remote
Storage & Battery	Min. dual card slots (high-speed formats); long-life rechargeable battery with power-saving features
Build & Environment	Min. comprehensive dust/moisture-resistant sealing; compact, professional-grade body

Reference model: professional full-frame mirrorless camera (e.g. Nikon Z8), or comparable.

18. Ultra-Wide Zoom Lens — Quantity: 1

Ultra-Wide Zoom Lens	
Lens Type & Mount	Mount: Nikon F-mount (with Z mount adapter for Z8) Format: Full-frame (FX) ultra-wide zoom
Focal Length	Min. 14–24 mm
Maximum Aperture	Min. f/2.8 (constant)
Optical Elements	Min. advanced ED and aspherical elements, with anti-flare coating for high contrast
Autofocus	Min. silent, fast internal-focusing AF motor
Image Quality	Min. edge-to-edge sharpness; minimal distortion and chromatic aberration; suited for landscape, architecture and interior photography
Build	Min. professional-grade, weather-sealed construction

Reference model: Nikon AF-S NIKKOR 14–24 mm f/2.8 professional ultra-wide zoom lens, compatible with the camera specified under item 18, or comparable.

19. Telephoto Zoom Lens — *Quantity: 1*

Telephoto Zoom Lens	
Lens Type & Mount	Mount: Min. Nikon F-mount (with Z mount adapter for Z8) Format: Min. Full-frame (FX) ultra-wide zoom
Focal Length	Min. 70–200 mm
Maximum Aperture	Min. f/2.8 (constant)
Optical Elements	Min. fluorite, ED and aspherical elements for superior clarity
Autofocus	Min. silent, fast and accurate internal-focusing AF motor
Image Stabilization	Min. up to approx. 5 stops, with switchable stabilization modes

Reference model: Nikon AF-S NIKKOR 70–200 mm f/2.8 professional telephoto zoom lens, compatible with the camera specified under item 18, or comparable.

20. Memory Card — *Quantity: 10*

Memory Card	
Form Factor	Min. SD (Secure Digital), SDXC type
Capacity	Min. 128 GB
Read Speed	Up to 300 MB/s
Write Speed	Up to 260 MB/s
Performance Class	Min. UHS-II Speed Class U3 (sustained video recording); Video Speed Class V90 (4K/8K video); Application Performance Class A2, where supported
Video & Photo Support	Min. supports 4K/8K video recording and high-speed burst mode; compatible with DSLR, mirrorless, action cameras and drones
Technology	Min. UHS-II bus interface, backward-compatible with UHS-I devices at reduced speeds; shock-, temperature-, water- and X-ray-resistant

Reference model: 128 GB UHS-II SDXC memory card, compatible with the camera specified under item 18, or comparable.