TECHNICAL BILL OF QUANTITIES

Boardroom & Workplace AV / IT Systems — Performance Specification and Indicative Design

This document defines vendor-neutral requirements, quantities, performance specifications, interfaces and indicative layouts for each system. It is intended for system integrators to price, design and propose compliant equipment. Any equivalent product meeting or exceeding the stated performance is acceptable, subject to approval.

Revision	01 — Tender / design development
Prices	Not included. Integrator to complete rates.
Drawings	All layouts and diagrams are indicative and not to scale; integrator to produce shop drawings.
Standards	BS EN 50173 / TIA-568 cabling; IEC 60268-16 (STI); AVIXA display image size (DISCAS); local electrical code.

1. Bill of Quantities — summary

Item	Description	Location	Qty	Unit	Rate	Amount
1	Boardroom main display — 115" class direct-view 4K	Boardroom feature wall	1	No.		
2	Reception curved fine-pitch LED screen	Reception desk face	1	Lot (2.25 m²)		
3	Wireless presentation & BYOD conferencing system	Boardroom	1	Set		
4	Boardroom audio system — ceiling array mic, DSP, ceiling speakers	Boardroom ceiling / rack	1	Set		
5	Network table mute buttons	Boardroom table	Per seat (14 indicative)	No.		
6	AI auto-framing PTZ camera	Below main display	1	No.		
7	Room control & automation system	Boardroom / rack	1	Set		
8	Stand-alone portrait digital posters	Lounge / circulation	5	No.		
9	Mobile interactive collaboration board	Flexible / workshop	1	No.		
10	32" colour e-paper signage	Lobby / room entrance	1	No.		
11	Artificial skylight modules	Meeting-room ceiling	3	No.		
12	Meeting-room booking panels	Room entrances	5	No.		
13	AV rack, network & structured cabling	AV / IT room	1	Lot		
14	Installation, programming, commissioning & training	All areas	1	Lot		

2. General requirements

• All equipment commercial grade, new, with manufacturer warranty registered to the end client.
• Integrator to submit compliance statement per clause, datasheets and shop drawings for approval prior to procurement.
• All IP devices on dedicated VLANs; default passwords changed; firmware current at handover.
• Cable containment concealed; no visible cables in client areas.
• Bilingual (Arabic / English) user interfaces where applicable.

3. System specifications

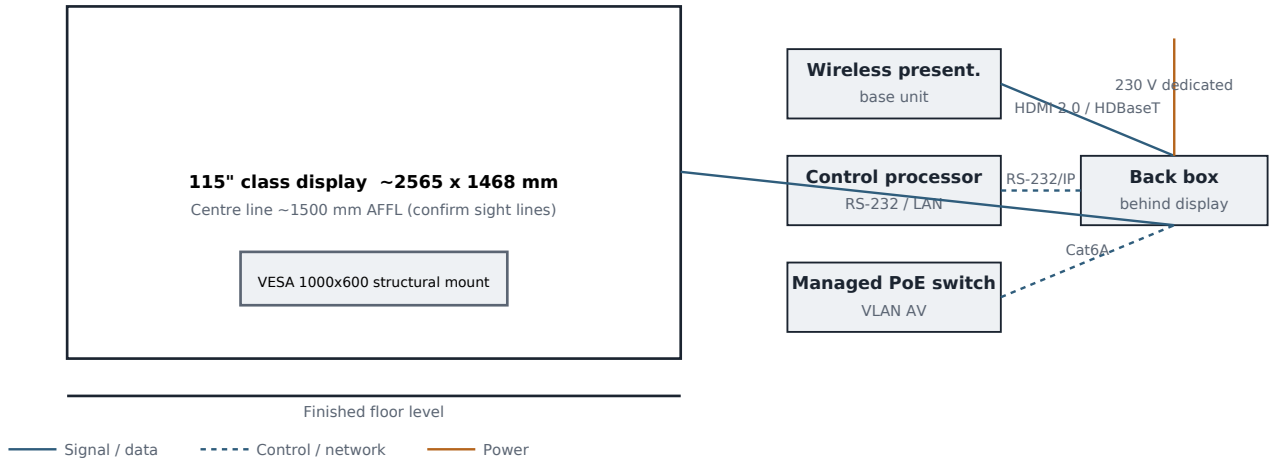
Item 1 — Boardroom main display — 115" class direct-view 4K

Quantity / unit	1 No.
Location	Boardroom feature wall
Function	Single large-format presentation and video-conference display, non-touch, commercial 24/7 rated.

Parameter	Minimum requirement
Diagonal / class	114–116 inch class
Resolution	3840 x 2160 (UHD) native
Panel technology	Mini-LED backlit LCD or equivalent, anti-glare / matte
Brightness	>= 1,000 cd/m² typical
Operation	24/7 commercial duty cycle
Inputs	min. 2 x HDMI 2.0 (HDCP 2.2), 1 x DisplayPort or USB-C, LAN, RS-232
Control	RS-232 and IP control (protocol documented), CEC disable option
Weight / size	<= 90 kg; approx. 2565 x 1468 x 35 mm
Mounting	VESA 1000 x 600 mm, structurally approved wall mount

Site / installation	Structural wall survey and loading certificate; delivery route and lifting plan for ~2.6 m crated unit; recessed back box with dedicated 230 V 16 A outlet, 2 x Cat6A and 2 x HDMI conduits to rack.
Interfaces / dependencies	Wireless presentation base, control system, network.

Fig. — Wall elevation and signal schematic (indicative, not to scale)



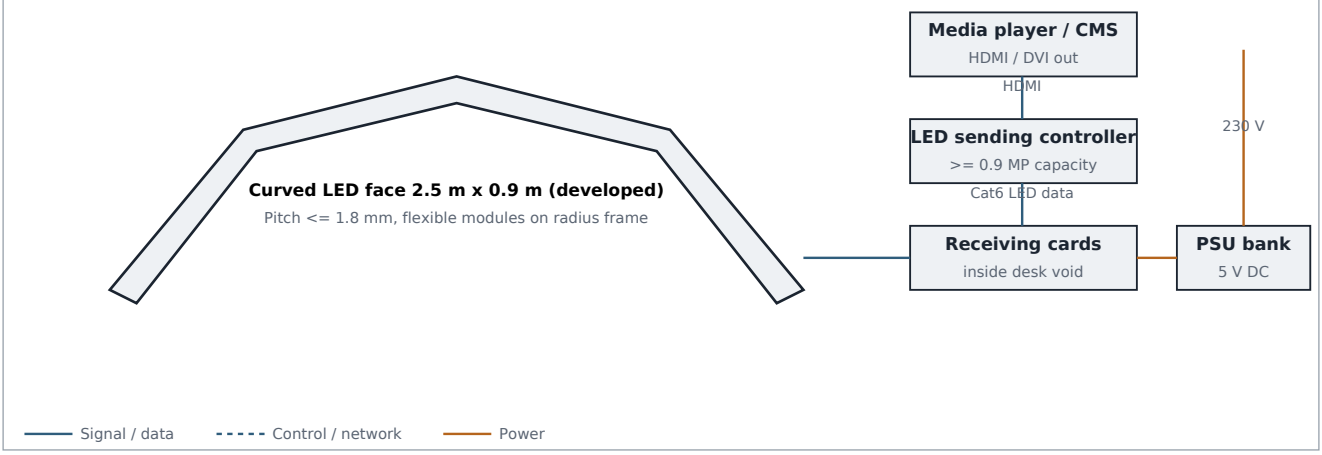
Item 2 — Reception curved fine-pitch LED screen

Quantity / unit	1 Lot (2.25 m²)
Location	Reception desk face
Function	Seamless flexible LED surface integrated into the curved reception desk front for welcome / brand content.

Parameter	Minimum requirement
Active area	2.5 m (W) x 0.9 m (H) developed, following desk radius
Pixel pitch	<= 1.8 mm, SMD or COB, flexible modules
Resolution	approx. 1392 x 500 px
Brightness	600–800 cd/m², auto-dimming
Refresh / grey	>= 3840 Hz, >= 14-bit
Controller	Sending controller >= 1 MP capacity, receiving cards, redundant data loop
Spares	>= 3% modules, 1 receiving card, 1 PSU
Maintenance	Front-serviceable (magnetic) modules

Site / installation	Joinery cut-out and radius sub-frame coordinated with desk fabricator; ventilated controller/PSU compartment; dedicated 230 V circuit; Cat6 to media player.
Interfaces / dependencies	Media player/CMS, joinery contractor.

Fig. — Plan of curved desk LED and data/power topology



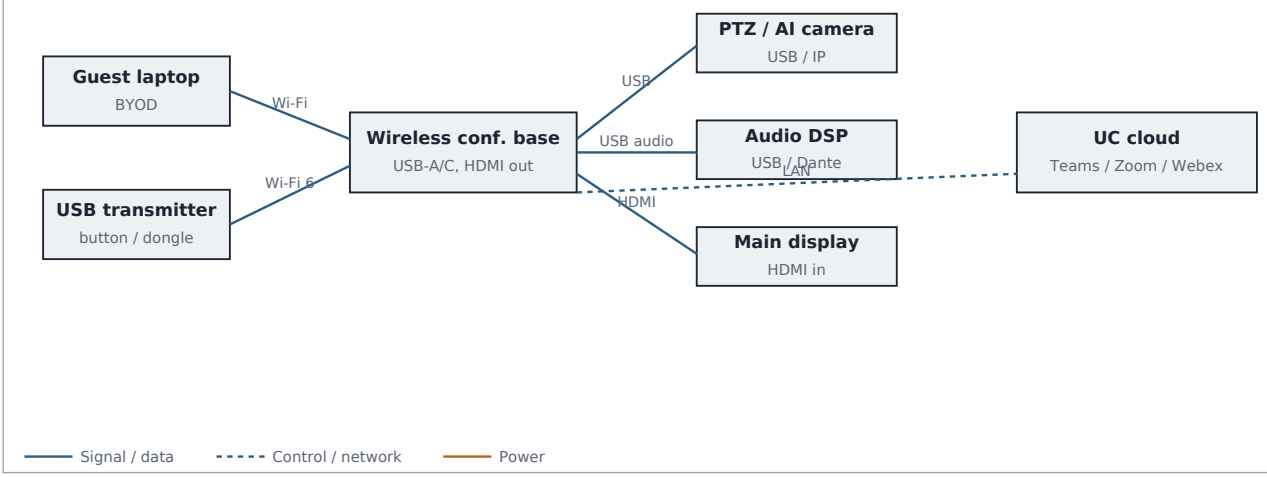
Item 3 — Wireless presentation & BYOD conferencing system

Quantity / unit	1 Set
Location	Boardroom
Function	Allow guests to share content and use room camera/microphones/speakers with their own laptop for any UC platform.

Parameter	Minimum requirement
Users	>= 2 simultaneous sources on screen
Resolution	4K30 output
Peripherals	USB pass-through of room camera and audio (UVC/UAC)
Transmitters	min. 2 USB-C buttons + app-based sharing
Platforms	Teams, Zoom, Webex, Google Meet (BYOM)
Network	Dual network (guest/corporate), Wi-Fi 6, 802.1X
Management	Cloud / on-prem device management, firmware updates

Site / installation	LAN port with VLAN, USB/HDMI paths to rack, AP coordination to avoid channel conflict.
Interfaces / dependencies	Camera, DSP, display.

Fig. — Unified conferencing signal flow (BYOD + room system)



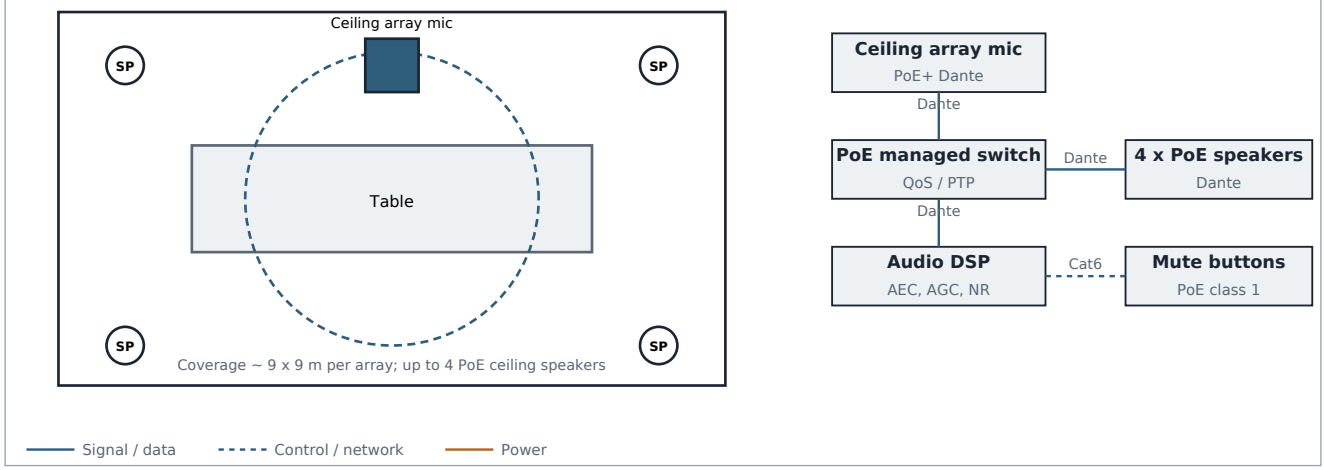
Item 4 — Boardroom audio system — ceiling array mic, DSP, ceiling speakers

Quantity / unit	1 Set
Location	Boardroom ceiling / rack
Function	Hands-free speech pick-up and voice reinforcement/far-end playback with no table clutter.

Parameter	Minimum requirement
Microphone	Ceiling beam-steering array, automatic coverage, Dante, PoE+
DSP	Network DSP with AEC on all channels, AGC, noise reduction, automixer; USB + Dante + analogue I/O
Loudspeakers	Up to 4 x networked PoE ceiling speakers (included in this item)
Network audio	Dante / AES67 compliant; PTP clocking
Performance	STI >= 0.6 at all seats; NC <= 35 room target
Programming	Acoustic tuning, coverage zoning, presets recalled by control system

Site / installation	Ceiling tile/void coordination and RCP; acoustic review (RT60 target 0.4–0.6 s); PoE+ switch with QoS.
Interfaces / dependencies	Item 3, item 5, item 13.

Fig. — Reflected ceiling plan coverage and Dante/PoE audio network



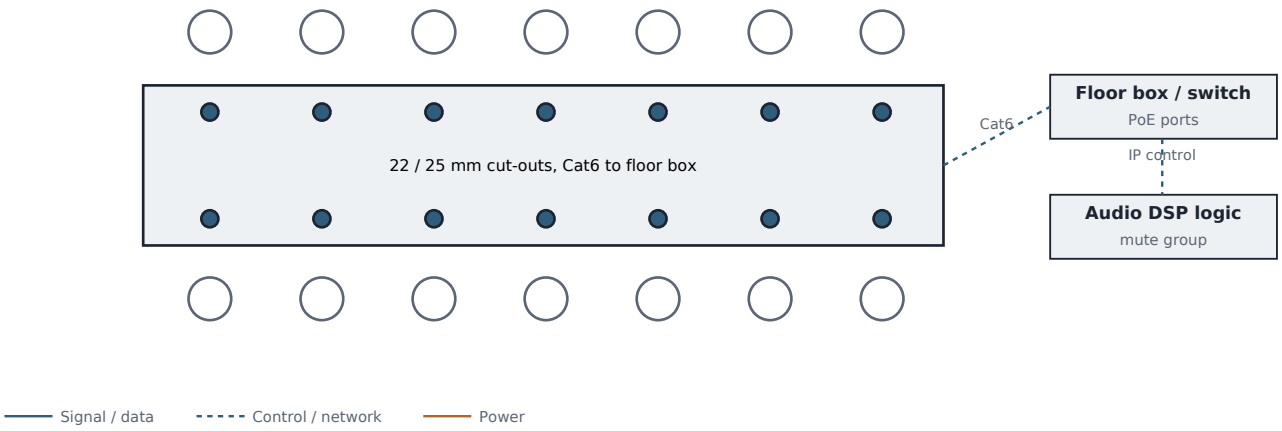
Item 5 — Network table mute buttons

Quantity / unit	Per seat (14 indicative) No.
Location	Boardroom table
Function	Seat-level microphone mute/push-to-talk with visible status ring.

Parameter	Minimum requirement
Type	Touch-sensitive, low-profile, table-mounted
Power	PoE Class 1 (<= 2 W)
Modes	Toggle, push-to-talk, push-to-mute; logic to DSP
Indicator	LED ring, configurable colour/brightness
Mounting	22 mm or 25 mm through-hole, max. table thickness per manufacturer

Site / installation	Table cut-outs before table delivery; Cat5e/6 from each button to floor box; switch ports reserved.
Interfaces / dependencies	Item 4 DSP or control system.

Fig. — Table plan: one mute button per seat (indicative 14 seats)



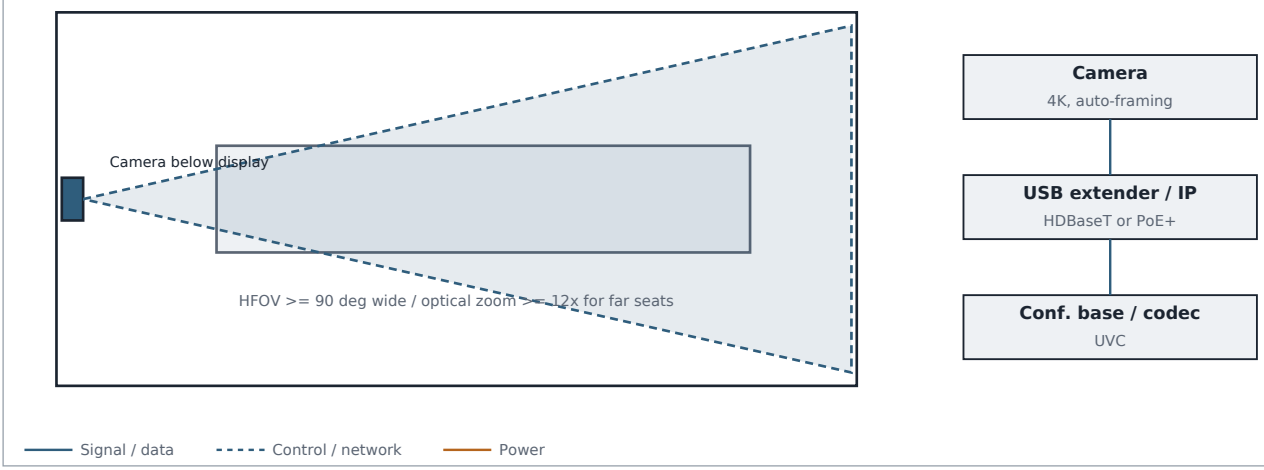
Item 6 — AI auto-framing PTZ camera

Quantity / unit	1 No.
Location	Below main display
Function	Automatic framing of participants, speaker and presenter tracking without an operator.

Parameter	Minimum requirement
Resolution	4K sensor, 1080p60 output min.
Field of view	>= 90° HFOV; optical zoom >= 12x (PTZ) for rear seats
Intelligence	Group framing, speaker tracking, presenter mode
Outputs	USB 3.x (UVC), IP (RTSP/NDI optional), HDMI
Control	IP / VISCA, presets recallable from control system
Certification	UC-platform certified preferred

Site / installation	Sight-line study, mounting bracket coordinated with display, USB extension (active/HDBaseT) to rack.
Interfaces / dependencies	Items 3, 4, 7.

Fig. — Camera field of view in plan



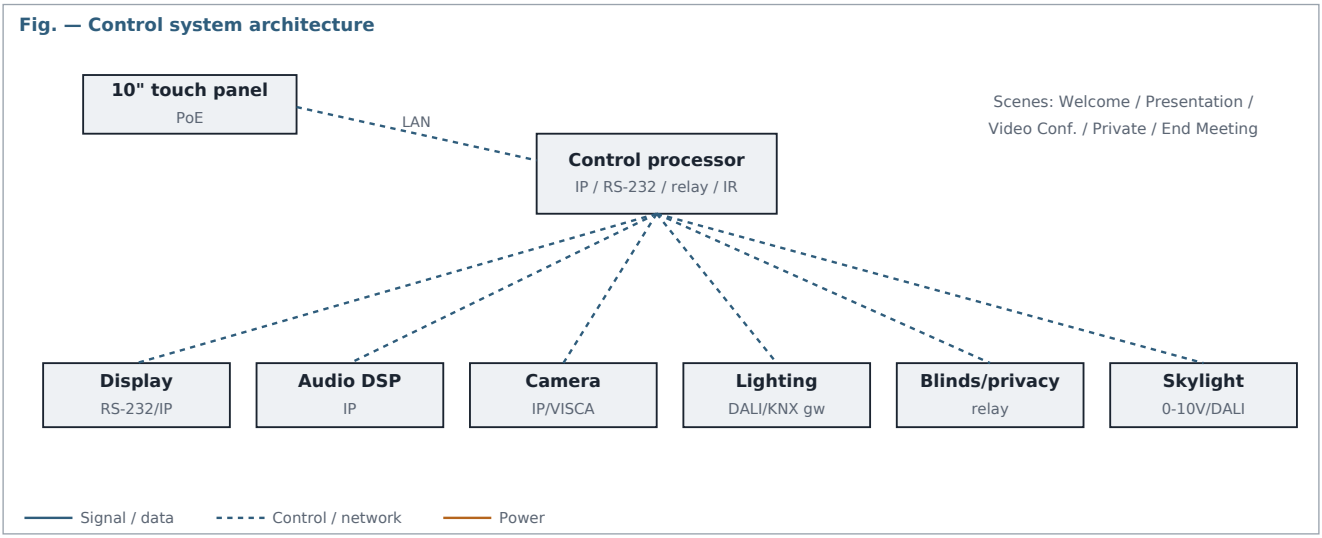
Item 7 — Room control & automation system

Quantity / unit	1 Set
Location	Boardroom / rack
Function	One-touch scenes controlling AV, lighting, privacy and skylight: Welcome, Presentation, Video Conference, Private Discussion, End Meeting.

Parameter	Minimum requirement
Processor	Rack/compact control processor, IP + RS-232 + relay + IR + I/O
Touch panel	10" capacitive, PoE, table or wall mount
Lighting	DALI-2 / KNX gateway integration
Programming	Custom GUI, documented source, scheduling, fault logging
Remote	Secure remote monitoring / management

Site / installation	Approved control narrative and GUI mock-up; interface list per subsystem; lighting contractor coordination.
Interfaces / dependencies	All controllable subsystems.

Fig. — Control system architecture



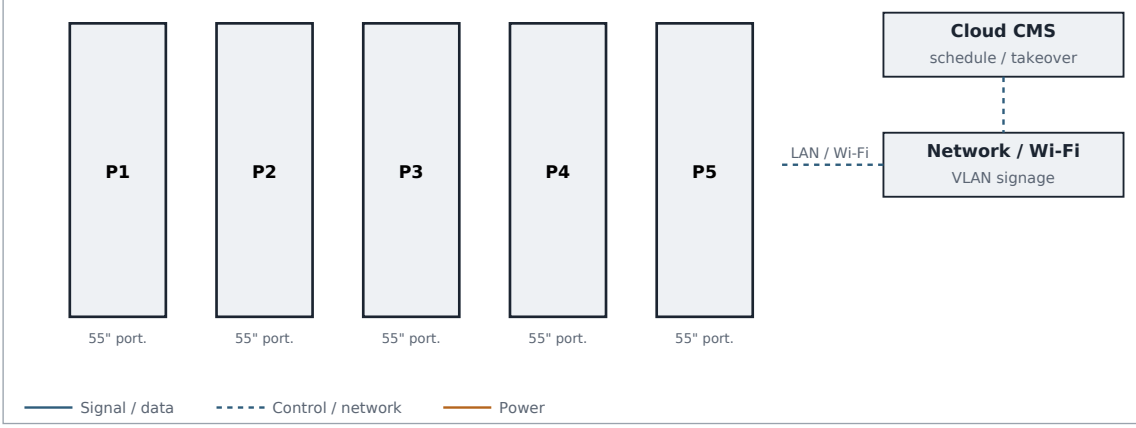
Item 8 — Stand-alone portrait digital posters

Quantity / unit	5 No.
Location	Lounge / circulation
Function	Freestanding wayfinding/event displays able to run independently or synchronised.

Parameter	Minimum requirement
Size	55" class, portrait
Brightness	>= 500 cd/m² (indoor)
Connectivity	Wi-Fi + LAN, USB
CMS	Cloud CMS, bilingual (AR/EN) scheduling, sync/takeover mode
Housing	Freestanding base, anti-tip, concealed cabling

Site / installation	Floor positions, power at each location, network/Wi-Fi coverage.
Interfaces / dependencies	CMS licence and content templates.

Fig. — Portrait poster elevations and CMS network



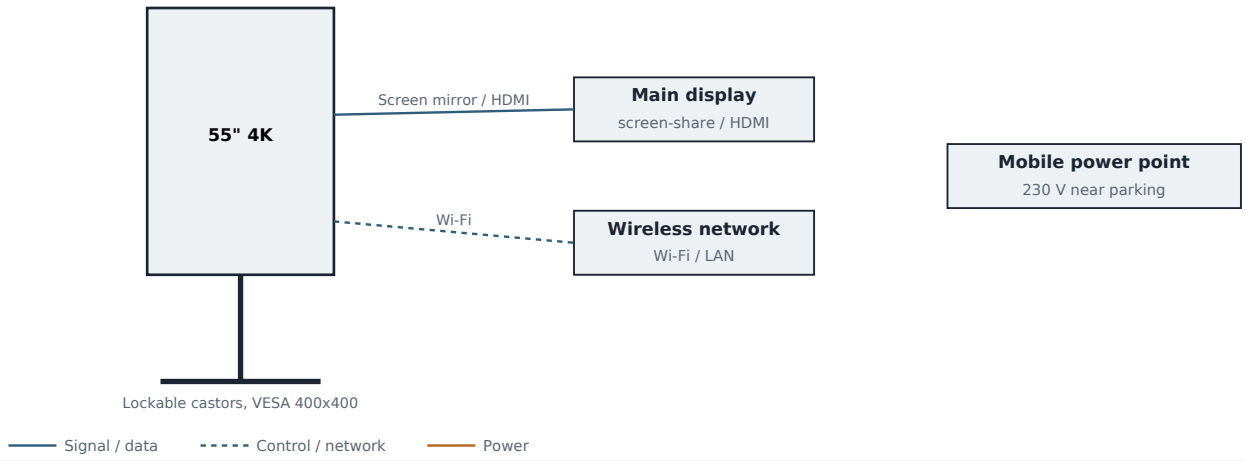
Item 9 — Mobile interactive collaboration board

Quantity / unit	1 No.
Location	Flexible / workshop
Function	Portable 4K pen/touch whiteboard for workshops with mirroring to the main display.

Parameter	Minimum requirement
Size / resolution	55" class, 3840 x 2160
Touch	>= 20 points, pen + brush, latency <= 30 ms
I/O	HDMI, DisplayPort/USB-C (via tray), USB, LAN, Wi-Fi
Stand	Mobile floor stand, lockable castors, VESA 400 x 400
Sharing	Screen-mirroring and file export (email/USB/cloud)

Site / installation	Clear parking zone near 230 V outlet; Wi-Fi coverage.
Interfaces / dependencies	Network; main display for mirroring.

Fig. — Mobile board on stand and casting path



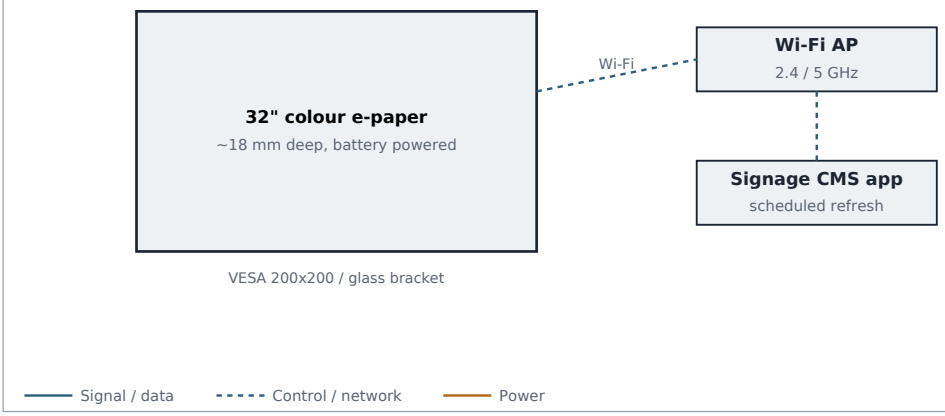
Item 10 — 32" colour e-paper signage

Quantity / unit	1 No.
Location	Lobby / room entrance
Function	Ultra-low-power, cable-free colour signage for notices and schedules.

Parameter	Minimum requirement
Size	32" class colour e-paper, 2560 x 1440
Depth / weight	<= 20 mm / <= 3 kg
Power	Embedded battery, multi-week autonomy; USB-C charging
Connectivity	Wi-Fi (PoE adaptor optional)
Mounting	VESA 200 x 200 or glass bracket

Site / installation	Mounting surface and Wi-Fi coverage; content refresh schedule.
Interfaces / dependencies	CMS app.

Fig. — Wall/glass mounted e-paper and wireless update path



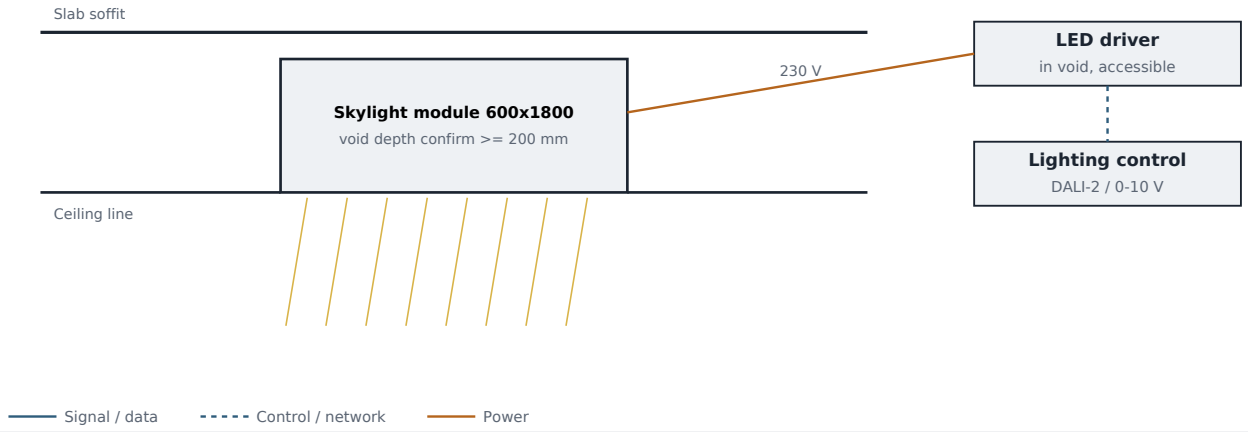
Item 11 — Artificial skylight modules

Quantity / unit	3 No.
Location	Meeting-room ceiling
Function	Simulated daylight with tunable CCT for day / evening scenes.

Parameter	Minimum requirement
Module	approx. 600 x 1800 mm, recessed
Light	Tunable white 2700–6500 K, CRI >= 90, sky/sun effect
Control	DALI-2 or 0-10 V, scene recall
Thermal	Driver remote-mountable, accessible
Ceiling	Void depth to be confirmed (>= 200 mm)

Site / installation	RCP coordination with MEP; structural hangers; dedicated lighting circuit.
Interfaces / dependencies	Item 7 / lighting control.

Fig. — Section through artificial skylight in ceiling void



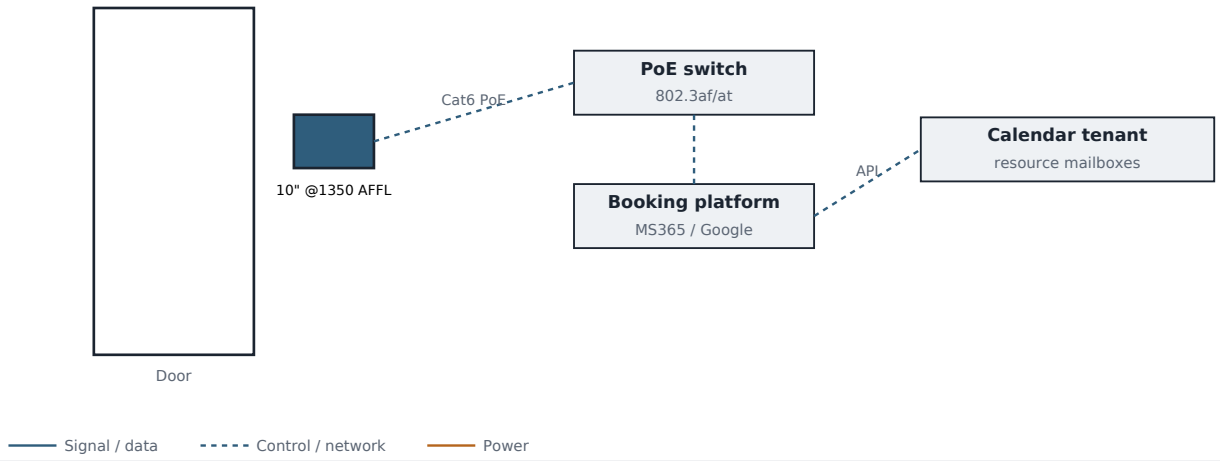
Item 12 — Meeting-room booking panels

Quantity / unit	5 No.
Location	Room entrances
Function	Door-side availability display with book/check-in/release functions.

Parameter	Minimum requirement
Screen	10" capacitive, LED status bar (red/green)
Power	PoE 802.3af/at
Platform	Microsoft 365 / Google Workspace native integration
Licence	1-year software licence per panel included
Mounting	Wall/glass, ~1350 mm AFFL

Site / installation	One PoE data point per entrance; calendar resource mailboxes created by IT.
Interfaces / dependencies	Booking platform tenant.

Fig. — Door-side booking panel and platform integration



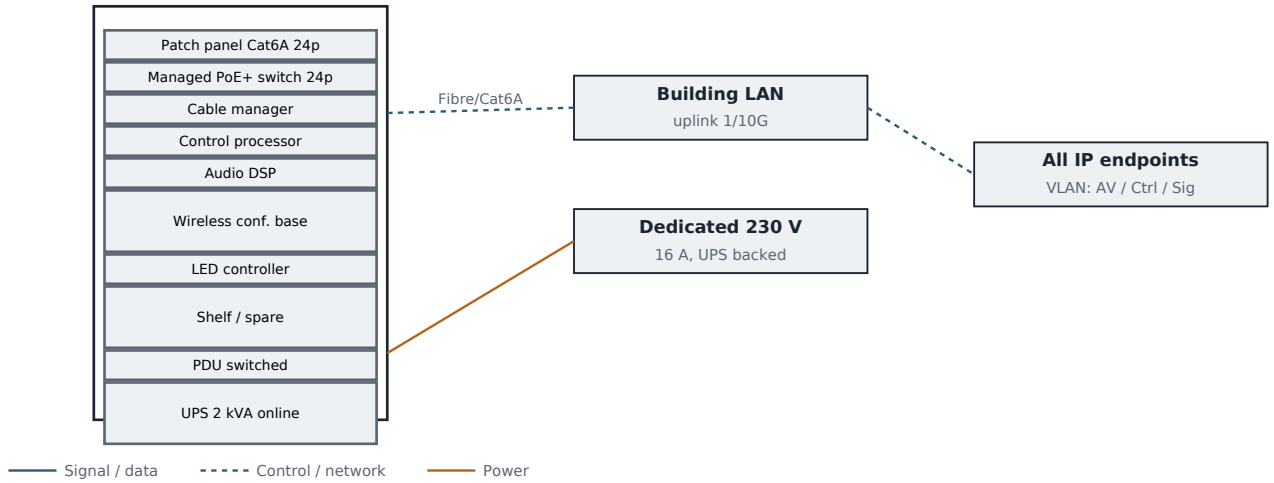
Item 13 — AV rack, network & structured cabling

Quantity / unit	1 Lot
Location	AV / IT room
Function	Central rack housing processing, switching and power protection for all AV endpoints.

Parameter	Minimum requirement
Rack	24–42U ventilated, lockable, cable management
Switch	Managed L2+/L3 PoE+ (>= 370 W budget), IGMP snooping, QoS, PTP for Dante
Cabling	Cat6A, tested and certified, labelled both ends
Power	Switched/metered PDU; online UPS >= 2 kVA, >= 15 min
VLANs	AV / control / signage / guest separated

Site / installation	Rack location with cooling, dedicated 16 A supply, building LAN uplink, IT security approval.
Interfaces / dependencies	All IP endpoints.

Fig. — AV rack elevation (indicative 24U)



Item 14 — Installation, programming, commissioning & training

Quantity / unit	1 Lot
Location	All areas
Function	Turnkey delivery from survey to handover.

Parameter	Minimum requirement
Design	Shop drawings, schematics, RCP, rack elevations, cable schedule
Installation	First/second fix, terminations, labelling
Testing	FAT/SAT, audio STI measurement, cable certification
Training	End-user and technical sessions
Documentation	As-built drawings, O&M; manuals, passwords, warranty register
Support	12-month defects liability, response SLA

Site / installation	Site access, approved programme, fit-out readiness.
Interfaces / dependencies	All items.

Fig. — Delivery stages

