



UAC-01 - DISTINTA ORDINE / BILL OF MATERIALS

RFQ prototype baseline - 2 flight prototypes + recommended spares

La distinta è organizzata per singolo veicolo ma include una colonna "spares consigliati". Nel file XLSX allegato il fornitore potrà compilare marca, part number, lead time, prezzo unitario, compliance e note.

The BOM is organized per vehicle and includes a recommended spares column. In the accompanying XLSX, the supplier can complete manufacturer, part number, lead time, unit price, compliance and notes.



Category	Line items	Qty/vehicle total	Recommended spares
Structure	13	39	14
Propulsion	9	68	21
Power	16	27	17
Avionics	15	31	19
HMI	9	11	11
Data	6	6	6
Safety	6	7	6
Ground/Test	7	8	0
Engineering	9	9	0



P/N	Descrizione IT	Description EN	Qty/veh	Spare	RFQ qty	Crit	Preliminary specification
10-001	Telaio centrale primario	Primary central chassis	1	0	2	A	Machined/welded Al or composite, FEA substantiated
10-002	Pedana composita antiscivolo	Composite anti-slip deck	1	0	2	A	Sandwich CFRP/GFRP, isolated rider surface
10-003	Stelo inferiore strutturale	Lower structural stem	1	0	2	A	Aircraft Al/CFRP, internal cable routing
10-004	Stelo superiore/HMI housing	Upper stem/HMI housing	1	0	2	B	Machined/composite enclosure
10-005	Traversa manubrio	Handlebar cross-member	1	1	3	B	6061/7075-T6 or equivalent
10-006	Bracci pod modulari	Modular pod arms	4	1	9	A	Identical replaceable arms preferred
10-007	Shroud/duct strutturale pod	Structural pod duct/shroud	4	1	9	A	Composite/Al hybrid, rotor-containment analysis
10-008	Griglie protezione rotore integrate	Integrated rotor safety grilles	8	2	18	A	Low-loss structural guard concept
10-009	Isolatori pod-telaio	Pod-to-frame isolators	8	4	20	B	Tuned vibration isolators
10-010	Isolatori pedana	Deck isolation mounts	4	2	10	B	Elastomer/wire-rope tuned mounts



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10-011	Carenature e pannelli estetici	Body and aesthetic panels	1	0	2	C	Graphite/anthracite, UESE grey logo
10-012	Pattini/landing pads	Landing/skid pads	4	2	10	B	Energy-absorbing replaceable pads
10-013	Kit bulloneria aerospace	Aerospace fastener kit	1	1	3	A	Locking hardware, torque traceability



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20-001	Motore elettrico HV alta potenza	High-power HV electric motor	8	2	18	A	12-15 kW continuous / 20-25 kW peak target, supplier sizing
20-002	Rotore/elica ducted	Ducted rotor/propeller	8	4	20	A	Matched to duct; balanced and serialized
20-003	Mozzo rotore	Rotor hub	8	2	18	A	Machined aerospace alloy / proof tested
20-004	Inverter/ESC HV	HV inverter/ESC	8	2	18	A	Independent FOC, CAN-FD, current/temp/rpm feedback
20-005	Palette vettorazione spinta	Thrust-vectoring vane set	4	1	9	A	2-axis effective vectoring, low-loss
20-006	Servo attuatori vettorazione	Vectoring servo actuator	8	2	18	A	Redundant feedback, fail-neutral
20-007	Sensore posizione servo	Servo position sensor	8	2	18	A	Redundant angle feedback
20-008	Sensori temperatura motore	Motor temperature sensor set	8	4	20	B	Winding + bearing/endbell preferred
20-009	Cablaggio fase motore HV	Motor phase HV harness	8	2	18	A	Shielded high-current, serviceable



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30-001	Battery pack HV A	HV battery pack A	1	0	2	A	350-450 V architecture, high-power, 5-8 kWh usable target
30-002	Battery pack HV B	HV battery pack B	1	0	2	A	Independent/fault-tolerant second string
30-003	BMS pack A	Battery management system A	1	1	3	A	Cell/temp/current/SOH/SOC, CAN-FD
30-004	BMS pack B	Battery management system B	1	1	3	A	Cell/temp/current/SOH/SOC, CAN-FD
30-005	PDU HV	HV power distribution unit	1	1	3	A	Precharge, contactors, branch fuses, HVIL
30-006	Contattori HV	HV contactor set	4	2	10	A	Appropriate DC interrupt rating
30-007	Fusibili branch motori	Motor branch fuses	8	4	20	A	DC-rated high-speed fuse
30-008	Insulation monitoring device	Insulation monitoring device	1	1	3	A	Continuous HV insulation monitor
30-009	Service disconnect HV	HV service disconnect	2	1	5	A	Manual service plug with interlock
30-010	DC/DC isolato A 400->28V	Isolated DC/DC A 400->28V	1	1	3	A	Redundant avionics supply



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30-011	DC/DC isolato B 400->28V	Isolated DC/DC B 400->28V	1	1	3	A	Redundant avionics supply
30-012	Batteria tampone avionica	Avionics hold-up battery	1	1	3	A	28 V, supports controlled transition/data logging
30-013	Caricabatteria off-board	Off-board charger	1	0	2	B	Isolated, programmable, logging
30-014	Porta di ricarica + interlock	Charge port + interlock	1	1	3	A	Touch-safe, keyed, HVIL
30-015	HV cable/connector set	HV cable/connector set	1	1	3	A	Orange shielded HV, keyed connectors
30-016	Barriere termiche batterie	Battery thermal barriers	1	1	3	A	Propagation mitigation/vent channels



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40-001	Flight computer A	Flight computer A	1	1	3	A	Deterministic real-time, safety development capable
40-002	Flight computer B	Flight computer B	1	1	3	A	Independent compute lane
40-003	Flight computer C	Flight computer C	1	1	3	A	Independent compute lane
40-004	Safety monitor/voter	Safety monitor/voter	1	1	3	A	Independent watchdog and voting
40-005	IMU industrial/aerospace	Industrial/aerospace IMU	3	2	8	A	Independent 6/9 axis IMUs
40-006	GNSS multibanda	Multiband GNSS receiver	2	1	5	A	L1/L5, RTK-ready
40-007	Antenna GNSS	GNSS antenna	2	1	5	B	Low-multipath, ground plane
40-008	Barometro	Barometric sensor	2	2	6	B	Independent pressure sensors
40-009	Altimetro LiDAR/radar	LiDAR/radar altimeter	2	1	5	A	Downward, low-altitude hover/landing
40-010	Optical flow/vision sensor	Optical flow/vision sensor	2	1	5	A	GNSS-denied low-alt position hold



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40-011	Obstacle sensor front	Front obstacle sensor	2	1	5	B	Radar/LiDAR/stereo option
40-012	Obstacle sensor lateral	Lateral obstacle sensor	2	1	5	B	Left/right awareness
40-013	Magnetometro/compass	Magnetometer/compass	2	1	5	B	Separated from HV/motor fields
40-014	Load cell pedana	Deck load cell	4	2	10	A	Rider presence and CoP sensing
40-015	Amplificatori load cell	Load-cell signal conditioner	4	2	10	B	Synchronized digital output



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50-001	Display flight 7-8 in	7-8 in flight display	1	1	3	A	>=1000 nit, glove use, anti-glare
50-002	Controller sinistro	Left control pod	1	1	3	A	Redundant Hall axes + mode switches
50-003	Controller destro	Right control pod	1	1	3	A	Redundant Hall axes + vertical command
50-004	Dead-man grip switch set	Dead-man grip switch set	2	2	6	A	Dual-channel monitored
50-005	Emergency landing control	Emergency landing control	1	1	3	A	Guarded / deliberate activation
50-006	Key/arm enable	Key/arm enable	1	1	3	A	Two-step arming logic
50-007	Haptic warning actuator	Haptic warning actuator	2	2	6	C	Grip vibration alert
50-008	Buzzer/speaker	Buzzer/speaker	1	1	3	C	Fault/arm alerts
50-009	LED status/strobe set	LED status/strobe set	1	1	3	B	Blue/orange/white as approved palette



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60-001	CAN-FD harness	CAN-FD harness	1	1	3	A	Dual redundant buses preferred
60-002	Ethernet switch rugged	Rugged Ethernet switch	1	1	3	B	Service/data network
60-003	Flight data recorder	Flight data recorder	1	1	3	A	Removable protected storage
60-004	Telemetry radio	Telemetry radio	1	1	3	B	Test range only; non-flight-critical
60-005	Service Wi-Fi module	Service Wi-Fi module	1	1	3	C	Disabled/isolated in flight as required
60-006	USB-C/service connector	Service connector	1	1	3	C	Sealed diagnostic access



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70-001	Harness/tether prova	Test harness/tether	1	1	3	A	Quick release, structural anchor
70-002	Ancoraggio tether	Tether anchor fitting	1	1	3	A	Proof-loaded structural fitting
70-003	Helmet UESE custom	Custom UESE helmet	1	1	3	B	Certified PPE suitable for test profile
70-004	Sensori fumo/temperatura pack	Pack smoke/temperature sensors	2	2	6	A	Independent overtemp detection
70-005	Thermal vent routing	Thermal vent routing	1	1	3	A	Directed away from rider
70-006	Ballistic recovery provision - option	Ballistic recovery provision - option	1	0	2	B	Supplier feasibility option, activation envelope analysis



P/N	Descrizione IT	Description EN	Qty/veh	Spare	RFQ qty	Crit	Preliminary specification
80-001	Tether test rig	Tether test rig	1	0	2	A	4-point restrained lift frame with load measurement
80-002	Propulsion thrust stand	Propulsion thrust stand	1	0	2	A	Instrumented 1-pod thrust/power/endurance rig
80-003	Ballast dummy 100 kg	100 kg ballast dummy	1	0	2	B	Anthropomorphic/CG adjustable
80-004	HV service PPE kit	HV service PPE kit	1	0	2	A	Rated PPE, insulated tools, lockout/tagout
80-005	Service laptop/toolchain	Service laptop/toolchain	1	0	2	B	Locked engineering image
80-006	Battery transport/storage case	Battery transport/storage case	2	0	4	B	Fire-resistant/vented as applicable
80-007	Spare motor/ESC pod kit	Spare motor/ESC pod kit	1	0	2	A	Complete service spare pod channel set



P/N	Descrizione IT	Description EN	Qty/veh	Spare	RFQ qty	Crit	Preliminary specification
90-001	NRE feasibility/sizing	NRE feasibility/sizing	1	0	2	A	Propulsion, energy, mass, CG, thermal, aero/downwash study
90-002	CAD dettagliato + disegni	Detailed CAD + drawings	1	0	2	A	Native CAD, STEP, 2D PDF/DXF
90-003	Analisi FEM/fatica	FEA/fatigue analysis	1	0	2	A	Primary structure and pod attachments
90-004	CFD/downwash/duct optimization	CFD/downwash/duct optimization	1	0	2	A	Ground effect, rider interaction, duct/vane efficiency
90-005	Sviluppo flight-control software	Flight-control software development	1	0	2	A	Manual/assisted/autopilot + fault management
90-006	HIL/SIL environment	HIL/SIL environment	1	0	2	A	Automated regression and fault injection
90-007	Safety assessment/FMEA	Safety assessment/FMEA	1	0	2	A	FHA/PSSA/FMEA/FTA as appropriate
90-008	Campagna prove prototipo	Prototype test campaign	1	0	2	A	Bench, tethered, unmanned; manned quoted separately
90-009	Documentation as-built	As-built documentation	1	0	2	A	BOM, drawings, wiring, configuration index, manuals



Package	Title	Qty	Scope
PKG-01	NRE engineering	1 lot	Feasibility, detail design, FEA/CFD, electrical, FCS, safety, V&V;
PKG-02	Ground/integration prototype	1 unit	Complete structure/power/avionics; constrained operations
PKG-03	Flight prototypes	2 units	As-built configuration controlled
PKG-04	Critical spares	1 set	Motors, ESCs, sensors, controls, connectors, pod parts
PKG-05	Test equipment	1 lot	Thrust stand, tether rig, ballast, instrumentation
PKG-06	Documentation/quality dossier	1 lot	CAD, drawings, BOM, manuals, FAI, material records, test reports
PKG-07	Optional manned flight support	Option	Separate approval/test campaign
PKG-08	Optional certification support	Option	Authority liaison and compliance evidence planning