

## 第二章

### 技術性規格書

## 技術性規格書

### 1. 高仿真模擬人(1.3.2.1)

請在下面打勾，逐點指出（是/否）哪些內容應符合本技術規範。

如果提供的產品與規格不同，則必須提供詳細信息。

Mandatory (M) / Desirable (D) / Optional (O)

項目	描 述	M/D/O	是	否	請提供詳細內容
<b>高仿真模擬人(1.3.2.1)</b>					
<b>1</b>	<b>General</b>				
1.1	The Universal Patient Simulator shall be a full-body patient simulator designed to realistically simulate all types of acute patient management scenarios	M			
1.2	It shall be completely wireless and self-contained by internal battery and air compressor. <ul style="list-style-type: none"> <li>· The compressor shall be installed in the simulator.</li> <li>· The operating sound of the compressor shall not interfere with the auscultation sound of the simulator.</li> <li>· The compressor shall not cause unwanted body movement of the simulator.</li> <li>· Battery recharge time of the simulator shall be 2 hours or shorter for at least 80% recharge</li> <li>· Remaining battery capacity of the manikin shall be displayed in the control software</li> <li>· Battery charging and battery swapping shall be allowed while the manikin is in operation.</li> </ul>	M			
1.3	It shall be rugged and reliable for use in multiple environments and able to continuously operate approximately 4 hours in wireless mode.	M			
1.4	Material: The simulator's skin of the head and arms shall be made of silicone. The skin in other parts and in airway shall be PVC, and the main structure is metal and polycarbonate to ensure the robustness of the simulator. The touch sense of skin and tissue should be close to the touch of normal human body.	M			
1.5	The skin and airway material does not contain DEHP (plasticizer) and does no harm to the health of users who need regular contact with simulator.	M			

項目	描 述	M/D/O	是	否	請提供詳細內容
1.6	It shall be 180 cm +/-5% in height and no less than 35kg to simulate a real patient.	M			
1.7	The simulator shall be capable of full range of motion, allowing the legs to articulate for 90 degree sitting position.	M			
1.8	The simulator shall have fully articulated arms with at least 160° flexion, 30° extension, 70° abduction, and 90° medial rotation of arms.	M			
1.9	The simulator shall have fully articulated pelvis with 1-axis rotation of lumbar and 3-axis rotation of hip joints, which allows the simulator to sit without any external support.	M			
1.10	The simulator shall have optional interchangeable realistic face skin to simulate patients of different conditions. At least one optional geriatric physical appearance shall be available for choosing.	M			
1.11	The manikin's operating system shall be an independently installed software which does not need to rely on the system browser for connection operation.	M			
1.12	Multiple different simulators of the same manufacture shall be controlled via one single operating system, allowing instructors to quickly master the operation.	M			
1.13	The operation temperature of the simulator shall be in the range of 4°C to 40°C, and storage temperature shall be in the range of -15°C to 50 °C, which enables using and storing the simulator under different temperature conditions.	M			
1.14	The simulator design shall be precise, the system shall be stable, and there is no need for regular equipment calibration. Core functions such as secretion, eye reactions, blood pressure measurement, SpO <sub>2</sub> measurement, etc. do not require regular calibration to perform accurately.	M			
<b>2</b>	<b>FEA Airway Features</b>				
2.1	It shall have realistic life-size intubation head with a flexible tongue, arytenoid cartilage, epiglottis, vallecula, vocal cords, trachea, esophagus, and simulated lungs for spontaneous breathing and realistic chest rise and fall.	M			
2.2	The airway should be able to Open/Close by automatically or manually controlled.	M			

項目	描 述	M/D/O	是	否	請提供詳細內容
2.3	Head shall have neck opening and replaceable skin for practicing cricothyrotomy techniques. The neck skin shall be replaced easily.	M			
2.4	The head position could be detected and recorded into the log.	M			
2.5	It shall be able to perform standard ALS airway skills: <ul style="list-style-type: none"> <li>· Bag/Valve Mask ventilation</li> <li>· Oropharyngeal and Nasopharyngeal airway placement</li> <li>· Endotracheal tube intubation</li> <li>· Combitube placement</li> <li>· Laryngeal Mask Airway (LMA) placement</li> <li>· Retrograde intubation</li> <li>· Fiberoptic intubation</li> <li>· Light Wand Intubation</li> <li>· Trans-tracheal Jet Ventilation</li> <li>· Needle cricothyrotomy</li> <li>· Surgical cricothyrotomy</li> </ul>	M			
2.6	The following signs of spontaneous respiration shall be shown: <ul style="list-style-type: none"> <li>· Bilateral or unilateral chest rise and fall</li> <li>· Breathing sound</li> <li>· CO<sub>2</sub> detection</li> </ul>	M			
2.7	Exhaled CO <sub>2</sub> Flow – It shall be able to exhale CO <sub>2</sub> with use of external CO <sub>2</sub> reservoir to confirm placement of airway devices within the trachea.	M			
2.8	There shall be separate neck skin for cricothyrotomy procedures which allows multiple cricothyrotomy procedures without the need for replacement after each procedure.	M			
2.9	Unilateral chest rise shall be observed with right mainstem intubation.	M			
2.10	Variable Respiratory rate – The operator shall be able to create a spontaneously breathing patient and be able to adjust the rate.	M			
2.11	Pharyngeal Obstruction – The posterior pharyngeal surface shall swell into the anterior pharyngeal cavity.	M			
2.12	Tongue Edema – It shall have at least 3 settings of tongue edema: normal, medium and maximum. When used in concert	M			

項目	描述	M/D/O	是	否	請提供詳細內容
	with pharyngeal obstruction, it shall be very difficult to advance a laryngoscope blade.				
2.13	Trismus – It shall be able to clench the teeth together, severely limiting mandibular movement. (supporting document/ catalogue/ video shall be provided upon request)	M			
2.14	Laryngospasm – It shall be able to closes the vocal cords completely.	M			
2.15	Decreased cervical range of motion – The operator shall be able to lock the neck in the position by clicking the button of the instructor application. (supporting document/ catalogue/ video shall be provided upon request)	M			
2.16	Variable Lung Compliance – At least 4 settings of lung compliance shall be available.	M			
2.17	Variable Airway Resistance – At least 4 settings of airway resistance shall be available.	M			
2.18	Stomach distention and decompression – Stomach distension shall occur as a result of over inflation or intubation of the esophagus with ventilations given. Passing a gastric tube shall cause decompression.	M			
2.19	It shall be able to simulate tongue fallback and airway will automatically open with correct head tilt, chin lift and jaw thrust.	M			
2.20	It shall have at least 4 automatically setting for the airway configuration. (Including: Custom / Normal / Cannot intubation, can ventilate / Can't intubate, can't ventilate.)	M			
2.21	When the manikin is under below setting, it shall able to, 1) Can't Intubate, Can Ventilate – not possible for intubation but can be ventilated with a bag valve mask (BVM) device 2) Can't Intubate, Can't Ventilate – cannot be ventilated by any method other than needle or surgical airway	M			
2.22	Tracheal Access through the Neck – The trachea may be accessed through the neck (i.e., transtracheal jet ventilation, needle or surgical cricothyrotomy, or tracheotomy). The neck collar shall be replaceable.	M			
2.23	The ear contour shall conform to normal anatomy and can support hanging ear nasal oxygen tubing.	M			
3	<b>BREATHING</b>				

項目	描 述	M/D/O	是	否	請提供詳細內容
3.1	The manikin shall be able to simulate spontaneous breathing – bilateral and unilateral chest rise and fall.	M			
3.2	It shall have normal and abnormal breath sounds on auscultation sites, and bilateral, unilateral sound or no sound can be controlled. · At least 5 Anterior auscultation sites to be controlled separately. · At least 6 Posterior auscultation sites to be controlled separately.	M			
3.3	Left and Right lung sound shall be able to control independently by software	M			
3.4	Cyanosis on mouth shall be performed automatically or programmed control when in low saturation situation.	M			
3.5	It shall have multiple upper airway sounds synchronized with breathing, and auscultation sound shall include but not limited to normal breathing, coarse crackles, fine crackles, pleural rub, pneumonia, rhonchi, stridor, wheezes, and no sound.	M			
3.6	It shall be able to perform needle thoracentesis (bilateral) and the thoracentesis module can be used for multiple times, no need to change every time. Decompression shall be logged automatically.	M			
3.7	It shall be able to perform chest tube insertion(bilateral).	M			
3.8	SpO <sub>2</sub> monitoring with real medical device: Both left and right index fingers shall support the use of real clinical oximetry probes for SpO <sub>2</sub> monitoring. No regular calibration is required. (supporting document/ catalogue/ video shall be provided upon request)	M			
3.9	It shall be able to connect with ventilator to perform mechanical ventilation.	M			
3.10	It shall have the auscultation focus function. When activated, the system shall automatically turn off the corresponding action of the simulator for no less than 30 seconds, and let the learners concentrate on the auscultation exercises. (supporting document/ catalogue/ video shall be provided upon request)	M			
3.11	The manikin shall be able to upgrade with an advance lung system, allowing the manikin to connect directly with ventilator to conduct ventilator training with all modes of ventilation	M			

項目	描 述	M/D/O	是	否	請提供詳細內容
	including Pressure/Volume Control, Pressure Support, APRV, PAV, HFOV, NIV.				
3.12	The manikin shall be able to upgrade with an advance lung system to allow lung compliance adjustment to range from 3 to 150 mL/cmH2O or wider.	M			
3.13	The manikin shall be able to upgrade with an advance lung system to allow airway resistance adjustment to range from 0 to 150 mL/cmH2O or wider.	M			
3.14	The control software of the advance lung system shall be integrated within the manikin control software, and include quick choice manual, lung monitor, lung mode control and breath effort control session.	M			
3.15	The optional lung system shall allow changing spontaneous effort (from 0 to 50 cmH2O or wider) and respiratory rate (from passive to 100 bpm or wider).	O			
3.16	The optional lung system shall simulate spontaneous control of breath timing (Inspiration-expiration) ratio and shall be able to adjust to different ratios.	O			
3.17	The optional lung system shall be able to hold PEEP up to 20 cmH2O.	O			
3.18	The optional lung system shall allow easily activate pre-programmed respiratory conditions with variable levels of severity including Normal, Asthma, ARDS, Interstitial Lung Disease (ILD), and COPD.	O			
3.19	The optional lung system shall be able to create and save an unlimited number of user-defined respiratory conditions including pneumothorax, bronchospasm, pneumonia, cough, cystic fibrosis, flash pulmonary edema, and more.	O			
3.20	The software of the optional lung system shall have ventilation monitor displaying relevant breathing parameters including PEEP, PIP, Tidal Volume, to provide feedback from the lung in terms of pressure, flow, and volume waveform.	O			
3.21	The software of the optional lung system shall give a graphical and animated representation of the equation of motion of air in the system (as a teaching tool).	O			

項目	描 述	M/D/O	是	否	請提供詳細內容
3.22	The software of the optional lung system shall have a Breath Effort Control session to control the spontaneous breathing effort of the manikin: <ul style="list-style-type: none"> <li>· Breath Rate (breaths per minute)</li> <li>· Pause % (percent of total breath time)</li> <li>· Inspiratory and Expiratory Muscle Pressure</li> <li>· Inspiratory and Expiratory rise time (percent of total breath)</li> <li>· Inspiratory and Expiratory Hold Time</li> </ul> Inspiratory and Expiratory Release Time (percent of total breath time for release of muscle pressure)	O			
3.23	The optional lung system shall support tidal volume up to 800ml.	O			
4	<b>CARDIAC</b>				
4.1	The control software shall have an ECG Library of over 200 cardiac rhythm variants.	M			
4.2	Variable rate of extrasystoles.	M			
4.3	Compression artifacts on ECG.	M			
4.4	Heart sounds synchronized with ECG can be auscultated on the manikin, including but not limited to aortic stenosis, Austin Flint Murmur, systolic murmur, stills murmur, atrial septal defect, ventricular septal defect, no sound.	M			
4.5	Defibrillation: <ul style="list-style-type: none"> <li>· The simulator shall be compatible with use of real Automated External Defibrillators (AED), or manual defibrillators and ECG rhythm can be shown in the real device.</li> <li>· AEDs are connected by adapters provided with the simulator.</li> <li>· 5 joule thresholds for conversion.</li> </ul>	M			
4.6	Cardiac monitoring shall be performed by: <ul style="list-style-type: none"> <li>· 3 lead (4 wires) ECG monitoring.</li> <li>· via the defib paddles (M).</li> <li>· External Pacing – with variable pacing threshold.</li> </ul>	M			
4.7	Defibrillation, electrical cardioversion and pacing shall be able to perform on the manikin with actual effects. Corresponding symptoms, vital signs and monitoring parameters automatically change consistent with the conditions set by the scenario.	M			
5	<b>Cardiopulmonary Resuscitation (CPR)</b>				

項目	描 述	M/D/O	是	否	請提供詳細內容
5.1	The manikin shall provide following characteristic for CAB checking: · Breathing sound on exhalation · Chest rise · Palpable pulses	M			
5.2	It shall be compliant with 2020 Guidelines or updatable to newer guidelines.	M			
5.3	The manikin shall have QCPR® technology to give real-time feedback on the CPR quality.	M			
5.4	It shall be able to measure the volume and frequency of ventilation	M			
5.5	It shall be able to detect the compression with the following criteria: · Depth of compression · Fully release of compression · Frequency of compression · Compression fraction	M			
5.6	The CPR compression shall be able to generate palpable pulses, blood pressure waveform and ECG artifacts.	M			
5.7	Real time feedback on quality of CPR shall be observed in control software.	M			
5.8	ECG and heartrate can be displayed on the simulated monitor.	M			
5.9	A full report on CPR performance will be included in the debriefing mode.	M			
5.10	The report will include: · Overall score of CPR and score of compression and ventilation. · Percentage of correct hand position. · A graph to display the compression depth, rate, and ventilation volume during CPR.	M			
5.11	The assessment guideline of CPR shall be able to change by instructors, thus can be adapted to the assessment standards of different organizations in different regions.	M			
6	<b>Circulation</b>				
6.1	All pulses shall be synchronized with ECG or compression.	M			
6.2	Pulse strength dependent on BP selected and anatomical position.	M			

項目	描 述	M/D/O	是	否	請提供詳細內容
6.3	The manikin shall provide at least the following pulses: <ul style="list-style-type: none"> <li>· Bilateral carotid pulses</li> <li>· Bilateral brachial pulses</li> <li>· Bilateral radial pulses</li> <li>· Bilateral femoral pulse</li> <li>· Bilateral popliteal pulses</li> <li>· Bilateral posterior tibialis pulses</li> <li>· Bilateral dorsalis pedis</li> </ul>	M			
6.4	Blood Pressure Arm (left) with Korotkoff sounds synchronized with pulse.	M			
6.5	NIBP shall be able to be measured with real clinical monitor with designated BP cuff on both arms. No need to recalibrate when BP cuff is repositioned. (supporting document/ catalogue/ video shall be provided upon request)	M			
<b>7</b>	<b>Vascular Access and wireless IV Drug Administration</b>				
7.1	It shall be able to perform IV access (both arms) – Bolus or infusion.	M			
7.2	It shall be able to perform Intraosseous access – tibia and humeral.	M			
7.3	It shall be able to perform deltoid intramuscular injection.	M			
<b>8</b>	<b>Sounds and Others</b>				
8.1	The manikin shall be able to generate the following sounds: <ul style="list-style-type: none"> <li>· Heart sounds synchronized with ECG</li> <li>· Left and Right Lung sounds – anterior auscultation site and posterior auscultations sites.</li> <li>· 4 kinds of Bowel sounds</li> </ul>	M			
8.2	Heart and lung sounds shall be auscultated with a stethoscope.	M			
8.3	All auscultation sites shall be independently controllable by software.	M			
8.4	External vocal sounds shall be allowed for import into the system file.	M			
8.5	Operator shall be able to hear the external vocal sound from the headset via the manikin.	M			
8.6	The volume of vocal sound shall be adjustable.	M			
8.7	Patient Voice: Built-in voice library with the sounds of coughing vomiting, crying and a wireless microphone enables the mentor to speak out through the manikin.	M			
8.8	No additional wired voice modules shall be required for connection with computer or simulator when using streaming voice to speak out as a patient.	M			

項目	描 述	M/D/O	是	否	請提供詳細內容
8.9	It shall support prerecording patient voice to improve fidelity.	M			
8.10	It shall contain prerecording voice with no less than 11 different languages.	M			
8.11	It shall be possible for genitalia to be added to the manikin for urinary catheterization procedures, including both male and female.	M			
8.12	Urine output shall be able to control in variable amount.	M			
8.13	Short-term catheterization and Foley catheterization is possible.	M			
9	<b>Neurological Response</b>				
9.1	The manikin shall be able to blink in 4 different modes: · slow · normal · fast · winks	M			
9.2	The eyes shall be controllable to open, close or partially open	M			
9.3	The manikin shall have the following pupillary accommodation: · Synchrony / asynchrony · Normal and sluggish speed of response · Dilated/Contracted Pupil adjustment · Unresponsive option	M			
9.4	Size of pupils can be adjusted unilaterally or bilaterally	M			
9.5	The eyelid and eyeball shall be separated from each other, and the eyelid movement shall not drive the eye movement.	M			
10	<b>Secretion and bleeding</b>				
10.1	The manikin shall have an internal reservoir tank for storing fluid and simulated blood.	M			
10.2	The manikin shall have the following sites of secretion and bleeding: · Eyes · Ears-Cerebrospinal fluids · Forehead	M			
10.3	At least 4 bleeding ports shall be provided to connect the wounds or other bleeding modules	M			
10.4	Vital signs shall automatically respond to blood loss & therapy.	M			
10.5	The bleeding system shall be able to simulate both arterial and venous bleeding	M			
10.6	The bleeding rate (from 0 to 100) shall be controllable.	M			
11	<b>Convulsion</b>				

項目	描 述	M/D/O	是	否	請提供詳細內容
11.1	The manikin shall have convulsion of both hands.	M			
11.2	The convulsion shall have 3 levels: off, Clonic, Tonic/clonic	M			
12	<b>Software Control</b>				
12.1	The manikin shall be controlled wireless by provided Notebook PC and shall be operated in the Windows system for easy use and maintenance.	M			
12.2	The operating system shall have no less than 12 language configurations, including but not limited to English, French, Dutch, Portuguese, Italian, Spanish, German, Chinese, Japanese, Korean, Russian, Polish.	M			
12.3	Software shall provide two operation modes to control: · Manual Mode Operator shall precisely control the manikin responses. All physiological and pharmacological responses are controllable by operator or custom-made scenarios. · Auto Mode All Physiological and pharmacological responses shall be controlled automatically by software programs. Pre-packaged or custom-made scenarios can be run in this mode.	M			
12.4	The illness of manikin can be easily controlled by increase or decrease the level of series.	M			
12.5	The heart, lung, and bowel sounds shall have individual volume controls.	M			
12.6	The software shall automatically or manually record all events into a log file.	M			
12.7	The event log shall be generated by following factors: · Automatic log system with stopwatch function · Manikin sensors generate automatic entries	M			
12.8	Manual logging functions: · CAB actions and treatments · Miscellaneous actions and treatments · Medication given · Define your own entries	M			
12.9	The software shall include a display of past 10 mins, present and future 10 mins scenario trending providing instructors with situational awareness during a scenario.	M			
12.10	The operator shall be able to control the vital sign displays and parameters of the patient monitor.	M			

項目	描 述	M/D/O	是	否	請提供詳細內容
12.11	The software shall have a debriefing system with the following or more features: A log file with captured video and monitor displays in one integrated interface during debriefing section.	M			
12.12	The display of log at each second should be synchronized to captioned video and monitor display.	M			
12.13	Debriefing can be saved.	M			
12.14	Scenario editor and run scenario shall be included in the control software.	M			
12.15	Scenario operation including Trend and Handlers preprogrammed by user.	M			
12.16	The operating system can synchronize with Scenario Cloud to import scenarios and scenario plans.	M			
13	<b>Patient Monitor</b>				
13.1	It shall be a colour display all-in-one PC, with display screen size of 15" or larger.	M			
13.2	The communication between patient Monitor and Control PC shall be wireless.	M			
13.3	The patient monitor shall be highly configurable	M			
13.4	It shall be able to simulate several parameters including ECG, Blood Oxygen Levels (SpO2), Carbon dioxide level (CO2), Arterial Blood Pressure (ABP), Central Venous Pressure (CVP), Pulmonary Artery Pressure (PAP), Pulmonary Capillary Wedge Pressure (PCWP), NIBP, Train-of-four Ratio (TOF), Anesthetic Agent (AGT), Cardiac output and other.	M			
13.5	Viewable X-rays--Operator shall be able to transfer the X-ray film image to patient monitor from the instructor application and at least 300 film images available for different patient conditions. User-defined X-ray images shall be compatible as well.	M			
13.6	Lab Results can be viewed on the monitor - Operator shall be able to transfer the Lab Result to patient monitor from the instructor application.	M			
13.7	It shall be able to play the video or share image- Operator shall be able to transfer the video or image to patient monitor from the instructor application.	M			
13.8	12 lead ECG display shall be supported.	M			

項目	描 述	M/D/O	是	否	請提供詳細內容
13.9	It shall have a virtual defibrillation monitor: automatic defibrillation and manual defibrillation shall be provided.	M			
13.10	Manual defibrillation mode shall have function of adjustable charge, manual charge, and discharge.	M			
13.11	The automatic defibrillation mode shall simulate a real AED to automatically detect the current heart rhythm of simulator and determine if it needs defibrillation. Clear voice instruction for CPR and defibrillation shall present and analyze the heart rhythm every 2 minutes.	M			
13.12	It shall have metronome function to guide CPR. The function shall be able for turning on/off.	M			
13.13	It shall have pacemaker control options.	M			
13.14	The virtual defibrillation monitor shall be integrated with patient monitor and display in one single interface. No additional display needed.	M			
13.15	The shock from virtual defibrillation monitor shall be automatically detected by simulator and vital signs shall change simultaneously according to scenario preset. The defibrillation and shock energy will be automatically logged in the evaluation report system.	M			
13.16	The operation software shall have the display of virtual automatic external defibrillator (AED).	M			
14	<b>Scenario Editing System</b>				
14.1	Automatic physiological-driven scenarios shall be written in the scenario editing system, to enable automatic response according to the learner's operation.	M			
14.2	It shall be an independent software which can be installed into any laptop with WINDOWS system.	M			
14.3	It shall allow modifying patient monitor layouts and parameter formats, at least 4 layouts available for choosing.	M			
14.4	It shall allow designing themes for half-automatic scenarios and adding instructor instructions regarding the workflow into scenarios.	M			
15	<b>Scenario Platform</b>				

項目	描 述	M/D/O	是	否	請提供詳細內容
15.1	The simulator package shall include 1 year subscription of scenario cloud platform, with no less than 400 scenarios allowing users to freely download and use. There shall be continuous scenarios updates with no additional charge. (supporting document/ catalogue/ video shall be provided upon request)	M			
15.2	The scenario cloud platform shall contain scenario written by the international authority education / medical institutions, including but not limited to the American Academy of Pediatrics, American Heart Association, National League of Nursing with legal copyright, to help users better manipulate the simulation such as PALS and NRP (supporting document/ catalogue/ video shall be provided upon request)	M			
15.3	The scenarios need to conform to the education concepts of simulation teaching, and at least contain case overview, learning objectives, pre-simulation requirements, equipment list, medications & fluids, learner brief, patient overview, expected interventions, guided reflection questions, etc. (supporting document/ catalogue/ video shall be provided upon request)	M			
15.4	Scenarios for assessment should include evidence-based assessment forms, including teamwork assessment scale, NCLEX-RN US Nurse License Test form, AHA ACLS course examination form, etc. (supporting document/ catalogue/ video shall be provided upon request)	M			
15.5	All simulation scenarios can be installed in any computer with control software, and instructor shall be able to log in with his account and open any scenario in the software for review or trial run.	M			
15.6	Scenario files shall be able to be shared via email or social media.	M			
16	<b>Simulator Configuration</b>				
16.1	One set of Full body manikin with articulating legs and arms	M			
16.2	One set of Clothing (pants, zip-hoodie, gown and belt)	M			
16.3	One set of Fluid refill bottle	M			
16.4	One set of Blood refill bottle	M			
16.5	One set of Genital Kit (Male & Female & Non-Gendered Included)	M			
16.6	One set of Wound Kit (Wounds + Adhesive)	M			
16.7	One set of Airway lubricant	M			

項目	描 述	M/D/O	是	否	請提供詳細內容
16.8	One set of Blood concentrate	M			
16.9	One set of Blood pressure cuff	M			
16.10	One set of External power supply	M			
16.11	One set of IV bag + plug and luer lock	M			
16.12	One set of Tools	M			
16.13	One set of Wireless Control Unit (Notebook PC)	M			
16.14	One set of Wireless Simulated Patient Monitor (All-in One PC)	M			
16.15	One set of Control Software (installed in the PC)	M			
16.16	1-year access to up to 400 scenarios	M			
16.17	Advanced Lung System	O			
16.18	Thigh IM pad	M			
16.19	IM pad PVS (4)	M			
16.20	Left Arm skin silicone	M			
16.21	Right Arm skin silicone	M			
16.22	Neck skin	M			
16.23	Chest Skin (female & Male)	M			
16.24	Head skin (Female, Male & Geriatric)	M			
16.25	Documents (important product information and quick installation guides)	M			
16.26	Other accessories and parts	M			
<b>17</b>	<b>Safety Requirements</b>				
17.1	Simulator system shall meet the requirements comply with the electromagnetic compatibility (EMC) requirements of IEC 62368-1:2014, IEC 60950-1:2005, part 15 of the FCC Rules, RSS-210 of IC rules and RED and RoHS requirements.	M			
<b>18</b>	<b>Maintenance and training</b>				
18.1	The supplier shall provide at least one-year warranty after the date of installation of the equipment	M			
18.2	The Supplier should provide documentary proof that they are the manufacturer authorized sales and service agent in Hong Kong or Macau and spare parts will be provided by manufacturer	M			
18.3	Unlimited offsite support via WhatsApp, email and telecom				
18.4	The supplier shall provide an oversea user training (3 instructors), the training MUST be conducted by manufacturer qualified personnel	M			
18.5	Onsite training	M			

項目	描 述	M/D/O	是	否	請提供詳細內容
18.6	Scenario cloud 5 years subscription for 1-5users	M			
18.7	The supplier shall provide two (2) preventive maintenance (PM) services during the warranty period. All PM activities must be performed exclusively by manufacturer-qualified personnel holding valid certification.	M			
18.8	The Supplier shall provide an inspection checking for the existing 2 sets of Laerdal SimMan 3G Manikins. The checking service MUST be conducted by the engineer from the manufacturer personnel with certificates.	M			
18.9	The Supplier shall provide comprehensive user manuals and installation guides in English.	M			

## 技術性規格書

### 電動病床(1.6.3.1 & 1.6.3.2)

請在下面打勾，逐點指出（是/否）哪些內容應符合本技術規範。  
如果提供的產品與規格不同，則必須提供詳細信息。

Mandatory (M) / Desirable (D) / Optional (O)

項目	描 述	M/D/O	是	否	請提供詳細內容
<b>2.</b>	<b>電動病床(1.6.3.1)</b>				
2.1	Electric beds with adjustable hi-lo position	M			
2.2	Hospital ward bed, Size: L2185-2385 x W1010 x H375-830mm Product Weight: 160kg Safe Working Load: 250kg Max. Patient Weight: 185kg	M			
2.3	Lightweight HDPE Head and Foot Panels	M			
2.4	Backrest Angle Adjustment (Electronic): 0 to 70°	M			
2.5	Knee Break Angle Adjustment (Electronic): 0 to 35°	M			
2.6	Surrounding split HDPE Soft drop side Rails with inset controls for patient & Nurse	M			
2.7	Electronic Trendelenberg Tilt 14° Degrees Head and Foot down	M			
2.8	Attendant Handset	M			
2.9	Battery Backup unit	M			
2.10	Anti-microbial Powder Coated Structure	M			
2.11	Retracting Backrest (Reduces Abdominal Squeeze)	M			
2.12	CPR Quick Release Back Rest	M			
2.13	Integral Easy Release Base Extension (195mm Extension)	M			
2.14	Removable Lightweight Blow Moulded Head & Foot Panels	M			
2.15	Removable ABS Formed Deck Panels	M			
2.16	Twin Central Locking Tente 5" Castors	M			
2.17	Fixed Attendant Control Panel (ACC)	M			
2.18	Cardiac Chair Positioning	M			

項目	描 述	M/D/O	是	否	請提供詳細內容
2.19	CPR Bed Levelling (Electronic)	M			
2.20	Backrest Angle indicators (Both Side Rails)	M			
2.21	Foam Mattress included Size: L1970 x W860 x H125mm Cover: waterproof, fire-retardant PU, washable and antimicrobial Thickness: 125mm Mattress complied with BS7177:2008 Medium Hazard Standard	M			
2.22	Two Section with two hooks, Upper C-shaped (Stainless Steel)	M			
2.23	Hooks (2pcs/set)	M			
2.24	User Menu	M			
<b>3</b>	<b>電動病床(1.6.3.2)</b>				
3.1	Electric beds with adjustable hi-lo position	M			
3.2	Hospital ward bed, Size: L2185-2385 x W1010 x H375-830mm Product Weight: 160kg Safe Working Load: 250kg Max. Patient Weight: 185kg	M			
3.3	Lightweight HDPE Head and Foot Panels	M			
3.4	Backrest Angle Adjustment (Electronic): 0 to 70°	M			
3.5	Knee Break Angle Adjustment (Electronic): 0 to 35°	M			
3.6	Surrounding split HDPE Soft drop side Rails with inset controls for patient & Nurse	M			
3.7	Electronic Trendelenberg Tilt 14° Degrees Head and Foot down	M			
3.8	Attendant Handset	M			
3.9	Battery Backup unit	M			
3.10	Anti-microbial Powder Coated Structure	M			
3.11	Retracting Backrest (Reduces Abdominal Squeeze)	M			
3.12	CPR Quick Release Back Rest	M			
3.13	Integral Easy Release Base Extension (195mm Extension)	M			
3.14	Removable Lightweight Blow Moulded Head & Foot Panels	M			

項目	描 述	M/D/O	是	否	請提供詳細內容
3.15	Removable ABS Formed Deck Panels	M			
3.16	Twin Central Locking Tente 5" Castors	M			
3.17	Fixed Attendant Control Panel (ACC)	M			
3.18	Cardiac Chair Positioning	M			
3.19	CPR Bed Levelling (Electronic)	M			
3.20	Backrest Angle indicators (Both Side Rails)	M			
3.21	Foam Mattress included Size: L1970 x W860 x H125mm Cover: waterproof, fire-retardant PU, washable and antimicrobial Thickness: 125mm Mattress complied with BS7177:2008 Medium Hazard Standard	M			
3.22	Two Section with two hooks, Upper C-shaped (Stainless Steel)	M			
3.23	Hooks (2pcs/set)	M			
3.24	User Menu	M			