

# Mobile Hospital

## Technical Proposal Mobile Hospital for Myanmar MOH

1. Mobile Operating Theatre Unit
2. Mobile Imaging unit & Laboratory Unit

MOH Required Type

October, 2014

# Consist of Mobile Hospital Unit

1. Mobile Hospital Unit
2. Chassis Application
3. Detailed Description
  - 1) Mobile Operating Theatre Unit
  - 2) Mobile Imaging & Lab. Unit
4. Exterior Sample Design
5. Our Reference in Myanmar

# 1. Mobile Hospital Unit

## General Description

Mobile Hospital is revolutionizing the way the world perceives mobile Medical solutions.



“Medical Support

Direct Service”



# 1. Mobile Hospital Unit

## General Description

### Background

- Medical infrastructure for supplying essential medical services to people who live remote or isolated areas.
- The necessity of emergency medical treatment facility is increasing because of frequent occurrence of large size nature disaster, etc.
- It is essential that having a adequate emergency system to prevent large scale loss of lives in the emergency situation such as war, terror, riot, etc.



Disaster Rescue & Relief



Community Health Service

# 1. Mobile Hospital Unit

## General Description

### Characteristic

Mobile Hospital Unit provides a high specification system designed to meet highest expectation for medical care. The Mobile Hospital Unit is designed to provide International Hospital standard under the most arduous climatic conditions together with simple methods of operation and deployment.

- The Mobile Hospital Unit is able to be a total fixed general hospital in an autonomous field sections.
- Specifically designed field surgery center offers fastest full-medical services, mobile operations and the mobile clinic systems to civilians. This unit has a potential ability to provide wide-range relief services whenever and wherever civilians request.
- This unit can is suitable in any landscapes and is incorporate modular touchable units which is to deliver comprehensive medical, dormitory and food services to any areas even such as hostile and disaster-stricken environments.
- **Mobile Unit** allows short setup time.
- Each self-independent sections are transportable to any fields and directly operative based on its purposed.

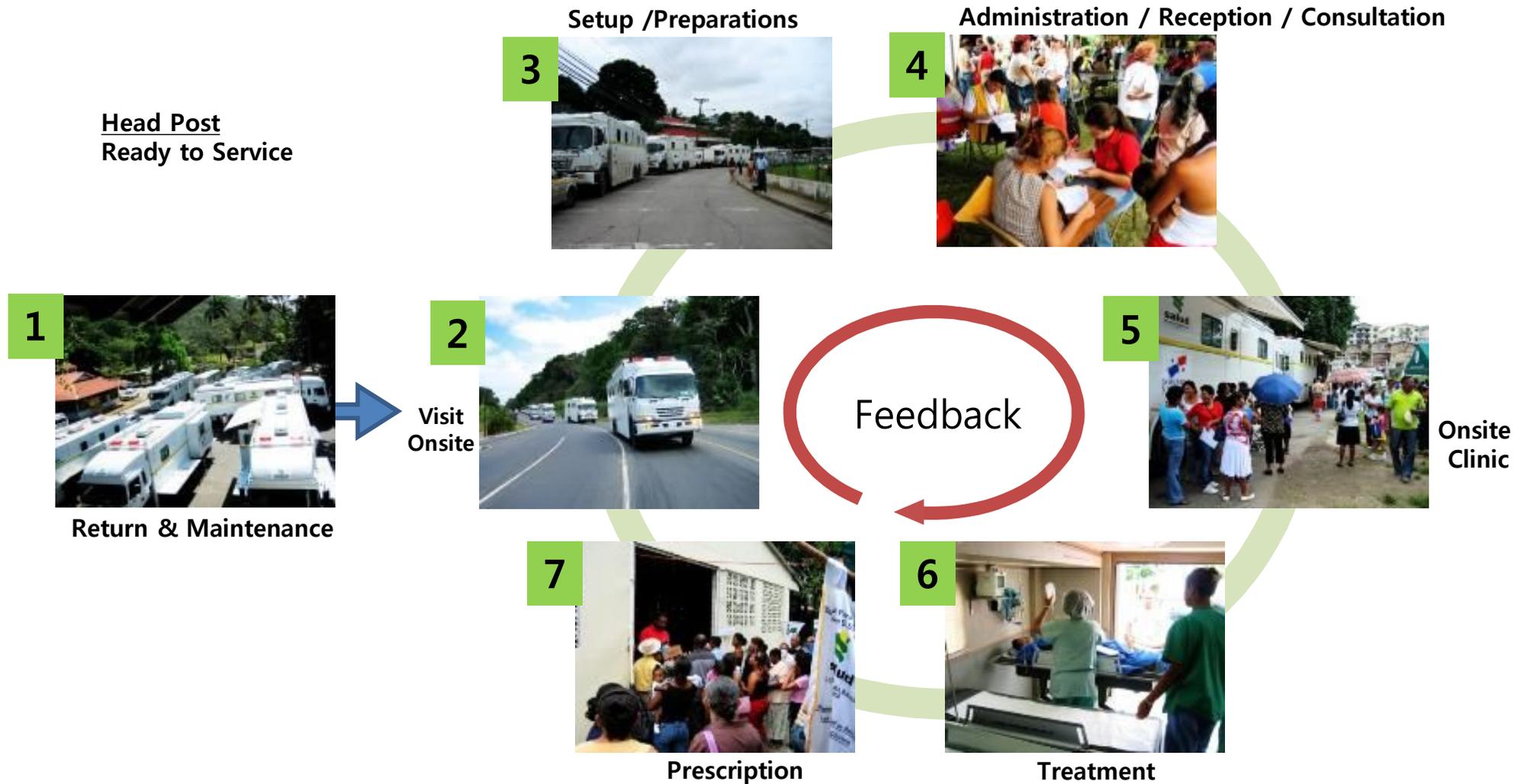
### Expected Effect of Mobile Hospital



# 1. Mobile Hospital Unit

## General Description

### Process Diagram



# 1. Mobile Hospital Unit

## General Description

### Components of Hospital Units

Mobile Hospital Unit has same hospital conditions and its medical systems as local hospital.

Each sections of the Mobile health center are ergonomically designed and fitted with built-in lighting, heating, air conditioning and water & auto generating systems to ensure convenient optimum functions.

Electrical power generators can be also supplied based on units.  
All units are fully insulated to be used under severe climatic conditions.  
This unit can use powers from its own power generator and local electrical plant.



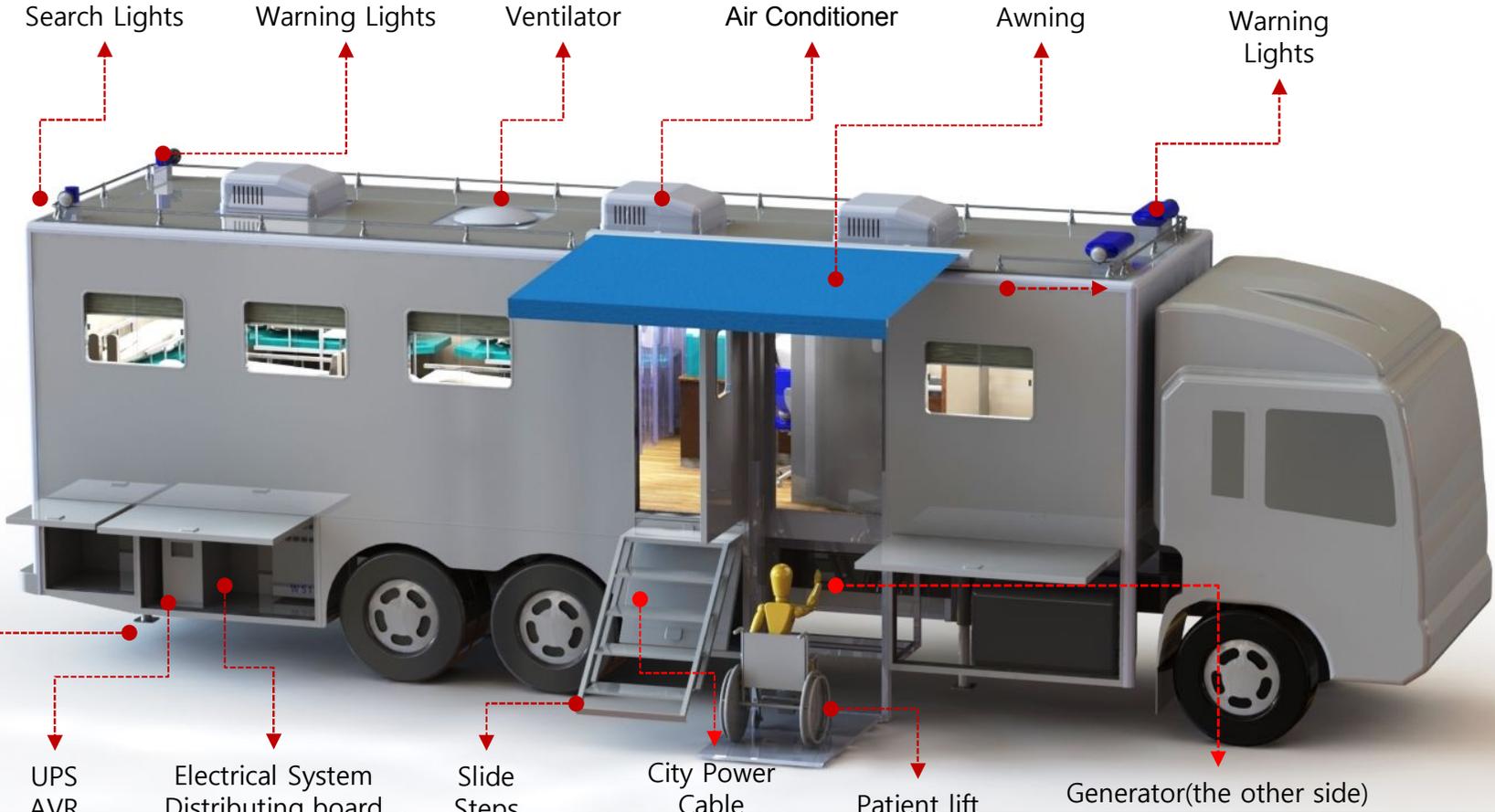
**M**edical  
Solution &  
Device

**E**lectrical Power  
System  
Equipment &  
Device

# 1. Mobile Hospital Unit

## General Description

**E**lectrical Power System Equipment & Device



# 1. Mobile Hospital Unit

## General Description



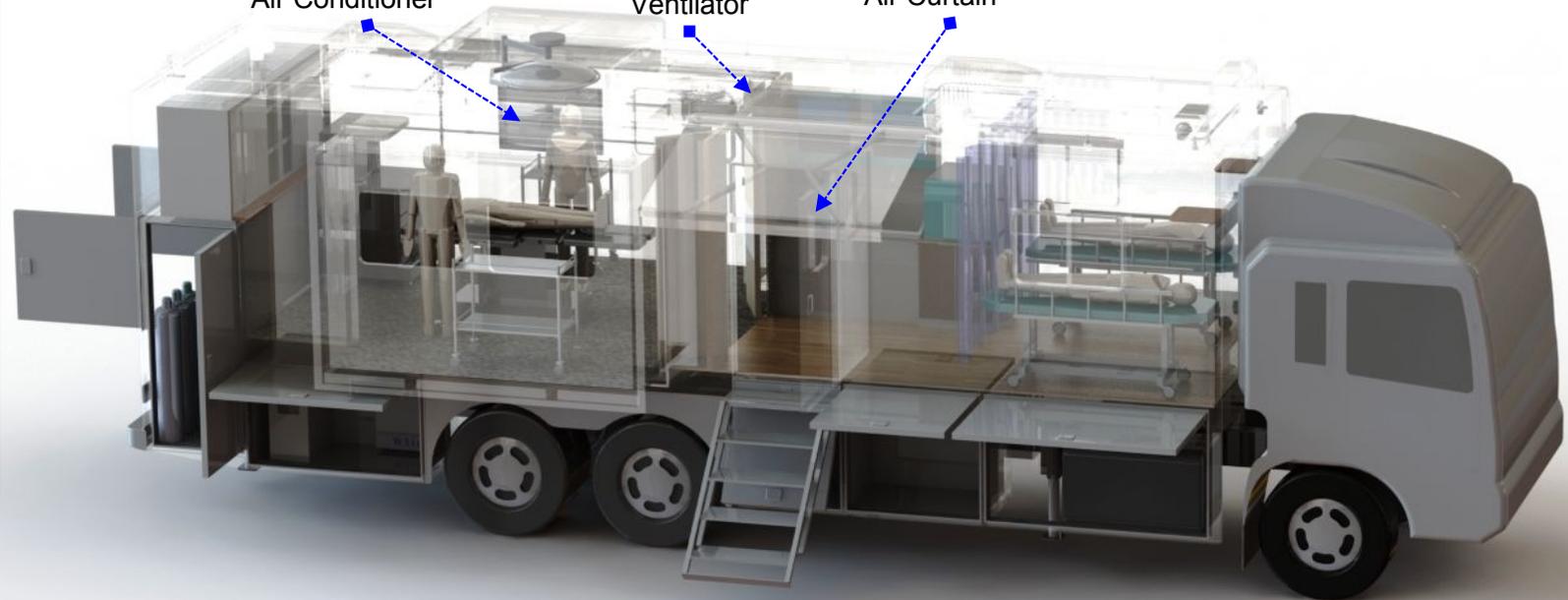
Air Conditioner



Ventilator



Air Curtain



**HVAC** & Device

# 2. Chassis Application

## 2-1. Truck Chassis

**Any 6X4 Truck Chassis are applicable**

Driving and Crew's Compartment

- 1) The driving/crew compartment is designed to provide substantial impact and roll-over protection for the crew in the event of an accident and at the same afford maximum possible vision for the driver.
- 2) Driver's seat vertically and longitudinally adjustable, with adjustable backrest.
- 3) The doors or door locks are designed to prevent their being inadvertently opened from the inside.
- 4) The following instrumentation and controls is mounted in the driving compartment and is clearly identified and visible to the driver while seated. Control and switches expected to be operated by the driver while the appliance is in motion are within convenient reach for the driver:
  - Ⓐ Speed Meter
  - Ⓑ Engine Tacho Meter
  - Ⓒ Engine Oil Gauge
  - Ⓓ Coolant Temperature Indicator or Gauge
  - Ⓔ Turn Signal Control and Indicator Light
  - Ⓕ Headlight switch.
  - Ⓖ High Beam Headlight switch and indicator
  - Ⓗ Fuel Level Gauge.
  - Ⓘ Windshield wipers and washer.



**TATA DAEWOO**

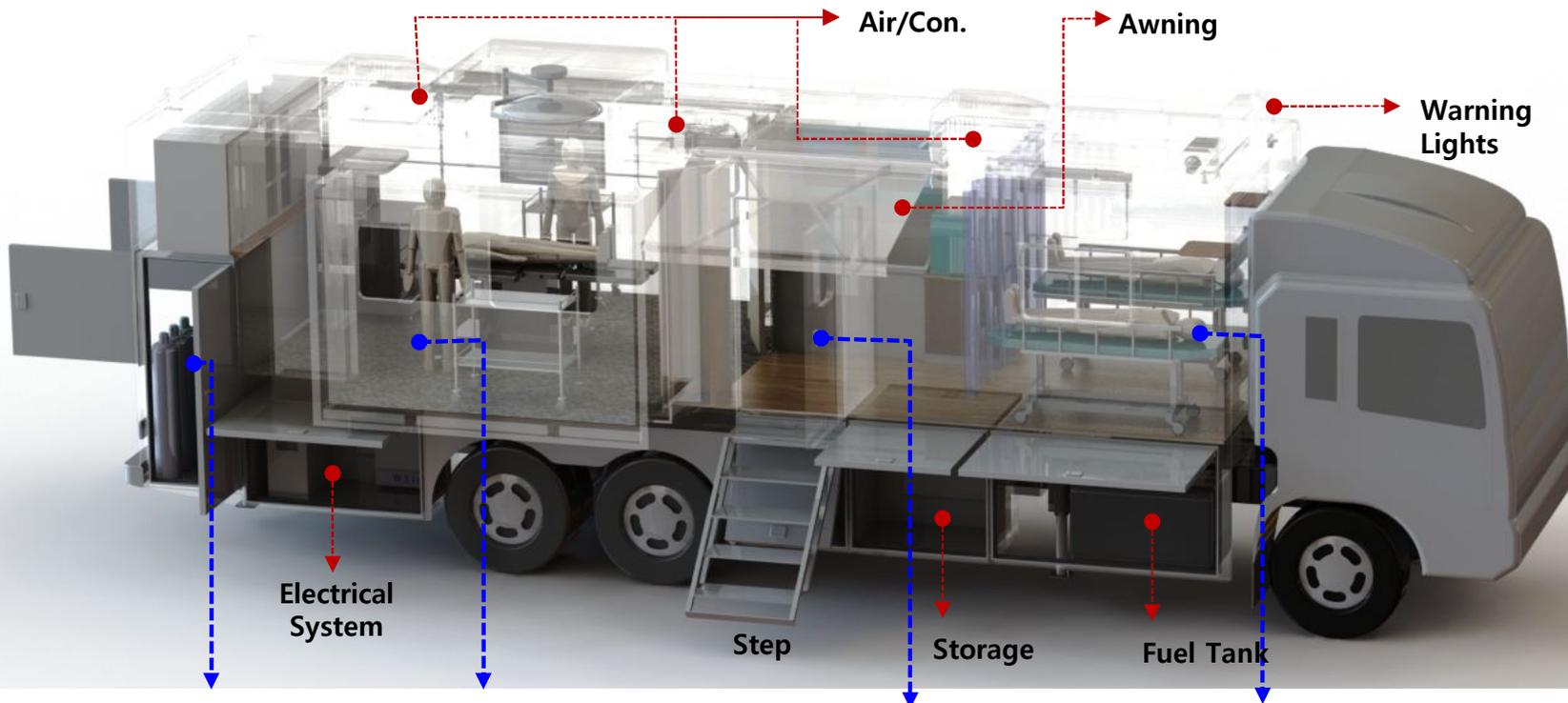
<b>General</b>	Overall Length	(mm)	10,000 to 11,200
	Overall Width	(mm)	Less than 2,500
	Overall Height	(mm)	3,000 to 3,800
	Wheel Base	1st W/B (mm)	<b>Not Less than 7,000</b>
<b>Engine</b>	Type		Turbo Intercooler & Diesel Engine
	Displacement	(cc)	Not less than 11,000
	Max. Power	(ps/rpm)	Not less than 300ps
<b>Fuel tank</b>		(ℓ)	400L(AL)

# 3. Detailed Description

(Required Type)

## 3-1. Mobile Operating Theatre Unit

### 3D Image



Myanmar MOD  
Mobile Surgery & Intensive Unit



Medical Gas Supply



Surgery Room (OT)



Preparation



Recovery

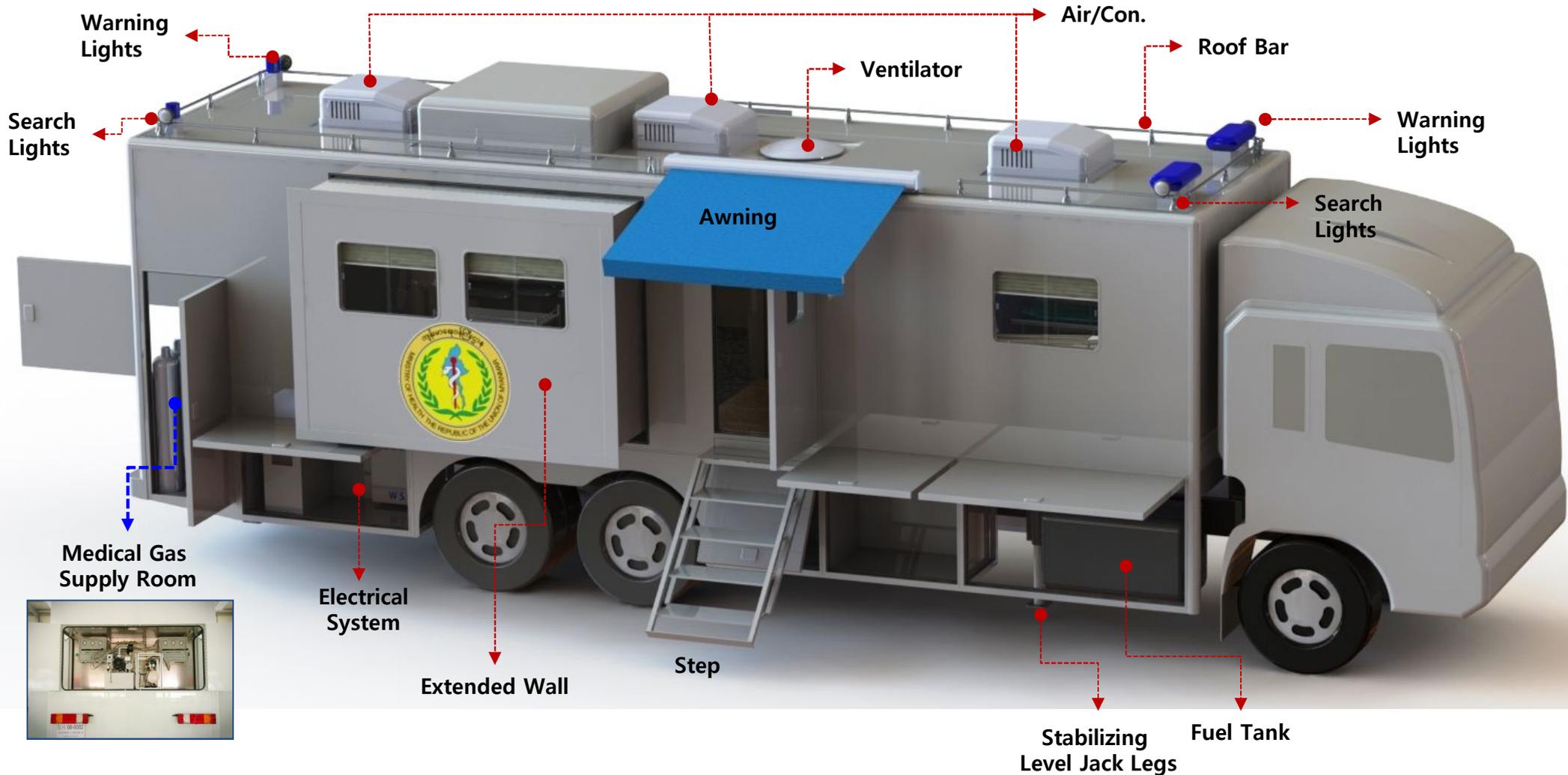


※ *Note: Above image may be different from the actual.*

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

Operating Theatre Unit-Exterior 3D Image

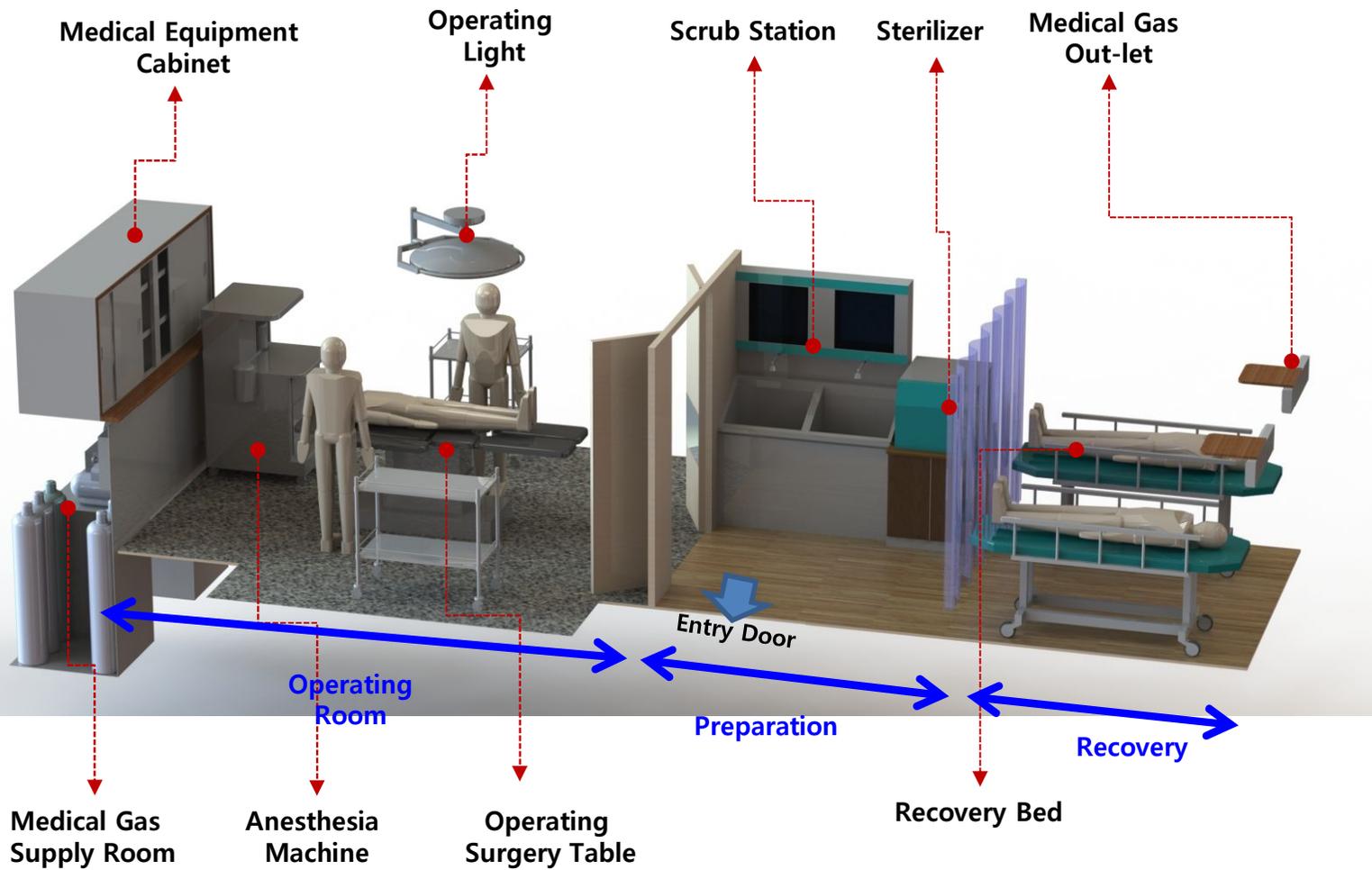


# 3. Detailed Description

(Required Type)

## 3-1. Mobile Operating Theatre Unit

### Operating Theatre Unit - Interior 3D Image



Myanmar MOD  
Mobile Surgery & Intensive Unit



Recovery 2 beds

※ Note: Above image may be different from the actual.

# 3. Detailed Description

(Required Type)

## 3-1. Mobile Operating Theatre Unit

Interior image



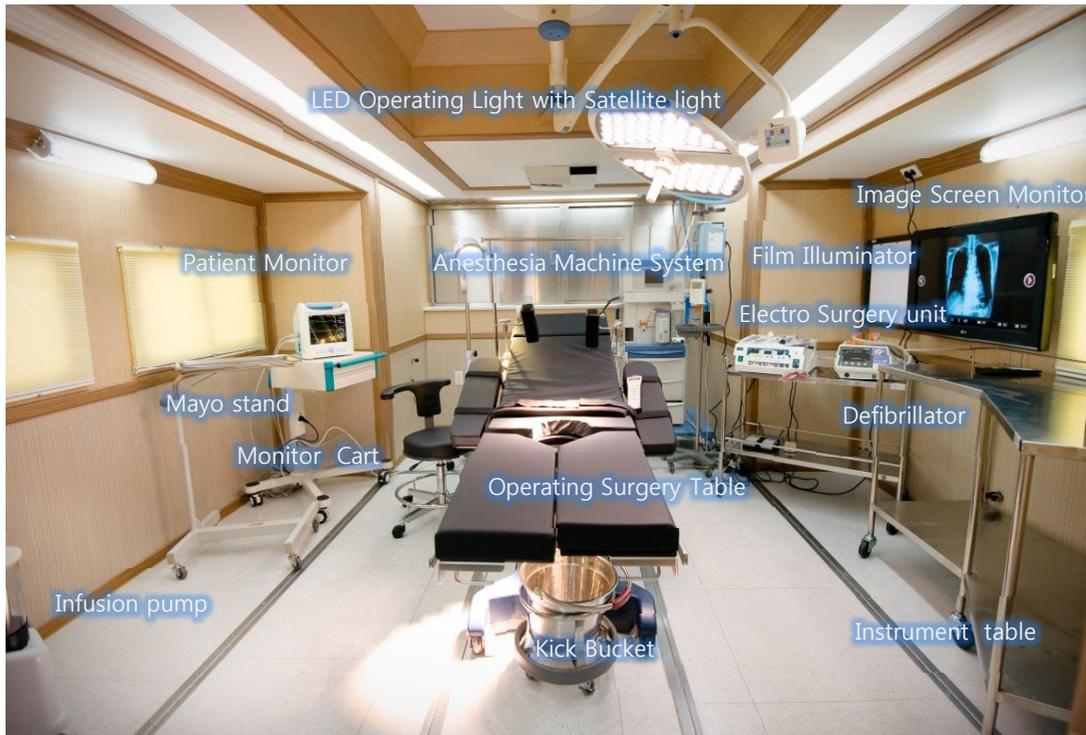
※ Note: Above image may be different from the actual.

# 3. Detailed Description

(Required Type)

## 3-1. Mobile Operating Theatre Unit

### Operating Room



### Surgical Medical Equipment

- Operating Table, Mechanical
- Operating Light, LED
- Suction Machine
- Electrosurgical Unit (Diathermy)
- Supporting Instrument Trolley
- Waste Disposal Collecting System
- Orthopedic Instrument
  - 1) Basic Orthopedic Instrument Set
  - 2) Microsurgical Set and Loupes
    - 2-1) Stainless Steel Microsurgery Set
    - 2-2) Surgical Loupes
    - 2-3) Light Source 1 for Microsurgery
    - 2-4) Light Source 2 for Microsurgery
    - 2-5) Titanium Microsurgical Instrument Set
    - 2-6) Microvascular Clamps Set
  - 3) Electric Height Speed Drill and Bone Saw
  - 4) Pneumatic Tourniquet
  - 5) POP Saw Set
    - 5-1) Manual POP Cutting Devices
  - 6) Air Split
- Cabinet
- X-Ray View Box
- Scrub Basin, Double Tap, Soap Dispenser
- Bed for Recovery/HDU
- Wall Mounted Transport Ventilator, ICU ventilator
- Wall Mounted Anesthetic machine

※Note: Above image may be different from the actual.

# 3. Detailed Description

(Required Type)

## 3-1. Mobile Operating Theatre Unit

### Recovery Room



### Recovery Medical Equipment

- Wall Mounted Transport Ventilator, ICU ventilator
- Bed for Recovery/HDU

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

### i. Equipment List (Surgery-Orthopedic-Microsurgical ) 1/12

Item	Model	Q'ty	Image / Description
1. Operating Table, Mechanical	JS-001	1	
2. Operating Light, LED	JS-010	1	
3. Suction Machine	MS-700	1	
4. Electrosurgical Unit (Diathermy)	ITC-400D	1	
5. Supporting Instrument Trolley	TT-609	1	
6. Waste Disposal Collecting System	TK-47S	1	

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

### i. Equipment List (Surgery-Orthopedic-Microsurgical ) 2/12

	Item	Model	Q'ty	Image / description
<b>7. Orthopedic instrument</b>				
7-1. Basic orthopaedic instrument set				
1	Osteotome(straight)		7	Blade width (6,8,10,15,20, 25,30)mm length:240mm
2	Bone hammer		4	Weigh:140g,270g,350g,450g
3	Osteotome(curved)		8	BLADE width (6,8,10,15,20, 25,30)mm length:240mm
4	Periosteal elevator		3	BLADE width (9,12,15)mm length:180mm
5	Periosteal elevator		3	BLADE width (10,15,20)mm length:240mm
6	Double-sides osteotome		8	BLADE width (6,8,10,15,20, 25,30)mm length:300mm
7	Plate bending wrench		1	Length:240mm,upper limb 2*1
8	Plate bending wrench		1	Length:240mm,upper limb 2*2
9	Bone flat chisels		3	BLADE width (6,9,12)mm length:200mm
10	Spinal gouges		5	BLADE width(3,4,6,8,12)mm length:200mm
11	Double-use guide drill		2	Drill bit diam:2.5mm,3.2mm, NEUTRAL AND LOAD BEARING TYPE
12	Depth gauges		4	Gaugin depth(30.60,90,100)mm
13	Tap(t-type)handle		3	Diam.:3.5mm,4mm(length:160mm) Diam.:4.5mm,(length180mm)
14	Countersink drill		2	Diam.:6mm,8mm (length:180mm)
15	Tap(t-type)handle		1	Diam:6.5mm(length:200mm)

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

### i. Equipment List (Surgery-Orthopedic-Microsurgical ) 3/12

	ITEM	MODEL	Q'TY	Image / Description
16	Double-end guider		3	Diam:(2.5,3.0)mm (3.2,4.5)mm (4.5,6.5)mm
17	Bone pry		1	Size:10mm,length:230mm
18	Broken nail hollow		3	INNER diam:6mm,7mm,8mm length:160mm
19	Bone curette		10	BLADE WIDTH: 3mm,4mm,5mm,6mm,7mm SIZE:STRAIGHT,LEFT BAND
20	Nerve detacher		4	Double ended width 3.5mm. Length240mm.DISEETOR width:5mmwith BLANT HOOK ON THE other,length:240mm
21	Screw driver		4	SLOTTED POINT: large,small,length:200mm INNER HEXAGONAL: SW3.5,sw2.5,length:200mm
22	Retractor		2	HEAD size:18mm,42mm
23	Safety screw driver		2	Inner hexagonal sw3.5,sw2.5
24	Bone file(osteotribe)		2	Edge osteotribe,round osteotribe
25	Safety screw driver		2	Slotted head:large,small size
26	Safety screw driver		2	Hexagonal head:large,small size
27	Bone file(osteotribe, forfinger)		2	Round ostetribe
28	Broken screw extractor		2	Large size diam:4.5mm,small SIZE DIAM:3.5mm
29	Self-centering bone holding forceps		4	Size: large size, small size. Length:180mm,260mm
30	Reduction forceps		4	Large size.Length:200mm SMALL SIZE.Length:160mm

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

### i. Equipment List (Surgery-Orthopedic-Microsurgical ) 4/12

	Item	Model	Q'ty	Image / description
31	Triangle self-centering bone holding forceps		1	Length:250mm
32	Reduction forceps with points		4	Large size.Length:200mm SMALL SIZE.Length:140mm
33	Bone holding forceps with guide		3	Large size.Length:230mm MEDIUM SIZE.Length:230mm . SMALL SIZE.Length:230mm
34	Double joint bone scissors		8	Straight,curved,length:160mm, 180mm,230mm,270mm
35	Bone holding clamps		3	Large,medium,small
36	Double joint outrigger scissors		1	Length:260mm
37	Angle rongeur scissors		1	Length:200mm
38	Bone rongeurs(angular)		3	BLADE width:3mm,5mm,6mm length:220mm
39	Double action bone rongeurs, (Slightly curved)		3	Width:2mm,length160mm. Width:3mm.Length180mm. Width4mm,length220mm
40	Laminectomy rongeurs		4	Blade width:2.5mm,4.5mm. Blade mounth angle:90°,130°. STEM length:160mm
41	Double action bone rongeurs,(pointed curved)		3	BLADE width:2mm,3mm length:180mm BLADE width4mm length:220mm
42	Gemanic laminectomy rongeurs		10	Blade width:2mm,2.5mm,3mm, 3.5mm,4.5mm,blademounth ANGLE:90°,130°.Length220mm
43	Double action bone rongeurs,(straight)		1	BLADE width8mm,length220mm
44	Laminectomy rongeurs(aboral)		3	Blade width:4.5mm,blade MOUNTH ANGLE:90°,110°,130°STEM length160mm
45	Adjustable laminectomy rongeurs		2	Blade width:2.5mm,4.5mm,length:190mm

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

### i. Equipment List (Surgery-Orthopedic-Microsurgical ) 5/12

	Item	Model	Q'ty	Image / description
46	Spurling rongeurs		4	BLADE width:3mm,4.5mm length170mmand220mm
47	Spurung rongeurs		4	Bladewidth:3mm,4.5mm. Length170mmand220mm
48	Rejection forceps		2	SMALL size,length:140mm, LARGE size,length:160mm
49	Plate bend forceps		1	Length:220mm
50	Beside traction rack		1	
51	Desk type bending press		1	Desk type
52	Blouse rack		1	
53	Wire cutting forceps		1	Maximum ranges of cutting 1.2mm DIAMETER
54	Wire pliers for medical application(flat/ Sharp)		2	MAXIMUM RANGES OF CUTTING 2mm DIAMETER
55	Wire cutting forceps		1	Maximum ranges of cutting 2.5mm DIAMETER
56	Wire cutting forceps		1	MAXIMUM RANGES OF CUTTING 6mm DIAMETER
57	Bone kirshner scissors		1	Maximum ranges of cutting 2.5mm DIAMETER
58	Asseous pin bending forceps		2	Large size,bend steinman pin use small size bend kirshner pin use
59	Wire cutting forceps		1	MAXIMUM RANGES OF CUTTING 2mm DIAMETER
60	Auto retractors		2	Length:200mm,hook depth:40mm AND 60mm

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

### i. Equipment List (Surgery-Orthopedic-Microsurgical ) 6/12

	Item	Model	Q'ty	Image / description
61	Wire cutting forceps		1	Pcs
62	Skull tractive bow		1	Large size
63	Skull tractive bow		1	Large, medium,small
64	Retractor self-reating ratchet typer		2	Length:280mm
65	Krishner wires traction bow		1	Pcs
66	Melti-purpose retractor		1	3*1set
67	Stainman pins traction bow		3	Large, midium,small
68	Compression instrument		1	Length:240mmuse FOR NAIL
69	Angle finder		3	Mouth angle:95°,130°,135°,used for nails
70	Cernical vertebra trephine		4	Diam:13mm,14mm,15mm,16mm, CERVICAL VERTEBRA,LUMBAR VERTEBRA USE
71	Inserter extractor		1	Length:200mm,used FOR NAILS
72	Indicator rotating core		2	Large,small match for use with ring saw
73	Combination screw barrel reamer		1	Length:250mm,use FOR NAILS
74	Periosteal elevator		1	SHARP MOUTH,MICROSHARP MOUTH, length:300mm
75	Screw tap		1	Length:270mm,used FOR NAILS

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

### i. Equipment List (Surgery-Orthopedic-Microsurgical ) 7/12

	Item	Model	Q'ty	Image / description
76	Nerve root retractors		6	MOUTH ANGLE:95°,135° size:3mm,5mm,7mm
77	Screw holding forceps		3	Size:3.5mm,4mm,4.5mm
78	Spinal plate retractor		2	Size:large,small
79	Cervical vertebra retractor		2	Size:large,small
80	Muscle retractor		4	Size:large,small
81	Posterior cervical vetebra retractor		2	Length:170mm
82	Tibial and fibula retractors		2	Size:bread shape
83	Toggle		1	2001-20-01-02
84	Patella clamp		1	Length:90mm
85	Conductor steel type		1	Straight,left bend,right bend

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

### i. Equipment List (Surgery-Orthopedic-Microsurgical ) 8/12

	Item	Model	Q'ty	Image / description
7-2. Microsurgical equipment specifications				
1	Screw holding forceps		1	A7-piece kit One 9 to 15cm tweezer, point diameter 0.15mm ONE 9 TO 15cm TWEEZER, POINT DIAMETER 0.3mm ONE 9 TO 15cm TWEEZER (AS NEEDLE HOLDER) ONE 9 TO 14cm NEEDLE HOLDER (CURVED) ONE 9 TO 14cm NEEDLE HOLDER (STRAIGHT) ONE 9 TO 14cm SCISSOR (CURVED) ONE 9 TO 14cm SCISSOR (STRAIGHT)
2	Surgical loupes	C32-2.5x c32-4x	1	
3	Light source 1 for microsurgery	HK7000	1	

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

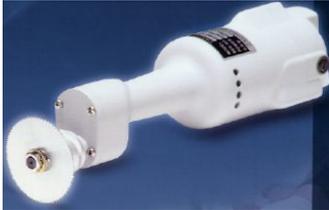
### i. Equipment List (Surgery-Orthopedic-Microsurgical ) 9/12

	Item	Model	Q'ty	Image / description
4	Light source 2 for microsurgery	Xenon 1000	1	
5	Micro vascular clamps set		1	2 double clamp    1.2cm LONG FOR VESSEL 0.5 - 1.2mm 2 double clamp    2.7cm LONG FOR VESSEL 2.0 - 3.5mm
6	Micro vascular clamps set		1	2 double clamp    1.2cm LONG FOR VESSEL 0.5 - 1.2mm 2 double clamp    2.7cm LONG FOR VESSEL 2.0 - 3.5mm

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

### i. Equipment List (Surgery-Orthopedic-Microsurgical ) 10/12

Item	Model	Q'ty	Image / Description
7-3. Electric Height Speed Drill and Bone Saw	Micro Power & Power Pro	1	
7-4. Pneumatic Tourniquet	Tourni-3000	1	
7-5. POP Saw Set	HCC-114	1	
7-5-1. Manual POP Cutting Devices		1	
7-6. Air Split	663	1	

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

### i. Equipment List (Surgery-Orthopedic-Microsurgical ) 11/12

Item	Model	Q'ty	Image / Description
8. Medical Cabinet		1	
9. X-Ray View Box	TV-501S	1	
10. Scrub Basin, Double Tap, Soap Dispenser	HL-HS2003-600	2	
11. Bed for Recovery/HDU	SSH-220-2	1	
12. Wall Mounted Transport Ventilator, ICU ventilator	PNEUMA2	1	

# 3. Detailed Description

## 3-1. Mobile Operating Theatre Unit

### i. Equipment List (Surgery-Orthopedic-Microsurgical ) 12/12

Item	Model	Q'ty	Image / Description
13. Wall Mounted Anesthetic machine	Vetia	1	
14. Autoclave	HS-3041VD	1	
15. Medical grade Monitor	KT-D201U8E	1	

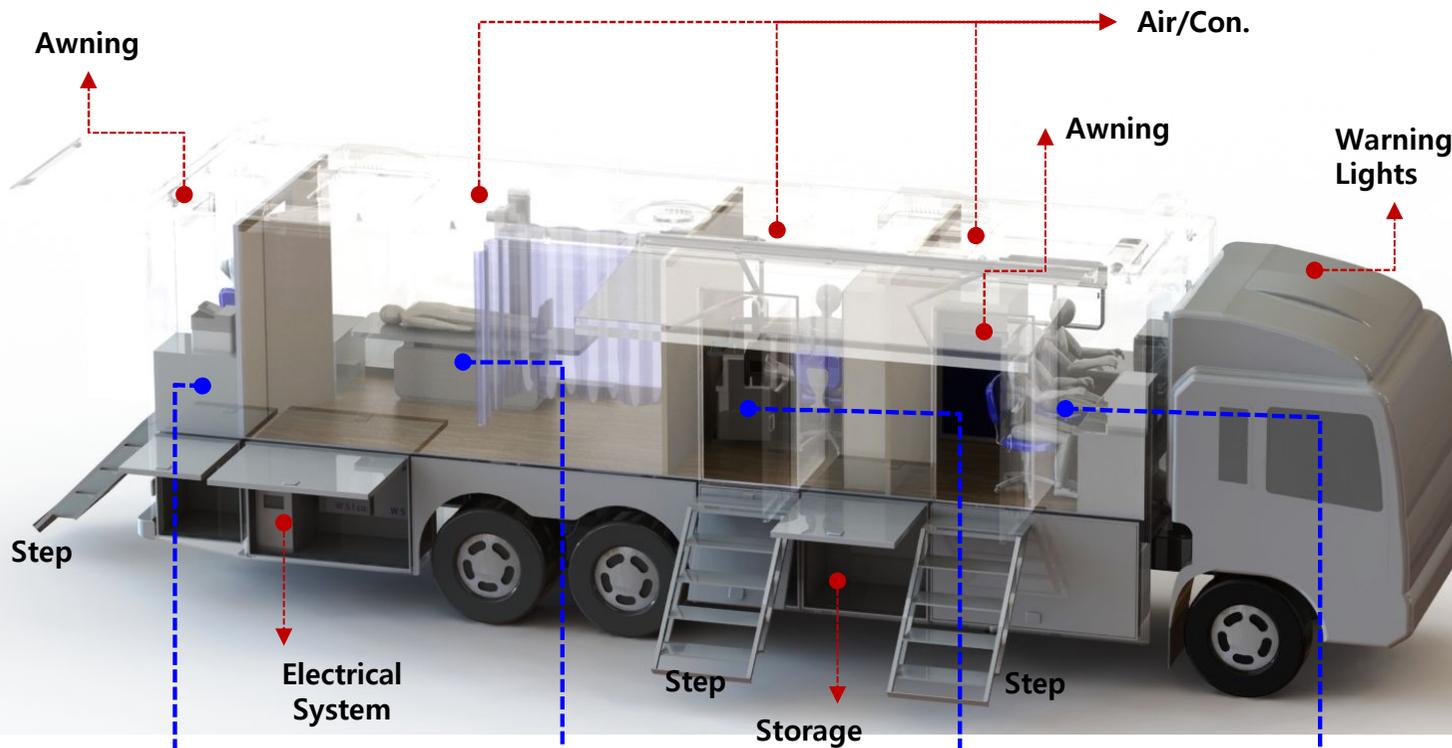


# 3. Detailed Description

## 3-2. Mobile Imaging & Lab. Unit

(Required Type)

### Imaging & Lab. - Exterior 3D Image



Myanmar MOD  
Mobile Radiology Unit  
Mobile Surgery Unit



X-Ray control Section



X-RAY / Ultrasound Room



Laboratory

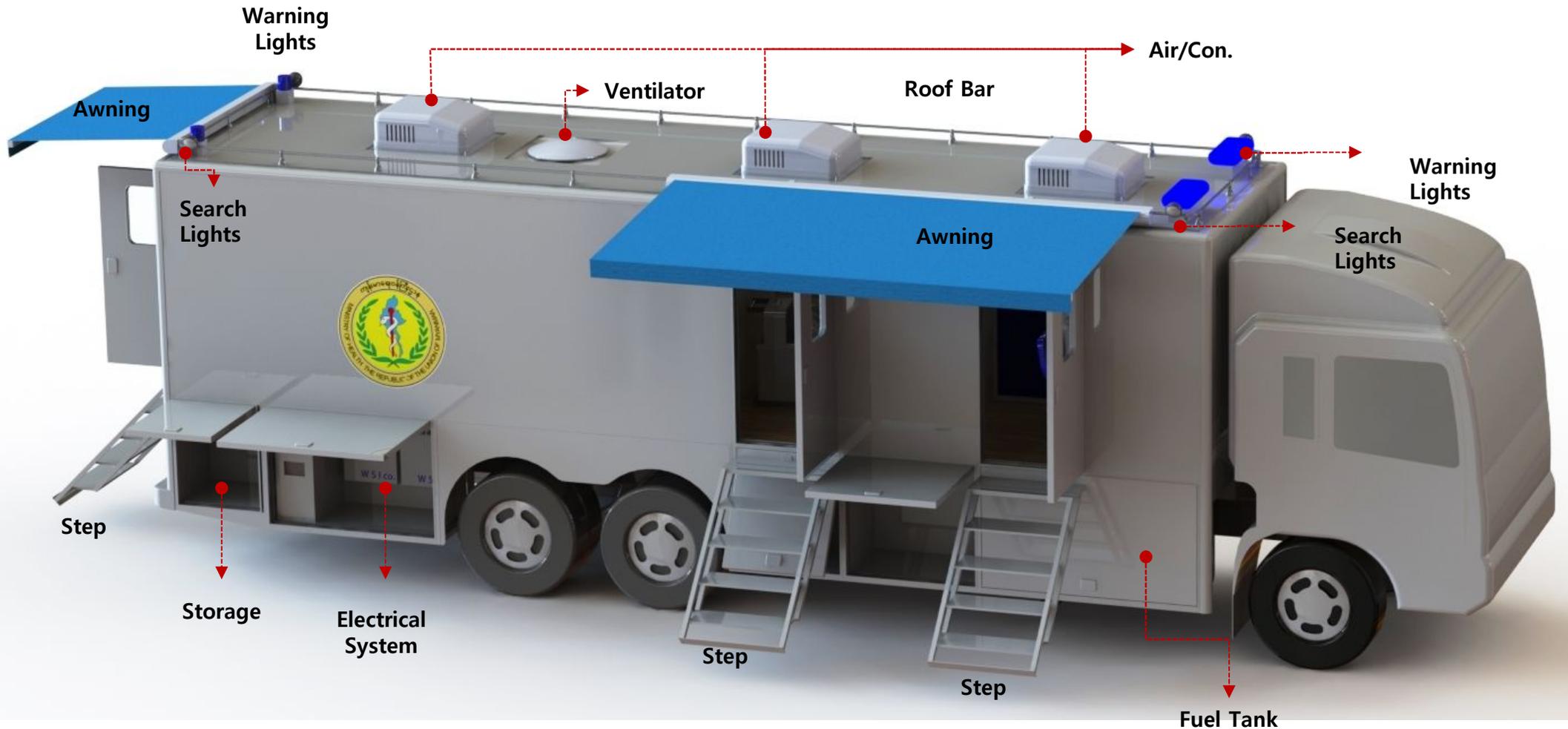
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# 3. Detailed Description

(Required Type)

## 3-2. Mobile Imaging & Lab. Unit

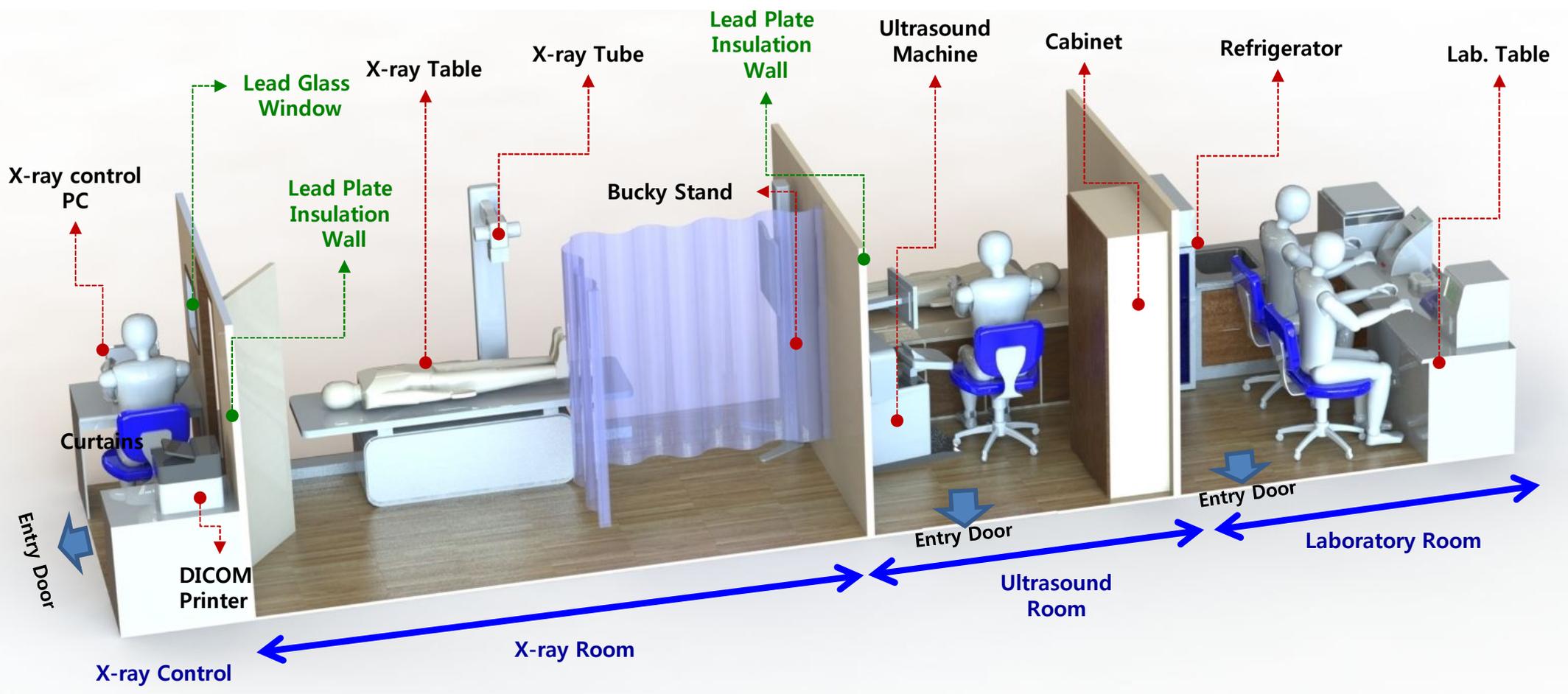
### Imaging & Lab. - Exterior 3D Image



# 3. Detailed Description

## 3-2. Mobile Imaging & Lab. Unit

Imaging & Lab. - Interior 3D Image



*\*Note: Above image may be different from the actual.*

# 3. Detailed Description

(Required Type)

## 3-2. Mobile Imaging & Lab. Unit

### Interior image



X-ray / Ultrasound Section



Laboratory Section



Myanmar MOD - Mobile Radiology Unit .



*\*Note: Above image may be different from the actual.*

# 3. Detailed Description

(Required Type)

## 3-2.Mobile Imaging & Lab. Unit

### Interior image



### Ultrasound Section



Myanmar MOD - Mobile Radiology Unit .

*※Note: Above image may be different from the actual.*

# 3. Detailed Description

## 3-2. Mobile Imaging & Lab. Unit

### i. Equipment List (X-ray / Ultrasound) 1/2

Item	Model	Q'ty	IMAGE
1. X-Ray System, Radiology	Accuray-603R	1	
2. Detector	el'tor	2	
3. Bucky Stand	VB-20	1	
4. Radiographic Table	TF-32	1	
5. Lead Apron, 0.5mmPb	-	1	

# 3. Detailed Description

## 3-2.Mobile Imaging & Lab. Unit

### i. Equipment List (X-ray / Ultrasound) 2/2

Item	Model	Q'ty	IMAGE
Medical grade (BARCO) Monitor	KT-D201U8E	1	
Tabletop DICOM Printer	Drypro 832	1	
Film, 14X17", 500 sheets	Konica Minolta	1set	
Mobile Digital Diagnostic Ultrasound w/3 Probes <b>Supplied by Zeya</b>	E-CUBE 7	1	

# 3. Detailed Description

## 3-2. Mobile Imaging & Lab. Unit

### ii. Equipment List (Laboratory Instrument) 1/3

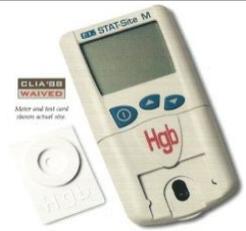
Item	Model	Q'ty	Image / Description
1. Binocular Microscope	CX 22	1	 A binocular microscope with a white body and black accents. The text 'CX22' is visible in the top right corner of the image. The microscope has two eyepieces, a nosepiece with objective lenses, and a stage.
2. Semi-Auto Biochemical Analyzer	A-6	1	 A compact, white and blue laboratory instrument. It has a circular sample compartment on the left and a control panel on the right. A small display screen is visible on the control panel.
3. Electrolyte Analyzer	Smartlyte	1	 A white and grey laboratory instrument with a digital display and a sample inlet. The brand name 'SMARTLYTE' is visible on the top left.
4. Laboratory Centrifuge	VS-4000i	1	 A white laboratory centrifuge with a digital display and control buttons. The model number 'VS-4000i' is visible on the front panel.
5. Glucometer	AccuCheck	1	 A red and white glucometer with a digital display and a test strip. The brand name 'Accu-Check' is visible on the device.

# 3. Detailed Description

(Required Type)

## 3-2.Mobile Imaging & Lab. Unit

### iii. Equipment List (Laboratory Instrument) 2/3

Item	Model	Q'ty	Image / Description
6. Haemoglobinometer	Stat-Site M	1	 A handheld haemoglobinometer (Stat-Site M) with a small LCD screen and buttons, next to a white test card with a circular well.
6-1) Test Card		1	
7. Micropipette (3 sets)	Research Plus	1	 A single-channel micropipette with a grey body and blue accents, labeled 'Research Plus'.
8. PCV Centrifuge	VS-12000	1	 A small, white microhematocrit centrifuge with a red lid and a black rotor, labeled 'VS-12000'.
9. Refrigerator	BPR-245	1	 A white laboratory refrigerator with a glass door and a blue interior, labeled 'BPR-245'.

※ Note: Some of the specification of Medical equipment shown in this proposal would be changed without notice.

# 3. Detailed Description

## 3-2.Mobile Imaging & Lab. Unit

### iii. Equipment List (Laboratory Instrument) 3/3

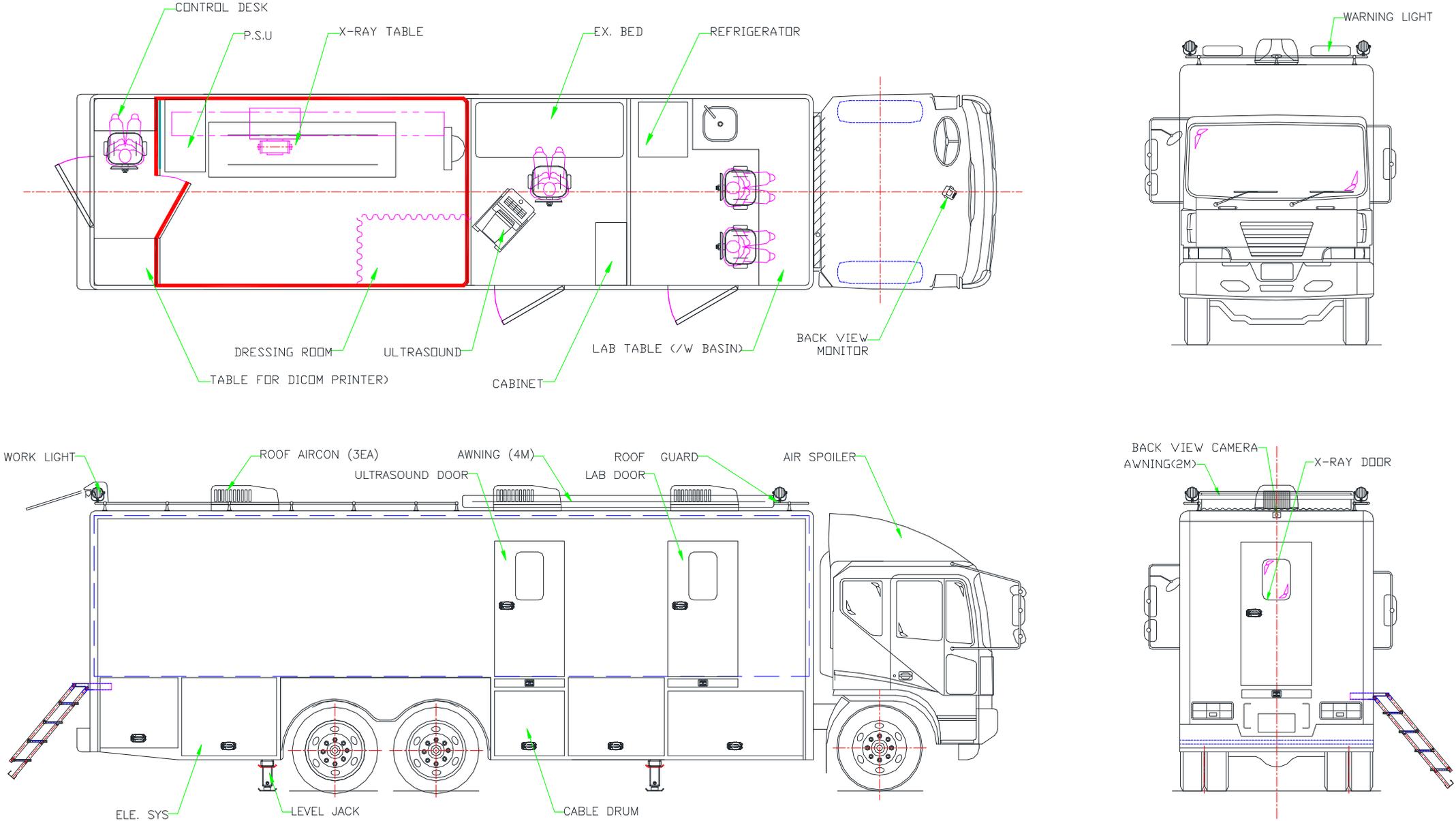
Item	Model	Q'ty	Image / Description
10. Computer and Printer			Supplied by Zeya

# 3. Detailed Description

(Required Type)

## 3-2. Mobile Imaging & Lab. Unit

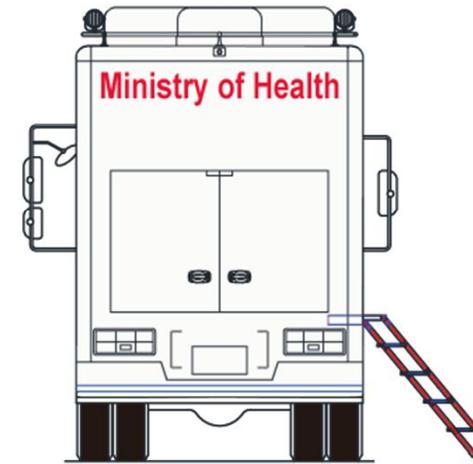
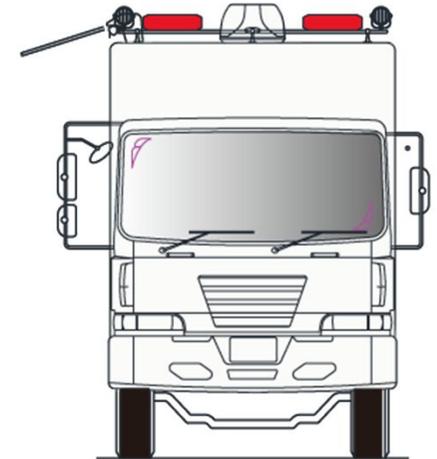
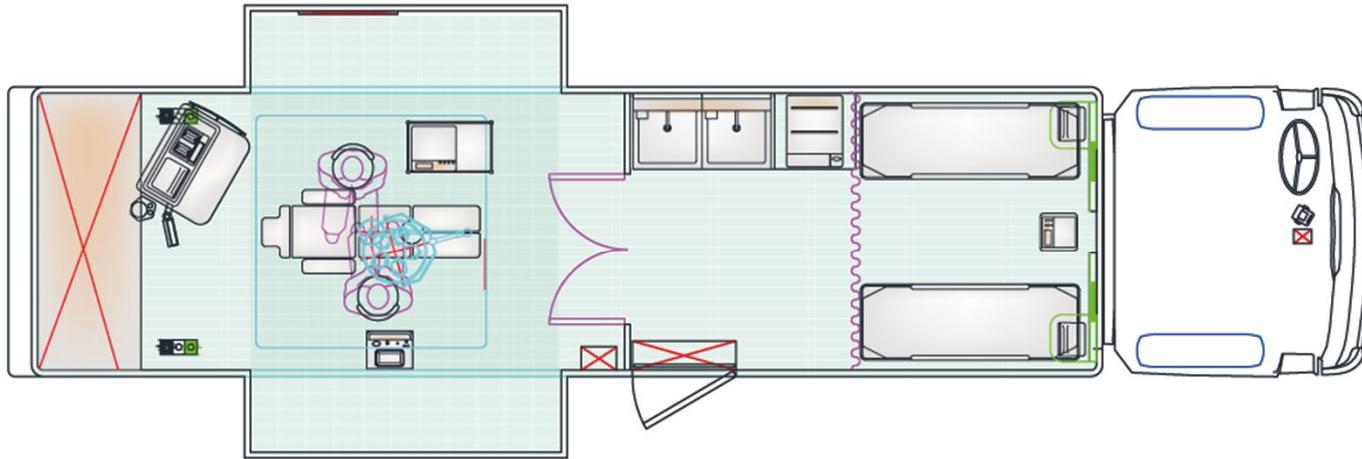
### Floor Plan



※ Note: Above image may be different from the actual.

# 4. Exterior-Sample Design

(Required Type)

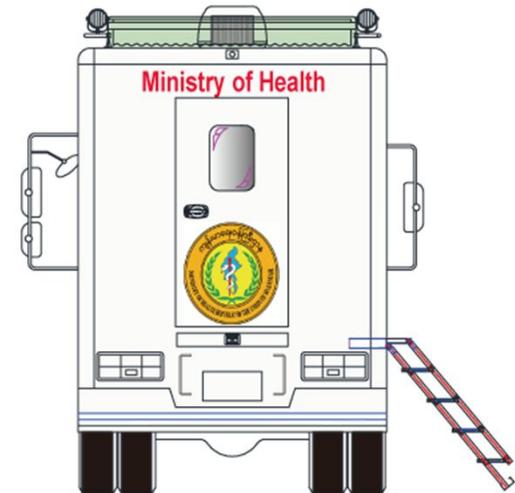
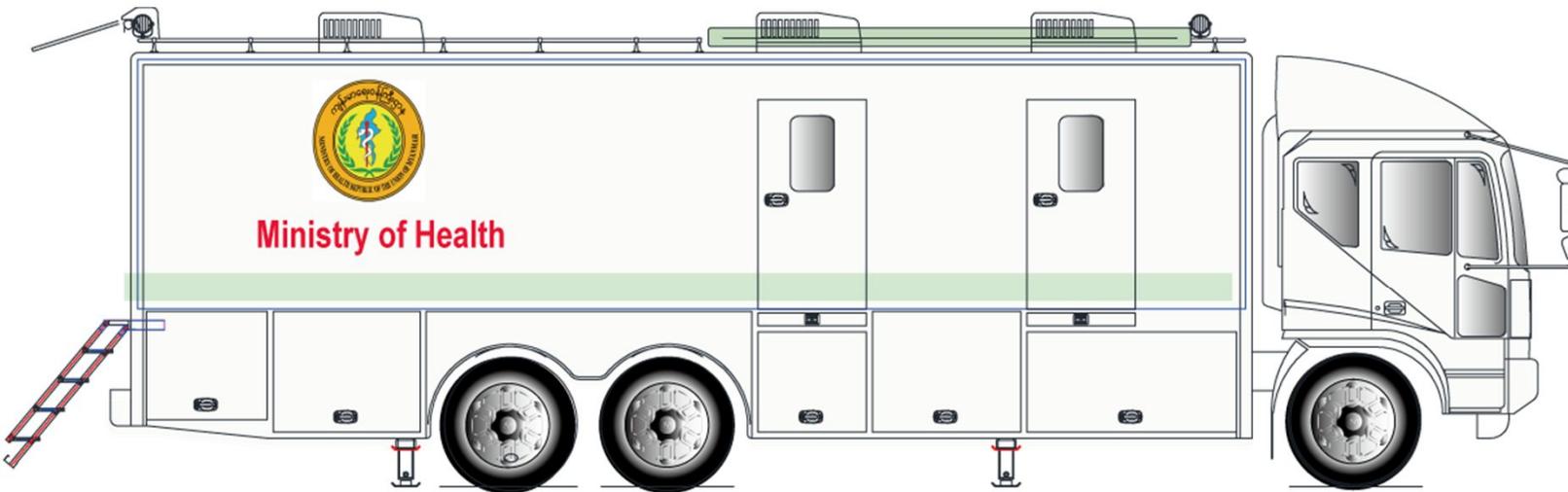
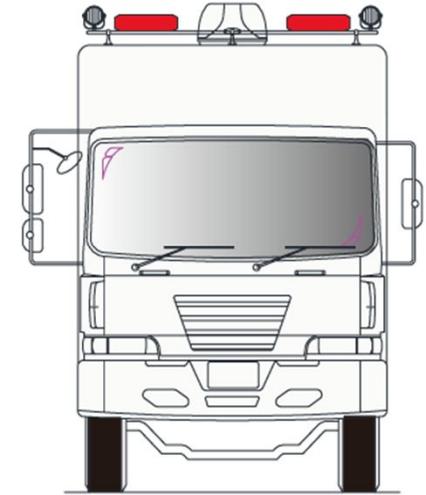
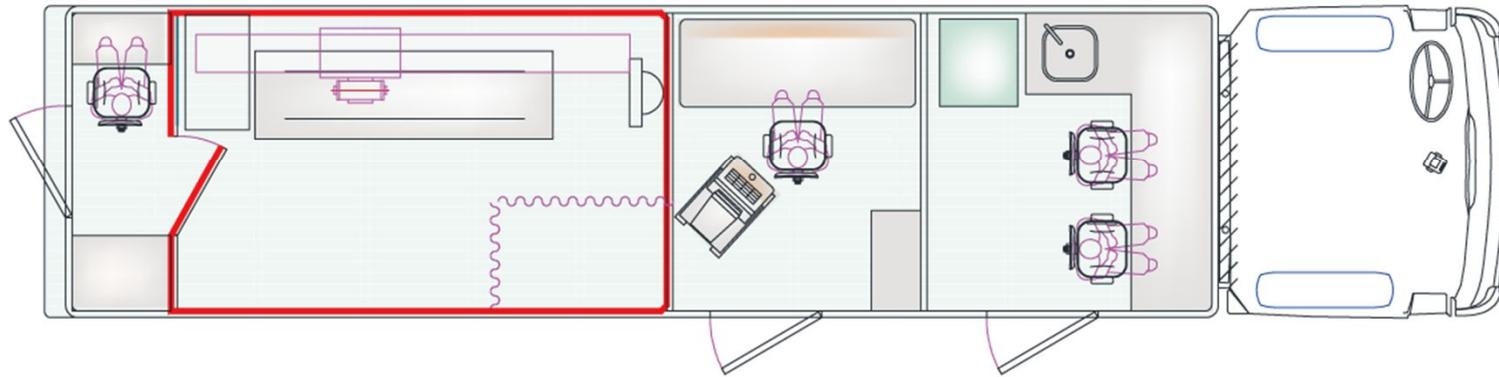


Operating Theatre Unit

*※Note: Above image may be different from the actual.*

# 4. Exterior-Sample Design

(Required Type)



Imaging & Laboratory Unit

※Note: Above image may be different from the actual.

# Our Reference Mobile Hospital In Myanmar

2013

### Mobile hospital unit

End-User : Myanmar (MOD-Army Hospital )

Description : Mobile Surgery & Recovery unit 1Unit

Mobile Radiology, Mammography, Cardiology unit 1Unit



Mobile Surgery & Recovery unit



Mobile Radiology, Mammography, Cardiology unit

# Medical Service In Myanmar by MOD

*with Our Mobile Hospital Unit*



# Medical Service In Myanmar by MOD

*with Our Mobile Hospital Unit*

