

FINANCIAL / TECHNICAL PROPOSAL

50 BED MOBILE FIELD HOSPITAL



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I BACHMANN RDS COMPANY PROFILE

BACHMANN RDS SAS belongs to the International Group LOSBERGER DE BOER, worldwide leader in the field of **rapid deployment systems and metal-textile structures**.

Our head-office is based in Paris and we have a maintenance and after-sale service centre in Mornac, France. The LOSBERGER DE BOER Group also have sales offices located in Germany, Dubai, Holland, China, USA, UK and we operate worldwide through our extended network of agents and distributors.

Our expertise comprises not only the design and the manufacture of **inflatable frame tents and aluminium or steel-frame structures**, but also a wide range of services, such as **installation, maintenance and operational support**.

Our rapid deployment systems are designed for multiple sectors such as **defence & security, aviation, industrial applications** as well as **humanitarian & NGOs** with the aim to provide instant and durable solutions for people and/or sensitive equipment.

Main applications:

- Mobile Headquarters / Command Posts
- Field Hospitals
- Workshops and storage hangars
- COLPRO systems (CBRN)
- Decontamination systems (individual and collective)
- Field Camp Systems (kitchen and messing facilities, sports halls, accommodation etc.)
- Special applications and projects (camouflage, missile protection)
- Humanitarian & Peace Keeping missions



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II CONCEPT DESCRIPTION

II.1 Hospital Layout

Fully integrated, our 50 Bed Hospital solution includes various medical departments such as operation theatre, ICU, wards, CSSD, pharmacy, laboratory and a field kitchen. The whole system can be transported using only three (3) trucks which are included in our offer. The system is self-supporting including water tanks, generator etc.



Configuration of the standard 50-bed hospital.

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II.2 General Description

The 50-bed mobile hospital is a fully operational hospital. It can be rapidly deployed (approximately 20 to 24 hours for a trained team in regular working conditions).

The complete setup is self-supporting. Diesel generators, water storage/filtration and air conditioning units are included.

The hospital consists of the following main components:

- Surgical trailer: this includes a completely equipped operation room, X-ray room and a storage area.
- Storage trailers 40ft (1x): for storage of tents and all other components mentioned below.
- Storage Chassis 20ft (1x): for storage of tents and other components + 1 field kitchen towed behind.
- Inflatable tents (15x), including connecting corridors. In the tent, services like OPD, registration, triage/emergency room, ICU, pharmacy, lab, sterilization and patient wards.
- Medical content & furniture: each service in the system comes with basic medical equipment and consumables, as well as suitable furniture.
- Installations: fully autonomous installations for water (including storage for clean and wastewater, pump, toilets & sinks), electricity and air treatment and AC for the hospital is included.
- 3 Trucks
- Tools & on-site instruction for deployment: all necessary tools for handling and deployment are included. As well, a manual and on-site instruction for deployment, operations and maintenance is included.

Key assets of the 50-bed Hospital are:

- Compact in transport (only two trailers with trucks and two truck chassis), but covering all functions needed for a 50-bed hospital.
- Quick and easy to deploy: a trained team can deploy this hospital in 20 working hours.
- Fully autonomous: installations, medical equipment, consumables etc. are included. Only staff is needed to operate the hospital.
- Modular: all components of the infrastructure can be connected to each other, so different configurations can be made: **for every specific situation, an optimal solution can be established.**



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Operating Theatre:

- OT table and OT light
- Anaesthesia machine
- Electrosurgical unit
- Patient monitor
- Ultrasound
- Surgical kits
- Item for first 2000 surgeries

Digital X-ray room:

- Mobile DR X-ray generator
- Touchscreen control
- Lead screen
- Protective clothing

Laboratory:

- Haematology analyser
- Urine analyser
- Microscope
- Centrifuge
- Fridge

Triage & Emergency care room:

- Examination beds
- Patients trolleys
- Defibrillator
- Patient monitor
- Oxygen supply system
- Automatic ventilators

Sterilization room:

- Two sterilizers
- Washing machine
- Tumble dryer
-

Wards:

- 50 beds
- 10 instrument trolleys
- Medicine trolley
- 10 Sinks in flight cases
- 2 Toilets in flight case
- Items for 5000 treatments for one year

Infrastructure:

- 10 Inflatable tents with sluices
- Field kitchen for 200 meals a day
- Water storage bladders
- Redundant water pump kit
- Main generator and back up generator
- Air treatment
- AC & heating for tents and medical container

Trucks

- 2x Truck with 40ft container on trailer with hydraulic lift
- 1x Truck with 20ft container on trailer

Miscellaneous: More than 1000 different items according to your specified needs

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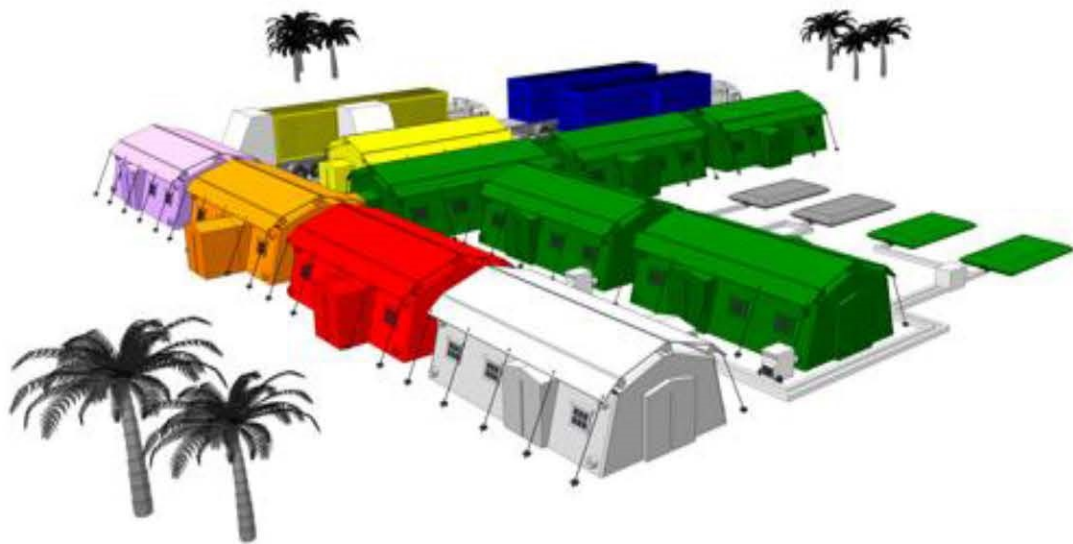
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II.3 Pictures/Drawings



A 50-bed hospital constructed in the field



3D-impression of a 50-bed field hospital



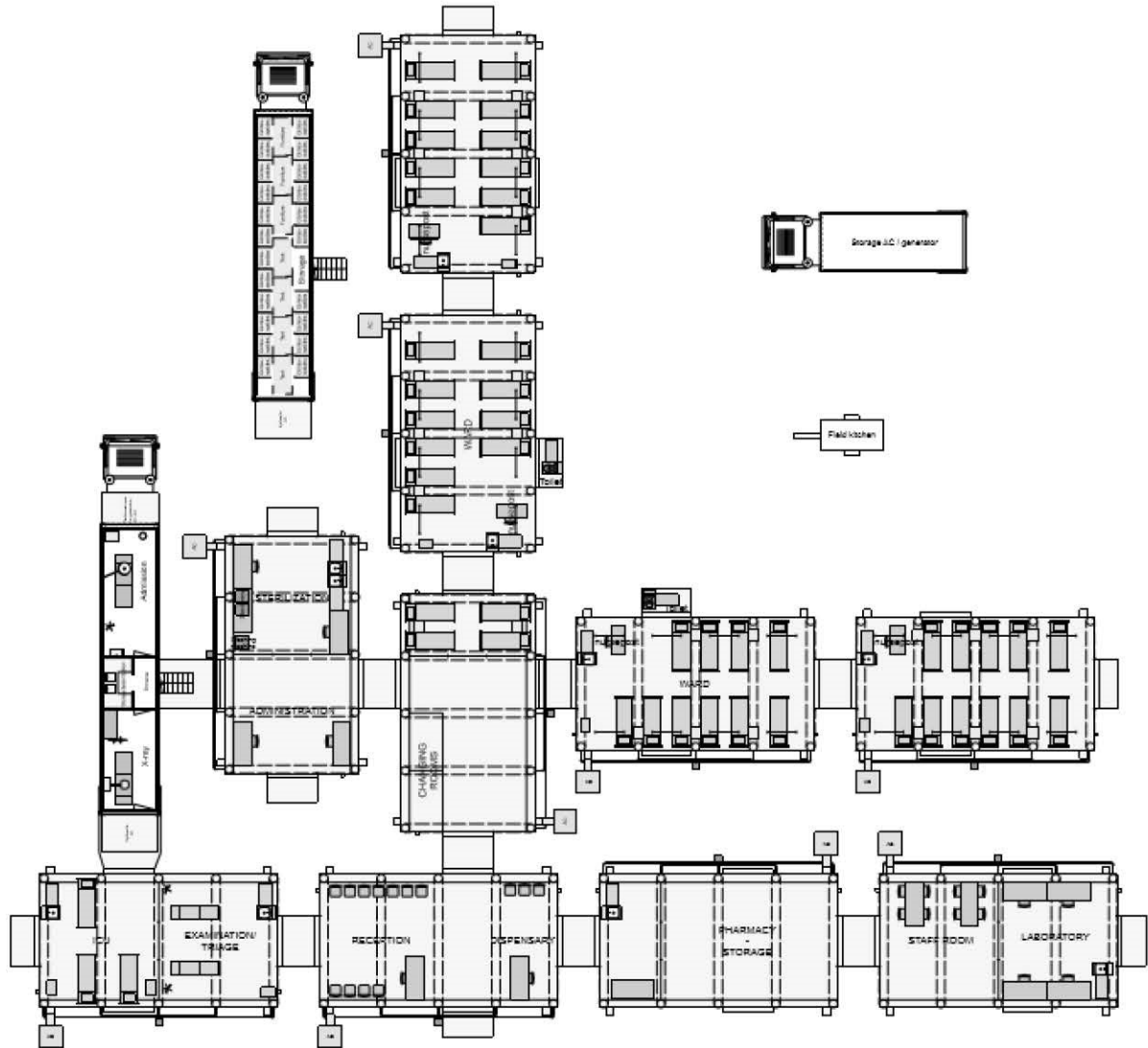
50 bed mobile hospital during Hajj Pilgrimage in Saudi Arabia

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50 bed hospital with mobile medical complex



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III TRAILERS AND CHASSIS

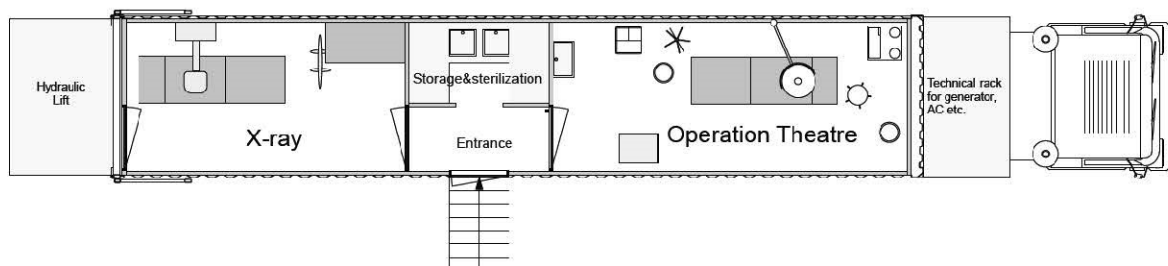
III.1 Surgical Trailer

The core of the 50-bed hospital is the so-called 'Hospitrailer': a surgical unit on a trailer.

This unit contains a fully equipped operation room, X-ray room and a storage area (which can also be used for sterilization). The X-ray room can also be used as a pre/post OT room.

The Operating Theatre (OT) includes the following:

- High quality air treatment step air filtering including HEPA filter, overpressure and an air change rate of 6 to 10 times.
- An AC system for cooling and heating is installed.
- Also included are a 800 litre fresh water tank and a 800 litre wastewater tank. The supply water is filtered in 2 steps.
- The unit is self-supporting using a generator and can be levelled using the 4 supporting legs.
- The patient can enter the trailer by using the stairs at the side or the patient lift at the back.



Floor plan

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General specifications:

- Insulated (6 cm PU) and easy to clean walls
- Medical floor with vertical edges for easy cleaning
- Electrical system: 220V, Power sockets, equipped with automatic fuses
- Overpressure by mechanical ventilation (Can be adjusted to negative pressure on demand)
- 3 step air-filtering including G3, F7, HEPA (H13) & UV device for clean air. See Annex – Air filter for the performance chart of the UV-device.
- AC for cooling and heating (2 units, 1 in OT and 1 in X-ray/pre-post OT room)
- 2 step water filtering, including UF-filtration with forward flush for low maintenance
- Cupboards for storage

Trailer:

- 20 kVA back-up diesel generator with tank on front side of the trailer, mounted in cage.
- Sliding side entrance staircase with handrail
- Hydraulic lift at the back of the container for patients and material
- Wastewater tank of 800 litre
- Clean water tank of 800 litre
- Spare wheel



Trailer with hydraulic lift, stairs, water tanks, levelling legs and generator in rack at the front.

Operation Room:

The operation room is fully equipped for operations, including:

- Operation Table
- Operation Light
- Anaesthesia machine: Glostavent standard, including UPS & Oxygen generator (no O2 bottles needed). See Annex – Specs Diamedica Glostavent Helix for more specs.
- Electrosurgical unit
- Patient monitor
- Equipment (see Annex - Inventory Operating Room - Equipment), consumables and instruments for about 2,000 surgeries (see Annex Inventory Operating Room - Consumables 2,000 Surgeries for more details).

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Inside the operation theatre.

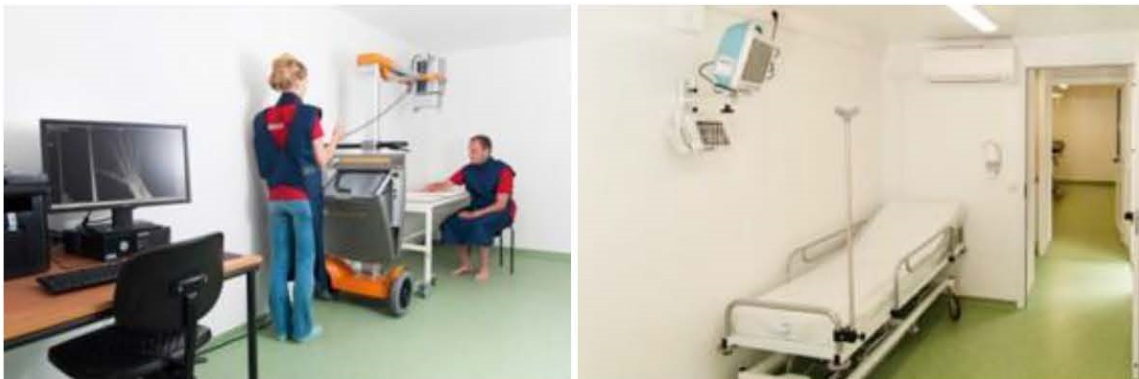
X-Ray Room:

In the X-ray room, the following equipment is delivered:

- Mobile DR X-ray - Fully Digital, with touchscreen control
- Thorax stand
- Lead screen
- Protective clothing

For more details see Annex – Inventory XRAY room

The X-ray room has sufficient protection against radiation. See Annex - Radiation safety inspection for more information.



The X-ray room including equipment, the X-ray room can also be used as pre-post OT-room

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Storage/Technical Room (middle section):

- 2 Stainless steel sinks
- Cupboards for storage
- Air treatment system
- Water treatment system
- Electrical switchboard
- Fridge for keep cool medicines



*Sinks, cupboards and water treatment system in the middle section of the trailer.
The fridge is also located here*

III.2 Storage Trailers

Next to the surgical trailers, a trailer for transport and storage of infrastructure, furniture, tents etc. is integral part of the 50-bed hospital. The trailer has a 40ft container for storage, a generator platform, a hydraulic lift and a sliding stair for entrance.

Due to the **smart packing plan**, which is clearly marked inside the container, the content of the 50-bed hospital can be transported **very compact**.



The storage trailer with truck

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IV INFLATABLE TENTS

During deployment, a tent camp will be deployed to get a 50-bed field hospital. The tent camp consists of 15 inflatable tents of 56 m2 each. Since the tents are inflatable, they can be deployed in only a few minutes.

Specifications of tents:

Each tent comes with the following components:

- Inner liner
- Lights
- Emergency light
- Shadow roof
- Divider sheet
- Ground sheet
- Electrical inflator
- Big bags, ground pins etc. for anchoring

See Annex – Specifications Inflatable Tent for more specifications and information of the delivered tents.



The inflatable tent from outside and inside, including all accessories like shadow roof, lighting and inner liner.

The following components are also included for connectivity of the tents:

- Connecting corridors for tent-tent.
- Connecting sluices for tent-medical trailer.
- Entrance modules, also to be used as extensions of tents to locate toilets for example.

NB: A forklift or crane is advised on deployment site to load and unload the trailers.

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V MEDICAL CONTENT AND FURNITURE

Many different medical departments can be installed in the tents. Besides the OT and the X-ray, which will be located in the surgical trailer, the services listed underneath can be deployed in the tents. All departments come with necessary equipment, consumables etc. to be fully operational.

Reception & administration:

- Table and chair for staff
- Chairs for waiting room

Basic screening & triage:

- 2 Examination beds
- 2 Emergency trolleys
- Defibrillator
- 2 Patient monitors
- Diagnostic set
- ECG
- Ultrasound
- IEH kit (See Annex – Specifications IEHK 2011).



Examination table (left) and screening in the basic screening and triage room.

ICU & Pre-/post OT-room:

- 2 Patient trolleys
- 2 Patient monitors
- Defibrillator
- Ventilator system including 3 ventilators (both usable for adults and paediatrics), See Annex – Specifications Portable Ventilator
- Oxygen concentrator, pump, pressure tank and lines (no O2 bottles needed). See Annex – Specifications Portable Ventilator
- Ventilator system for infants.

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General Wards:

- 50 beds
- 25 IV-stands
- 10 instrument trolleys
- 2 Medicine trolleys
- Items for 2500 treatments for one year
- 8 Vital signs patient monitors
- Nurse posts incl. desk, chair and waste bins

For more specs: see Annex – Inventory 50 bed ward



CSSD (Central Sterile Services Department):

- 2 Sterilizers, tabletop model
- 2 Demi-water makers
- Washing machine
- Tumble dryer

For more specs: see Annex – Inventory Sterilization Room – Equipment & Consumables



The sterilizers (left) and a double sink (right) in the CSSD.

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Pharmacy:

- Furniture for dispensary
- Crates for storage and distribution of medicines
- Storage racks for storage of medicines
- Fridge for keep-cool medicines (can also stay in the medical trailer)



The pharmacy, including dispensary area.

Laboratory:

- Microscope
- Centrifuge
- Blood bank refrigerator
- Vaccine refrigerator
- Haematology analyser
- Chemistry analyser
- Arterial blood gas analyser
- Consumables

For more specs: see Annex – Inventory Laboratory – Equipment & Consumables



A laboratory in the inflatable tent

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Staff Room:

A staff room can be located in a tent, including chairs and tables for the staff.

General:

Supporting items for all departments are included in the hospital. Consider:

- Tables
- Chairs
- Side-tables for beds
- Cabins, to be used as changing rooms or storage.
- Cleaning cart
- Fire extinguishers

Packing:

All medical items are properly packed:

- Very fragile equipment is packed in a flight cases with foam protection inside to protect the equipment.
- Fragile equipment is packed in plastic crates with foam protection inside to protect the equipment.
- All other equipment is packed in plastic crates without foam.
- Consumables and renewables are packed in carton boxes.

This way, all items can be re-packed and transported safely when the hospital needs to be relocated. Included is a clear packing plan, so each crate and flight case can be located in a specific position, preventing any displacement during transport.



The content of the 50-bed hospital is packed in boxes, crates and flight cases.

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Fragile medical equipment is packed in a flight case, other items in plastic crates.

VI INSTALLATIONS

The 50-bed Hospital is fully autonomous: all necessary installations are included.

VI.1 Water

The water system contains the following components:

- 2 Clean water bladders of 10.000 m³ each
- 1 pump: a redundant pump system including 2-step water filtering is providing clean water.
- 10 sinks: each sink is mounted in a flight case, including side-table and dispensers for soap, alcohol and towels.
- 5 toilets: each toilet is mounted in a flight case, including side-table and dispensers for soap, alcohol and towels.
- 2 Wastewater bladders of 10.000 m³ each (1 for grey water, 1 for black water).
- Supply and drain hoses to connect all components. With different colours and sizes, supply and drain hoses are differentiated to prevent mistakes.

Due to the modular approach, these items can be located in the camp wherever needed.

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Toilets and sink



Filled clean water bladders are connected to a pump

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VI.2 Electricity

A redundant power system is part of the 50-bed hospital.

Generators:

Multiple generators are mounted on the trailers:

- 1x 200 kVA on the storage trailers: the generator has sufficient capacity to power the whole camp.
- 1x 20 kVA generator on the surgical trailer: this generator has sufficient capacity to run the OT. This has multiple advantages:
 - The surgical trailer can be deployed first and become operational within a few hours with its own power supply
 - The surgical trailer can be used-stand alone
 - In case of a big power failure, the most critical parts of the hospital, of which the OT, can still be kept operational.

Each generator has its own diesel tank. Besides, there is a diesel tank mounted on the storage trailer for back-up capacity. The trailers have a diesel dispensing gun and pump to fill the trucks- and generator tanks.



The 20 kVA generator of the surgical trailer (left) and a generator on the storage trailer (right).

Power Distribution:

To distribute the power from the generator to the different tents and surgical trailer, multiple components are delivered, with a modular approach. Consider:

- Extension cables
- Distribution boxes
- Power strips for inside tents

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VI.3 HVAC

The surgical trailer is standard equipped with air treatment and AC. For optimal comfort in the tents, these will be also equipped with easily movable HVAC-units. These units can be used for:

- Heating of the tent
- Cooling of the tent
- Fresh air in the tent: part of the air will recirculate to reduce energy consumption, but fresh air will be mixed with the recirculating air as well. A coarse filter is installed.

The HVAC will be equipped completely with external & internal ducts and a thermostat.

The standard HVAC installation is suitable for moderate climates. For more extreme temperatures, a heavier HVAC unit or multiple small ones will be advised.



Example of Mobile Heavy-Duty AC units

Thanks to these highly spec'd AC units the patient ward tents can have negative pressure and by adding special HEPA filters they can be used for COVID applications.

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VI.4 MOBILE FIELD KITCHEN



General specifications:

- All terrain 1 axle trailer
- Weather protection with non-woven fabric
- Two double wall pressure cooking kettles of 150 liters
- Two pressure frying baking units of 50 and 78 liters
- Two 28 liters water heaters
- Four cooking burners
- 100% diesel fired (no electricity needed)
- Including cooking accessories
- For more details see Annex - Field Kitchen.pdf

Mobile field kitchen is towed behind the 20ft truck.

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VII TRUCKS

The 50-bed hospital consists of three trailers. A truck will be connected to each trailer, to make the hospital quick and easy to transport.

Specifications:

- Brand: IVECO
- Euro 3
- Axle configuration: 6x6
- Drive: left side
- Including spare wheel



A 6x6 tractor head

VIII SUPPORT

We can deliver a total package: not only the content of the 50-bed hospital will be supplied, but also the necessary support is included as described above.

VIII.1 Transport

Transport is not included into our offer. Our quotation is FCA, Mornac (16) / FRANCE.

Buyer will pick up the delivered stock at his own costs.

VIII.2 Training

Training will be provided by a specialized trainer to your bio medical staff. Training will be realized during 3 days, in our warehouse (in Vassen, Netherlands) before delivery.

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The following issues will be dealt with during training:

Deployment instruction:

- Packing and unpacking of the hospital
- Inflating and deploying the tents
- Connecting tents and surgical container with corridors
- Deployment of electrical infrastructure
- Deployment of water infrastructure
- Deployment of AC's
- Furnishing the tents with furniture and medical equipment. A deployment manual is included.

After training, the staff shall be able to deploy the hospital independently.

This initial training will be for a fixed duration of time. Additional training will be chargeable.

Bio medical instruction:

- Use of Glostavent anaesthesia machine
- Use of X-ray machine
- Use of Ultrasound
- Use of Sterilizers
- Use of general OT equipment (OT table, patient monitors, electrical surgical unit, etc).
- Operation and maintenance of technical installations (air filters, water filters, generator, AC).

A maintenance manual is included, both on paper and on a tablet.

VIII.3 Tools

All necessary tools and equipment for the deployment and re-packing of the hospital are included in the trailers. Consider:

- Handling equipment for big items, like pallet chart and stacker
- Stairs, both small for inside tents as large for work outside.
- Command post; tent for coordination of deployment, including portophones.
- Lighting: lights on tripods to be able to work even during the night: these lights can also be used to light the hospital while deployed for optimal safety.
- General toolboxes with all basic tools needed for deployment and maintenance
- Deployment manuals including drawings.
- Tablet with instructions, both for deployment and operational use of the hospital.

We remain available for remote support: Included is 1 year of helpdesk via telephone and Whatsapp from Europe.

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IX FINANCIAL OFFER

The Total price for the proposed Mobile Field Hospital is: Euro 6,250,000.00.

Excluded from this price:

VAT, taxes, duties, royalties, non-objection fees, warehousing and terminal charges, customs fees, cargo taxes and security charges, if/when applicable.

Payment Terms:

- 100% down payment

Delivery time:

Material available in stock, first come first serve base. We will obviously endeavour to deliver in the shortest possible time.

Final delivery time to be confirmed upon order and receipt of payment.

Warranty:

The 50-bed hospital comes with 1 year of warranty. We follow the warranty conditions of our suppliers/manufacturers.

Validity: 7 days from this offer's date. Availability cannot be warranted.

This proposal is based on the supply of listed equipment only.

All other request or item is excluded of the present scope and will be quoted upon your detailed request.