

# Space Time Concepts

turnkey medical engineering



**modular operating theatres**

Ceiling

Wall Paneling

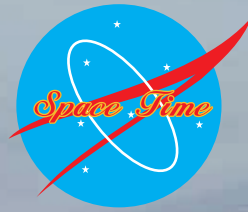
Windows

Doors

Flooring







# Space Time Concepts

## Lighting

A leading name in turnkey medical engineering in GCC & India

We offer complete tailor made solution to address your specific needs. We work with various health care providers, offering the most efficient and cost effective medical engineering, electro-mechanical and interior fit out services.

15 years experience in the design, installation and commissioning of medical engineering works In hospitals & other specialized clinical department.

## Modular Operating Theatres

The construction is done with readymade prefab panels with speedy construction and high quality finishes and flexible to future expansions & maintenance without interrupting other functioning departments.

We offer turnkey engineering solutions for modular operating rooms which includes site survey, design, supply, supervision, Installation, Testing & commissioning, Operation & Maintenance of the system.

## High Pressure Laminated Walls



## Solid Mineral Surface Walls



- High wear-resistance –fewer scuffs and scratches
- Impact resistance –no denting
- UV-resistant
- Easy to maintain, clean and disinfect
- Resistant to heat and light
- Insensitive to spots
- Resistant to water, steam, solvents and largely to chemicals
- HPL is fire inhibiting and can be finished as flame retardant
- Available thickness—from 0.8mm to 13mm
- Antimicrobial Wall surface
- Superior static load capacity –no dimpling

- Antibacterial Solid Mineral Surface
- Absolute flatness of the surfaces to facilitate cleaning and the achievement of conditions of aseptic hygiene
- Wide range of colours coordinated among the various material
- Joints between self-loading panels, manufactured in full height with no horizontal seams, offer a perfectly airtight sea

## Painted Stainless Steel Walls



## Stainless Steel Walls



- High corrosion resistance
- High mechanical resistance
- Ease of cleaning –smooth, non-porous surface
- Maintaining initial features at very low and very high temperatures (cryogenic features)

- Powder coated antimicrobial paint
- Variety of design and pattern –any colour of the RAL palette
- High aesthetics (modern, light, prestigious)  
Attractive total investment cost 100% recyclable

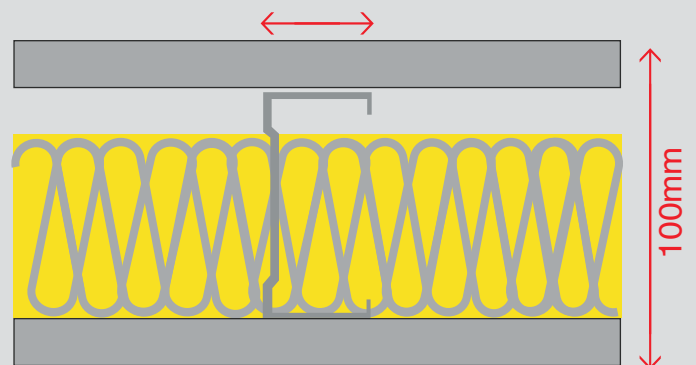


## Glass Walls



- Mineral-acrylic material is a solid, non-porous, homogeneous surfacing
- Material composed of  $\pm 1/3$  acrylic resin (also known as PolyMethyl, MethAcrylate or PMMA) and  $\pm 2/3$  natural minerals
- The main mineral is Aluminium TriHydrate(ATH) derived from bauxite, an ore from which aluminium is produced
- Trademarks Corian or Staron

## Gypsum Fiber Board Walls With Hygiene Coating Anti Bacterial, Anti Fungal paint



1 S 21 = F60 + 52dB upto 10m high  
Steel Stud - 0.6 x 75mm  
Severe Duty Impact Rating

- High Performance Gypsum Fiber Board walls as per HTM standards for rating with acoustic, moisture, impact or load bearing performance
- Hygiene Coating is a paint finish with anti bacterial & anti fungal properties, is done on the gypsum fiber board walls for OT to get a seamless finish on the walls

# Ceiling Systems with Peripheral Lights

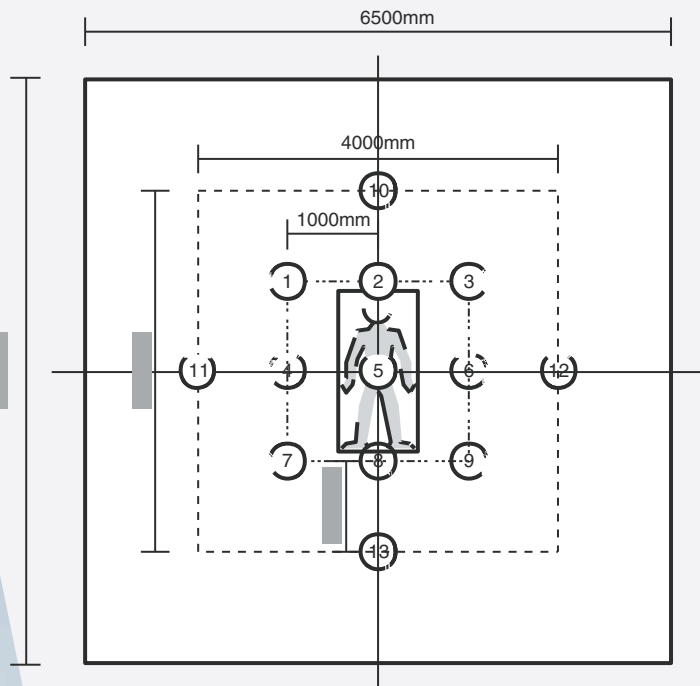


## Ceilings Systems

Normal purity luminaire lamps with high frequency ballast and special coating – resistant to oil vapours, chemical attack, disinfectants and cleaning agents. Lights are installed as recessed luminaries in Operation Theatre ceiling with amounting frame in cutout recess openings.

## Peripheral lights

System ceiling enable installation of peripheral devices in the ceiling. Without limiting access to them whenever maintenance service is needed. Types recommended: Stainless Steel Ceiling, Fiber Board Ceiling



Lighting Distribution Systems

01	1150
02	1245
03	1150
04	1245
05	1500
06	1245
07	1150
08	1245
09	1150
10	1000
11	1000
12	1000
13	1000



# LED Surgical Light



- Operating lamp must be ceiling model LED surgical lights having Focusmatic property for room height 2.80m to 3.00 m.
- Made of aluminium and a module consisting of individual segments, it must be ideal for operating rooms with laminar flow systems.

The lamp yoke must have a controller with:

- Lighting level adjustment
- Endoscopic mode
- Selection of temperature colour
- Focal electronic lighting level
- Battery indicator
- Cupola selection
- On/off switch

The main arm and satellite arm must have the following property:

- Light intensity for main arm 160,000 Lux
- Light intensity satellite arm 100,000 Lux
- Colour temperature in °Kelvin 4500°K
- Colour Rendering Index, CRI (Ra) >95
- LED life time >40000 h
- Feeding unit 100 to 240 V
- Frequency 50 / 60



## Hermetically Sealed Doors



Stainless Steel Doors



Hinged Doors

- Features
- Stainless Steel & painted stainless steel Automated doors
  - Track system including all necessary running gear & door guidance
  - Hermetically sealed gaskets and handles
  - Various option to accommodate lead through rail system
  - Micro processor controlled electric automation
  - Fire rated, fully assembled door kits



Automatically Operated Doors



Sliding Doors

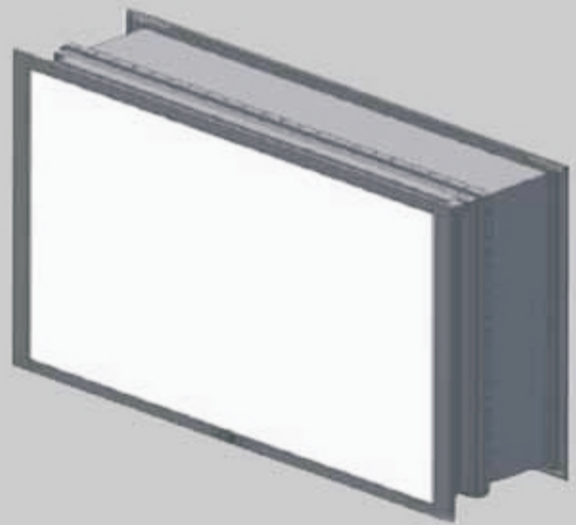
- Sliding door- offers a greatly reduced movement / turbulent of air.
- Hermetically closing is 99.999986% air tight at pressure of 50P.A.
- Door blade hangs by means of two hard plastic rollers with double bearing to provide smooth & silent running.
- Various options available like Micro processor controlled & regulated electromechanical sliding doors, switches & locks.



## Windows



Window – Regular Glass



Window – Electric Glass

Windows and glass elements are made from high quality painted stainless steel and are integral element

## Static Conductive Flooring



- Compacted floor covering for the better hygiene, maintenance & traffic resistance
- Available in 15 shades of colour
- Thickness 2mm, tile size 608\*608\*mm.
- Electrical resistance, point to ground –  $2.5 \times 10^{10}$  to  $5 \times 10^{10}$  OHMS[Ω].
- This does not allow generation of charges over 100 volts
- Manufactured under hydraulic pressure result in no change in surface pattern, quality, smoothness even after heavy duty abrasion
- Due to lack of porosity, chemical spills rest on the surface & can be easily removed with conventional cleaning methods.
- All joints between tiles are welded & floor finish terminates the room perimeter over a concealed cove former & continuing up the wall for 100mm to give continuous sealed surface.
- Conforms to NFPA 99, DIN51953 & EN 1081 standards.

## Hygiene Air-conditioning



Designing and integration of purified HVAC system is the internal part of building modular operation theatre.

These systems are according to international standards of purified HVAC system

### Tasks of Hygienic Air Conditioning

- To control the temperature and humidity of the space.
- To assist in the removal and dilution of waste anaesthetic gases.
- To dilute airborne bacterial contamination
- To control the movement of air within the department, such that the transfer of airborne bacteria from clean to sterile areas is minimised

## Laminar Flow Unit







## Perfect Hygiene Air-conditioning for all Hospital Departments

We provide new generation compact air conditioning units which has been developed for universal use in all hospital departments and meets the requirements of International standards. Compact construction and innovative technology ensure operating cost benefits extending well into the future. The optimised arrangement of mechanical and dynamic-flow components ensure low speeds and internal pressure losses.

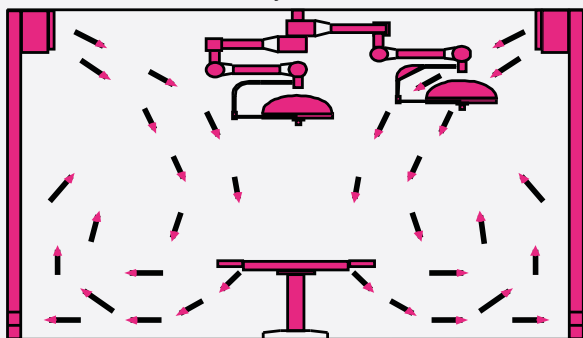
### Use in the air-conditioning central unit

- Flexible duct connection
- 4-way hot gas switching for optimum energy use
- Built-in safeguard from a 100 % air capacity redundancy
- Outer air filter with anti-freeze protection
- Interior outer air damper
- Thermally insulated corner profiles
- Mirror image designs available
- Refrigeration circuit and heat recovery tested in the factory

Turnkey Design & Supply of HVAC System Including:

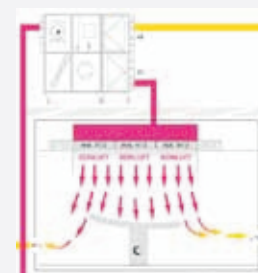
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Conventional Ventilation Systems



Traditional Turbulent Flow Air Distribution System

Air Conditioning Concept acc. DIN 1946-4  
[Remote plant system acc. HTM 03-01]



Advantage:

- Service and Maintenance outside OT
- Better Control of the Sound level
- Better mixing possibilities of fresh air and return air

Disadvantage:

- Requires space for duct system
- Requires a large technical room

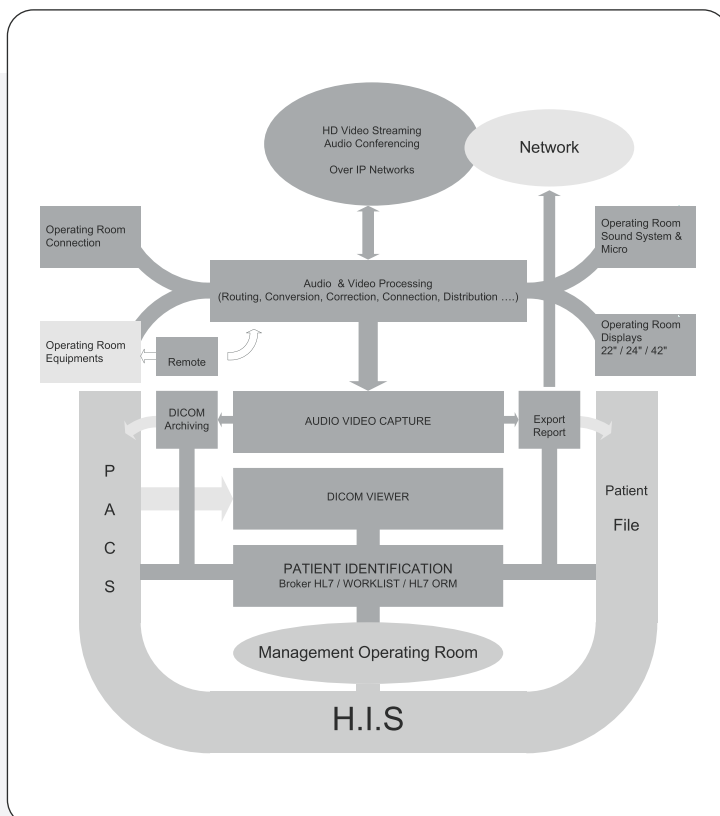
Ideal solution – from technical-hygienic view



## Surgical Multimedia System [SMS] Imaging Station for Surgical Unit

The S.M.S system allows the review of exams of the patient, from a CD, in direct consultation of P.A.C.S. or postponed (by prior preparation) with an ergonomics adapted to the personnel and to the conditions of use in a surgical unit.

Integrated into your Information System, SMS is an intuitive application suite for capturing video sequences, creating operating reports and remotely checking numerous essential functions in the operating theatre. Thanks to its ease of use, its DICOM compatibility, simple setup and openness to other software applications, SMS is a central solution that combines reliability, efficiency and ease of use.



## Surgical Medical System

- Excellent Full HD & SD audio/video capturing
- Multi- functional Image Preview & Display
- IP-Router managed video streaming
- Multi Functional DICOM Interface to optimize workflow in and outside the OR
- Easy DICOM implementation thanks to Proprietary patient Data Management System Broker Interface
- OR Equipment Remote Control functions



# Media Bridge



- Media Bridge is a medical supply unit & substitute for pendants.
- Trolley system is movable on an internal rail system along the entire width by providing 360 degree
- Large -sized air-supply system
- Complies with the latest air conditioning medical guideline and norms
- All-round air supply apron made of VSG-Glass
- Required care fed in through the feed-in column via the interim ceiling

Side facing away from the OT-area: Can be equipped on two levels  
Side facing the OT-area: plain and vertical

## Advantages | Features:

Disruption and turbulence-free Laminar-Air-Flow  
from the ceiling air supply system up to a height of 2,100 mm from the floor

## Options

- Movable on four sides thanks to rotating points
- Movable on an internal rail-systems along the entire width

Medical gas connection points incorporated

Nurse Call provisions and Electrical power sockets included

The ceiling pillars contain maintenance panels to allow for future expansions

Equipment trolleys for monitoring and infusion side designed project – related for Modular Design. This makes it possible to arrange the workstation Individually

- Also available as L or U Shaped unit

## Lighting possibilities

- Non-glare, indirect room lighting
- Dimmable lighting [e.g. for minimal-invasive surgery]
- Dynamically controllable RGB-lights [e.g. for endoscopic use]

# Pendant



Modular Concepts supplies & installs a complete range of clinical pendants /beams. These are ceiling mounted systems that provide simple and convenient access to multiple gas, electrical and data outlets at a safe height wherever they are needed. The range includes fully-flexible multi-movement pendants and beams specifically designed for use in critical care and operating theatres and rigid and retractable pendants designed for operating, anesthetic and ancillary rooms.

Pendant Arms are of various types consist of single arm, double arms & multi movement arms. The moveable pendant arms of the supply units offer an optimum in freedom of movement in the workplace and can have, depending on the requirements, one or two-arm, be height adjustable and also come in a wide range of sizes.

The pendant arm system can be positioned correctly using just a small amount of hand strength. This can then be secured in position using pneumatic brakes. Cushioned end stops prevent "hard impacts".



## Rigid & Retractable Pendants

Rigid and retractable pendants provide simple and convenient access to electrical and data services, medical gases and AGSS in the operating theatre, anesthetic or ancillary room.

Retractable pendant offers 300-400mm of vertical movement via a remote control, to bring services to the ideal height. A maximum of nine medical gas and 32 electrical / dat outlets can be mounted onto the retractable pendant.

## Isolated Power System



### Isolated Power System [IPS]

Isolated power provides two types of safety:

1. Continuity of supply i.e. the isolated supply removes the possibility of earth faults therefore there is no need to blow a fuse or trip a breaker to protect against earth leakage currents that could cause electrical shock.
2. Isolation from earth allows only negligible electrical current to flow through body –even an RCD will allow up to a 30mA-not sensitive enough for a medical environment.

A Typical System for an Operating Theatre will include Floor standing Enclosure Containing:

- 8 Kva Medical Grade Isolation Transformer
- Medical Grade Line Insulation Monitor
- X 16 Double Pole mcbs
- Earth Fault Detection System to ( IEC61557-8/9)
- 1 Remote Alarm Unit
- UPS by- pass Switch
- 10 Kva UPS with a 10 minutes autonomy

#### Features

- Multi-bladed units, specifically designed control O.T room air pressures.
- Unit comprises of carbon steel housing with grade 304 stainless steel blades
- Balancing is carried out utilizing a proven balance weight assembly
- Accurate to range of 1 pascal over their working range of 5-35 Pa.
- Adjustment can easily be carried out on site, should the need arise.

## Surgeons Control Panels



### Surgeons Control Panels

Each Control Panel Will Contain:

- Time elapse clock
- Standard clock
- Control for temp/ Humi
- Touch screen
- Control for peripheral/O.T light
- IPS alarm
- Medical gas alarm & IPS alarm – Visual & Audio

Electronic touch screen panel [eTCP]

- Wipe clean for excellent infection control
- Flexibility to accommodate design changes with ease
- Easy update to accommodate future services
- Proven reliability
- Compact size where operating room space is at a premium
- Modern appearance complements today's high tech operating rooms
- Ability to incorporate third party interfaces



## Pressure Relief Dampers



## Pressure Relief Dampers

PRD 's are Pressure Stabilizer fixed inside the OT to maintain a positive pressure inside the Operation Theatre

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## X-ray Viewer



## X-ray Viewer

- Twin plate X-ray viewing screen
- High frequency fluorescent lamps controlled by dimming ballasts
- Control luminance without flicker
- Uniform level of illumination across the entire front panel
- Sealed flush with the inside face of the operating theatre wall
- Spring loaded clips to secure the X-ray

## Surgical Scrub Sink



- Stainless Steel/SMS Construction
- Removable Bay Panels
- Adjustable Thermostatic Mixing Valve
- Available in One, Two, or Three, Bay Sizes

- Automatic, Manual or Electronic Infra-Red
- Soap Dispenser, Digital Timer, Eyewash Options
- Pedestal Base or Chair Carrier mounting
- Custom Sizes Available
- Anti-Splash Tub

## Operation Theatre Tables



Mechanical and hydraulic operating tables are designed for all surgical operations and treatments. They ensure ease and comfort of usage and safeness for patient and medical staff, the design is ergonomical and esthetic. They can be equipped in wide range of additional accessories, which supports safe placement of the patient in order to use exceptional technical parameters.



**Space Time Concepts**  
turnkey medical engineering

Our services  
includes

Design Consultancy

Site Assessment

Supply

Installation

Testing & Commissioning

Maintenance Service



## Other Medical Engineering Systems



Piped Medical Gas Systems



Pneumatic Tube Systems



Bed Head Units



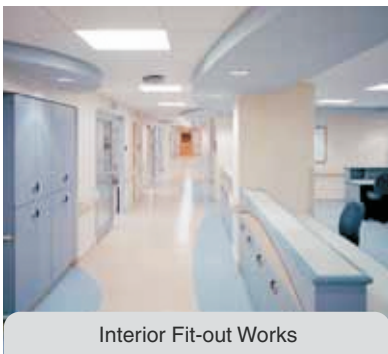
Nurse Call Systems



Radiation Shielding



Pendants



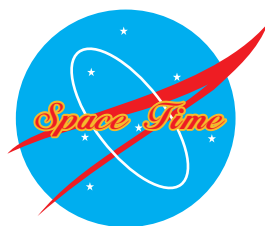
Interior Fit-out Works



Electromechanical Works



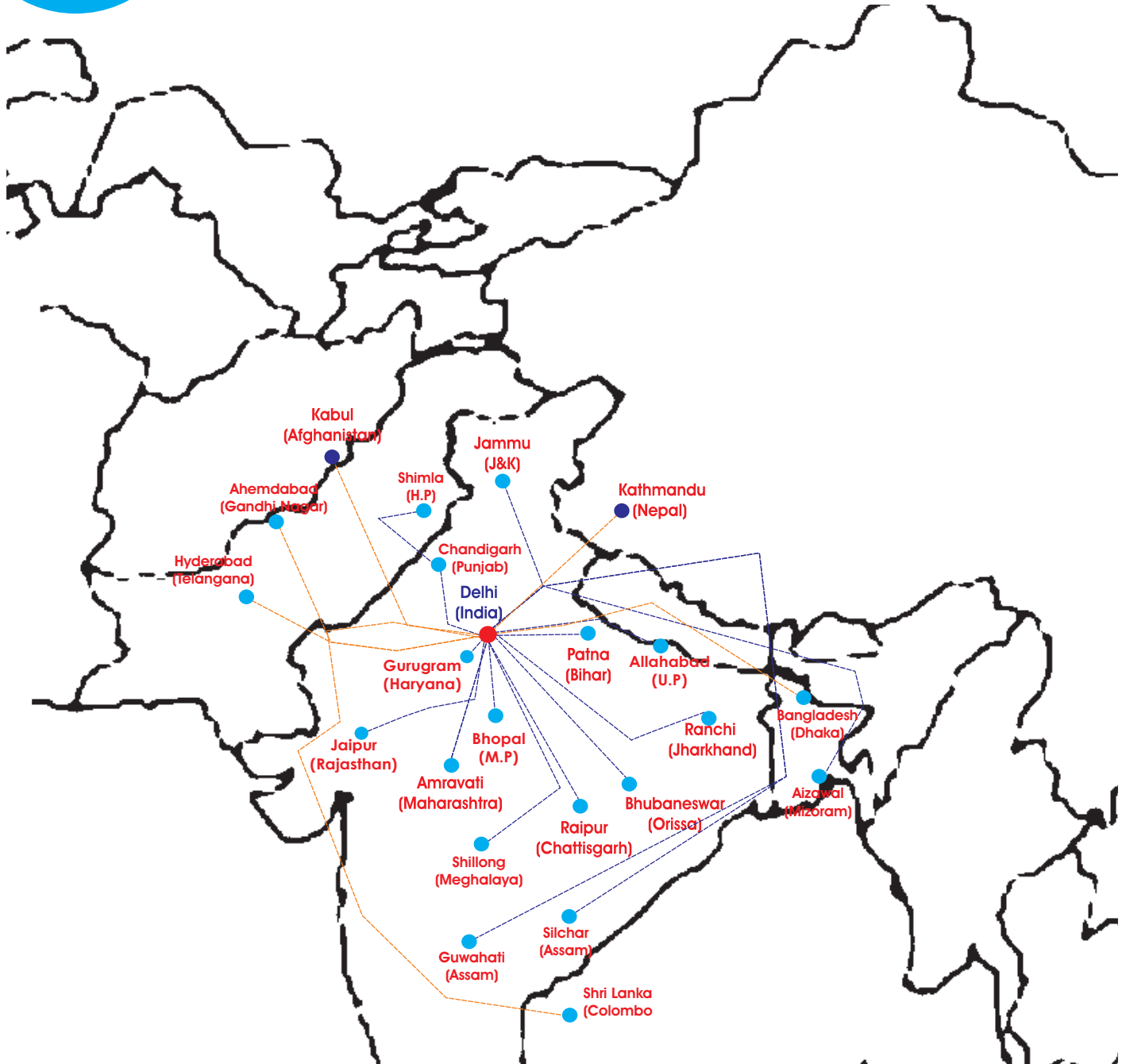
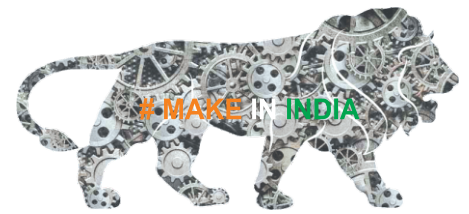
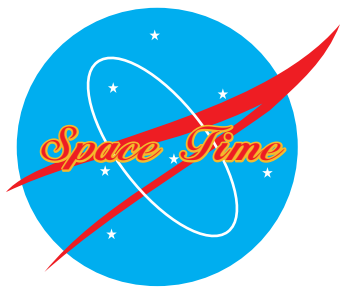
Hygiene Bath Support Systems



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[www.spacetimeindia.com](http://www.spacetimeindia.com)



# Space Time & Research (P) Ltd.

**Manufacturer Importer & Exporter of : - Hospital Furniture, Medical Equipments, Surgical Instruments, Laparoscopy & Endoscopy Equipments & Instruments, Scientific & Lab Equipments& Instruments, Physiotherapy Equipments, Hospital Linen, Oxygen Pipeline & All types of Hospital Goods For Turnkey Projects .**

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