

COMPLETE CARE DELIVERED

REMOTELY

Carenation is a scalable tele-health platform that enables complete remote care delivery with specialist consultation, patient monitoring and education using cutting edge technologies.

THE CARENATION PLATFORM SUPPORTS THE FOLLOWING CAPABILITIES



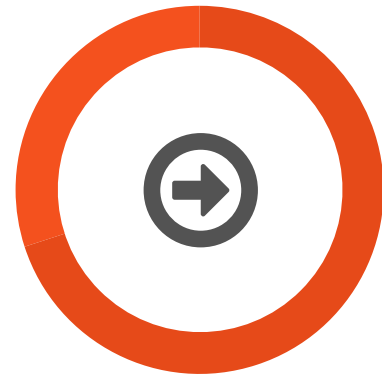
- Telehealth workflows
- Video and Audio Scopes Streaming
- Realtime Annotations
- Video collaboration
- Vitals Data Telemetry
- Data Analytics
- Messaging
- Reports and other FileShare
- ECG viewer
- EMR and other HIS Integrations
- Application Share
- Stream Recording
- Stream Snapshots
- Tele-Pathology
- Patient portal

Its is a modular system that allows for customisation of components depending on the needs of the hospitals. The cross platform capabilities allow for use of laptops, Tablets and mobile devices. The device integration allows wide range of devices from various vendors. Carenation simplifies the medical workflows with an intuitive UI which helps nurse, doctor and patient use the system with minimal or no learning curve. It also integrates with EMRs and other HIS using standards.



CARE PORTAL

COMPLETE TELE-HEALTH SYSTEM WITH DOCTOR AND NURSE MANAGEMENT AND WORKFLOWS. INCLUDES SUPPORT FOR MOBILE ENDPOINT



DEFERRED REPORTS

BETTER UTILISATION OF DOCTOR TIME BY DECOUPLING THE NEED FOR PATIENT AND DOCTOR TO BE AVAILABLE AT THE SAME TIME



DEVICE GATEWAY

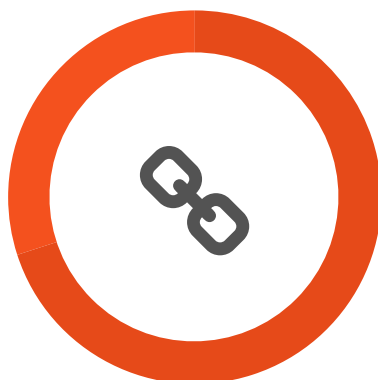
ALLOWS REALTIME TELEMETRY OF MEDICAL DEVICE DATA. MULTIPLE DEVICE VENDOR SUPPORT. AUDIO, VIDEO, ECG AND OTHER VITALS

CARENATION COMPONENTS



CONFERENCE

WEB-RTC BASED VIDEO CONFERENCING SYSTEM WITH STUN AND TURN



INTEGRATIONS

INTEGRATION WITH HOSPITAL SYSTEMS WITH HL7 STANDARDS AND API. ALSO SSO



ANALYTICS

OPERATIONAL INSIGHTS AND MEDICAL ANALYTICS CAPABILITIES

Why Carnation ?

FOR HOSPITALS/ TERTIARY CARE CENTRES

1. Increase patient intake - By setting up Telehealth Stations increase patient outreach enabling more efficient transfers.
2. Offer specialist consults - By setting up Telehealth Stations in tertiary centres enable specialist consults with doctors in other hospitals.
3. Retain patients rather than transfer to another facility due to lack of specialists thereby retaining the revenues associated with patient care.
4. Employer driven healthcare - setting up endpoints to make the speciality care available in corporate clinics.
5. Manage Inflows better with scheduling
6. Better patient Loyalty
7. Operational Insights and mining on other health data
8. Cross promotions on patient portals

FOR PATIENTS

1. Better outcomes - Due to timelier access to specialists.
2. Reduce unnecessary admissions/ readmissions/ consults since with carenation they can better manage their health situations sitting at home.
3. Post operative monitoring - With Carenation you don't need to stay admitted post surgery beyond what is absolutely needed.
4. Meet specialist of choice right from home or the nearest centre
5. Track vitals with insights, Get Educated, Directly ask questions, Keep all previous Notes, Questionnaire and Prescriptions

FOR DOCTORS

1. Consult with your patient from the luxury of your home.
2. Trends and Insights into patient health over a period of time rather than instantaneous vital values.
3. Access to information from the past consults.
4. Easy Scheduling and triaging. .
5. Decreased travel for outreach services.
6. Continued engagement with patients.

FOR GOVERNMENTS

1. Effectively bridge the clinician - patient divide - With a decreasing supply of clinicians ensure more efficient allocation and management of resources.
2. Experience reduced costs as timelier access to the right doctor reduces the inefficiencies in the system.
3. Private-Public partnerships to make the best doctors available in the remotest of places.
4. Make healthcare affordable, reduce costs on specialists. - Only paramedic needed at the Primary healthcare centres.
5. Get insights into health data over demography easily.
6. Operational insights to optimise the doctor usage.

COMPONENTS OVERVIEW

DEVICE GATEWAY

Device gateway sits at the core of the carenation tele-health offering and handles the healthcare data telemetry. It classifies the devices data into channels and forms device vendor agnostic framework that supports new vendor device on-boarding through adapters and profiles requiring minimal to no code changes.

Device gateway has the following functionality

- Adapters for multiple medical devices
- Channels for Device Data Transport
- Signalling for Medical Data Telemetry
- Annotations and capture of images
- Video Audio ECG and Vitals Viewer
- Reports and Other files Sharing
- Supports Integration with Multiple Portals

Devices supported include: Stethoscope, Exam Camera, Dermatoscope, Otoscope, Ophthalmoscope, Vitals Monitor such as BP, Temperature, SpO2, ECG, Ultrasound, Digital Pathology. Application share is used to share proprietary device applications.

CARE PORTAL

The Telehealth workflows are provided by the Care portal. The portal allows management of the users and appointments. It also has patient portal to allow for continued care from home.

DEFERRED REPORTS

The deferred reports feature solves the problem of doctor availability during patient visit, using the appointment data recording features, the paramedic can record the vitals, video and audio scopes and also share the files which are queued as a part of the deferred queue, Doctors can the submitted data and provide video feedback and diagnosis

VIDEO CONFERENCING

Carenation has inbuilt webRTC based video conferencing or can integrate with third party video conferencing solution like Cisco Video conferencing Solutions using the Nurse Portal for Extended Care.

ANALYTICS

Carenation has optional Realtime Analytics capabilities that give insights into the operational aspects and also on the collected health data.

The operational data collected through the tele-health system can be mined to get insights like the doctor time utilization, Endpoint utilization and help manage patient inflows and resources better.

The health data can be mined to get insights and trends for vital data for a single patient or over a demographic.

INTEGRATIONS

Integration help the inter component communication and also communication with external systems like the EMRs with HL7 and Apis, Hospital Active Directories. API layers help integration of components into other systems like Extended Care.

CARENATION ORDERING GUIDE

Product List - Server Software components/features

Feature	Optional
Carenation Gateway server core incl(ECG, Annotation,File share)	NO
Carenation HA deployment *	YES

TESLON TECHNOLOGIES

Feature	Optional
Carenation Horizontal scalling deployment *	YES
Analytics and Reporting *	YES
P2P collaboration(50 bundle) *	YES
Deferred reports*	YES
Care portal with mobile support*	YES
Integrations*	YES

CARENATION GATEWAY SERVER CORE

This is a mandatory component in any kind of deployment. This forms the central part of the tele-health solution which takes care of the device gateway integration and telemetry. Refer the device gateway section for more details. the Device gateway can be integrated with carenation care portal or third party portals like cisco extended care

CARENATION HA DEPLOYMENT *

The HA deployment option ensures the zero downtime and is essential for making the system highly available. This is an optional component and would also impact the deployment architecture.

CARENATION HORIZONTAL SCALING DEPLOYMENT *

This is a different mode of deployment and will include cloud scaling components. This is essential if the scale of the system is large , and will ensure that horizontally scalable.

ANALYTICS AND REPORTING *

Analytics and insights on the operational aspects of the system like the endpoint/staff utilisation, patient inflows can be enabled with this optional component.

This can also collect the medical device data and provide trend data over time or a demographic. this give insights to the doctor and hospital on wellness.

P2P COLLABORATION*

Use this component if the video conference solution needs to be from carenation, If using a 3rd party video conferencing like Cisco UC, you can opt out of this option.

DEFERRED REPORTS*

Please refer the deferred reports description section above for the details on this feature. Its an optional feature an can be enabled by opting this component.

CARE PORTAL WITH MOBILE SUPPORT*

Care portal is the default portal option for Carenation Device gateway. This is marked as optional if using a third party portal or integration of the device gateway directly into EMR etc, This will provide the telemedicine workflows. Please refer the care portal description section for detailed functionality and the UI details. The home portal allows for patients to track vitals, get educated, message doctors and keep all their prescriptions online. The patient can also have a direct calls with their doctors.

INTEGRATIONS*

Integrations bundle provides integration into the health systems using HL7. this is an optional component if the integration is needed and not provided by the 3rd party portal. This also includes integrations into the hospital AD, and integration bus for other integrations. Note:- For integrations into specific components that need to be custom configured or created, additional customisation services might be needed on per engagement basis.

The physical servers or cloud components are not included as a part of the offering.

Product List - Endpoint components - software license

Endpoint licenses are added to the server depending on the requirement

Feature	Optional
Device Gateway - Nurse	NO
Device Gateway - doctor	NO
Careportal - Nurse	YES
Careportal - doctor	YES

Product List - Endpoint components - Compute Hardware

Feature	Optional
Carestation - Furniture	YES
Endpoint - PC	NO
Endpoint Touch Screen	NO
Endpoint Printer Scanner	YES

Product List - Endpoint components - Medical devices

Feature	Optional
Multiparameter Monitor with Thermometer BP Glucometer SpO2 Pulse 12 lead ECG	YES

Feature	Optional
Video Scopes Set - (Control Unit, Ophthalmoscope, Ottoscope, dermatoscope)	YES
Digital stethoscope	YES
UltraSound - Abdominal	YES
UltraSound - vascular	YES
UltraSound - Trans-Vaginal	YES
Telepathology - Trinocular Pathological Microscope kit	YES
X-Ray digitizer Scanner	YES
Telepathology - Trinocular Pathological Microscope kit	YES
Carenation Digitizer	YES
Glucometer	YES
Digital Weighing machine	YES

CARENATION MEDICAL DEVICE DETAILS

1. MULTIPARAMETER MONITOR

- Display mode: 7" color LCD with high-resolution with touch screen.
- Adopt digital SpO2 technology, which has strong anti-interference and anti-weak filling capability.
- User data terminal of PHMS health management system.
- ECG, NIBP, SpO2, PR, TEMP and Blood Glucose data can be measured in shorter time.



1B. MULTIPARAMETER MONITOR

- BP, SpO2, Temperature
- Choice of SureTemp® Plus or Braun ThermoScan® PRO 4000 Ear Thermometer
- Choice of SureTemp® Plus or Braun ThermoScan® PRO 4000 Ear Thermometer SureBP® technology measures blood pressure in about 15 secs as the cuff inflates
- Choice of Masimo® or Nellcor® pulse oximetry



1C. MULTIPARAMETER MONITOR

- BP, SpO2, Temperature, Pulse
- SureBP® supports all ages and provides 15-second readings as the cuff inflates
- Masimo® or Nellcor® Pulse Oximetry (SpO2) Algorithms (optional)
- SureTemp® Plus and/or Braun ThermoScan® PRO 4000 Ear Thermometry (optional)
- Optional Masimo® Acoustic Respiratory Monitoring (RRa)



2A. VIDEO SCOPE SET - HIGH END

- control unit will have option to change
 - dermatoscope,
 - otoscope,
 - endoscope,
 - Eye- Fundus
- Integrated display 3.5" full color TFT-LCD
- Resolution 2M pixel (1920x1080 pixels),
- Storage type Micro SD card, 8GB and support to 32GB



2B. VIDEO SCOPE SET - LOW END

- 1 – 300X (continuous zoom)
- Manual focus
- 2 MP
- 1600 * 1200, 640 * 480



3. DIGITAL STETHOSCOPE

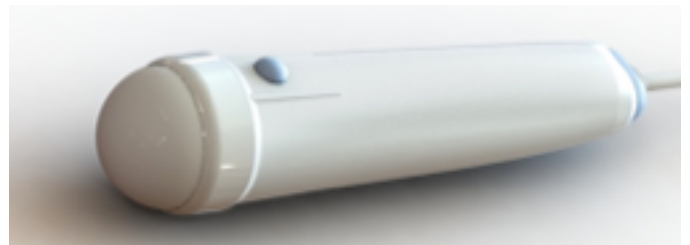
- Compact and portable, easy to use
- Display of ECG waveform, heart rate, SpO2, pulse rate, pulse waveform
- Earphone output and 16 steps volume adjustable
- Alarm for SpO2 and pulse rate exceeding limits
- Real-time detecting, TF card data record and review
- Real-time clock
- Recorded data can be transferred to a PC
- PC analysis software
- Low power consumption



4. ULTRASOUND - ABDOMINAL

Abdominal Imaging

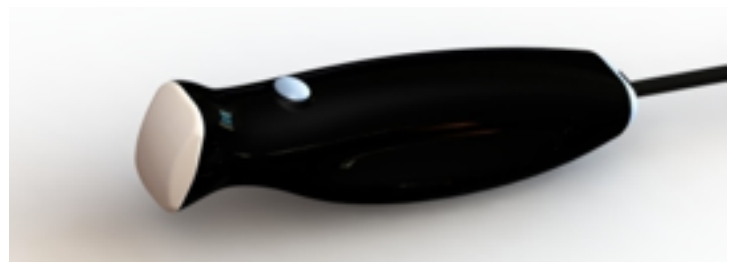
- 24 cm scan depth, 2.5 - 5.0 MHz scan frequency
- General Purpose – Liver, Kidney, Aorta, Heart
- OB GYN – IUP, Position, Date, IUD position
- Urology – Bladder, PVR, POUR
- Trauma – FAST Exam, IVC



5. ULTRASOUND - VASCULAR

Vascular Access Imaging

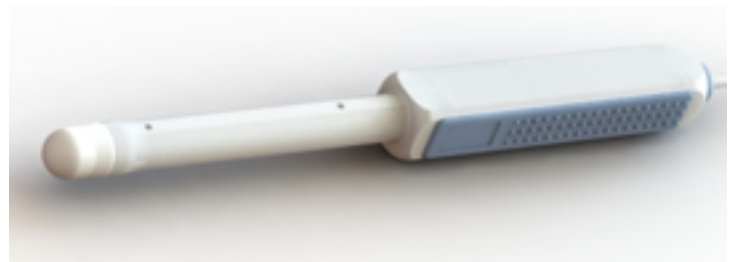
- 5 cm scan depth, 5 - 12 MHz scan frequency
- Line Placement – PICC
- Pneumothorax – eFAST Exam
- Musculoskeletal – MSK
- Pain Management



6. ULTRASOUND - TRANS-VAGINAL

Transvaginal Imaging

- 5 cm scan depth, 5 - 12 MHz scan frequency
- Valoration – Cervix, Ovaries
- Douglas Pouch – Free Fluid
- Cyst Presence – Volume
- Ectopic Pregnancy



7. TELEPATHOLOGY - TRINOCULAR PATHOLOGICAL MICROSCOPE KIT

Trinocular observation head inclined at 45°, rotateable through 360°, interpupillary distance adjustment ring 55-75mm, dioptic adjustment ring on the left ocular having adjustable dioptic scale with trinocular tube for photomicrographic/camera attachments. Anti-Fungal Treated Observation Head.

- ACHROMATIC Objectives: 4X, 10X, 40X(S), 100X(O,S), Co-axial low positioned mechanical x-y stage of size 120 x 125 mm with stage fine vernier graduation Condenser
- Built in Super Bright LED Lamp, Variable Intensity Control with SMPS Based broad range 100V-220V Power Supply. Provided with Standard Indian Plug.
- Resolution: 5.0 Megapixel, C-mount type adapter & standard 23 mm reduction lens.
- CMOS Sensor, USB2.0



8. WEIGHING SCALE BLUETOOTH

- Bluetooth Class 1

- Improved compatibility with various Bluetooth receivers
- Built-in real time clock
- 40-measurement memory
- 100 g resolution up to 200 kg capacity
- Very low profiles
- Rugged construction
- Motion tolerance
- kg / lb selection



9. X-RAY DIGITIZER SCANNER

DiagnosticPRO Advantage with its high-resolution capabilities (44.5microns), it provides the ability to digitize mammography films, and offers larger spot size options for digitizing general radiographic, CT, MR, ultrasound, and nuclear medicine films.

- Width: 6" to 14" (15.24 cm to 35.56 cm)
- Length**: 7" to 51+" (17.78 cm to 129.54 cm)
- Thickness: 0.005" to 0.009"

Auto Feed:

- Width: 7" to 14" (17.78 cm to 35.56 cm)
- Length: 7" to 17" (17.78 cm to 43.18 cm)
- Thickness: 0.005" to 0.009"

Resolution: 4K x 5K

Optical Density: .05 to 4.0

Bit Depth: 32-bit mapped to 12-bit (4096) and 8-bit (256) grayscale output



10.CARENATION DIGITIZER - RCA

Driver free (USB Video Class) for any OS (windows XP、 Vista、 win7, Linux any version, MAC

OS, android). Webcam Like device.

- Compatible for Directshow.
- Play & Plug with USB Video Class for USB 2.0
- Auto detect A/V CVBS NTSC / PAL input
- Frame rate: NTSC for 30fps / PAL for 25fps
- Resolution:640x480
- Output format: YUV422 raw data / MJPEG
- Audio Interface: Build in stereo ADC for audio recording ,RCA X 2
- Build in 3D comb filter, 3D de-interlace
- Optional special function for surveillance: De-fog and digital wide dynamic range



11.DIGITAL SLR CAMERA

Brand: Nikon Model Name: D7000 SLR

Key Feature:

Product Type: Digital Camera

Resolution: 16.2 MP

Sensor Type: CMOS

High Speed Data Transfer Superb Picture Quality

Box Contains: Camera Body,AF-S 18-105mm VR Kit Lens,Rechargeable Li-ion Battery EN-EL15,Quick Charger MH-25,Rubber Eyecup DK-21,Camera Strap AN-DC1,Body Cap BF-1B,Eyepiece Cap DK-5,Accessory Shoe Cover BS-1,USB Cable UC-E4,Video Cable EG-D2,View NX 2 CD,User Manual



CARENATION CARE-STATION DETAILS

1.CARESTATION - MODEL A -1

Mount for Large Screen 42" for Video conference

Side 21" touch screen for carenation workflows

Holder for mini PC



2.CARESTATION - MODEL - C -1M

Telemedicine cart design

2 screen mounts.

Extendable design for additional devices.



Not Intended for Use in an Emergency

Carenation is not intended for use in emergency situations. In the event of an emergency, call 911 or your local emergency response system.