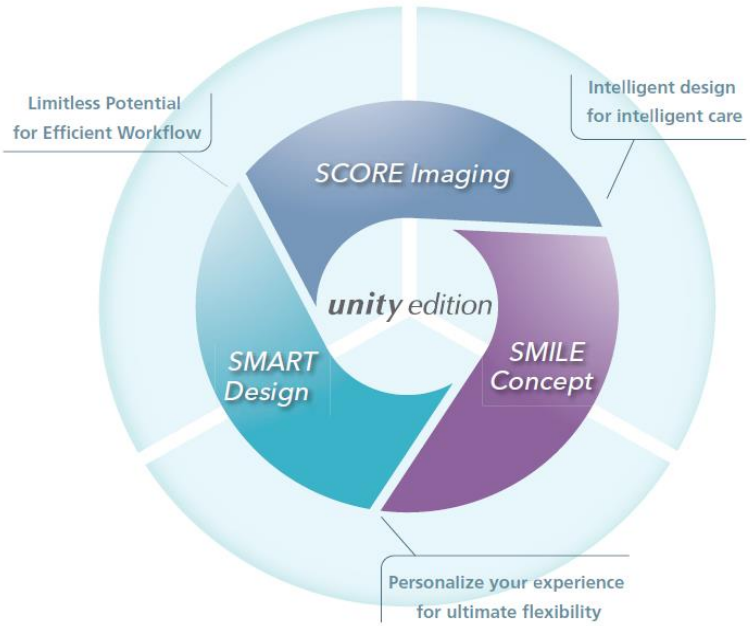
SHIMADZU

Digital Angiography System

Trinias B12/C12/F12 *unity* edition

“unity” Concept



Based on our many years of experience, Shimadzu has added the latest advancements in imaging technology to our Trinias system to achieve the high quality patient care in interventional procedures.

The result is a patient centric experience, free from worry for operators to easily perform all types of interventional procedures. Trinias unity edition sets the bar high with improved functionality with new hardware and software features that provides simple workflow for cardiac and vascular procedures from head to toe.

The system uses Intelligent Design to provide Intelligent Care in minimally invasive procedures. Our technology provides solution to imaging problems that you face every day.

SCORE Imaging

Implemented by original high-speed image processing technology [SCORE Imaging]. Excellent visibility, abundant image guidance, real-time property suitable for treatment. We support advanced interventions that judge on the spot and tie it to treatment.

- **SCORE PRO Advance**
- **SCORE StentView/StentShot**
- **SCORE RSM**
- **SCORE Chase**
- **SCORE MAP**
- **Flex-APS**
- **SCORE 3D/CT/Navi**
- **Multimodality Q/R**

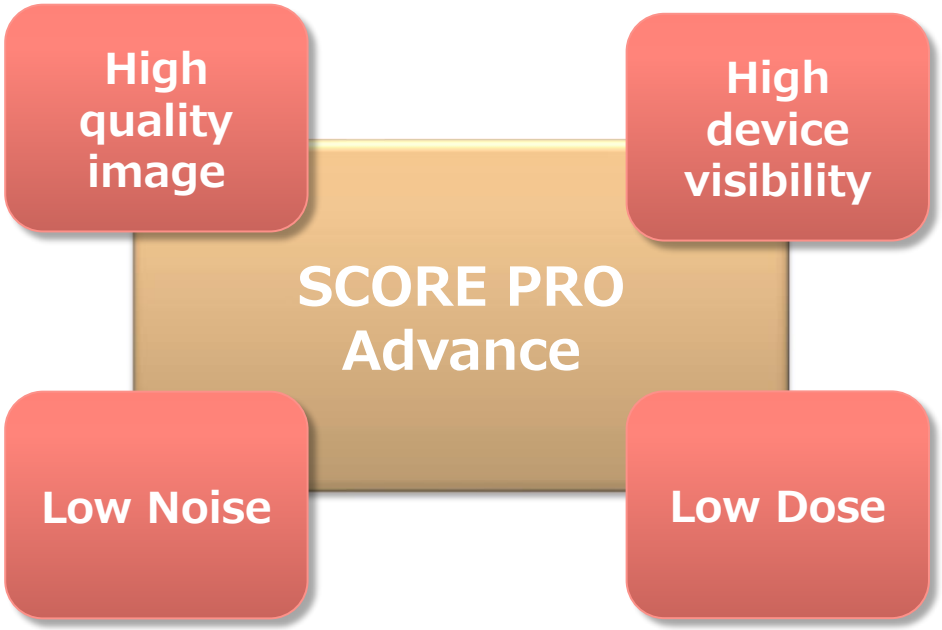
Experience the next frontier of intervention

SCORE PRO Advance

High-speed image processing developed with the concept of low exposure and high image quality SCORE PRO is equipped with state-of-the-art motion tracking noise reduction (NR) and has been reborn as SCORE PRO Advance.

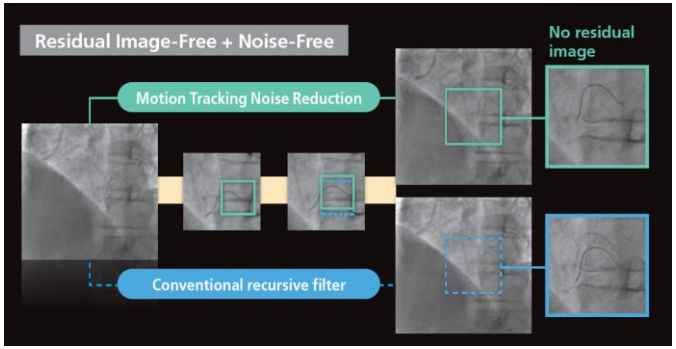
High-quality images that reached using Shimadzu's real-time image processing technology will support advanced interventions.

Improvement of image quality by SCORE PRO Advance has promoted low-dose therapy a step further. By optimally combining the pulse rate and the dose per pulse, a dose reduction of approximately 50% per exam can be expected



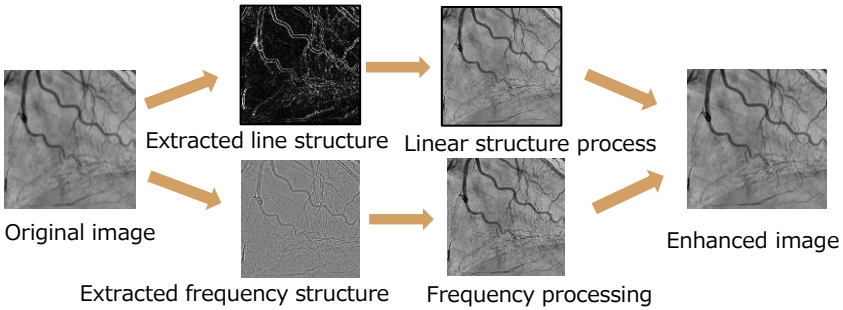
Motion tracking NR

Motion of a subject is detected for each time-series images. It aligns and accumulates, and reduces noise without causing image rags. Especially improves visibility of the device during fluoroscopy.



Object Extraction type Enhancement

It separates the line structure component of the image from noise and highlights it by extracting only structures, such as devices and blood vessels. The fine parts which are difficult to extract the line structure are supplemented with multi-frequency processing, edge enhancement processing, etc. to realize optimum emphasis processing. It is useful for visualization of micro vessels such as collateral circulation and visualization of thin devices and the like

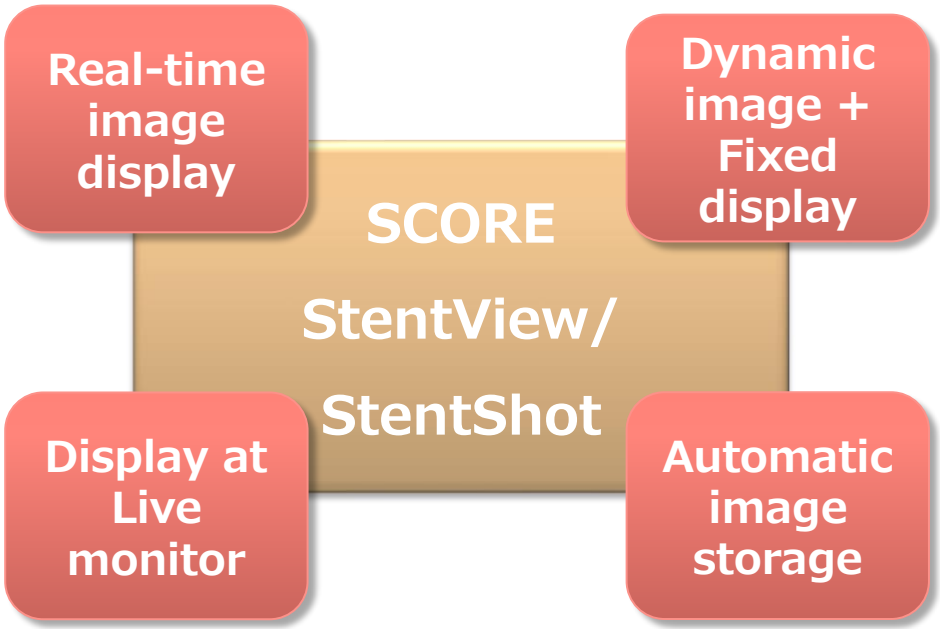


SCORE StentView / StentShot (Option)

SCORE StentView / StentShot are PCI support applications making full use of Shimadzu's real-time processing.

Stent which moves by heart beat is fixed not in post processing but in real time and it supports advanced PCI by grasping the positional relationship at Stent placement and providing images suitable for evaluating the shape of Stent .

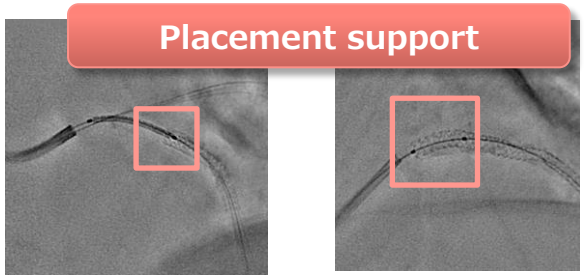
StentView / StentShot images are automatically displayed on the live monitor by just stepping the foot switch after pressing the button. Since the simple operation, you will be able to use smoothly during the procedure without having to divert the eyes from Live monitor.



SCORE StentView (Option)

Stent information is acquired in real time on heart beat images, and it is fixedly displayed while improving its visibility to support more accurate device placement.

It is suitable for real-time grasp of device position relationships and position adjustment during exposure.

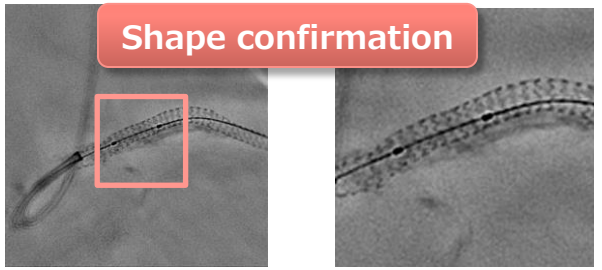


Confirming the overlay　Confirming the balloon position

SCORE StentShot (Option)

SCORE StentShot is an application in which noise on the image is greatly reduced by successive addition processing and Stent's visibility is further improved.

The shape of Stent is clearly visualized.

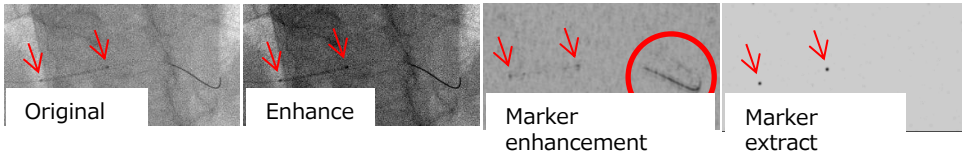


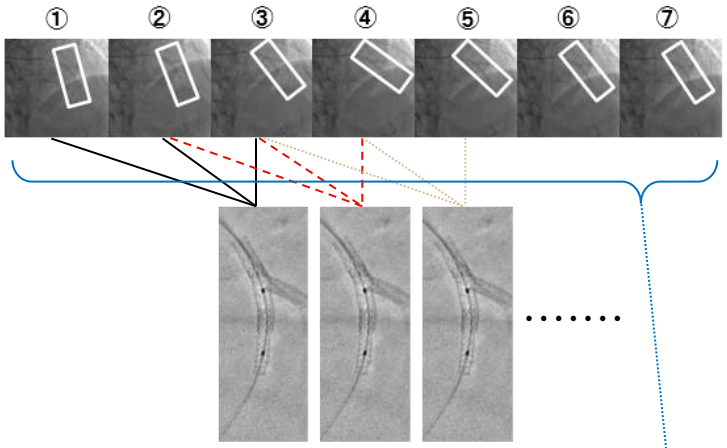
Evaluating the shape of stent

SCORE StentView/StentShot（Option）

Principle of StentView/StentShot

Balloon markers are extracted from the original image, Stent is enhanced by adding / averaging while correcting distortion due to motion.





StentView image

Dynamic image for StentView

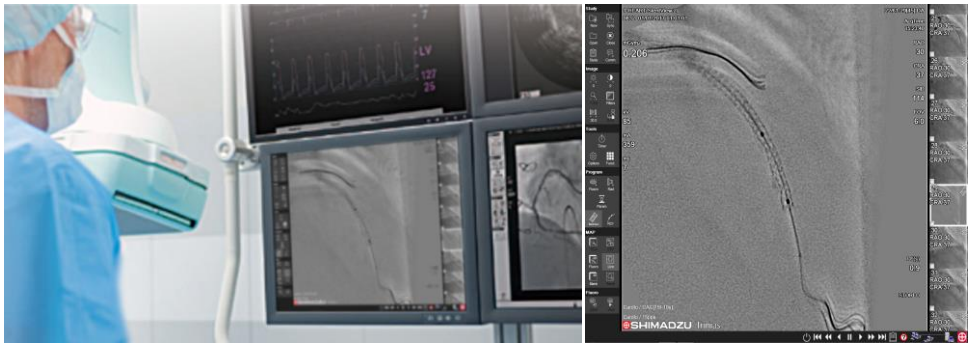
Still image for StentShot

Are created.

StentShot image

Display at Live monitor

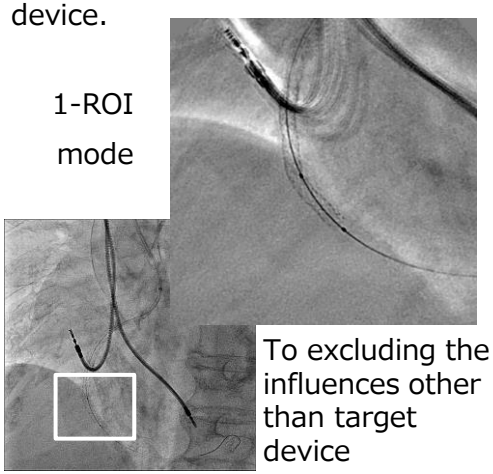
Pressing the button and stepping on the foot switch instantly displays the acquired image on the live monitor and supports smooth PCI.



High succession ratio with ROI mode

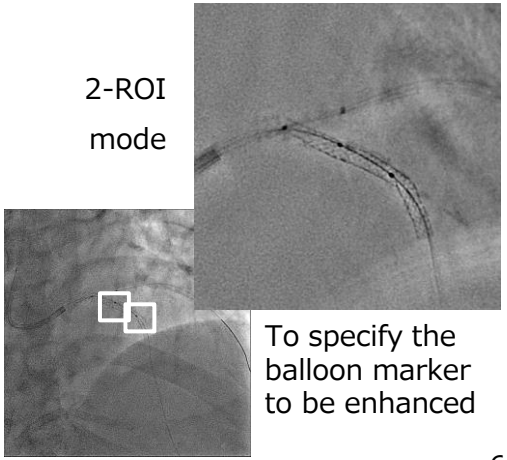
By designating the region of interest (ROI) even when there are multiple devices, we greatly improved the detection efficiency of the device.

1-ROI mode



To excluding the influences other than target device

2-ROI mode



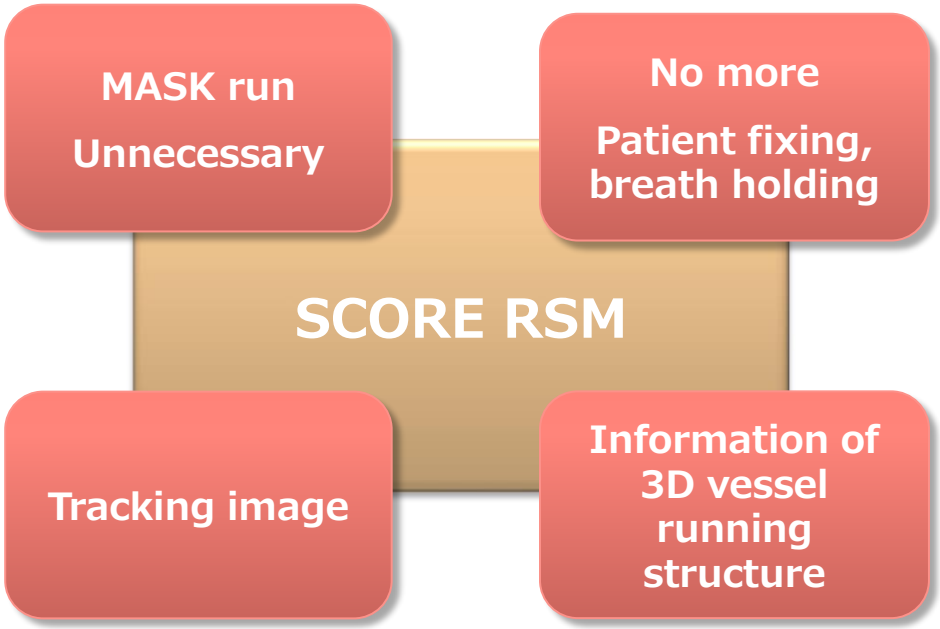
To specify the balloon marker to be enhanced

SCORE RSM

SCORE RSM is a dynamic DSA that is unnecessary for mask shooting reached by high-speed digital image processing technology of Shimadzu.

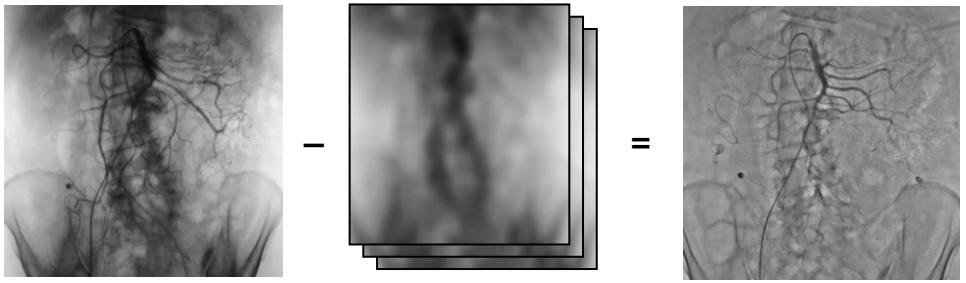
Three-dimensional imaging combined with tracking contrast of all lower limbs and precession/ pendulum motion of C-arm is possible. It is also useful for patients with difficult breath holding.

There is no influence of motion artifacts, so re-acquisition is not necessary. It supports minimally invasive treatment by shortening treatment time, low dose, reducing contrast medium.



Principle of SCORE RSM

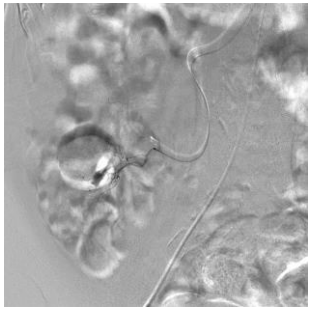
Real time subtraction processing of original image and frequency processed image extracts blood vessels and devices, emphasizes and images. Mask images frequency-processed from the same image are created in real time and subtraction processing is performed, so like DSA images that do not require mask shooting and are resistant to motion can be obtained.



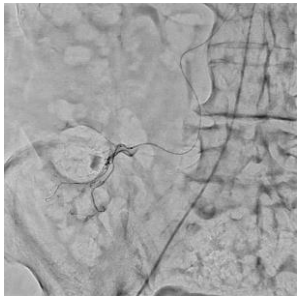
Original image **Frequency image** **SCORE RSM**

DSA without motion artifact

In normal DSA, motion artifacts due to motion cause a decrease in diagnostic ability, but since SCORE RSM does not cause misregistration due to motion, you can do the examination without fixing the patient or stopping breathing.



DSA



SCORE RSM

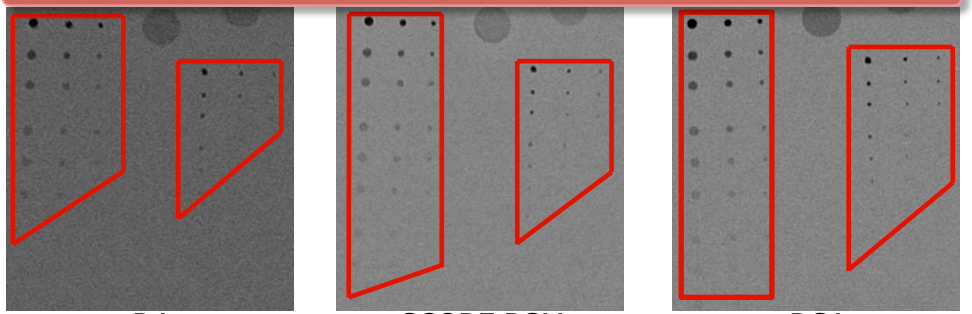
SCORE RSM

Features of SCORE RSM

Although SCORE RSM has the same spatial resolution and vascular visualization capability as ordinary DSA, it can shoot at a dose of about 50% per pulse, and it is effective for radiation reduction.

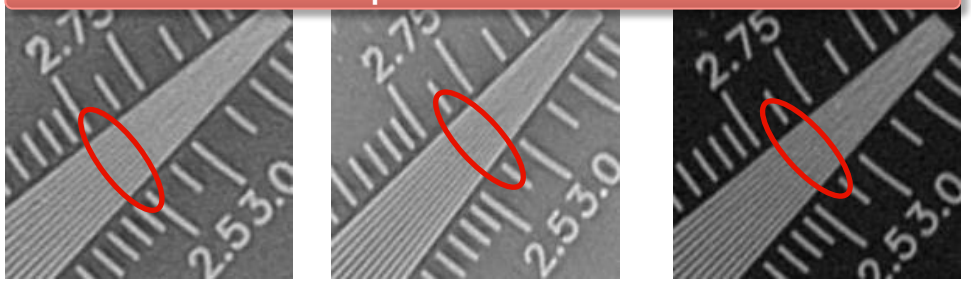
Mode	Contrast (vessels)	Contrast (Tumor stain)	Resolution	Dose/Pulse	Panning
DA	○	×	○	33%	○
DSA	◎	◎	◎	100%	×
RSM	◎	○	◎	50%	○

Low-contrast resolution



DA　　SCORE RSM　　DSA

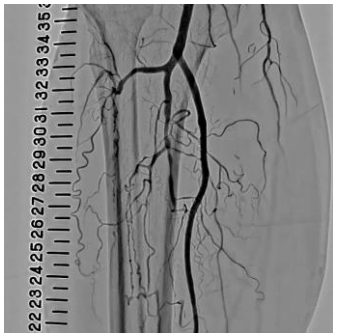
Spatial resolution



DA　　SCORE RSM　　DSA

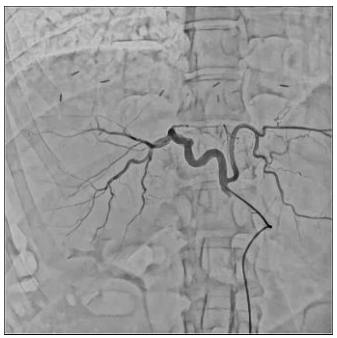
Application example for lower limbs

SCORE RSM clearly shows fine vessels of lower limb extinction. Moreover, since there is no misregistration even when there is a patient's body movement, it can be effectively used also in lower limb where body movements tend to occur at the time of contrasting.



Application example for Abdomen

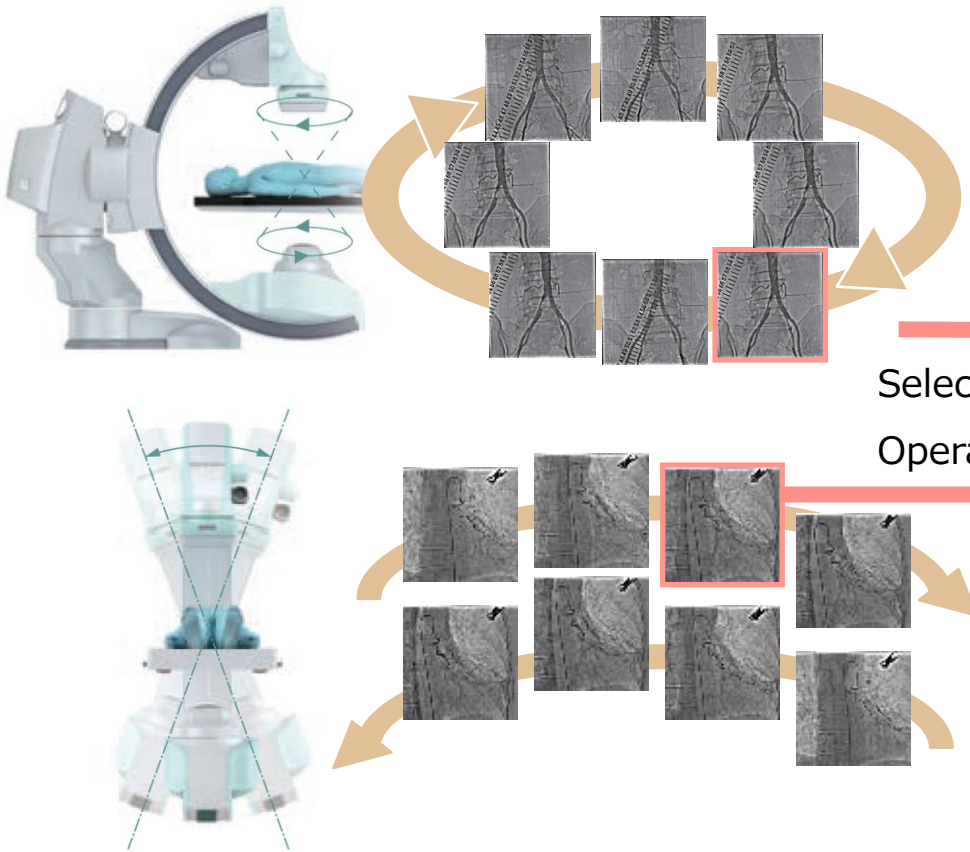
SCORE RSM can also be used effectively in the abdominal area. Especially for patients who have difficulty in breath holding, you can shoot without misregistration.



SCORE RSM

SCORE RSM by precession/pendulum

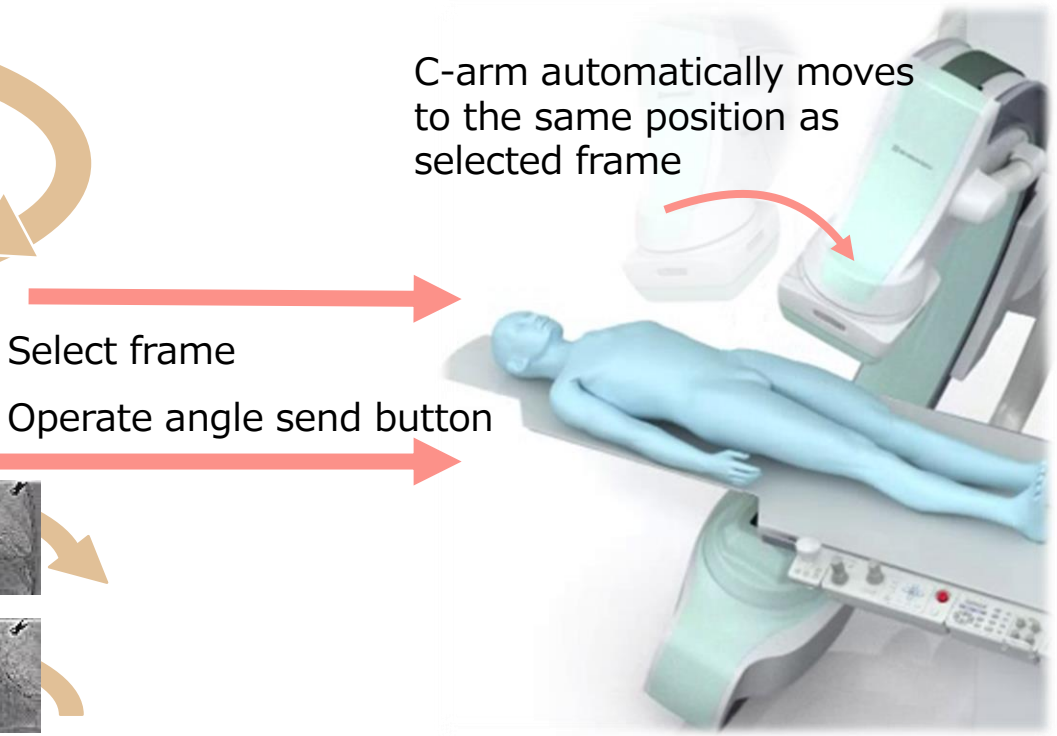
By acquiring SCORE RSM with precession or pendulum C-arm movements, you can observe the blood vessels from multiple directions with one time of contrast and can recognize it as an image with depth feeling such as like 3D running structure of blood vessels.



Reproduction C-arm angle from image

Reproduction of C-arm angle by sending the angle information acquired by SCORE RSM is available with one touch operation.

Without additional fluoroscopy, you can position it that you want to use for treatment, and support minimally invasive and smooth procedure.

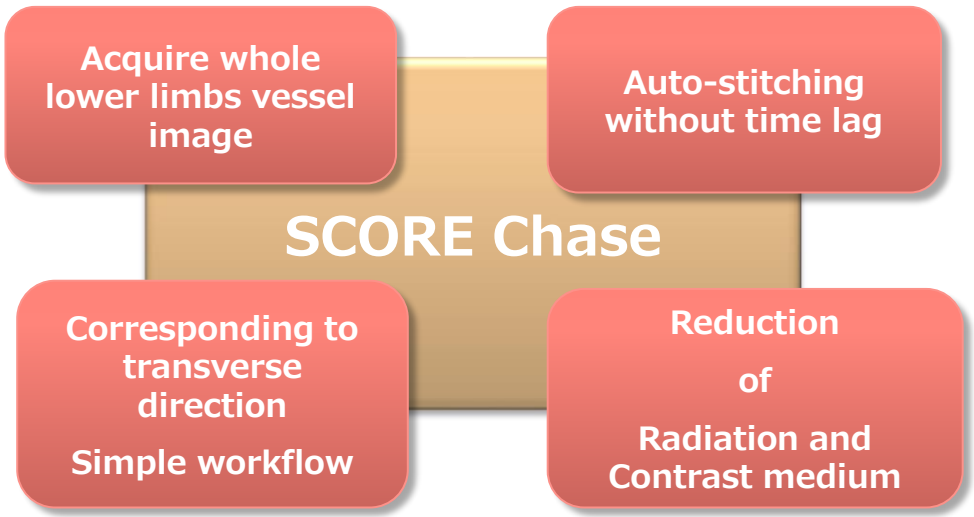


SCORE Chase (Option)

SCORE Chase is an application that takes vessel tracking image while panning the table in the longitudinal and transverse directions and creates long-view images automatically after acquisition, which is an effective application for grasping the whole lower limb blood vessel running.

Just by acquiring image with panning table after pressing the SCORE Chase button, a long-view image is automatically created without time lag. It is also possible to display the current radiation area in real time on the long-view image without fluoroscopy.

In combination with multifunctional "SMART Table", Bolus Chase DSA and creating long-view DSA image become available. It supports minimally invasive treatment by functions such as automatic table positioning without fluoroscopy and a roadmap that does not require an another contrast image.

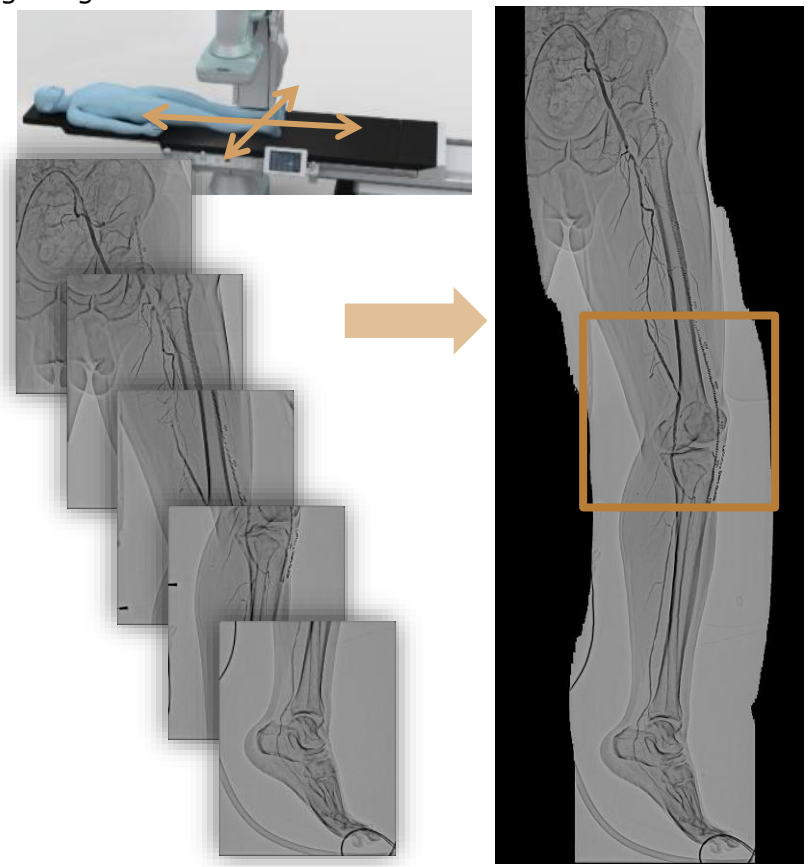


SCORE Chase (Option)

Simple and Easy Operation

Long-view images are automatically created after acquisition by simply pressing a SCORE Chase button before exposure.

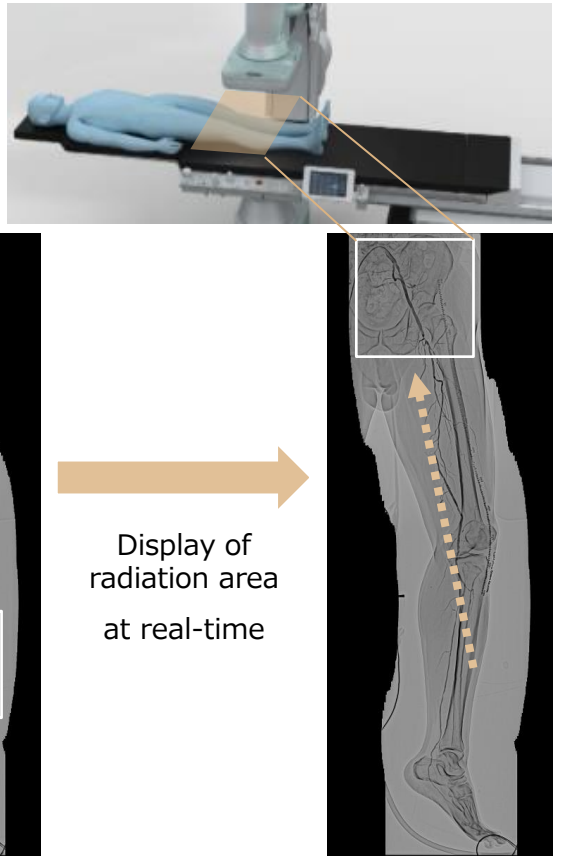
It supports panning in both longitudinal and transvers directions, and even when the patient's lower limb can not be straightened, it is possible to pan freely according to the bending of the lower limb while looking at the tracking image.



Display of Radiation area without fluoroscopy

In conjunction with the table top position and FOV, it is possible to display the current radiation area in real time on the long-view image without fluoroscopy. It is useful for radiation reduction and smooth examination workflow.

Table top position and FOV are adjustable without fluoroscopy.



SCORE Chase (Option)

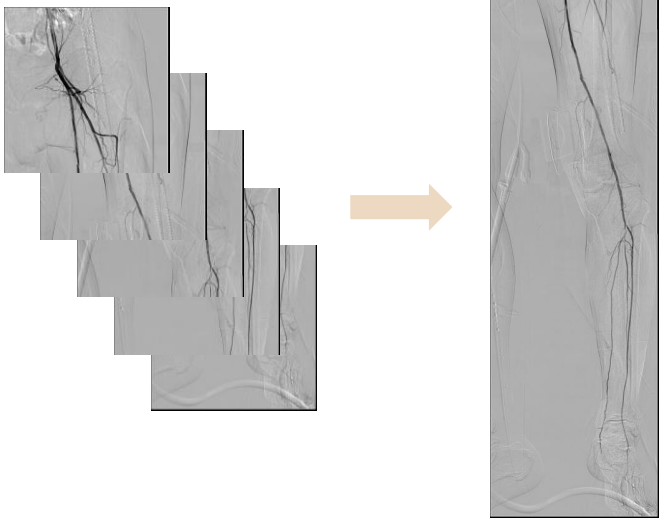
Functions introduced in this slide are only available in combination with SMART Table

Chase DSA

Bolus Chase DSA and creating long-view DSA image (Remote Chase - DSA) become available in combination with SMART Table (KS-100).

These new functions can be operated by newly designed SMART Table dedicated Chase Console from operation room, which also reduce the radiation on operator.

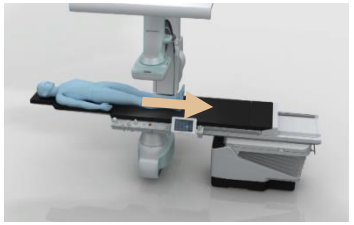
Remote operation by Chase Console



Position linkage with SMART Table

Positioning information is acquired from a mean frame of pre-acquired SCORE Chase image , and the table top can be adjusted to the target position with one touch operation by Chase Console. The target position can be reproduced without fluoroscopy, it is useful for radiation reduction with smooth workflow from observation to treatment.

Positioning information is sent to SMART table with one touch operation

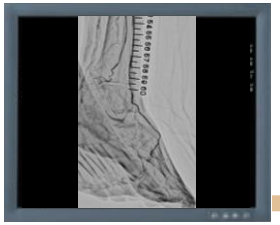


Just selecting a target frame from pre-acquired dynamic SCORE Chase image

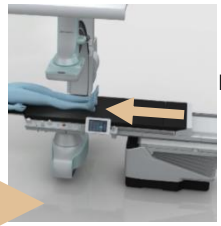
SMART table automatically set up the target position

Chase MAP: Roadmap without re-acquire contrast shot

Long-view image is consisted by contrast image. By using this contrast image when creating roadmap, another contrast shot is no more necessary. It can reduce the total amount of contrast medium usage.



Selecting a target frame (with contrast)



SMART table moves for the target

・Chase DSA
→Selected frame becomes roadmap
・ Chase DA/RSM mode
→Just acquire MASK image
(No need contrast shot)

Roadmap image

SCORE MAP

Versatile road map functions are available, that you can select according to the target region of intervention and type of the procedure. Switching to normal fluoroscopy and with bone or bone-free display also be done simple operation.

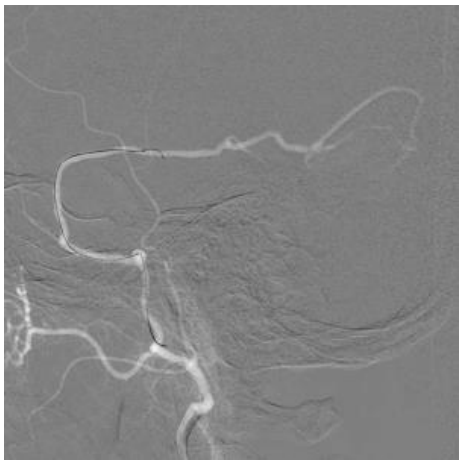
Even if you switch the field of view or do digital zooming, the MAP image will follow, so re-acquisition and re-MASK are no more necessary.

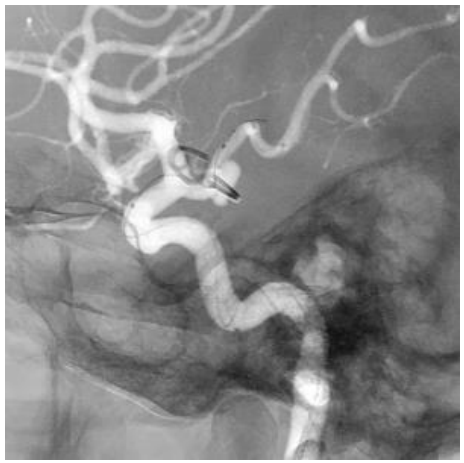
When Move C-arm or change SID during MAP, MAP mode will automatically change to fluoroscopy. If it returns to the same geometry again, it will automatically return to MAP mode.

DSA-MAP function

Roadmap function that uses acquired DSA images created as MAP images

With bone and bone free display are available to be selected

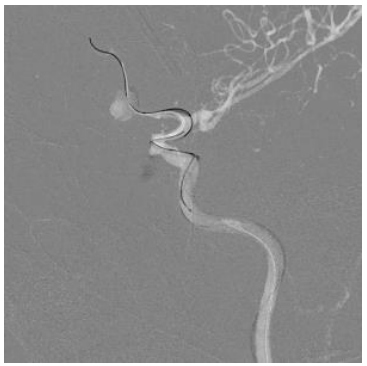




FluoroMAP function

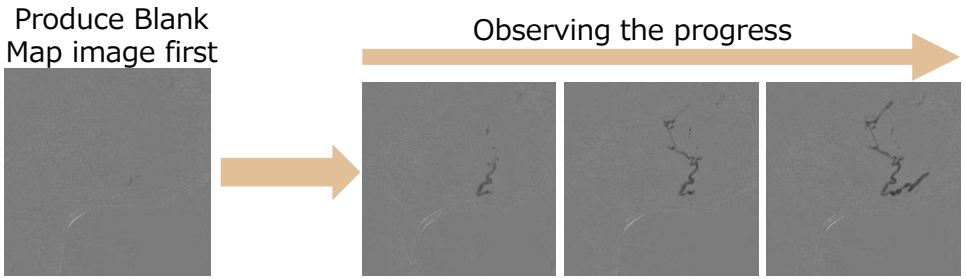
Roadmap function that uses subtraction under fluoroscopy and uses it as a MAP image.

With bone and bone free display are available to be selected



Blank MAP function

A function of displaying only the contents of the procedure as a result of the sbtraction of the fluoroscopic images before and after the procedure starts. It is suitable for observing the progress of embolization procedure.

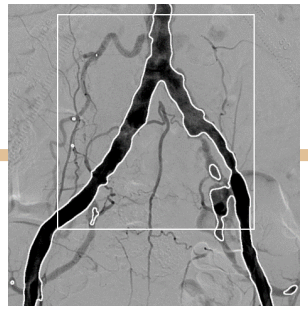


SCORE MAP

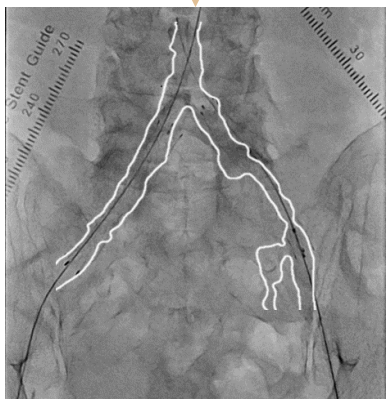
TraceMAP function

It is a road map function that extracts the vessel contour automatically from the DSA image and superimposes it with the fluoroscopic image. Since the blood vessel lumen does not turn white compared with the conventional road map, it is easy to grasp the blood vessel bifurcation part and has high visibility of the wire and the device.

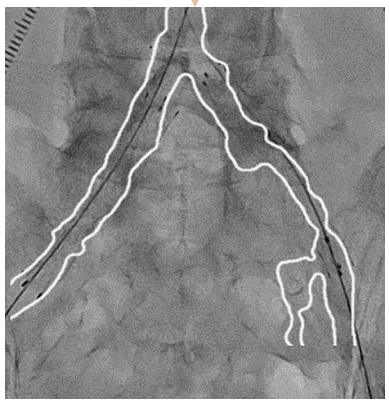
It is also possible to display Trace map only in the region of interest, and it also supports scaling of the field of view.



Extracting vessel contour from DSA



Overlay with fluoroscopy

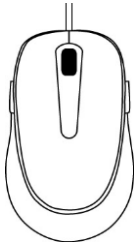


Respond to FOV change

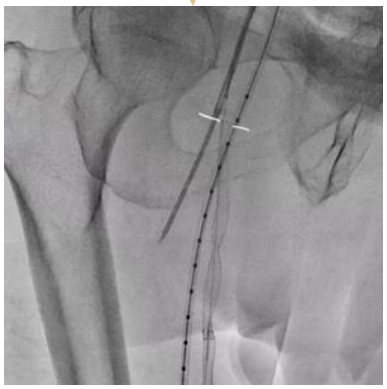
Sckech function

Using the mouse in the operation room and the joystick in the examination room, you can easily write the guide by handwriting like a sketch on the fluoroscopy image.

It also supports scaling of the field of view.



Handwriting on DSA image by mouse



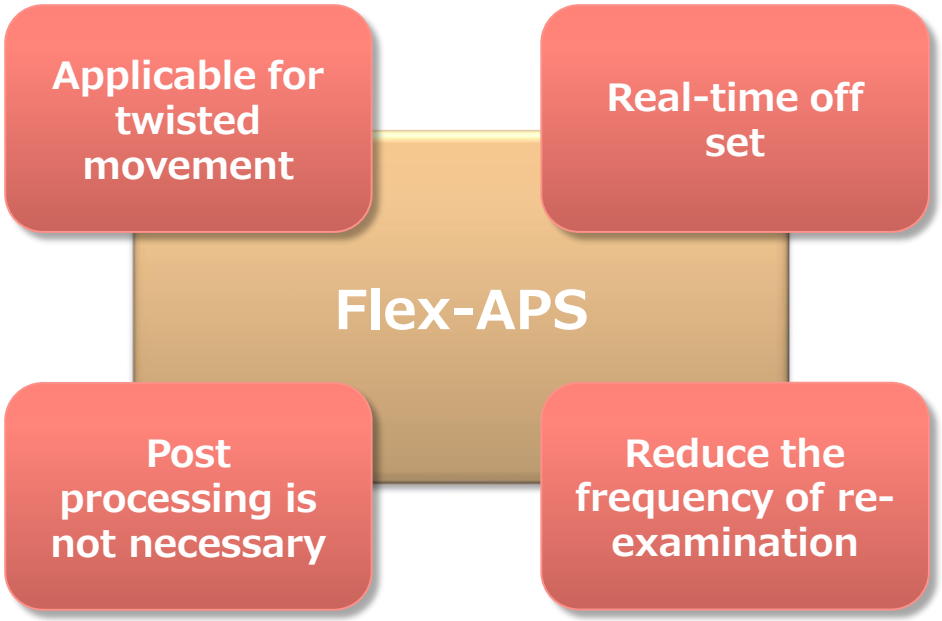
Sketched line overlays on fluoroscopy image

Flex-APS

Flex-APS is an application that automatically offsets misregistration due to body movements during DSA.

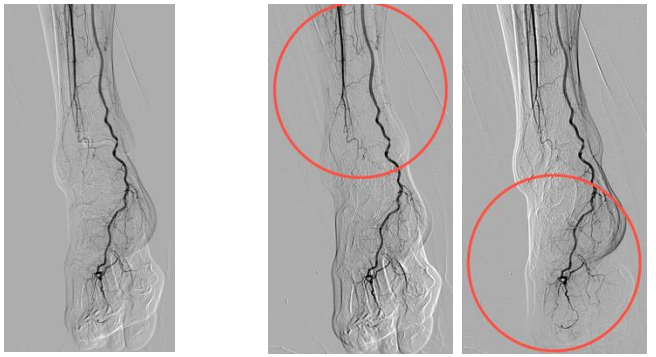
With appropriate offsets for each pixel, it corresponds to body movement like twist that can not be offset with conventional pixel shift. Because it is real time, you can observe blood vessel images with less misregistration artifacts during acquisition.

Flex-APS not only reduces offset processing in post-processing but also reduces re-examination due to the feature that misregistration has minimized. This makes it possible to suppress the use of unnecessary exposures and contrast media.



Principle of Flex-APS

Flex-APS calculates the motion for each pixel unit between the mask image and the live image by using the index of the dynamic motion vector, and by performing different offsets for each pixel, appropriate correction is made for the entire image.

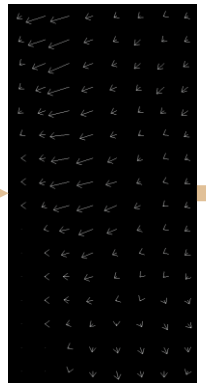


Twist movement

Without offset

Conventional pixel shift

In the case of misregistration due to twisting motion, only the part of the image can be offset properly by the conventional pixel shift.



Calculation for offset value

Flex-APS image

Flex-APS:

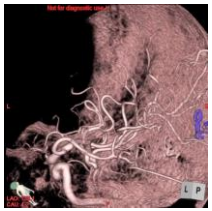
By performing different offsets for each pixel, appropriate correction is made for the entire image.

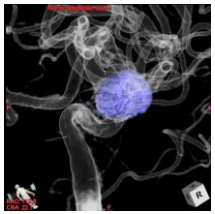
SCORE 3D（option）/ SCORE CT（option）

SCORE 3D（option）

It is an application to acquire blood vessels image by rotation mode and reconstruct as 3D images.

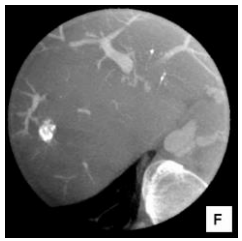
By acquiring with the fastest 60°/sec rotation, we reduced the burden on the patient by decreasing contrast injection time and high image quality by suppressing the influence on the image caused by movement.



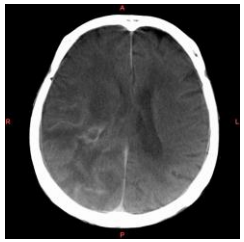


SCORE CT（option）

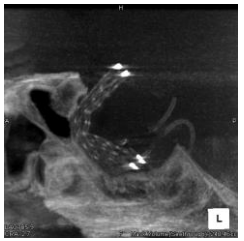
It is an application that reconstructs the cross-sectional image of the low contrast area mainly for visualization of tumor stain and makes it observable during procedure. Depending on the procedure and the body parts, it is possible to select 10-sec, 20-sec acquisition mode, and CT-HR mode for intracranial stent imaging. After acquisition, reconstructed images are displayed automatically.



Tumor stain at TACE



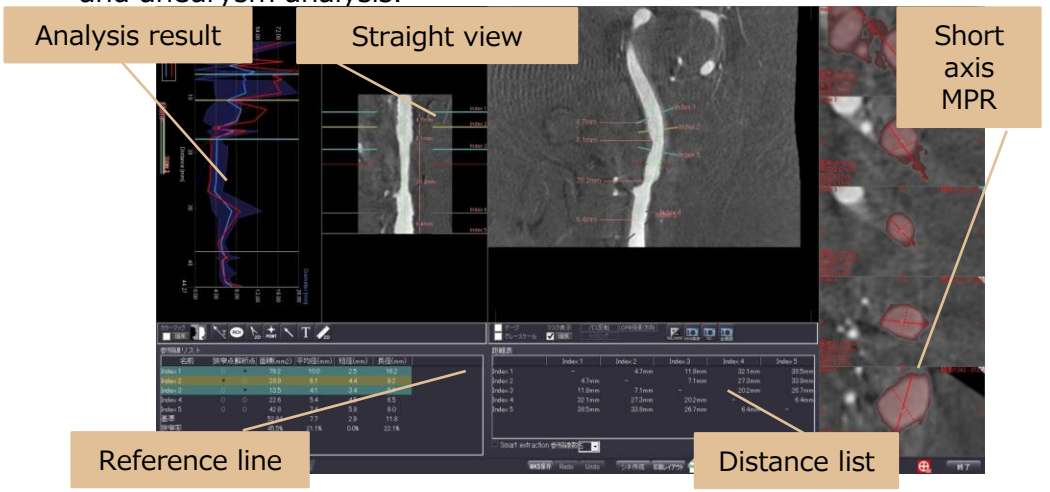
Intracranial bleeding

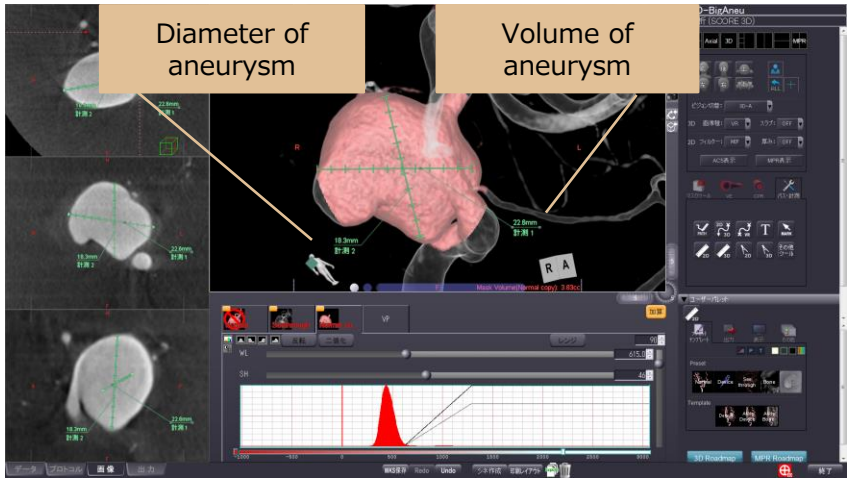


Intracranial stent imaging by CT-HR

Analyzing function

Supporting advanced technique with blood vessel analysis function and aneurysm analysis.





SCORE 3D（option）/ SCORE CT（option）

Display of working angle range

It is indicated if C-arm angle in VR image is available with the actual C-arm, while you are observing the target region in VR image.

This supports quick decision for working angle and smooth change of C-arm angle.

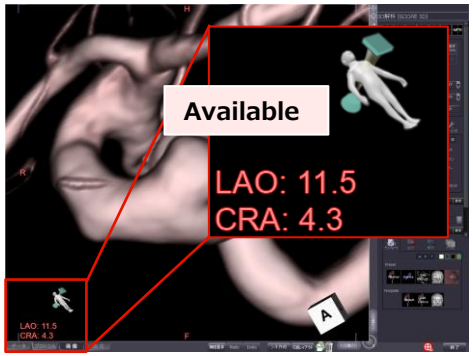
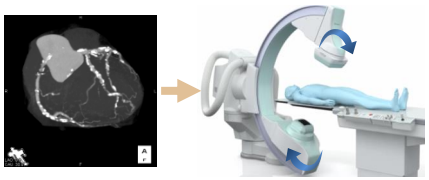


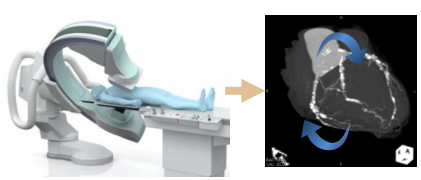
Image interlocking function

C-arm can be moved according to 3D image, 3D image can be rotated according to C-arm angle.

Positioning can be done without fluoroscopy, supporting minimally invasive and smooth procedure.



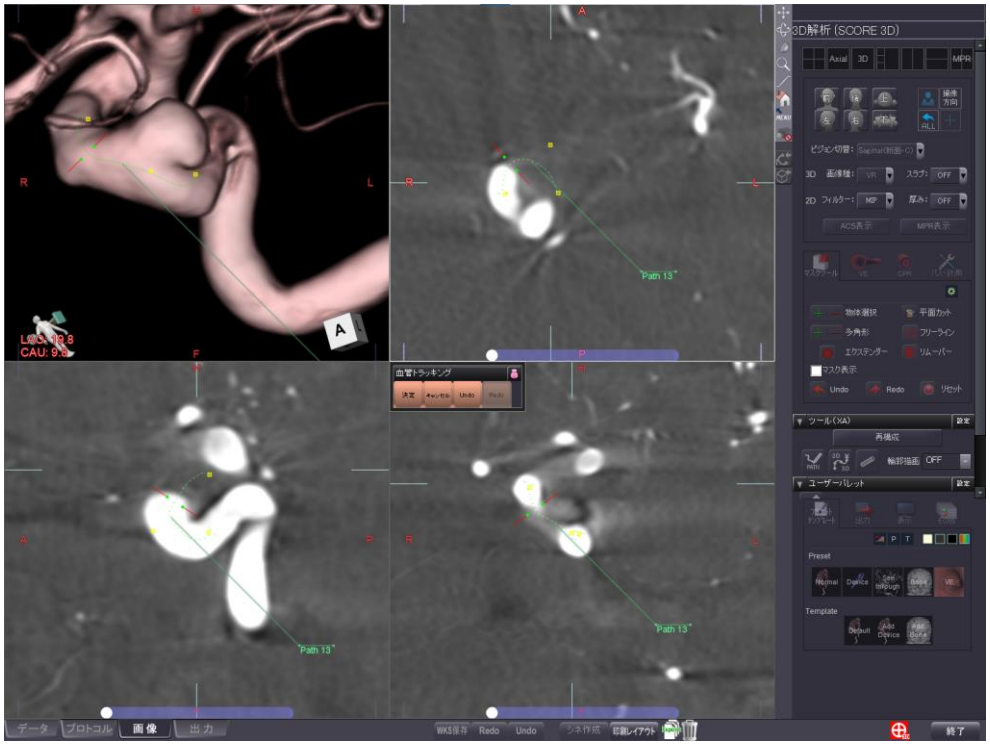
3D image => C-arm movement



C-arm angle => Image rotation

Vessel tracking

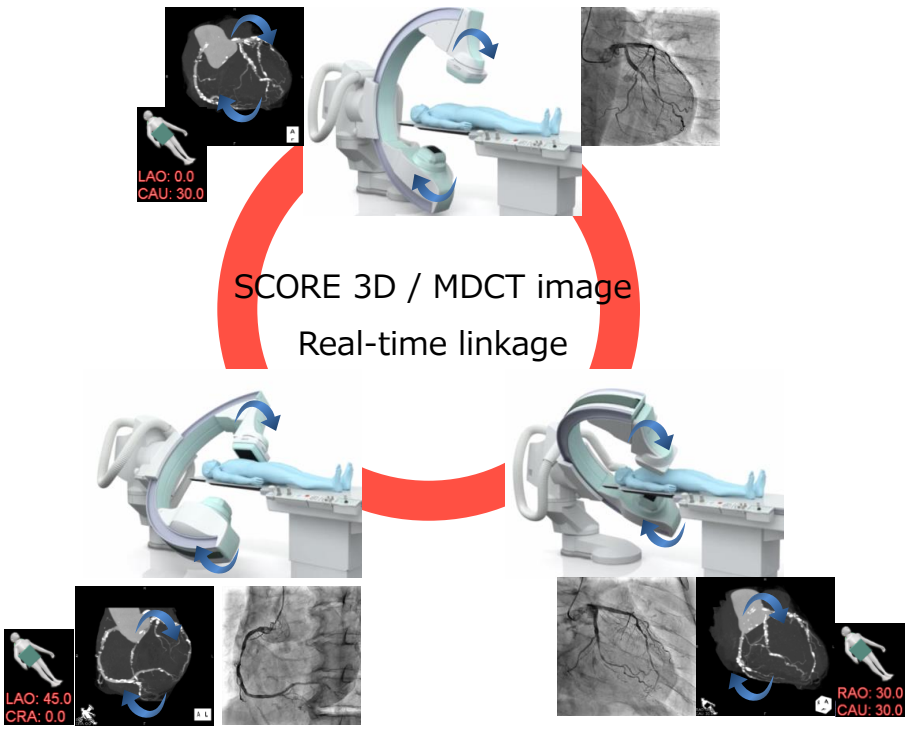
This is a path-making function which can work in all of Axial/Sagital/Coronal/VR views. This can generate a tracking path even CTO lesion invisible in VR image. Not only a starting point and an end point, multiple tracking points can be set.



SCORE Navi (option) / Multimodality Q/R (option)

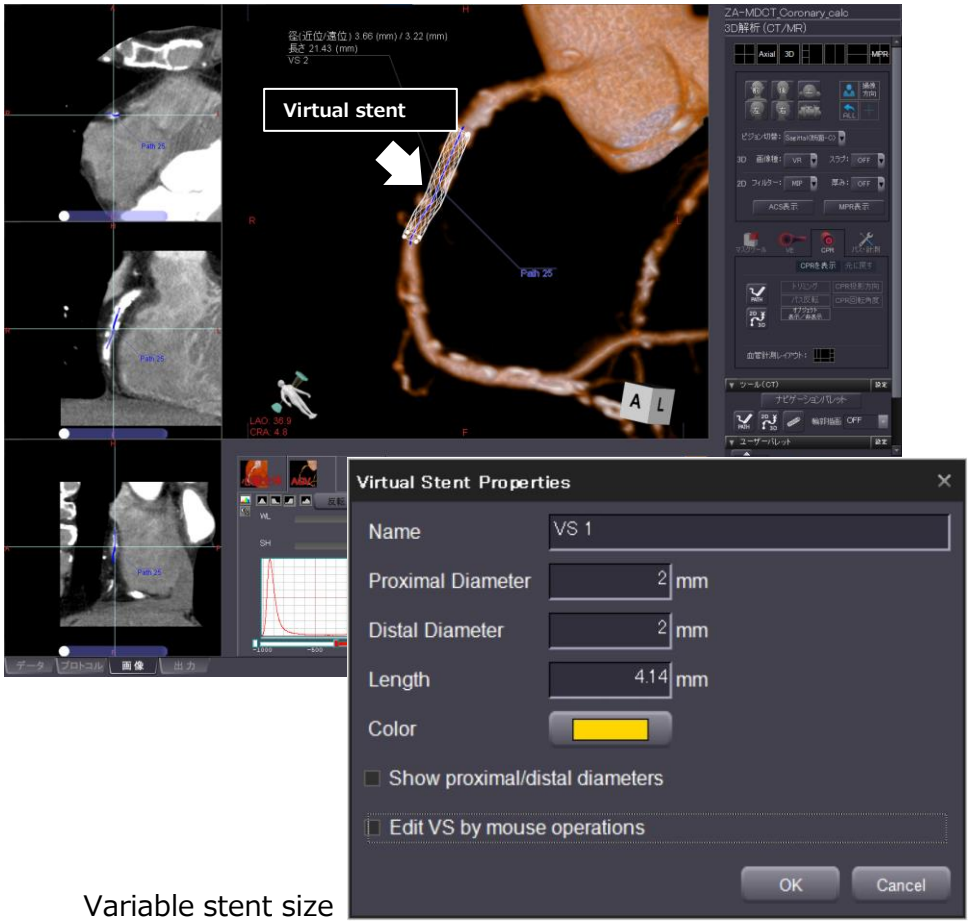
It is an application that supports minimally invasive treatment by effectively utilizing fluoroscopy images. Besides fusion of 3D images on fluoroscopy images, it is possible to bi-directional angle linkage between C-arm and 3D images can be used as a reference, thus reducing the amount of contrast media used.

In Multimodality Q/R, in addition to SCORE 3D images, fusion and C-arm bi-directional angle linkage with preoperative CT/MRI images become possible.



Virtual stent function (only with Multimodality Q/R)

An application that displays a stent placement virtually before procedure. The simulation will support you to consider the optimal stent size.



Variable stent size

SMART Design

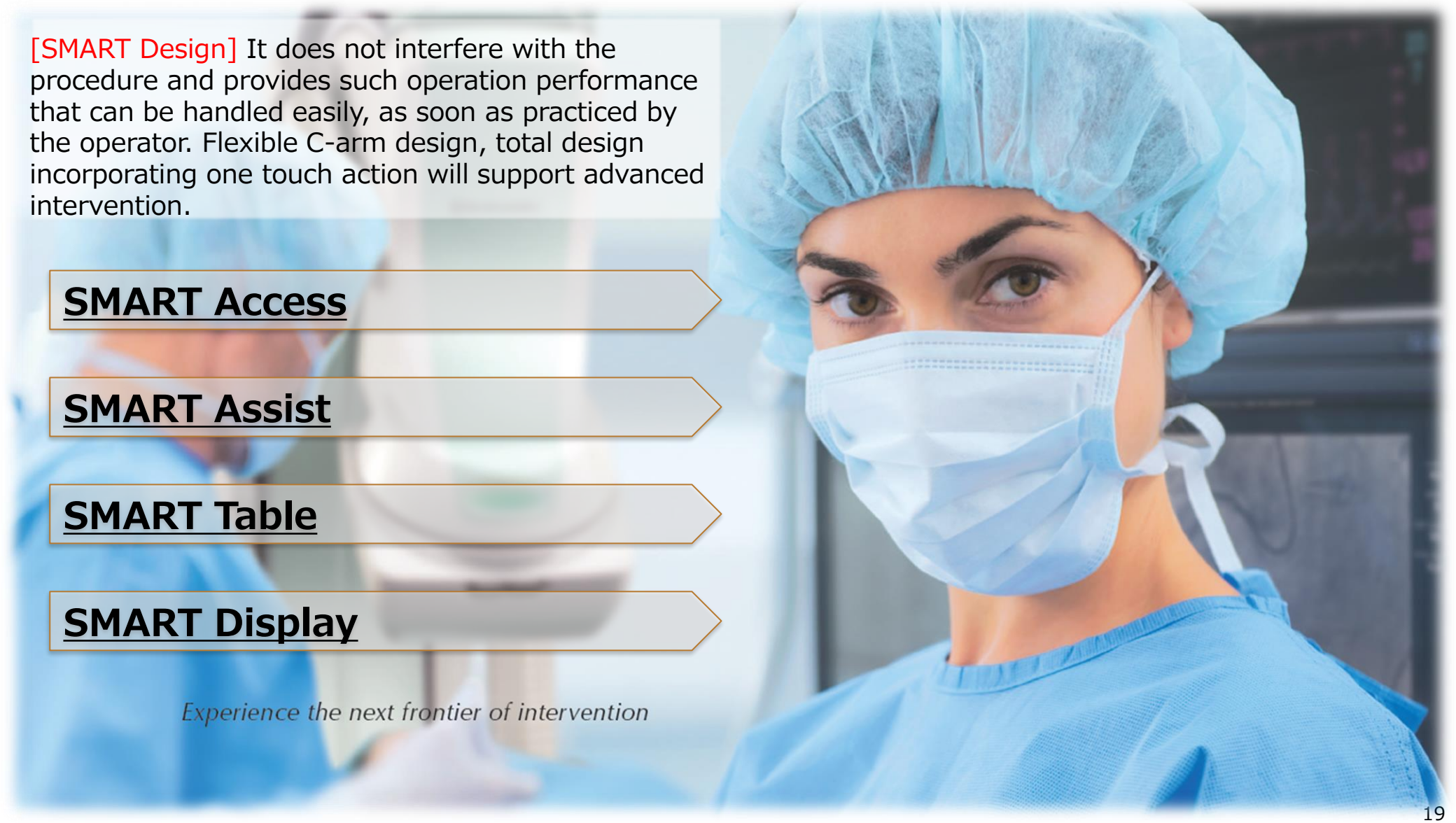
[SMART Design] It does not interfere with the procedure and provides such operation performance that can be handled easily, as soon as practiced by the operator. Flexible C-arm design, total design incorporating one touch action will support advanced intervention.

SMART Access

SMART Assist

SMART Table

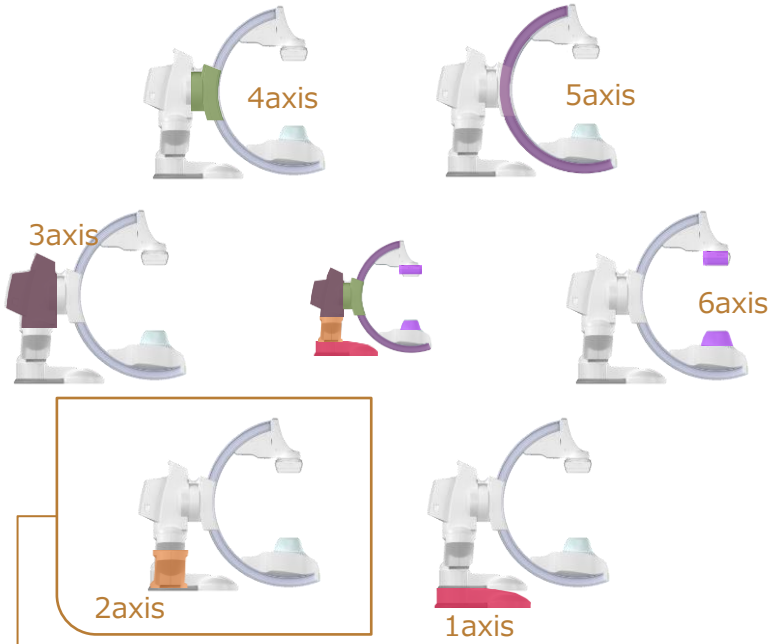
SMART Display



SMART Access (Single-plane, flooring type:F12)

6-axis structure with less motion restriction

By adopting a 6-axis structure for the C-arm, C-arm moves flexible with less motion restriction. Especially, the triple pivot structure of the base enables free C-arm setting.



This part is Shimadzu's peculiar design. By the structure of this axis it is possible to translate to any position anywhere in the longitudinal or transverse direction. By freely translating in parallel, it is possible to move in accordance with positioning and tracking contrast agent.

Wide coverage

By switching the C-arm position, it is possible to cover various body parts without moving the patient. It greatly reduces the burden on patients, operators and staff, and provides a safer working environment.

Home position

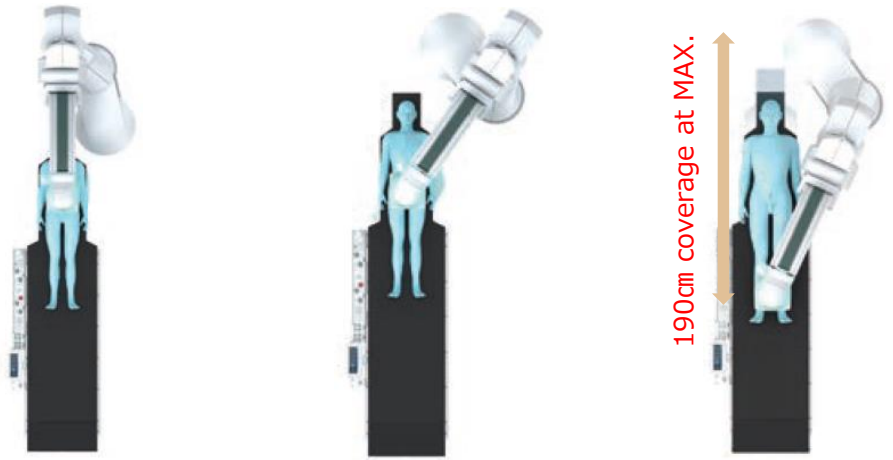
It's commonly used. Because of the inline C-arm, access to the patient can be done from all directions.

Multi position

By inserting the C-arm diagonally, it is useful for examination of the lower abdomen and catheter approach from the iliac artery. Moreover, patient access from the head side is easily possible.

Peripheral position

Positioning for peripheral treatment. Without swiveling the table, whole patient body can be covered. The combination with SCORE RSM enhance the minimally invasive procedure further.



Transverse 140cm coverage supports the Trans Radial Approach. Upper arm and wrist are covered by lateral movement of C-arm without table swiveling.

SMART Assist（ Single-plane, flooring type:F12 ）

System controllers in the examination and operation room are designed to be able to do with one touch action as easily as possible, and it does not require complicated operation during the procedure and provides an intuitive operation environment.

The latest digital system realizes a dynamic reference which can refer the dynamic image on a reference monitor, a speedy operation environment, perfect parallel processing which various processing can be done in parallel even during live image is acquiring.

Table side controllers
Intuitive operation

Dynamic Reference
Dynamic image display on reference monitor

PCI View
Reduce eyes movement for Ref. image confirmation

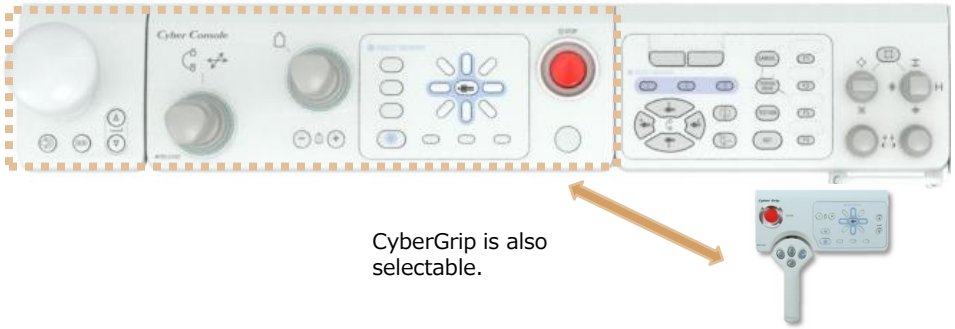
High-speed digital system
Complete parallel processing

SMART Touch
Integrated bed side touch panel console

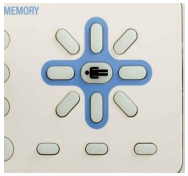
Wireless footswitch（Option）
Easy to handle

Table side controllers

Cyber Console that allows you to operate C-arms at will, even from the top of sterile sheets. (Speedy C-arm that moves at high speed 25°/s)



C-arm angle can be preset to the button designed to understand the swing angle of the C-arm relative to the patient at a glance, for one touch operation. It is not memory management by number, it is easy to operate without feeling stress. Especially by registering angles often used for routine examination, you can quickly reproduce the C-arm angle, which will shorten the examination time.



Maximum memory numbers : 72 types

Remote console (Option)

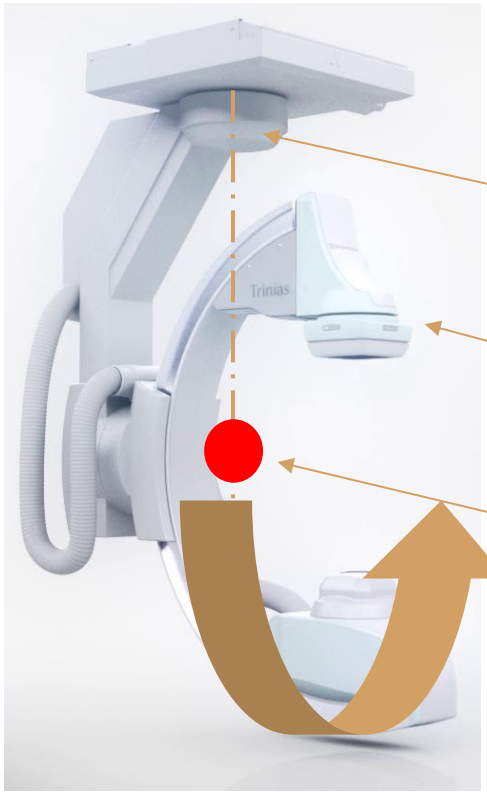
Optional remote console provides the same operating environment as the bedside from the operating room

SMART Access（Single-plane, ceiling type:C12）

High-speed rotation C-arm

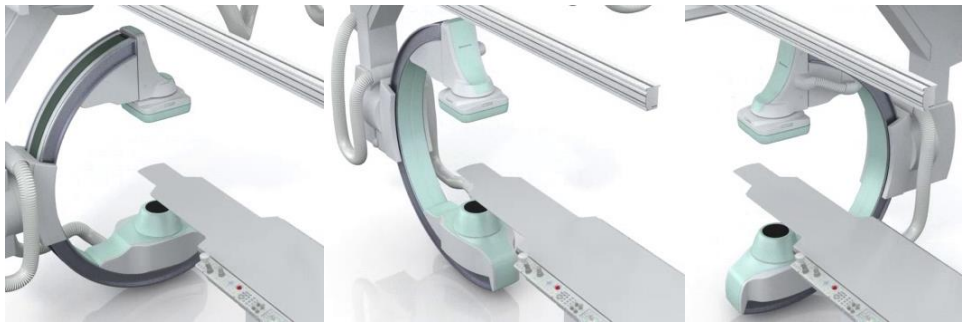
C-arm supports smooth PCI with speedy positioning achieves high speed rotation of up to 25°/s. You can also quickly position deep angles such as spider view.

A unique G shape suspension structure hanging on the ceiling on the extended line of the center of gravity position of the C-arm realized stable rotation without shaking.

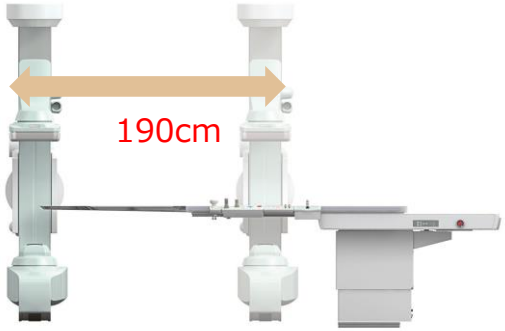


Wide coverage

By changing the insertion direction of the C-arm, you can respond to various body parts without having to move the patient. It greatly reduces the burden on patients, operators and staff, and provides a safer working environment.



Transvers 210cm coverage enhance the trans radial approach. With a longitudinal movement range of 190 cm, safe examination is possible without moving the patient from the heart to the peripheral examination. A secure PCI can be supported by fully taking advantage of ceiling type C-arm.



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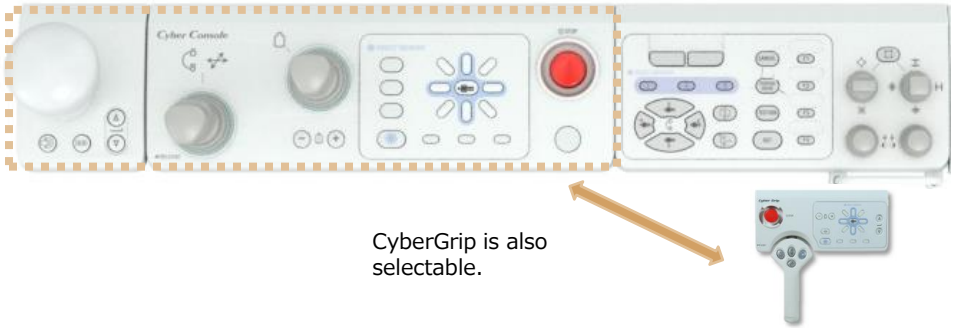

CyberGrip is also selectable.

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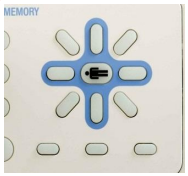

Maximum memory numbers : 108 types

Remote console (Option)

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SMART Access （Bi-plane system:B12）

6-axis structure with less motion restriction

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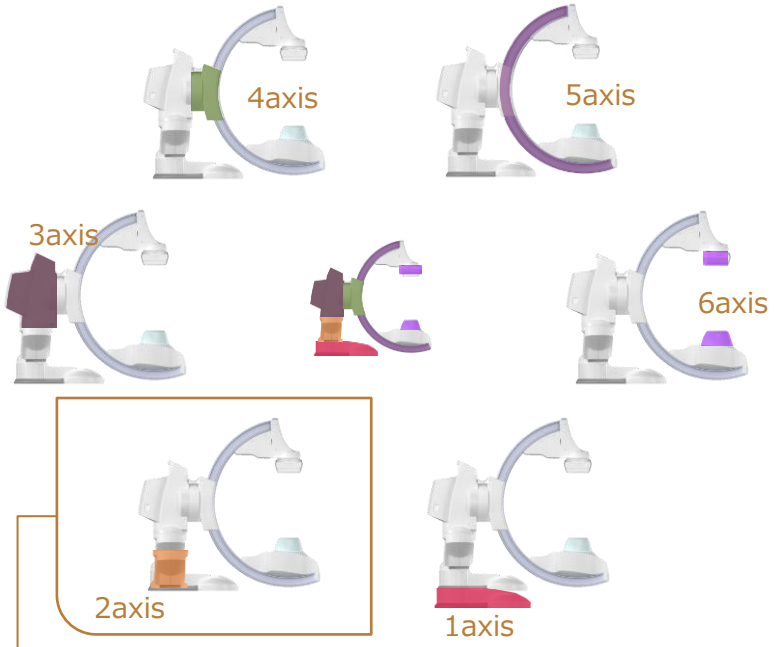

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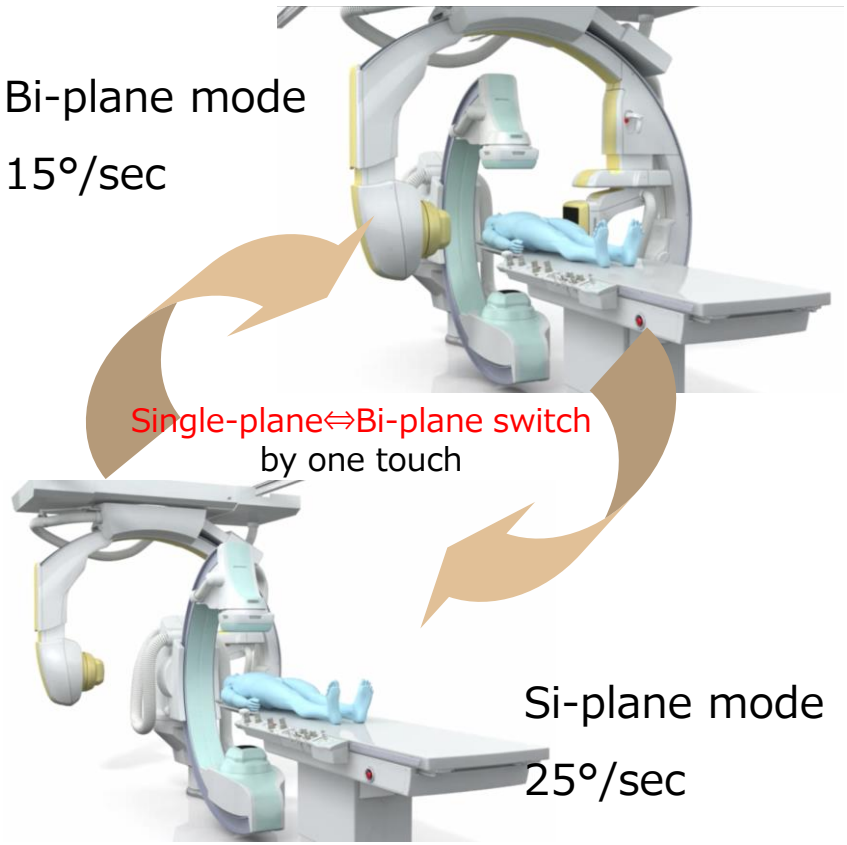
SMART Access （Bi-plane system:B12）

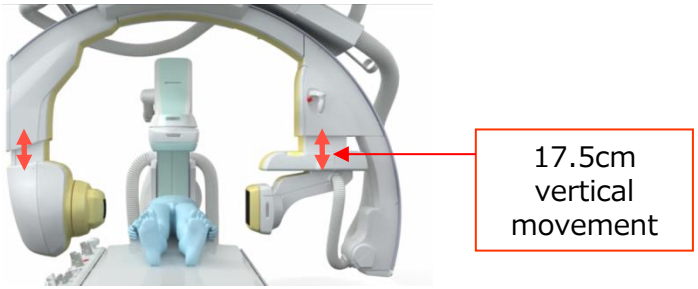
High-speed positioning

High-speed bi-plane positioning of 15 °/s will support smooth procedure. Switching between single-plane and bi-plane mode is also fast.



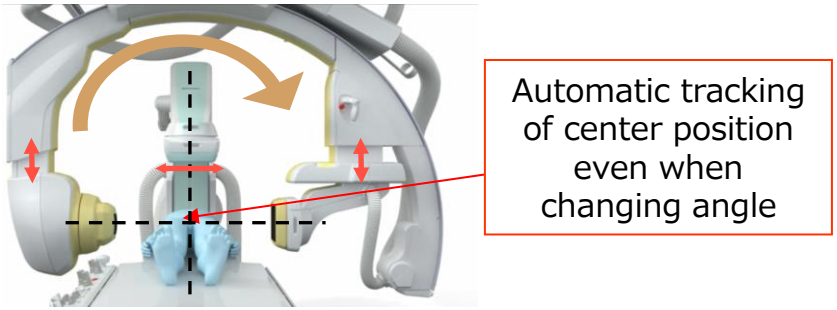
ISO-center adjustment for lateral C-arm

Positioning operation to set the target part in the center position of the lateral arm and the frontal arm is a cumbersome operation of repeatedly moving the table up and down and rotating the C-arm. In Trinias, since the ISO-center of the lateral arm can be independently moved up and down, it helps smooth height adjustment by eliminating complicated operation.



ROI automatic trace function “CyberChase”

Even when exposure with changing the position in the bi-plane mode, CyberChase, which is a function to memorize the center position of frontal/lateral arm and make it follow automatically, will further support the efficiency workflow.



SMART Assist（ Bi-plane system:B12 ）

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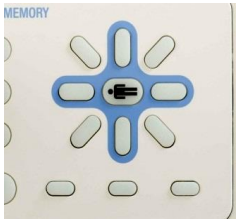


Maximum memory numbers : 288 types

Remote console (Option)

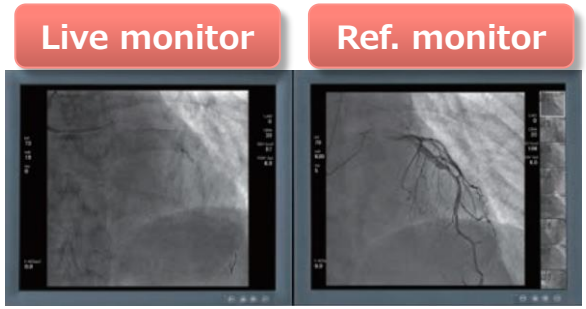
Optional remote console provides the same operating environment as the bedside from the operating room

SMART Assist

Dynamic Reference

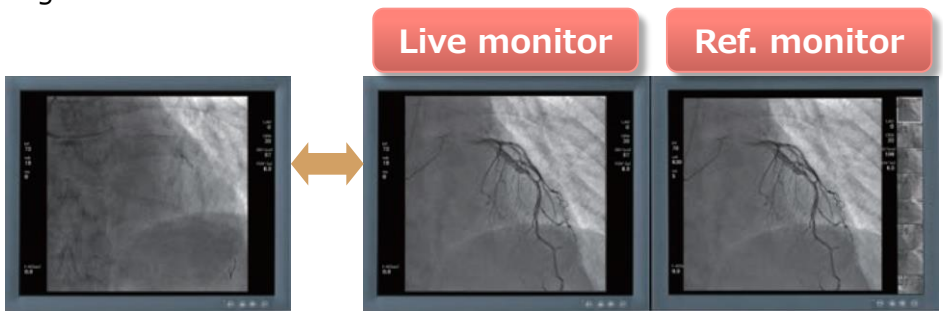
Reference images can be referred to not only as still images but also as dynamic images. It makes possible to comparing blood flow before and after treatment while live fluoroscopy is proceeding.

- Fluoroscopy image
- Fluoro Last image hold
- Automatic cyclic display after acquisition



PCI View

[PCI View] is prepared as a mode for PCI. On the live monitor, it is possible to perform PCI without movement of eyes, since it has a function to automatically display the arbitrary reference dynamic image or still image when fluoroscopy is turned off. Provide like a subliminal blood vessel image by linking ON / OFF of fluoroscopy with display of reference image.



Fluoro ON　　Fluoro OFF

High-speed digital system

The latest digital system realizes a speedy operation environment. Easiness of image handling, in particular, provides surprising responsiveness in either examination or operation room, providing stress-free IVR environment.

- Dynamic Image display after acquisition. :approx. 0.5sec
- Image selection responsiveness
  Forward/Backward movement: Instantaneous
  Reference image display : Instantaneous

By assigning frequently used operation to the function keys of the keyboard, it is possible to operate time-consuming procedure with one action.

- Fluoroscopy:10pps
- Acquisition: DSA
- Acquisition: SCORE RSM
- SCORE StentView
- Fluoroscopy record
  …etc

SMART Assist

SMART Touch

All imaging operation has integrated in the bed side touch panel console【 SMART Touch 】, including the change of acquisition mode, various function switching, image selection, change layout of large LCD monitor【SMART Display】. It is highly recognizable, allows the user to operate as desired, and supports a high-level treatment environment one step ahead.

*The layout and color of buttons are customizable.

*SMART Touch is available to be added at operation room as option.

Standard for bed side

Integrated multi functions

Seamless system operation environment

Customizable as you like

Wireless footswitch（Option）

For free access position of the operator, you can select the wireless footswitch additionally. Since there is no cable crawling on the floor, it is possible to maintain a clean environment.

Various functions can be set for each switch.

- Frontal Fluoroscopy
- Lateral Fluoroscopy
- Bi-plane fluoroscopy
- Digital Acquisition
- Table UP
- Table Down

… etc

SMART Table（option）

In the Trinias series unity edition, it is possible to combine with the multifunctional patient table【SMART Table (KS-100)】. Various positioning is possible according to complicated procedures from the heart, head to the peripheral region.

It is possible to operate table manually and electrically, and it also supports interlocking with images and can be positioned automatically according to the region of interest on the image.

It can be combined with normal patient table (KS-70)

Tilting function

Tilting and rolling operation can be done from the bedside dedicated console.

It corresponds to various procedures such as blood pressure control, pressure control at the time of central vein puncture, and inclination control at the time of CO 2 imaging.

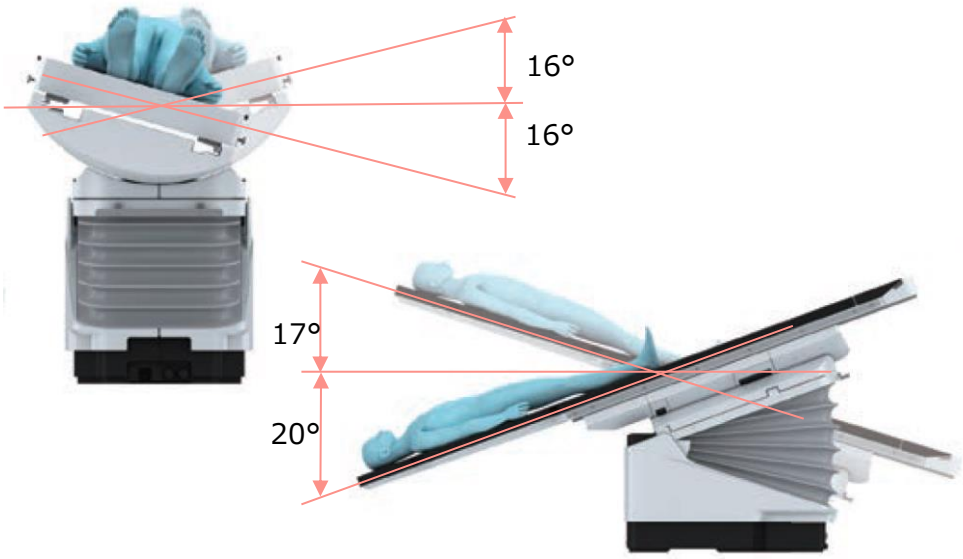


Image interlock function

A function of acquiring positional information from the acquired image, sending the positional information of the image to the table with one touch, and automatically adjusting the table position.

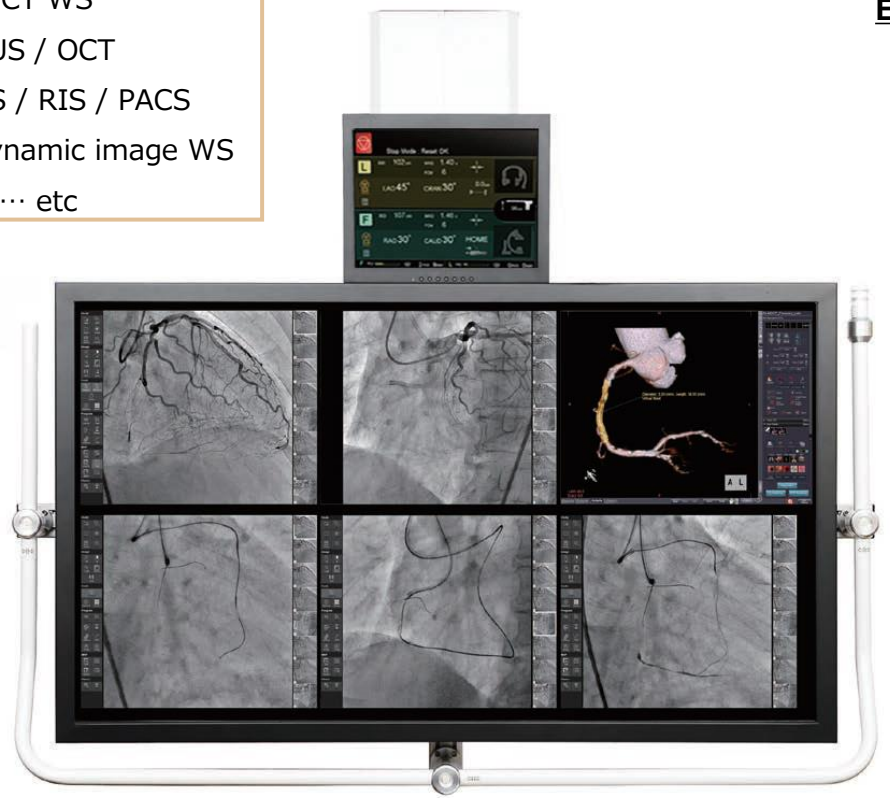
The position can be reproduced without fluoroscopy, it is useful for dose reduction and smooth procedure.

SMART Display（option）

SMART Display is a monitor system that can manage various image information required for advanced intervention, and can freely change the layout and display it on a 58-inch large field of view monitor.

- ･Fluoroscopy, DA
- ･Reference image
- ･MDCT WS
- ･IVUS / OCT
- ･HIS / RIS / PACS
- ･ Dynamic image WS

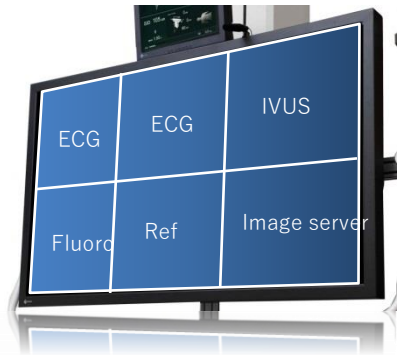
  … etc

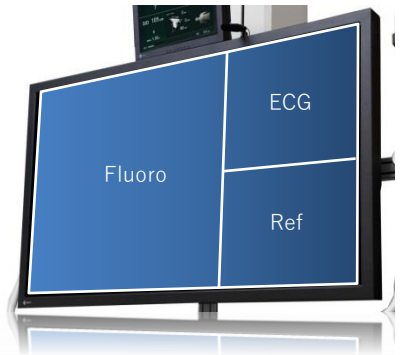


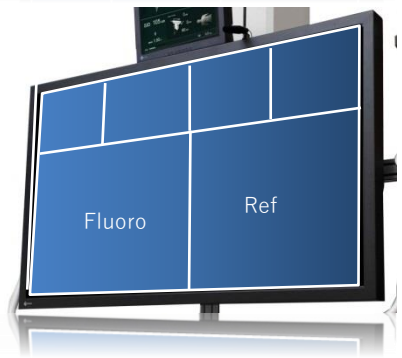
Speedy Layout Change

Multiple patterns can be preset in the layout, and it is possible to easily change it even during examination by operating SMART Touch.

Example of layout







SMILE Concept

Consideration for reduction of exposure to patients / physicians proposed by Shimadzu [SMILE Concept]. We propose a total solution that delivers safety and security.

SMILE Dose-eye

SMILE Recovery

SMILE Support

SMILE Dose-eye

Low dose and high image quality, SMILE Dose-eye balancedly realized the two elements in this trade-off relationship in the whole system.

MBH filter
Efficiently eliminates unnecessary soft X-rays.

Pulsed Fluoroscopy
10 types of rates according to the application

Grid control
Blocks unnecessary soft X-ray

Virtual Collimation
Enables collimation without fluoroscopy

Image processing
SCORE PRO Advance ensure lower dose

Fluoroscopy Video Recording
High-definition fluoroscopy

Area Dosimeter
Displays the actual dosage (DICOM RDSR)

MBH filter

The soft X-ray elimination filter automatically switches according to the selected protocol /procedure, and accurately removes soft X-rays that do not contribute to the image. By combining Al and Au in addition to general Cu rather than a single material, it effectively removes only X-rays that do not contribute to image quality.

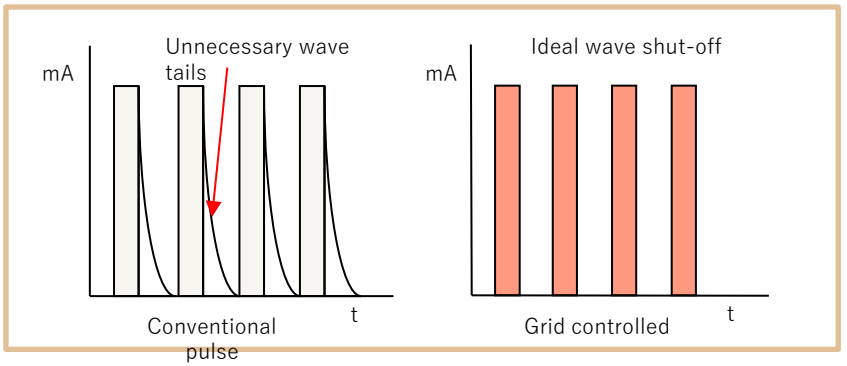
Pulsed fluoroscopy

10 types of rates according to the procedure.

30, 15, 10, 7.5, 6, 5, 3.75, 3, 2, 1 pps

Grid control

Ideal wave shut-off is realized in low dose pulse fluoroscopy mode. Achieving dose reduction by precisely removing unnecessary wave tails generated by conventional pulse fluoroscopy.



SMILE Dose-eye

Virtual Collimation

The position of the collimator can be graphically displayed on the last image hold of fluoroscopy. Fluoroscopy for positioning collimation becomes unnecessary.

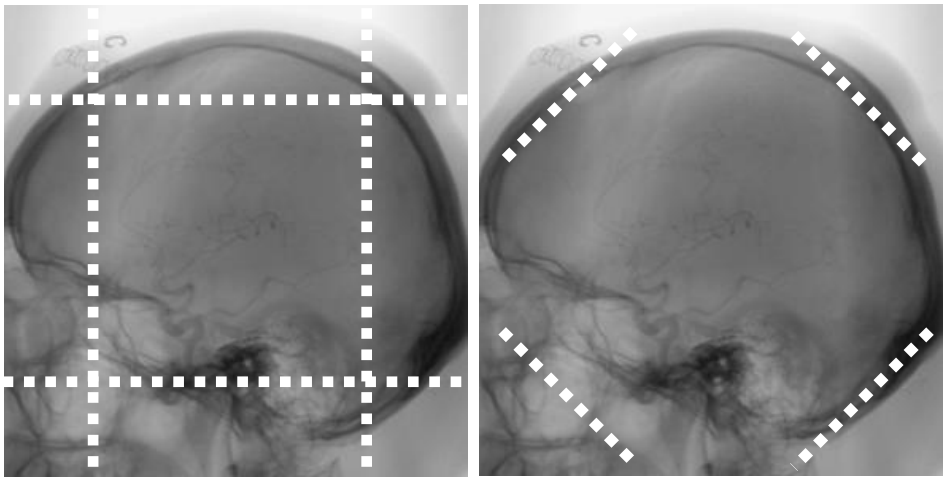


Image processing

The acquisition protocol of fluoroscopy and digital angiography with 50% dose reduction by SCORE PRO Advance are available.

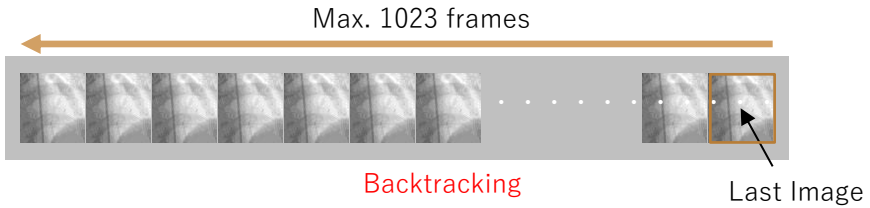
Motion tracking NR deliver the lag less image with lower noise level, which can be used for intervention sufficiently with lower frame rate fluoroscopy.

Implementation of operation at low frame rate as much as possible leads to further dose reduction.

Fluoroscopy record

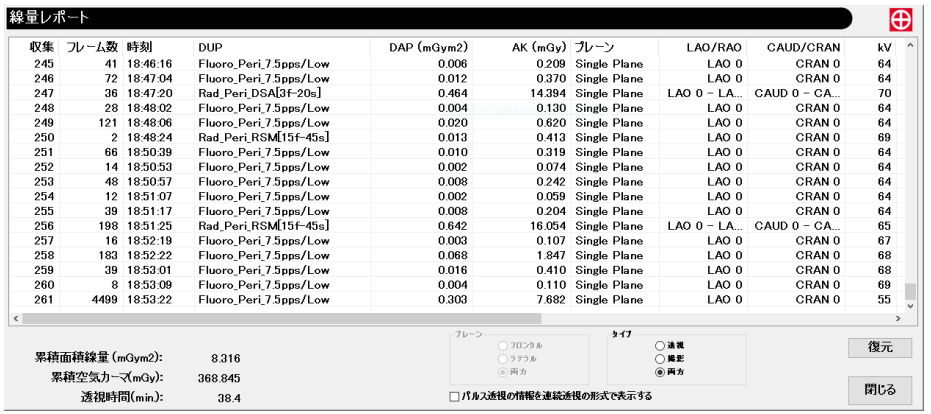
It's possible to save the fluoroscopic images of the procedure you want to record on the hard disk tracing back to the maximum 1023 frames. It is possible to save fluoroscopic images at the time of angioplasty treatment with balloon dilation or rotablator as it is, so it is possible to reduce confirmation shot. This leads to total dose reduction.

Media storage and network transfer are also possible as DICOM format.



Area Dosimeter

By installing an area dosimeter on the front of the X-ray tube, dose is displayed on the monitor in real time.
Compatible for DICOM RDSR (Radiation Dose Structured Report)



SMILE Recovery

SMILE Recovery will deliver safety and relief to users.

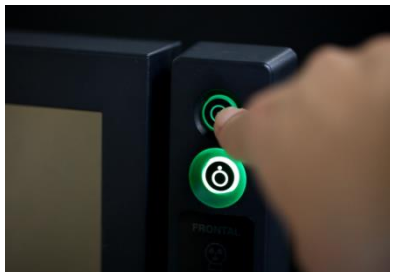
High-speed start up
All function start up within 2 minutes

Data Mirroring
Provides data storage redundancy

Backup Filament
Automatically switch to the other filament

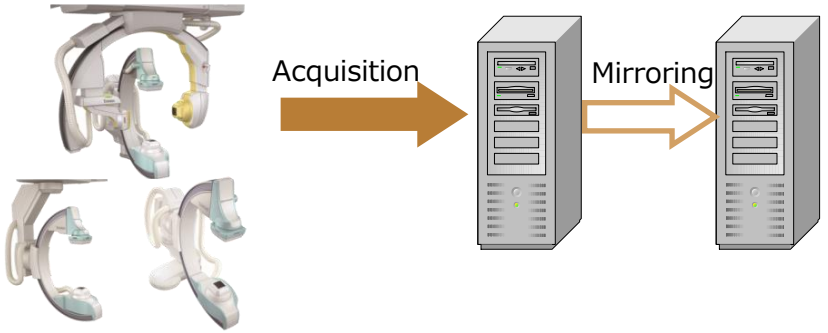
High-speed star up

Examination is possible within 2 minutes after booting or rebooting.
In case of emergency, examination can be started immediately.



Data Mirroring

By instantly mirroring the acquired images to the second computer, not only provide parallel processing but also it can be used with emergency backup.



Backup Filament

If a filament burns out during an examination, the other filament will be automatically selected so the examination can be continued.