Press Release

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Sonialvision G4 R/F system with SUREengine FAST technology
Significant reduction in exposure dose in endoscopic examinations of bile and pancreatic ducts

Best-in-class features /

New "SUREengine FAST" technology supports ERCP examinations /

Premium application software

Celebrating the 50th anniversary of its presence in Europe, Shimadzu emphasizes its Excellence in Science approach through further enhancing the range of examinations covered by its Sonialvision G4 R/F system. In both functionality and operability, this universal R/F table outperforms other R/F systems and it highlights the company's position as a world-leading manufacturer of diagnostic imaging equipment. Since its release, more than 700 of these systems have been installed on the global market. The Sonialvision G4 R/F is part of the Shimadzu product range shown during the ECR 2018 congress in Vienna, Austria.

Equipped with the largest available FPD at 17" (43 x 43 cm) and Shimadzu's digital image processing engine SUREengine-Advance, the Sonialvision G4 covers the widest possible range of examinations, providing inter-departmental hospital capability.

New SUREengine FAST
The "SUREengine FAST" image processing technology significantly reduces the X-ray irradiation dose in endoscopic retrograde cholangiopancreatography (ERCP), which is used in the examination and treatment of bile and pancreatic ducts applying endoscopes. Compared with the fluoroscopic X-ray irradiation pulse rate (15 fps) used during conventional endoscopic examinations and in combination with the SONIALVISION G4, the "SUREengine FAST" technology allows fluoroscopic exposure to be reduced by approx. 45 % while maintaining image quality and real-time

performance. SUREengine FAST stands for Shimadzu Ultimate Real-time Enhancement Engine Fluoroscopy Assisted Studies and Treatments and is included as standard in SONIALVISION G4.

Further functions of the Sonialvision G4 cover applications such as tomosynthesis, T-smart and SLOT Advance:

- **Tomosynthesis**
  Shimadzu's **"High Definition Tomosynthesis"** imaging technology, allows the reconstruction of the tomosynthesis image from original images acquired in the 1×1 high definition mode using a 6-inch (15 cm) field of view. This mode provides tomosynthesis images with even higher spatial resolution and is very effective for diagnosing small areas such as bones in the finger tips etc. in detail, or for detecting very small micro-fractures.

  The Oblique Tomosynthesis feature provides oblique tomographic images reconstructed at any optimal angle of up to ± 20 degrees laterally or vertically to match the ideal diagnosis angle. This feature is helpful when examining spines, hip joints and other areas that could be difficult to observe by standard horizontal tomographic images parallel to the table-top.

  Low-dose tomosynthesis allows multiple slices of volume data to be observed with a minimized X-ray dose, requiring only single linear tomography stroke acquisition. By switching the field of view and using collimation, X-ray exposure can be reduced to prevent unnecessary radiation exposure outside the area of interest. The mode allows a further minimization of the dose level, making the system ideal for pediatric use as well.

  Position-free tomography tomosynthesis by SONIALVISION allows images to be recorded at any angle required for diagnosis. This includes a variety of table angles, also with the patient standing or in reverse inclined position to apply gravity, which is not possible with CT scanners. This helps to expand the examination possibilities, for example to examine joints under weight-bearing conditions.

- **T-smart**

  is the most sophisticated tomosynthesis technology that automatically divides the original projection images into two sets of projection images (metal-free projection images and metal-only projection images). It then performs iterative re-constructions on each of them and finally integrates the two data sets into one, providing a "T-smart" image.

- **SLOT Advance**

  provides high-accuracy images with long fields of view, such as for full-spine or full-leg images, taken with a minimal X-ray dose. The combination of SONIALVISION G4's extra-long imaging chain slide coverage, and its large FPD of 17" achieves even a wider longitudinal and transverse imaging area of up to 55" x 17" (141 x 42 cm) compared to the image stitching capabilities of CR units.

Additionally, the grid is removable from the table, effective for a much lower dose required especially in pediatrics and gynecology. Furthermore, the table's heavy-duty design supports a patient load of up to 318 kg in the horizontal position.

Web summary

Shimadzu, a world-wide leading manufacturer of diagnostic imaging equipment, has further enhanced the range of examinations covered by its Sonialvision G4 R/F system. Equipped with the largest available FPD at 17" (43 x 43 cm) and Shimadzu's digital image processing engine SUREengine-Advance, the Sonialvision G4 covers the widest possible range of examinations, providing inter-departmental hospital capability. The advanced "SUREengine FAST" image processing technology significantly reduces the X-ray irradiation dose in endoscopic retrograde cholangiopancreatography (ERCP), which is used in the examination and treatment of bile and pancreatic ducts using endoscopes.

Figure 1: Sonialvision G4 R/F system for the widest possible range of examinations

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