UltraiQ

Transforming Ultrasound Quality Assurance

Scan the phantom

Processing in UltraiQ

Clear reports

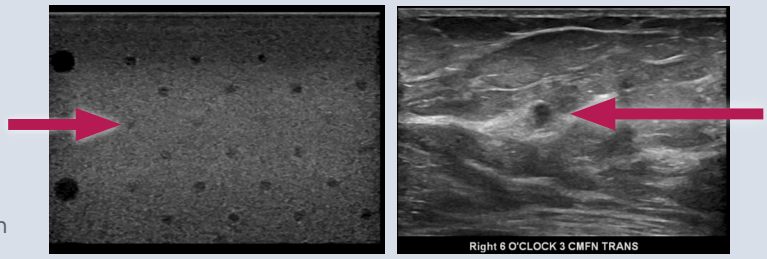
cablon medical

Image quality: crucial for patient care

Several large scale studies have identified that up to 40% of all ultrasound transducers in clinical use have at least one defect[1,2,3]. In practice, sonographers do not discover these defects at all or only at a (too) late stage[4,5]. This leads to noticeable errors in diagnosis and patient journeys[6,7]. Frequent assessment of transducers for defects is therefore essential for reliable and safe patient care.

Risks of defective transducers

This case shows how a transducer defect can significantly affect patient trajectories. The patient was scanned to investigate a mass, which – if watery and smooth – is often benign. The ultrasound images on the right were made with a defective transducer that erroneously shows a watery cyst as filled, both in the patient (R) and on a phantom (L). This misinterpretation can lead to unnecessary concern, misdiagnosis and ultimately painful procedures such as punctures.



Source: Dr. James A. Zagzebski, Emeritus Professor, University of Wisconsin

The Utune Optimizer is a new and unique test object featuring thousands of randomly distributed cystic targets. Combined with the UltraiQ software, it delivers clinically relevant insights into ultrasound image quality[8].
With its unique advanced 3D targets, the Optimizer brings a new dimension to image quality control, delivering precise evaluations for multi-row, 3D/4D and matrix transducers.

Phantoms

All phantoms support the full range of medical ultrasound frequencies.

UltraiQ General Purpose Phantom

This phantom is used for long term trend analysis of the image quality. A single image gives insight into the following characteristics of your transducer:

- Contrast
- Axial resolution
- Lateral resolution
- Distance accuracy
- Penetration Depth

UltraiQ Uniformity Phantom

The Uniformity Phantom helps detect element dropout and measures the signal to noise ratio of your ultrasound transducer. These measurements help identify acute hardware issues with the transducer and can be used as a quick status test.

Utune Optimizer

The Optimizer contains thousands of randomly distributed cystic targets, allowing for detailed analysis of cystic target visibility at varying depths. For the first time, this can be directly linked to human visual perception, providing medically relevant insights into image quality[9]. The optimizer is available with 2mm or 4mm cysts.

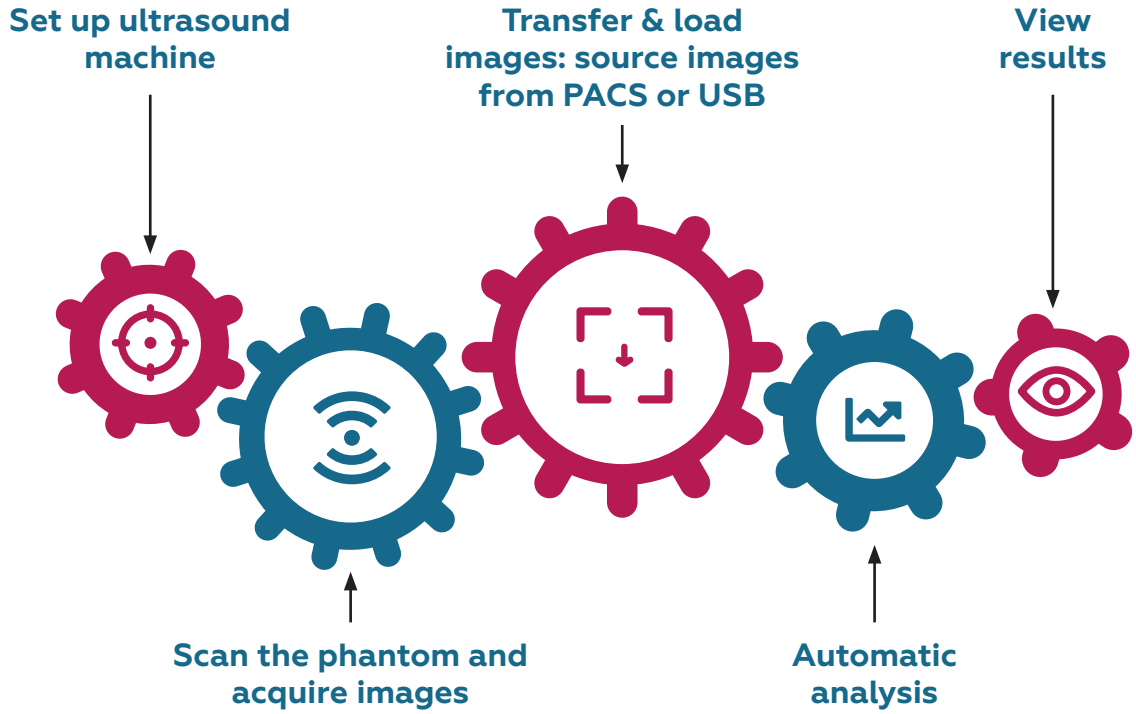
UltraiQ: quick and reliable quality assessment

The UltraiQ software detects transducer defects earlier and with a precision that is much higher than visual inspection[1]. This makes intervention possible before the defective transducer influences diagnosis.
It also helps to make informed purchasing decisions of new ultrasound equipment by objectively identifying differences in performance between ultrasound systems. Version 5 of UltraiQ introduces iQVision; an AI target recognition assistant that makes measurements even faster[2,3].

Key benefits at a glance

- **Saves up to 20 minutes** of time per transducer
- **User-friendly** and intuitive
- **AI assistant** and chat bot guide you through measurements
- **Early detection** of transducer defects
- **Supports all international standards**
- **Objective performance** comparisons

How does it work?



References

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7. Lorentsson, 2023, Investigation of the Impact of Defective Ultrasound Transducers on Clinical Image Quality in Grayscale 2-D Still Images.
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9. Hsieh, 2023, A minimum SNR criterion for computed tomography object detection in the projection domain.

Want to know more about UltraiQ?
Visit https://cablon.nl/en or scan the QR code.

PM-015

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