



Our declared objective is to enhance the quality and safety of products and technical services. Our goal is to improve the economy and competitiveness of your business by reducing the costs due to rejects.

The foundation of our technical competence is the expertise of the Fraunhofer Gesellschaft and the Fraunhofer Institute for Nondestructive Testing, IZFP, made available through joint projects and international partnerships.

Q NET builds up an international net of partners.

Currently international Q NET partners are found in:

United States Russia
China
and India.

Q NET ENGINEERING GMBH
Altenkessler Str. 17 B6
D-66115 Saarbrücken

Please contact:
Dr. Ludwig von Bernus
Phone +49 (0) 6 81 9 76 71 53
Fax +49 (0) 6 81 9 76 71 58

<http://www.qnetworld.com>
email: q-net@t-online.de

Our Service

Quality Assurance and Quality Control:

- We provide assistance and advice for your QA program and analyze your manufacturing or production process.
- We support you in selecting the appropriate method, technology and NDE equipment suited for your process control. If necessary we develop custom tailored equipment according to your needs.
- We inspect your parts and components.

Marketing Services :

- We provide support to improve your competitive edge through organizing and execution of national and international research projects. We support your international marketing efforts.

Equipment Design, Manufacturing and Sales:

- We design and furnish inspection equipment; our application center provides worldwide service and repair support.



Sampling Phased Array System with immersion water tank

Ultrasonic testing system with real time 3 dimensional tomographic reconstruction of inspection results



Ultrasonic inspection system „Sampling Phased Array“ with immersion water tank

Challenge

- Combination of conventional multi channel testing, phased array inspection and fast tomographic imaging
- Fast and complete sampling of UT-information
- Inspection of anisotropic materials using Reverse Phase Matching Technique (carbon fiber composites, austenitic welds)

Solution

- Novel Sampling Phased Array technique
- Acquisition and storage of complete UT-information of every array element
- Realtime 2D and 3D tomographic reconstruction implemented on PCs or specialised hardware

System

Ultrasonic inspection system „Sampling Phased Array“ with immersion water tank is intended for ultrasonic testing of components and specimens under laboratory conditions and consists of following modules:

- 3 or 5 axes manipulator
- Motion control system
- Immersion tank (Fig. 4)
- UT-electronics (64 channel UT-frontend, Fig. 3)
- Master-PC
- Application software

Advantages

- Small, lightweight UT-electronics with high inspection performance
- Fast, online reconstruction and visualization
- Quantitative inspection results
- Inspectability of anisotropic materials

Technical Data

Functionality of Sampling Phased Array system

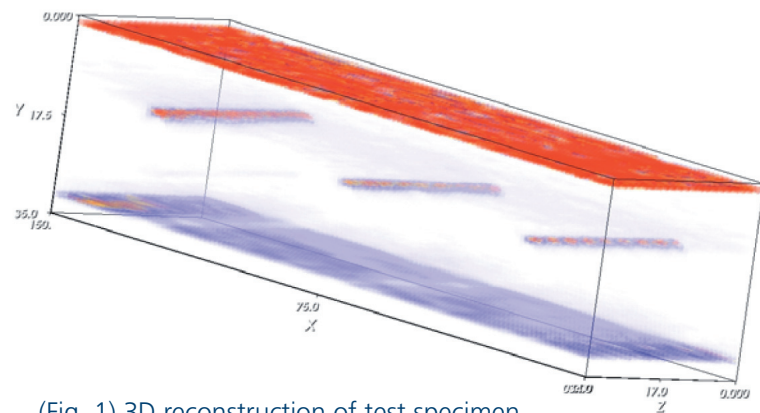
- Sampling Phased Array mode
- Conventional Phased Array mode
- Multi-channel inspection mode
- Tomographic 2D and 3D reconstruction based on SynFoc-Sampling Phased Array principle

Application Software

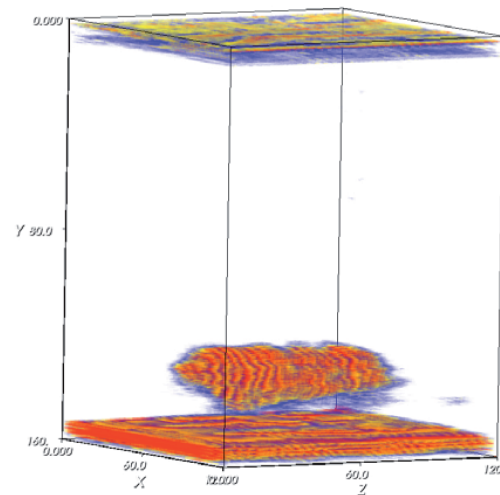
- Fast data acquisition
- 2D / 3D visualisation and analysis tools
- User-friendly interface

Reconstruction functions

- Reconstruction of A-scans for appropriate angle of incidence
- Reconstruction of two dimensional projections of inspected volume (Sector-, B-, C-, D-scans)
- 3D reconstruction of inspected volume (Fig.1,2)



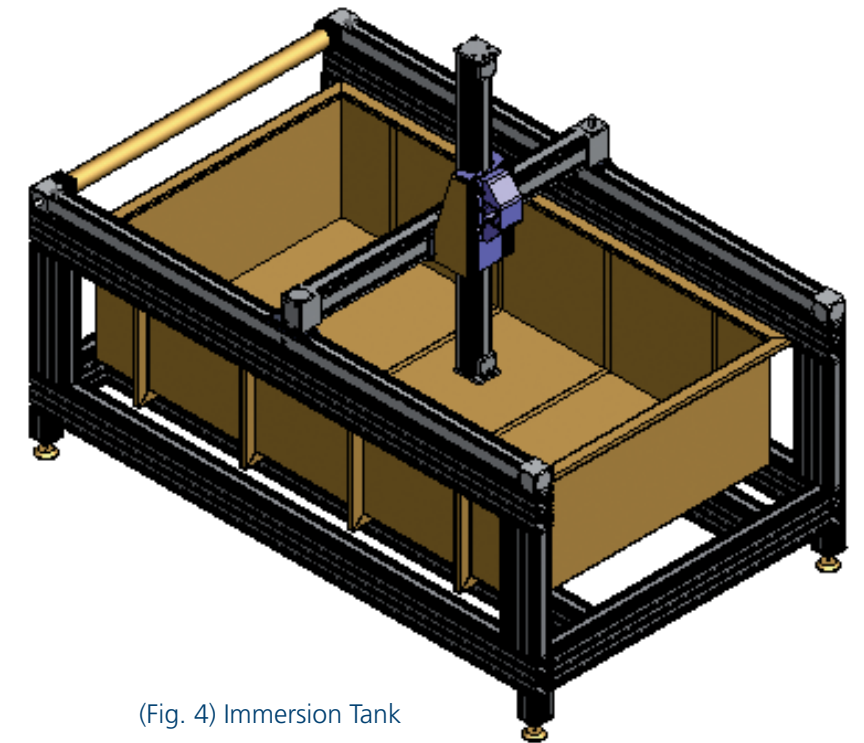
(Fig. 1) 3D reconstruction of test specimen with 3 side drilled holes



(Fig. 2) 3D reconstruction of a material discontinuity



(Fig. 3) Ultrasonic front-end μ-USE



(Fig. 4) Immersion Tank