

### 1.7.2. FUSION OF NDT DATA FROM MODERN INSPECTION METHODS

Anastasopoulos A., Kattis S., Tsimogiannis A.,  
Envirocoustics ABEE, Athens, Greece

An increasing demand for cost-effective inspections and maintenance is driving the industry to modern solutions, which will provide the necessary inspection results for the assessment of the condition of static equipment in chemical plants and refineries with minimum disruption to operations and low cost. Results visualization is an important step towards successful interpretation of NDT data. This step is a prerequisite in order to proceed with efficient structural integrity assessment and fitness for service. In addition to that, visual combination of NDT data from different methods is becoming increasingly important as modern NDE techniques produce large amounts of results with short inspection time.

The need to merge, review and manipulate these data together has pushed towards software that are capable of working with data from various techniques. In this paper we will discuss the necessity for advanced centralized data viewing and integration to asset management databases. In other words, *the real issue of finding a way to integrate traditional NDT data gathered on daily basis with NDT data gathered from modern on-stream techniques, in a user friendly form that will permit data fusion and structure visualization, is discussed and software based solution is presented.*

Within this framework, the paper demonstrates how the NDT data are fused and how this process helps towards evaluation of equipment integrity. Application examples are presented including fusion of in service Acoustics Emission and automated UT testing for corrosion mapping as applied on spheres, pressure vessels and above ground storage tanks. Fusion of Acoustic Emission data with ultrasonic scanning and/or TALRUT<sup>tm</sup> is discussed for the screening of the annular ring of Above Ground Storage tanks.