

Improving integrity management of safety-critical systems on North Sea oil & gas installations



SCI has recently released a safety audit and monitoring software tool aimed at helping North Sea operators to manage more effectively the safety and integrity of their oil & gas installations, most of which are operating close to or beyond their original design life. Since the 1990s, the continuous demands to reduce costs has led to a reduction of the offshore workforce, which in turn has resulted in a reduction of the levels of maintenance impacting on the overall integrity of some installations. The need for enhanced integrity assurance has been recognised by the offshore industry and the recent final report on the HSE Asset Integrity Key Programme 3 (KP3) indicated that the physical state of installations was considered to be poor for more than 50 percent of the inspected installations.

MATRICES has been developed in response to the key issues and recommendations identified in the HSE KP3 to provide operators with a simple and efficient means of managing the integrity of safety-critical elements throughout their operational lives. It is designed to complement maintenance management systems by providing an overall

view of the integrity of installations and their systems via performance indicators and highly visual reports, which can be used by the senior management as an input for decision making.

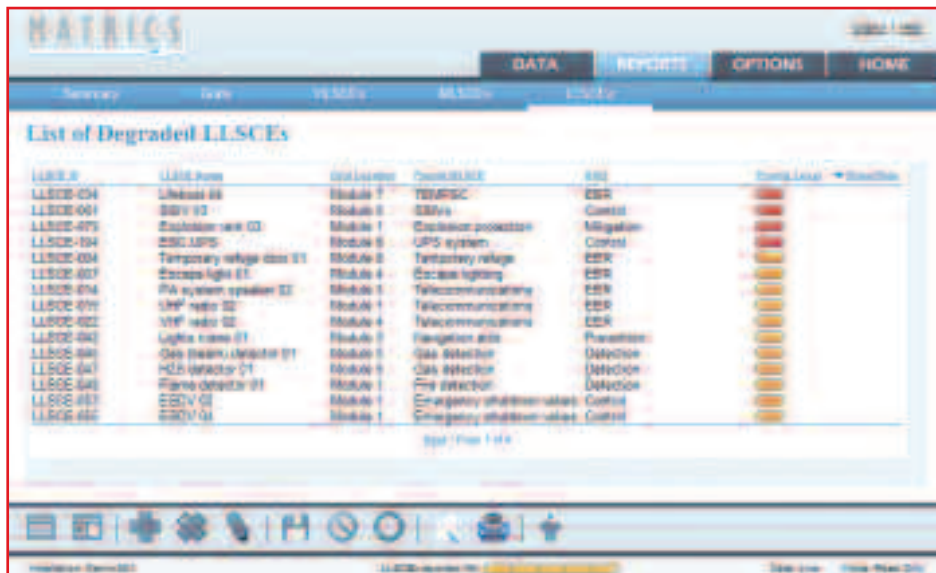
MATRICES, which stands for **M**anagement **A**udit **T**ool for **R**apid **I**nterpretation of **C**ritical **S**ystems, is a very versatile software tool, which can be used for assessing and monitor-

ing the condition of critical systems and components against their performance standards, for prioritising remedial actions, and for compliance demonstration. It facilitates the assessment of the technical risks arising from continued operation with degraded safety critical elements, which could potentially lead to critical situations.

The assessment method used within MATRICES is flexible and can be tailored to the specific needs of individual operators. It enables them to assign a Priority Level to each safety critical component based on a quick assessment of the consequences of failure and the actual condition of each component. The assessment of the integrity at the system level is facilitated by the reporting of the number of degraded components within each critical system via a traffic light alert system.

The software has been designed as a web-based and multi-user tool to enable companies to share information effectively and can be easily integrated within existing IT systems. Relevant existing data can also be transferred from existing system to MATRICES to ease the initial population of data.

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(Top) Screen shot showing list of degraded components

(Above) Screen shot showing detailed report for a system.