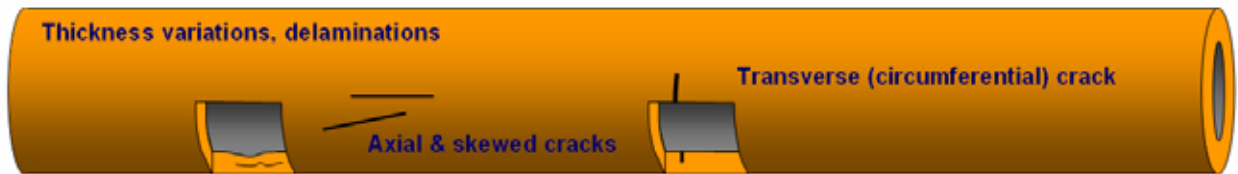


Tube inspection using massively parallel systems (1/2)

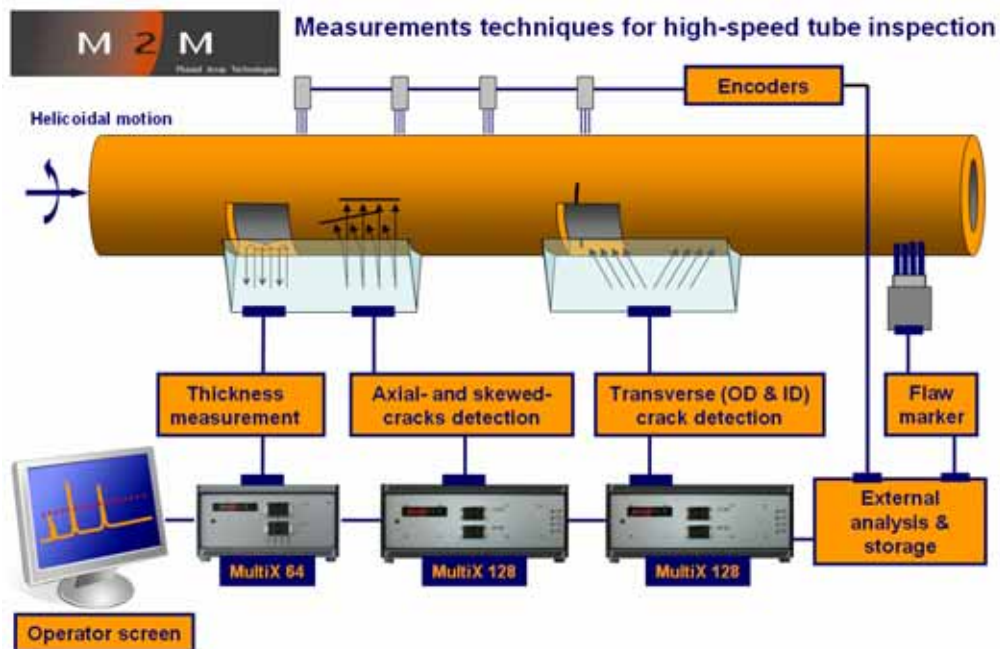
The objective of the NDT procedure is to detect defects from the outside of the tube at very high speed. Researched defects include loss of thickness, delaminations, and cracks (see figure below). The following schematic diagram illustrates the location and orientation of these defects.



In order to meet speed requirements, several techniques have to be used in parallel mode rather than fired sequentially. NDT procedures are decomposed into:

- thickness measurements, delaminations
- axial- and skewed cracks detection
- circumferential cracks detection (OD & ID defects)

The full inspection procedure is illustrated in the following schematic diagram:



Tube inspection using massively parallel systems (2/2)

Three full-parallel architecture systems have been used for this tube inspection, in order to achieve all these measurements simultaneously while maintaining speed requirements: one MULTIX64 and two MULTIX128. Those customized systems are successfully implemented at the customer production site.



On-site implementation. Pictures show display-screen, probes and coupling to the tube. Helicoidal motion controller are shown in the bottom right picture. ***Pictures courtesy of M2M, work realized in collaboration with DMV (group Mannesmann) and CEV (VALLOUREC R&D group).***