

AXIAL TOMOGRAPHY FROM DIGITIZED REAL TIME RADIOGRAPHY*

Andrew S. Zolnay
William M. McDonald
Paul A. Doupont
Ronald L. McKinney
Maria M. Lee

Lawrence Livermore National Laboratory
P.O. Box 808/L-333
Livermore, California 94550
(415) 422-0969

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ABSTRACT

Axial tomography from digitized real time radiographs provides a useful tool for industrial radiography and tomography. The components of this system are: X-ray source, image intensifier, video camera, video line extractor and digitizer, data storage and reconstruction computers.

With this system it is possible to view a two dimensional x-ray image in real time at each angle of rotation and select the tomography plane of interest by choosing which video line to digitize. The digitization of a video line requires less than a second making data acquisition relatively short.

Further improvements on this system are planned and initial results are reported.

INTRODUCTION

The unique features of the "Video Cat" System (axial tomography from digitized real time radiographs) make it a very useful tool for industrial radiography and tomography.

A unique aspect is the formation of an x-ray image on the phosphor of the Delcalix image intensifier. With the video camera it is possible to view the x-ray image and select the tomography plane of interest by choosing which video line to digitize. Also, the real time x-ray image at each angle of rotation can be examined while the tomographic data is acquired. The digitization of a video line requires less than a second making data acquisition relatively short.

VIDEO CAT COMPONENTS

A block diagram of Video Cat components is shown in Figure 1. These components are discussed in this section.

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