# NEW CR SYSTEM ANNOUNCEMENT

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## Abstract

Fujifilm, a leader in the digital RT industry, has developed a new CR system to deliver ultra-high quality images in order to meet precise non-destructive testing applications where current CR systems may not be accepted and conventional lower-sensitivity X-ray films have been used. The new CR system "Dynamix HR" consists of a new Reader "Dynamix HR Reader" which scans at 50 micron, a new Imaging Plate "UR-1" which has high-resolution phosphor layer , and a new Dynaview Workstation which consists of sophisticated Fujifilm viewer software, a high-resolution monitor, and a DVD Recorder for archival storage. The system was announced on September 25, 2006 and is exhibited in the ACPNDT 2006 Conference.

## 1. Introduction

For the non-destructive testing application, conventional X-ray film has been long used similarly for the medical application. Fujifilm had commercialized the medical CR system in 1983, and then non-destructive testing CR system in 1989. Since then, Fujifilm has been developing high-quality, high-performance CR systems in both the medical application and the non-destructive testing application. In September, 2006, Fujifilm announced a new CR system for the non-destructive testing application. This paper explains main features on the new system.

## 2. Objectives of the new system

### 2.1.1. Advantages of CR system against conventional X-ray film system

The CR system has been recently replacing conventional the X-ray film system thanks to the following advantages:

1) Imaging Plate can be erasable and reusable.
2) X-ray exposure time can be shortened thanks to its higher sensitivity.
3) The CR system accepts rough X-ray exposure conditions thanks to its wider dynamic range.
4) Only one time exposure may be required for a subject which has thick parts and thin parts thanks to its wider dynamic range.
5) The CR system does not require chemical processing and dark room.
6) Images displayed on a PC monitor are more visible than film.
7) Measurement of length in a subject on a PC monitor is easier than on film.
8) The CR system can easily retrieve stored digital images.
9) The CR system, which stores images in hard disk or DVD media, requires smaller space for image storage.
10) The CR system can easily create documents with digital images.

### 2.1.2. Disadvantages of CR system against conventional X-ray film system

Although the CR system has many advantages against conventional X-ray film system, the current CR system delivers almost the same resolution as X-ray film of ISO 100 sensitivity, does not reach resolution delivered with X-ray film of ISO 80 or lower sensitivity. Therefore, the market strongly requires a new CR system which delivers higher resolution.

### 2.1.3. Fujifilm new CR system

In order to deliver higher resolution, Fujifilm has developed a new CR system "Dynamix HR" which consists of a new Reader "Dynamix HR Reader", a new Imaging Plate "UR-1", and a new Dynaview Workstation. The new Reader scans at 50-micron pitch at high speed in both horizontal and vertical directions. The new Imaging Plate with the sizes of 35x43cm, 24x30cm, and 18x24cm incorporates high-resolution phosphor layer sandwiched by support PET and protective layer. Scanned images are processed with Fujifilm proprietary image processing technologies and high quality images are automatically displayed on a high-resolution monitor of Dynaview Workstation, although manual image processing is possible at users' option. The Dynamix HR has been announced at the ECNDT Conference held in September, 2006 in Berlin, Germany, and is exhibited at the APCNDT Conference held in November, 2006 in Auckland, New Zealand. Availability and Pricing will be announced later.

## 3. Main features of the Dynamix HR

The Dynamix HR has the following main features:

1) Ultra-high image quality thanks to the newly developed 50-micron pitch Reader, the newly developed Imaging Plate, and Fujifilm proprietary image processing technologies
2) The Reader accepts two types of Imaging Plate; newly developed UR-1 and current ST-6. The Reader scans at 50-micron pitch when UR-1 is inserted, while scans at 100-micron when ST-6 is inserted.
3) The Reader accepts a new ST-6 Imaging Plate with the size of 15 x 30 cm.
4) Fast processing speed; 97 seconds for UR-1 35 x 43 cm Imaging Plate, 58 seconds for ST-6 35 x 43 cm
5) Compact and light-weighted Reader
6) Dynaview Workstation which consists of sophisticated Fujifilm viewer software, a high-resolution monitor, and a DVD Recorder for archival storage

[Photo of Dynamix HR Reader]

## 4. Specifications of Dynamix HR Reader

| Imaging Plate | UR-1 | ST-6 |
|---|---|---|
| Scanning pitch | 50μ | 100μ |
| Size of Imaging Plate | 35x43cm | 14x17"/ 35x43cm |
| | 24x30cm | 10x12"/24x30cm |
| | 18x24cm | 8x10"/18x24cm |
| | — | 30x15cm |
| Processing speed | 97 sec. (35x43cm) | 58 sec. (35x43cm) |
| Dimensions | 590(W)×380(D)×810(H)mm | |
| Weight | approx. 100kg | |