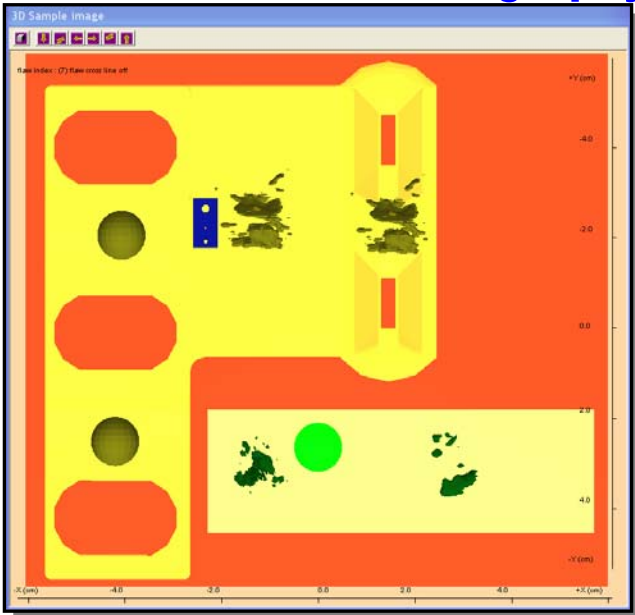


Nondestructive Simulation Software for Radiography



Simulate flaws in any location in the Sample part with XRSIM-Pro. *Can you get a part with a flaw at every key location within it? How many parts would you need and what is the cost for this reference set?*

Modify material type and flaw morphology with XRSIM-Pro. If a part's failure history documents and/or finite element analysis shows a high stress

region, you can simulate the ability of your radiographic inspection to find critically sized flaws *at that location*.

There is no need for expensive prototypes or engineered phantoms. No more searching for a "defective" part with a known problem in just the right area. The image above shows three spherical flaws, four hot pore tear casting defects and a penetrometer in a geometrically complex casting and a simple plate. The relative location as well as the type of material – void, oxide inclusion, face coat or other material – is adjustable within the simulation.

Create and Examine Complex Assemblies of Sample Parts. The example above, illustrates the "translucent" feature allowing for the easy positioning of flaw into your CAD file. Complex assemblies of sample parts, with and without flaws, can thus be built up in XRSIM-Pro to determine the composite effects of the assembly on inspectability.

Sample parts and Flaws can be resized and reshaped, as well as repositioned, to get exactly the setup you need to model the inspection process. By resizing a flaw you can, in several steps, **establish the limits of detectability for flaws of a critical size**. Make sure you have adequate coverage for all critical flaws in all important locations. Make sure you don't need just one more shot and that you aren't wasting money on extra shots that don't improve the quality of the part.

Cost Effectively Optimize your Procedures. Try out different setup's to quickly discover the optimal one. Now you have the time to checkout all the alternatives without spending a fortune on tests. Follow through on all *what if questions* to develop the best possible inspection. *What is the best film – would a faster one help? Do I just need a more powerful generator – exactly how much more? Quantify the amount of added benefit gained from getting better equipment. Can a real-time detector do this inspection or do I need the higher resolution of film? Can any inspection setup be identified to find defects at the required levels, or are the inspectors just not trained enough or not doing the job right?*

Product/Feature	XRSIM-Pro
Cost (US\$)	\$15,000
1 st Principle Physic Engines	✓
Optimization / POD / Analysis	✓
Scattering Effects	✓
Course Plans and Guides	N/A
Materials Characterized	Unlimited / User Extendable
Source	Adjustable Spot Size
* Tube Sources	
Energy Range	1 kV– 1 MeV
Specific Equipment Characterized	User Definable
* Isotope Sources	
Cesium, Cobalt, Iridium, & Ytterbium	✓
Detectors	
* Film: (Agfa, Fuji &/or Kodak)	9 + Option
Slow, Medium, & Fast	✓
* Real Time	
Amorphous Silicon	✓
Image Intensifier	✓
* Lead Screens Modeled	✓
Sample Part Characteristics	Complex Assembly Saves ✓
# of Geometrically Complex Samples	Full CAD <i>stl</i> file importing
# of Primitive Shapes (sphere, cube, torus, cone, rod, L & T)	Full CAD <i>stl</i> file importing
Penetrameters / Stepwedge	3 / 1
Flaw Characteristics	
Real Flaw Libraries	Optional
Number of Flaws	4 per Sample
Proportional Flaws (10-20-30 & 1-2-4)	1 each
Graphical User Interface	
In Program Part Manipulation	✓
Grouping & Complex Assemblies	✓
Dynamic Flaw & Part Adjustment	✓

Further information is available from **NDE Technologies, Inc**
on our website: <http://www.xrsim.com> or at Sales@NDETechnologies.com

1(434) 973-0299

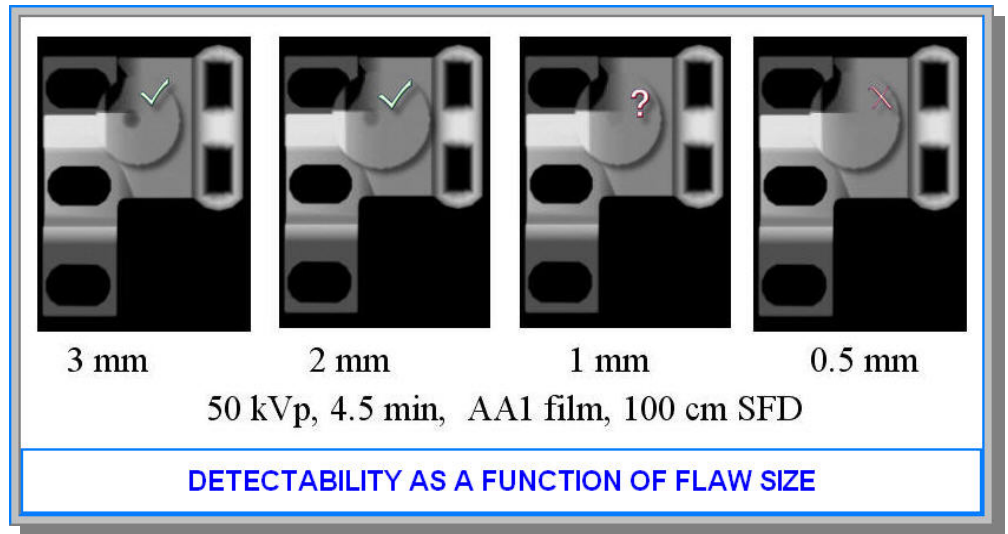
Premium Radiographic Simulation Software



Radiographic Simulation programs speed the setup and auditing of inspection procedures. XRSIM-Pro can save time and money in an inspection process by removing the need to develop film and prototype parts. With no actual film generated you can concentrate on critical specification parameters instead of dealing with stray development artifacts. Similar benefits are gained by skipping the manufacture of prototype parts. By simply opening a CAD stereolithography file into XRSIM-Pro you can begin to determine optimum inspection parameters. You can increase both design speed and quality through the use of computer based simulations.

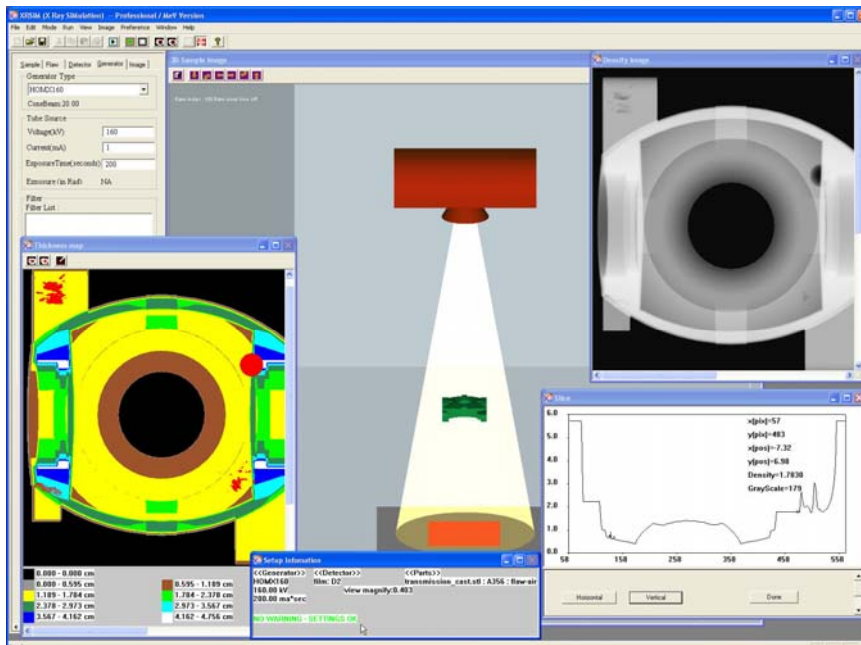
By simulating you can quickly establish minimum detectable flaw sizes.

There is no need to waste money inspecting parts for defects that cannot be seen by your equipment. Without XRSIM-Pro you could spend hours on countless test setups and more time processing film to finally establish critical flaw parameters. Notice in the example at left – as the flaw shrinks it becomes harder and harder to pick out until in the third shot detection is questionable and finally not possible. This process can be done using XRSIM-Pro in a matter of minutes because the XRSIM family of programs has been developed with efficient computational routines that provide results in minutes not hours.



Fast Realistic Radiographic Simulations.

The program provides these impressive speeds on inexpensive desktop personal computers running Windows operating systems. There is no need to invest in expensive workstations to utilize the program's benefits. The example below show the XRSIM-Pro program's main components: the large green CAD file in top view, the multi-colored Thickness Map generated from the CAD information, simulated Density Image and the setup tabs, entry boxes and selection options of Submenu.



A full line of premium radiographic simulation programs are available.

XRSIM-Pro is the introductory version of our radiographic product line. Additional features, customization and expansion possibilities are offered in XRSIM-Pro and XRSIM-Pro/MeV. XRSIM-Edu uses the first principle physics engines of XRSIM to focus the instruction of nondestructive evaluation concepts.

Please contact your Sales Representative for more information about the different versions.

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