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Editor: Dermott **'Red'** Cullen   FREE Subscription: E.mail **Red** Cullen at **cullen1@llnl.gov**

What Is TART?

Tart is a General Purpose Time Dependent Coupled Neutron Photon Monte Carlo radiation transport code that uses 3-D Combinatorial geometry. What makes TART so useful is that it is currently Internationally available to run on **ANY computer**, and it is incredibly **FAST**. For current timing results on a variety of computers, see,
http://reddog1.llnl.gov/homepage.red/speed.htm

TART Website

TART now has its own website, **http://reddog1.llnl.gov**

RED DOG

You should periodically check this site for the latest announcements and updates to the on-line documentation. No longer need documents be considered frozen in time to contain only what was in them on the date they were published. Now they can be dynamic sources of information that can be continuously updated to reflect the most recent information. This is what is now being done with all on-line TART documentation.

TART98 Released

For those TART users who already have TART97 CD, updates are now available for TART and TARTCHEK. To obtain the updates contact Red Cullen at **cullen1@llnl.gov**, telling him what type(s) of computers you are using.

Note that this ONLY applies to those who already have TART97 CD.

LINUX Version Now Available

Thanks to Andrej Trkov of the Institute Josef Stefan, Ljubljana, Slovenia, a LINUX version of TART is now available. To obtain a copy contact Red Cullen at **cullen1@llnl.gov**.

Note that this ONLY applies to those who already have TART97 CD.

Beating the Speed of Light

It wasn't too long ago that Monte Carlo codes could run thousands of particle histories in a reasonable amount of time. Today's computers are so much faster and cheaper than computers were just a few years ago, that in the span of just a few years we have gone from running thousands, to millions, to billions of particle histories in a reasonable amount of time. Today a reasonably priced PC can run several billion histories per day.

But we are running into the limit of the speed at which an individual computer processor can produce results for us. One simply way around this limit, now available with the TART system, is to use many processors to run the same TART problem and use the TART utility code TARTSUM to add all of the results together. Using this approach, if each processor can handle a billion histories per day and we have a thousand processors available, we have the potential of handling a **trillion** (yes, ten to the twelfth power) histories per day.

Higher Energy Applications

By the final release of TART98, the energy range for both neutrons and photons will be extended up to 1 GeV. For photons our Evaluated Photon Data Library, '97 version (EPDL97) will be used to immediately extend TART to handle photon problems up to 1 GeV. For neutrons TART is ready to go up to 1 GeV, but the available data isn't ready. As soon as higher energy neutron data becomes available TART is ready to use it.

Interesting Applications

If you have an interesting TART application that you would like to include in this newsletter and share with our readers, please contact Red Cullen at **cullen1@llnl.gov**.

Do You Need Help?

If you need help using TART contact Red Cullen at 925-423-7359. If you are having problems with TART input, send it to **cullen1@llnl.gov**; I'll find out what's wrong with it, fix it, and return it to you.