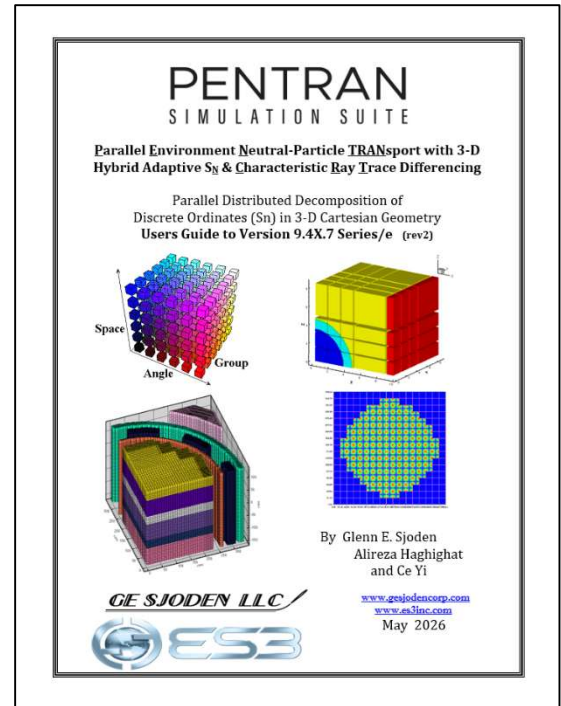


PENTRAN Code System

*Contact for pricing options**

Includes full neutronics 3-D Sn analysis tools:

- **PENTRAN¹** 3-D Parallel Sn and CRT with MPI support, **forward and adjoint**, fixed source or eigenvalue, with angular, energy, spatial (coarse mesh zone) MPI parallelism with Sn adaptive schemes, or ray trace in 3-D
 - **WWPEN2MC** for preparation of **CADIS Adjoint** Transport Weight Windows for **MCNP³** **WWINP** Files, with **MIRROR-ADJ** and **3DIWWG** interpolation utilities
 - **PENDATA** parallel data gathering tool
 - **PENMSHXP** block adaptive 3-D mesh generator with material balance, and geometry + solution plotting capability
 - **GMIX & HMIX** MG cross section mixing, homogenization, nuclear parameters, and processing tools
 - **OJOYU** multigroup cross section prep for **NJOY²**
 - **XSMCNP** for multigroup **MCNP³** cross section generation
 - **REPRO** preconditioning tool to accelerate PENTRAN
 - **PPEN.pre / PPEN.post**, parallel execution scripts
 - **Sort-lodbal-flx** data sorting script when automatic load balancing is used in PENTRAN
- *Linux OS required. **On-line or in person training and consulting available***
 - Upgrades for any codes during license period (non-trial period/contracted only).
 - Extended consulting, problem resolution, and cross section generation and data services available



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***LICENSING:** Engineering and Software System Solutions, Inc. (ES3), www.es3inc.com, Nuclear Systems Group, is an Authorized Reseller of the PENTRAN Simulation Suite and Code system. Please submit any inquiries regarding licensing/sales via email to: nuclear.systems@es3inc.com.

¹Available to most countries, but falls under ECCN 0D999(b), US Dept of Commerce classification, 21 Mar 2011. Country citizenship verification is required for all users; export is limited to specific countries and persons—licensees must administer controlled access.

²A parallelized NJOY cross section production option is available using NJMAKE and ETEN-DN (MPI) codes to expedite NJOY parallel processing for fast multi-group cross section production. This set of routines can be purchased separately as a **Cross Section Generation Toolkit**.

³MCNP must be obtained by the user via RSICC license at ORNL. MCNP and MCNP6 is a trademark and product of Triad National Security, LLC, Los Alamos National Laboratory, 2018