Code sand Formats Committee Sessions 1-2, 24.5.2017

The committee reviewed the table of codes from ENSDF Codes project summary report INDC(NDS)-0696 and made the following remarks and recommendations:

Maintenance and dissemination of ENSDF Analysis and Utility Codes: general statement and recommendation.

The committee strongly recommends that an effort is made to maintain the codes and ALSO to synchronize the dissemination from both NNDC and IAEA web sites.

Since the IAEA codes web site is only meant for stable releases of the codes, the committee strongly recommends that a stable and continuous line of communication is established between NNDC and IAEA, to ensure that when a stable version of the code is ready for release by NNDC, that the IAEA is informed and makes the same version available on the IAEA web site. Dates of the updates should agree with the version dates of the codes.

1. NDS publications and web display is now done with Java-NDS so Webtrend is obsolete and removed from table
2. T-RULER: a new code by T.Kibedi treating uncertainties using distribution functions obtained with Monte Carlo method.
   -can treat asymmetric uncertainties
   -error limits: fixes ranges for : <0.5, <+0.5,…
   -two methods for deducing mean values and errors from distribution function
   -clear POLICY needed on uncertainties in order to continue work

   RECOMMENDATION: The approach is reasonable and the network should agree and endorse it so that a beta version is completed and made available for validation

3. NS_library: a new module that contains all the Nuclear Structure data parsed from an ENSDF file. It can then be used to run other modules performing operations such as calculating ICC (BrIcc), normalizing decay schemes (GABS), Calculating initial atomic vacancy distribution (BrIccEmis), calculating reduced transition rates (TRuler), logft, etc: The code is done
4. Briccemis: currently the atomic radiation database is being calculated. After that it will be published. Once that is done AND the Monte Carlo treatment of uncertainties is endorsed AND a format for Atomic Data in ENSDF is adopted, the code can be finalized and released. Estimated time end of 2017.
   -proposed format for Atomic Data:
   'MA', 'MX', E(TOT), I(TOT) etc
   -option to display atomic radiation data on the web should be added
   -add a flag in ENSDF file to tell code decay scheme is incomplete and Briccemis should not be run

5. JGAMUT: corrected for recoil effects and sent to NNDC and IAEA
6. V. AveLib: updated and modified to run on all platforms and sent to NNDC and IAEA
7. Checking codes (FMTCHK): continuous efforts to enhance format checking by NNDC
8. Pandora: enhancement of code is still needed. Who will do it is open. Perhaps LBNL.
9. New R0 interpolating code: RadD was completed and sent to NNDC and IAEA. Now this code ahs been incorporated into ALPHAD code. This will be demonstrated on Friday (Balraj). Needs final bug checking and then will be released.
10. NewGTOL: a code written by PNPI (Russia) to handle singular matrices where GTOL fails to give result. Should be tested by some experienced evaluators first before a recommendation is made. It is available on MYENSDF WEBTOOL at the IAEA.
11. LOGFT: warning messages need to be given for unphysical input data and uncertainties. STILL PENDING.
12. BetaShape (LNHB, Mougeot):currently EC is missing and forbidden non-unique transitions are handled as allowed just like Logft. Work is in progress to include EC and include an improved treatment of non-unique forbidenness that will include nuclear structure effects. Otherwise the code gives improved spectra and average beta energies based on improved calculations and experimental beta shape factors.

    RECOMMENDATION: Logft needs to be replaced with a code that does better calculations. The committee is pleased that XM is doing a systematic analysis of BetaShape results compared to Logft and looks forward to discussing the results of this analysis.
    Note: The new average beta energies and spectra will be made available on LNHB site soon.
    Code reads from and writes to an ENSDF file. A demo will be given on Friday.
13. MYENSDF Webtool: All checking codes (Russian) are available on this web tool. NewGtol is also there to test. An additional section for non-ENSDF analysis/utility codes is included where useful codes for evaluators can be made available. Access to MYENSDF Webtool for those wanting to run the codes only, is made free without password.
14. Editors: There is a need for an ENSDF editor that is publicly available and fully supported/maintained.
    Tree-editor: The committee supports V.Zerkin's efforts at IAEA.
    RECOMMENDATION: an expert evaluator works closely with VZ to implement all required features. LBNL is willing to do that.
    EVP editor: require input from Alejandro (NNDC).
15. Formats:
    a. Formats for including continuous data (proposal by Sonzogni):

    RECOMMENDATION: a more thoroughly worked-out proposal is prepared for a format for continuous data accompanied by an example.

b. XML: there are still some issues with including comments records because they are not standardised in ENSDF. A proposal to translate the comments first and then put into normal text was discussed
c. XML is tightly linked to GND for ENDF: a stable version of GND will be released together with the new ENDF/B VIII file by the end of the year

RECOMMENDATION: The committee endorses this effort and recommends it is supported by NSDD and USNDP.

Proposal: LBNL (Basunia) and BNL (Sonzogni) look into the LBNL report and provide feedback.

An XML example of ENSDF data should be made available on the web for all evaluators to peruse. The backward translation from XML to ENSDF should also be demonstrated.

GENERAL RECOMMENDATION: to make available better and enhanced codes for comparison, validation and adoption by the network.