JANIS TRANS Checker

N. Soppera, NEA Data Bank

Principle

Reading of EXFOR format has been implemented in JANIS in 2007.

For each supported format (ENDF, GENDF, BOXER, INTER…); JANIS takes as input one or more source data files and produces as internal result:

- Java objects representing the data coded in source data files
- a list of error and warning messages

The Java objects representing the data are either:

- used to fill a relational database: this allows indexation of source data files (searches…)
- displayed to user in the Graphical User Interface (plots, tables…)
- discarded

Error and warning messages are either:

- displayed on screen
- written to log files: displayable by browsers (XML files with an XSLT)

Feedback received

We have received some requests to clarify some error messages. For example:

“`Expected blanks ENTRY record, columns 12-17 [C 14135 20] line 5906`”

Here the error is caused by a column misalignment, but often JANIS TRANS Checker will report the consequences of the misalignment.

We have also received a feature request: how one can check PRELIM files before uploading them to the PRELIM area.

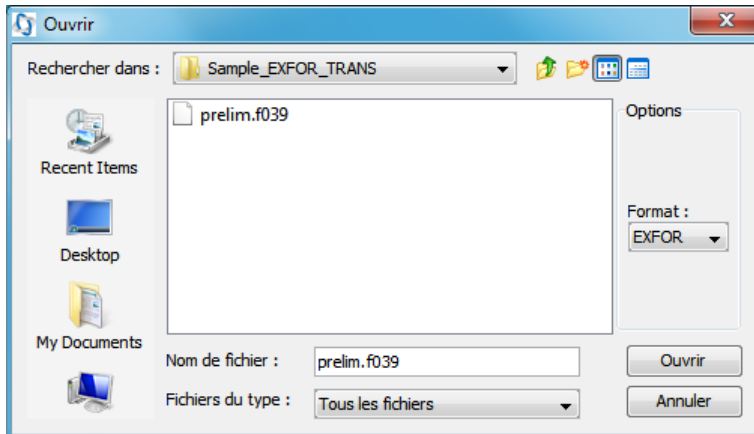## Different ways of checking EXFOR PRELIM/TRANS files with JANIS

Import "Dummy"
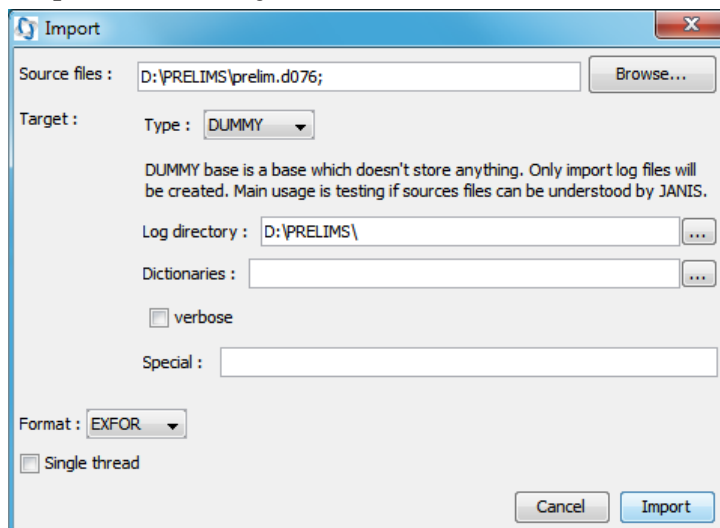
"Dummy" means that JANIS will read your source(s) file(s) and do not store anything except an XML log file containing all error and warning messages.
This log file can be displayed by browsers (Internet Explorer, Firefox…)

"File/Open"

JANIS will read your TRANS file(s) and display error and warning messages in the Open progress dialog.
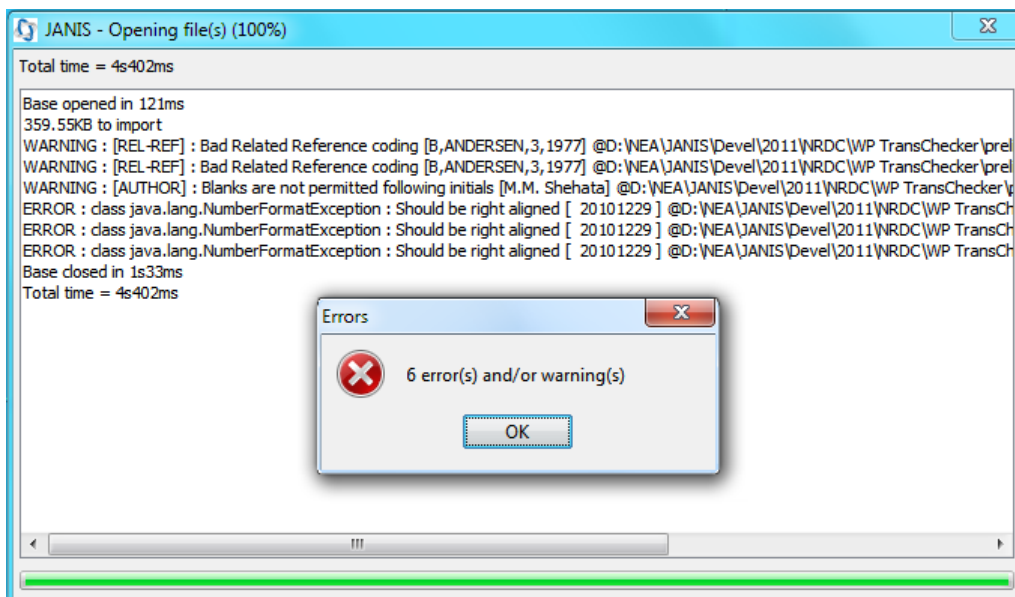
Then the TRANS file content will be available in a JANIS "Renderer" window, allowing you to display the textual information:

And display the data points as plots or tables:
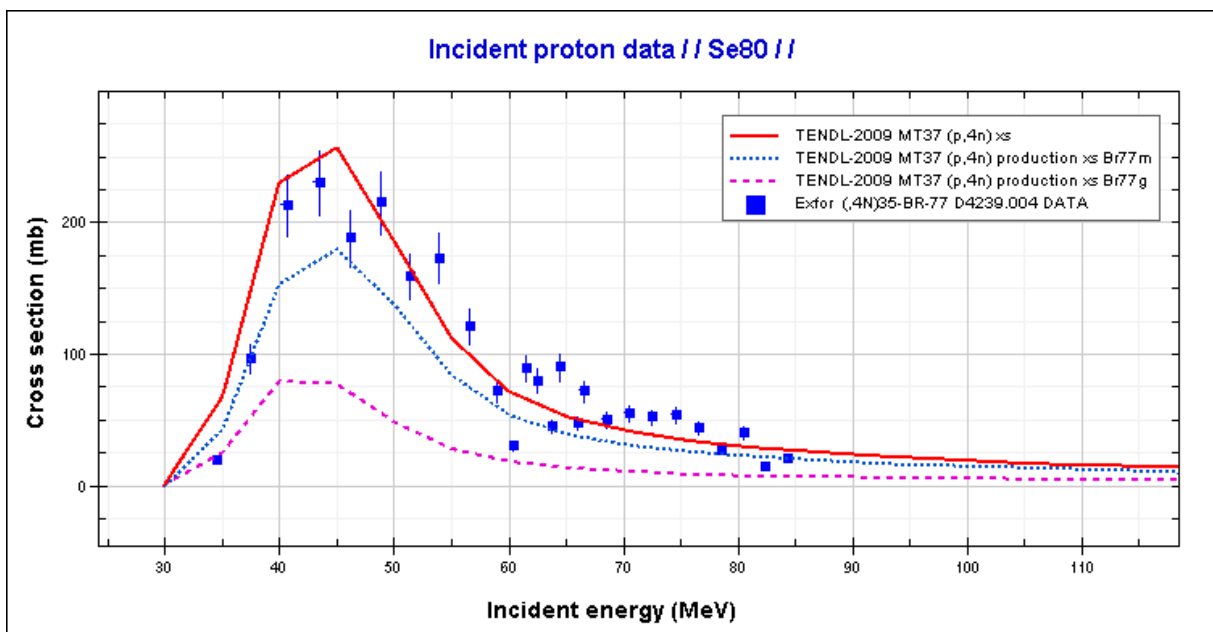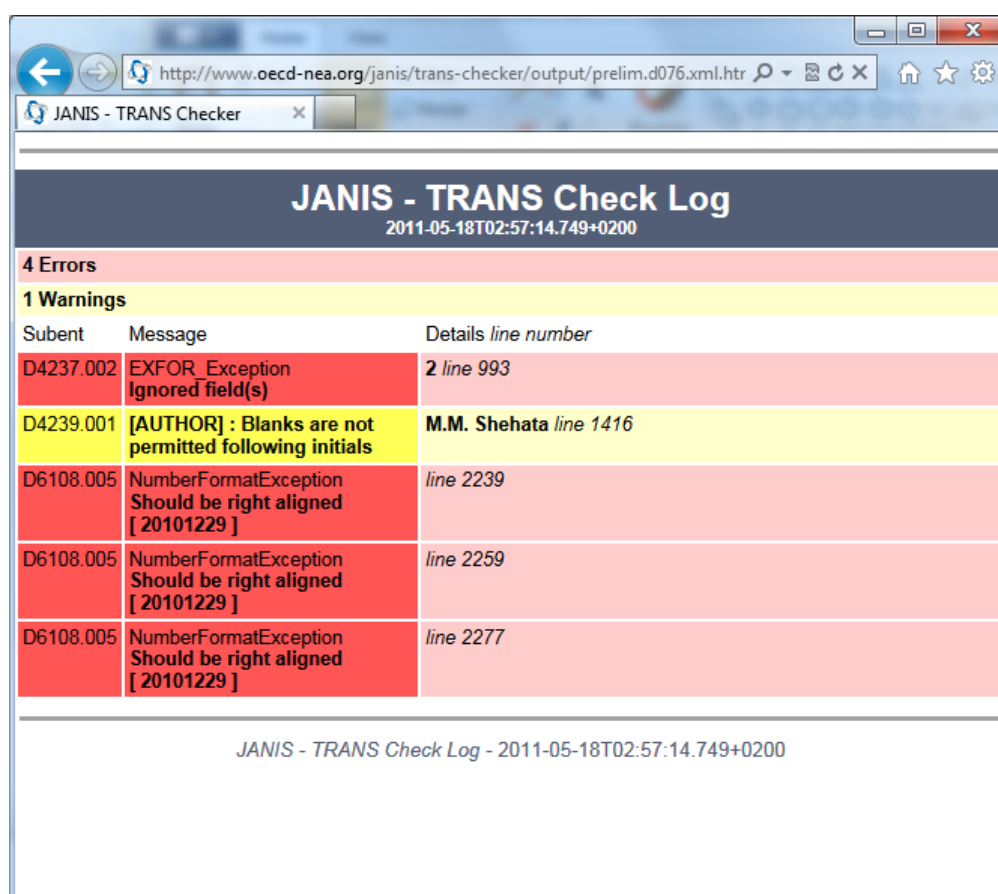
Automatic TRANS Checker on www.oecd-nea.org website

The Import "Dummy" functionality as been installed as an automatic tool on NEA website:
www.oecd-nea.org/janis/trans-checker
Each 3 minutes the content of PRELIM folder is checked and any new or updated file is downloaded, goes through an Import "Dummy" and the result log file with error and warning messages is written to the web server.

This functionality has recently been installed to also check Indian PRELIM files received by NDS.

TRANS Checker as command line tool

A command line version of the Import "Dummy" functionality has been produced for integration in the EXFOR Editor software.
This tool is downloadable from www.oecd-nea.org/janis/trans-checker.html

Recent developments

New checks

New checks have been implemented recently:
- New REACTION SF4 rules
- References and authors coding in REL-REF and MONIT-REF keywords
- Mismatch between the announced number of fields and the number of fields found in data tables ("Ignored field(s)" error messages)

Dic 236 wildcards

Previous versions of JANIS were using the "expanded" Dic 236 distributed by NDS along with each master EXFOR backup. This version of the dictionary contains for each code using wildcard(s) all combinations used in the Master EXFOR database.
The Dic 236 entries containing wildcards are now used directly. This avoids misleading "Unknown Quantity" error messages in TRANS and PRELIM checks which were previously reported for each new combination not yet used in the Master database.

Automatic TRANS Checker

The JANIS log file is removed whenever a PRELIM file disappears from the PRELIM area. So log files do not accumulate anymore in http://www.oecd-nea.org/janis/trans-checker/. Timestamps have been added to indicate the date and time of the last check.

Limitations

Checks implemented

JANIS is not primarily a data checking tool so the checks which were initially implemented were only the one required to ensure the correct execution of JANIS.
 This has been later extended with checks non essential for JANIS execution, but providing useful feedback to EXFOR compilers.

EXFOR dictionaries

JANIS needs EXFOR dictionaries for reading EXFOR files. These dictionaries do not contain the proposed codes so all uses of proposed codes will be reported as incorrect codes.
JANIS source code contains the latest distribution of EXFOR dictionaries.
The Import "Dummy" and the command line version of TRANS Checker provide a way of specifying more up to date dictionaries. This applies to all of them except:
- Dic 24 Data Headings: JANIS requires an internal table for grouping together Data Headings which define what we name a "Variable", e.g. for taking together EN-CM-

MAX and EN-ERR and determining that the EN-ERR column give the errors for EN-CM-MAX column.
- Dic 25 Data Units: JANIS requires the expression of all EXFOR units in terms of SI units and few special dimensionless units.

Errors and warnings

The main difference between an error and a warning message is the fact that when an error is encountered then a part of the source file is skipped. This can be:
- The remaining part of the keyword
- The remaining part of the Subentry
- The remaining part of the source file

For example a misaligned date field in a SUBENT record triggers an error which then causes the skipping of the whole Subentry. The Subentry content is ignored and will be checked only after correcting the date field error first.

Further developments

- Provide a web interface to the Import "Dummy" functionality
- Implements new checks
- Try to transform the most common "errors" into "warnings" to allow checking the remaining part of the file. For example JANIS currently does not use the SUBENT date field so we can try to report any problem in this field as a warning and continue the reading of the Subentry.
- Some messages concerning an entire Entry are reported for all Subentries, e.g. if keyword HISTORY is missing then a warning will be reported for each Subentry (e.g. Entry E2201 in PRELIM E065)
- Improve messages