

TASverter

Thermal Analysis for Space model converter

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Mechanical Engineering Department - Thermal and Structures Division

Topics

- Why TASverter ?
- Purpose of TASverter
- Supported formats
- Approach
- Current status
- How to get it?
- Further STEP-TAS developments



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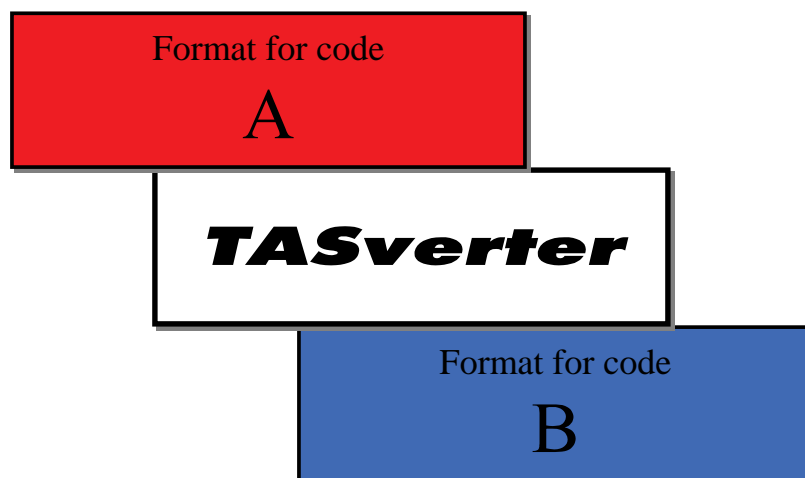
Sheet 2

Why TASverter ?

- STEP-TAS converters did not deliver industrial solution up to now
- TASverter is an initiative of ESA/ESTEC D/TOS-MVC to:
 - Offer users finally a working solution for exchange of thermal models between major analysis tools
 - Remove complicated dependency on (at least) 3 developers
 - STEP-TAS library developer
 - Analysis tool A developer
 - Analysis tool B developer
 - Produce a fully functional tool and basis for future industrial versions
 - Produce a framework for verification of data exchange standard(s) and implementations

Purpose of TASverter

Convert thermal analysis models
from format of software code A to format for software code B



Supported formats

- Before end of 2002
 - Thermica SYSBAS
 - Thermica VIF
 - ESARAD .erg
 - STEP-TAS .stp (ISO 10303 Part 21, version STEP-TAS-ARM/2)
- Beginning of next year
 - TRASYS .inp
- Possible further extensions
 - MSC/PATRAN, TSS, ...
 - User requests

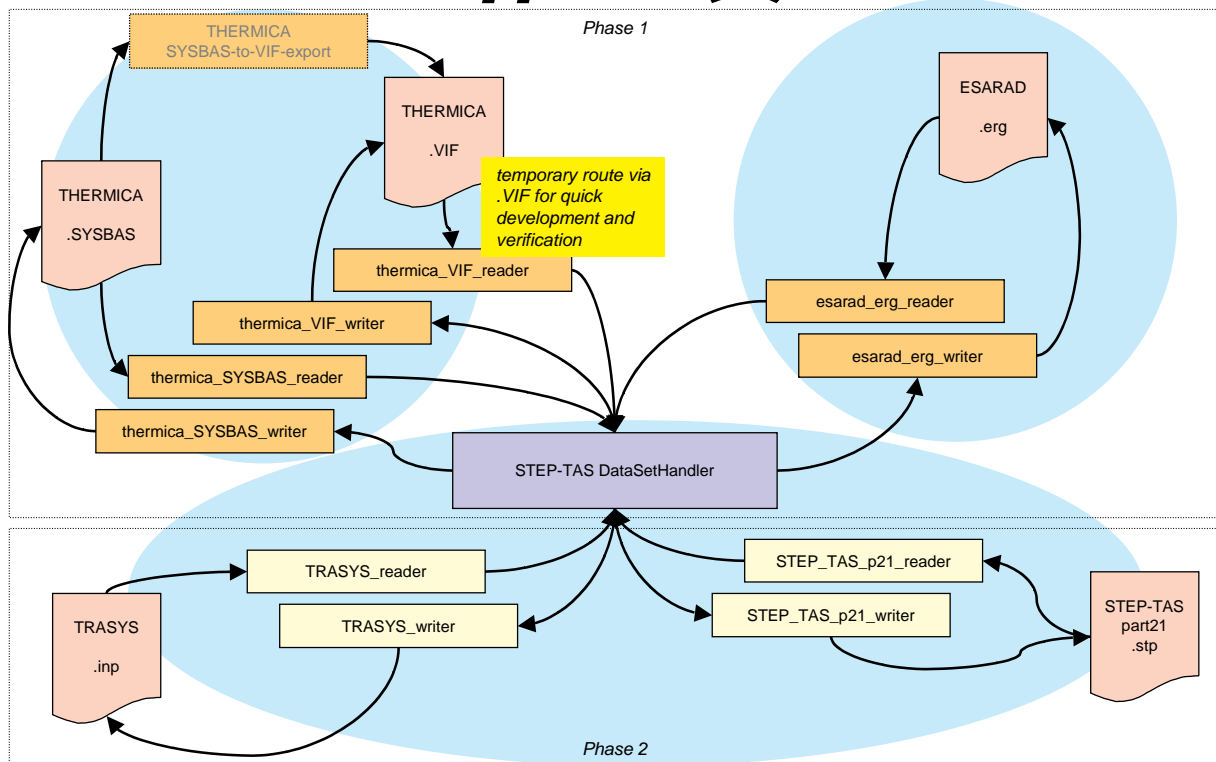


Approach(1)

- For each format a reader and a writer is created
- Internal data storage is based on STEP-TAS data structure
 - STEP-TAS DataSetHandler,
automatically generated with *pyExpress* (STEP-EXPRESS compiler)
- Fine-tuning and simplification of the STEP-TAS standard
 - Support all model features: more shapes, mirroring, user-defined coordinate transformations, full assembly tree
 - Goal is to be able to recreate a thermal model which is as much as possible understandable and editable by humans
 - Updated STEP-TAS standard will be released for inclusion in ECSS and ISO TC184/SC4 (STEP committee)



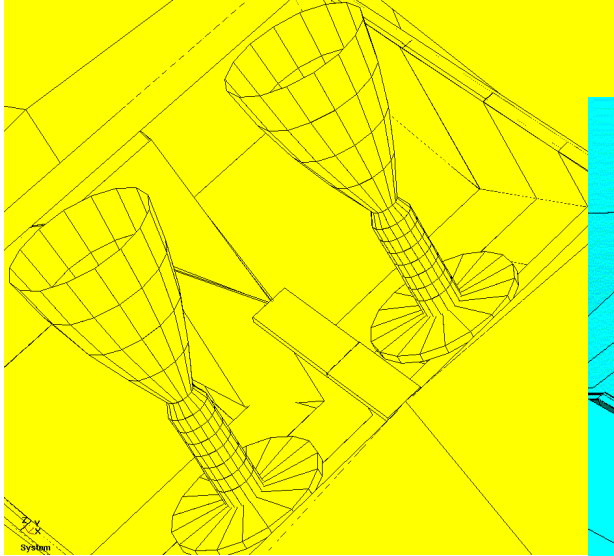
Approach(2)



Current status (1)

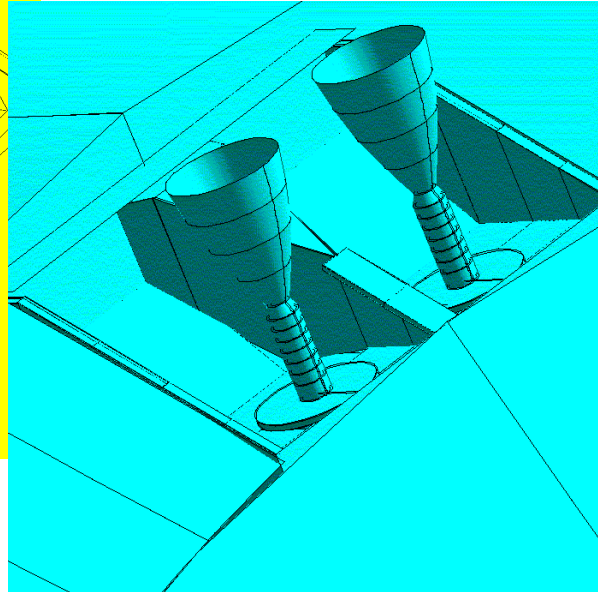
- pyExpress STEP-TAS DataSetHandler is almost complete
- Thermica VIF_reader and VIF_writer are in testing phase
- Thermica SYSBAS_reader is in testing phase
- ESARAD erg_writer is in testing phase
- ESARAD erg_reader and Thermica SYSBAS_writer are under construction

Current status (2)



Thermica model
VIF-format

ESARAD model



How can you get it?

As soon as it is available the Windows executable can be downloaded freely from:

<http://www.estec.esa.int/thermal/tools>

Please send an E-mail to: Hans-Peter.de.Koning@esa.int

And we let you know when the software is available.

Further STEP-TAS developments

- Formal standardisation in frame of ECSS / ISO
- C++ STEP-TAS library developed by Simulog (ready 2003-Q1)
 - No more dependency on third party software
 - C-API migration path from current STEP-TAS library will be provided
 - Pure ANSI C++
 - Will be distributed in source code, so tool vendor can compile/link on any platform/compiler
 - High performance: processes ~50000 STEP instances per minute on typical PC
- TASverter with SINDA / ESATAN exchange
 - SINDA85 -> ESATAN converter already available
 - With full user-definable unit conversion
 - AP203 import

