

4.9.3

Applicable User Manual version: 4.5.0

No modifications.

4.9.2P1

Applicable User Manual version: 4.5.0

No modifications.

4.9.2

Applicable User Manual version: 4.5.0

Corrections:

- Bug fix of the export of model names and labels in the raytracing hdf5 files (rmap.h5, rpt.h5, rbox.h5)

4.9.1

Applicable User Manual version: 4.5.0

No modifications.

4.9.0

Applicable User Manual version: 4.5.0

No modifications.

4.8.3P1

Corrections:

- Bug fix in the SDS/HDF5 library (h5 close on Windows)

User Manual:

- Applicable User Manual version: 4.5.0.

4.8.3

Systema Interface:

- Nothing.

Common:

- Nothing.

Bounding Box module:

- Nothing.

Computation Point module:

- Nothing.

Mapping module:

- Nothing.

User Manual:

- Applicable User Manual version: 4.5.0.

4.8.0

Systema Interface:

- Methods to get and set the position of Dosrad computation point have been added in the Python class `SpecficItemProperty`. See Systema Python API documentation for details.

Common:

- Nothing.

Bounding Box module:

- Nothing.

Computation Point module:

- Nothing.

Mapping module:

- Nothing.

User Manual:

- Applicable User Manual version: 4.5.0.

4.7.0

Systema Interface:

- The CAD file library has been changed and offers new simplification features: small pieces removal, holes/chamfers/fillets removal. See Systema User Manual for details.
- The 3D display performance has been improved and Systema is available for 64 bits Windows architecture.
- A new post-processing tab is available allowing, among other, to extract Mapping results more easily. See the Systema Release Note for details.

Common:

- The ray-tracing performance has been improved. In some favourable situations where the model is largely empty, a 50% gain on the ray-tracing time can be reached.

Bounding Box module:

- Nothing.

Computation Point module:

- Nothing.

Mapping module:

- Nothing.

User Manual:

- Applicable User Manual version: 4.5.0.

4.6.0

Systema Interface:

- Systema offers the possibility to insert volumic shapes in the geometrical model. Dosrad is not yet able to handle them, this will come in a future version.
- It is possible to create / access Dosrad specific items via the Python interface. See the Systema/Python API documentation for details.
- The Systema GUI has been revamped, see the Systema Release Note for details.

Common:

- Nothing.

Bounding Box module:

- Nothing.

Computation Point module:

- Nothing.

Mapping module:

- Nothing.

User Manual:

- Applicable User Manual version: 4.5.0.

4.5.2

Systema Interface:

- It is possible to have a single Systema installation with different modules installed (Thermica, Plume).

- Nastran Import has been enhanced: density and thickness are imported as Dosrad properties on the corresponding shapes.
- Copy/paste of Computation point is possible in the meshing tree.
- Copy/paste of Bounding Box is possible as well, under the condition that it is not meshed.
- Creation of specific items with multiple geometric meshing tree element selection is working.

Common:

- Nothing.

Bounding Box module:

- Nothing.

Computation Point module:

- Nothing.

Mapping module:

- Nothing.

4.5.0

Documentation:

- The Dosrad User Manual and Release Note (this document) is available in the installation directory under the doc subfolder.

Systema Interface:

- Ray filtering has been enhanced: when displaying ray with a property, it is possible to filter according to another property.
- The Systema framework offers Python scripting capability: model and meshing creation can be performed with a Python script. See Systema User Manual for detailed information.

Common:

- The random library has been changed, allowing to fire more rays without repetition. This may lead to differences in Mapping and Computation point results. This has been validated in the limit of high ray numbers: all reference test cases have been compared to 4.4.2 version results where the number of fired rays has been increased until convergence.
- The volume computation has been extended to NORM technique. There are four possible choices of methods, see user manual for details. Note that an increase in computation time is expected in case the NORM thicknesses have to be used (Shell and Slab dose curve type).
- The log file of each module contains information on the virtual nodes set by the user (volumes and honeycomb cores). This allows the user to check the settings performed in the meshing.

Bounding Box module:

- Nothing.

Computation Point module:

- A new text output file has been added. This text file contains total dose and total equivalent aluminium thickness for all defined computation points.

Mapping module:

- Nothing.

4.4.2**Systema Interface:**

- Removing possibility for the user to set up a custom numbering and submodel naming for meshes. This possibility, introduced in version 4.3.3, was confusing for the user and could lead to errors in referenced shapes management, leading to possible wrong computed doses.
- Instead of the RadMass module, the mass of a selection of shapes is available as textual information in the model 3D view.
- Change of material file format. Compatibility from the old format to the new one is insured by internal Systema converter. The reverse compatibility is not possible.
- The material database is available in a small tab with direct access for creation and/or modification.
- The new functionality of ray path display has been added for Dosrad. This allows to have more information on the obtain results. The ray filter by type of rays feature is particularly useful when tracking void rays.

Common:

- The post-processing of the ray-tracing, that is to say the computation of dose for each ray departing of all the impacted surfaces, has been centralized and is common for all modules. This is the first step to have in a future version only one module able to compute indifferently at a bounding box centre, at a computation point and on a meshed shape.
- Possibility to model honeycomb has been added. A simple incident angle dependent added thickness is implemented for rays that hit the two panels of an honeycomb panel.
- Possibility to model volumes has been added. For instance, when a box is modelled, if a volume is attached to it, the plain box is taken into account. At the moment, only SLANT thicknesses are correctly accounted for, the NORM ones may come in a future release.

Bounding Box module:

- The output text file produced contains only thicknesses by face and total doses for each bounding box. This is the equivalent of the DOSTOT format of Systema V3. A new output file has been added. It is the equivalent of the DOSRES format of Systema V3 and thus contains dose by face as well as corresponding solid angles and, which is new with respect to the DOSRES format, the faces area. It is produced in CSV format in the result folder. This allows to directly open it under any spreadsheet editor.
- The solid angles by mesh are exported in the h5 file

Computation Point module:

- nothing

Mapping module:

- nothing

RadMass module:

- This module has been suppressed as the mass is directly available in the model 3D view as textual information.

4.3.3

Systema Interface:

- Adding possibility for the user to set up a custom numbering and submodel naming for all the meshes. This allows to create submodels, opening the possibility to perform radiation shielding mass budget (see RadMass new module.)
- Improved bounding box meshing performance. The referenced shapes browser is hidden for Bounding Box and Computation Point non-geometrical nodes.

Common:

- Improve dose curve reading robustness. In particular, dose curve file coming from Systema V3 / EarthRad module are read without modification

Bounding Box module:

- In some cases (several bounding boxes), h5 output files were not containing all the expected data

Computation Point module:

- nothing

Mapping module:

- nothing

RadMass module (NEW):

- Thanks to extended meshing capabilities, this new module allows to compute radiation mass of shapes or group of shapes. The mass is computed as the product of the density, the area and the Dosrad thickness (set by the user). This feature was available in the Systema V3 version. That is why it has been developed for Dosrad V4.

4.3.0

First DOSRAD V4 release