Release Notes 5.1.2

December 2014
Bug Fixes

• **Corrected failure criteria formulation**
  - Shear terms in strain based criteria
    - Tsai-Hill 3D Transversely Isotropic
    - Tsai-Wu 3D Transversely Isotropic
  - Hashin 3D linear expression
  - Tsai-Wu 3D linear expression

• **Corrected phase homogenization order when using the multi-level method**
  - Affects elastic and visco-elastic UD material models including voids

• **Corrected specific heat capacity computation**

• **Improved robustness with custom output for clustering with failure model**

• **Improved robustness for woven/braided**
  - More robust when switching from FE to MF
  - Improved reporting for incorrect inlays definition
  - Improved error messages

• **Improved robustness for second order homogenization**
**Bug Fixes**

- **Improved Marc interface robustness**
  - Corrected periodic boundary conditions formulation
  - Corrected shear_13 periodic loading boundary condition
  - Corrected user thermal loading definition

- **Improved GUI robustness**
  - Affects only intensive GUI browsing

- **Initial seed size taken into account when exporting to Abaqus**

- **Corrected handling of continuous fibers with diameter larger than 0.5**

- **Upgraded WiseTex engine for woven**
  - Improved robustness for braided and inlay geometry generation
Upgrade

• Update to Postgresql 9.3
  ○ Requires an upgrade of the database

Bug fix

• Corrected unit system conversion of strain rate dependent failure models
Bug Fixes

• **Improved robustness**
  o Weldline mapping
    ▪ Only hexa 20 elements were concerned
  o Automatic scaling
    ▪ Removal of negative bounding box size ratios
  o Donor meshes with wedges
  o Porosity mapping procedure
    ▪ Volume fraction now results from mapped size and mapped pore density
Upgrades

• **Digimat to RADIOSS**
  - Support of RADIOSS v12
  - Support of RADIOSS for UD and Woven
  - Support of 1 layer draping file
  - Hypermesh/Optistruct plugin v12

Bug Fixes

• **Digimat to PAM-CRASH**
  - Support of UD and woven with Micro and Hybrid solution

• **Improved robustness when using**
  - Porosity and variable aspect ratio files
  - Volume fraction files

• **Element deletion triggering**
  - All integration points must fail to trigger element deletion
  - Concerns LS-Dyna, Nastran/SOL700 & PAM-CRASH
• **Digimat to Abaqus**
  o Corrected computation of transverse shear stiffness for composites with transversely isotropic fibers
  o Corrected handling of multiple integration point elements when using Digimat Orientation File (.dof)
    ▪ Each integration point has its actual orientation instead of the orientation of the first integration point

• **Hybrid solution**
  o Convergence improvement on Current yield Norton law for implicit solver
  o Improved robustness
    ▪ Identification of hybrid parameters for TE and TEP materials
      • Correct non-linear behavior of TEP material for every temperature
      • Identification possible for 0°
    ▪ Identification of hybrid parameters for EVP materials with failure criteria

• **Porosity (Mucell)**
  o Corrected license usage for 3 phases involving voids and porosity distribution file.
Bug Fixes

• Support of aspect ratio distribution

• Support of all formats of 3D TIMON orientation files for solid elements

• Enhanced equivalence between material models output from RP and CAE

• ABAQUS
  o Value of transverse shear stiffness now depends on thickness section
  o Density of materials now always written
  o Support of ABAQUS input files with the following keywords (without spaces):
    ▪ *SOLIDSECTION, *SHELLSECTION, *ENDSTEP,
    ▪ *ELEMENTOUTPUT,
    ▪ *TRANSVERSESHEARSTIFFNESS

• ANSYS
  o Corrected SVAR output request
    ▪ Respect of user defined output frequency
  o Improved robustness for ANSYS models
    ▪ For models containing several materials
- For models with non-Digimat material preceding a Digimat material