

JPL EXPORT ADMINISTRATION DOCUMENT REVIEW RECORD
---

Log #: 11666-11680

(Note: This form and process do not replace the procedures described in JPL Policy relating to review and approval of proposals and contractual documents. This process is intended to document the review and coordination of requests to ascertain the export control ramifications relating to specific documents. Export Administration signature does not convey authority to export or release the "Exporter of Record" from any export laws or regulations.)

**Program:** ISSM: Ice Sheet System Model

**Person Requesting or Initiating Export:** Dr. Eric Larour

**Date Received:** Apr-16-2012

**Document Title/Description:** ISSM changes from revision 11666 to revision 11680

**Release to:** <http://issm.ess.uci.edu/svn/issm/issm/trunk> on ISSM svn repository

**JPL Intranet:** [murdo.jpl.nasa.gov/proj/ice/larour/issm-uci/trunk-jpl](http://murdo.jpl.nasa.gov/proj/ice/larour/issm-uci/trunk-jpl)

**Disposition: 6** Does not contain export-controlled information. May be released/disclosed as requested subject to Company guidelines on protection of proprietary information (if applicable).

**Comments:** see table of changes below.

**Reviewed by ISSM Export Transfer Liaison:** Dr. Eric Larour      **Date:** Apr-16-2012



JPL Export Administration Form TBS June 29, 2011

**Disposition:**

- 1: Public Domain Information (Ref ITAR Section 120.11)
- 2: Qualifies for ITAR Exemption
- 3: Covered by Department of State License/Agreement Number
- 4: Covered by Department of Commerce validated license or exception
- 5: New License Required
- 6: Does not contain export-controlled information. May be released/disclosed as requested subject to Company guidelines on protection of proprietary information (if applicable).
- 7: Other (specify)

---

**Change #1** with diff file ISSM-11666-11667.diff:

Function name:

M /issm/trunk-jpl/configure.ac

Export determination: 6.

Rationale: Took out ad/Makefile.am in configure.ac A /issm/trunk-jpl/cron/configs/linux64\_borstad\_daily A /issm/trunk-jpl/cron/configs/linux64\_borstad\_nightly A /issm/trunk-jpl/cron/configs/linux64\_borstad\_ucitrunk A /issm/trunk-jpl/cron/configs/linux64\_borstad\_validation A /issm/trunk-jpl/cron/configs/macosx64\_borstad\_validation A /issm/trunk-jpl/cron/configs/macosx64\_borstad\_validation A /issm/trunk-jpl/cron/configs/macosx64\_borstad\_validation borstad config files for nightly runs

**Change #2** with diff file ISSM-11667-11668.diff:

Function name:

A /issm/trunk-jpl/cron/configs/linux64\_borstad\_daily A /issm/trunk-jpl/cron/configs/linux64\_borstad\_nightly A /issm/trunk-jpl/cron/configs/linux64\_borstad\_ucitrunk A /issm/trunk-jpl/cron/configs/linux64\_borstad\_validation A /issm/trunk-jpl/cron/configs/macosx64\_borstad\_validation A /issm/trunk-jpl/cron/configs/macosx64\_borstad\_validation A /issm/trunk-jpl/cron/configs/macosx64\_borstad\_validation

Export determination: 6.

Rationale: borstad config files for nightly runs M /issm/trunk-jpl/externalpackages/windows/InstallInstructions.txt fix some typos

**Change #3** with diff file ISSM-11668-11669.diff:

Function name:

M /issm/trunk-jpl/externalpackages/windows/InstallInstructions.txt

Export determination: 6.

Rationale: fix some typos M /issm/trunk-jpl/m4/issm\_options.m4 Added adolc package

**Change #4** with diff file ISSM-11669-11670.diff:

Function name:

M /issm/trunk-jpl/m4/issm\_options.m4

Export determination: 6.

Rationale: Added adolc package M /issm/trunk-jpl/src/c/Makefile.am M /issm/trunk-jpl/src/c/io/Matlab/FetchMatlabData.cpp M /issm/trunk-jpl/src/c/io/Matlab/WriteMatlabData.cpp M /issm/trunk-jpl/src/c/io/Matlab/matlabio.h A /issm/trunk-jpl/src/c/objects/Numerics/Matrix.cpp A /issm/trunk-jpl/src/c/objects/Numerics/Matrix.h A /issm/trunk-jpl/src/c/objects/Numerics/Vector.cpp

A /issm/trunk-jpl/src/c/objects/Numerics/Vector.h M /issm/trunk-jpl/src/c/objects/objects.h  
A /issm/trunk-jpl/src/c/toolkits/matlab/MatlabMatrixToMatrix.cpp A /issm/trunk-jpl/src/c/toolkits/matlab/MatlabVectorToVector.cpp M /issm/trunk-jpl/src/c/toolkits/matlab/matlabincludes.h  
Starting abstraction of Matrix and Vector objects, to step away from Petsc libraries.

**Change #5** with diff file ISSM-11670-11671.diff:

Function name:

M /issm/trunk-jpl/src/c/Makefile.am M /issm/trunk-jpl/src/c/io/Matlab/FetchMatlabData.cpp  
M /issm/trunk-jpl/src/c/io/Matlab/WriteMatlabData.cpp M /issm/trunk-jpl/src/c/io/Matlab/matlabio.h  
A /issm/trunk-jpl/src/c/objects/Numerics/Matrix.cpp A /issm/trunk-jpl/src/c/objects/Numerics/Matrix.h  
A /issm/trunk-jpl/src/c/objects/Numerics/Vector.cpp A /issm/trunk-jpl/src/c/objects/Numerics/Vector.h  
M /issm/trunk-jpl/src/c/objects/objects.h A /issm/trunk-jpl/src/c/toolkits/matlab/MatlabMatrixToMatrix.cpp  
A /issm/trunk-jpl/src/c/toolkits/matlab/MatlabVectorToVector.cpp M /issm/trunk-jpl/src/c/toolkits/matlab/matlabincludes.h

Export determination: 6.

Rationale: Starting abstraction of Matrix and Vector objects, to step away from Petsc libraries. D /issm/trunk-jpl/externalpackages/android Not needed anymore

**Change #6** with diff file ISSM-11671-11672.diff:

Function name:

D /issm/trunk-jpl/externalpackages/android

Export determination: 6.

Rationale: Not needed anymore A /issm/trunk-jpl/src/android New android directory for development. Not connected

**Change #7** with diff file ISSM-11672-11673.diff:

Function name:

A /issm/trunk-jpl/src/android

Export determination: 6.

Rationale: New android directory for development. Not connected M /issm/trunk-jpl/etc/environment.sh M /issm/trunk-jpl/etc/environment\_variables.sh A /issm/trunk-jpl/externalpackages/android-emulators A /issm/trunk-jpl/externalpackages/android-ndk A /issm/trunk-jpl/externalpackages/android-ndk/android-ndk-r7b-darwin-x86.tar.bz2 A /issm/trunk-jpl/externalpackages/android-ndk/install.sh A /issm/trunk-jpl/externalpackages/android-sdk A /issm/trunk-jpl/externalpackages/android-sdk/android-sdk-r16-macosx.zip A /issm/trunk-jpl/externalpackages/android-sdk/apache-ant-1.8.2-bin.zip A /issm/trunk-jpl/externalpackages/android-sdk/install.sh  
Setting up the externalpackages for the android build.

**Change #8** with diff file ISSM-11673-11674.diff:

Function name:

M /issm/trunk-jpl/etc/environment.sh M /issm/trunk-jpl/etc/environment\_variables.sh  
A /issm/trunk-jpl/externalpackages/android-emulators A /issm/trunk-jpl/externalpackages/android-ndk A /issm/trunk-jpl/externalpackages/android-ndk/android-ndk-r7b-darwin-

x86.tar.bz2 A /issm/trunk-jpl/externalpackages/android-ndk/install.sh A /issm/trunk-jpl/externalpackages/android-sdk A /issm/trunk-jpl/externalpackages/android-sdk/android-sdk-r16-macosx.zip A /issm/trunk-jpl/externalpackages/android-sdk/apache-ant-1.8.2-bin.zip A /issm/trunk-jpl/externalpackages/android-sdk/install.sh  
Export determination: 6.  
Rationale: Setting up the externalpackages for the android build. M /issm/trunk-jpl/src/m/classes/friction.m minor display of friction

**Change #9** with diff file ISSM-11674-11675.diff:

Function name:

M /issm/trunk-jpl/src/m/classes/friction.m

Export determination: 6.

Rationale: minor display of friction M /issm/trunk-jpl/src/c/io/Matlab/FetchMatlabData.cpp

M /issm/trunk-jpl/src/c/toolkits/petsc/patches/MatlabMatrixToDoubleMatrix.cpp

Added support for 'single' matlab format

**Change #10** with diff file ISSM-11675-11676.diff:

Function name:

M /issm/trunk-jpl/src/c/io/Matlab/FetchMatlabData.cpp M /issm/trunk-jpl/src/c/toolkits/petsc/patches/M

Export determination: 6.

Rationale: Added support for 'single' matlab format A /issm/trunk-jpl/examples/Jakobshavn

A /issm/trunk-jpl/examples/Jakobshavn/Domain.exp A /issm/trunk-jpl/examples/Jakobshavn/Front.exp

A /issm/trunk-jpl/examples/Jakobshavn/Jks.par A /issm/trunk-jpl/examples/Jakobshavn/WeakB.exp

A /issm/trunk-jpl/examples/Jakobshavn/runme.m M /issm/trunk-jpl/examples/SquareIceShelf/runme.m

Added Jks tutorial

**Change #11** with diff file ISSM-11676-11677.diff:

Function name:

A /issm/trunk-jpl/examples/Jakobshavn A /issm/trunk-jpl/examples/Jakobshavn/Domain.exp

A /issm/trunk-jpl/examples/Jakobshavn/Front.exp A /issm/trunk-jpl/examples/Jakobshavn/Jks.par

A /issm/trunk-jpl/examples/Jakobshavn/WeakB.exp A /issm/trunk-jpl/examples/Jakobshavn/runme.m

M /issm/trunk-jpl/examples/SquareIceShelf/runme.m

Export determination: 6.

Rationale: Added Jks tutorial M /issm/trunk-jpl/examples/SquareIceShelf/runme.m

reverted back to normal

**Change #12** with diff file ISSM-11677-11678.diff:

Function name:

M /issm/trunk-jpl/examples/SquareIceShelf/runme.m

Export determination: 6.

Rationale: reverted back to normal M /issm/trunk-jpl/examples/Jakobshavn/Jks.par

simplified

**Change #13** with diff file ISSM-11678-11679.diff:

Function name:

M /issm/trunk-jpl/examples/Jakobshavn/Jks.par

Export determination: 6.

```
Rationale: simplified M /issm/trunk-jpl/src/c/Makefile.am M /issm/trunk-jpl/src/c/modules/CreateJacobianMatrixx/
M /issm/trunk-jpl/src/c/modules/CreateJacobianMatrixx/CreateJacobianMatrixx.h
M /issm/trunk-jpl/src/c/modules/CreateNodalConstraintsx/CreateNodalConstraintsx.cpp
M /issm/trunk-jpl/src/c/modules/CreateNodalConstraintsx/CreateNodalConstraintsx.h
M /issm/trunk-jpl/src/c/modules/GetSolutionFromInputsx/GetSolutionFromInputsx.cpp
M /issm/trunk-jpl/src/c/modules/GetSolutionFromInputsx/GetSolutionFromInputsx.h
M /issm/trunk-jpl/src/c/modules/InputUpdateFromSolutionx/InputUpdateFromSolutionx.cpp
M /issm/trunk-jpl/src/c/modules/InputUpdateFromSolutionx/InputUpdateFromSolutionx.h
M /issm/trunk-jpl/src/c/modules/Mergesolutionfromftogx/Mergesolutionfromftogx.cpp
M /issm/trunk-jpl/src/c/modules/Mergesolutionfromftogx/Mergesolutionfromftogx.h
M /issm/trunk-jpl/src/c/modules/Reduceloadx/Reduceloadx.cpp M /issm/trunk-
jpl/src/c/modules/Reduceloadx/Reduceloadx.h M /issm/trunk-jpl/src/c/modules/Reducevectortogtox/Reduce
M /issm/trunk-jpl/src/c/modules/Reducevectortogtox/Reducevectortogtox.h M /issm/trunk-
jpl/src/c/modules/Reducevectortogtox/Reducevectortogtox.cpp M /issm/trunk-
jpl/src/c/modules/Reducevectortogtox/Reducevectortogtox.h M /issm/trunk-jpl/src/c/modules/Solverx/Solverx
M /issm/trunk-jpl/src/c/modules/Solverx/Solverx.h A /issm/trunk-jpl/src/c/modules/Solverx/SolverxPetsc.c
M /issm/trunk-jpl/src/c/modules/SystemMatrixesx/SystemMatrixesx.cpp M /issm/trunk-
jpl/src/c/modules/SystemMatrixesx/SystemMatrixesx.h M /issm/trunk-jpl/src/c/modules/UpdateDynamicC
M /issm/trunk-jpl/src/c/modules/UpdateDynamicConstraintsx/UpdateDynamicConstraintsx.h
M /issm/trunk-jpl/src/c/modules/VecMergex/VecMergex.cpp M /issm/trunk-
jpl/src/c/modules/VecMergex/VecMergex.h M /issm/trunk-jpl/src/c/objects/Elements/Element.h
M /issm/trunk-jpl/src/c/objects/Elements/Penta.cpp M /issm/trunk-jpl/src/c/objects/Elements/Penta.h
M /issm/trunk-jpl/src/c/objects/Elements/Tria.cpp M /issm/trunk-jpl/src/c/objects/Elements/Tria.h
M /issm/trunk-jpl/src/c/objects/Loads/Icefront.cpp M /issm/trunk-jpl/src/c/objects/Loads/Icefront.h
M /issm/trunk-jpl/src/c/objects/Loads/Load.h M /issm/trunk-jpl/src/c/objects/Loads/Numericalflux.cpp
M /issm/trunk-jpl/src/c/objects/Loads/Numericalflux.h M /issm/trunk-jpl/src/c/objects/Loads/Pengrid.cpp
M /issm/trunk-jpl/src/c/objects/Loads/Pengrid.h M /issm/trunk-jpl/src/c/objects/Loads/Penpair.cpp
M /issm/trunk-jpl/src/c/objects/Loads/Penpair.h M /issm/trunk-jpl/src/c/objects/Loads/Riftfront.cpp
M /issm/trunk-jpl/src/c/objects/Loads/Riftfront.h M /issm/trunk-jpl/src/c/objects/Node.cpp
M /issm/trunk-jpl/src/c/objects/Node.h M /issm/trunk-jpl/src/c/objects/Numerics/ElementMatrix.cpp
M /issm/trunk-jpl/src/c/objects/Numerics/ElementMatrix.h M /issm/trunk-
jpl/src/c/objects/Numerics/ElementVector.cpp M /issm/trunk-jpl/src/c/objects/Numerics/ElementVector.h
M /issm/trunk-jpl/src/c/objects/Numerics/Matrix.cpp M /issm/trunk-jpl/src/c/objects/Numerics/Matrix.h
M /issm/trunk-jpl/src/c/objects/Numerics/Vector.cpp M /issm/trunk-jpl/src/c/objects/Numerics/Vector.h
M /issm/trunk-jpl/src/c/shared/Alloc/alloc.cpp M /issm/trunk-jpl/src/c/shared/Alloc/alloc.h
M /issm/trunk-jpl/src/c/solutions/ResetBoundaryConditions.cpp M /issm/trunk-
jpl/src/c/solutions/convergence.cpp M /issm/trunk-jpl/src/c/solutions/solutions.h
M /issm/trunk-jpl/src/c/solvers/solver_adjoint_linear.cpp M /issm/trunk-jpl/src/c/solvers/solver_linear.cpp
M /issm/trunk-jpl/src/c/solvers/solver_newton.cpp M /issm/trunk-jpl/src/c/solvers/solver_nonlinear.cpp
M /issm/trunk-jpl/src/c/solvers/solver_stokescoupling_nonlinear.cpp M /issm/trunk-
jpl/src/c/solvers/solver_thermal_nonlinear.cpp M /issm/trunk-jpl/src/mex/CreateJacobianMatrix/CreateJaco
M /issm/trunk-jpl/src/mex/CreateNodalConstraints/CreateNodalConstraints.cpp
M /issm/trunk-jpl/src/mex/GetSolutionFromInputs/GetSolutionFromInputs.cpp
M /issm/trunk-jpl/src/mex/InputUpdateFromSolution/InputUpdateFromSolution.cpp
M /issm/trunk-jpl/src/mex/Mergesolutionfromftog/Mergesolutionfromftog.cpp
```

M /issm/trunk-jpl/src/mex/Reduceload/Reduceload.cpp M /issm/trunk-jpl/src/mex/Reducevectortogto/Reducevectortogto.cpp M /issm/trunk-jpl/src/mex/Reducevectortogtos/Reducevectortogtos.cpp M /issm/trunk-jpl/src/mex/Solver/Solver.cpp M /issm/trunk-jpl/src/mex/SystemMatrices/SystemMatrices.cpp M /issm/trunk-jpl/src/mex/UpdateDynamicConstraints/UpdateDynamicConstraints.cpp  
 Large commit, to strip out Petsc from the code. Created new Matrix and Vector wrapper objects to the Petsc Mat and Vec objects. These wrappers make it possible to hook up a different package to handle matrix and vector operations.

**Change #14** with diff file ISSM-11679-11680.diff:

Function name:

M /issm/trunk-jpl/src/c/Makefile.am M /issm/trunk-jpl/src/c/modules/CreateJacobianMatrixx/CreateJacobianMatrixx.h  
 M /issm/trunk-jpl/src/c/modules/CreateJacobianMatrixx/CreateJacobianMatrixx.cpp  
 M /issm/trunk-jpl/src/c/modules/CreateNodalConstraintsx/CreateNodalConstraintsx.h  
 M /issm/trunk-jpl/src/c/modules/CreateNodalConstraintsx/CreateNodalConstraintsx.cpp  
 M /issm/trunk-jpl/src/c/modules/GetSolutionFromInputsx/GetSolutionFromInputsx.h  
 M /issm/trunk-jpl/src/c/modules/GetSolutionFromInputsx/GetSolutionFromInputsx.cpp  
 M /issm/trunk-jpl/src/c/modules/InputUpdateFromSolutionx/InputUpdateFromSolutionx.h  
 M /issm/trunk-jpl/src/c/modules/InputUpdateFromSolutionx/InputUpdateFromSolutionx.cpp  
 M /issm/trunk-jpl/src/c/modules/Mergesolutionfromftogx/Mergesolutionfromftogx.h  
 M /issm/trunk-jpl/src/c/modules/Mergesolutionfromftogx/Mergesolutionfromftogx.cpp  
 M /issm/trunk-jpl/src/c/modules/Reduceloadx/Reduceloadx.h M /issm/trunk-jpl/src/c/modules/Reducevectortogtofx/Reducevectortogtofx.h  
 M /issm/trunk-jpl/src/c/modules/Reducevectortogtofx/Reducevectortogtofx.cpp M /issm/trunk-jpl/src/c/modules/Reducevectortogtosx/Reducevectortogtosx.h  
 M /issm/trunk-jpl/src/c/modules/Reducevectortogtosx/Reducevectortogtosx.cpp M /issm/trunk-jpl/src/c/modules/Solverx/Solverx.h  
 M /issm/trunk-jpl/src/c/modules/Solverx/Solverx.h A /issm/trunk-jpl/src/c/modules/Solverx/SolverxPetsc.h  
 M /issm/trunk-jpl/src/c/modules/SystemMatrixesx/SystemMatrixesx.h M /issm/trunk-jpl/src/c/modules/SystemMatrixesx/SystemMatrixesx.cpp  
 M /issm/trunk-jpl/src/c/modules/SystemMatrixesx/SystemMatrixesx.h M /issm/trunk-jpl/src/c/modules/UpdateDynamicConstraintsx/UpdateDynamicConstraintsx.h  
 M /issm/trunk-jpl/src/c/modules/UpdateDynamicConstraintsx/UpdateDynamicConstraintsx.cpp M /issm/trunk-jpl/src/c/modules/VecMergex/VecMergex.h  
 M /issm/trunk-jpl/src/c/modules/VecMergex/VecMergex.h M /issm/trunk-jpl/src/c/objects/Elements/Element.h  
 M /issm/trunk-jpl/src/c/objects/Elements/Penta.cpp M /issm/trunk-jpl/src/c/objects/Elements/Penta.h  
 M /issm/trunk-jpl/src/c/objects/Elements/Tria.cpp M /issm/trunk-jpl/src/c/objects/Elements/Tria.h  
 M /issm/trunk-jpl/src/c/objects/Loads/Icefront.cpp M /issm/trunk-jpl/src/c/objects/Loads/Icefront.h  
 M /issm/trunk-jpl/src/c/objects/Loads/Load.h M /issm/trunk-jpl/src/c/objects/Loads/Numericalflux.cpp  
 M /issm/trunk-jpl/src/c/objects/Loads/Numericalflux.h M /issm/trunk-jpl/src/c/objects/Loads/Pengrid.cpp  
 M /issm/trunk-jpl/src/c/objects/Loads/Pengrid.h M /issm/trunk-jpl/src/c/objects/Loads/Penpair.cpp  
 M /issm/trunk-jpl/src/c/objects/Loads/Penpair.h M /issm/trunk-jpl/src/c/objects/Loads/Riftfront.cpp  
 M /issm/trunk-jpl/src/c/objects/Loads/Riftfront.h M /issm/trunk-jpl/src/c/objects/Node.cpp  
 M /issm/trunk-jpl/src/c/objects/Node.h M /issm/trunk-jpl/src/c/objects/Numerics/ElementMatrix.cpp  
 M /issm/trunk-jpl/src/c/objects/Numerics/ElementMatrix.h M /issm/trunk-jpl/src/c/objects/Numerics/ElementVector.cpp  
 M /issm/trunk-jpl/src/c/objects/Numerics/ElementVector.h M /issm/trunk-jpl/src/c/objects/Numerics/Matrix.cpp  
 M /issm/trunk-jpl/src/c/objects/Numerics/Matrix.h M /issm/trunk-jpl/src/c/objects/Numerics/Vector.cpp  
 M /issm/trunk-jpl/src/c/objects/Numerics/Vector.h M /issm/trunk-jpl/src/c/shared/Alloc/alloc.cpp  
 M /issm/trunk-jpl/src/c/shared/Alloc/alloc.h M /issm/trunk-jpl/src/c/solutions/ResetBoundaryConditions.cpp M /issm/trunk-

jpl/src/c/solutions/convergence.cpp M /issm/trunk-jpl/src/c/solutions/solutions.h  
 M /issm/trunk-jpl/src/c/solvers/solver\_adjoint\_linear.cpp M /issm/trunk-jpl/src/c/solvers/solver\_linear.cpp  
 M /issm/trunk-jpl/src/c/solvers/solver\_newton.cpp M /issm/trunk-jpl/src/c/solvers/solver\_nonlinear.cpp  
 M /issm/trunk-jpl/src/c/solvers/solver\_stokescoupling\_nonlinear.cpp M /issm/trunk-  
 jpl/src/c/solvers/solver\_thermal\_nonlinear.cpp M /issm/trunk-jpl/src/mex/CreateJacobianMatrix/CreateJaco  
 M /issm/trunk-jpl/src/mex/CreateNodalConstraints/CreateNodalConstraints.cpp  
 M /issm/trunk-jpl/src/mex/GetSolutionFromInputs/GetSolutionFromInputs.cpp  
 M /issm/trunk-jpl/src/mex/InputUpdateFromSolution/InputUpdateFromSolution.cpp  
 M /issm/trunk-jpl/src/mex/Mergesolutionfromftog/Mergesolutionfromftog.cpp  
 M /issm/trunk-jpl/src/mex/Reduceload/Reduceload.cpp M /issm/trunk-jpl/src/mex/Reducevectortog/Redu  
 M /issm/trunk-jpl/src/mex/Reducevectortgos/Reducevectortgos.cpp M /issm/trunk-  
 jpl/src/mex/Solver/Solver.cpp M /issm/trunk-jpl/src/mex/SystemMatrices/SystemMatrices.cpp  
 M /issm/trunk-jpl/src/mex/UpdateDynamicConstraints/UpdateDynamicConstraints.cpp  
 Export determination: 6.

Rationale: Large commit, to strip out Petsc from the code. Created new Matrix  
 and Vector wrapper objects to the Petsc Mat and Vec objects. These wrappers  
 make it possible to hook up a different package to handle matrix and vector  
 operations. M /issm/trunk-jpl/m4/issm\_options.m4 Simplifying dakota glitch