## ACATS Modification List for ACATS 4.1

Version 4.1D March 31, 2017

#### What is this?

This is the ACATS modification list for ACATS 4.1. This document includes test corrections, test removals, and new tests for ACATS 4.1. ACATS 4.1 is the current test suite for Ada, covering the third edition of Ada, ISO/IEC 8652:2012 (usually known as "Ada 2012").

ACATS Modification List version 3.1Q for ACATS 3.1 is the current list for that test suite. ACATS 3.1 should be used for testing implementations that support Amendment 1 (ISO/IEC 8652:1995/AMD 1:2007, often known as "Ada 2005"), and will continue to be maintained as necessary for the foreseeable future.

ACATS Modification List version 2.6E for ACATS 2.6 is the current list for that test suite. ACATS 2.6 should be used for testing implementations of the second edition of Ada, ISO/IEC 8652:1995 (usually known as "Ada 95"); it also will continue to be maintained as necessary for the foreseeable future.

## Changes from the last list:

The grading tool was corrected to properly count Annex C RQMT failures in their own category (they had accidentally been counted as "NA (Compile)"). The table sizes in GRD\_DATA.A (part of the grading tool) were increased as the new tests added recently have caused them to be exceeded when the entire ACATS is graded at once.

New test C350001 checks that the object form of attribute Image is implemented.

Test C352001 had a Failed message that reflected Ada 95 requirements rather than the Ada 2005 requirements that are tested for. This is confusing, so it was corrected.

New tests B354002 and C354004 test the basic requirements for the Mod attribute.

New tests B35A001 and C35A001 checks that Small can be specified by an aspect specification and that the associated Legality Rules are checked.

New test C452002 checks that overloading resolution works as expected for Ada 2012 membership operations.

New test C453001 checks that modular adding operators wrap around for various user-defined and language-defined types.

New test C470001 checks that a qualified expression is a name and can be used in places that require a name. New test B470001 checks that a qualified expression is a constant view, regardless of what the expression is.

Modified test C480001 so that it didn't have any **in out** parameters in functions, as it is supposed to be valid for both Ada 2005 and Ada 2012.

Tests C611A04 and C611B03 (new last time) had a number of overlong lines corrected.

New tests B651001, B651002, B651003, C651001, and C651002 check rules involving nonreturning procedures.

Test B74203E used a number of attributes that are not defined in Ada 95, thus failing to test the objective. It was replaced by test B730013, which tests additional cases including attributes added by Ada 95.

New test BA21005 checks that Pure and Preelaborate aspects are not specified late, with a nonstatic value, or with a non-Boolean type.

A number of (very old) tests were withdrawn as their objectives and code are nearly identical to other tests. Such tests serve no purpose other than making the ACATS take longer to process. The tests in question are:

CD1009A has the same objective as one of the objectives of CD2A31C.

CD1009B has the same objective as one of the objectives of CD2A21C.

CD1009L has the same objective as CD2D13A.

CD1009M has the same objective and code layout as CD3014C.

Tests CD2A21C and CD2A31C were also withdrawn to be replaced by new tests CD30011 and CD30012, respectively. The new tests ensure that none of the checks of the withdrawn tests are lost, while adding applicability criteria and modern formatting.

New test CD30010 checks that aspect specifications can be used to specify Component\_Size. New tests BD30001, BD30002, and BD30003 check that legality rules are enforced for the type forms of aspect Size, Alignment, and Component Size.

New test CXAC009 checks that Stream IO.File Type has Preelaborable Initialization.

New tests posted between January 1, 2017 and March 31, 2017 will become required for conformity assessments on October 1, 2017. New tests posted between October 1, 2016 and December 31, 2016 will become required for conformity assessments on July 1, 2017. New tests posted between July 1, 2016 and September 30, 2016 will become required for conformity assessments on April 1, 2017. New tests posted before July 1, 2016 are required for conformity assessments. The effective dates of tests are marked in the lists.

Questions about this document? Contact the ACAA Technical Agent at agent@ada-auth.org.

## **ACATS 4.1 includes optional Test Grading tools**

ACATS 4.1 introduces new test grading tools.

When the ACATS was designed (as the ACVC in the early 1980s), the intention always was that running it would give a simple and clear Pass or Fail result. However, grading of tests (particularly of B and L Tests) is somewhat subjective and very time-consuming. (Test grading typically involved poring over compiler listings of the entire ACATS with a large highlighter.) The subjectivity was acceptable in the days of common formal testing, as the formal testers would enforce a common grading standard (even if no one could describe what that was), but in an age of self-testing, it reduces the value of the ACATS.

As such, we're introducing a long-overdue set of automated grading tools. These tools are intended to:

- Greatly reduce the effort to grade an ACATS test run (and, hopefully to reduce the cost of formal testing to make it a more practical option);
- Ensure that all users of the ACATS grade tests in the same way, thus making it more valid to compare ACATS results between different implementations and different testers;
- Give implementers certainty as to whether a particular test result is passing (whether the location of an error is "close enough" to the canonical position);
- Be able to detect process errors (especially errors of omission) that is, tests improperly run (for instance, files compiled in the wrong order where the ACATS requires an order), or not run at all (if one is checking off lines in a listing, it's hard to notice that some test or portion of a test is missing).

The tools also will optionally give feedback to implementers about quality of error message positioning and of error cascades (does one error generate multiple messages?). (Since "goodness of an implementation" is not something that the ACATS tests for, this is not an official goal for the tools.)

This is an ambitious set of goals. It's unlikely that they'll be completely met by the initial versions of the tools. As such, their use will be completely optional (but encouraged!) for ACATS 4.1. The tools will be updated periodically by the normal process for updating the ACATS – an ACATS Modification List like this one.

Details on the operation of the tools can be found in the ACATS 4.1 documentation (that documentation can be found at http://www.ada-auth.org/acats-files/4.1/docs/UG-6.HTM). As always, if you have questions, contact the ACAA Technical Agent at <a href="mailto:agent@ada-auth.org">agent@ada-auth.org</a>.

#### **Notice:**

The ACAA has created and maintains the Ada Conformity Assessment Test Suite for the purpose of conformity assessments conducted in accordance with the International Standard ISO/IEC 18009 - Ada: Conformity assessment of a language processor. This test suite should not be used to make claims of conformance unless used in accordance with ISO/IEC 18009 and any applicable ACAA procedures.

## List explanation:

Test numbers given are for the basic test. Categories are "Withdrawn" (the test should not be processed for Ada conformity assessments); "Allowed Modification" (either the original test or the modified one should be processed for Ada conformity assessments); "Modified" (the modified test must be processed for Ada conformity assessments); "Pending New" (the test does not need to be processed for Ada conformity assessments, but will be added in the future); "New" (the test is processed for Ada conformity assessments).

ACATS version labels are provided with all new and modified tests. Use this label to retrieve the test from the ACATS VCS. See "How to get new and modified tests".

In citations, line numbers are given relative to the start of a test file in the format of '@<line#,line#,...>'; if a test program comprises more than one file, then the particular file will be indicated by "fn", where "n" is the test-program name's file-designator numeral. E.g., "B38103E: @f1-31, ... " denotes test file b38103e1.ada. In cases where there are two or more rationales for different errors in a test program, these different rationales with their respective line citations are listed on separate lines. References to the Ada standards are given in the format:

```
<section|chapter>.<clause>[.<subclause>]:<paragraph>
```

These references are to the Ada standard as available at <a href="http://www.adaic.org/resources/add-contentstandards/12rm/html/RM-TOC.html">http://www.adaic.org/resources/add-contentstandards/12rm/html/RM-TOC.html</a>.

Main list:

Check that the object form of the Image attribute is implemented.

C352001 [Allowed Modification] New VCS Label: A4\_1D Org VCS Label: A4\_1
Required after 2017-07-01
Corrected Failed message @267 to reflect intended result.

B354002 [Pending New] New VCS Label: A4\_1D
Required after 2017-10-01
Test basic requirements for the Mod attribute.

C354004 [Pending New] New VCS Label: A4\_1D Required after 2017- $\overline{10}$ -01 Test basic operation of the Mod attribute.

B35A001 [Pending New] New VCS Label: A4\_1D Required after 2017-10-01 Check Legality Rules are enforced when Small is specified by an aspect specification.

C35A001 [Pending New] New VCS Label: A4\_1D Required after 2017-10-01 Check that Small can be specified by an aspect specification.

B38003D [Modified] VCS Label: A4\_1A Corrected error tags @70,76,82,88 so "optional" and "error" are on the same line, as required by the test standards.

C3A0030 [New] VCS Label: A4\_1A Check that an access discriminant is only null excluding if it includes a null exclusion.

B3A1001 [Modified] VCS Label: A4\_1A Split Pack6 so possible error sets don't intersect; fixed overlong lines.

B3A1002 [Modified] VCS Label: A4\_1A Split Pack6 so possible error sets don't intersect; fixed overlong lines.

C452002 [Pending New] New VCS Label: A4\_1D Required after 2017- $\overline{10}$ -01 Check that overloading resolution of Ada 2012 membership operations works as intended.

C453001 [Pending New] New VCS Label: A4\_1D Required after 2017-10-01 Check that modular adding operators wrap around rather than raising Constraint Error.

B455002 [Modified] VCS Label: A4\_1A Corrected casing of error tags and fixed overlong lines.

C460014 [Pending New] New VCS Label: A4\_1C
Required after 2017-10-01
Check that Constraint\_Error is raised appropriately when converting access-to-classwide to another access type.

C460015 [Pending New] New VCS Label: A4\_1C
Required after 2017-10-01
Check that Constraint\_Error is raised appropriately when converting access-to-limited-classwide to another access type.

- B470001 [Pending New] New VCS Label: A4\_1D
  Required after 2017-10-01
  - Check that qualified expressions are a constant view of the expression, even if the expression is a variable object.
- C470001 [Pending New] New VCS Label: A4\_1D Required after 2017-10-01

Check that qualified expressions are a name, and thus can be used as a prefix and other places a name is required.

- C480001 [New] VCS Label: A4\_1A Check that an initialized allocator for a class-wide type does an accessibility check on the tag of the initializing object.
- C480001 [Allowed Modification] New VCS Label: A4\_1D Org VCS Label: A4\_1A Required after 2017-07-01

  Changed mode to "in" (instead of "in out") @103 & 144 as those parameters are used in functions, making that an Ada 2012 feature, and this is an Ada 2005 test.
- C52101A [Modified] VCS Label: A4\_1A Corrected comment @49 not to have the form of an error tag.
- B611001 [New] VCS Label: A4\_1A

  Check that Pre and Post are only allowed on subprograms and entries (and not on subprogram instances).
- B611002 [New] VCS Label: A4\_1A Check that Pre and Post are not allowed on subprograms acting as completions.
- B611002 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1A Required after 2017-07-01 Corrected several error location codes.
- B611003 [New] VCS Label: A4\_1A Check that Pre'Class and Post'Class are only allowed on primitive subprograms of tagged types. (Normal tagged types and interfaces.)
- B611004 [New] VCS Label: A4\_1A Check that Pre'Class and Post'Class are not allowed on subprograms acting as completions.
- B611005 [New] VCS Label: A4\_1A

  Check that Pre and Post are not allowed on abstract subprograms and null procedures.
- B611006 [New] VCS Label: A4\_1A Check that the restrictions on Pre'Class and Post'Class expressions added by AI12-0113-1 are enforced.
- B611006 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1A Required after 2017-07-01 Clarified error @208; changed error @233 & @247 to OK (as the inherited Proc4 routine is abstract and thus is not subject to the new rule).
- B611007 [New] VCS Label: A4\_1A Check that Pre'Class and Post'Class are not allowed on entries and protected subprograms of untagged task and protected types.

- B611008 [New] VCS Label: A4\_1A

  Check various rules about the use of the Result attribute.
- B611009 [New] VCS Label: A4\_1A Check that F'Result is not allowed in the body of F.
- B611010 [New] VCS Label: A4\_1A Check that the Old attribute is not allowed in a subprogram or entry body, or in an accept statement.
- B611011 [New] VCS Label: A4\_1A Check the Old attribute cannot be used within a precondition expression nor in a generic specification outside of a postcondition expression.
- B611012 [New] VCS Label: A4\_1A Check that the prefix of an Old attribute cannot contain the Result attribute, another Old attribute, nor the index of a quantified expression.
- B611013 [New] VCS Label: A4\_1A  $\,$  For a discrete X, check that X'Old has the nominal subtype of X.
- B611014 [Pending New] New VCS Label: A4\_1C
  Required after 2017-10-01
  [VCS Label A4\_1B] If an Old attribute reference occurs in at a place where it is potentially unevaluated, check that the prefix must statically denote an object.
  [VCS Label A4 1C] Corrected error location codes @240 and @252.
- B611015 [Pending New] New VCS Label: A4\_1B
  Required after 2017-07-01
  Check that the prefix of an Old attribute cannot have a limited type.
- B611016 [Pending New] New VCS Label: A4 1B Required after 2017-07-01 Check that tagged task and tagged protected types do not allow Pre'Class and Post'Class, nor are they allow on operations of those types.
- B611017 [Pending New] New VCS Label: A4\_1C
  Required after 2017-10-01
  [VCS Label A4\_1B] Check that Pre'Class cannot be specified for an overriding of a subprogram that does not specify Pre'Class.
  [VCS Label A4\_1C] Declaration of New\_Proc @358 is not overriding and thus not subject to the rule. The declaration of Shine @149 never overrides primitives of the actual type by 12.3(18), thus this rule does not apply to instances of Gen2. Added an example using a generic derived type.
- B611018 [Pending New] New VCS Label: A4\_1C
  Required after 2017-10-01
  [VCS Label A4\_1B] Check 6.1.1(10-16/3).
  [VCS Label A4\_1C] Type T08 @230 and @241 needs to be declared abstract.
- B611019 [Pending New] New VCS Label: A4\_1C Required after 2017-10-01 [VCS Label A4 1B] Check 6.1.1(17/3).

[VCS Label A4\_1C] The declaration of Get\_Count @112 never overrides primitives of the actual type by 12.3(18), thus this rule does not apply to instances of Gen2. Added examples using generic derived types.

- C611A01 [New] VCS Label: A4\_1A

  Check that preconditions and postconditions where both specific and class-wide contracts apply are checked properly.
- C611A02 [New] VCS Label: A4\_1A

  Check that the correct expressions are evaluated for specific preconditions and postconditions, and that they are evaluated at the correct point.
- C611A02 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1A Required after 2017-07-01

  The main subprogram name was corrected to follow the rules of the ACATS User's Guide, clause 4.3.3.
- C611A03 [New] VCS Label: A4\_1A

  Check that the correct expressions are evaluated for class-wide preconditions and postconditions, and that they are evaluated at the correct point.
- C611A03 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1A
  Required after 2017-07-01
  The main subprogram name was corrected to follow the rules
  of the ACATS User's Guide, clause 4.3.3.
- C611A04 [Pending New] New VCS Label: A4\_1D
  Required after 2017-10-01
  [VCS Label A4\_1C] Check that the correct expressions are evaluated for class-wide preconditions and postconditions of an interface type, and that they are evaluated at the correct point.
  [VCS Label A4 1D] Fixed too long lines.
- C611B01 [New] VCS Label:  $A4_1A$  Check that X'Old has the tag of X and not the tag of the nominal subtype of X (for Post).
- C611B01 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1A Required after 2017-07-01

  The main subprogram name was corrected to follow the rules of the ACATS User's Guide, clause 4.3.3.
- C611B02 [New] VCS Label: A4\_1A

  Check that X'Old has the tag of X and not the tag of the nominal subtype of X (for Post'Class).
- C611B02 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1A Required after 2017-07-01

  The main subprogram name was corrected to follow the rules of the ACATS User's Guide, clause 4.3.3.
- C611B03 [Pending New] New VCS Label: A4\_1D
  Required after 2017-10-01
  [VCS Label A4\_1C] Check that X'Old has the tag of X and not the tag of the nominal subtype of X (for Post'Class of an interface type).
  [VCS Label A4 1D] Fixed too long lines.

- B62001C [Modified] VCS Label: A4\_1A Changed error @35 to be optional, as the syntax error @33 is required (and the comment that only one error need be detected is boqus).
- B62001D [Modified] VCS Label: A4\_1A Changed error @41 to be optional, as the syntax error @33 is required (and the comment that only one error need be detected is bogus).
- B65005A [Allowed Modification] New VCS Label: A4\_1P Org VCS Label: A4\_1 Required after 2017-07-01 Added additional error locations to directly support common error reporting strategies.
- B65005B [Allowed Modification] New VCS Label: A4\_1P Org VCS Label: A4\_1 Required after 2017-07-01

  Added additional error locations to directly support common error reporting strategies.
- C650B04 [New] VCS Label: A4\_1A

  Check that the result of a function that returns a class-wide tagged type does an accessibility check on the tag of the result object when the result expression is class-wide.
- B651001 [Pending New] New VCS Label: A4\_1D
  Required after 2017-10-01
  Check that a return statement cannot apply to a nonreturning procedure, and that a renames-as-body of a nonreturning procedure has to be a nonreturning procedure (pragma No Return version).
- C651001 [Pending New] New VCS Label: A4\_1D
  Required after 2017-10-01
  Check that a nonreturning procedure can raise an exception and raises Program Error otherwise (pragma No Return version).
- B651002 [Pending New] New VCS Label: A4\_1D Required after 2017-10-01 Check that a return statement cannot apply to a nonreturning procedure, and that a renames-as-body of a nonreturning procedure has to be a nonreturning procedure (aspect No Return version).
- C651002 [Pending New] New VCS Label: A4\_1D
  Required after 2017-10-01
  Check that a nonreturning procedure can raise an exception and raises Program\_Error otherwise (aspect No\_Return version).
- B651003 [Pending New] New VCS Label: A4\_1D
  Required after 2017-10-01
  Check that an aspect No\_Return can only be given on a procedure or generic procedure, that the expression has to be nonstatic, and that the aspect is not given on an instance or null procedure.
- B730006 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Corrected format of error tags; added location indicators.
- B730011 [Pending New] New VCS Label: A4\_1C
  Required after 2017-10-01
  Test various rules about completions of private types and extensions; replaces test B74001A.

- B730012 [Pending New] New VCS Label: A4\_1C Required after 2017-10-01
  - Test various rules about completions of private types and extensions in generic units; replaces test B74001B.
- B730013 [Pending New] New VCS Label: A4\_1D Required after 2017-10-01
  - Test operations available for a private type; replaces test B74203E.
- B73001A [Allowed Modification] New VCS Label: A4\_1P Org VCS Label: A4\_1 Required after 2017-07-01
  - Added additional error locations to directly support common error reporting strategies.
- B73001B [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01
  - Added additional error locations to directly support common error reporting strategies.
- B73001C [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01
  - Added additional error locations to directly support common error reporting strategies.
- B73001D [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01
  - Added additional error locations to directly support common error reporting strategies.
- B73001E [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01
  - Added additional error locations to directly support common error reporting strategies.
- B73001F [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01
  - Added additional error locations to directly support common error reporting strategies.
- B73001G [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01
  - Added additional error locations to directly support common error reporting strategies.
- B73001H [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01
  - Added additional error locations to directly support common error reporting strategies.
- B740003 [Modified] VCS Label: A4 1A
  - Modified criteria @75 so that it doesn't look like an error tag to the grading tools; also fixed an overlong line.
- B74001A [Withdrawn] VCS Label: A4\_1C Replaced by B730011.
- B74001B [Withdrawn] VCS Label: A4\_1C Replaced by B730012.

- B74203E [Withdrawn] VCS Label: A4\_1D Replaced by B730013.
- B750A07 [New] VCS Label: A4\_1A Check that only legal expressions are allowed in the return expression of an expression function that returns a limited type.
- B83F02C [Modified] VCS Label: A4\_1A

  Updated many optional error markers to match ACATS standards.
- B91003A [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added additional error locations to directly support common error reporting strategies.
- B91003B [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added additional error locations to directly support common error reporting strategies.
- B91003C [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added additional error locations to directly support common error reporting strategies.
- B91003D [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added additional error locations to directly support common error reporting strategies.
- B940003 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01

  Added additional error locations to directly support common error reporting strategies.
- B940004 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1
  Required after 2017-07-01
  Split into 8 files; added location indicators.
- B95007B [Modified] VCS Label: A4\_1A Fixed error markers @62,66,70 to match ACATS standards.
- Required after  $2017-\overline{10}-01$ Test that Pure and Preelaborate aspects cannot be specified late, with a nonstatic expression, or an expression of a type other than Boolean.
- BB42001 [New] VCS Label: A4\_1A

  Check that the arguments of a pragma Assert have to have the correct types.

BA21005 [Pending New] New VCS Label: A4 1D

- BB42001 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1A Required after 2017-07-01 Corrected two incorrect error location codes.
- CB42001 [New] VCS Label: A4\_1A Check the usual operation of pragma Assert, including the optional message.

- BB42002 [New] New VCS Label: A4\_1A Check that the arguments of a pragma Assert cannot be reordered even if named notation is used.
- CB42002 [New] New VCS Label: A4\_1A

  Check that if the assertion policy is Ignore, none of the expressions of a pragma Assert are evaluated and no exception is raised by the pragma.
- BB42003 [New] VCS Label: A4\_1A Check that a pragma Assertion\_Policy is illegal if the policy is not recognized.
- CB42003 [New] VCS Label: A4\_1A

  Check that procedure Ada.Assertions.Assert evaluates its arguments and raises Assertion Error regardless of the assertion policy.
- CD1009A [Withdrawn] VCS Label: A4\_1D

  Has one of the objectives of, and thus redundant with, test
  CD2A31C (now CD30012).
- CD1009B [Withdrawn] VCS Label: A4 $\_$ 1D Has one of the objectives of, and thus redundant with, test CD2A21C (now CD30011).
- CD1009L [Withdrawn] VCS Label: A4\_1D Virtually identical to, and thus redundant with, test CD2D13A.
- CD1009M [Withdrawn] VCS Label: A4\_1D Virtually identical to, and thus redundant with, test CD3014C.
- CD11001 [New] VCS Label: A4\_1A Check that appropriate entities are visible in an aspect specification.
- CD2A21C [Withdrawn] VCS Label: A4\_1D Replaced by CD30011.
- CD2A31C [Withdrawn] VCS Label: A4\_1D Replaced by CD30012.
- BD30001 [Pending New] New VCS Label: A4\_1D
  Required after 2017-10-01
  Check Legality Rules are enforced when Size is specified by an aspect specification for a type.
- BD30002 [Pending New] New VCS Label: A4\_1D Required after 2017-10-01 Check Legality Rules are enforced when Alignment is specified by an aspect specification for a type.
- BD30003 [Pending New] New VCS Label: A4\_1D
  Required after 2017-10-01
  Check Legality Rules are enforced when Component\_Size is specified by an aspect specification.
- CD30010 [Pending New] New VCS Label: A4\_1D
  Required after 2017-10-01
  Check that Component\_Size can be specified via an aspect specification.

CD30011 [Pending New] New VCS Label: A4\_1D Required after 2017-10-01

Merges legacy tests CD1009B and CD2A21C to eliminate duplication (CD1009B has the same objective as one of the objectives of CD2A21C) while adding modern formatting and applicability criteria.

CD30012 [Pending New] New VCS Label: A4\_1D Required after 2017-10-01

Merges legacy tests CD1009A and CD2A31C to eliminate duplication (CD1009A has the same objective as one of the objectives of CD2A31C) while adding modern formatting and applicability criteria.

- BD4003A [Modified] VCS Label: A4\_1A Moved error marker from 066 to 067 so it is on the incorrect construct.
- CXAC009 [Pending New] New VCS Label: A4\_1D
  Required after 2017-10-01
  Check that Stream\_IO.File\_Type has Preelaborable\_Initialization.
- CXB3023 [New] VCS Label: A4\_1A

  Check that a value of an unchecked union type (defined with pragma Unchecked Union) can be passed to a C function.
- CXB3024 [New] VCS Label: A4\_1A

  Check that a value of an unchecked union type (defined with aspect Unchecked Union) can be passed to a C function.

==== Annex C =====

[None.]

==== Annex D =====

- CXD2007 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added missing N/A  $\Rightarrow$  Error tag.
- LXD7001 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added missing error tag.
- LXD7003 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1
  Required after 2017-07-01
  Added missing error tag.
- LXD7004 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added missing error tag.
- LXD7005 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added missing error tag.
- LXD7006 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added missing error tag.

- LXD7007 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added missing error tag.
- LXD7008 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1
  Required after 2017-07-01
  Added missing error tag.
- LXD7009 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added location indicators.
- CXDB001 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added missing N/A  $\Rightarrow$  Error tag.
- CXDB002 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added missing N/A  $\Rightarrow$  Error tag.
- CXDB003 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added missing N/A  $\Rightarrow$  Error tag.
- CXDB004 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1
  Required after 2017-07-01
  Added missing N/A => Error tag.

==== Annex E =====

[None.]

==== Annex F =====

[None.]

==== Annex G =====

==== Annex H =====

[None.]

- LXH4001 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1
  Required after 2017-07-01
  Corrected format of error tag; added location indicators.
- LXH4003 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1
  Required after 2017-07-01
  Corrected format of error tag; added location indicators.
- LXH4006 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added missing error tags.
- LXH4009 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1 Required after 2017-07-01 Added missing error tags.
- LXH4013 [Allowed Modification] New VCS Label: A4\_1C Org VCS Label: A4\_1
  Required after 2017-07-01
  Added missing error tags.

LXH4014 [Allowed Modification] New VCS Label: A4 1C Org VCS Label: A4 1 Required after 2017-07-01 Added missing error tags.

==== Support =====

F611A00 [New] VCS Label: A4 1A

Foundation for tests  $\overline{C}611A01$ , C611A02, and C611A03.

F611A00 [Allowed Modification] New VCS Label: A4 1C Org VCS Label: A4 1A Required after 2017-07-01

Added additional data for test C611A04. The changes are only needed for that test.

F611B00 [New] VCS Label: A4 1A

Foundation for tests  $\overline{C}611B01$ , C611B02, and C611B03.

GRADE.A [Allowed Modification] New VCS Label: A4 1D Org VCS Label: A4 1 Required after 2017-07-01

[VCS Label A4 1C] Allowed manual grading for tests that are missing execution or linking (with no earlier errors). Corrected the result for binder crashes. Added category totals to the summary.

[VCS Label A4 1D] Corrected so that Annex C RQMT failures are properly counted in their own category.

GRD DATA.A [Allowed Modification] New VCS Label: A4 1D Org VCS Label:  $A4 \overline{1}$ 

Required after 2017-07-01

Increased table sizes as the new tests have caused grading the entire ACATS to exceed the old limits.

SPECIAL.A [Allowed Modification] New VCS Label: A4 1C Org VCS Label: A4 1

Required after 2017-07-01

Added test BA21005 to the list of optional main subprograms.

SUMMARY.A [Allowed Modification] New VCS Label: A4 1C Org VCS Label: A4 1

Required after 2017-07-01

Corrected identification of main subprograms in modern tests. Changed the unit name for subunits to be the full expanded name including the parent name.

## How to get new and modified tests:

The official home of the ACATS test suite is the ACAA web site. The site can be accessed at www.adaauth.org.

The complete set of official new and modified tests are available in the Mod 4 1D.Zip and Tar files on the ACAA web site. As always, when a multi-file test is modified, we provide all of the files, including the unmodified files.

Individual new and modified tests can be retrieved from the ACATS VCS. Simply navigate to the appropriate directory (folder), and select the test you want. Select the revision you want (usually the most recent) and it will be retrieved for you. Tests are stored in directories that correspond to the test's prefix.

For instance, the test CD92001.A will be found in the CD directory. You can also browse the differences between versions of a test. [In case of a conflict, the files in the ACATS VCS should be considered the 'official' versions.]

If you cannot get the files from the official site or you cannot get the files in a format appropriate for your processor, please contact your ACAL.

The baseline ACATS 4.1 is available in various formats on the ACAA web site.

## **Summary lists:**

## Withdrawn Tests

(Refer to the main list for details)

B74001A B74001B B74203E CD1009A CD1009B CD1009L CD1009M CD2A21C CD2A31C

## **Allowed Modification Tests**

(Refer to the main list for details)

```
B611006
            2017-07-01
            2017-07-01
B63005A
            2017-07-01
B65005B
            2017-07-01
B730006
            2017-07-01
B73001A
B73001B
            2017-07-01
            2017-07-01
B73001C
B73001D
            2017-07-01
            2017-07-01
B73001E
            2017-07-01
B73001F
            2017-07-01
B73001G
B73001H
            2017-07-01
            2017-07-01
B732C02
            2017-07-01
B91003A
            2017-07-01
B91003B
            2017-07-01
B91003C
            2017-07-01
B91003D
            2017-07-01
B940003
            2017-07-01
B940004
BB42001
            2017-07-01
C352001
            2017-07-01
            2017-07-01
C480001
C611A02
            2017-07-01
            2017-07-01
C611A03
            2017-07-01
C611B01
            2017-07-01
C611B02
            2017-07-01
CXD2007
```

CXDB001	2017-07-01
CXDB002	2017-07-01
CXDB003	2017-07-01
CXDB004	2017-07-01
F611A00	2017-07-01
LXD7001	2017-07-01
LXD7003	2017-07-01
LXD7004	2017-07-01
LXD7005	2017-07-01
LXD7006	2017-07-01
LXD7007	2017-07-01
LXD7008	2017-07-01
LXD7009	2017-07-01
LXH4001	2017-07-01
LXH4003	2017-07-01
LXH4006	2017-07-01
LXH4009	2017-07-01
LXH4013	2017-07-01
LXH4014	2017-07-01
GRADE	2017-07-01
GRD_DATA	2017-07-01
SPECIAL	2017-07-01
SUMMARY	2017-07-01

## **Modified Tests**

(Refer to the main list for details)

B38003D B3A1001 B3A1002 B455002 B62001C B62001D B740003 B83F02C B95007B

BD4003A C52101A

## **New Tests**

(Refer to the main list for details)

B611001 B611002 B611003 B611004 B611005 B611006 B611007 B611008 B611009 B611010 B611011 B611012 B611013 B750A07 BB42001 BB42002 BB42003 C3A0030 C480001 C611A01 C611A02 C611A03 C611B01 C611B02 C650B04 CB42001 CB42002 CB42003 CD11001 F611A00 F611B00

# **Pending New Tests**

## (Refer to the main list for details)

B354002	2017-10-01
B35A001	2017-10-01
B611014	2017-10-01
B611015	2017-07-01
B611016	2017-07-01
В611017	2017-10-01
В611018	2017-10-01
В611019	2017-10-01
B651001	2017-10-01
B651002	2017-10-01
B651003	2017-10-01
B730011	2017-10-01
В730012	2017-10-01
В730013	2017-10-01
BA21005	2017-10-01
BD30001	2017-10-01
BD30002	2017-10-01
BD30003	2017-10-01
C350001	2017-10-01
C354004	2017-10-01
C452002	2017-10-01
C453001	2017-10-01
C460014	2017-10-01
C460015	2017-10-01
C470001	2017-10-01
C611A04	2017-10-01
C611B03	2017-10-01
C651001	2017-10-01
C651002	2017-10-01
CD30010	2017-10-01
CD30011	2017-10-01
CD30012	2017-10-01