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This is the second ACS development to be used in Cycle 8. Below is the list of addressed tickets.

## News

- Organization and execution of [ACS Workshop #12](#)
- ACE Monotonic clock initial tests have been performed with successful results
  - Further tests on the simulation and production environment need to be performed before changing the default configuration

## Code

- Python 3 interpreter as default
- Increased speed of ACS initialization script helper (acsutilBlock) (~10 seconds)
- Python 3 compatibility for ComponentCallerAPI and EventConverter
- Thread-safe improvements (acsFindFile, bulkDataConfiguration, characteristic component properties registration)
- Newer g++ versions compatibility (still works with 4.8.5 as usual, but also 8.3.1)
- Bug in deactivating/reactivating components with BACI properties without restarting the container was sorted out
- RHEL / CentOS 8 compatibility done

key	summary	type	created	updated	due	assignee	reporter	priority	status	resolution
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```
git status
On branch integration/COMMON-2020AUG
Your branch is up to date with 'origin/integration/COMMON-2020AUG'.

git log --no-merges --oneline origin/master..origin/integration/COMMON-2020AUG -- ACS
12db304b99 (origin/feature/ICT-17223) ICT-17223: Fixing small typo in reference file of acsutil module's tests
05285c76ff ICT-17223: Improved acsutilBlock behavior to print as before, while checking status more frequently
ddc23982b3 ICT-17223: Chnged small typo in file name used for testing the changes
3ef3d09f8d (origin/bugfix/ICT-16800) ICT-16800: Removing trailing line
38667b2eaa ICT-16800: The servant counter was corrected considering the executions of components_available and
components_unavailable
3e2bd6b070 ICT-17223: Correcting a small typo in acsstartupPids script
a017ffe7f3 ICT-17223: Making acsutilBlock and initialization scripts more efficient
8545f17eac (origin/feature/ICT-17222) ICT-17222: Making ComponentCallerAPI and EventConverter Python 3
compatible
23c25f1605 (origin/bugfix/ICT-17148) Added fix for ICT-17148
14ffff77c4 (origin/feature/ICT-17135) ICT-17135: Removed code that prevented considering control components
normally in HibernateServer
9fbf6a4141 ICT-16964: Modifications to MonitoringSyncTool to ignore MonitorPoint table as described in ICT-9553
9ca3c5fed0 (origin/feature/ICT-17111) ICT-17111: Fixed the _duplicate method type return for MockComponent class
3c6cf9e39a (origin/feature/ICT-17110) ICT-17710: Fixed the constness of == and != operands in acsalarm Property
class
81b20caf87 ICT-16964: Removed all cdb_rdb hard-coded classes copied from ARCHIVE/Database codegen
b49c3c21a3 (origin/bugfix/ICT-17036) ICT-17036: Changed the strtok for strtok_r implementation to be thread
safe both in acsutilFindFile and bulkDataNTConfiguration files
```

87a0cab897 (origin/feature/ICT-16782) ICT-16782: Configured .bash\_profile.acs to use 'command' to ensure no mix with local aliases while respecting changes in PATH for system utilities  
e2dlbf0b7c (origin/feature/ICT-16948) ICT-16948: Added new entries to BDNT XSD Schemas to configure Stream/Flow profiles The implementation was made compatible to consider these changes  
057f81f3c2 (origin/feature/ICT-16954) ICT-16954: Modified default interpreter to be Python 3.6.9  
aafa8b0fa5 (origin/task/ICT-16965) ICT-16965: Updated ACS version to ACS-2020AUG  
bc09816b41 (origin/bugfix/ICT-16945-ant-is-reporting-that-it-fails-even-though-its-installed-correctly) Property junit.batch not needed  
bf944c88ab ICT-16945 Avoid to run task junit-batch

git log --no-merges --oneline origin/master..origin/integration/COMMON-2020AUG -- ARCHIVE  
3eeb7c64de (origin/bugfix/ICT-17002-asdmexportlight-is-picking-up-xsl-transformer-from-xmlparserv2-again) ict-17002 changing service names so that the pipeline integration classes still work  
672018b7ee ict-17002 had to update log4j2 version due to oracle xml incompatibilities  
697c89eebd ict-17002 adapter to changed package structure in DataPacker  
5e7e2eb827 ict-17002 adapter to changed package structure in DataPacker  
64cbe32013 ict-17002 adapter to changed package structure in DataPacker  
cde0006c9d ICT-17002 corrected scripts, downgrading commons-io to align with ACS-shipped version, correcting classpaths after DataPacker refactoring  
a3469dd20b ICT-17002 downgraded commons-io from 2.6 to v2.0 in order to work in the ACS environment  
a31625a886 ict-17002 updated asdmexportlight version  
9dab7a0b64 (origin/feature/ICT-16986-project-code-generator-support-new-phased-array-project-type) ICT-16986 added Phased Array Project Type: P  
081b2aeba0 (origin/feature/ICT-16964) ICT-16871: Reverted the change in ARCHIVE/TMCDB/Database to enable code generation from DDL file as a consequence of ICT-16964 changes  
1efc60d8a7 Correct the way the key for the DefaultCANAddress table is defined  
95d0388f5c Remove the stub function for getting the default CAN address when simulating. Replace it with the TMCDB functions that are used when not simulating. This required code to populate this table when simulating.  
556a1fc75f Manually revert a change that was committed as at the wrong time.  
0a7a74d8a7 Simulate get functions to get the serial number. This became necessary as more of the TMCDB is being tested.  
3d8a29d056 ICT-16941: updated poms -> 2020.08-SNAPSHOT

git log --no-merges --oneline origin/master..origin/integration/COMMON-2020AUG -- ICD

3072d733e4 Added the getScanNumber function to the Array. At the moment the function always returns zero.  
5a8547e0f2 (origin/feature/ICT-17088-remove-dependency-on-h2) ICT-17088 Removed useless dependency and upgraded ADAPT version to 2020.08  
bad6bae77f ICT-17051 Adapted to new dependency versions  
5565fa82f4 ICT-17051 Upgraded versions of Hibernate, Spring, Spring Security, javax.activation and javax.servlet  
bd6ea195c3 Added the expertParameters element to the sciencegoal  
44cb56d83e Added expertParameters to the science goal  
721f655d2b ACASpectrometerCorrelatorConfiguration subclasses AbstractCorrelatorConfiguration  
da8ff682ce Excluding xml-apis in poms to fix Java 11 IDE issues  
9e01ae4006 Removed ws-commons-util dependency from icd/obops maven-master.pom  
fef8043f21 Changed to java 11 in poms  
b5b22f737e Track changes in the exception types  
6a9312b27a Remove most exception definitions. All functions now throw the same exception type. This should simplify error handling in client code.  
a7328fe116 ICT-17112 aqua hashCode correction  
f33546e9e0 ICT-17112 added equals & hashCode to StatusPF classes  
7ff2aaaa8c ICT-17112 moved annotations to member vars and re-generated eq&hc  
1961b96e50 ICT-17083: Ensure that message-bus-persisted-rabbitmq module installs cx-oracle compatible with Python 2 and 3  
c54480b312 Incremented minor version for ACA spectrometer changes  
c79abb9a0b Ensure the test works even if no TMCDB\*Add.xml files are in the path.  
5cd55eafed Added changes for ACA spectrometer correlator configuration  
95d0388f5c Remove the stub function for getting the default CAN address when simulating. Replace it with the TMCDB functions that are used when not simulating. This required code to populate this table when simulating.  
b944ca7feb Improve the error handling when the CAN address cannot be obtained from the TMCDB. This fixes ICT-13736.  
a86dd0c3f6 Start and stop the collection of debug logs  
d05bblacaf Do not call functions that will throw exceptions if the TmcdB\*Add.xml files are not loaded  
7a3b78de57 Improve error handling  
1babbb2302 Improve the error handling when a TmcdB\*Add.xml file cannot be found  
2bffc0c9ff Improve the error handling when a TmcdB\*Add.xml file cannot be found  
dcbba8384c Updated poms to 2020.08  
b9c336cb7c Use JPA transactions. Review and update the visibility of member functions  
da992a02d7 The loadAssembly function now uses JPA interfaces  
9c369f3c9d Improve the error handling when loading files into the TMCDB  
f5a00fff87 Improve the error handling in the loadLruType function

4d27b93fb2 Better handle the case where a TMCDB\*Add file cannot be found

5a6531b4c1 Do not assume the weather stations will consistently be returned in the same order.

5dc9606263 (origin/feature/ICT-16984) ICT-16984: Python Message Bus updated and CAS Oidc security implementation (ICT-16845)

8fa90eb14a Increase the priority of a log message

9649ffe2a6 Use assertions for all tests. Its no longer necessary to eyeball the results.

26333d9d89 Add a bunch of asserts. Still more to do

7a9da8dd34 Recast the test within the UnitTest framework. Now need to add lots of assertions

fbefb3559a Use JPA interfaces to update the hw schema table

969c6d10fd Start using JPA interfaces for data base access

7af0ela91f Refactor the loadAssemblyData function into a number of smaller more focussed functions.

6b70f83f2a Start splitting up the big loadAssemblyData function

3eb421f050 Use JPA functions to set up the test

fdd5a8129f Remove an unused parameter

88e6acbc2f Add a check for an error that, if it had been in place last week, would have saved me a lot of time.

336f880b07 Improve some logging

3d8a29d056 ICT-16941: updated poms -> 2020.08-SNAPSHOT

b61087fedf (origin/feature/ICT-16904) ICT-16904: Add the new state CalOnlyIngestion to the APDM

25e0a03208 The TMCDB\_IDL namespace isa replaces with the TMCDB namespace. I do not understand how this was missed in the previous merge.

0fac3c56ea Improve the error handling in the getWVRParameters function

be82c3bfb8 Improve the error handling in the getWVRParameters function

5f3f43b112 Change the way exceptions are thrown so that the stack trace contains the name of the function that threw the exception.

f85f7ffa72 Improve the error handling in the the getPolarizationOrientation function

2e12273417 Added session management o all remaining functions. This involved removing the unused getPads function. It duplicated the getAllPadInfo function.

eefb52d3c7 The getAntenna function now throws an exception instead of returning null if an antenna is not found. This simplifies error handling.

42a976b9a3 Error handling improvements

6248b18ca9 Remove an interface. It's no longer needed as: 1. A proxy class is no longer used. 2. There are now just two accessor classes and one is a subclass of the other.

d811a53911 Remove the proxy class as its no longer needed. 1. Session and transaction managemnet are now done in the component class. 2. Exceptions are directly propagated.

e115207a89 Replace the Hibernate session and transaction handling code in the Proxy class with JPA style session and transaction handling code in the component class.

798cef8e98 Use the right log file name

230863ac2d Add a test of the getAssemblyConfigData function

4db310e79f Reinstate the loading of assembly data. I had incorrectly thought that was part of the sw side of the TMCDB.

850ef5f67c Add tests for the getStartup functions

dcdc7020f8 Improve the error handling in teh getStartup\* functions

c5f666c8ac Improve an error message

5a274e4e01 Test a lot more functions. Some are stil not tested

5a66a5ad18 Connected PM01 to both correlators

1ebfdd6ff3 Improve the documentation

c200fc97bd (origin/feature/ICT-16382) ICT-16382: Upgraded pyfits from version 1.3 to astropy.io.fits version 2.0.16

The officially supported OS is the 64 bit version of "Red Hat Enterprise Linux Server release 7.6 (Maipo)". The binary distribution of ACS (tarball) is made for this OS. We also successfully use its clone "CentOS 7.6".

For all machines the expected kernel is 3.10

The expected and actual versions of compilers, ORBs and various RPMs can be found by running the command =acsConfigReport=, both for required RPMs and for software shipped together with ACS. To get a rough overview before installing ACS, here are the most basic ones:


- gcc: 4.8.5 RHEL 7.6
- java: openjdk-11.0.4
- python: 2.7.16 and 3.6.9
- ACE: 6.4.3
- TAO: 2.4.3
- mico: 2.3.13
- JacORB: 3.9
- omniORB: 4.2.3

The operating system dependencies are:

- redhat-lsb-core
- ksh
- gcc


- gcc-c++
- gcc-fortran
- libX11-devel
- libffi-devel
- perl
- readline-devel
- bzip2
- bzip2-devel
- openssl-devel
- openldap-devel
- libxml2-devel
- freetype-devel
- libxslt-devel
- sqlite-devel
- expat-devel
- bison
- flex
- autoconf
- unzip
- dos2unix
- tcl-devel
- tk-devel
- procmail

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