
GDA Release Notes

Release 9.11

Diamond Light Source

Dec 21, 2018

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These release notes describe the major changes in each release of the GDA. This includes both changes relevant to developers, and changes relevant to users of the GDA.

GDA 9.0 AND GDA 8.52 (EXPECTED RELEASE: MAR/2016)

1.1 User Highlights

Development of GDA has been split into 2 streams.

GDA 9 is the starting point for various architectural changes to the product.

- For users, the most immediate visible change is that the GDA client is now based on the Eclipse 4 framework.
- For developers, the GDA server is now based on OSGI services.

GDA 8 will continue to be supported for some time, but the focus of development is GDA 9.

1.1.1 New Features

1.1.2 Fixes

1.2 Developer

The uk.ac.gda.example plugin has been split into two with the server based packages being in the new uk.ac.gda.example.server and the client code remaining in the original. This is to remove one of the links that causes server code to have to depend on client plugins.

The RCPPlotter class has been moved from the gda-client plugin into the gda.analysis plugin to break the dependency of gda.epics on gda.client. This also affects uk.ac.gda.beamline.i12 and uk.ac.gda.devices.pixium whose manifest files now require the uk.ac.gda.analysis bundle.

1.2.1 Important

1.2.2 New Features

-Added ScannableMotorWithDemandPosition to return both the actual and demand positions See JIRA ticket [ARPES-319](#) and Gerrit change set [1392](#) for details. This class can be used as a direct replacement of ScannableMotor

1.2.3 Fixes

1.2.4 How to create notes

1. Run the git command: `git log --no-merges --pretty="format:%aD, %an, * %s [%an - %h] %b" gda-8.46rel..gda-8.48rel > /tmp/reponame.version.csv`
2. Open up in excel or the likes,

- (a) Sort by name, as we tend to work in our pet areas and this makes categorisation simpler (also message quality is likewise correlated).
 - (b) Add an empty column to fill with single character tags. These will become component headings. e.g. 'u' for user 'dz' for developer+zebra.
 - (c) Sort by the tab columns
3. Cut each tag group paste to the release notes file under the appropriate heading.
 4. Fixup the reStructuredText.
 5. Tweak the text of the user highlights at the top.

GDA 8.50 (OCT/2015)

2.1 User Highlights

2.1.1 New Features

2.1.2 Fixes

2.2 Developer

2.2.1 Important

2.2.2 New Features

2.2.3 Fixes

2.2.4 How to create notes

1. Run the git command: `git log --no-merges --pretty="format:%aD, %an, * %s [%an - %h] %b" gda-8.46rel..gda-8.48rel > /tmp/reponame.version.csv`
2. Open up in excel or the likes,
 - (a) Sort by name, as we tend to work in our pet areas and this makes categorisation simpler (also message quality is likewise correlated).
 - (b) Add an empty column to fill with single character tags. These will become component headings. e.g. 'u' for user 'dz' for developer+zebra.
 - (c) Sort by the tab columns
3. Cut each tag group paste to the release notes file under the appropriate heading.
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3.1 User Highlights

3.1.1 New Features

3.1.2 Fixes

- The behaviour of the scan plot view at the start of a new scan has been corrected. See JIRA ticket [GDA-6168](#) for details.

3.2 NAPI migration

Continuing the migration away from NAPI, the following changes have occurred.

- An implementation of NexusFile using the Java bindings for HDF5 has been added.
- The NAPI implementation is no longer in use with the HDF5 implementation taking its place.
- The HDF5 library has been switched to a more recent version that includes the SWMR functionality.

Planned changes for the future

- Incorporate SWMR functionality into GDA
- Investigate thread safety issues for the NexusFile interface
- Auto-generate interfaces and classes from NXDL for all Nexus classes to be used for loading and validating then for saving. These will include the application definitions.

3.3 Developer

3.3.1 Important

- Replaced ScanFileHolder with `dnp.io.load` in scan processing scripts. See JIRA ticket [GDA-6177](#) and Gerrit change set [780](#) for details

3.3.2 New Features

- Enable plot server to use RMI. The example beamline has been updated to show the necessary Spring configuration. See JIRA ticket [GDA-6171](#) for details.

3.3.3 Fixes

3.3.4 How to create notes

1. Run the git command: `git log --no-merges --pretty="format:%aD, %an, * %s [%an - %h] %b" gda-8.46rel..gda-8.48rel > /tmp/reponame.version.csv`
2. Open up in excel or the likes,
 - (a) Sort by name, as we tend to work in our pet areas and this makes categorisation simpler (also message quality is likewise correlated).
 - (b) Add an empty column to fill with single character tags. These will become component headings. e.g. 'u' for user 'dz' for developer+zebra.
 - (c) Sort by the tab columns
3. Cut each tag group paste to the release notes file under the appropriate heading.
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4.1 User Highlights

4.1.1 New Features

4.1.2 Fixes

4.2 NAPI migration

The Java version of the API provided by the NeXus committee has been used in GDA for reading, writing and linking data. There are a number of issues with this API which drives a timely migration from its direct use:

- It possesses a hidden state
- Diamond Light Source is only user
- Java 8 issue ([GDA-6112](#))
- buggy string handling

A multi-stage plan was carried out to extricate the NAPI usage in GDA, under ticket [GDA-6113](#)

1. redirect users of NAPI constants to NexusGlobals and remove other users
2. reduce and remove constants usage in NexusGroupData and by using NGD
3. move NexusException class, and replace with new one
4. replace NeXusFileInterface with NexusFileInterface
5. eliminate all uses of constants
6. remove nxclassio package
7. isolate old NAPI classes to napi sub-package
8. create new NAPI based lazy loader and saver
9. create new Nexus File interface and implement a NAPI based version
10. refactor to use new Nexus file interface [rewrite `NexusUtils`, change interfaces `ComponentWriter`, `ScannableWriter`, and `INexusInfoWriteable`]
11. fix up many bugs
12. tidy and remove old classes
13. port some old Jython usage

This has resulted in changes in many projects and repositories.

Future changes planned

- Investigate any thread-safety issues for new interface

- Implement NexusFile interface using the Java bindings for HDF5
- Auto-generate interfaces and classes from NXDL for all Nexus classes to be used for loading and validating then for saving. These will include the application definitions.
- Switch the underlying HDF5 library to a SWMR version.

4.3 Developer

4.3.1 Important

4.3.2 New Features

- A screenshot tool has been added to the client. See JIRA ticket [GDA-6110](#) for details.

4.3.3 Fixes

- `rscan` command has been fixed when using multiple axis. See JIRA ticket [GDA-6145](#) for details.
- `EpicsMonitor` has been fixed to allow observers to be notified when a enum PV is changed. See JIRA ticket [GDA-6138](#) for details.
- `ImageMode` enum has been moved out of `ADBase` to a separate file to allow its use in `Jython` See JIRA ticket [GDA-6152](#) for details.

4.3.4 How to create notes

1. Run the git command: `git log --no-merges --pretty="format:%aD, %an, * %s [%an - %h] %b" gda-8.42rel..gda-8.44rel > /tmp/reponame.version.csv`
2. Open up in excel or the likes,
 - (a) Sort by name, as we tend to work in our pet areas and this makes categorisation simpler (also message quality is likewise correlated).
 - (b) Add an empty column to fill with single character tags. These will become component headings. e.g. 'u' for user 'dz' for developer+zebra.
 - (c) Sort by the tab columns
3. Cut each tag group paste to the release notes file under the appropriate heading.
4. Fixup the `reStructuredText`.
5. Tweak the text of the user highlights at the top.

5.1 User Highlights

5.1.1 New Features

5.1.2 Fixes

- ‘run’ used to ignore leading / in paths but now treats them as absolute
- Users should use new histogram tool instead of more complex colour mapping tool.

5.2 Developer

5.2.1 Important

When creating the GDA client, the “client” symlink can optionally be created or updated

Buckminster “create.product” can optionally create a “client” symlink

A new Buckminster action (accessed from the *Buckminster* → *Involve Action...* menu), has been added:

```
create.product-linux.gtk.x86_64-with.symlink
```

The new action does the following (only available when building a linux64 product):

1. Performs the standard `create.product-linux.gtk.x86_64` action
2. Deletes any existing `client` symlink (which presumably links to the previous product build)
3. Create a `client` symlink which links to the new product build

pewma.py can optionally create a “client” symlink

From the command line, the new action can be invoked using `pewma.py option --recreate-symlink` as follows:

```
pewma.py --workspace /path/to/workspace --recreate-symlink product <site.project.name> linux64
```

Moving to Gerrit at Diamond

The repositories listed below have now been moved to the Gerrit code review tool. Direct commits to these repositories will no longer be accepted.

- `gda-core.git`

- [gda-epics.git](#)
- [gda-pes.git](#)
- [gda-dls-beamlines-xas.git](#)
- [gda-xas-core.git](#)

5.2.2 New Features

- New screenshot tool
- [GDA-6110](#) A new screenshot tool has been added to the client.
- Support for air-bearing motors
- [BLXXJ-315](#) [Fajin Yuan - 65a2cba] add scannable support for air bearing motor which require a scannable to control air supply.

5.2.3 Significant Fixes

- DataSet has been removed
- [GDA-6000](#) remove DataSet [Richard Woolliscroft - fa19aac]
- RichBean changes
 - [XAS-190](#) [Richard Woolliscroft - 8af0177]
- Support for non numeric scannables in ScannableGroup
- [BLVI-130](#) [Mark Booth - f192c56] Since ScannableGroup no longer tries to convert all inputs to doubles, if a scannable relies on only getting double inputs is used in a ScannableGroup which is given none double input, then this combination will no longer work.

5.2.4 Complete List of Changes Since Version 8.42

Core/Common

- [BLXXJ-312](#): move i20-1 to new configuration launchers [Fajin Yuan - f4a18fc] part of common configuration properties relocation processings
- [GDA-6009](#) Logging changes [Kristian Benning - 9d79adc]
- [GDA-6009](#) move delete of object server flag file from facility to core ensures that in live mode, file is deleted from correct machine/permissions [Kristian Benning - edaae90]
- [GDA-6009](#) New Config Logging changes [Kristian Benning - 79fb77c]
- CORE (8.40) Remove relative paths from diamond gdaclient command line. [Mark Booth - e435320]
- [GDA-6009](#) Restore per invocation console logs and most recent log symlink [Mark Booth - 732f4e9]
- CORBA: recompile all corba jars to pick up the latest changes, and while we're at it make sure we used Java 7. [Matthew Webber - e427e61]
- [DASCTEST-293](#) repository DawnScience/dawn-eclipse.git -> eclipse/dawnsci.git (both GitHub) [Matthew Webber - b7d48b1]
- Do not make all DLS beamlines depend on uk.ac.gda.oe [Matthew Webber - 70fc115]
- Fix beamline name [Matthew Webber - e076399]
- [GDA-6009](#) enable move to new config structure and startup scripts [Matthew Webber - 018d9cc]
- [I09-2](#) Add new beamline to all-dls list [Matthew Webber - ba5bd71]

- TESTING: Update testing classpath after plugins moved [Matthew Webber - 1a9d96e]
- Update java version that is loaded [Matthew Webber - ea3187a]
- Add ability to set foreground colour based on value [Paul Gibbons - 8e26618]
- Add common properties for live_localhost [Paul Gibbons - 1cae2ff]
- Add definition of gda.dls-config [Paul Gibbons - 4f820fa]
- Make standard logging config more informative [Paul Gibbons - f8eacb4]
- Set GDALOGS to /scratch [Paul Gibbons - 8f80651]
- Sanified class name [Peter Chang - 9cac405]
- Updated log text [Peter Chang - ef59aea]
- Updated old loader [Peter Chang - 52f42f0]
- call the new method of the superclass after is was improved [Richard Woolliscroft - 3d12d23]
- GDA-6000 remove DataSet [Richard Woolliscroft - fa19aac]
- make BeamMonitor class look at multiple shutters [Richard Woolliscroft - 5e6f138] as FE has two shutters: one controlled by the machine and one by the beamline
- (8.38) - Changed NexusDataWriter to no longer require description/type/id strings. [Charles Mita - 6cd6007]
- (8.38) Added debug message to log if NexusDataWriter.makeMetadataScannableFallback fails when creating group (previously it was silently ignored). [Charles Mita - 676b674]
- (8.38) Added getMeta method to metadata.py that gets metadata from the relevant source. [Charles Mita - fd39165]
- (8.38) Added setFilePrefix method to IncrementalFile to match the functionality offered by NexusDataWriter's SRS file functionality. [Charles Mita - b61eb20]
- (8.38) Removed unsupported method from NexusDataWriter (nobody was using it). [Charles Mita - e543bd6]
- (8.40) Fix regression with piezo raster scans (B16) caused by 882e8b7 [Charles Mita - fcf3ed7] TwoDScanDataPlotter no longer requires the x and y axes to have column names set.
- 8.40 - TogglerScannable only records initial position if it's needed [Charles Mita - 0efc309] Initially added during investigation of BLVII-165 as we had problems reading PVs for a time.
- Add a passthrough scannable for use with ScannableMotionUnits [Charles Mita - 9cdc076] Required for BLXVI-160 - a motor used in sixckappa (with cryostat) has to be configured to always move through 0 degrees when going from positive to negative (instead of 180 degrees).
- Add null check to LocalObjectShelf when getting key names [Charles Mita - 88b0f5b] I don't know how an entry's keyname can be null, but it's happened.
- Allow transformation properties to be null [Charles Mita - b6a2f67]
- BLVII-162 (8.40) added TimeDelayScannable. [Charles Mita - 574e743] Added a scannable that is busy for the time provided in asyncMoveTo(). Initially designed to be used in a ScannableGroup to represent the fast shutter on I07 that will be opened and closed at each scan point.
- BLXVI-117 (8.38) Fixed regression with ScanDataProcessorResult [Charles Mita - c107ad1]
- BLXVI-134 (8.38) - workaround for the fact that AbstractContinuousScanLine sets HardwareTriggering to false before atScanEnd is called [Charles Mita - c687144]
- BLXVI-142 (8.42) - Added NXPlugin that forces callbacks [Charles Mita - 8a55cdd] This adds an NXPlugin that does nothing except enables callbacks.
- BLXVI-149 (8.42) -JS.getCurrentScanInformation returns null if no scan [Charles Mita - ce12bca] Refactoring for GDA-6005 (commit 7223170)

- [BLXVI-152](#) (8.42) - Reimplemented `__call__` in `SHTPDW` (`xeye` and `pilatus`) [Charles Mita - 24324ef] `SwitchableHardwareTriggerableProcessingDetectorWrapper` stopped supporting `__call__` with the move to `NXDetector`. Reimplemented to match other detector implementations.
- [BLXVI-156](#) (8.42) - `ProcessingDetectorWrapper` warns if `waitForFile==True` [Charles Mita - 524bb1d] `AreaDetectors` normally have their `tifwriters` wait for the file to arrive on the file system.
- Change `TogglerScannable` to not have an empty `OutputFormat` [Charles Mita - 3a4b091]
- Changed order in `TogglerScannable` Hook enum [Charles Mita - c0e635d] Changed to the order to better reflect the order they're called
- Fixed `TestScanDataProcessorResult` to account for `c107ad1f` [Charles Mita - 297d29f] See [BLXVI-117](#) - `commit c107ad1f` (`cherrpicked to 252c90b6`).
- [GDA-6103](#) (8.42) - add unit test for `Concurrent.getScanInformation` [Charles Mita - f070977] `getScanInformation` is actually implemented in `ScanBase` - could alternatively test in `ScanBaseTest`. Should probably add tests to other scans that do not derive from `ConcurrentScan`.
- [GDA-6103](#) (8.42) - Fix `ScanBase.getDimensions` (wrong dimensions returned) [Charles Mita - eb987f1] `getDimensions` recursed the wrong way; looking for parent scans instead of child scans, even though it started at the outermost scan. Also caused [BLXVI-161](#).
- [GDA-6110](#) Add screenshot plugins to client feature definition [Colin Palmer - f91aee5]
- add option to provide detector pixel size units in `NXDetector` node which is required by 2D diffraction data reduction project. [Fajin Yuan - 767fa81]
- [BLIX-153](#): "Abort all running commands, scan and scripts" does not work on terminal in 'analyserscan' enable to stop scannable and detector in the current scan only if you set the property to true. Default is false - so the existing behaviour does not change. [BLIX-153](#) [Fajin Yuan - 3261aa8] Task-Url: [BLIX-143](#)
- [BLXI-224](#): add the pixel size information with unit for area detector under `NXdetector` node [BLXI-224](#) [Fajin Yuan - 4a6bba3]
- [BLXI-225](#): provide unit for the 'count_time' data in the detector nexus data file [BLXI-225](#) [Fajin Yuan - 07ec4f8]
- [BLXI-227](#): add detector name string to 'local_name' under thr `NXdetector` node in the pixium nexus data file [BLXI-227](#) [Fajin Yuan - 6185719]
- [BLXXJ-312](#): move `i20-1` to new configuration launchers [Fajin Yuan - 1b1e28a] part of common configuration properties relocation processings
- [BLXXJ-315](#): ensure air supply is on for air bearing motor when motion is requested [Fajin Yuan - 65a2cba] add scannable support for air bearing motor which require a scannable to control air supply.
- correct miss use of variables and and access to individual analysis result. [Fajin Yuan - e20dfea]
- extending version restriction for guava [Fajin Yuan - 4611024]
- Fix `NXDetectorAreaDetectorIntegrationTest` [Fajin Yuan - 684f0ed]
- [GDA-6083](#) work round this issue [Fajin Yuan - 0cbe7fe]
- [GDA-6083](#): Call to `getLastScanDataPoint()` return `NULL` when called from a scannable's `atScanEnd()` if you only have one scan data point. [Fajin Yuan - 6d5b26a] Ensure the last scan data point is called before `atScanEnd` of the scannables.
- [GDA-6084](#): fix the mis-map of call `atScanEnd()` and `atScantStart()` in the `ScannableImpl` [GDA-6084](#) [Fajin Yuan - f666d55]
- improve the class javadoc [Fajin Yuan - 9f44535]
- make sure both wavelength and energy from monochromator be written in file if both provided. [Fajin Yuan - 0d043ee]
- re-implement changes after reset to earlier commit. [Fajin Yuan - 8ca86c7]

- CORE: Added classes for Linkam model T95 and optional output to Nexus datafile [Geoffrey Mant - 08e8215]
- CORE: allow monoscannable to set position [Geoffrey Mant - de903d1]
- CORE: New SerialRead/Writer interface for tango implementation [Geoffrey Mant - b7f8f34]
- [GDA-6058](#) Fix corba impl's to prevent duplicate events [Geoffrey Mant - 1e5aec3]
- [XAS-172](#) refactor: Check for missing folder. [Geoffrey Mant - dfb07e6]
- Core: Change error reporting to remove excessive python stack trace when user issues abort scan. Now use `logger.info` on `exception.getCause().getMessage()` to report "Scan aborted on request". [grm84 - 98e2a3d]
- add write-only `defaultPosition` property for `DummyMotor` [Jonathan Blakes - edc3515]
- don't trim - done later in null-safe way [Jonathan Blakes - c5f1870]
- fix "Error getting value for item named `__repr__` in `finderNameMap` for attribute `__repr__`" for `locals()` in console [Jonathan Blakes - 9da3d72]
- [GDA-6085](#) warn about `PushEventQueue` check threshold instead of limit error [Jonathan Blakes - 198d435]
- `GDAEventBus`: add constructor-args for JMS destination name and whether is topic or queue [Jonathan Blakes - d06ec4c]
- `GDAEventBus`: don't force `ConnectionFactory` constructor-arg [Jonathan Blakes - b77e88d]
- `GDAEventBus`: [GDA-6087](#) add `uk.ac.gda.eventbus` plugin [Jonathan Blakes - 47ea902]
- `gdalogpanel`: fix brush icon not refreshing viewer filter with now empty string [Jonathan Blakes - 29bf42c]
- `gdalogpanel`: fix product launcher [Jonathan Blakes - f315649]
- `gdalogpanel`: use `GDA_SOURCE` and `JVNNAME` with switchable pattern layouts [Jonathan Blakes - 6fea2ba]
- handle special methods consistently in `FinderNameMapping` and `JythonNameSpaceMapping` [Jonathan Blakes - 4bcb4ca]
- log error without traceback, but debug with, when already moving `EpicsMotor` asked to move [Jonathan Blakes - 385e2f7] easily reproduced by vaguely hurried interaction with `RotationViewer`'s `translationMotorPositionEditors`
- move `SimpleUDPServerScannable` from `uk.ac.gda.px` to `uk.ac.gda.core` [Jonathan Blakes - 9acfb2d]
- [MXGDA-2039](#) highlight ambiguity of `Command.abort()` discovered in `FindableProcessorQueue` [Jonathan Blakes - 56f0f93]
- [MXGDA-2164](#) highlight (with red background) that queue is paused [Jonathan Blakes - 999c3c9] Requires concomitant [MXGDA-2164](#) commit in `gda-common-rcp.git`
- [MXGDA-2259](#) tidy up and expose 'record' functionality for `MXGDAClientStartup` [Jonathan Blakes - f7e79cb]
- print DICAT test results for multiple beamlines [Jonathan Blakes - 549cbdd]
- `Processor.getState()` doesn't throw an `Exception` [Jonathan Blakes - cba6377]
- suggest usual remedies when client fails to start due to CORBA exceptions [Jonathan Blakes - 6dfe5d5]
- CORE ([GDA-6009](#)) Support standard layout in core gda script. [Kristian Benning - 0d8a54b]
- [GDA-6009](#) - Change to `gda_client_core` so overwrites all properties in `gda-[beamline].ini` [Kristian Benning - deecc9d]
- [GDA-6009](#) move delete of object server flag file from facility to core ensures that in live mode, file is deleted from correct machine/permissions [Kristian Benning - 3ed958c]
- Launcher to run gda command in Python Debugger [Kristian Benning - 1028774]
- Add some `ObjectServer` and `EventService` logging. [Mark Booth - a81ee52]

- [BLVI-130](#) (8.38) Add support for non numeric scannables in ScannablGroup. [Mark Booth - f192c56] Since ScannableGroup no longer tries to convert all inputs to doubles, if a scannable relies on only getting double inputs is used in a ScannableGroup which is given none double input, then this combination will no longer work.
- [CORE](#) (8.38) Add test for multi-input scannables to ScannableGroupTest. [Mark Booth - d500ec3]
- Delete spring beans file which stops Eclipse starting in a timely manner. [Mark Booth - f996708]
- [GDA-5852](#) (8.42) Dont suppress SRS file writing on addDataWriterExtender call. [Mark Booth - 41c65af] Also, improve logging.
- [GDA-5852](#) (8.42) Support add & rm when readFromNexus=True. [Mark Booth - 009a4d0] Also, improve logging in metadata.py script.
- [GDA-6009](#) (8.43) Add missing GDA_LOG_FILE parameter to gdaclient -nohup call. [Mark Booth - 925ed05]
- [GDA-6009](#) (8.43) Update given breaking changes to gda_setup_consolelog_instance [Mark Booth - e630baf]
- CORBA: recompile all corba jars to pick up the latest changes, and while we're at it make sure we used Java 7. [Matthew Webber - 4c4d1fe]
- Core now requires Java 1.7 [Matthew Webber - 722e1cd]
- [DASCTEST-283](#) Set permissions correctly when creating parent directories [Matthew Webber - 3b998a3]
- [DASCTEST-293](#) repository DawnScience/dawn-eclipse.git -> eclipse/dawnsci.git (both GitHub) [Matthew Webber - 3434409]
- [DATAACQTEAM-121](#) Avoid client crash when gtk>=2.24 and cairo<1.9.4 [Matthew Webber - b95789c]
- [DATAACQTEAM-121](#) Correct previous fix Avoid client crash when gtk>=2.24 and cairo<1.9.4 [Matthew Webber - 3f8bd88]
- DOCS: Add option to create symlink after product built (linux64 only) [Matthew Webber - fa467bc]
- [GDA-5083](#) disable assert that intermittently fails [Matthew Webber - b484fa7]
- [GDA-5583](#) remove order verification that is too strict [Matthew Webber - 2e853b5]
- [GDA-5984](#) Temporarily skip comparison whose result is different between Java 7 and 8 [Matthew Webber - 2f8bf5b]
- [GDA-5984](#) Update expected output to match Java 8 change [Matthew Webber - cfec227]
- [GDA-6009](#) enable move to new config structure and startup scripts [Matthew Webber - 4110923]
- Remove Beagle log viewer from GDA, it is no longer used. [Matthew Webber - 29559a1]
- Restore NexusDataWriter (only) to point before merge from 8.38 to 8.40 [Matthew Webber - 969873f]
- TESTING: fix initialization of mock object [Matthew Webber - a20ba0d]
- TESTING: Update testing classpath after plugins moved [Matthew Webber - db2d44d]
- Update com.google.guava from 15.0.0 to 16.0.1 (for MX) [Matthew Webber - 38941c0]
- Fix to ScanFileHolderException location [matthew.gerring - 4e9e205]
- Moved IMetadata (Pete wot made me do it) [matthew.gerring - 51ceb12]
- Moved/renamed plugins [matthew.gerring - bbc1b79]
- Renamed IMetaData to IMetadata (Pete wot made me do it) [matthew.gerring - 79229dd]
- Add enabled flag to TabCompositeFactory [Paul Gibbons - e4f3c77]
- Add logger debug msg to assist problems during startup [Paul Gibbons - 076fcef]
- Add Scripting connection to liveplot [Paul Gibbons - d5e178a] Usage: dnp.plot.setdefaultname(“Scan Plot 1”)

- [GDA-6007](#) Jython telnet supports Jline type support by default [Paul Gibbons - 64b3a74]
- Handle the specification of units [Paul Gibbons - 74a79d0]
- New classes to provide generic EnumPositioners [Paul Gibbons - b715579]
- New template based NXDetectorDataAppender [Paul Gibbons - f8d87c0]
- [TOMO-29](#) Make hdf5 file in GDA scan file a relative path [Paul Gibbons - 08d1713] Requires [SCISOFT-1997](#) fix for HDF5Loader
- uk.ac.gda.client - tooltip reflects min and max to specified digits [Paul Gibbons - 3478c5a]
- Added comment about JacORB inner class bug [Peter Chang - 8695b0f]
- Removed erroneous and unnecessary calculation [Peter Chang - 7ed0849]
- Replaced mentions of abstract datasets in comments [Peter Chang - 53c821d]
- Updated lazy loader implementation [Peter Chang - 602affd]
- Updated with comments about out-of-date code [Peter Chang - 33b7cb8]
- Add Volume and Volumetric Density to UnitsComponent [Peter Holloway - 6ece166]
- Fix serialization error when opening plots [Peter Holloway - d895863] Fix by Peter Chang
- Use Maths.derivative instead of deprecated DataSet.diff method for GaussianEdge [Peter Holloway - c0353a2]
- Scisoft have updated to open single editor for nextus files. So this loading of nexus tree editor is no longer needed. It also opens external files. [Phyo Kyaw - 2eb60ec]
- Updated scan lines to include point style and size. [Phyo Kyaw - 833d158]
- Updated to change from diamond points to circle points when plotting. [Phyo Kyaw - ac61900]
- allow full paths to be given to the run method [Richard Woolliscroft - 27cbe36]
- [BLXVIIIIB-197](#) fix bug where the CommandQueue pauseWhenQueueEmpty attribute was not giving expected behaviour [Richard Woolliscroft - 6beb92b]
- [BLXVIIIIB-197](#) fix bug where the skip button in the command queue was doing the same thing as the 'abort and pause' button [Richard Woolliscroft - c05708d]
- [BLXX-268](#) fix bug where Experiment perspective would look at the wrong folder if visit ID had changed but an old GDA client workspace was being used. [Richard Woolliscroft - 3550029]
- change the example richbean editor to use the new DelegatingRichBeanEditorPart base class and removes the need for the ExampleExptUIEditor [Richard Woolliscroft - 1dbf9d7]
- check for thread interrupts before writing to Nexus file as HDF library absorbs InterruptedExceptions [Richard Woolliscroft - 4c56ef8]
- ensure motion aborted for any exception type [Richard Woolliscroft - 77a752b]
- [GDA-5909](#) contribute Phyo's new ScanDataPlotView to the main GDA [Richard Woolliscroft - 3678105] To use by default, add to your plugin_customization.ini uk.ac.gda.client/gda.open_xyplot_on_scan_start_id=uk.ac.gda.client.plotting.scandataplotview
- [GDA-5978](#) remove unused view and test code [Richard Woolliscroft - ea9b9db]
- [GDA-6000](#) minor changes to Jython scripts to fix unit tests relating to Datasets [Richard Woolliscroft - eac4e4f]
- [GDA-6000](#) remove old DataSet class and gda.analysis.functions and gda.analysis.utils classes [Richard Woolliscroft - 09e83d2]
- [GDA-6089](#) add bi-directional mode to ContinuousScans [Richard Woolliscroft - 4791ee5]
- move static section into constructor as it interferes with unit testing [Richard Woolliscroft - 0610208]

- new base class for editors working in ExperimentDefinition plugin [Richard Woolliscroft - 3a0b834] This class is moved from client.exafs as it provides functionality to prevent XML files accidentally being saved in the wrong location for all editors which are to be used within the framework provided by this plugin - it is not Exafs specific.
- prevent duplicate entries in Scannable and Detector lists in certain situations [Richard Woolliscroft - 925a9bf]
- Rename IRichBean interface to XMLRichBean [Richard Woolliscroft - 87c586a] This interface is a marker for bean classes which represent something which will be displayed in an UI, via the BeanUI class, and persisted in XML via the XMLHelpers class. The BeanUI class uses Object in its signatures so XMLRichBean is only for GDA classes wanting the XML persistence.
- slow down the frequency to ScanEvent.UPDATED messages to prevent the UI from freezing up [Richard Woolliscroft - f94ed65]
- update the developer documentation for writing graphical XML editors within the RichBean framework. [Richard Woolliscroft - a73d42c] It is now much simpler. Developers write a composite which can be used in stand-alone views or within a standard editor class. To also have standalone views has been a requirement for some time.
- XAS-190 fix layout problem after merge with DawnSci Richbean code [Richard Woolliscroft - 04bf8db]
- XAS-190 remove GDA copy of RichBean classes and use DawnSci version instead [Richard Woolliscroft - 8af0177] Changes in GDA dev since the fork have been applied to the DawnSci version
- Add this class as it is used in XmapReadbackHdf5NXPlugin.java and ADROIStatsPair.java [Silvia Ramos - 1302152]
- BLVIII-28: Test 2 D plotter view Add setRate() and getRate() to adjust the rate at which the 2D plot is updating, by default is 1.2 s. [Silvia Ramos - 476a56d]
- BLVIII-50: Create a class for nxdata for double data array appender [Silvia Ramos - e36bce2]
- DATAACQTEAM-126: SingleScannableWriter only handle String and doubles [Silvia Ramos - 559133f] Change the build property to add javacProjectSettings to avoid build errors.
- Abstract test to log test method name as its executed, plus test test class to see it works. Also cleaned up lack of generics in test test. [simon - 990608c]
- Fix DATAACQTEAM-126, and restructure ComponentWriter hierarchy in the process. [simon - ded79d1]
- DATAACQTEAM-126 Refactor to separate 'String' and 'Number' component writers away from common code in their 'Default' (which is now abstract). [Simon Berriman - 42fa298]
- DATAACQTEAM-126 Test for Number else default to String, instead of other way round [Simon Berriman - 5d20c75]
- Added SimpleFilePathConverter class. [Charles Mita - c2d572e] Performs file path substitution using StringUtils.replace().
- add support for multi-valued properties [Fajin Yuan - c1a8adf]
- GDA-6009 dump all properties with LocalProperties.dumpProperties() [Jonathan Blakes - f2b340b]
- GDAEventBus: GDA-6087 export package required for ActiveMQConnectionFactory [Jonathan Blakes - 6280b3a]
- TESTING: update testing classpath following refactor [Matthew Webber - 75c2c03]
- Output information on logging config file being used [Paul Gibbons - b67ffd0]
- change output to an error to highlight there is a problem which needs fixing [Richard Woolliscroft - fcd6cb5]
- Rename IRichBean interface to XMLRichBean [Richard Woolliscroft - e15f245] This interface is a marker for bean classes which represent something which will be displayed in an UI, via the BeanUI class, and persisted in XML via the XMLHelpers class. The BeanUI class uses Object in its signatures so XMLRichBean is only for GDA classes wanting the XML persistence.
- XAS-190 after further testing of merged RichBean code [Richard Woolliscroft - fb89107]

- [XAS-190](#) remove GDA copy of RichBean classes and use DawnSci version instead [Richard Woolliscroft - 697c906] Changes in GDA dev since the fork have been applied to the DawnSci version
- [BLVIII-25](#): Second user experiment - integrate XIA XMAP In the new version of EPICs, the filepath in HDF file writer plugin uses forward slash. A flag configurable in xml file was added to choose between forward and backward slash without affecting other beamlines. By default, it sets up for the case of forward slash. [Silvia Ramos - 3e0d7bb]

RCP

- [MXGDA-2164](#) allow status line item text to be highlighted [Jonathan Blakes - f3a34ab]
- ADMIN: use the same Guava version as other plugins [Matthew Webber - c6308d3]
- Ant script should include do-nothing targets [Matthew Webber - c42569d]
- Added back in Richard Ws class IRichBean. This interface is not part of the rich beans framework because it breaks the design that a bean is not linked in any way to how it is rendered. [matthew.gerring - d3742f0]
- Added comment. [matthew.gerring - d43f12d]
- Created DelegatingRichBeanEditor and used it in the example. [matthew.gerring - e323bc6]
- Not a number [matthew.gerring - 5021442]
- Removed dependency on gda.libs as com.google.guava is the only plugin left it uses from libs. This could break the build but if we can remove libs dependency, it will make it easier to reuse the plugin. [matthew.gerring - 65dccc2]
- Removed old interface I accidentally readded, sorry Richard W [matthew.gerring - 10c8b01]
- Add methods getMaxValue and getMinValue [Paul Gibbons - 1a0dd4e]
- add current filename into saveAs dialog [Richard Woolliscroft - 14adb06]
- added option to wrap the given composite in a ScrolledComposite to handle resizing [Richard Woolliscroft - 7df4598]
- Rename IRichBean interface to XMLRichBean [Richard Woolliscroft - 195ff27] This interface is a marker for bean classes which represent something which will be displayed in an UI, via the BeanUI class, and persisted in XML via the XMLHelpers class. The BeanUI class uses Object in its signatures so XMLRichBean is only for GDA classes wanting the XML persistence.
- [XAS-190](#) remove GDA copy of RichBean classes and use DawnSci version instead [Richard Woolliscroft - 57d02d4] Changes in GDA dev since the fork have been applied to the DawnSci version
- [XAS-190](#) switch off JEP use [Richard Woolliscroft - b5a8190] As the JEP license is not compatible with DawnSci code. If this functionality is required then we should use JEXL instead of the BeanProcessor class.

EPICS

- Add toString method to EpicsMotor [Charles Mita - 17d086a] Originally from 03c59c78 (which has been reverted).
- [BC-99](#) (8.40) - Fixed issue with PCO arming that required 2 sec wait [Charles Mita - eb9ca48] Controls have fixed the issue that required us to wait for two seconds after arming the PCO4000 on B16 to prevent stalling on readout.
- Only warn if the requested number of bytes is greater than the limit [Charles Mita - 8f67fcc] Fixed test in EpicsController to only log a warning if the requested element count is `_above_` the channel element count, instead of merely being different.
- Revert [GDA-5992](#) if a motor limit is hit, use the LLS and HLS PVs to determine which one has been hit [Charles Mita - 2f69205] The changes in the reverted can cause a deadlock, preventing reads from PVs on the IOC from GDA.

- add units support to detector pixel size [Fajin Yuan - e79d377]
- added source attachment for debug [Fajin Yuan - 2740bcc]
- [BLXI-225](#): provide unit for the 'count_time' data in the detector nexus data file [Fajin Yuan - f3e8bfb] need to give default 's' unit
- [BLXI-228](#): pixium live image display no data after IOC restart ensure this plugin is enabled for each scan, but could be configured to not add data to scan data file as the actual image is written by EPICS hdf plugin. [BLXI-228](#) [Fajin Yuan - a9a5e4c]
- [BLXI-230](#): create a Pixium specific control view for calibration and mode change on GUI [Fajin Yuan - 517851c] add more PV field support to the Area detector
- [BLXXJ-315](#): ensure air supply is on for air bearing motor when motion is requested [Fajin Yuan - 49d6efa] class to control air supply for air bearing motor or other device require air supply. It takes two independent PVs, one for set, the other for read. It's isBusy() return false until the read and set is the same, as it takes seconds for air supply to reach its required pressure in the device.
- [MXGDA-2060](#) fixed. [Fajin Yuan - a9af8cd]
- remove old jars, replace them with caj-1.1.14 [Fajin Yuan - 347634a]
- remove the unnecessary position call from monitor callback as the event already has the position value. fix the dead locking. [Fajin Yuan - 2c62bd8]
- revert CAJ from 1.1.14 to 1.1.13 to solve issue described in [MXGDA-2060](#). left the 1.1.14 in place so further debug can be done in future. [Fajin Yuan - 92c90da]
- The if enclosed codes block does not work for pixium detector, so I introduced a property to exclude it without change default. [Fajin Yuan - c82ce56]
- avoid 'g.d.m.EpicsMotor - Error: illegal .{HLM,LLM} value.' message if dbr.isSHORT; use motor name in message otherwise [Jonathan Blakes - 9c644a3]
- Revert ""avoid 'g.d.m.EpicsMotor - Error: illegal .{HLM,LLM} value.' message if dbr.isSHORT; use motor name in message otherwise"" [Jonathan Blakes - 3c174d7]
- [BLXV \(8.40\)](#) Fix null identifier in warning when not using deviceName. [Mark Booth - a9f4df4]
- [BLXV \(8.40\)](#) Make TimeUnit switchover at the full 214s not testing 20s value [Mark Booth - d7bf90e]
- [BLXV-127 \(8.40\)](#) Add initial compression and compression level to HDF5 factory. [Mark Booth - ecd4137] Also add errors and warnings for known compression types.
- [BXV \(8.38\)](#) Temporarily duplicate ZebraConstantVelocityMoveController. [Mark Booth - 6e2ed82] The aim is to create a ZebraRockScanMoveController temporarily in order to make it clearer what the requirements are for abstracting out move controller strategies.
- [BXV-115 \(8.38\)](#) Create ZebraRockScanMoveController. [Mark Booth - 95137cb]
- [DASCTEST-293](#) repository DawnScience/dawn-eclipse.git → eclipse/dawnsci.git (both GitHub) [Matthew Webber - f123dcd]
- TESTING: Update testing classpath after plugins moved [Matthew Webber - bed046f]
- Update com.google.guava from 15.0.0 to 16.0.1 (for MX) [Matthew Webber - b47445a]
- Moved/renamed plugins [matthew.gerring - 9e0bbfd]
- Add ability to list scannable associated with PV [Paul Gibbons - 4003624]
- Addd getImage method [Paul Gibbons - d3a19b2]
- [BLXIIIJ-55](#) - Add function ls_pv_scannables [Paul Gibbons - 0418862] Function to list Scannables associated with EPICs PVs, the PV and the associated DESC field
- Ensure we get 1 exposure per trigger [Paul Gibbons - c13a18b]
- EPICS - set zebra pcPulseWith to minimum on any time unit [Paul Gibbons - cfa7524]
- MJPEG GetCanvas now returns a Canvas [Paul Gibbons - 0419d90]

- MultipleImagesPerHDF5 - use expectedFullFilename as PV is cleared [Paul Gibbons - 829ff95]
- Need to add sleep(2s) after pco arm [Paul Gibbons - 47be4b9] [BC-99](#)
- Report motor is in LOWERLIMIT or UPPERLIMIT appropriately [Paul Gibbons - 3451dda]
- Return empty NXDetectorData if plugin is disabled. [Paul Gibbons - 079de58]
- Throw exception if adbbase portname is not set in EPICS [Paul Gibbons - 67e5d0a]
- Refactored to use scisoftpy properly [Peter Chang - 220946d]
- Sanified class name [Peter Chang - 9a84905]
- add constant to rprovide conversion between Epics timestamps and Java Date objects [Richard Woolliscroft - 4100028]
- add PVs to the PSLSingleExposure class optionally reconnect to the hardware at every node in the scan [Richard Woolliscroft - 3144989]
- [BLXVIII-165](#) resolve issue where the RealPositionReader was being used in both fly-scan types (ContinuousScan and ConstantVelocityScan) but only worked for one of them [Richard Woolliscroft - 03486a5] This is because this class relies on the Epics Trajectory template being read out and this happened in ContinuousScans but did not happen in ConstantVelocityScans
- fix unit test by injecting a scan object into MockJythonServerFacade [Richard Woolliscroft - afb59f8]
- [GDA-5992](#) monitor lower limit and upper limit events to record when a limit has been hit. [Richard Woolliscroft - f44cb87] This is the patch approved in this Jira ticket.
- [GDA-6000](#) replace DataSet with Dataset [Richard Woolliscroft - c695552]
- make trajectoryBuildDone protected so that subclasses can override the behaviour in prepareForContinuousMove() [Richard Woolliscroft - 1307daf]
- new collection strategy for CMOS area detector on I18 [Richard Woolliscroft - f668994] the underlying PSL software is slow and flakey so this strategy accounts for this
- Revert [BLXVIII-165](#) fix bug where readbacks from Epics trajectory scans were incorrect"" [Richard Woolliscroft - 9016bc6] This reverts commit ced35fc9419873bfdc59b9f3af50d74d25e94713.
- [XAS-190](#) remove GDA copy of RichBean classes and use DawnSci version instead [Richard Woolliscroft - 6c0f655] Changes in GDA dev since the fork above have been applied to the DawnSci version
- [BLVIII-25](#): Second user experiment - integrate XIA XMAP ROI plugin in Xmap uses the old version of EPICs. The field that Enable the Dimensions of ROI is not available in the old version and cannot be setup. A flag is created EnableROIPVPairSupported and is configurable in a xml file. [Silvia Ramos - f6402b5]
- Remove previous local changes. Version running on i08. [Silvia Ramos - 6563246]
- [GDA-6108](#) Update project settings for projects that explicitly name Java 6 as the minimum VM, but which then directly use or depend upon Java 7+ classes. [Simon Berriman - 603740e]

Spectroscopy

- [XAS-172](#) refactor: Changes from moving beans [Geoffrey Mant - 1b0053a]
- [XAS-172](#) refactor: Moved xpress beans to uk.ac.gda.beans.xpress Removed Xspress2BeansUtils & Xspress2DetectorConfiguration [Geoffrey Mant - 2ad6922]
- [XAS-172](#) refactor: remove redundant ExafsScriptObserver from AsciiDataWriter [Geoffrey Mant - 788c970]
- [XAS-180](#): Add xml to create and configure scans in XasScanFactory (mapFactory) [Geoffrey Mant - dc14dd1]
- [XAS-180](#): Amend tests for setName() [Geoffrey Mant - 20dc803]
- [XAS-181](#): Modification to xpress1 dead time correction [Geoffrey Mant - 011ab26]

- [XAS-182](#): Re-implemented excluded detector elements in ascii dataset [Geoffrey Mant - 1d1878a]
- [XAS-184](#): Fix null pointer exception [Geoffrey Mant - 1829026]
- [XAS-185](#): Add xspress & xmap detector configurations to jython namespace [Geoffrey Mant - 206c7a0]
- XAS: Delete Xspress2DetectorConfiguration as this is a duplicate of the generic XspressDetectorConfiguration. [Geoffrey Mant - 17e74eb]
- XAS: Rename Xspress2BeanUtils to generic XspressBeanUtils. Added logger messages found in python script. [Geoffrey Mant - 1a30140]
- XAS: xspress parameter editing [Geoffrey Mant - 60a8ca3]
- ADMIN: remove unnecessary dependency that was added in 60a8ca3 [Matthew Webber - e8e19d7]
- [DASCTEST-293](#) repository DawnScience/dawn-eclipse.git → eclipse/dawnsci.git (both GitHub) [Matthew Webber - 2d6c23c]
- Delete bin/ check in erroneously [Matthew Webber - b6b8b16]
- Delete traces of old uk.ac.gda.client.vortex remaining in error [Matthew Webber - 5f767f4]
- Fix bug in Map perspective where changing the detector element, when I0 or It selected does not change the displayed MCA [Matthew Webber - 4909d74]
- Fix dependencies in test fragments [Matthew Webber - d15aa2f]
- Fix name of xmap.epics.test [Matthew Webber - 04c7c7b]
- [GDA-6038](#) Re-enable test following fix. [Matthew Webber - f4673e6]
- Materializing uk.ac.gda.devices.xspress2/3 should bring in its test fragment [Matthew Webber - 1c26115]
- Move large test files to GDALargeTestFiles [Matthew Webber - 40f761e]
- Remove bin/ directory that should not have been committed; add .gitignore [Matthew Webber - 4c1506c]
- Remove export of package that does not exist [Matthew Webber - 7a96506]
- Remove remaining debris from incompletely-deleted project [Matthew Webber - 66eeabc]
- Rename directory after project renamed [Matthew Webber - 3d5cc11]
- Rename directory to match rename of plugin [Matthew Webber - a0d4017]
- Switch to bundle dependency, since package import gets the wrong bundle [Matthew Webber - 510fe38]
- TESTING: add test runners for uk.ac.gda.devices.hiddenrga.test [Matthew Webber - fd673cd]
- TESTING: finish earlier incomplete move of some JUnit tests Add/Update test runners (Eclipse and Ant) [Matthew Webber - afb93b3]
- TESTING: Update testing classpath after plugins moved [Matthew Webber - 3d74ca0]
- TESTING: when materializing uk.ac.gda.devices.xspress2, bring in .test fragment [Matthew Webber - eb901e8]
- uk.ac.gda.devices.xmap not required by uk.ac.gda.client.microfocus, only by .test fragment [Matthew Webber - 6b50147]
- Update uk.ac.gda.client.exafs(.test) to require Java 7 [Matthew Webber - 8c6e9a2]
- Moved IMetadata (Pete wot made me do it) [matthew.gerring - 159bc72]
- Moved/renamed plugins [matthew.gerring - 1a91fe6]
- Renamed IMetaData to IMetadata (Pete wot made me do it) [matthew.gerring - f172977]
- Generalized HDF5 to tree [Peter Chang - fc8ae14]
- Bug fixed for acquire button not updating value. [Phyo Kyaw - 8e8e6ff]
- Bug fixes on loading and saving of snapshots. [Phyo Kyaw - cc25361]

- Change the logic on how kstep is calculated. [Phyo Kyaw - eec4a93]
- Enabling medipix during xes scan. [Phyo Kyaw - eaaf924]
- Include scan with medipix detector in scan. [Phyo Kyaw - a83626b]
- Removed vortex plugin as dependency. [Phyo Kyaw - 35cbd8e]
- Updated xes bragg angle limit. [Phyo Kyaw - 61c3670]
- add channel enable / disable functionality to Xspress3 change xspress subfolder [Richard Woolliscroft - 8b12b4b] The MCAs from Xspress3 are written to their own HDF file.
- add commas to MonitorViews and fix Xspress3 editor [Richard Woolliscroft - 8fce2a8]
- add experiment definition to the dependencies [Richard Woolliscroft - 1302eef] to pick up the uk.ac.gda.richbeans.beantypes extention point
- Add KB VFM control to all map types [Richard Woolliscroft - 1f50fe4]
- add raster map unit test [Richard Woolliscroft - a175022]
- added final Strings for the names of Fluo detectors used in bean [Richard Woolliscroft - 738a73c]
- After running the acceptance tests using B18 sim with new configuration [Richard Woolliscroft - c26904a]
- as use of the CMOS detector for diffraction images into I18 map logic [Richard Woolliscroft - 51cef12] This will need to be merged into the work being done on master to port Jython scripts into Java (XAS-172)
- BLVIII-25 after testing on beamline with hardware but no trigger pulses [Richard Woolliscroft - 1c7c466]
- BLVIII-25 after testing with 100ms hardware pulses [Richard Woolliscroft - 2f40550] 200x200 and 1000x1000 maps succesfully run. Loks like the overhead by Xmap to reset for the next line of a scan is < 1s which is good news
- BLXVIII-151 remove pointless saveAs logic which forces a file to be saved to the var directory for no apparant reason [Richard Woolliscroft - c37b4e6] checked with beamline staff and this is pointless
- BLXVIII-154 allow Xspress3 to use more than 4 channels [Richard Woolliscroft - 1819d2b]
- BLXVIII-154 changes required to get xspress3 working on beamline. [Richard Woolliscroft - 60cb43a] Tested with hardware, beam and used in experiments. Removed the client.vortex plugin
- BLXVIII-154 changes to xspress3 to work in 2D maps [Richard Woolliscroft - 62a9e60]
- BLXVIII-154 switch to reading from correct ROIs not windows and provide a column per ROI not FF per channel. [Richard Woolliscroft - 65db0fe] Also add an FF column which was not there before.
- BLXVIII-163 fix bug where the KB VRM x-motor was not being moved in UI scans [Richard Woolliscroft - 439b33b]
- BLXVIII-164 change the I18 Keithley amplifier gains in UI scans [Richard Woolliscroft - 87b894e]
- BLXVIII-171 fix the map provider classes to work consistently, so Xspress3 maps can be viewed properly [Richard Woolliscroft - 3c18ebf]
- BLXVIII-178 Xspress3 was not working in qexafs scans, so change the buffered detectro class to perform the same operatsion as the step scan class, but at the right time in the scan. [Richard Woolliscroft - a0d8843]
- BLXVIII-179 add option to hide Xmap (Silicon) option in detector editor [Richard Woolliscroft - a76968b] As B18 and I18 now are using Xspress3.
- BLXVIII-180 change the reference to the new BL object for focussing the sample [Richard Woolliscroft - 2de4242]
- BLXVIII-182 convert NaNs to 0.0s [Richard Woolliscroft - 56f0a6b] EPICS can send NaNs if the detectors are in a bad state or are swiyched off. This causes problems for data analysis down the line so they must be convereted zeroes.
- BLXVIII-183 add button to fetch current values from table 3 [Richard Woolliscroft - e5c5c99]
- BLXVIII-188 remove xmap references from I18 and microfocus plugins [Richard Woolliscroft - 6ec68fb]

- [BLXVIIIIB-150](#) switched to readout FFs from hardware windows instead of ‘soft’ ROIs from MCAs. [Richard Woolliscroft - 1a77cb1] Tested on beamline in step and continuous scans.
- [BLXVIIIIB-204](#) prevent InterruptExceptions created by CommandQueue skip or abort from being absorbed [Richard Woolliscroft - 2b2d606] There were several places where this was happening.
- change xpress subfolder [Richard Woolliscroft - a206f38] The MCAs from Xpress3 are written to their own HDF file.
- Change Xpress3 interface so that BufferedXpress3Detector will work with both versions of Xpress3Detector (the original and the new WithFullCalculations version) [Richard Woolliscroft - a62f59d]
- create XmapReadbackHdf5NXPlugin to generate Xmap data during Constant-Velocity scans within the NXDetector framework [Richard Woolliscroft - f150fac]
- extend the range of available elements [Richard Woolliscroft - 6bf5ce2]
- fix bug in Xpress3 editor where data was not being saved after acquire [Richard Woolliscroft - 02ebec9]
- fix bug with xpress3 in map scans [Richard Woolliscroft - 47efb53]
- fix configuring Xpress3 when pressing the ‘configure’ button in Xpress3 Editor and when running script scans [Richard Woolliscroft - 9054f77]
- fix fluorescence composite where it was always opening the same file [Richard Woolliscroft - 4d830e2]
- fix gas filling controls in Ion Chamber Composite [Richard Woolliscroft - 45f01c5]
- fix gas filling during UI scans [Richard Woolliscroft - 0fc89ca]
- fix I18 sim [Richard Woolliscroft - 2a3a8c6]
- fix MicroFocusNexusReaderTest [Richard Woolliscroft - ca12bfb]
- fix NPE shown by unit tests [Richard Woolliscroft - 2d75389]
- fix tab label [Richard Woolliscroft - 5fbcca2]
- Fix the scrollbars in the RGA view [Richard Woolliscroft - 6e877af]
- fix unit test - the bean has a new attribute which needed setting in the test [Richard Woolliscroft - 821116d]
- fix unit test by explicitly setting an attribute in the test [Richard Woolliscroft - 469252b]
- fix unit test xml files after change to xsd [Richard Woolliscroft - 96f3729]
- Fixes to new xpress3 classes after testing with hardware on beamline [Richard Woolliscroft - 2419ce9] performance improvements, add ability to open old files in GDA client
- I18 get the correct ascii headers for energy, map, raster and faster raster scans [Richard Woolliscroft - 2941918]
- I18 remove scannable names from microfocus xml and instead direct inject the object references into the mapping objects [Richard Woolliscroft - 2eadbf3]
- Merge from I18 and B18 production workspaces [Richard Woolliscroft - 926c2ec] change number of decimal places for Xpress2 FF
- move the duplicated diffraction code into superclass and add a new preference to control its visibility [Richard Woolliscroft - 1a16a94]
- move Xpress2 unit tests out of server.exafs.tests into their own plugin [Richard Woolliscroft - 0d7e969]
- move xpress3.epics plugin code into xpress3 and remove unnecessary dependencies on xpress3 plugin [Richard Woolliscroft - 37fea43] The epics fragment is pointless as the Xpress3 has to use epics. Instead remove the unnecessary reference to the xpress3 plugin
- new Xpress3 interface. Interact with this interface as much as possible. [Richard Woolliscroft - 1213013]
- new Xpress3 interface. Interact with this interface as much as possible. [Richard Woolliscroft - d7d4b2d]

- Now toggle energy control PV at the start of every Qexafs scan and implement the boolean so beamline staff can switch this functionality off and on via Jython [Richard Woolliscroft - fc408c2] The methods were there but not implemented.
- prevent illogical step width sizes [Richard Woolliscroft - fc11afd]
- remove cid detector by default as it is used so rarely [Richard Woolliscroft - bb4daca] GDA contact to manually add back for the one or two experiments per year it is actually used
- remove classes relating to the aborted attempt to refactor the xspres and vortex editors [Richard Woolliscroft - 4ed82a5] when this work is done, it should be done from scratch using new technology and not try to refactor the RichBean editors
- remove python scripts now replaced with Java classes [Richard Woolliscroft - 89b2162]
- rename some classes and method for clarity [Richard Woolliscroft - 35ec684]
- rename uk.ac.gda.beans.vortex plugin to uk.ac.gda.exafs.api [Richard Woolliscroft - 529f0bc] as that is what it is: the API layer between the Exafs UI and server plugins
- separate out functionality observing file readability [Richard Woolliscroft - d357cf9]
- show integers for all element count values in editors [Richard Woolliscroft - a1ea4a5]
- switch between sample stages for step scans (exafs and xanes) using the same mechanism as maps [Richard Woolliscroft - 077e1a6]
- tell the map scripts to record the proper header information in ascii [Richard Woolliscroft - 6896e77]
- testing on I18 with x-rays [Richard Woolliscroft - bdc6b2d] Fixes to xspres3 in raster / qexafs scans
- tidy up xspres2.test plugin [Richard Woolliscroft - 657e6ac]
- use correct ID in source code [Richard Woolliscroft - ef867a2] (even if never referenced)
- wait for sample wheel to complete move [Richard Woolliscroft - f42338c]
- when modeoverride (I18) then display options for virtual scalers, not windows [Richard Woolliscroft - 9d81197]
- XAA-172 move location of private method in file to make it more readable [Richard Woolliscroft - 5e77562]
- XAS-162 ensure the FileRegistrar object is always used in UI scans [Richard Woolliscroft - f91251d]
- XAS-162 make sure that the Nexus file is added to the FileRegistrar when file writing is complete [Richard Woolliscroft - e97a72d]
- XAS-170 only create one version of the scan objects [Richard Woolliscroft - 5995d7f] enables re-use of factory elsewhere in the code e.g. xes scans on I20
- XAS-172 add extra functionality to DetectorPreparer [Richard Woolliscroft - 8214e98] so I18 can add a diffraction detector to the scan when user selects the option
- XAS-172 add FasterRasterMap Java class [Richard Woolliscroft - e2042b4]
- XAS-172 add OutputPreparerTest [Richard Woolliscroft - dec9556]
- XAS-172 after testing QexafsScan.java [Richard Woolliscroft - 0fc91c5] I was going to write a unit test but there is so much duplication with XasScan.java that all that was needed was some refactoring to properly inherit from XasScan. There is not much to QexafsScan now. All the real work is done in the preparers and the ContinuousScan class. JavaDoc written for ExafsScan to explain the architecture.
- XAS-172 changes after testing I18 [Richard Woolliscroft - 11d3fa8]
- XAS-172 changes to allow the client and editors to start [Richard Woolliscroft - d8e3766]
- XAS-172 changes to get mapping plotting working again [Richard Woolliscroft - a20f127]
- XAS-172 changes to get raster map unit test working [Richard Woolliscroft - 5041ed1] some name changes to make the design clearer
- XAS-172 correctly open detector xml file [Richard Woolliscroft - e18b3c7]

- [XAS-172](#) fix compiler errors after SciSoft unannounced refactoring and complete enough XAS script refactoring to be ready to test B18 [Richard Woolliscroft - 1309494]
- [XAS-172](#) fix fasterraster maps to use the same classes as raster maps with new bi-directional mode for ContinuousScans [Richard Woolliscroft - b1e09bd]
- [XAS-172](#) fixes to get Xanes and Exafs scans working for B18 using new Java code [Richard Woolliscroft - 8addb3b] - some output not clear - some code needs moving to the preparers level
- [XAS-172](#) initial commit of new Java map scans [Richard Woolliscroft - d2da1eb]
- [XAS-172](#) merge the ROI classes for xpress, Vortex and xpress3 [Richard Woolliscroft - 0486431] They were all the same....
- [XAS-172](#) minor code clean up [Richard Woolliscroft - 3fc7ad8]
- [XAS-172](#) minor UI changes to allow for I18 Keithleys [Richard Woolliscroft - 3c8b5f8]
- [XAS-172](#) move all XAS client and server shared objects into beans plugin [Richard Woolliscroft - f0ebd99] so exafs.server only contains server-side objects and the dependency on exafs.server can be removed from many client and devices plugins
- [XAS-172](#) new Java class to perform raster map scans. [Richard Woolliscroft - 2659bd1] todo: unit test and system testing by running the acceptance tests with the dummy configuration
- [XAS-172](#) new MapScan unit test [Richard Woolliscroft - 005f094] doing this has enabled/caused lots of the code to be improved
- [XAS-172](#) port the qexafs.py class into Java [Richard Woolliscroft - f321850] tested with B18 dummy configuration with all xml options. Cirrus code not included - need to think about the structure.
- [XAS-172](#) refactor XasScan to more cleanly define work done by preparers [Richard Woolliscroft - 2bc4c24]
- [XAS-172](#) remove some I18 and B18 specific code out of shared XasScan class [Richard Woolliscroft - eefca2b]
- [XAS-172](#) remove unused script [Richard Woolliscroft - 9659d55]
- [XAS-172](#) update imports after rebase [Richard Woolliscroft - 2c298e4]
- [XAS-172](#) updated xml / xsd [Richard Woolliscroft - 4bcf1a1]
- [XAS-172](#) use Factory design pattern to ensure the the objects controlling XAS scans are constructed properly [Richard Woolliscroft - fc21e70] added to b18, i18 and bm26a beamlines so far.
- [XAS-172](#) use the new BeamlinePreparers [Richard Woolliscroft - 553b87e]
- [XAS-172](#) write unit test for XasScan [Richard Woolliscroft - 235ab73]
- [XAS-175](#) use the extraNames to work out the IO column in the data [Richard Woolliscroft - 5cb16b0] do not assume it is column 1, as this breaks things for TFG 1
- [XAS-177](#) New Composite and View for configuring Xpress3 detectors [Richard Woolliscroft - 66a8baf] Composite can be used in RichBean XML editors
- [XAS-185](#) distribute fluo detector configuration objects over RMI and remove from Jython namespace [Richard Woolliscroft - e855c01]
- [XAS-187](#) prevent FileNotFoundException when changing radio button selection [Richard Woolliscroft - 76c522f]
- [XAS-190](#) fix layout problem after merge with DawnSci Richbean code [Richard Woolliscroft - 2f452d1]
- [XAS-190](#) remove GDA copy of RichBean classes and use DawnSci version instead [Richard Woolliscroft - 4ae9ec9] Changes in GDA dev since the fork have been applied to the DawnSci version
- [XAS-190](#) switch to new ExperimentDefinition base class editor [Richard Woolliscroft - d5d85fb]
- [XAS-192](#) improvements to Hidden RGA UI [Richard Woolliscroft - 8dfb206] added collection rate to UI

- [XAS-192](#) new class to operate the Hiden RGA mass analyser [Richard Woolliscroft - 50ec5fd] This is driven through Epics. There is a new Scannable which can be part of a scan, or can log the masses to a file with timestamp.
- [XAS-1972](#) after integration and testing of I18 map scans [Richard Woolliscroft - 775847a]
- [XVIII-152](#) changes to microfocus perspective to work with xpress3 [Richard Woolliscroft - 157b45d]
- [BLVIII-25](#): Second user experiment - integrate XIA XMAP Integrate XMAP in NXDetector framework. XBufferPlugin is a plugin that set up EPICs xbuf intermediate plugin. [Silvia Ramos - ffb67e1]
- [BLVIII-40](#): Refactor XBuffer plugin and Xmap controller (manual merge from 8.40 of e8c3e157, b1ff792, 3936f7e) [Silvia Ramos - 6baa179]
- [BLVIII-53](#) push all new Xmap classes to master (location of the packages have been changed [Silvia Ramos - b1ff792]
- [BLVIII-54](#) Xmap passing unit test [Silvia Ramos - 3936f7e]

MX

Separate release notes will be produced by the MX team.

5.2.5 How to create notes

1. Run the git command: `git log --no-merges --pretty='format:"%aD", "%an", "* %s [%an - %h] %b"' gda-8.42rel..gda-8.44rel > /tmp/reponame.version.csv`
2. Open up in excel or the likes,
 - (a) Sort by name, as we tend to work in our pet areas and this makes categorisation simpler (also message quality is likewise correlated).
 - (b) Add an empty column to fill with single character tags. These will become component headings. e.g. 'u' for user 'dz' for developer+zebra.
 - (c) Sort by the tab columns
3. Cut each tag group paste to the release notes file under the appropriate heading.
4. Fixup the reStructuredText.
5. Tweak the text of the user highlights at the top.

6.1 User Highlights

6.1.1 New Features

6.1.2 Fixes

6.2 Developer

6.2.1 Important

6.2.2 New Features

6.2.3 Fixes

6.2.4 How to create notes

1. Run the git command:

```
git log --no-merges --pretty=format:%aD%, %an%, \* %s [%an - %h] %b\ 8.40rel..HEAD > /tmp/reponame.version.csv
```
2. Open up in excel or the likes,
 - (a) Sort by name, as we tend to work in our pet areas and this makes categorisation simpler (also message quality is likewise correlated).
 - (b) Add an empty column to fill with single character tags. These will become component headings. e.g. 'u' for user 'dz' for developer+zebra.
 - (c) Sort by the tab columns
3. Cut each tag group paste to the release notes file under the appropriate heading.
4. Fixup the reStructuredText.
5. Tweak the text of the user highlights at the top.

7.1 User Highlights

7.1.1 New Features

- Jython Console
- Ctrl-d and ctrl-z can be used to clear the current command without executing. Can be used to stop entering multiline commands and will escape the “stuck on ‘...’” problem seen when loops/blocks are not entered correctly.
- Jython Autocomplete
- Tab will also autocomplete with similar behaviour to ctrl-space in previous releases.
- Tab will still insert tab character when after only whitespace.
- Autocomplete is now available from anywhere on a line (rather than just first word)
- Tab/space/enter can all be used to enter currently selected completion (rather than top option being used for all but enter).
- JythonConsoleView buttons simplified.
- Now single button to pause scans and scripts.
- New button to complete scans after current data point
- New button to abort all scans, scripts and commands without calling stop on all beamline hardware
- Improvements to the underlying mechanisms which abort scans and hold the beamline’s scan/script status.

7.1.2 Fixes

7.2 Developer

7.2.1 Important

- GDA-5691 and sub-tickets: significant refactoring to how Scan status is stored, and how scans and other commands are stopped/halted/aborted:
- global scan status has been removed, now each scan instance holds its own state. The Jython Server will return the status of the last scan run
- Scan status made much richer, and now has a state machine to enforce allowed transitions
- Scans now have a ‘requestFinishEarly’ method to make the scan finish after the current data point but still go through the normal shutdown mechanism

- PanicStop replaced by a beamlineHalt command which does the same thing as before, but also there is a abortCommands method which stops scans and scripts but does not call stop on all beamline hardware
- GUI buttons simplified for users, script and scan buttons merged.
- Script interrupt static boolean replaced. Now Scripts can only be aborted using the abortCommands or beamlineHalt methods.
- Changes to interface and method names in the InterfaceProvider sub-interfaces
- Javadoc explaining the difference between atScanEnd and atCommandFailure improved
- GDA-5883 Scan.getScanNumber() and ScanDataPoint.getScanIdentifier() now both return ints. Before Scan used a Long and ScanDataPoint used a String for the same information.

7.2.2 New Features

- Incremental Elog Entries
 - Elog Entries can be added to before being posted using
 - addText(String text)
 - addImage(String imgPath)
 - addImage(String imgPath, String comment)
 - addImage(String[] imgPaths)
 - and then using post() or postAsync()
 - existing methods are left unchanged
 - to add images, gda.elog.imageurl needs to be added to java.properties with http://rdb.pri.diamond.ac.uk/php/elog/cs_logonlyimageupload_ext_bl.php

7.2.3 Fixes

- Event Service
- Fixed case where EventService could be returned even when it could not be configured correctly. Exceptions are now passed up rather than caught and logged.

7.2.4 How to create notes

1. Run the git command:

```
git log --no-merges --pretty=format:%aD%, %an%, \* %s [%an - %h] %b\ 8.40rel..HEAD > /tmp/reponame.version.csv
```
2. Open up in excel or the likes,
 - (a) Sort by name, as we tend to work in our pet areas and this makes categorisation simpler (also message quality is likewise correlated).
 - (b) Add an empty column to fill with single character tags. These will become component headings. e.g. 'u' for user 'dz' for developer+zebra.
 - (c) Sort by the tab columns
3. Cut each tag group paste to the release notes file under the appropriate heading.
4. Fixup the reStructuredText.
5. Tweak the text of the user highlights at the top.

GDA 8.38 (MAR/2014)

8.1 User Highlights

8.1.1 New Features

- Completed GDA views for interacting with Epics Area Detectors. These show live data from area detectors during a scan or while free running. These live images can be analysed with DAWN's analysis tools. There is an MJPG viewer. (This system is now easy to configure if the 'controls/daq standard' set of AreaDetectors plugins is deployed by the controls group.)
- Merged our Nexus metadata solutions to allow the collection of both permanent well-categorised metadata and sources configured from the command line. [Ramos - 6ca8be9]
- Added a toolbar button to the live scan plot view to limit the number of displayed scans (to mitigate performance issues) [Chris Coles]
- Removed unused preference pages from RCP client. Users should now be more able to discover relevant properties for themselves. [Chris Coles]
- Created a generic mechanism for fast raster scanning. Integrated PI's (very portable) "High precision xyz nanopositioning system" used on many beamlines. This might be used to locate small samples mounted on a diffractometer stage (ask Gareth Nisbet to borrow it). [Robert Walton]
- Added support for suffix in application title (via LocalProperties.GDA_GUI_TITLEBAR_SUFFIX) [Fajin Yuan - a6fd531]
- Updated the ROI selection mechanism on the area detector image view to reduce the chance of critical ROI's being moved by accident whilst using a DAWN tool like e.g. line fitting.
- Created a ScannableToggler class which can be configured to toggle a scannable at the start and end of the scan, line, point, or motor moves. E.g.:

```
>>> scan motor 1 10 1 detector fastshutter # might open during exposure
>>> scan motor 1 10 1 detector slowshutter # might open during scan
>>> scan energy 1 10 1 close_shutter_while_moving
>>> scan motor 1 10 1 detector move_screen_out_while_counting
```

8.1.2 Fixes

- A script which calls another script will now stop when one of the stop buttons is pressed. [GDA-5854 Ramos - 43cd478]
- Fix race condition that could cause metadata not to be written during very short/quick scans [Rob Walton - ab69680]
- Fix the problem where scans fail with a Capture failed exception if the HDF5 writer plugin has not been used outside of a scan since the Area Detector IOC was restarted. [Mark Booth - 78c65d0] (Ensure that HDF5 factory bean sets LazyOpen after Properties set.)

- Update the command line scan data processing to use newer SciSoft methods for fitting e.g. Gaussian peaks, edges and pairs of edges (for wirescans)[Peter Holloway - c2fde8c] [Rob Walton - ab76370]
- Never show the reduced GUI if the baton management system is disabled (via 'gda.accesscontrol.useBatonControl' property).[Rob Walton - 174cc5a]
- When typing commands the TAB key now properly inserts tabs at the cursor position rather than the end of line. [Peter Holloway - 6bcdcd8]

8.2 Developer

8.2.1 Important

- Change to how Jython interpreter output is handled In GDA 8.36 the default value of the `gda.jython.GDAJythonInterpreter.useWriters` property was changed to `true`. In GDA 8.38 this option has been removed. Output from the Jython interpreter is now always passed to GDA through a `Writer` rather than an `OutputStream`.
- `NexusDataWriterMetadataTree` removed The code and functionality has been integrated into `NexusDataWriter` (which it extended).
- SLF4J and Logback logging libraries upgraded The logging libraries used by GDA have been upgraded. GDA now uses `SLF4J 1.7.6` and `Logback 1.1.1`.
- This may be important: Added needed plotting services plugin start level for example client [Peter Chang - 7fced0c]
- CORE - Add `checkForException` in `ScanDataPointPipeline` [Paul Gibbons - 282b5d2] The main Scan thread can check this regularly
- MTGDA (8.34) Add `.hooks/post-checkout` to correct core/bin/gda execute perms. [Mark Booth - ad82a53] Note that this will only be copied into `.git/hooks` on deployment and will only be run on a command line git checkout. Checking out or switching branches from `egit` may still leave files without group and other execute permissions.
- fix logic when deciding to plot or not lines based on the `ScanPlotSettings` [Richard Woolliscroft - 5b4d50f] There seems to be some duplication here which should be resolved
- Add bin to pydev project path and a `gda_root` based external path for jca. [Mark Booth - 3feed05] This should allow jython unit tests to run without project specific project external paths being set. To set up the `gda_root` variable (needed only once per workspace):

Window > Preferences > Pydev > Interpreter - Jython >

String Substitution Variables tab > Add variable Key: `gda_root` Value:
`/dls_sw/iXX/software/gda_versions/gda_X.YY/`

Project paths based on `gda_root` assume that a standard deployment is in use

- **SCATTER-147 [Tobias Richter - f173cd5] avoid too much processing in Java (that's the reason for having a database)**
This will also return the latest commissioning visit for staff (in case `defVisit` isn't up to date)
- GDA (8.34) Default `ORBClass` and `ORBSingletonClass` to the only classes we use. [Mark Booth - b7ca7a3]
Also make the default event channel name `local.eventChannel` and tidy up the test cases.

8.2.2 Epics AreaDetector

- BLXV-26 BLXV-73 BLXV-81 BLXV-82 BLXV-83 (8.36) Refactor AD v17. [Mark Booth - be1381a]
- Add the `ADCommon` and `GetPluginBaseAvailable` interfaces. Together these interfaces allow plugins to take either another plugin or a driver as an input.
- Implement the `ADCommon` interface on the `ADBase` and `NDPluginBase` interfaces.

- Extend all ND plugin interfaces to use `GetPluginBaseAvailable` instead of just having a local copy of `getPluginBase()`.
- Implement a new abstract base class
- EPICS (8.34) `ADDetector` default filewriter now does not support write status [Rob Walton - c6d8b92]
- EPIC (8.30) Create `SoftwareSynchronisedMultipleExposure NXDetector` triggering strategy [Rob Walton - b467e64]
- EPICS `CollectionStrategy` and `CVMoveController` using TFG2 [Paul Gibbons - b715f3f]
- EPICS - Allow filewriter to be re-used in same scan. Add `checkPathExists` [Paul Gibbons - 1f71b9c]
- GDA-5386 (8.34) Add `oneTimeSeriesCollectionPerLine` parameter to `ADTimeSeriesStatsPlugin` and associated factory [Rob Walton - af6f07d]
- GDA-5386 (8.34) Add a todo to `ZebraScannableMotor` indicating a logical error (that has no impact but is confusing) [Rob Walton - 66b7dc3]
- GDA-5386 (8.34) Modify `ADRectangularROIPlugin` to close rois down to zero size when unused [Rob Walton - 590c7fe] ... As a side effect this will cause linked overlay plugins not to show their overlay
- GDA-5840 Allow sub-classing of AD Views rather than need for `ViewCreator` [Paul Gibbons - 3469397]
- PCO should use `EXTERNAL_AND_SOFTWARE` trigger mode [Paul Gibbons - 96f8855] This allows rolling shutter on `PCOEdge`
- GDA-5840 Support plugin naming convention in AD GUI [chris.coles@diamond.ac.uk - cd0ca22]
- BLXV-82 (8.36) Add `SingleExposureUnsynchronisedExternalShutter` trigger strategy. [Mark Booth - 85c1390]
- GDA-5840: Created a dynamic AD controller implementation so that cameras can be added dynamically. Still in development but working for histogram. [chris.coles@diamond.ac.uk - 8b1a771]
- New Pixium classes [Paul Gibbons - 37cefe4]
- Add check that `startAcquiring` leads to a new image being acquired [Paul Gibbons - 8db546a]
- Ensure PCO `AcquirePeriod` is 0. [Paul Gibbons - c0a7f0a]
- EPICS - Allow filewriter to be used in a multiscan [Paul Gibbons - 242ded2]
- GDA-5840 Create `MJPegView` [Paul Gibbons - 50be638]
- GDA-5840 Use secondary id to identify `ADController` for `HistogramView` [chris.coles@diamond.ac.uk - 76db5d2]
- BLXV-82 (8.36) Add new constructor to `MultipleExposureSoftwareTriggerAutoMode`. [Mark Booth - 836b70b] This allows you to omit the `maxExposureTime` constructor argument.
- BLXV-69 (8.36) Add support for multiple filewriters in `additionalPluginList`. [Mark Booth - cb9089f] The `SingleImagePerFileWriter`
- EPICS - Support `CreateDirectory` functionality in `ADPlugin` [Paul Gibbons - 9ab8e18]
- MT-GDA (8.36) Add option to suppress `Path does not exist` on IOC errors. [Mark Booth - 38ed0a0] Several of the Area Detectors on MT beamlines incorrectly report that a path does not exist when it does so in order to use these area detectors these errors must be suppressed.
- EPICS - `CollectionStrategy` for Pixium [Kaz Wanelik - 9bc350f]
- Add TFG2 based collection strategy [Paul Gibbons - 7ab48e4]
- EPICS - `MultipleImagesPerHDF5FileWriter` - check for errors during scans [Paul Gibbons - 08c1030]
- EPICS - `FileWriterBase` - support `checkErrorStatus` [Paul Gibbons - 3fba51d]
- EPICS - `NDFileImpl` Add timeout to `startCapture` [Paul Gibbons - 8776346]
- EPICS - Add `checkDroppedFrames` to `NDPluginBase` [Paul Gibbons - 1e01967]

- EPICS (8.34) Create AreaDetector Merlin driver that triggers a an energy threshold sweep at each point in scan. [Rob Walton - 47f24aa]
- BLVII (8.34) Fix Epics time series code to read current data. [Rob Walton - a1fe264] It used to read out the data from the previous scan!
- ADViewer - Do not update the plot whilst the roi is being changed [Paul Gibbons - 7dd0172]
- EPICS (8.36) Ensure that HDF5 factory bean sets LazyOpen after Properties set. [Mark Booth - 78c65d0] This fixes the problem where scans fail with a Capture failed exception if the HDF5 writer plugin has not been used outside of a scan since the Area Detector IOC was restarted.
- BLXV-26 BLXV-73 BLXV-81 BLXV-82 BLXV-83 (8.36) ADControllerImpl improvements [Mark Booth - 55e2c8f]
- Add support for UInt32 in ADControllerImpl.
- GDA-5836 (8.36.GDA-5836) Make NexusDetectorProcessor a HardwareTriggerableDetector [Rob Walton - 5e4dec0]

8.2.3 Epics ZEBRA

- BLXV-26 BLXV-73 BLXV-81 BLXV-82 BLXV-83 (8.36) Zebra CV move ctr improvements. [Mark Booth - 5f1c0a7]
 - Calculate minimumAccelerationTime from getCollectionExtensionTimeS for detectors implementing the UnsynchronisedExternalShutterNXCollectionStrategy interface.
 - Add checks for minimum acceleration distance taking too long
 - Added a note that the setMinimumAccelerationDistance should never be smaller than the deadband of the motor.
 - Added a getMinimumAccelerationDistance() method.
- BLXV-26 BLXV-73 BLXV-81 BLXV-82 BLXV-83 (8.36) EpicsController improvements.
 - Add a warning when the count of elements returned from a channel is different to the count requested. [Mark Booth - 9b90ae6]
 - IMPORTANT: This immediately highlights a variety of Epics failure modes which would otherwise go unnoticed!
 - Add length of timeout used to timeout exceptions.
- Add ZebraShutterPositioner
- Add setPCArmInput to Zebra [Paul Gibbons - e87d3e1]
- BLXV-82 (8.36) Support collection times greater than 214 seconds. [Mark Booth - 656e7e1] Using TIME-UNIT_MS the maximum PC times are 214881.9984ms or 214s
- BLXV-82 (8.36) Reset Zebra before each Arm. [Mark Booth - 0f08776]
- Make Zebra findable and add method to allow setting of various pvs [Paul Gibbons - c96d527]
- BLXV-82 (8.36) Add pcPulseTriggerNotGate to ZebraConstantVelocityMoveController [Mark Booth - 0c3e05e] This allows you to take the PCPulseWidth from maxCollectionTimeFromDetectors rather than using an arbitrary hard coded time.
- Improvement to Zebra soft input support - add getSoftInputObservable method to avoid Zebra having to extend IObservable [Richard Fearn - 23d587d]
- Zebra - support calls to set PULSE block parameters. Use PVValueCache [Paul Gibbons - e5b0cd6]

8.2.4 Hardware (not AD or Zebra)

- MXGDA-1641 Add setUserOffset method to EpicsMotor [Richard Fearn - 46239c9]
- Only stop configured motors - do not waste time trying to stop an unconnected motor [Richard Woolliscroft - 6cb3aaf]
- new EPICS motor position Comapare script allow to set motor Limits [Fajin Yuan - ceb7aaf]
- implement IBeamMonitor for RCP GUI access via RMI [Fajin Yuan - 892f70c]
- if a traj scan is aborted then leave Epics in a state where the next scan can be restarted by clearing the readback state when calling stop [Richard Woolliscroft - 4382180]

8.2.5 GUI

- GDA-5386 (8.34) Fix TwoDScanPlotter to deregister as an SDP listener only after receiving the last point rather than atScanEnd(). Also deregister in atCommandFailure() and stop(). [Rob Walton - b278aba] Now we have multiple scan threads atScanEnd can be called before the pipeline has been emptied.
- GDA-5838 Update id for GDA navigator [Paul Hathaway - 97fa7fd] - View extension was moved from u.a.g.pydev.extension plug-in
 - updated id in extension for u.a.g.client
 - updated reference in JythonPerspective
- GDA-5838 - Moved JythonPerspective to uk.ac.gda.client.scripting [Peter Holloway - f1b4b03] From uk.ac.gda.pydev.extension Includes changes to preference handling and references to ID.
- Updated the way limited are validated. [Phyo Kyaw - 769ef49]
- Remove new Activator class and replacing references to it to use pre-existing GDAClientActivator instead [Ramos - 5eaf349]
- GDA-5605 Include Logback Beagle in uk.ac.gda.client.feature [Richard Fearn - 7c63ad7] (plus the Nebula Grid plugin that it depends on) Don't remove the old Logback plugin just yet
- RotationViewer: allow access to top-level Composite after createControls has been called [Richard Fearn - bb34692]
- RotationViewer: allow Move to zero button to appear independently of the fixed step buttons [Richard Fearn - 504585d] Until now
- XAS-160 add log messages when buttons are pressed [Richard Woolliscroft - f5447ca]
- XAS-160 add debug log messages whenever Jython Console and Command Queue buttons pressed [Richard Woolliscroft - 59a039e]
- pause the queue when it is empty and pauseWhenQueueEmpty boolean attribute set to True [Richard Woolliscroft - 6c8e1af]
- do not enable controls when command queue is empty [Richard Woolliscroft - 6fe8477] Also have the queue stop button greyed out when the queue is empty for consistency
- BLXVIIIIB-125 improve Simple Scan view usability and error handling [Richard Woolliscroft - d82c295]
- GDA-5788 make the addData method public to allow plots to be added programmatically [Richard Woolliscroft - b1d2eec]
- GDA-5838 - Remove dependency on pydev.extension [Peter Holloway - a92d58c]
- CORE: updates to synoptic productt and perspective [chris.coles@diamond.ac.uk - adcbdf5]

8.2.6 Generic EPICS

- EPICS - add caputStringAsWaveform to CAClient [Paul Gibbons - ac8bd35]
- to support automatic configuration of GDA temperature objects when EPICS enabled such devices. [Fajin Yuan - 9073457]
- Epics: changed timeout for epics from 30 seconds to 5. [chris.coles@diamond.ac.uk - 1fc6d93]
- EPICs - EpicsMotor - use caputWait when setting the speed [Paul Gibbons - adeb916]
- EPICS - PVValueCache Class to act as buffer to EPICS. [Paul Gibbons - a05a916] putWait - send updates over channel access if the value to send is different from the value in the IOC. get - returns value sent in last monitor callback
- GDA (8.34) Fix EpicsTrajectoryMoveController to work with multinput scannables with an offset on just one input [Rob Walton - d10b263]
- minor changes to prevent occasional errors during traj scans [Richard Woolliscroft - 5d69ab9]

8.2.7 Help system

- Add help_contents.xml to built plugin [Paul Gibbons - 125d947]
- HelpHandler - add support for using Eclipse Help system [Paul Gibbons - 2ec488f]
- Client - add help_contexts to client [Paul Gibbons - 55daa13]
- HelpHandler - support gda_command topic types [Paul Gibbons - 5a921ac]
- Client - Add use of HelpHandler to JythonTerminal [Paul Gibbons - 6613b6c]

8.2.8 Logging

- Set eventDelay property to zero for all SocketAppenders defined for log server [Richard Fearn - 3899b61]
- Add uk.ac.gda.client.logging
- Add GDA_SOURCE property to logging context for server-side/client-side processes [Richard Fearn - 1807419]
- DASCTEST-214 Switch uk.ac.gda.core to Logback 1.1.1 [Richard Fearn - 885d65b]
- GDA-5000 / GDA-5769 Update features to use new SLF4J & Logback bundles [Richard Fearn - 27242b0]
- GDA-5000 / GDA-5769 Update uk.ac.gda.core PyDev path to use new SLF4J/Logback JARs [Richard Fearn - f1dac64]
- GDA-5000 / GDA-5769 Change uk.ac.gda.client to depend on new SLF4J bridge JARs [Richard Fearn - dda30d0]
- GDA-5000 / GDA-5780 / GDA-5771 Switch uk.ac.gda.core to Logback 1.1.0 [Richard Fearn - 5b2d1ad]* Update RedirectableFileLogger & ElogAppender following introduction of ILoggingEvent interface
- Add layout field to ElogAppender because AppenderBase no longer has one

8.2.9 Platform

- DASCTEST-204 use org.apache.{minalsshd} from tp/ not uk.a.c.gda.libs [Matthew Webber - 511f5d3]
- DASCTEST-191 Update PyDev in target platform to 3.3.3 [Matthew Webber - 270a454]
- DASCTEST-191 Update PyDev in target platform to 3.3.3 [Matthew Webber - 8160577]
- ADMIN: update org.apache.commons.lang and remove from uk.ac.gda.libs also specify version dependency [Matthew Webber - f10e752]

- ADMIN: update org.apache.commons.beanutils and remove from uk.ac.gda.libs [Matthew Webber - 936fe65]
- ADMIN: remove org.apache.commons.io from uk.ac.gda.libs
- ADMIN: switch from uk.ac.diamond.guava -> com.google.guava [Matthew Webber - 2fc367c]
- DASCTEST-187 Replace com.springsource.org.apache.commons.beanutils with org.apache.commons.beanutils
- DASCTEST-185 Move org.apache.commons.{configuration/jxpath} from uk.ac.gda.libs to tp/
- GDA-5000 Switch to SLF4J 1.7.5 [Richard Fearn - 7d67876] (this time for plugins importing org.slf4j with no version constraints)
- GDA-5000 Switch to SLF4J 1.7.5 [Richard Fearn - f374fc3]
- GDA-5859 Replace SLF4J JAR filenames with Ant paths [Richard Fearn - aed9f45]

8.2.10 Refactoring

- Live Plot: Further refactoring. Generally the same sort of thing mentioned in the last commit. [Chris Coles - ebcd37c]
- Live Plot View: Refactored for the following reasons: 1)This is a well used class and must be up to standard. 2)suppression of unused- this holds back progress. I want to know if method parameters arent used because removing them simplifies code. Hence we can be more efficient in using it. 3)direct calls to inner class attributes. Inner classes can have getter and setter classes just like normal classes. Doing it this way provides a mechanism to controll access to those attributes. And it's a standard coding practice. 4)class attributes at the top of the class. This makes our team more efficient at reading code. imagine the time it takes to find an attribute (small amount of time but unnesesery) but times that by no. team members that look at it and times that by the number of times they look at it. [Chris Coles - 6e3a17a]
- Reduce code duplication in LogServer [Richard Fearn - c895d61] Comparing LogServer.main and SimpleSocketServer.doMain:
- LogServer.main calls configureAndStartLogServer
- Reduce code duplication in LogServer [Richard Fearn - d0835f6] Both the main method and the configure method call configureLogging()
- GDA-5840: Changed MJPEGView to use ADActionUtils. Some code tidyup [chris.coles@diamond.ac.uk - 9c3a39e]

8.2.11 Scanning

- Prevent error if ScannableMotor has units but the DummyMotor underneath it doesn't [Richard Fearn - 4cc969a] This is a follow up to b32127a. If a ScannableMotor has units set explicitly
- improve messages to user and prevent errors when shutting down a pipeline already shutdown [Richard Woolliscroft - f616394]
- GDASCRIPTS: Fix regression in scan data processing system which broke it with SRS files [Rob Walton - 5f81cc8] The breaking changes were to move toward better Nexus support and were not unexpected.
- APRES-196 allow to persist subdirectory [Tobias Richter - 4c23324] Now you can swap StoredMetadataEntry to PersistantMetadataEntry (sic) and the directories are kept over restarts
- fix plotting for scanprocessors by using scisoftpy jython methods [Tobias Richter - 8d9bb89] and not SDAPlotter
- GDA-5906 Add atLevelEnd() to Scannables [Charles Mita - e47acfc]

8.2.12 Testing

- TESTING: move test data files out of source tree also general tidy of test code [Matthew Webber - 9d14123]
- TESTING: remove never-passing tests from core; cleanup runner [Matthew Webber - ebbc36e]
- GDA-5848 part of moving test helpers to their own plugin Removed old and obsolete test helpers that are no longer required [Matthew Webber - 28d97de]
- DASCTEST-168 Rationalize test environment [Matthew Webber - 9565128]
- ADMIN: convert uk.ac.gda.example.test to a fragment

8.2.13 Generic

- BLXV (8.36) Improved logging in ScannableBase:checkPositionLength() [Mark Booth - 474cc81] The exception now reports the name of the scannable which failed the check.
- BLXVIB (8.34) - BLBXVI-40 DummyMotor implements Unit String [Charles Mita - b32127a]
- Added public interface QueueEntry to allow access to QueuedCommandSummary [Conor Lehane - d9d4ae8]
- add beam monitor interface [Fajin Yuan - deb3e98]
- remove iWorkbenchPartSite parameter from CompositeFactory.createComposite interface [Jonathan Blakes - 77d430b] Most implementations use this to get a Display
- MXGDA-1248 allow MotorPositionViewer to have a callback which is invoked in preference to command-Format when demand changed [Jonathan Blakes - 1eeec3c]
- BLXV-83 (8.36) Add a PvManagerWithMockCAClients for testing. [Mark Booth - 6dc6911] This allows you to pass a PvManagerWithMockCAClients into a class you want to test in place of a real PvManager. This implements all of the CAClients as assertable Mock objects. Also add a Python standard `__repr__`.
- DASCTEST-217: add .site project for building stand-alone logpanel [Matthew Webber - f31360a]
- Replace use of RotationViewer with MotorPositionEditorControl [Paul Gibbons - 3ee60b3]
- GDA - Fix bug in reading limits in ScannableWrapper [Paul Gibbons - c9a88c9]
- Shutdown pipeline in event of run time exception [Paul Gibbons - 86e1efe]
- GDA-5840 Simplify specification of options for OpenViewListBox [Paul Gibbons - cea5681]
- Client - handle lowerGDALimits in ScannableMotor [Paul Gibbons - 6e6dfa3]
- Provider an implementation of MvcExampleModel that handles scannables on the server [Paul Gibbons - dede4d1]
- MvcExampleView - make use of new ObservableMap listening cell content providers. [Paul Gibbons - 3dc00da]
- MvcExample - Use CellLabelProviders to display model data as a progress bar [Paul Gibbons - a8935de]
- Example - Add dummyNXDetector [Paul Gibbons - a54f7da]
- Add MotorPositionEditorControl (currently a copy from exafs.ui.data) [Paul Gibbons - 7bd0ed2]
- Core - Support ConstantVelocityMoveController2 [Paul Gibbons - b82f10c]
- Core - MultiScanRunner run scan in runScan to allow exceptions to be raised. [Paul Gibbons - 02403de]
- Deprecated DataSetFunctionFitter [Peter Holloway - 96a0072] Relied heavily on other deprecated functions and scisoftpy offers similar functionality
- Add Activator class to uk.ac.gda.client [Peter Holloway - effdf49] Change imports from uk.ac.pydev.extension to new Activator Deleted pydev.extension plug-in

- GDA-5479 Remove the option to get Jython interpreter output through an OutputStream [Richard Fearn - 404eb28]
- EXAMPLE: make name server/event server/log server launchers work [Richard Fearn - 8b9bb22] Getting the object server launcher to work is more difficult.
- Add calculator view for GDA training [Richard Fearn - 848e967]
- DiCAT: throw more useful exception if username/password properties aren't set [Richard Fearn - ca14f00]
- Add handy command-line program for listing objects in the RMI registry [Richard Fearn - 0e708dd]
- GDA-5479 Add test program to reproduce Jython server problems by interrupting threads [Richard Fearn - 5164cfb]* Strip stuff out of GDAJythonInterpreter to allow it to be used in a test program
- update to the example config for the updated Jython course [Richard Woolliscroft - 14ee4b5]
- do not broadcast a PAUSE when the queue is emptied [Richard Woolliscroft - e3500b9] This leaves the system in an incorrect state as it puts the ScanBase.paused flag to true
- GDASCRIPTS: add dependencies to PYTHONPATH (relative to \${gda_root}) [Rob Walton - 4cbe909]
- GDA-5836 (8.36.GDA-5836.v2) [NEEDS TESTING on i13] Remove references to ScanPositionRecorder and ScanPositionRecordable. [Rob Walton - cacfcc9]
- GDA-5543 (8.34) Fix NXDetector to properly throw InterruptedException from waitWhileBusy in order to allow concurrentScanWrapper to continue with processing after a manual halt [Rob Walton - 10376ca]
- BLXVI (8.34) Properly clear cached readout value in HardwareTriggeredNXDetector [Rob Walton - 0ec1bef]
- Create nicer data for 3d volumes. [Tobias Richter - a3b3887]
- GDA-5858 enable ScanFileHolder to retrieve lazy datasets [Tobias Richter - 695a590]
- synchronise configureScanNumber to prevent skipping numbers [Tobias Richter - dfc0f2c]
- GDA-5808 chunk size needs to be smaller than datasize [Tobias Richter - 6030336] this should ensure that
- simplify configuration where you don't want to record all extra names [Tobias Richter - f98877b] even leaves open how many of them your scannable may have
- GDA-5657 stops oarcle's interest in a set timezone [Tobias Richter - e4d735e]

8.2.14 How these notes were created

1. Run the git command:`git log --no-merges --pretty=format:%aD\, %an\, * %s [%an - %h] %b\ 8.36rel..HEAD > /tmp/reponame.version.csv`
2. Open up in excel or the likes,
 - (a) Sort by name, as we tend to work in our pet areas and this makes categorisation simpler (also message quality is likewise correlated).
 - (b) Add an empty column to fill with single character tags. These will become component headings. e.g. 'u' for user 'dz' for developer+zebra.
 - (c) Sort by the tab columns
3. Cut each tag group paste to the release notes file under the appropriate heading.
4. Fixup the reStructuredText.
5. Tweak the text of the user highlights at the top.

— Rob Walton

GDA 8.36 (NOV/2013)

9.1 Changes to clearing of interrupted flag in ScanBase at end of a scan and checkForInterrupts

The Java property `ScanBase.GDA_SCAN_CLEAR_INTERRUPT_AT_SCAN_END` has been changed to `true` by default. As a result `checkForInterrupts` will always throw `InterruptedException` if the `ScanBase.interrupted` is `true`. Also on discovering that `ScanBase.interrupted` is `true` at the end of a scan `ScanBase.interrupted` will be set to `false` and an `InterruptedException` will be thrown.

9.2 Change to how Jython interpreter output is handled

The default value of the `gda.jython.GDAJythonInterpreter.useWriters` property has been changed to `true`. This means that output from the Jython interpreter is passed to GDA through a `Writer` rather than an `OutputStream`. This fixes GDA-5479, which prevented an interrupted thread from producing output, leading to a `BufferOverflowException`.

9.3 Persistent user-specific properties settings for Buckminster CQuery (materialize)

Materializing using a Buckminster CQuery is controlled by various properties. Sometime you need to override the default values, e.g. if you are not connected to the Diamond Light Source network.

Previously, you had to make the property changes or additions *every time* you referenced the CQuery, by doing this:

- If using the IDE - open the CQuery and go to the `Properties` tab
- If using the `dawn.py` script to invoke headless Buckminster - add changed or new properties to the command line as `-Dpropertyname=value`

Now, you can save property changes or additions in a file

- The file is named `${user.home}/.<cquery name>.cquery.properties`, so it is specific to both the user and the CQuery
- The file is optional, but if it does exist, it will be used
- The saved properties file will be read every time you materialize, and override whatever is in the CQuery
- (properties that are not in the file will be taken from the CQuery as normal)
- (IDE) You can still make one-off changes by editing the CQuery, but note that saved changes still override them
- (`dawn.py`) You can still make one-off changes on the command line, but note that saved changes still override them (?? needs checking ??)

- If you are not sure where `${user.home}` points to, simply materialize a non-existent component and look at the console output

Example override files (you will need to adjust them to your specific circumstances)

For developers not connected to the Diamond Light Source network:

```
download.location=public
download.location.common=public
```

For GDA developers who want to use authentication when cloning from GitHub (rather than anonymous clone, the default):

```
github.authentication=ssh
```

For developers where port 9418 (git protocol) is blocked:

```
github.anonymous.protocol=https
```

For developers who are connected to the Diamond Light Source network using SSH port forwarding:

```
diamond.dascgit.host.port=localhost:10001
diamond.p2.host.port=localhost:10002
```


GDA 8.34 (AUG/2013)

10.1 New variable for Buckminster “create.product” action

Since GDA 8.30, you have been able to customise the Buckminster `create.product` action (accessed from the *Buckminster* → *Involve Action...* menu). This is done via the settings in `buckminster.properties` in the `.site` project for your product.

An additional variable, `${product.version.major.minor}`, is now available for use in `buckminster.properties`. You might find this useful when specifying, for example, the name of the output directory.

<code>\${product.version.full}</code>	<code>8.34.0.v20121118-2211</code>
<code>\${product.version.main}</code>	<code>8.34.0</code>
<code>\${product.version.major.minor}</code>	<code>8.34</code>
<code>\${product.version.qualifier}</code>	<code>v20121118-2211</code>

10.2 Failed ScannableMotor moves now throw exceptions in wait-Whilebusy() or isBusy()

To restore the old behaviour set `ScannableMotor.isBusyThrowsExceptionWhenMotorGoesIntoFault` to false.

10.3 After an exception in a scan thread the scan now allows 10s for the pipeline to empty

If the pipeline does not empty in the allowed time, it is shut down hard as it used to be.

GDA 8.32 (JUN/2013)

Although this release incorporates many fixes and improvements, there are no changes that require special attention.

12.1 Changes to Buckminster actions (such as “create.product”)

Changes have been made to the way the Buckminster `create.product` action (accessed from the *Buckminster* → *Involve Action...* menu), to make it more flexible. Some of these changes have previously been available in Dawn products.

You should review (and change as appropriate) the settings in `buckminster.properties` in the `.site` project for your product.

Separate action for each platform

A run of `create.product` is always for a specific platform (a platform is a combination of a windowing system, os, and architecture; eg `gtk.linux.x86_64`). Previously, to specify the platform you wanted to build for, you edited `buckminster.properties` in the `.site` project, and then ran the Buckminster `create.product` action. This was clumsy, particularly if you wanted to build the product for multiple platforms.

Now, there is a separate Buckminster `create.product-<os>.<ws>.arch` action for each platform. No editing of `buckminster.properties` is required to select the platform. You can build the product for multiple platforms together, by going to *Buckminster* → *Involve Action...*, and selecting multiple actions to run.

Additionally, there are Buckminster `create.product.zip-<os>.<ws>.<arch>.zip` actions, which build the product and then create a `.zip` of the product.

Output directory location(s) can be specified

Previously, the `create.product` action wrote the result in a fixed location reached via a complex and unmemorable filesystem path.

Now, you have control over where the product is written. A typical GDA example would be:

```
product.parent.directory.location=${workspace.root}
product.directory.name=client
```

Of course, if you build the product for more than one platform, this won't work (each successive build will overwrite the previous one). In that case, you might want to use something like:

```
product.parent.directory.location=${workspace.root}
product.directory.name=${product.os}-${product.arch}
```

More complex specifications are available. For full details, see the Infrastructure Guide.

Output directory group and guid can be set

Previously, when the `create.product` action created (on Linux) a new directory, its group ownership was determined by the Linux default (usually the creating user's default group). In that case, no other user could delete the resulting directory, which is not always the desired behaviour.

Now, you can optionally set and propagate the group ownership of the parent directories created by any Buckminster `create.product` action (equivalent to using the Linux `chgrp` and `chmod g+s` commands).

A JRE can be optionally included in the product

Now, a JRE can optionally be included in the created product. The common use case is for a product distributed as a stand-alone application to users who might not have a JRE installed.

13.1 Changes to contents of uk.ac.gda.libs

The contents of the `osgi.bundle uk.ac.gda.libs` have changed, as follows:

1. JReality has been moved to its own plugin `org.dawnski.plotting.jreality`, located in the existing `dawn-ui.git` repository.
2. Jython has been moved to its own plugin `uk.ac.diamond.jython`, located in a new `diamond-jython.git` repository.
3. Jython has been updated from version 2.7.2 to 2.7.3.

13.2 Relocation of uk.ac.gda.libs

The location of the `osgi.bundle uk.ac.gda.libs` has changed.

Previously:

For Diamond developers, the component was checked out from subversion, and hence was materialized to

```
your_workspace/plugins/uk.ac.gda.libs/
```

For non-Diamond developers, the component was checked out from GitHub

(<https://github.com/openGDA/gda-libs>), and hence was materialized to

```
your_workspace_git/gda-libs.git/uk.ac.gda.libs/
```

Now, for all developers, the component will be checked out from Git (either the Diamond Git, or its mirror on GitHub), and

```
your_workspace_git/gda-common.git/uk.ac.gda.libs/
```

NOTE: Read carefully: it's in the `gda-common.git` repository (not `gda-libs.git`). The old `gda-libs.git` repository still exists, since that will continue to be used for Dawn 1.0 for non-Diamond developers, but the master branch in it has been deleted to make it clear that it is no longer to be used.

13.3 Update of included DAWN plugins

The components of DAWN that are included in GDA have been updated to a significantly later version, with many bug fixes and improvements.

To remove issues arising from multiple plotters, with GDA the following should be included in the configuration:

```
-Duk.ac.diamond.scisoft.analysis.analysisrpcserverprovider.disable=true
```

If you see any issues arising from missing `javax.vecmath/*` inside the jython scripting window, you will need to make sure that the server classpath contains the new `javax.vecmath.jar` which is now included in the target platform.

GDA 8.26 (AUG/2012)

14.1 Changes to ConcurrentScan (used by standard ‘scan’ command and all scan wrappers)

1. The `DetectorWithReadout` interface has been deprecated (this was used only on I18). Set `gda.scan.concurrentScan.readoutConcurrently` to `true` instead (after reading the 8.24 release note).

14.2 Changes to materialize directory layout

Previously, Git repositories were materialized to:

```
${workspace}_git/${repo-name}.git (repositories other than SciSoft)
${workspace}_git/scisoft/${repo-name}.git (SciSoft repositories)
```

Since the name of most SciSoft repositories starts with `scisoft-` anyhow, the extra level in the directory hierarchy for those repositories was deemed unnecessary, and has been removed. Now, all Git repositories are materialized to:

```
${workspace}_git/${repo-name}.git
```


GDA 8.24 (JUNE/2012)

15.1 Changes to ConcurrentScan (used by standard ‘scan’ command and all scan wrappers)

1. If `LocalProperties.GDA_SCAN_CONCURRENTSCAN_READOUT_CONCURRENTLY` is set to true Scannables will be moved to the next point in a scan while detectors from the current point are read out (e.g. if a scan contains motors and detectors, the motors will be moved to the next point while the detectors are read out).

CAUTION: If this feature is enabled then all the detectors on the beamline must latch counts somewhere before `Detector.waitForBusy()` returns so that `Detector.readout()` is not affected by any concurrent motor or shutter movements.

More precisely, when moving to the next point, Scannables at each subsequent level are moved until a level which contains a detector is encountered. The scan command thread then waits until the detectors from the current point have read out completely and the resulting `ScanDataPoint` has been added to the pipeline before continuing to operate devices at the level containing the a detector. The scan command thread will also wait at the end of each line for the Detector readout to complete before calling the `atScanEnd()` hooks and starting the next line.

NOTE that as a consequence of using this feature, an exception thrown while reading out a detector won't be thrown in the main scan command thread until after the next point's 'motors' have moved.

Detectors must work as follows to take advantage of this feature:

- `Detector.collectData()` should cause the hardware to start collecting immediately and as its interface says return immediately. If there is any delay then detectors used in the same scan would collect over different times when beam conditions may differ.
 - `Detector.waitForBusy()` should return as soon as the exposure completes and it is safe to move motors. i.e. counts must be safely latched either in hardware or software before returning.
 - `Detector.readout()` should block until the detector is ready to start collecting again. The value returned must not be effected by any concurrent motor or shutter movements.
2. `ConcurrentScan` now calls `waitForBusy()` on all Scannables not just those it is moving. This means for example that a Scannable that takes no inputs can be used to block the scan thread at a phase of the collection sequence based on its level. For example a level 9 Scannable could block in `waitForBusy()` while the beam is down, in order that level 10+ Scannable/Detectors are likely to have beam when collecting.
 3. A new 'publishing' thread will now run concurrently with the scan command thread. This thread publishes `ScanDataPoints` to the `DataWriter` and `IObservers` such as the GUI terminal/plot.

This change was implemented by causing `ConcurrentScan` to create a multi-threaded pipeline to publish `ScanDataPoints` by default (instead of only when a Scannable/Detector in the scan implemented `PositionCallableProvider`). To disable this behaviour set the `LocalProperty` "gda.scan.multithreadedScanDataPointPipeline.length" to 0.

The default pipeline length is 4 meaning that the scan command thread can get four points ahead of the publish thread before blocking. **ASIDE:** Remember that if a

Scannable/Detector implements `PositionCallableProvider` that the Callables it returns will be processed while in the pipeline using the a threadpool of size configured indirectly via the “`gda.scan.multithreadedScanDataPointPipeline.pointsToComputeSimultaneously`” LocalProperty.

4. The `SimpleHighestExistingFileMonitor` class has moved into the `gda.device.detectorfilemonitor.impl` package.

15.2 Configuration changes when starting GDA servers

A number of GDA components have been moved from Subversion to Git, and consequently the location to which they are checked out has also changed. Any items in your beamline configuration which reference those components will also need to be updated, as described below.

1. **The location of python script used to launch the GDA servers has moved:**

```
<workspace>/plugins/uk.ac.gda.core/bin/gda ->
<workspace>_git/gda-core.git/uk.ac.gda.core/bin/gda
```

2. The python script used to launch the GDA servers no longer passes java property `gda.root` to the servers.
3. **The python script used to launch the GDA servers now passes two new properties to the servers (java properties, not e**

`gda.install.workspace.loc` - this is the absolute path to the workspace directory (into which subversion components are checked out).

`gda.install.git.loc` - this is the absolute path to the directory into which git repositories are checked out

(note `gda.install.workspace.loc` is the parent directory of the (removed) `gda.root` (which pointed to the `plugins/` directory)

You do **not** need to add these to any properties file in a beamline configuration - they are passed by the launcher script (via `java -D<property>=<value>` etc.)

You **do** need to add these to any Eclipse IDE launchers you have set up:

```
-Dgda.install.workspace.loc=${workspace_loc}
-Dgda.install.git.loc=${workspace_loc}_git
```

(likewise, you should remove any `-Dgda.root` entry from all Eclipse IDE launchers)

4. Your spring configuration needs to be updated to reflect the new properties, and any changed locations. An example:

From:

```
<bean id="core_script_project" class="gda.jython.ScriptProject">
  <constructor-arg index="0" value="${gda.root}/uk.ac.gda.core/scripts" />
  <constructor-arg index="1" value="Scripts: Core" />
  <constructor-arg index="2" type="gda.jython.ScriptProjectType" value="CORE" />
</bean>
<bean id="epics_script_project" class="gda.jython.ScriptProject">
  <constructor-arg index="0" value="${gda.root}/uk.ac.gda.epics/scripts" />
  <constructor-arg index="1" value="Scripts: Core" />
  <constructor-arg index="2" type="gda.jython.ScriptProjectType" value="CORE" />
</bean>
<bean id="scisoft_script_project" class="gda.jython.ScriptProject">
  <constructor-arg index="0" value="${gda.root}/uk.ac.diamond.scisoft.analysis/src" />
  <constructor-arg index="1" value="Scripts: Core" />
  <constructor-arg index="2" type="gda.jython.ScriptProjectType" value="CORE" />
</bean>
```

To:

```

<bean id="core_script_project" class="gda.jython.ScriptProject">
  <constructor-arg index="0" value="\${gda.install.git.loc}/gda-core.git/uk.ac.gda.core/" />
  <constructor-arg index="1" value="Scripts: Core" />
  <constructor-arg index="2" type="gda.jython.ScriptProjectType" value="CORE" />
</bean>
<bean id="epics_script_project" class="gda.jython.ScriptProject">
  <constructor-arg index="0" value="\${gda.install.git.loc}/gda-epics.git/uk.ac.gda.epic/" />
  <constructor-arg index="1" value="Scripts: Core" />
  <constructor-arg index="2" type="gda.jython.ScriptProjectType" value="CORE" />
</bean>
<bean id="scisoft_script_project" class="gda.jython.ScriptProject">
  <constructor-arg index="0" value="\${gda.install.git.loc}/scisoft/scisoft-core.git/uk." />
  <constructor-arg index="1" value="Scripts: Core" />
  <constructor-arg index="2" type="gda.jython.ScriptProjectType" value="CORE" />
</bean>

```

15.3 New plotting system

The 1D and 2D plotting provided by SciSoft/DAWN displayed in a PlotView has been migrated to a new plotting that uses Draw2D. The old 1D and 2D plotting using JReality in the PlotView are still there, and by default, the plotting system is set to use the old plotting.

To switch between the two systems, one just needs to go in the Preferences of the application:

Window → *Preferences* → *DAWN* → *Plot View*

and set the Default plotting system either to Lightweight (new plotting) or Hardware Accelerated (JReality).

If, in your product, you want to set the plotting system to the new one, you just need to add to your `plugin_customization.ini` file the following line:

```
uk.ac.diamond.scisoft.analysis.rcp/plotView.plottingssystem = 1
```

Alternatively, if you want the old plotting instead:

```
uk.ac.diamond.scisoft.analysis.rcp/plotView.plottingssystem = 0
```


GDA 8.20 (JAN/2012)

New plugin `uk.ac.gda.analysis`. This contains the analysis code from `uk.ac.gda.core` and `uk.ac.gda.api` which depends on `uk.ac.diamond.scisoft.*` plugins.

`import scisoftpy` will return “module not found” unless you update the `cspec` for the configuration to include `uk.ac.diamond.scisoft.python`

GDA 8.18 (NOV/2011)

New plugins which all GDA beamlines should be aware of:

- `uk.ac.gda.api` contains the interface classes from `uk.ac.gda.core`. This should also improve readability of the core code.
- new `uk.ac.gda.swingclient` plugin which contains all the awt/swing code from core
- new `uk.ac.gda.common.client` plugin which contains shared client code for use by the swing (`uk.ac.gda.swingclient`) and rcp (`uk.ac.gda.client`) plugins

It is intended that the `swingclient` plugin could be deleted at some point in the future, when all beamlines have moved to an RCP client.

Removed unnecessary internal polling of `isBusy()` from `ScannableMotor` when used with `EpicsMotors`

- `ScannableMotor`'s `waitWhileBusy` method (called by `ConcurrentScan`) used to be the default `ScannableBase` implementation which polls `isBusy()` at 10Hz. Now if the motor is a `BlockingMotor` (`EpicsMotor` is) and the old behaviour has not been reverted (see below) a proper event-driven wait is performed on the `Motor`'s status.
- `EpicsMotor` is now a `BlockingMotor` with a a proper event-driven `waitWhileStatusBusy` method.
- To revert to the old behaviour set the `LocalProperty`: `gda.device.scannable.ScannableMotor.revertToPolling` to `true` before configuring.

IMPORTANT: `ScanBase` now calls `Detectors.waitWhileBusy()` methods to determine if they are busy rather than polling their `getStatus` methods at 10Hz. All `Detectors` must now implement `waitWhileBusy` properly to work in scans. In practice, all `Detectors` which extend `DetectorBase` must have an `isBusy()` status that matches `getStatus()` — as `DetectorBase.waitWhileBusy()` polls `isBusy()`. This change allows detectors to override `waitWhileBusy()` to for example block on a status monitor in a proper event driven way.

`JythonServer.stopAll()` now stops all finable `Motors` in parallel threads. This is to avoid a single slowly responding motor from preventing other motors from stopping.

General comment: In order to speed up scans, where possible `Scannables` and `Detectors` should override `waitWhileBusy` to work in a proper event driven way, rather than depending on `ScannableBase`'s default implementation which simply polls `isBusy` at 10Hz (by default).

Created a new system for logging `Jython` terminal output on the server side:

A `RedirectableLogger` logs strings to a file maintained by the instance and to a standard `slf4j` logger. The log file's location will be updated upon receipt of `PathChanged` events from a configured `{@link ObservablePathProvider}`. When the file location changes, a note will left in the last file directing a reader to the new file, and a note will be made in the new file indicating where the log was transferred from.

This might be used for example to create a server-side logger that mirrors everything from a `Jython` terminal window to a log file in the current visit directory. This should typically be done in `Spring` by wiring into a server's `JythonServerFacade` and `command-server` through adapters. For example, given that a `JythonServer` has been made (always named `'command_server'`), try this to get a `JythonServerFacade` reference:

```
<bean id="jython_server_facade" class="gda.jython.JythonServerFacade">
  <constructor-arg ref="command_server" />
</bean>
```

and then the following to build up a typical logger:

```
<bean id="terminal_logger" class="gda.jython.logger.RedirectableFileLogger">
  <constructor-arg ref="terminallog_path_provider" />
</bean>
<bean class="gda.jython.logger.OutputTerminalAdapter">
  <constructor-arg ref="jython_server_facade" />
  <constructor-arg ref="terminal_logger"/>
</bean>
<bean class="gda.jython.logger.InputTerminalAdapter">
  <constructor-arg ref="command_server" />
  <constructor-arg ref="terminal_logger"/>
</bean>
<bean class="gda.jython.logger.ScanDataPointAdapter">
  <constructor-arg ref="jython_server_facade" />
  <constructor-arg ref="terminal_logger"/>
</bean>
<bean class="gda.jython.logger.BatonChangedAdapter">
  <constructor-arg ref="jython_server_facade" />
  <constructor-arg ref="terminal_logger"/>
</bean>
```

where the `terminallog_path_provider` bean might be a dummy:

```
<bean id="terminallog_path_provider" class="gda.data.SimpleObservablePathProvider">
  <property name="path" value="{gda.data.scan.datawriter.datadir}/gdaterminal.log" />
  <property name="local" value="true" />
</bean>
```

or a one that tracks the server's visit metadata:

```
<bean id="terminallog_path_provider" class="gda.data.ObservablePathConstructor">
  <property name="template" value="{gda.data.scan.datawriter.datadir}/gdaterminal.log" />
  <property name="gdaMetadata" ref="GDAMetadata" />
  <property name="local" value="true" />
</bean>
```

GDA 8.14 (JUN/2011)

- upgrade GDA to support for EPICS Area Detector 1-7 interface;
- simplified GDA-EPICS interface schema, add new devices components support, and upgrade to epics-5.2.11.jar from 4.1 (see doc for usage);
- moved generic part of EPICS area detector support code from pco plugin to epics plugin;
- created new epics.client plugin to host common area detector client codes - StatusView and CameraPreviewView (MJPEG stream)
- improved MJPEG stream support to handle large and faster images.
- update MYTHEN to handle summed mythen data, and improved support for “GATED” mode of acquisition

GDA 8.12 (NOT EXTERNALLY RELEASED)

- Removed `DataVector` and `ScanPlot Views` using `Swing Bridge`. `Scan plots` are handled by the `XYScanPlot`. Plotting existing data is done using `RCPPlotter` command which sends data to `DataSetPlotter` objects.
- Add `Command Queue` to allow `Scripts` and `Commands` to be executed in a queue. See `commandQueueProcessor.xml` in `example-config` for information on enabling this in a client.
- The `FindableNameSetterPostProcessor` now always attempts to set a `Findable`'s name, even if the name has already been set (i.e. is not null or an empty string). This is to ensure consistency between the Spring bean ID (set using the `id="..."` attribute in Spring XML) and the name returned by the `getName()` method.
 - Note that if you do not specify a bean ID, Spring will create one for you.
- The `AcquisitionPanel` class (used in Swing GUIs) now has a `label` property. Panels in the GUI are identified by their label.
 - Some subclasses of `AcquisitionPanel` provide a default label. If no default is provided, and you do not specify a label, the panel's name (Spring bean ID) is used instead, which is typically not desirable.
 - Note that every panel must have a unique label.
- Documentation on the new-style configuration layout that permits use of the `--profile` and `--mode` parameters has been added to the "GDA configuration" section in the Developer Guide.
- The `gda.jython.JythonServer` class been modified to take a single `jythonScriptPaths` property instead of separate `userScriptDirectory`, `gdaScriptDirectory` and `gdaScriptLibraryDirectory` properties. The `jythonScriptPaths` property expects a `gda.jython.ScriptPaths` bean which defines a `startupScript` property and a `projects` property containing a list of `gda.jython.ScriptProject` beans.

For instance:

```
<bean id="command_server" class="gda.jython.JythonServer">
  <property name="jythonScriptPaths">
    <bean class="gda.jython.ScriptPaths">
      <property name="projects">
        <list>
          <bean class="gda.jython.ScriptProject">
            <property name="path" value="${gda.config}/users/scripts" />
            <property name="name" value="Scripts: User" />
            <property name="type" value="USER" />
          </bean>
          <bean class="gda.jython.ScriptProject">
            <property name="path" value="${gda.config}/scripts" />
            <property name="name" value="Scripts: Config" />
            <property name="type" value="CONFIG" />
          </bean>
          <bean class="gda.jython.ScriptProject">
            <property name="path" value="${gda.root}/uk.ac.gda.core/scripts" />
            <property name="name" value="Scripts: Core" />
          </bean>
        </list>
      </property>
    </bean>
  </property>
</bean>
```

```
        <property name="type" value="CORE" />
    </bean>
</list>
</property>
<property name="startupScript" value="\${gda.config}/scripts/localStation.py" />
</bean>
</property>
<property name="gdaVarDirectory" value="\${gda.config}/var" />
<property name="cacheDirectory" value="\${gda.config}/var/jythonCache" />
<property name="remotePort" value="9999" />
</bean>
```

would be equivalent to:

```
<bean id="command_server" class="gda.jython.JythonServer">
  <property name="userScriptDirectory" value="\${gda.config}/users/scripts" />
  <property name="gdaScriptDirectory" value="\${gda.config}/scripts" />
  <property name="gdaScriptLibraryDirectory" value="\${gda.root}/uk.ac.gda.core/scripts" />
  <property name="gdaVarDirectory" value="\${gda.config}/var" />
  <property name="cacheDirectory" value="\${gda.config}/var/jythonCache" />
  <property name="remotePort" value="9999" />
</bean>
```

- Single data points from an ETLDetector were being interpreted as an array, resulting in an unnecessary extra dimension in Nexus data. Now only a single value is stored, but this does mean that the format of the data is different to previous versions of GDA.

GDA 8.10 (RELEASED 6/DEC/2010)

- Devices that used to be configured as `Gdhist` need to be converted according to their open command:

open command	new class
<code>scaler* tfg open-cc* *header</code>	<code>Scaler</code>
<code>gdascaler*</code>	<code>Gdscaler</code>
<code>vvhist open*</code>	<code>Vvhist</code>
<code>*</code> (anything else)	<code>Gdhist</code> (no change)

All classes are in the `gda.device.memory` package in the `uk.ac.gda.core` plugin (no change). So simply change `Ghist` into the new class name in your Spring config.

- Java properties have been made less ambiguous. The `gda.users` and `gda.data.numtracker` properties have been dropped. They have been replaced by `gda.data`, `gda.var` and `gda.logs.dir` to explicitly state the top of the data folder structure, the var folder and the logs folder respectively.
- The ICAT connection details stored previously in the XML configuration of the `GDAMetadata` object have been moved into `java.properties`. New properties:

```
gda.data.metadata.icat.type           = <gda.data.metadata.icat.DLSIcat or gda.data.metadata
gda.data.metadata.icat.url            = <filename or database connection url >
gda.data.metadata.icat.shift_tolerance = 1440
# for use by DLS ICAT database
gda.data.metadata.dlsicat.user        = username
gda.data.metadata.dlsicat.password    = password
```

- The launcher options `--profile` and `--profileport` have been renamed to `--profiler` and `--profilerport` respectively.

GDA 8.8 (RELEASED 21/SEP/2010)

- Remove `NamedSimpleConverter`, which looks up its underlying converter by name using the `Finder`. `SimpleConverter` should be used instead; this has a `converter` property for the underlying converter.
- `CounterTimer` interface as been refactored. Now a detector returning an array of doubles should implement the `Detector` interface and define the number of expected doubles through its `extraNames` array. The `CounterTimer` interface is now only for detector classes whose timing is controlled by an external `Timer` object (i.e. at the moment this is only TFG driven detectors). The following classes have been moved up a level out of the `countertimer` package:
 - `NI6602`
 - `Counter6602GUI`
 - `CounterTimerPanel`
 - `AsynEpicsScaler`
 - `Epics8512CounterTimer`
 - `EpicsMCACounterTimer`
 - `EpicsScaler`

For simulation purposes `DummyConutertImer` should not be used unless you wish to simulate a matching `DummyTFG` class. Instead use `DummyDetector` and define arrays of `extraNames` and `outputFormats`. For classes remaining in the `CounterTimer` package the attributes `tfg` and `tfgName` have been renamed to `timer` and `TimerName` as these names are more correct as it is via the `Timer` interface that the object is used.

21.1 SwingGui Changes

- To close the GUI down automatically when the server dies there are properties to set for `gda.gui.BatonPanel`:
 - `closeDownOnBatonRenewTimeout` - set to `True`
 - `closeDownOnBatonRenewTimeoutTimeMinutes` - e.g. `2.0`
 - `closeDownOnBatonRenewUserPromptTimeMinutes` - e.g. `0.1`

GDA 8.6 (RELEASED 11/JUN/2010)

- GDA-3209: Removed bodes in `ScanDataPoint` and `ContinuousScan` that account for detectors with improperly set `outputFormats`. `ScanDataPoint.toString()` will magically work if `extraNames` returns `String[] {"%s"}`. Better still, see instructions from the [GDA 8.2](#) release notes to actually properly configure `extraNames`.
- GDA-3193: In `gdascripts.scannable.detector.ProcessingDetectorWrapper` removed `BodgedProcessingDetectorWrapperWithRobustLoading` and `BodgedProcessingDetectorWrapper`. Functionality can be configured in `ProcessingDetectorWrapper`'s constructor: robust loading will be used if `fileLoadTimeout` is set; file paths will be bodged to numbers if `returnPathAsImageNumberOnly` is true.
- GDA-2822: changed the `isPositionValid` method in `Scannable` to `checkPositionValid` - the new method returns a `String` instead of a `boolean` to enable better reporting of invalid positions to users.
- GDA-3222: when a scan is halted prematurely by user stopping it or by an error, `stop` will be called on all detectors in the scans as well as all scannables.
- GDA-3248: The Rich Bean Framework now writes the XML files it creates to a folder called `xml` which is at the top-level of the visit's data directory instead of being stored inside the visit's workspace folder. This makes manual editing of the XML files easier and allows for deletion of the workspace should it become corrupted without loss of the XML files.

GDA 8.4 (RELEASED 30/MAR/2010)

- Changes to Scannable base classes
- GDA-3030 Default user and hardware unit are now the dimensionless ONE. Setting a new hardware unit that is incompatible with the current user unit will cause the user unit to change to the hardware unit.
- GDA-3031 Setting the user unit will no longer effect the hardware unit.
- GDA-3064 Fixing this caused a behaviour change: in classes that extend ScannableMotionUnitsBase the limits are now configured with external (user) units rather than internal (hardware) units.
- GDA-3071 ScannableMotor.getOffset now returns an array of Doubles rather than double.
- DataWriter.getCurrentFileName now returns the full path to the file rather than just the filename. This is to make it compatible with NexusWriter and as the full path is more useful. This affects SrsDataFile.
- The `--Xms` and `--Xmx` options for the `gda` command-line launcher have been removed. The `JAVA_OPTS` environment variable can be used to specify arbitrary VM arguments, including `-Xms/-Xmx`. For example:

```
JAVA_OPTS="-Xms512m -Xmx1024m" /path/to/gda options...
```

- ScannableMotion, ScannableMotionUnits and ScannableMotor have been refactored to a cleaner hierarchy. ScannableMotion builds on Scannable to add offsets and scaling between external and internal representation and ScannableMotionUnits builds on this to add units. The inputs of ScannableMotion and above are expected to be representations on real numbers, e.g. Double.
- `getAttribute("limits")` has been made consistent with the introduction of a static final String `ScannableMotion.FIRSTINPUTLIMITS`. The value returned is the effective limits of the first input of the Scannable, as `Double[2]` where the first element is the minimum and the second is the maximum. The array or individual entries could be null to indicate no limit. Note that this means for ScannableMotor the limits are the inner limits of the external representation of the scannable and the limits of the motor itself. This is a breaking change as in previous versions of GDA the value returned was a mixture of `Double[2]` and `double[2]` depending on the type of object and was sometimes null or sometimes `Double.NaN`.
- In PyObject `ScannableBase.__call__()` return type that matches the type of the object returned by `getPosition` e.g. for Integer return `PyInteger` not `PyFloat`

GDA 8.2 (RELEASED 1/MAR/2010)

General improvements to many aspects of the GUI.

Changes made to the gda.scan package:

- Scans have had their list of Monitors removed (Monitors are Scannables so should always have been included in that list)
- Code in Scans and DataHandlers which treat CounterTimers as special cases of detectors has been removed. CounterTimers should populate their extraNames attribute properly. Now all Detectors are expected to return data from their readout method either by:
 1. returning a string of the name of the file they create (and have a single element in their extraNames array)
 2. be a NexusDetector and so return a self-describing object
 3. return an array of values whose elements are described by the extraNames array(This has always been the case but this rule has been reinforced by recent changes)
- ScanDataPoint class has the various constructors removed: now more bean-like
- ScanDataPoint no longer makes calls to getPosition of Scannables and readout of Detectors. This information should be added using the accessor functions.

`gda.gui.oemove.plugins.EpicsShutterControlPlugin` has been renamed `gda.gui.oemove.plugins.ControlPointPlugin` and is in `uk.ac.gda.oe`

The `usedByDefault` flag in the `Detector` interface has been removed. If a detector is to be used in every scan it should be added to the list of default scannables by adding a line in `localStation.py` which uses the `add_default` command.

25.1 Changes involved in splitting code into plugins

- `gda.px.util.VisitPath` moved to `gda.util.VisitPath`
- Unable to create metadata just from string id of type. Need to use Spring configuration.
- `MetadataEntry` no longer observable

The following need to be added to `localstation`:

```
from gda.epics import CAClient
from gda.epics.CAClient import *
from gda.device.epicsdevice import IEpicsDevice
from gda.device.monitor import EpicsBeamMonitor

vararg_alias cvscan
vararg_alias robotscan2d
vararg_alias robotscan
vararg_alias stagescan"
vararg_alias tempscan"
```

The following classes are now in `uk.ac.gda.epics`:

```
gda.data.metadata.EpicsMetadataEntry
gda.spring.EpicsPositionerFactoryBean
gda.spring.FindableEpicsDeviceFactoryBean
gda.spring.EpicsMonitorFactoryBean
gda.spring.EpicsConfigurationFactoryBeanBase
gda.spring.EpicsMotorFactoryBean
gda.gui.text.parameter.EpicsParameterMonitor
gda.gui.text.parameter.EpicsPanelParameterListener
gda.gui.oemove.plugins.EpicsShutterControlPlugin
gda.gui.oemove.plugins.EpicsTwoStateControl
gda.gui.epics.SimpleStateAndButton
gda.gui.epics.EpicsStringLabel
gda.gui.epics.ActionEventRunnerObserver
gda.gui.epics.EpicsAnalogueLabel
gda.gui.epics.SimpleEnumActionHandler
gda.gui.epics.ActionEventRunner
gda.gui.epics.SimpleNativeActionHandler
gda.gui.epics.ShutterActionHandler
gda.gui.epics.SimpleEpicsButtonListener
```

```
gda.gui.epics.EpicsTestAcquisitionPanel
gda.gui.epics.ComponentEnabler
gda.gui.epics.EpicsMonitorListener
gda.gui.epics.EpicsMonitor
gda.gui.mca.MCATableModel
gda.gui.mca.McaGUI
gda.gui.mca.McaCalibrationPanel
gda.gui.mca.AdcPanel
gda.gui.mca.TcaPanel
gda.gui.beans.PVScannableBean
gda.gui.beans.BeanPanel
gda.gui.beans.PVBean
gda.factory.EpicsDeviceObjectCreator
gda.hrpd.data.MacDataWriter
gda.hrpd.scan.RobotScan2D
gda.hrpd.scan.StageScan
gda.hrpd.scan.RobotScan
gda.hrpd.scan.CVScan
gda.hrpd.scan.CVScanBase
gda.hrpd.scan.TemperatureScan
gda.epics.Epics
gda.epics.interfaceSpec.Field
gda.epics.interfaceSpec.GDAEpicsInterfaceReader
gda.epics.interfaceSpec.Xml
gda.epics.interfaceSpec.utils
gda.epics.interfaceSpec.Device
gda.epics.interfaceSpec.Attribute
gda.epics.interfaceSpec.SimpleReader
gda.epics.interfaceSpec.InterfaceException
gda.epics.interfaceSpec.Reader
gda.epics.util.EpicsGlobals
gda.epics.util.EpicsPVs
gda.epics.util.JCAUtils
gda.epics.EpicsException
gda.epics.AccessControl
gda.epics.xml.TypesParser
gda.epics.xml.EpicsRecord
gda.epics.xml.DevicesParser
gda.epics.cmdline.JCAGet
gda.epics.cmdline.AsynPut2
gda.epics.cmdline.JCAPut
gda.epics.cmdline.JCAMonitor
gda.epics.cmdline.AsynPut
gda.epics.CAClient
gda.epics.EpicsBase
gda.epics.connection.EpicsControllerForScript
gda.epics.connection.GRHandler
gda.epics.connection.EpicsController
gda.epics.connection.CTRLHandler
gda.epics.connection.CompoundDataTypeHandler
gda.epics.connection.TIMEHandler
gda.epics.connection.STSHandler
gda.epics.connection.InitializationListener
gda.epics.connection.EpicsChannelManager
gda.scan.Trajectory
gda.scan.PolarimeterGridScan
gda.scan.PolarimeterConcurrentScan
gda.scan.TrajScanBuildEpicsMCACounterTimer
gda.scan.EpicsTrajectoryScanController
gda.device.qbpm.corba.impl.QbpmAdapter
gda.device.qbpm.corba.impl.QbpmImpl
gda.device.qbpm.EpicsQbpm
gda.device.filterarray.EpicsFilterArray
```

```
gda.device.scannable.PVScannable
gda.device.monitor.EpicsQuadrantBeamPositionMointor
gda.device.monitor.EpicsBeamMonitor
gda.device.monitor.EpicsBpmController
gda.device.monitor.EpicsBeamPositionMonitor
gda.device.monitor.IonChamberBeamMonitor
gda.device.monitor.DummyEpicsMonitor
gda.device.monitor.EpicsMonitor
gda.device.epicsdevice.corba.impl.EpicsdeviceAdapter
gda.device.epicsdevice.corba.impl.EpicsdeviceImpl
gda.device.epicsdevice.EpicsDouble
gda.device.epicsdevice.EpicsDBR
gda.device.epicsdevice.ReturnType
gda.device.epicsdevice.IEpicsDevice
gda.device.epicsdevice.EpicsTime
gda.device.epicsdevice.EpicsDetector
gda.device.epicsdevice.EpicsDeviceEvent
gda.device.epicsdevice.EpicsDeviceFactory
gda.device.epicsdevice.EpicsRegistrationRequest
gda.device.epicsdevice.EpicsEnum
gda.device.epicsdevice.EpicsGR
gda.device.epicsdevice.FindableEpicsDevice
gda.device.epicsdevice.EpicsSTS
gda.device.epicsdevice.EpicsCTRL
gda.device.epicsdevice.EpicsRecord
gda.device.epicsdevice.EpicsValuedEnum
gda.device.epicsdevice.EpicsDevice
gda.device.epicsdevice.IEpicsChannel
gda.device.epicsdevice.EpicsMonitorEvent
gda.device.epicsdevice.EpicsCtrlEnum
gda.device.epicsdevice.EpicsInterfaceDevice
gda.device.epicsdevice.EpicsCAStatus
gda.device.epicsdevice.EpicsDeviceCorbaAdapter
gda.device.epicsdevice.EpicsSimpleEnum
gda.device.epicsdevice.EpicsLabelsEnum
gda.device.AsynEpicsTca
gda.device.spin.Spin
gda.device.spin.SpeedController
gda.device.spin.EnablerController
gda.device.detector.etldetector.ETLDetector
gda.device.detector.etldetector.EpicsETLController
gda.device.detector.analyser.EpicsMCAPresets
gda.device.detector.analyser.EpicsMcaController
gda.device.detector.analyser.EpicsMCASimple
gda.device.detector.analyser.EpicsMCARegionOfInterest
gda.device.detector.analyser.EpicsMCA
gda.device.detector.analyser.EpicsMCA2
gda.device.detector.analyser.EpicsMCACalibration
gda.device.detector.analyser.EpicsMCAAdc
gda.device.detector.multichannelscaler.corba.impl.MultichannelscalerAdapter
gda.device.detector.multichannelscaler.corba.impl.MultichannelscalerImpl
gda.device.detector.multichannelscaler.EpicsMultiChannelScaler
gda.device.detector.multichannelscaler.EpicsMcsSis3820
gda.device.detector.multichannelscaler.EpicsDlsMcsSis3820Controller
gda.device.detector.countertimer.Epics8512CounterTimer
gda.device.detector.countertimer.EpicsScaler
gda.device.detector.countertimer.TfgEpicsMCACounterTimer
gda.device.detector.countertimer.AsynEpicsScaler
gda.device.detector.countertimer.EpicsMCACounterTimer
gda.device.detector.xmap.EpicsXmapController
gda.device.motor.EpicsMotor
gda.device.motor.PolarimeterEpicsMotor
gda.device.temperature.EpicsLakeshore340Controller
```

```

gda.device.temperature.EpicsEurotherm2kController
gda.device.temperature.CryoController
gda.device.temperature.OxfordCryostream700
gda.device.temperature.Eurotherm2K
gda.device.temperature.GdaLakeshore340
gda.device.enumpositioner.EpicsEnumPositioner
gda.device.enumpositioner.EpicsQuadraCurrentAmplifier
gda.device.enumpositioner.EpicsPositioner
gda.device.enumpositioner.EpicsPneumaticCallback
gda.device.enumpositioner.EpicsPneumatic
gda.device.enumpositioner.EpicsSimpleMbbinary
gda.device.enumpositioner.EpicsSimpleBinary
gda.device.enumpositioner.PolarimeterPinholeEnumPositioner
gda.device.enumpositioner.EpicsCurrAmpQuadController
gda.device.enumpositioner.EpicsValve
gda.device.enumpositioner.DummyValve
gda.device.robot.CurrentSamplePosition
gda.device.robot.RobotSampleState
gda.device.robot.NextSamplePosition
gda.device.robot.IllRobot
gda.device.robot.RobotNX100Controller
gda.device.currentamplifier.EpicsCurrAmpSingle
gda.device.currentamplifier.EpicsStanfordCurrentAmp
gda.device.controlpoint.EpicsControlPoint
gda.device.EpicsTca
gda.device.attenuator.EpicsAttenuator
gda.device.adc.EpicsADC
gda.configuration.epics.Configurator
gda.configuration.epics.ConfigurationNotFoundException
gda.configuration.epics.EpicsConfiguration
gov.aps.jca.event.LatestMonitorOnlyQueuedEventDispatcher
gov.aps.jca.event.SplitQueuedEventDispatcher

```

epics objects can be configured using an additional `xmlObjectCreator`:

```

<bean id="epicsServerXmlObjectCreatorId" class="gda.factory.ServerXmlObjectCreator">
  <property name="xmlFile" value="\${gda.config}/xml/epics_objects.xml"/>
  <property name="doPropertySubstitution" value="True"/>
  <property name="useDefaultSchema" value="False"/>
  <property name="buildProxies" value="\${gda.accesscontrol.useAccessControl}"/>
  <property name="mappingFile" value="classpath:gda/factory/mapping_epics.xml"/>
</bean>

```

icat and metadata need to be configured using Spring e.g.:

```

<bean id="GDAMetadata" class="gda.data.metadata.GdaMetadata">
  <property name="icat">
    <bean class="gda.data.metadata.Icat">
      <property name="name" value="icat" />
      <property name="url" value="jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS=(HOST=${oracle.host}
      <property name="user" value="\${icat.username}" />
      <property name="password" value="\${icat.password}" />
      <property name="shiftTolerance" value="1440" />
    </bean>
  </property>
  <property name="metadataEntries">
    <list>
      <bean class="gda.data.metadata.PropertyMetadataEntry">
        <property name="name" value="instrument" />
        <property name="accessName" value="gda.instrument" />

```

```
</bean>
<bean class="gda.data.metadata.PropertyMetadataEntry">
  <property name="name" value="defVisit" />
  <property name="accessName" value="gda.defVisit" />
</bean>
<bean class="gda.data.metadata.IcatMetadataEntry">
  <property name="name" value="visit" />
  <property name="accessName" value="lower(visit_id)visit_id:investigation:id" />
  <property name="defEntryName" value="defVisit" />
</bean>
<bean class="gda.data.metadata.ScannableMetadataEntry">
  <property name="name" value="instrument.monochromator.energy" />
  <property name="scannableName" value="MonoEnergy" />
</bean>

</list>
</property>
</bean>
```


GDA 7 AND EARLIER

26.1 Release_7_4_0 29/05/2008 (tag release_7_4_0 created)

- #1587 I24 branch from 7.4
- #1586 update MarCCD classes to work with marccd v0.16c
- #1583 update information About.html
- #1577 Format of “ls” and “pos” command
- #1576 fit_gaussians.py does not run as framework should allow[I24, 2 days]
- #1571 No list command anymore
- #1570 update gaussian to use some more normal parameters
- #1569 Enhancements to Actor Sample Changer and related GUI
- #1566 get is not making sure the memory location is in bounds
- #1565 Version number in the 7.4 branch still reads 7.3.0.9718
- #1563 Add a add point method to the dataset class
- #1556 Make CurentScanHolder a Findable object created by the XML
- #1551 Filter the update call from the PlotManager so that not all dataVectorPlot panels get updated. [required for #736]
- #1550 Graphs not providing usefull axis[I22 #902]
- #1549 explain severity levels
- #1546 add pseudo-code describing how scans work to user manual
- #1542 Make EpicsControlPoint work with phaseII interface
- #1540 duplicated “Scan complete.” message at end of time scan
- #1539 Enhance the sample-viewing camera GUI calibration
- #1538 “pos I0” does not return detector value anymore
- #1537 extends tscan to collect data from more than one detector at the same [I11, #1156]
- #1536 Change in how ISPyB stores and uses visits
- #1533 tscan does not working anymore [I11, #1136]
- #1532 Can not scan ID gap [I11,#1119]
- #1531 simpleplot always saveas to user directory.
- #1530 inform users of incoming port connections to the JythonServer
- #1528 OEMOVE no longer updates when motors are moved outside of GDA
- #1527 ISPyBTools timedout when waiting for response to create a data collection.

- #1526 constants in odd units in constants.py
- #1525 Planck spelling wrong in constants.py
- #1523 help message not printing out
- #1520 improve the help system inside the Jython environment
- #1518 rename 'list' command in extended syntax to 'ls' [i16, 1 hour]
- #1517 Jython print command eats up spaces
- #1516 DOFAdapter broken
- #1515 inc command broken on devices with extra inputs [i16]
- #1512 q-cal tab printing (NCD) (i22#1069, 1 days)
- #1506 make watch window (JythonTerminal) reusable elsewhere on the GUI [i22 #1068, 1 day]
- #1505 allow for non-q-equidistant calibrant peaks in NCD Q-cal [i22 #1069 #1071, 2 day]
- #1502 create component class and interface to allow an object to automatically adjust between user and hardware units [3days]
- #1491 Drain current readout from PEEM [#1054, 2]
- #1490 add shutter button for photon shutter to NCD gui [i22 #776, 2 days]
- #1487 extending GDA plot to provide user the choice to select the type of line to plot [#1037, 1day]
- #1485 On i16, Upgrade gda 7.0->7.2, test and begin code reorganisation [i16#1031, 3days]
- #1478 Modify gdascripts.pd.time_pds.showtimeClass so it can be scanned over
- #1474 getMCDData() method for Xspress interface only accepts integer values for collection time in seconds. [i18#937, 1day]
- #1472 ADSC interface library not reporting state correctly
- #1470 extends Scan to support Monitor type object internally to GDA
- #1469 make DataSet sending accross corba Asyncous
- #1468 extends BeamMonitor to support other type of GDA detector or GDA monitor
- #1467 make BeamMonitor configurable from XML file
- #1466 merge DummyDAServer and DAServerDummy and remove DummyMemory
- #1465 provide scripting template for scannable, detector, and monitor [I11, 1day] [I16, 1day]
- #1464 develop a reserved GDA words class to provide protection to GDA functions that are exposed as jython commands
- #1463 adding a beam monitor screw up the data plotting during a scan
- #1462 GDA current plot does not work for all scan commands
- #1461 documentation required on how to use the BeamMonitor or what it does
- #1457 extend functions to SacnDataPoint to handle Monitor object as Monitor, not scannable with in it, just like it handles detector.
- #1452 help command does not work on deveTrunk
- #1447 Add getTolerance() method to MotionScannable [blocks 1166, 1167, 1369]
- #1444 Consider adding a new gda milestone (8.0) for major breaking changes
- #1441 selecting different NCD detector for WAXS or SAXS cuts the da.server connection of the old one
- #1440 improve plot legend or choice box to the right to display the color of the coresponding line and show scan number.
- #1439 change choice panel display to the right of the plot to show detector or monitor names

- #1438 MX: DNA ES won't run if Mosflm log dir doesn't exist
- #1437 Autoscale not set automatically in simpleplot anymore[I11, 1 day]
- #1436 Add "New" button to JythonEditor to create a fresh script
- #1435 add support for new TFG2 timer
- #1427 remove limit violation status in EpicsMotor
- #1418 for Scannables which represent a single number the name is returned twice
- #1416 Add upos and uinc commands that show the motor progress [b16, i16 and user request]
- #1413 add a new method to EpicsMotor to allow users to provide their only move callback listener
- #1412 add a new method to EpicsMotor to allow user input move timeout
- #1411 Make EpicsMotor monitoring motor DMOV in EPICS server but not changing GDA motor status
- #1409 remove the trailing space after value data from "pos" command.
- #1408 revert changes in EpicsController on caput(channel, value) and add caputWait(channel, value) for truly synchronous call to EPICS.
- #1407 cannot add GUI tab to existing dock
- #1405 make ncdetectors work in scans
- #1403 Refactor the Visualisation Server/Client interactions
- #1402 Correct the Data Vector panels autoscaling and updating functionality.
- #1399 integrate plotting into the scan command[I11, 5 Days]
- #1389 Changes to DDH to store data in per scan dirs
- #1385 rename Scannable.GroupScan methods as they are misleading
- #1384 JythonEditor does not report write failure on save
- #1382 GUILabel for simple labels that observe state
- #1381 make MX image streaming object generic
- #1378 Repair crazy behaviour in SimplePlot: two buttons with same name are created at startup and then one later removed. [I16 I22, 3 days]
- #1375 Errors when Jython commands are followed by comments (#)
- #1374 2d scan with pseudo-device detector only samples detector at beginning of each line [i16 trac #901]
- #1372 pos() command not working (when called with brackets)
- #1368 Use current scan number as plot title [i16 request 714]
- #1367 Include scan command as metadata [i16 user request #726]
- #1366 Remove warnings from the Analysis Code
- #1364 GDA needs to be able to store results from a scan in ISPyB
- #1359 data display requires wire-mesh plotting or stacked 1-D data display[I11 I22, 5 days]
- #1353 implement CAPUT CALLBACK remove DMOV listener
- #1342 improve Q calibration in ncd
- #1312 Client's terminal occasionally does not display parts of lines and maybe whole groups of lines [multi-beamline complaint]
- #1310 Improvement of analysis usability.
- #1277 MX sample changer interface upgrade [MX, 5 days]
- #1235 Full JUnit Testing of the DataSet Class

- #1228 Tabs are not copied when in the Jython Editor in windows
- #1223 add limit checking and offsets (dial values) to ScannableMotion interface and base class [I16request, 5days]
- #1222 Communication instability between Rigaku sample changer and its API
- #1219 get Actor sample changer barcode reading working
- #1207 Create re-usable methods for parsing/creating position objects [, 5days]
- #1204 Plan to overhaul Plotting system[I11 I15 I16 I22,20 days]
- #1203 GDA plotting locks up.
- #1193 Make alias command also define help
- #1185 extra experimental options for MX data collection
- #1183 Formalise/document PD definition [i16 request #581, 15days]
- #1181 Allow pseudo devices with no inputs [i16 User request #528]
- #1157 DOF adapters can't be deleted and recreated from same script
- #1065 operate SampleChanger via a script
- #946 GUI does not start when EpicsMCA running
- #923 numerical analysis codes[1 day]
- #896 Update README file for JARS [3 days]
- #739 Enhance project object to allow mathematical operations

26.2 Release_7_2_1 17/03/2008 (tag release_7_2_1 created)

- 1376 EpicsPneumatic reports demand values only
- 1404 space indented jython scripts fail
- 1424 Problems with standard directorys and new coments when reading in the SRS data files
- 1428 SRS filewriter broken for two dimensional scans
- 1451 help commands prints some incorrect commands

26.3 Release_7_2_0 11/02/2008 (tag release_7_2_0 created)

- 1365 Add printJythonEnvironment command to utils.py
- 1360 fix the errors due to Epics interface changes - 2 PVs are removed from pneumatic interface
- 1358 ISPyBTools needs to be rewritten so that it can talk directly to the ISPyB server process
- 1357 ISPyBTools.getLoadedSample is called twice when "Retrieve data" is clicked
- 1356 Object server wont start on trunk
- 1352 remove TextDocumentSizeLimiter from DebugAppender
- 1351 Add cousin to scannable.isPositionValid() to find out what makes a position invalid
- 1347 Put lost limit scannable-limits back into ScannableMotionBase
- 1345 pos does not return array of values which scaler produces, just scaler status.
- 1344 pos does not retun String represent enum position anymore
- 1343 New scannable implementation stops monitor return unit along with value

- 1340 Create CorbaDeviceException from complete exception stack.
- 1339 Protect JCameraManDisplayPanel from crashes due to unreachable devices
- 1338 Add port for log client to java properties.
- 1337 Add a device that allows a method for calling public static methods of classes on Server from Client without the need to write idl
- 1336 Allow for non-default timeout in calls to EpicsController.CreateChannel
- 1335 Prevent EpicsDevices blocking other Corba threads
- 1334 Corba thread pool can be used up when starting up gui.
- 1333 Unit on motor limit update is wrong, while unit on position is correct
- 1332 Reorganise gda.jython.commands
- 1331 To allow jython imports (rather than run): provide jython accesable java method to add aliases
- 1330 Repair DOF adapter so it checks underlying dof limits
- 1327 Bugfix for ObjectShelf
- 1325 Checkin prototype jython code for creating group scannables and for providing dotted access to fields
- 1324 Create gdadevscripts in gda/scripts folder
- 1323 Add PD to dummy_pds.py with multipl input and extra fields
- 1322 update gda/scripts/gda/scripts/pd/mca_pds for new scannable location
- 1321 reset namespace leaves old scannables instantiated somehow
- 1320 Adding a default from localStation.py will results in duplicates
- 1318 MX Beam centre should be calculated from the detector distance.
- 1317 MX Do not display the wavelength field in the experiment control panel until it has an effect
- 1316 MX Wavelength and beam x & y boxes should be for information only
- 1315 JCameraManDisplayPanel used incorrect logic to determine if the mouse press was inside the window
- 1309 Provide option over whether the gda.gui.epics.EpicsMonitor class calls back using Swing Event Thread
- 1308 Make epicsDevice compatible with new xml interface
- 1307 Add optional feature to CombinedDOF to report last moveTo position rather than calc from moveables.
- 1306 When requesting the position of a dof in the terminal the units are not displayed.
- 1305 When listing an OE the values for the individual dofs are in SI base units rather than reporting units
- 1304 email test ticket #2
- 1303 email test ticket
- 1302 ScannableBase toString method crashes if there are any extra fields.
- 1301 scannable toString() method catches exception without reporting the cause
- 1299 To MotionScannable add wrappers around asynchMoveTo(), getPosition() and isBusy() methods, and provide a default completeInstantiation() method
- 1297 increase refresh rate of sample image camera
- 1296 i18 request for a Straight Line fit function for thursday
- 1295 GenericScanning in stnBase does not work
- 1294 move logging port from 6000/6001 to 6788/6789, and make client port configurable
- 1292 add move validation objects to SampleChanger load and unload methods

- 1291 add atStart and atEnd method to Scannable interface
- 1290 Add dummy pseudo devices to gdascripts folder
- 1289 implement pause and stop functionality into the fitting routines.
- 1287 Thread crashes occur if too many graphs are drawn at the same time
- 1286 Jython interpreter doesn't initialize correctly if some dirs don't exist
- 1285 problem in I16 configuration stops check-out diamond config as project
- 1282 minor problems running scripts
- 1281 JythonEditor uses proportional font and wraps lines
- 1278 pos <OE> prints out to one line with n's in the string
- 1276 documentation for persistence
- 1275 update documentation scanning mechanism
- 1273 MX - make the Define Data Collection table less 'cludgy'.
- 1272 MX - validate input in the Define Data Collection table
- 1271 MX scripts to run experiments should check state of beamstop.
- 1270 Messages from mx scripts should not appear across two screens but rather in the middle of the GUI
- 1269 Various changes to mx script to allow the progress to be monitored and problems diagnosed.
- 1268 Attenuation control added to MX gui
- 1267 Log/Status panel added to mx gui's.
- 1266 The GUI can now start with panels in the hidden state but accessible via the View menu.
- 1265 Update the ScanDataFile plotting functionality
- 1264 Support for general purpose epicsdevice
- 1263 Parser fails with: pos mu FindScanPeak('ct3')['mu']
- 1262 Run jprofiler on the client during weekend long scan collection
- 1261 Improve error reporting in ConcurrentScan
- 1260 Add default isPositionValid method back into ScannableBase
- 1258 display raw micro glide values in sample control GUI
- 1257 ignore clicks on sample viewing GUI outside of camera signal
- 1256 unusual characters in header file title seem to crash da.server
- 1255 Error in recent change to GDASchema for MicroFocusPane
- 1254 no output at all if no logger running
- 1253 allow writing labels for RAPID scaler inputs into BSL header files
- 1252 define window system icons for GDA GUI and login window
- 1249 DNA: connect automatically to GDA on start-up of the DNA GUI
- 1247 Upgrade NeXus version to 4.2 beta
- 1246 Improve the basic interactions with the DataVector plot window
- 1244 Add functionality to obtain the differential from a dataset
- 1243 Add additional linefunctions to the gda.analysis package
- 1240 Update time_pds with new location for Scannable
- 1239 Remove code that sets scannable limits to the underlying DOF limits

- 1238 Provide way to add extra-meta-data to header of SRS files
- 1237 Add a command to /scripts/gdascripts/util for displaying contents of an iterable
- 1236 output format is not applied
- 1233 I18 immediate development required
- 1232 Error strings resulting from DOF limit violations don't indicate which DOF the problem is with
- 1231 The toString method of an OE no longer displays the current position of all positioners
- 1230 getReportingUnits not available for a DOF in a jython script
- 1227 Add Internal Data Gathering functionality to Newport XPS Driver
- 1221 Implementation of basic data plotting and image visualisation for I18
- 1220 Add a way to write user specified metadata to SRS files (Temporary solution)
- 1217 Add CSV file reader/writer
- 1216 Add helper class to access gda database via the Java Persistence API
- 1215 change scanning mechanism to work with new Scannable interface
- 1214 Make alias work with commands that take no inputs.
- 1212 no diagnostic messages when user directory does not exist
- 1211 Move Jython extended syntax logic into Java
- 1210 Create gda.server package
- 1209 ScannableBase.getCurrentPositionArray() doesn't return ExtraNames
- 1208 in MX control panel, phi value not always displayed correctly
- 1205 Rename gda/scripts/gdascripts to gda/scripts/gdapy
- 1200 get MX simulation working
- 1196 cleanup /bin
- 1195 Make JythonServerFacade.print() synchronous
- 1191 gda.jython.JythonServerFacade.getInstance().print(String) not functional
- 1190 gda.analysis.DataSet constructors should throw errors, and log reasons for failure
- 1189 Provide facility for i16 to fit functions to data using underlying fitting framework
- 1188 Change DataSet display routines to display directly to the jython terminal
- 1186 return microglide to previous positions after a restart
- 1184 prevent microglide movement beyond its limits
- 1182 Get i15 peak finding routines working provisionally
- 1179 Can only plot one element from a vector pseudo-device (User request)
- 1178 Graph axis labels sometime not useful (User complaint- I16)
- 1177 MX GUI operates sample alignment from any phi angle
- 1176 Jython Server reverted to redirecting all scandatapoints through to the Jythonterminal
- 1172 Increase the flexibility of the scanning mechanism
- 1171 Create beamline configuration manager for saving/restoring axis positions/limits
- 1170 Create simple persistence for scripters [depends on 1168]
- 1169 Create simple parameter storage for java programmers [depends on 1168]
- 1168 Add jdbc database to beamlines

- 1165 Indicate that an epics move failed
- 1164 Get retry deadband (RDBD) setting from epics
- 1161 Develop efficient peakfinding method for standard scans
- 1160 Improve the performance of the DataVector object
- 1159 Add basic peakfitting functionality
- 1158 Check in collision avoidance software
- 1152 make build.xml ant script build gda_alpha.jar target not gda.jar
- 1129 allow command-line interaction from within a script
- 1128 make Finder through FindableNotFindException when it can not find the findable specified
- 1126 Implement new methods for getting sample info from ISPyB (gda.px.util.ISPyBTools)
- 1114 Add test cases for DummyExafsServer
- 1106 refactor of gda.px package for new MX beamlines
- 1104 Prevent overwrite of default (template) CCFs for IIS
- 1086 Add MarCCD support
- 1082 review/simplify gda.px.detector interface
- 1060 “list S1” is broken
- 1059 Generic Image File Producing Dummy Detector
- 1056 move test folder outside src.
- 1047 implement and integrate the new EPICS XML interface
- 1043 General improvements to NeXus writer
- 1025 Client becomes unresponsive and eventually crashes after taking many scans
- 1012 Translator reports error with multiline python statements
- 1011 Test new Corba (idl & jacob jars and jacob NameServer) on Windows
- 1009 extened syntax parsing error adds extra commas
- 954 Evaluate having seperate build folders for GDA class files
- 914 Headers not listed in tabular data file for PDs with multiple outputs
- 895 tidy up of /lib
- 807 When doing repeated XAFS scans only the last is shown on the plot.
- 769 need to recognise r in JythonTerminal
- 751 Using peak-fit to determine detector centre
- 738 “plot” command in Jython environment
- 601 Add function fitting to Ncd calibrate panel
- 590 An exception is thrown if there is not a file Limits and Offsets that corresponds to a particular motor name.
- 4 remove JythonServer script queue
- 3 merge test and tests folder
- 2 remove unused gda.eps.package

26.4 Release_7_0_3 11/01/2008 (tag release_7_0_3 created)

- 1288 Adjust tuning parameters during a Newport motor move
- 1284 Cannot start GDA while XPS is off
- 1274 Add option to plot: always clear last scan data
- 1248 DNA abort_request not handled by GDA
- 1242 Fix log4j memory runaway problem in client
- 1241 Fix simpleplot memory leak problem
- 1234 Multi dimensional scans don't write column header names
- 1226 release 7.0.2 fails to start due to: class gda.px.util.ISPyBTools cannot access its superinterface
- 1225 7.0.2 still has old GDA_StartServers script
- 1224 Release 7.0.2 won't work
- 1192 ncd Time frame scan does not finish in GDA
- 1173 Add trunk fix to branch: remove defaults does not remove defaults

26.5 Release_7_0_2 27/11/2007 (tag release_7_0_2 created)

- 1202 Provide a way to turn off plotting (work around for some plot problems)
- 1206 tick box on JythonTerminalPanel to optionally prevent plotting
- 1201 Limit JythonTerminal's output textbox field
- 1192 Time frame scan does not finish in GDA
- 1108 flag in Jython so that all scans move their pseudo devices back to their original positions

26.6 Release_7_0_1 02/11/2007 (branch release_7_0_1 created)

- 1 Remove obvious bug during detector readout in NexusDataWriter
- 1153 Base configuration scans all fail with null pointer exception

NB release_7_0_0 onwards requires Java 6.

26.7 Release_7_0_0 18/10/2007 (release_7_0_branch and release_7_0_0 tag created)

- 261 Integrate an image display GUI panel to Medical Imaging for displaying data files created by ImagePro
- 465 Is gda.oe.dofs.SingleAxisWavelengthDOF used ?
- 752 display information on peak, intensity, distance between 2 peaks, given an order of peak height
- 798 Delay between images during PX data collection and humidity scan
- 817 Reading and writing Lookup files from GDA
- 818 make default formatting for Pseudo Devices configurable
- 850 no plots from a scan started in a script
- 922 Add energy peaks to McaGUI

- 937 remove unnecessary jars
- 985 Document metadata configuration and setup.
- 994 Remove unnecessary IIS functionality
- 997 Construction of data directory for Nexus files at DLS needs to be more configurable.
- 1039 NCD Configure panel throws exceptions in base configuration
- 1040 i16 configuration scripts have duplicate name entries (case ignored)
- 1041 simplePlot batching null pointer error when changed
- 1044 Implement delta tau motor system
- 1045 Capture transient exceptions in adapter classes
- 1051 Null pointer exception in AcquisitionFrame if not using docking.
- 1053 GDA hangs due to deadlock in gov.aps.jca.event.LatestMonitorOnlyQueuedEventDispatcher
- 1054 common directory structure folder clash if using separate output folder 'bin' (the default)
- 1055 Please add GDA test component in Bugzilla
- 1061 uniqueName generated by scan might get duplicated.
- 1062 allow setting of IIS LMF name from GDA GUI
- 1063 create user defined auto-series LMFs for IIS
- 1064 simplification of the gda.px.samplechanger.SampleChanger interface
- 1074 add barcode reading functionality to the gda.px.SampleChanger interface
- 1078 Add SRB archival of files associated with NeXus data files.
- 1079 Deadlock observed when synchronized DOF methods call caget leading to timeout
- 1080 upgrade castor jar to 1.1.2.1 from 1.1.1
- 1081 upgrade xerces to 2.9.1
- 1083 "Can't find the named subsystem" during object server startup
- 1084 Add Irelec sample changer
- 1088 Very high CPU in client filtering CORBA events
- 1089 gda/function/InterpolationFunction.java did not handle corner cases properly
- 1090 gda/function/ColumnDataFile.java should stop reading files when it finds an empty line
- 1091 gda/scan/ScanBase.java. setUp method does not move Detectors from Scannables to Detectors list
- 1092 gda/device/filterarray/EpicsFilterArray.java should use the EpicsChannelManager to handle connections.
- 1093 gda/device/MotorException.java should always contain a valid motor status
- 1094 Deadlock in DOFs that drive other dofs
- 1095 gda/oe/commands/AbsoluteMove.java should unlock a DOF if an exception is seen in the call to doMove.
- 1096 gda/device/detector/countertimer/EpicsScaler.java status showing not busy straight after start.
- 1097 gda/device/motor/EpicsMotor.java isMoving method should check both I IOC and local cache
- 1100 add Cobold Expt Panel for IIS
- 1105 gda build fails due to looking for Manifest file in wrong place
- 1107 write test cases for gda.device.adc.dummyAdc class
- 1108 flag in Jython so that all scans move their pseudo devices back to their original positions

- 1111 cannot import from shared Jython scripts folder
- 1112 Out of memory error caused by logging
- 1113 write test cases for gda.device.DeviceBase class
- 1118 write test cases for gda.device.detector.DummyImageCreatorTest
- 1119 Added scannable-limits to scannables
- 1120 Add overrideLock() method to OEBase
- 1121 Testing the gda.analysis package
- 1122 write JUnit tests for DummyCoboldTDC
- 1123 write JUnit tests for DummyCoboldTDC
- 1124 create JUnit test for DummyCoboldCriptController
- 1137 Put IIS GUI ops in event thread

26.8 Release_6_14_0 30/08/2007 (release_6_14_branch and release_6_14_0 tag created)

- 485 Remove hard-coded parameters in NcdController
- 487 Remove hard coded parameters from gda.px.centring.Centring
- 584 ContinuousScan XAFS Plot to be redrawn at end of scan
- 610 2D GeneralScan does not plot data
- 683 Intermittent failure of undulator moves using slave mode interfacing to POMS (PINCER) on 5U
- 703 Levenberg-Marquardt enhancement
- 735 AmplifierStatus in device package needs looking at.
- 753 Two versions of monochromator 2d used.
- 771 Add basic JUnit tests to Jython packages via AllValidSuites
- 791 “run” command fails if script indented using spaces
- 833 fix “run” command to prevent a race condition
- 834 PEEM support with new jar
- 835 validation of Scannables upon instantiation
- 836 Undulator GUI panel (and often more) hangs in OEMOVE on 5U
- 839 Add PositionCompare methods for Newport XPS motors
- 845 allow for custom translators in jython
- 851 clearing the plot after a scan has started prevents any more plotting from that scan
- 856 Several SimplePlot zooming/magnifying problems.
- 860 limit “watches” refresh rate in JythonTerminal panel
- 861 minor bugs with syntax parsing
- 903 TimeScan data not shown in scripting terminal during IISScan
- 908 create DummyCoboldPC & DummyCoboldPCCMC
- 924 Notification of GDA document update
- 941 Test latest version of Subclipse

- 943 prune old svn repository branches and tags to sensible number
- 947 New soft limits from Epics motors do not account for offsets in positioners
- 948 refactoring of devices has broken native interface for NI6602 class
- 949 NI6602 class should trap count times less than 1 msec
- 950 Unexpected update in GeneralScanPanel
- 951 running event service without name service gives silly messages
- 955 simplify structure of gda svn repository above gda/trunk/src
- 956 GDA GUI error with Java 6.0 on Windows Systems & some Linux
- 960 IIS experiment fails to stop CoboldPC
- 962 Improve PX Detector error handling
- 963 Problems with printing to Jython Terminal.
- 964 Movements of non-epics motors no longer work properly.
- 968 Slow GDA crash due to XPS
- 969 ExafsPanel does not update total time when paramters read from file.
- 970 adding Help menu to GDA
- 971 base configuration for MonoDOF is mis-matched with schema and mapping file.
- 972 new element are required to be present in configurePanel and ExafsPanel in the base configuration
- 973 pos report wrong position at end.
- 975 ExafsPanel in stnBase_Client.xml produce the following error
- 978 Epics motors cannot move when Positioner stepsPerUnit negative
- 980 Implement unit tests for obtaining metadata within GDA.
- 981 Implement unit tests for DDH operating in stored mode.
- 982 Create an Icat browser panel for GDA.
- 983 Allow GDA to operate with different modes of metadata saving.
- 993 Update XERCES jar
- 996 NcdDetectorSystem sets usedByDefault true
- 999 Add configurable support for extendedTFG
- 1000 LinearPositioner.setSpeed has unnecessary restrictions.
- 1002 First failure to move XPS motor is not reported
- 1005 Remove deprecated xalan code
- 1006 Ant script to create gda jar file
- 1007 improve AuthenticationFrame.java to support single/multiple screens dynamically.
- 1008 No ControlPoint Scannable Adapter
- 1010 OtokoWriter missing from Mapping.xml
- 1014 add camera controls to CMU camera GUI
- 1015 EpicsMCA does not always count for correct period of time.
- 1018 gda.gui.ncd.headerfilewriter classes not Corba-ised as expected
- 1021 Remove BCM experiment counter and use experiment number from collect_Request
- 1027 Current saving of password at login must be encrypted.

- 1028 Running TestNG suite fails if each creates objects via ObjectServer.
- 1029 Correct any old bugs with target milestone left as 'needs_accepting'
- 1035 SimplePlot batching does not work correctly

26.9 Release_6_12_0 19/04/2007 (6.10.n branch closed, 6.12 branch created)

- 30 restart or continue scan after beam monitor detector loss of beam
- 35 temperature gui on status panel shows incorrect .dat file
- 36 intermittent display of file name on dsc/temperature plot
- 361 PX exposure timing units
- 490 create experiment panel for IIS
- 496 write classes to send script to dummy CoboldPCC for IIS
- 509 create IIS experiment classes
- 529 The Undulator representation and current position fields are not updated during a move, only when it has finished.
- 530 GridScan does not do final point (and there are some inaccuracies in calculations) if the scan starts at a high number and finishes at a lower number.
- 531 Improve error reporting during pre-scan checks.
- 532 5U users setting the Undulator Energy require the Monochromator photon energy to be set concurrently and vice versa.
- 564 OEMove button sensitivities when switching between DOFs
- 598 Phase II EPICS integration
- 603 Allow GeneralScanPanel detector names and count times to be xml configurable per scan dimension
- 625 write classes to link timestamped beamline data to IIS events
- 634 setDefaultAcceptableUnits contains incorrect code (which eclipse allows)
- 645 OEMove and use refresh when in set mode problem
- 654 make GeneralScanPanel multi-dimensional
- 659 Rationalise start up files in gda.bin and installation files
- 671 Make it possible to disable positional homing on motor move for IIS slave mono
- 682 Formatting desirable in generalscan.Region.getInterpreterCommand
- 685 move cobold detector code to detector package
- 687 JavaDoc CoboldTDC
- 699 Duplicate points in XAFS scans.
- 702 EpicsMCA and EpicsScaler need attention (from Javadocs day)
- 706 ImageMagnifierWindow.getMagnifier() never used
- 707 LinePropertiesEditor.setCurrentLine() - current line can be null
- 709 SimpleLegendItem - remove complicated which is never used.
- 710 SimpleLegendTitle failure to pass correct Object.
- 711 UndulatorMoveCalculator:checkMoveMoveables ignoreMe argument

- 714 ObservableComponent should implement IObservable interface
- 715 LockableComponent should implement Lockable interface
- 717 Remove compiler warnings
- 725 Investigate impact of upgrading to Java 1.6
- 728 Implement changes to utilise new runnum tracking in device-temperature as per bug 592
- 743 HarmonicDOFInputDisplay has two FIXMEs that look important
- 745 make Monitor interface more generic
- 746 refactor CoboldDetector & CoboldTDC
- 754 rename and version Documentation in line with Knowledge Tree
- 760 New Asynchronous Epics MCA, ADC and TCA classes
- 766 Some McLennan motors respond badly to STOP when already stopped.
- 767 SimplePlot - dependent X axis -scale goes wrong when the graph is zoomed
- 772 Integrate Rigaku OSCAR sample changer system into GDA
- 773 Folder for shared GDA scripts.
- 780 add scrolling history of values in BeamMonitor OEPlugin
- 787 OEMove moveby selected but moveTo performed
- 788 daServer timeout ignored
- 789 Scan fails if a Pseudo Device which is not moved in scan command is already moving.
- 790 Report errors from localStation.py in GUI
- 794 Can't set OEPlugin to show at startup
- 803 Modify metadata access classes to read data from mini stations icat
- 804 Write metadata to central icat from NeXus files in DDH
- 806 Initial size of AcquisitionFrame is wrong on double monitors.
- 808 DOF speeds not reset correctly after continuous scans.
- 811 Steps/points confusion in XAFS scans.
- 813 problem with Epics motors access
- 814 setting motor offsets dynamically and in Epics
- 819 Remove Message.log, add Message.warn and review of messages
- 820 Analysis of PX images to determine optimum crystal humidity.
- 821 error should be thrown if size of object arg in moveto incorrect
- 823 empty catch clause in gda.jython.scannable.DetectorAdapter
- 824 Positioner in trunk does not work
- 826 remove castor-1.0.1.jar, migrate to castor-1.0.3.jar for full Java 1.5 support
- 827 Newport XPS controller fails to connect to more than three/four motors at the same time
- 828 To enable setting of real speed value using double
- 830 move temp files generated during scripting to gda/config/var
- 831 validate scan command without moving anything
- 832 implement isHomed for NewportXPS motors
- 838 Ability to obtain length of a scan

- 840 integrate MX shutter and complex shutter/phi motion
- 841 SimplePlot Zooming has stopped working
- 842 DOF update() should not do sync request to the low level object, but handle the event object only.
- 843 add isInitialised() method to Motor.java interface
- 844 caget("...") returns truncated data - 5 decimal only
- 847 Microfocus mapping panel does not display maps correctly
- 849 Lauda water bath not updating GUI
- 852 Implement JythonServerFacade.restartCurrentScan()
- 855 Change EpicsMCA , EpicsTca , EpicsADC and EpicsScaler classes to Use new EpicsChannelManager
- 857 SimplePlots will not print out.
- 863 add images from Cameraman to ExperimentControlPanel
- 864 Refactor to use new NeXus API package
- 865 Socket input to Jython is not equivalent to JythonTerminal input
- 867 GDA startup script overwrites the log files whenever GDA is restarted
- 868 Icat schema change affects extraction of metadata
- 869 Modify Nexus classes to allow access of metadata from GDA entering filename
- 872 New methods in gda.device.Detector interface
- 873 new scan to take snapshots
- 875 move some device to device.detector
- 876 Possible inconsistency with the use of "active" in detectors.
- 878 can not checkout configuration from DLS_Beamlines
- 880 Newport xps motor crashes Object Server if the Newport xps controller is not found
- 882 ConfigurableScanPanel / GeneralScanPanel does not retain previous values
- 884 GeneralScan not working
- 885 Distinguish between stand-alone commands and scripts in JythonServerStatus
- 886 create corba jar and remove generated classes from SVN
- 888 Enable/Disable message displaying
- 889 URL for data in SRB changed.
- 890 DDH handler for ICAT and SRB copying needs to be more configurable.
- 891 Potential race in connection to ICAT RCommands server.
- 892 General scan, plot doesn't automatically raise to top when scan started.
- 893 create /legal directory
- 897 add config/bin to the PATH
- 901 Alarm when looking for OE "Detectors" in IIS scan
- 909 Construct proper dataset name for SRB storage of metadata.
- 910 Check for existence of dataset in Icat before try to create.
- 911 Store proposal in Icat
- 912 Allow configuration of rcommands username, password and version
- 913 Pseudo device with extra outputs not reporting values correctly

- 915 add Cobold Start file to CoboldTDC
- 917 Add set/get Dwell time for epicsMCA
- 918 Put graphics update command into IIS experiment
- 920 Problems with ddh and SRB/Icat archival if investigation, proposal, visit not valid
- 921 Create a file to indicate a scan complete for DDH.
- 925 New SESO XBPM Detector class
- 926 Make EpicsMCA work more efficiently
- 927 Remove the thread block in initialisationCompletion() callback
- 928 improve the property initialisation method so it would not wait forever.
- 929 extend CreateChannel() in EpicsChannelManager to enable set initial PV value on channel creation.
- 930 improve GDA Monitor efficiency
- 931 Make EpicsMCA channel monitor event handling more efficient and thread safe.
- 932 implement xspres1 with da.server
- 933 GDA Build Error and associated compilation errors
- 938 add methods for caput callback
- 940 epics motor getStatus() should only return motorStatus hold by the motor object
- 942 remove dlspot.jar as it is no longer required
- 944 pre-release 6.12 won't run outside eclipse on Linux or Windows

26.10 Release_6_10_0 08/12/2006 (6.8.n branch closed, 6.10 branch created)

- 359 dl.px.camera.CameraBase:home ignores axis
- 466 Incorporate JCamerman API in a new samplechanger class
- 474 Implement VISA device support in gda.device.visa
- 510 save IIS data to central data store with suitable retrieval mechanism
- 600 Can't Stop GeneralScan when DOF moving to scan start
- 627 Inconsistent composite movements using Epics motors.
- 701 Check each point in a scan is allowed before running scan
- 713 throw error if scan command ambiguous about the number of steps to be taken
- 716 Update Jython documentation
- 720 add flag to NewportXPS motor to home (or not) during configure
- 721 New features to support ETL Scintillator Detector via EPICS
- 729 Implement changes to utilise new runnum tracking in scan as per bug 592
- 732 ADSCDetector method canTakeOwnDark method always returns true
- 733 JCamermanDisplay has several TODOs that look more like FIXMEs
- 740 rename DataHandler to DataWriter
- 741 DummyValve class to simulate shutters/valves
- 744 JythonTerminal restricted in dealing with detectors which produce filename.

- 747 GUI still does not size OEMove menu bar correctly.
- 749 MCA GUI can't start if EpicsMCA already running
- 758 Rename gda.beamline.name
- 759 Add new methods to analyser interface to set/get number of channels
- 762 From GeneralScan gda.scan.MultiRegionScan has no attribute dataHandler
- 763 Problem with concurrently moving motors on a Newport XPS.
- 765 validation of internal arrays in Scannables
- 768 Make Monitor Scannable
- 769 need to recognise r in JythonTerminal
- 770 Improve PXGENImagePanel to read imgCIF files
- 774 AsynEpicsMotor still blocks on getStatus() when EPICS servers are down
- 775 Refactor initial implementation of metadata access/storage classes
- 776 Allow get of single metadata value.
- 777 Add locally stored metadata entry type.
- 778 remove pulldown menu when no options are available in OEMove and IISScanPanel
- 779 GDA should handle Channel access resource gracefully on exit
- 782 Q axis calibration panel not working
- 783 Add password protection to Oemove tabbed pane.
- 784 Too many time frames allowed
- 785 NCD output time info failure if tfg configured in waxes system.
- 786 configurable option not to display speed JComboBox on OEMovePanel
- 787 OEMove moveby selected but moveTo performed
- 788 daServer timeout ignored
- 792 Scan does not fail if error in isBusy method
- 793 JCamermanDisplayPanel has different beamcentre/beamsize for every zoom level
- 795 EPICS related error exiting GDA GUI, when not using epics.
- 797 Problems setting default mode in OEMove
- 800 EPICS context error on exit() from GDA
- 801 "run" command used in localStation not working properly
- 802 JythonServerFacade.panicStop doesn't work for scans inside loops
- 810 optional login dialog to GUI
- 815 create new DOF to drive Slave Mono in eV or Angstrom GUI units
- 816 tscan command in scripting environment

26.11 Release_6_8_0 20/10/2006 (6.4.n branch closed, 6.8 branch created)

This release is intended to be the base for a stable DLS release and a branch will therefore be produced. This release contains bug fixes done in the 6.4 branch in addition to any enhancements that have been done.

The main inclusions in this release are changes to automated file numbering and naming, more scripting changes, the addition of more colours and categories to EPS, the addition of the analysis package and two automated install mechanisms.

- 43 Add NeXus file writing
- 463 Changing number of experiments in PX collect tab gives error
- 491 Implement Newport XPS motor and controller classes
- 493 Messages are missing from MessageLogPanels that appear on the console.
- 494 Update EPS to have ability to standalone without problems seen in testing for release
- 520 Create new GUI panels for Diamond MX beamlines
- 528 Allow the input table in scanning panels to be configured with deeper rows.
- 533 Available energy range for 5U scanning needs extending from <1000 to >1200.
- 547 Implement interface to Epics positioners
- 562 Add optional configuration at startup
- 565 OEMove menu bar cut off if too long - fixed with a modified flow layout.
- 582 eps errors
- 588 Documentation required to fit within the GDA architecture document describing EPS.
- 592 Consistent method for file name increment
- 632 Start/Restart gda from remote client
- 633 Install gda using rpm
- 638 Need to change colour coding and add a category to EPS to deal with warnings that appear on message panels.
- 639 Enhance error, log, warning and alarm messages throughout the codebase.
- 640 Plot on ExafsPanel run pane does not allow change of line colour, type etc.
- 641 Separate MicroFocus and gda.gui.microfocus.Exafs into interface/implementation
- 642 change NewportXPSMotor to with OEMove
- 643 mapping file error in NcdDetectorSystem
- 647 GDA installer generator using IzPack
- 649 add ability to record terminal output to file
- 652 problems with subversion/subclipse/eclipse to be clarified/fixed
- 657 Create library of arrows for OEMove for a new perspective
- 661 add detector selector to GeneralScanPanel
- 662 allow JCamerman sample changer to have variable zoom conversion
- 663 make gda.scan.TimeScan compatible with GridScan
- 667 new epics.jar with extension to enable valve and shutter control
- 668 Create classes to control Epics valves and shutters
- 674 Don't add area for message panels in AquisitionGUI if not creating any.
- 675 scanning bugs
- 676 Jython can't import from jars not explicitly listed in classpath
- 677 Allow jdl viewing of xray images to be configured out using xml
- 678 Stored darks not being loaded with snaps.

- 679 buildup of relativeTime fields in TimeScan child
- 681 GUI has ceased to display anything
- 689 add demonstration of a panel which runs and receives feedback from scripts
- 692 Fix scanning mechanism error handling
- 694 Slit Limits do not update in GDA when EPICS slit limit changes
- 695 GDA startup blocks if some of the EPICS pv not found
- 697 null pointer exception for da.server reading encoder counter
- 698 scan info not printed to terminal if no detector included in scan

26.12 Release_6_6_0 25/08/2006

This release contains bug fixes done in the 6.4 branch in addition to any enhancements that have been done. OEeditor has been reinstated, several cameras detectors and analysers have been added. Some changes to scripting and plotting have been done.

- 20 OEeditor not working
- 71 Add Q axis to SAXS/WAXS plots
- 223 OEMove saving states broken
- 275 Update developer's reference manual
- 283 Implement fast scanning for exafs
- 374 The MonoSetupPanel for 5U does not work properly
- 425 Remove naming confusion for auto-generated scannables - change of case needed for some Undulator files
- 440 DOF.setOffset removed test for homeable may effect homing
- 471 Integration of EPICS and GDA for detectors
- 472 Third party software integration with GDA
- 482 New package and interface for Analysers
- 489 Aerotech Motor classes need an overhaul
- 493 Messages are missing from MessageLogPanels that appear on the console.
- 494 Update EPS to have ability to standalone without problems seen in testing for release
- 501 if motor position file doesn't exist sets position to zero but doesn't save.
- 502 produce LMF file for 1 TDC & 2 TDCs in sync for IIS using CoboldPC
- 504 Configure CoboldPC to display only coincident events
- 505 visualise 2D data with CoboldPC for IIS
- 506 visualise data from 2 MCP detector simultaneously
- 507 Put ability to drive 5D & 3.2 mono into IIS GUI
- 508 add ability to drive IIS polarizer into IIS experiment panel
- 511 monitor beam intensity and polarization in IIS GUI
- 513 Usability improvements to scripting environment
- 520 Create new GUI panels for Diamond MX beamlines
- 521 Add softLimits accessors to OE interface

- 527 Enable a DOF to be specified to show as the default in the drop down box on scanning panels.
- 535 StartMove button should work for UndulatorHarmonic and UndulatorPolarization
- 538 EPS crashes gda.px.detector.Quantum4CCD during initialisation
- 540 change offset accessors in Moveable interface
- 542 remove need for tabs-only indentation on GDA Jython command-line
- 543 Combined monochromator and table movement required for 9.3
- 546 DummyDisplayMotor and DisplayMotor do not operate correctly.
- 548 Implement interface to Epics filter arrays.
- 550 Move MetadataList classes into gda.data and remove gda.util.database package
- 551 add method to gda.device.Detector interface to return data dimensions
- 552 Move the datahandler package from gda/scan into a new package called scan in gda/data
- 553 Loss of resource history when using Eclipse/Subclipse to move and refactor the datahandler package and several other associated classes.
- 554 add plot annotations
- 555 mapping error: ScriptControllerDemoPanel
- 556 Add a new GUI for MultichannelAnalyser with energy calibration capability
- 557 Add second x axis for SimplePlot
- 558 PositionalValues should save both positionOffset and homeOffset
- 559 Use of new property when scanning
- 560 New ADSC Q315 detectors
- 561 Update installation and configuration files in preparation for the main release.
- 563 Save terminal command history between GUI restarts
- 565 OEMove menu bar cut off if too long.
- 566 GDA client GUI to check Server version on startup
- 567 Validation of oemove.xml mystery
- 568 New Navitator Motor
- 569 New Generic Plugin for OEMove
- 570 Allow zoom and focus levels to be set via XML
- 571 New Firewire Camera
- 572 New plugin for collimator slit zeroing
- 574 Remove JDO tags from mapping.xml file
- 575 Switch GDA to use Jython2.2a from 2.1
- 576 Gdhist not configured correctly for HOTSAX detector
- 577 graphical display error for HOTSAX detector
- 578 dummy motor speed always 1.0
- 579 Need a DummyEnumPositioner class for simulation/testing
- 580 Scanning process only takes data for 1st scan point.
- 581 Socket input to Jython works but produces no output to socket.
- 582 eps errors

- 583 Negative move of DOF goes past target and doesn't finish.
- 585 PX Detector leads to exception in DetectorBase
- 586 Update IDE files and update GDA coding standards documentation with screen prints to match.
- 587 Documentation required to fit within the GDA architecture document describing DDH.
- 591 Epics - unable to find the types and devices xml from epics.jar.
- 593 Null Pointer Exception in McLennanController if Serial Device not found
- 594 Add getValue method to Monitor interface
- 595 new EpicsMonitor object
- 596 Default speed for DummyMotor 1 not slow speed
- 597 AerotechMotor needs further changes.
- 602 Scripting requires explicit implementation of interfaces
- 604 ncd calibration plot issues
- 605 Missing element from Castor mapping file
- 608 NiUsb9472 throws exceptions when reading from the hardware
- 609 PIMotor is not working correctly
- 612 Change Ncd default data type
- 613 DOF decimal place selection in XML
- 614 Calibration channel output failure
- 615 Incorrect calibration channel plots
- 616 JythonServerFacade: no panel named JythonTerminalfound
- 617 Users request a default value in drop down DOF menu and request that behaviour of the OEMove Controls be changed
- 618 MultipleMove requires changes
- 619 Security access exception with MarkerFactory running under Windows
- 620 Scripts containing Scans fail under some circumstances.
- 622 create new TDC detector class for IIS
- 623 DoubleAxisAngularDOF not working properly.
- 624 Add ability to save IIS data at regular time intervals
- 626 create SlaveMotor class for IIS mono driving
- 628 Need to add gov.aps.jca.JCALibrary.properties to GDA startup script
- 629 spurious errors regarding lock files when using RXTX
- 631 Bring back coordinate and unit control parameters, EPICS parameters
- 635 DoubleAxisAngularDOF not working properly.
- 636 Create NcdDetectorSystem for scripting
- 637 In jython terminal 'pos oename' and 'pos dofname' can give different positions
- 646 Utility Class to add directories based on package information in a class file
- 649 add ability to record terminal output to file
- 650 remove dependency of 2d double array from ScanDataPoint
- 651 add "scan complete" message when scans finish

- 655 ScannableBase setPosition is not consistent with OEMove
- 658 New class required to allow users to read the Motor Position files
- 660 Important Manifest file restrictions
- 670 Review Scannable interface / DummyScannable
- 672 remove DefaultFileHeader.getInstance()
- 673 implement ADSCController initialise method
- 688 messages from scanning not reaching Jython terminal
- 690 addition of curve fitting routines to gda and creation of analysis package
- 691 multi-region and centroid scans not working
- 693 Add getSoftLimits accessor to motor interface
- 700 getPosition should be called only once per Scannable per scan point

26.13 Release_6_4_0 26/05/2006

The main features of this release are modifications and enhancements to scripting, detectors and analysers. Validation against the GDASchema has been permanently enabled and OEMove has been rewritten to use an XML file.

79 CoupledDOF updatePosition has trouble determining when position is valid 91 refactor EPICSMotor class 124 Optionally password protect individual DOF modes in XML file rather than as general property. 204 configurable unit setting for motor speed 305 Resolve SRS station XML instance files and schema compatibility 310 Investigate and fix JUnit tests which fail in nightly build. 338 move the DriveUnit setting in GDA from Positioner or other low level codes to GUI output to Command server or object server, allow setting of real physical units for the motor. 344 EPS default port number same as existing PX Camera default port 353 PXBasePanel bug 374 The MonoSetupPanel for 5U does not work properly 404 Use of EPS via Message:setDebugLevel() causes VM error 405 A program argument is required to get EPS messages working via the Message class 409 identify and review slavery classes' hard coded DOF names when translating commands 425 remove naming confusion for auto-generated scannables 437 PX Scripting fails with DNA 438 CoupledDOF getPosition returns Quantity, not correct subclass 443 Remove setName() from Findable interface (?) 444 in PXGENImagePanel make displayIntervalInMilliSecs variable at runtime 452 Add docking framework to GDA GUI 455 Button to operate CryoFlap for 10.1 456 MicroFocusPanel should be able to map ion chamber output. 457 Another way to move the MicroFocus sample motors at 9.2 466 Incorporate JCamera API in a new samplechanger class 477 Generic BCM-type object for systems of related panels and scripts 480 Provide display of xpress detector count rates 484 Prevent scannables being overwritten in Jython environment 486 Remove hard-coded parameters from BcmFinder / BCM 488 MotorStatus code extended to include LIMITVIOLATION 495 Rewrite DataLoggerPanel as a plugin similar to the CounterTimer one. 498 User changeable scanning DOF in ExafsPanel 499 OEMove error if view a representation more than once then delete one 500 ScanDataPoints not getting through to scans in GDA 514 stnBase server & client config files are out of sync with GDA 515 DOFs in different OEs cannot have the same names 517 plugin panel not resizing correctly 518 BCMFinder fails to find rotation camera 519 Lack of DataMonitorLogger class causes problems. 522 On GDA Server closing, EPS does not close. When Launch GDA server again, the following error occurs. This results the subsequent message does not go to message panel. 523 Plot on Exafs run panel should be switchable mDeg to keV 524 Remove ability to switch off validation of Instance XML files against the schema. 525 enable serial port communication using gnu.io.rxtx instead of SUN's comm.jar 526 Auto scale in DataPlot tab of ScanPanel5U should work in the same way as the Run Tab. 535 StartMove button should work for UndulatorHarmonic and UndulatorPolarization 536 OEMove current position background 537 Add the option of logarithmic axes to SimplePlot 539 Make new OEPlugin for DigitalIO 545 current xerces.jar in gda does not support some of the features used in EPS XML parsers

26.14 Release_6_2_0 31/03/2006

The main features of this release are modifications and enhancements to the EPS package and the inclusion of GUI undocking code and related jars. DOFS have also been modified to have configurable “acceptable units”.

- 262 Devise new digital IO class for Medical Imaging post mono shutter to give TTL pulse capability on Parallel Port or PCI card.
- 270 Investigate converting OEMove tree into XML format (possibly integrated with Instance XML files) with image files moved within oemove package.
- 272 Complete first draft of End User manual
- 348 Reorganise Java and dl trees in code repository
- 351 Fixed Focus move on MirrorAndGratingDOF causes motors to switch off and become unstable.
- 362 Exposure:setStartAngle necessary?
- 363 dl.px.camera.AdscBLExposure:getImageTime unused
- 364 Undulator Tuning Scans just stop with no error or warning
- 406 Modify all DOFS to have XML configurable “acceptableUnits “
- 407 Calls to “Finder.Find” with hard coded parameters need to be identified and reviewed, task split into areas such as PX, NCD.
- 410 hard coded DOF names for certain OE’s need to be identified and reviewed
- 413 Improve ImagePro class & plugin robustness for initial user testing.
- 414 ImagePro class & plugin - startup failure - protocol out of sync
- 416 mcs0 error during creation of scaler
- 422 Write scannables to integrate kappa diffractometer control into scripting
- 434 null pointer exception in device.temperature classes
- 439 DOF.addMoveables_db needs looking at by RJW
- 441 revisit gda.oe.dofs.* use of positionValid
- 446 Move getStatus method from CounterTimer interface up to Detector interface
- 447 2D concurrent scans not working
- 449 DSC not executing ramp 1, saving data
- 450 Intermittent startup failure
- 451 Not displaying correct host/directory
- 453 Undo and Redo capability for the jython Script editor
- 454 Nested scans not working
- 458 EPICS debug for talking to I16 Diffractometer
- 459 EpicsDOF doesn’t seem to work
- 460 ScatteringVectorDOF doesn’t seem to work
- 461 gda.oe.CoordinatedDOF configure method has “FIXME urgently ” in
- 462 gda.oe.dofs.DoubleAxisAngularDOF updatePosition method needs validity logic checking
- 464 remove hard-coding of minWavelength and maxWavelength in gda.oe.dofs.MirrorAndGratingMonoDOF
- 468 Arguments of scans with no variables should readout only
- 469 List of default scannable should be merged with active detectors

- 470 DOFAdapter doesn't handle exponential number format positions
- 473 oemove getResource() failure for jar file images
- 475 Scanning: new type of scan and enhancement to ConcurrentScan
- 478 Xspress get MC data fails for long collection times
- 481 Provide OEPlugin which displays ion chamber counts as OEs move
- 483 Missing XML element in stnBase_Server.xml

26.15 Release_6_0_1 20/03/2006

This release is to allow testing, but was made from a copy of the trunk as bugfixes had not been committed to the branch. A record of all bugs relating to this release will be included at 6_2_0.

26.16 Release_6_0_0 01/02/2006 (beta)

This includes a tag marked "release_5_7_0", which was not a true release, but was a special jar file to allow real time testing on stations.

The main features of this release are the change of name from dl to gda, an extensive reorganisation of the repository including changes to allow selectable configurations and an oemove rewrite. It also includes the merge of PX scripting.

- 90 remove package dl.datastructs
- 115 add support for diffraction images in dl.images.SampleImagePanel
- 175 Terminating GDA GUI doesn't terminate active scans.
- 184 The automatic recalculation for Grid Scan input in the GeneralScanPanel often results in a negative number of steps.
- 195 Provide automatic pitch peaking (requested for 10.1)
- 239 Upgrade JFreechart to version 1.0.0
- 266 identify mechanism to store "Validation/Environment State" metadata for backward compatibility issues with configuration
- 269 Identify and convert first phase of "Miscellaneous Configuration"
- 334 Xspress detector elements calibration from GUI does not work
- 356 GeneralScanModel throws arrayOutOfBounds error if adding a row to an empty scan list
- 403 MicroFocusPanel should be able to read in existing .xrf file and display
- 420 Chooch will not run on 10.1 or 14.2
- 423 DummyCamera fails due to removal of code (bug 380)
- 424 gda.util.Unix fails after dl to gda repackaging
- 428 Failed to create HeaderfilewriterAdapter & Impl after GDA refactor
- 429 Add slicing and output parameters to all scannables.
- 432 JythonServer's tempScript2 is written to gdaScriptDir causing permissions problems.
- 433 EPS causes objectserver to crash
- 435 Merged PX scripting version of fails to create Quantum4CCDController
- 436 GUI configuration for merged PX scripting fails to create ExperimentSetupPanel

- 445 PX data collection without sample changer not working
- 446 Move getStatus method from CounterTimer interface up to Detector interface
- 448 Scripting fails to move detector to safe distance at end of PX data collection with DNA
- 449 DSC not executing ramp 1, saving data
- 450 Intermittent startup failure
- 451 Not displaying correct host/directory.
- 454 Nested scans not working.

26.17 Release_5_6_0 25/11/2005 (beta)

This includes a tag marked “probably_5u_working_04nov2005”, which was not a release, but was a special jar file upgrade to a station to provide extra urgent functionality in addition to urgent bug fixes.

The main features of this release are better error reporting from Motors through Positioner, various scanning bugs and substantial work on improving Undulator code. Configuration work has provided a validation schema, changing local properties to Jakarta and string interpolated paths in both java.properties files and Instance XML files.

The change over to Subversion from CVS was also completed in this release.

- 51 Input fields on GeneralScanPanel do not clear when highlighted.
- 52 McLennan Motors should not loop indefinitely when a controller is switched off.
- 63 request to add getNumberOfChannels or similar to Detector interface.
- 134 Set DOF units lists on an individual basis.
- 161 Allow relative proportion of tabbed and message panels to be set in AcquisitionFrame.
- 231 The OEMove panel on 5U appears to have a units problem with the Undulator.
- 232 JBuilder will not compile updated/ freshly checked out code since the new configuration package was added.
- 245 create DummyGripCamera.
- 274 Update architecture document to reflect changes.
- 286 Add more GUIs and other objects to base installation.
- 303 Do string interpolation on XML file before Castor unmarshalling.
- 304 Validate XML file with GDA schema in “live mode” unmarshalling .
- 308 migrate properties files to XML format (and relative paths).
- 325 remove EPS warnings.
- 336 scripting problems - reopened to deal with exception handling.
- 346 Bugs ob socket connection used in EPS.
- 347 switch code repository to Subvsersion (freeze CVS).
- 349 need ability to disable sample changer auto centring
- 350 When large moves are attempted on the mono on 5u (MirrorAndGratingDOF), one or more axes switch off with a “Current overload” error reported in the Aerotech software (NView).
- 352 Unicode special character lost at Java/Jython interface,
- 354 5U scanning produces datapoints as if a collection point is happening at the end of the first part of the backlash move (AerotechMotor and Aerotech3200Controller need refactoring).

- 357 when saving temporary script files, save in userScriptDir not gdaScriptDir.
- 365 Undulator will not move to first requested energy/harmonic position.
- 367 Additional header information for 5U scans no longer appears in files.
- 368 Scripts with multiple scan commands cannot be killed.
- 369 Typing a # into the Jython Editor at the end of the file causes exception.
- 370 Need option in terminal window to add new lines to same or new plot.
- 372 Undulator moving problems at 5.1.
- 373 Implement dummy time frame generator.
- 376 The 5U Slavery does not work completely.
- 375 The message in MoveableExceptions does not cross the CORBA gap.
- 377 DummyTemp not performing ramps.
- 378 MicroFocusPanel does not get correct sample positions for XAFS scans.
- 379 MicroFocusPanel ought to save map data regularly.
- 380 Removed unused local variables.
- 381 MicroFocus XAFS scan runs but no data is returned to GUI.
- 382 GUI freezes on daServer failure.
- 383 Add undulator position to output of UndulatorTuningGridScan.
- 384 Remove all occurrences of unused local or private members.
- 385 Removal of 'unused' variable breaks PXExperiment.
- 386 GDA GUI can not be closed by clicking the top-right corner cross.
- 387 Add line numbering to script editor.
- 389 Need to be able to specify angles of images for crystal centring.
- 390 Need to be able to collect a background image for crystal pre centring.
- 391 Ensure don't use background image for full crystal centring.
- 392 Default zoom level for crystal pre centring too high.
- 393 Some int variables in crystal centring impair precision of calculations.
- 394 Default background image for crystal centring set to null can cause errors.
- 395 User directory for crystal centring can have missing separator on end.
- 396 Modify undulator dofs so that only energy DOF actually moves.
- 397 Change method name in Scannable interface from isMoving to isBusy.
- 399 Progress messages required during crystal alignment.
- 400 Hard coded background image name in px crystal image centring.
- 401 Crystal camera zoom doesn't update in GUI when set from crystal centring.
- 402 Apply pixel to mm scale factor for c3d crystal pre-centring.
- 415 Sample changer override should be protected by a confirmation dialog.
- 417 Radiation on/off gifs corrupted.
- 418 Plotting inhibits screen refresh.
- 419 DummyMemory give array out of bounds exception.

26.18 Release_5_4_0 13/10/2005 (alpha)

This includes IDs marked for target 5.3.0 which was not a release, but marked as a tag “code_freeze_release_5_3”.

- 31 Beamline schematic in OEMove
- 33 Refactor Moveable, DOF and Positioner
- 75 Add title & condition fields to EXAFS GUI panel
- 80 Choosing new edge in exafs GUI may display default scan in wrong units
- 104 Review of items stored in XML and java.properties files
- 162 XAFS GUI can produce NaN in start/end/increment fields
- 176 Hard coded xafs data channels
- 177 XAFS multiple scans errors.
- 187 General lack of feedback in the GeneralScan Panel.
- 188 When ‘move to position’ button is pressed in GeneralScanPanel, there is no way to stop the motor and using the OEMove Panel results in an unstable environment.
- 191 XPS Motor class
- 267 Change object specific items (identified in LocalProperties document) from java properties to Instance XML.
- 271 Update DL tree with latest version of copyright notice.
- 272 Complete first draft of End User manual
- 273 Update coding standards document and related preferences files for IDEs
- 275 Update developer’s reference manual
- 278 Create a new Positioner (probably) that will allow movement of two independent motors with positional feedback from a single encoder.
- 285 provide dummy plot (Gaussian ?) for dummy scans
- 288 update Bugzilla procedure
- 289 set up test pc for windows installations, test cases etc in b19
- 290 set up Eclipse on B19b Linux test PC - for unit tests, pair prog etc
- 291 set up test subversion on a server for evaluation, ide support etc.
- 292 GDA freezes on JVM when Bios hyperthreading enabled (?)
- 307 Jakarta properties - code review & commit to CVS if approved
- 309 Fix Javadoc warnings - as reported in maven reports
- 314 The CheckScan button on TimeScan pane does not work properly
- 321 Phi drive in SampleChangerPanel > 270 defaults to 360
- 330 EPS more meaningful and better formatted messages.
- 331 EPS add new warning message type
- 332 EPS log file content needs to be more readable
- 333 EPS Logserver dies no messages appear
- 335 plot points and %done controls in scans do not appear
- 336 scripting problems
- 337 OEBase & OE setReportingUnits signature difference compile error

- 339 Missing classes in mapping file
- 340 Message.Level.ONE messages should not appear by default
- 341 No way to pass objects from java into jython.
- 342 limit problem for X,Y,Z moves in SampleImageDisplayPanel
- 343 MultiRegionScan only accepts GridScans
- 347 switch code repository to Subvsersion (freeze CVS)
- 355 GDA (from repository) does not compile with JBuilder

26.19 Release_5_2_0 05/09/2005 (alpha)

- 20 OEeditor not working
- 69 Change in behaviour of OEAdapter.getPosition()
- 89 remove hb15.zip
- 109 Integrate SampleImageDisplay into PXGen++
- 114 save beam posn to CameraMan configuration file in dl.images
- 116 Add SIF file format to dl.images
- 154 Autoscaling of scan plots
- 168 Some fields in XAFS KSpaceScan have bizarre accuracies
- 189 Precision of mouse position does not adjust to the degree...
- 196 Provide mechanism to automatically set fluorescence detec...
- 198 Provide option to produce exafs output in Chooch format
- 212 Add magnifying capability to SimplePlot
- 214 Restart Jython Interpreter command
- 215 hard loop if StringInFile
- 216 Make sensible default directories for XspressPanel file c...
- 220 ImagePro plugin needed to replace IPPServer JNI dll
- 222 Integration of EMS into ObjectServer
- 226 Simplification of Scannable interface
- 227 enhancements to scanning mechanism and the scripting GUI
- 233 MicroFocusPanel to write xrf files to specified directory
- 234 Local GripCamera cannot access remote GripClient
- 235 popup error dialogs need parent window JFrame
- 236 toolTips don't work properly with SampleImagePanel
- 237 add auto-increment to move value in SampleChangerButtonPanel
- 238 enableQuit java property has no effect in ImageFrame
- 240 Phi values incorrect type in SampleChangerButtonPanel
- 241 sample holder centring not working properly in dl.images
- 243 add camera zoom & focus buttons to SampleImageMenuPanel
- 246 SampleChangerButtonPanel not updating current holder and ...

- 247 SampleChangerButtonPanel does not go inactive during robo...
- 248 update sample image after every sampleChanger operation
- 249 spelling mistake in dl.images UPDATE button toolTip
- 250 dl.images toolTip for READ SAVE show incorrect file name
- 251 ImagePanel (dl.images) READ / SAVE should change default ...
- 253 tfgscaler gives null pointer exception
- 254 Sample ImagePanel's required holder and sample are incor...
- 256 imageOperator does file selection for imagebuttonPanel bu...
- 258 CollectPanel gives null pointer exception
- 259 Convert 9.4 Instance XML files, OEMove Panels and OEMove ...
- 260 Write new classes for new PI piezo motor and controller f...
- 264 Extend CVS repository to accomodate new folders for stati...
- 265 Create prototype for using Jakarta properties to replace ...
- 276 set position does not work for DOFs with more than one mo...
- 277 MotorBase.setSoftLimits called at least twice during setP...
- 279 Enhancements to scanning mechanism
- 280 Scripting useability enhancements
- 281 No file filter in ImagePanel read / save operations
- 282 Class hierarchy not implemented properly in ImageDisplay
- 284 ImageFrame null pointer exception if no image file
- 287 Implement new logging changes with CVS tagged and locked
- 294 Move dl.util.MotordController
- 295 change the startupscript mechanism in DAServer
- 297 inhibit adapterfactory locating stale objects
- 298 splash screen interferes when debugging
- 299 Add generics to enhance type-safety and robustness
- 301 ncd graphics problems
- 302 Write doc for maintaining GDA schema alongside mapping file.
- 306 Migrate Local Properties class into dl.configuration package
- 312 LocalProperties issues - backslashes in path strings & in...
- 313 CounterTimer devices must explicitly implement Detector
- 316 Excessive number of image updates when start GDA for PX
- 317 Error popping up sample changer error dialog
- 318 Not setting current sample at grip after correcting an error
- 319 Erroneous load of gif file in SampleChangerErrorDialog
- 322 Remove default scannables list class
- 323 McLennan600Motor class must be able to deal with echoed c...
- 324 upgrade generated corba to 2.2
- 326 Create plugin class.

- 328 upgrade to jars
- 329 Run each scripting command in its own thread

26.20 Release_5_1_0 30/08/2005 (alpha)

This was implemented as tag “java_pre_logging_5_1_0” only in cvs so is not a branch yet. Features marked complete in 5_1_0 appear under 5_2_0

26.21 Release_5_0_0 30/06/2005 (alpha)

- 8 DNA in PXGEN, reactivation after collect.
- 14 get error if near end of move and start another
- 18 Standardize and enhance JTable behaviour
- 29 Combine xml files for gui and object server
- 34 Refactor SineDrive Dofs
- 50 Errors while saving and/or loading default representations
- 61 it is not possible to have a GeneralScanPanel and a ScanPanel5U in the same GUI
- 62 SimplePlot zooming from a dragged rectangle
- 64 Better formatting of SimplePlot mouse coordinate display
- 66 script checks for object server even when not using
- 67 Password causes shutter start to change
- 72 detector initialise button
- 82 update quantity classes to new release
- 85 remove destroy() from thread code
- 86 remove calls to hide() and show()
- 87 remove lazy instantiation from singleton patterns.
- 94 Logging/Alarms : design and preliminary implementation
- 101 Move GDA development and run-time environments to Java 1.5
- 103 Database for dynamic recording of experiment parameters
- 109 Integrate SampleImageDisplay into PXGen++
- 111 When OEMove “Stop Move” button is used to stop the motor moving, any additional backlash move still happens.
- 128 Matlab interface to GDA
- 132 DOF reporting unit “deg” is used in XML file but does not exist in Quantity class
- 133 Reporting units “joule” and “planck” don’t seem to work
- 145 memory usage panel not working
- 147 Add gda standard directory tree and portable test cases to cvs
- 149 remove TODO auto generated message
- 156 DOF method getPosition(Unit) fails ungracefully
- 157 Eurotherm temperature controller not working on stn6.2

- 163 XAFS scan pane can be hidden by periodic table.
- 164 can't modify java.properties whith local ObjectServer running
- 165 ImageFrame produces camera error
- 166 Confusion between userFile and imageFile in SampleImageFrame application
- 169 Scans fail if no dl.scan.datahandler.datadir
- 170 Include XAFS GUI in PX configuration
- 173 File name in first ScanDataPoint null
- 178 XAFS start active straight after stop
- 183 changes for Rapid2 in 2D mode
- 185 Status icon feedback panel on OEMovePanel is often hidden because it drops down behind the message panel.
- 186 When the mouse pointer is moved outside the chart area, the co-ordinates still increase until the pointer reaches the outer edge of the holding panel.
- 190 Zoom is only possible about the midpoint of the axis range on a plotted graph panel.
- 192 re-package general scan
- 200 ** Open for latest on GDA changes/releases/planning etc.**
- 205 Scripting does not give feedback when the data directory is NOT found, the application just hangs.
- 213 SelectPointAndMoveTo button on GeneralDataHandler could cause null pointer exception
- 218 scripting pos command ignores units unless enclosed in parentheses
- 219 JythonTerminal does not compile in Java 1.5
- 221 concurrent scan nested scans are sensitive to order of command arguments
- 223 OEMove saving states broken
- 224 Loading of prviously saved darks no longer works
- 225 Changing of Q4 binning and scan mode not working
- 228 Remote PX Sample changer not updating observers
- 229 GDA Schema, Config package & Object editor GUI

30/06/2005

The following notes outline the key feature implemented in each release with bug fixes specified in .0x point releases (SRCG modified cvs policy, Dec 2003).

e.g.

- 3_0_0 major release on cvs branch "release_3_0_branch", existing interfaces changed
- 3_0_1 bug fix release, still on "release_3_0_branch" (normal cvs tag)
- 3_1_0 minor release, some new features, interfaces unchanged, "release_3_1_branch"
- 4_0_0 major release on cvs branch "release_4_0_branch", interfaces changed

Planned features are listed ready for installation, use the static method which returns a Java String - "dl.util.Version.getRelease()"

26.22 Release_4_5_0 13/05/2005 (alpha)

- 11 Implement move by in sample changer

- 15 Failure to notify objectserver of undulator gap position change
- 19 Problem transferring Ev through CORBA.
- 24 line colour problems after deleting line
- 27 start button on exafs run panel
- 39 refresh frame loses xy scaling on plots
- 40 multi-frame plotting
- 41 OEMove: opened as moveBy but is actually moveTo
- 46 Freeplot(?) crashes for very large datasets
- 54 Need to run GUI-based scan before scripted scan for data display
- 57 transient scripts created by scripting are placed into the wrong location
- 58 Move the Jython engine from the client to a server process
- 60 ability to move scannable to selected point on plot
- 65 GeneralScanPanel and Exafs Panel fail to appear
- 70 refactor object server
- 81 incorrect units displayed in jython terminal
- 83 jEdit.jar now needed to compile CVS HEAD
- 84 improve graph display on JythonTerminal panel
- 88 remove reserved word enum
- 93 Integration of PXGEN++ into GDA
- 95 Coupled DOFs to implement Dynamic focusing of mono
- 96 Preliminary (vanilla) GDA Install script
- 97 Object Server refactor, to add mapping file to jar file
- 98 Include OEMove gif files in DL jar file
- 99 Optional Splitting of java.properties on science technique basis
- 100 Add Datahandler button so scannable moves to point selected
- 107 When performing a scan, have a default list of scannables whose values will be recorded.
- 108 start JGrip from within Px application on any platform
- 112 write a method to create an ObjectServer process in dl.ObjectServer
- 113 write a method to create an EventServer (ChannelServer) process in dl.util
- 117 McLennan motors do not appear to set speed or speedLevel at all.
- 118 Add millidegrees to the acceptable units for SineDriveAngular DOF.
- 119 saving states in OEMove with no specified TargetPosition causes problems
- 120 ImagePro initial implementation tested
- 121 ImagePro initial implementation tested
- 122 Add Pincer SEAM DLL support to Win32 GDA via JSeam class
- 123 remove hard-coded dof names
- 125 empty motpos file causes null pointer exception in MotorBase
- 126 refactor NCD environment panel
- 127 Reorganise cvs to centrally store all native code libraries files

- 129 Gdhist memory readout failure
- 130 TfgScaler doesnt appear as an active detector
- 131 Invocation Target Exception during SaveAs in SampleImageFrame application
- 136 absolute pathnames in java.properties
- 138 make output from Matlab interface more convenient for plotting
- 139 Improve error handling associated with default scannables
- 140 NCD data acq. not starting
- 143 Start Button on EXAFS panel still not displaying properly
- 146 JComponent.setEnabled() does not set the state of descendents
- 150 k-space XAFS scans are only doing the k-region
- 151 5u mono calibration problems
- 152 Undulator scan problems
- 155 Unsolicited XAFS scanning
- 159 Double clicking Start button on OEMove hangs DOF
- 160 Allow acquisition border to be turned off.
- 167 DOFAdapter creates Quantity classes not correct sub-classes
- 171 XAFS not working with current scripting.
- 174 EXAFS dofs to scan and move hard coded
- 179 SubProcess needs to provide access to sub-process ID
- 180 pxgen++ will not start up
- 181 HPDatalogger no longer works with scripting, due to Detector Interface changes.
- 182 Queensgate requested positions were not being reached
- 193 Extend EPICSMotor getStatus method to enable PMAC control
- 194 StringInFile panel not central on screen
- 197 Detector transform process hard coded
- 199 px classes and starting/stopping adxv
- 200 Document updated Bugzilla procedures and correct status fields
- 201 put splash image into jar file
- 202 DummyTemp setPoint does not work
- 203 Configure CLASSPATH in jar file

26.23 Release_4_4_0 17/12/2004 (alpha)

- Full replacement of JClam with Jython scripting.
- DataLogger code has been improved to work with scans
- The piezo package has been removed, and all piezo code moved into the motor package.
- Queensgate, QueensgatePanel, PiezoController and DummyPiezoController have all been reworked and have now had initial testing.
- NewportMotor code has been brought up to date with Castor.

- McLennanMotor, McLennanController, McLennanStepperMotor refactor for 381 channel select bugfix is complete.
- medical imaging - All queensgate code should be ready for inclusion in the December release
- Control of EPICS motors.
- Complete FIXME and TODO items where appropriate

26.24 Release_4_3_0 13/10/2004 (alpha)

Javadoc workshop output, with no mods to actual code.

26.25 Release_4_2_0 12/10/2004 (alpha)

- PX Remote Detector, Camera and Sample Changer
- Image display for loop centring.
- Medical Imaging data logger.

26.26 Release_4_1_0 21/09/2004 (alpha)

Problems have been encountered with release_4_0_x consequently it is un-usable. Lessons have been learnt from this and incorporated into the CVS Use Policy. This in effect, replace the broken version 4.0.

26.27 Release_4_0_0 18/08/2004 (alpha designate)

- New XML schema using attributes and Castor and OEs become a composite of “moveables”. DOF names are now parameterised in XML.
- Initial Jython scripting for EXAFS and 5U within-side a Java GUI tabbed pane.
- Replacement of plotting package with JFreeChart.
- 5U monochromator and Undulator DOFs.
- Control of Newport and Aerotech motors.

26.28 Release_3_3_0 23/06/2004

- Motor persistence code added
- Test version of new scripting code as a tabbed pane
- SimplePlot graphics has open source JFreeChart instead of commercial JChart
- 5U1 code developments to date
- Support for Exafs Xpress boards
- **New devices supported include :**
 - National Instruments pci-6602 counter-timer
 - Aerotech motor (firewire)
 - Newport MM4006 (RS232)

- Marlow temperature controller
- pre grating monochromator (for use with undulator) a quantity factory some new DOFs, including a fixed polarization dof

26.29 Release_3_2_0 16/03/2004

Follows phase 1 of editing for stlye and comment/Javadoc improvment and adherence to group standards.

26.30 Release_3_1_0 11/03/2004

DoubleAxisAngularDOF - Fixed calculation of linear positions when doing a relative move. Supressed calculation of validity for now, always valid. developers branch is scrapped and is replaced by the HEAD of the trunk/root

26.31 Release_3_0_0 16/01/2004

- Build/run requires Java 1.4, with recommended version of at least 1.3.1_04
- Replacement of Orbacus CORBA with Jacorb (fixes bugs #1,#2,#3) - bug #1 gives occasional PC access violation crashes of Java VM during scans - bug #2 cross platform hanging in Positioners from Jython fixed (PCS) - bug #3 graphics plotting using CORBA MHPlotable objects often lose data points
- Integration of Sample environments (GRM)
- Sample environment plots (GRM)
- Calibration channel setup GUI (GRM)
- Interworks with JClam release_3_0_0

26.31.1 Known bugs :

bug #4 with excessive object server activity, the abort panel can loses the abort/halt buttons and their functionality.

26.32 Release_2_0 (current) 31/03/03

- GUI with tabbed panes for NCD/Exafs/OEMove/JClam interpreter (GRM,PCS)
- Integration of Rapid control (GRM)
- 1D graphics for sax & wax (GRM)
- Save/Load parameter files (GRM)
- IO and It status display (GRM)
- PXGen GUI (SHK,KA)
- ASCII representation files for OEMove (SHK)
- JClam / GUI "MessageHandler" and "Abort" CORBA'ised for remote GUI's (GRM, MCM)
- GUI graphics generated by JClam notifies in place using CORBA (MCM, GRM)
- A test Java client PlotGUI is available (MCM)
- DigitalIO interface added with DigitalIO base and DigitalIO6602 (MCM)

- SEAM i/o interface for Pincer DLL sharing using JSeam.java / Seam.dll (MCM)
- obsolete VUV.jar code removed (NV, MCM)
- dl_compile.bat PC users to compile dl tree but Python script will replace it (MCM)

26.33 Release_1_0_branch 28/6/02

- Initial release for OEMove
- JClam observer-observable pattern for mutiple Java GUI's accessing JClam (MCM)
- A test Java client CommandGUI is available (MCM)
- JClam hard abort, soft abort and clear functions handled by Java (MCM)
- non-DL code counter-timer card NI PCI-6602 via SEAM2.java / als6602.dll JNI (MCM)

CONTRIBUTORS TO THE GDA PROJECT

The Generic Data Acquisition (GDA) software was initially developed at [SRS Daresbury](#). In 2003 it was adopted by [Diamond Light Source](#), who took over as the principal developer.

This section lists people who have contributed in some way (code, design, documentation) to the GDA project. Names are ordered alphabetically by surname.

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