MARTe2-core - Meeting #469

MARTe2 QA-audit (v1.1.0)

28.02.2020 16:30 - André Neto

Status:	Closed		**Start date:**	28.02.2020
Priority:	Normal		**Due date:**	
Assignee:	André Neto		**% Done:**	0%
Category:			**Estimated time:**	0.00 hour
Target version:	1.1.0		**Spent time:**	0.00 hour

Description

v1.1.0 has greatly improved the performance of the framework StructuredDataI mechanism. It also solves several bugs see #391, #450, #369 and #368

Requirements review

Date of the review: 23/01/2020

Person who did the review: André Neto

Version of requirements: N/A

Result of review: N/A

List of non-conformities: N/A

Comments: No new requirements were added w.r.t. to v1.0.0.

Architecture & design review

Date of the review: 23/01/2020

Person who did the review: André Neto

Version of architecture & design document: N/A

Result of review: N/A

List of non-conformities: N/A

Comments: No updates related to the architecture.

Code and documentation review

Date of the review: 23/01/2020

Person who did the review: André Neto

Version of source code: 1.1.0

Result of review: PASS

List of non-conformities:

```
 Note 974: Worst case function for stack usage: 'MARTe::ConfigurationDatabase::Copy' is recursive,
 loop contains call to 'MARTe::ConfigurationDatabase::Copy'. See +stack for a full report. [MISRA
 C++ Rule 7-5-4]
```

List of warnings reported by Doxygen:

```
ReferenceContainer.cpp:2: warning: the name `ReferenceContainer.cpp' supplied as the second argume
nt in the \file statement matches the following input files:
L2Objects/ReferenceContainer.cpp
L3Streams/ReferenceContainer.cpp
Please use a more specific name by including a (larger) part of the path!
```

Remark

The documentation of DataSourceI has to be revisited.

Remark

The SquareRoot template methods for float32 and float64 need to be provided.

```
template<typename Type>
inline Type SquareRoot(const Type x) {

    Type tmp = x;

    if (tmp < (Type) 0) {
        REPORT_ERROR_STATIC_0(ErrorManagement::Warning, "SquareRoot<Type> of negative number");
        tmp *= -1;
    }

    return sqrt(tmp);
}
```

It is only valid for Type being float64. In case of float32, there would be an implicit casting to satisfy the sqrt method. Two implementations shall be provided to call sqrt and sqrtf, as appropriate

Remark

The following classes have non-virtual destructors. As long they are not base classes of any derived class, it is safe, but they need to be monitored (flexlint will check and signal this as error code 1509).

```
Matrix, Vector, GlobalObjectsDatabase, LoadableLibrary, MemoryArea, StaticListHolder, CharBuffer,
AnyTypeCreator, LexicalAnalyzer, Token, TokenInfo, Directory, MutexSem, ThreadInformation.
```

Unit test review

Date of the review: 23/01/2020

Person who did the review: André Neto

Version of unit tests: 1.1.0

Result of coverage tests review: PASS

Result of functional tests review: PASS

Result of review: PASS

List of non-conformities:

LCOV report (files containing functions not executed at all):
Note: execute with

```
lcov -l  Build/MARTe2.coverage.info
```

and compare with the latest master release using tkdiff.

Files containing functions with coverage < 90% or which have changed w.r.t. to last master release. Exclamation marks inform of differences w.r.t. to the last master.:_

```
    1                                                  |Lines      |Functions|Branches        1
                                        |Lines      |Functions|Branches
```

	Filename	Rate	Num	Rate	Num	Rate	Num	
2	Filename		Rate	Num	Rate	Num	Rate	Num	2
	Filename		Rate	Num	Rate	Num	Rate	Num	
3	==							3
	==							
4	! [/home/aneto/Projects/MARTe2-dev-master/Source/Core/BareMetal/]							4 !
	[/home/aneto/Projects/MARTe2-dev/Source/Core/BareMetal/]							
								9 +
	L0Types/DjbHashFunction.cpp		100%	19| 100%	4| –	0	
								13 +
	L0Types/Fnv1aHashFunction.cpp		100%	18| 100%	4| –	0	
								15 +
	L0Types/HashFunction.cpp		100%	4|66.7%	3| –	0	
								36 +
	L1Portability/BinaryTree.h		100%	66|88.5%	139| –	0	
35	L1Portability/Environm...Linux/BasicConsole.cpp	79.9%	224	76.2%	42	–	0	39
	L1Portability/Environm...Linux/BasicConsole.cpp	79.9%	224	76.2%	42	–	0	
51	L1Portability/FastResourceContainer.cpp	83.5%	97	71.4%	7	–	0	55
	L1Portability/FastResourceContainer.cpp	83.5%	97	71.4%	7	–	0	
68	! L1Portability/StaticList.h		100%	29| 100%	32| –	0	72 !
	L1Portability/StaticList.h		100%	29| 100%	88| –	0	
81	! L2Objects/ClassMethodCallerT.h	95.3%	215	81.0%	727	–	0	85 !
	L2Objects/ClassMethodCallerT.h	95.3%	212	81.0%	727	–	0	
85	L2Objects/ClassRegistryDatabase.cpp	81.9%	127	100%	15	–	0	89
	L2Objects/ClassRegistryDatabase.cpp	81.9%	127	100%	15	–	0	
88	L2Objects/Introspection.cpp	73.3%	15	85.7%	7	–	0	92
	L2Objects/Introspection.cpp	73.3%	15	85.7%	7	–	0	
89	L2Objects/IntrospectionEntry.cpp	87.4%	103	93.3%	15	–	0	93
	L2Objects/IntrospectionEntry.cpp	87.4%	103	93.3%	15	–	0	
92	L2Objects/Object.cpp	88.5%	253	96.8%	31	–	0	96
	L2Objects/Object.cpp	88.5%	253	96.8%	31	–	0	
94	! L2Objects/ObjectBuilderT.h		100%	8|68.9%	708| –	0	98 !
	L2Objects/ObjectBuilderT.h		100%	8|68.7%	716| –	0	
101	! L2Objects/ReferenceCon...erFilterObjectName.cpp	97.1%	103	100%	11	–	0	105 !
	L2Objects/ReferenceCon...erFilterObjectName.cpp	96.7%	121	100%	11	–	0	
102	L2Objects/ReferenceCon...erFilterReferences.cpp	100%	13	100%	5	–	0	106
	L2Objects/ReferenceCon...erFilterReferences.cpp	100%	13	100%	5	–	0	
107	L2Objects/StructuredDataI.h		100%	6|75.0%	4| –	0	111
	L2Objects/StructuredDataI.h		100%	6|75.0%	4| –	0	
117	! L3Streams/DoubleBufferedStream.cpp	86.6%	119	84.0%	25	–	0	121 !
	L3Streams/DoubleBufferedStream.cpp	88.9%	117	84.0%	25	–	0	
118	! L3Streams/IOBuffer.cpp	95.1%	920	97.7%	44	–	0	122 !
	L3Streams/IOBuffer.cpp	95.0%	920	97.7%	44	–	0	
120	L3Streams/IOBufferFloatPrint.cpp	84.3%	460	100%	29	–	0	124
	L3Streams/IOBufferFloatPrint.cpp	84.3%	460	100%	29	–	0	
121	! L3Streams/IOBufferIntegerPrint.cpp	85.1%	442	93.5%	93	–	0	125 !
	L3Streams/IOBufferIntegerPrint.cpp	85.5%	442	93.5%	93	–	0	
127	L3Streams/PrinterI.cpp		100%	17|88.9%	9| –	0	131
	L3Streams/PrinterI.cpp		100%	17|88.9%	9| –	0	
129	L3Streams/SingleBufferedStream.cpp	86.0%	186	83.3%	24	–	0	133
	L3Streams/SingleBufferedStream.cpp	86.0%	186	83.3%	24	–	0	
143	! L4Configuration/ConfigurationDatabase.cpp	98.4%	249	97.1%	35	–	0	147 !
	L4Configuration/ConfigurationDatabase.cpp	98.2%	223	97.1%	35	–	0	
	!							148 !
	L4Configuration/ConfigurationDatabaseNode.cpp	98.7%	153	95.2%	21	–	0	
158	! L4Configuration/TypeConversion.cpp	96.4%	610	95.2%	21	–	0	163 !
	L4Configuration/TypeConversion.cpp	95.8%	615	95.2%	21	–	0	
197	! L5GAMs/RealTimeApplica...nfigurationBuilder.cpp	97.1%	2638	100%	55	–	0	202 !
	L5GAMs/RealTimeApplica...nfigurationBuilder.cpp	96.6%	2260	90.0%	50	–	0	
198	! L5GAMs/RealTimeApplica...ConfigurationBuilder.h	100%	1	100%	1	–	0	203 !
	L5GAMs/RealTimeApplica...ConfigurationBuilder.h	100%	1	50.0%	2	–	0	
203	! L6App/Environment/Linux/Bootstrap.cpp	97.3%	75	100%	6	–	0	208 !
	L6App/Environment/Linux/Bootstrap.cpp	94.4%	90	100%	6	–	0	
205	! L6App/RealTimeLoader.cpp	96.9%	64	66.7%	12	–	0	210 !
	L6App/RealTimeLoader.cpp	95.3%	64	66.7%	12	–	0	
208	BasicFile.cpp	88.9%	280	93.9%	33	–	0	213
	BasicFile.cpp	88.9%	280	93.9%	33	–	0	
211	BasicTCPSocket.cpp	88.7%	238	100%	25	–	0	216

```
     BasicTCPSocket.cpp                              |88.7%   238| 100%  25|    -    0
  212     BasicUDPSocket.cpp                         |88.1%   118|95.7%  23|    -    0    217
     BasicUDPSocket.cpp                              |88.1%   118|95.7%  23|    -    0
  213 ! Directory.cpp                                |88.8%    80| 100%  15|    -    0    218 !
     Directory.cpp                                   |87.5%    80| 100%  15|    -    0
  214     DirectoryScanner.cpp                       |89.1%    92|90.0%  10|    -    0    219
     DirectoryScanner.cpp                            |89.1%    92|90.0%  10|    -    0
  220     File.cpp                                   |85.7%     7|57.1%   7|    -    0    225
     File.cpp                                        |85.7%     7|57.1%   7|    -    0
  231 ! HttpProtocol.cpp                             |98.4%   547|96.3%  27|    -    0    236 !
     HttpProtocol.cpp                                |98.4%   550|96.3%  27|    -    0
  241     EventSem.cpp                               |87.2%   141| 100%  15|    -    0    246
     EventSem.cpp                                    |87.2%   141| 100%  15|    -    0
  242     MutexSem.cpp                               |86.8%   121| 100%  13|    -    0    247
     MutexSem.cpp                                    |86.8%   121| 100%  13|    -    0
  249     ExceptionHandler.h                         | 0.0%     2| 0.0%   2|    -    0    254
     ExceptionHandler.h                              | 0.0%     2| 0.0%   2|    -    0
  270 ! LoggerService.cpp                            |96.1%    76| 100%  14|    -    0    275 !
     LoggerService.cpp                               |97.4%    76| 100%  14|    -    0
  278 ! StateMachine.cpp                             |95.3%   192| 100%  16|    -    0    283 !
     StateMachine.cpp                                |95.9%   195| 100%  16|    -    0
  282 ! CircularBufferThreadInputDataSource.cpp      |97.8%   510|94.7%  19|    -    0    287 !
     CircularBufferThreadInputDataSource.cpp         |97.2%   534|94.7%  19|    -    0
  285 ! MemoryMapAsyncTriggerOutputBroker.cpp        |94.2%   257| 100%  20|    -    0    290 !
     MemoryMapAsyncTriggerOutputBroker.cpp           |94.9%   257| 100%  20|    -    0

  286     ================================================================================   291
     ================================================================================
  287 !                                      Total:|96.0% 24072|87.7%  8k|    -    0    292 !
                                             Total:|96.0% 23967|87.7%  8k|    -    0
```

GTest report


```
[----------] Global test environment tear-down
[==========] 4319 tests from 178 test cases ran. (292339 ms total)
[  PASSED  ] 4319 tests.
```

Integration test review

Date of the review: 23/01/2020

Person who did the review: André Neto

Version of integration tests: 1.1.0

Result of review: N/A

List of non-conformities: N/A

Comments: Not performed.

Acceptance test review

Date of the review: 23/01/2020

Person who did the review: André Neto

Version of acceptance tests: 1.1.0

Result of review: N/A

List of non-conformities: N/A

Comments: Not performed.

History

#1 - 28.02.2020 16:30 - André Neto

- Status changed from New to Closed