

## MARTe2-core - Meeting #337

### MARTe2 QA-audit (v0.16)

02.05.2018 14:24 - André Neto

<b>Status:</b>	Closed	<b>Start date:</b>	02.05.2018
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	André Neto	<b>% Done:</b>	0%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	v0.16	<b>Spent time:</b>	0.00 hour

#### Description

The v0.16 is dedicated to the release of a complete user manual (based on sphinx).

## Requirements review

**Date of the review:** 02/05/2018

**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 v0.14.

## Architecture & design review

**Date of the review:** 02/05/2018

**Person who did the review:** André Neto

**Version of architecture & design document:** 0.16

**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:** 02/05/2018

**Person who did the review:** André Neto

**Version of source code:** 0.16

**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:**

Source/Core/BareMetal/L3Streams/AdvancedErrorManagement.h:4: Warning: Found unknown command ` \copyright`  
Source/Core/BareMetal/L3Streams/AdvancedErrorManagement.h:136: Warning: argument 'code' of command @param is not found in the argument list of REPORT\_ERROR(...)  
Source/Core/BareMetal/L3Streams/AdvancedErrorManagement.h:136: Warning: argument 'message' of command @param is not found in the argument list of REPORT\_ERROR(...)  
Source/Core/BareMetal/L3Streams/AdvancedErrorManagement.h:79: Warning: argument 'code' of command @param is not found in the argument list of REPORT\_ERROR\_STATIC(...)  
Source/Core/BareMetal/L3Streams/AdvancedErrorManagement.h:79: Warning: argument 'message' of command @param is not found in the argument list of REPORT\_ERROR\_STATIC(...)  
Source/Core/BareMetal/L3Streams/BitSetToInteger.h:4: Warning: Found unknown command ` \copyright` (Repeated many times)  
Source/Core/BareMetal/L4Logger/Logger.cpp:43: Warning: Member LoggerErrorProcessFunction(const MArTe::ErrorManagement::ErrorInformation &errorInfo, const char8 \*const errorDescription) (function) of namespace MArTe is not documented  
Source/Core/BareMetal/L0Types/Matrix.h:576: Warning: Member Determinant(float32 &det) const (function) of class MArTe::Matrix is not documented.  
Source/Core/BareMetal/L0Types/Matrix.h:618: Warning: Member Determinant(float64 &det) const (function) of class MArTe::Matrix is not documented.  
Source/Core/BareMetal/L0Types/Matrix.h:659: Warning: Member Inverse(Matrix< float32 > &inverse) const (function) of class MArTe::Matrix is not documented.  
Source/Core/BareMetal/L0Types/Matrix.h:706: Warning: Member Inverse(Matrix< float64 > &inverse) const (function) of class MArTe::Matrix is not documented.  
Source/Core/BareMetal/L4Configuration/XMLParser.h:68: Warning: Unsupported xml/html tag <STRING> found  
Source/Core/BareMetal/L4Configuration/XMLParser.h:68: Warning: Unsupported xml/html tag </STRING> found  
Source/Core/BareMetal/L4Configuration/XMLParser.h:69: Warning: Unsupported xml/html tag <STRING> found  
Source/Core/BareMetal/L4Configuration/XMLParser.h:69: Warning: Unsupported xml/html tag </STRING> found  
Source/Core/BareMetal/L4Configuration/XMLParser.h:70: Warning: Unsupported xml/html tag <STRING> found  
Source/Core/BareMetal/L4Configuration/XMLParser.h:70: Warning: Unsupported xml/html tag </STRING> found  
Source/Core/Scheduler/L3Services/ExecutionInfo.h:160: Warning: argument 'context' of command @param is not found in the argument list of MArTe::ExecutionInfo::SetThreadSpecificContext(void \*const &contextIn)  
Source/Core/Scheduler/L3Services/ExecutionInfo.h:160: Warning: The following parameters of MArTe::ExecutionInfo::SetThreadSpecificContext(void \*const &contextIn) are not documented: parameter 'contextIn'  
Source/Core/Scheduler/L3Services/MultiThreadService.h:159: Warning: argument 'priorityLevelIn' of command @param is not found in the argument list of MArTe::MultiThreadService::SetStackSize(uint32 stackSizeIn)  
Source/Core/Scheduler/L3Services/MultiThreadService.h:159: Warning: The following parameters of MArTe::MultiThreadService::SetStackSize(uint32 stackSizeIn) are not documented: parameter 'stackSizeIn'

*Disclaimer: Some warnings might be to due a bug of Doxygen ([https://bugzilla.gnome.org/show\\_bug.cgi?id=406027](https://bugzilla.gnome.org/show_bug.cgi?id=406027)), fixed on version 1.8.10 (we use 1.6.1 on vcis-jenkins.f4e.europa.eu).*

**Remark**

The documentation of DataSourceel 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:** 02/05/2018

**Person who did the review:** André Neto

**Version of unit tests:** 0.16

**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
```

Filename	Lines  Rate	Num	Functions  Rate	Num	Branches  Rate	Num
L1Portability/Environm...Linux/BasicConsole.cpp	79.4%	223	76.2%	42	-	0
L1Portability/FastResourceContainer.cpp	83.5%	97	71.4%	7	-	0
L1Portability/MemoryArea.cpp	91.2%	57	91.7%	12	-	0
L2Objects/ClassProperties.cpp	92.9%	28	87.5%	8	-	0
L2Objects/Introspection.cpp	73.3%	15	85.7%	7	-	0
L2Objects/IntrospectionEntry.cpp	88.3%	111	93.3%	15	-	0
L2Objects/Object.cpp	88.8%	250	96.8%	31	-	0
L5GAMs/GAM.cpp	98.0%	349	94.6%	37	-	0
ExceptionHandler.h	0.0%	2	0.0%	2	-	0

*LCOV report (files containing functions with coverage < 90%):*

Filename	Lines  Rate	Num	Functions  Rate	Num	Branches  Rate	Num
L1Portability/Environm...Linux/BasicConsole.cpp	79.4%	223	76.2%	42	-	0
L1Portability/Environment/Linux/Sleep.cpp	76.3%	93	100%	8	-	0

L1Portability/FastResourceContainer.cpp	83.5%	97 71.4%	7	-	0
L2Objects/ClassRegistryDatabase.cpp	81.9%	127 100%	15	-	0
L2Objects/Introspection.cpp	73.3%	15 85.7%	7	-	0
L2Objects/IntrospectionEntry.cpp	88.3%	111 93.3%	15	-	0
L2Objects/Object.cpp	88.8%	250 96.8%	31	-	0
L2Objects/ReferenceCon...erFilterReferences.cpp	84.6%	13 100%	5	-	0
L3Streams/BufferedStreamIOBuffer.cpp	86.0%	50 100%	8	-	0
L3Streams/DoubleBufferedStream.cpp	82.7%	110 84.0%	25	-	0
L3Streams/IOBufferFloatPrint.cpp	84.5%	464 100%	29	-	0
L3Streams/IOBufferIntegerPrint.cpp	85.2%	460 93.5%	93	-	0
L3Streams/SingleBufferedStream.cpp	84.1%	176 83.3%	24	-	0
L3Streams/StreamString.cpp	89.9%	149 88.9%	36	-	0
[/home/aneto/Projects/MARTe2-dev/Source/Core/FileSystem/L1Portability/Environment/Linux/]					
BasicFile.cpp	87.8%	278 93.9%	33	-	0
BasicTCPSocket.cpp	85.5%	234 100%	25	-	0
BasicUDPSocket.cpp	88.1%	118 95.7%	23	-	0
Directory.cpp	86.2%	80 100%	15	-	0
DirectoryScanner.cpp	88.0%	92 90.0%	10	-	0
[/home/aneto/Projects/MARTe2-dev/Source/Core/FileSystem/L6App/Environment/Linux/]					
Bootstrap.cpp	41.9%	31 60.0%	5	-	0
[/home/aneto/Projects/MARTe2-dev/Source/Core/Scheduler/L1Portability/]					
ExceptionHandler.h	0.0%	2 0.0%	2	-	0
[/home/aneto/Projects/MARTe2-dev/Source/Core/Scheduler/L5GAMs/]					
GAMScheduler.cpp	87.1%	132 100%	15	-	0
=====					
Total: 94.0% 19608 88.1% 7k  - 0					

### GTest report

```
[-----] Global test environment tear-down
[=====] 3912 tests from 147 test cases ran. (208611 ms total)
[ PASSED ] 3909 tests.
[ FAILED ] 1 tests, listed below:
[ FAILED ] IOBufferGTest.TestPrintStructuredDataInterface
```

## Integration test review

**Date of the review:** 02/05/2018

**Person who did the review:** André Neto

**Version of integration tests:** 0.16

**Result of review:** N/A

**List of non-conformities:** N/A

**Comments:** Not performed.

## Acceptance test review

**Date of the review:** 02/05/2018

**Person who did the review:** André Neto

**Version of acceptance tests:** 0.16

**Result of review:** N/A

**List of non-conformities:** N/A

**Comments:** Not performed.

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## History

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**#1 - 02.05.2018 14:24 - André Neto**

- Subject changed from MARTe2 QA-audit (v0.14) to MARTe2 QA-audit (v0.16)

**#2 - 02.05.2018 14:33 - André Neto**

- Description updated

**#3 - 02.05.2018 14:42 - André Neto**

- Description updated

**#4 - 03.05.2018 11:52 - André Neto**

- Description updated