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# 1 SWS\_OS

## 1.1 Specification Item ECUC\_Os\_00020

### Trace References:

none

### Content:

Container Name	OsApplicationHooksOsApplicationHooks
Description	Container to structure the OS-Application-specific hooks
Configuration Parameters	

### Included parameters:

Included Parameters	
Parameter Name	SWS Item ID
OsAppErrorHook	ECUC_Os_00213
OsAppShutdownHook	ECUC_Os_00125
OsAppStartupHook	ECUC_Os_00124
OsMemoryMappingCodeLocationRef	ECUC_Os_00402

### Included containers:

No Included Containers
------------------------

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #74978: Mismatch in memory allocation for Os Tasks

#### Problem description:

Currently following situation occurs:

The OS so declared the Task Bodies (in order to mount in its own configuration structures)

The RTE in turn defines some of the Task Bodies.

But both do that with different memory sections since there is no common source of information which memory section is requested for a Task Bodies.

In the meantime Compilers are on the market with a quite strict checking of the memory relates settings and in case of mismatch those compilers issue an error.

Proposal: add a configuration parameter at OsTask referencing a SwAddrMethod.  
The OS shall use this SwAddrMethod in order to generate the correct MemMap  
MemoryAllocationKeywords (like Rte for Runnables)

E.g.

```
1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
3
```

```
/*.. Task Body or Task forward declaration ..*/
```

```
8
9 # define OS_STOP_SEC_<sadm>
10 # include "Os_MemMap.h"
```

### Agreed solution:

ECUC of SWS OS:

Add a reference attribute to the following Os config containers: Os-  
Task (ECUC\_Os\_00073), OsISR (ECUC\_Os\_00041), OsApplicationHooks  
(ECUC\_Os\_00020) and OsHooks (ECUC\_Os\_00035)

Details:

Name: OsMemoryMappingCodeLocationRef

Description Reference to the memory mapping containing details about the section  
where the code is placed

Multiplicity: 0..1

Type: Foreign reference to SW-ADDR-METHOD

No default value

Not post build-able

Pre-compile time All Variants

Scope: ECU

—

Add a requirement to SWS\_OS

[SWS\_Os\_xxxxx] d The OS code shall wrap each declaration of Task, ISR  
and hook functions with the Memory Mapping Allocation Keywords macros.

```
1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
3
4 <Task, ISR or hook functions declaration>
5
6 # define OS_STOP_SEC_<sadm>
7 # include "Os_MemMap.h"
```

where <sadm> is the shortName of the SwAddrMethod if configured in Os-MemoryMappingCodeLocationRef. d (SRS\_BSW\_00351)

—

**SWS RTE:**

[SWS\_Rte\_yyyyy] d The RTE Generator shall wrap each definition of a task body

with the Memory Allokation Keywords.

```

1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
3
4 <Task definition>
5
6 # define OS_STOP_SEC_<sadm>
7 # include "Os_MemMap.h"
    
```

where <sadm> is the shortName of the SwAddrMethod if configured in Os-MemoryMappingCodeLocationRef of the according OsTask.

If OsMemoryMappingCodeLocationRef is not defined , <sadm> shall be CODE\_<Taskname>. d (SRS\_BSW\_00351)

Add a note below:

"Requirement SWS\_Rte\_yyyyy is an exception to SWS\_Rte\_05088."

–Last change on issue 74978 comment 12–

**BW-C-Level:**

Application	Specification	Bus
1	3	1

## 1.2 Specification Item ECUC\_Os\_00022

**Trace References:**

none

**Content:**

Container Name	OsAppModeOsAppMode
----------------	--------------------

Description	<p>OsAppMode is the object used to define OSEK OS ISO 17356-3 properties for an OSEK OS ISO 17356-3 application mode.</p> <p>No standard attributes are defined for AppMode.</p> <p>In a CPU, at least one AppMode object has to be defined.</p> <p>[source: OSEK OIL Spec. 2.5 ISO 17356-6]</p> <p>An OsAppMode called OSDEFAULTAPPMODE must always be there for OSEK ISO 17356 compatibility.</p>
Configuration Parameters	

Included parameters:

No Included Parameters
------------------------

Included containers:

No Included Containers
------------------------

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #73564: References to OSEK

**Problem description:**

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356  
 ISO 17356-2: introduction?  
 ISO 17356-3: OS  
 ISO 17356-4: COM  
 ISO 17356-5: NM (not sure we need to have such reference)  
 ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

**Agreed solution:**

Replace references to  
 \* OSEK web site  
 \* the OSEK file name / version  
 with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

## SWS OS

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[..]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

## SWCT:

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilter-

TypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents &

related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:  
ISO 17356-4  
OSEK/VDX Communication (COM)  
[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

```
/* for ISO 17356 compliance this typedef has been added */
```

6.2 Related Standards and Norms

Remove

6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move reference to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove section references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,

from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,

from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

## SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"  
by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"  
by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

## SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

## SWS\_StandardTypes:

In Section 3.2: replace

[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)

by

[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====  
 CP\_TR\_AutosarModelConstraints  
 see PS for the SWCT.  
 =====

-----  
 SRS\_NetworkManagement:

- 1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"  
 Remove the description:  
 [5] [STD\_OSEK\_NM]  
 OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3  
 [STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3  
<http://www.osek-vdx.org/>  
 Change to :  
 OSEK/VDX NM Specification  
[www.iso.org](http://www.iso.org)  
 ==>  
 7.2.1 ISO 17356-5  
 [5] ISO 17356-5: NM Specification  
[www.iso.org](http://www.iso.org)
- 2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]
- 3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]  
 –Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

### 1.3 Specification Item ECUC\_Os\_00033

**Trace References:**

none

**Content:**

Container Name	OsEventOsEvent
----------------	----------------

Description	Representation of OS events in the configuration context. Adopted from the <b>OSEK OIL ISO 17356-6</b> specification.
Configuration Parameters	

Included parameters:

Included Parameters	
Parameter Name	SWS Item ID
OsEventMask	ECUC_Os_00034

Included containers:

No Included Containers
------------------------

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #73564: References to OSEK

**Problem description:**

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356  
ISO 17356-2: introduction?  
ISO 17356-3: OS  
ISO 17356-4: COM  
ISO 17356-5: NM (not sure we need to have such reference)  
ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

**Agreed solution:**

Replace references to  
\* OSEK web site  
\* the OSEK file name / version  
with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

SWS OS

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[.]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

SWCT:

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:  
ISO 17356-4  
OSEK/VDX Communication (COM)  
[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

```
/* for ISO 17356 compliance this typedef has been added */
```

6.2 Related Standards and Norms

Remove

### 6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move reference to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove section references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,  
from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,  
from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

## SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"  
by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"  
by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

## SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

## SWS\_StandardTypes:

In Section 3.2: replace

[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)

by

[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====

## CP\_TR\_AutosarModelConstraints

see PS for the SWCT.

=====

=====

SRS\_NetworkManagement:

1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"

Remove the description:

[5] [STD\_OSEK\_NM]

OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3

[STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3

<http://www.osek-vdx.org/>

Change to :

OSEK/VDX NM Specification

[www.iso.org](http://www.iso.org)

====>

7.2.1 ISO 17356-5

[5] ISO 17356-5: NM Specification

[www.iso.org](http://www.iso.org)

2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]

3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]

–Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.4 Specification Item ECUC\_Os\_00035

**Trace References:**

none

**Content:**

Container Name	OsHooksOsHooks
Description	Container to structure all hooks belonging to the OS
Configuration Parameters	

### Included parameters:

Included Parameters	
Parameter Name	SWS Item ID
OsErrorHook	ECUC_Os_00036
OsPostTaskHook	ECUC_Os_00037
OsPreTaskHook	ECUC_Os_00038
OsProtectionHook	ECUC_Os_00214
OsShutdownHook	ECUC_Os_00039
OsStartupHook	ECUC_Os_00040
OsMemoryMappingCodeLocationRef	ECUC_Os_00402

### Included containers:

No Included Containers
------------------------

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #74978: Mismatch in memory allocation for Os Tasks

#### Problem description:

Currently following situation occurs:

The OS so declared the Task Bodies (in order to mount in its own configuration structures)

The RTE in turn defines some of the Task Bodies.

But both do that with different memory sections since there is no common source of information which memory section is requested for a Task Bodies.

In the meantime Compilers are on the market with a quite strict checking of the memory relates settings and in case of mismatch those compilers issue an error.

Proposal: add a configuration parameter at OsTask referencing a SwAddrMethod.

The OS shall use this SwAddrMethod in order to generate the correct MemMap MemoryAllocationKeywords (like Rte for Runnables)

E.g.

```
1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
3
```

```
/*.. Task Body or Task forward declaration ..*/
```

```
8
```

```
9 # define OS_STOP_SEC_<sadm>
10 # include "Os_MemMap.h"
```

**Agreed solution:**

ECUC of SWS OS:

Add a reference attribute to the following Os config containers: Os-Task (ECUC\_Os\_00073), OsISR (ECUC\_Os\_00041), OsApplicationHooks (ECUC\_Os\_00020) and OsHooks (ECUC\_Os\_00035)

Details:

Name: OsMemoryMappingCodeLocationRef

Description Reference to the memory mapping containing details about the section where the code is placed

Multiplicity: 0..1

Type: Foreign reference to SW-ADDR-METHOD

No default value

Not post build-able

Pre-compile time All Variants

Scope: ECU

—

Add a requirement to SWS\_OS

[SWS\_Os\_XXXXX] d The OS code shall wrap each declaration of Task, ISR and hook functions with the Memory Mapping Allocation Keywords macros.

```
1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
3
4 <Task, ISR or hook functions declaration>
5
6 # define OS_STOP_SEC_<sadm>
7 # include "Os_MemMap.h"
```

where <sadm> is the shortName of the SwAddrMethod if configured in Os-MemoryMappingCodeLocationRef. d (SRS\_BSW\_00351)

—

SWS RTE:

[SWS\_Rte\_YYYYY] d The RTE Generator shall wrap each definition of a task body with the Memory Allokation Keywords.

```

1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
3
4 <Task definition>
5
6 # define OS_STOP_SEC_<sadm>
7 # include "Os_MemMap.h"
    
```

where <sadm> is the shortName of the SwAddrMethod if configured in Os-MemoryMappingCodeLocationRef of the according OsTask.  
 If OsMemoryMappingCodeLocationRef is not defined , <sadm> shall be CODE\_<Taskname>. d (SRS\_BSW\_00351)

Add a note below:

"Requirement SWS\_Rte\_yyyyy is an exception to SWS\_Rte\_05088."  
 –Last change on issue 74978 comment 12–

**BW-C-Level:**

Application	Specification	Bus
1	3	1

## 1.5 Specification Item ECUC\_Os\_00036

**Trace References:**

none

**Content:**

Name	OsErrorHookOsHooks.OsErrorHookin container OsHooks		
Description	Error hook as defined by <a href="#">OSEK ISO 17356</a> true: Hook is called false: Hook is not called		
Multiplicity	1		
Type	EcucBooleanParamDef		
Default value	-		
Post-Build Variant Value	false		
Value Configuration Class	Pre-compile time	X	All Variants
	Link time	-	
	Post-build time	-	
Scope / Dependency	scope: local		

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #73564: References to OSEK

**Problem description:**

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356  
ISO 17356-2: introduction?  
ISO 17356-3: OS  
ISO 17356-4: COM  
ISO 17356-5: NM (not sure we need to have such reference)  
ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

**Agreed solution:**

Replace references to  
\* OSEK web site  
\* the OSEK file name / version  
with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

SWS OS

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[.]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are

supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

SWCT:

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:

ISO 17356-4

OSEK/VDX Communication (COM)

[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the

sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

## 5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

### 5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

```
/* for ISO 17356 compliance this typedef has been added */
```

## 6.2 Related Standards and Norms

Remove

### 6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move refernce to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove secton references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,  
from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,  
from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"  
by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"  
by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

SWS\_StandardTypes:

In Section 3.2: replace

[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)

by

[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====

CP\_TR\_AutosarModelConstraints

see PS for the SWCT.

=====

=====

SRS\_NetworkManagement:

1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"

Remove the description:

[5] [STD\_OSEK\_NM]

OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3

[STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3

<http://www.osek-vdx.org/>

Change to :

OSEK/VDX NM Specification

[www.iso.org](http://www.iso.org)

====>

7.2.1 ISO 17356-5

[5] ISO 17356-5: NM Specification

www.iso.org

2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]

3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]

–Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.6 Specification Item ECUC\_Os\_00037

**Trace References:**

none

**Content:**

Name	OsPostTaskHookOsHooks.OsPostTaskHookin container OsHooks		
Description	Post-task hook as defined by <b>OSEK ISO 17356</b> true: Hook is called false: Hook is not called		
Multiplicity	1		
Type	EcucBooleanParamDef		
Default value	-		
Post-Build Variant Value	false		
Value Configuration Class	Pre-compile time	X	All Variants
	Link time	-	
	Post-build time	-	
Scope / Dependency	scope: local		

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #73564: References to OSEK

**Problem description:**

The OSEK web site is not available.

References need to be updated.

OSEK was pushed to ISO 17356  
ISO 17356-2: introduction?  
ISO 17356-3: OS  
ISO 17356-4: COM  
ISO 17356-5: NM (not sure we need to have such reference)  
ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

**Agreed solution:**

Replace references to  
\* OSEK web site  
\* the OSEK file name / version  
with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

SWS OS

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[.]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable

schedule event [16]." from 7.7.2.1

Remove chapter 12.3

SWCT:

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:

ISO 17356-4

OSEK/VDX Communication (COM)

[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

## 5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

#### 5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

```
/* for ISO 17356 compliance this typedef has been added */
```

## 6.2 Related Standards and Norms

Remove

### 6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move refernce to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove secton references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,  
from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,  
from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"  
by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"  
by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

SWS\_StandardTypes:

In Section 3.2: replace

[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)  
by

[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====

CP\_TR\_AutosarModelConstraints

see PS for the SWCT.

=====

=====

SRS\_NetworkManagement:

1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"

Remove the description:

[5] [STD\_OSEK\_NM]

OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3

[STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3

<http://www.osek-vdx.org/>

Change to :

OSEK/VDX NM Specification

[www.iso.org](http://www.iso.org)

====>

7.2.1 ISO 17356-5

[5] ISO 17356-5: NM Specification

[www.iso.org](http://www.iso.org)

2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]

3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]

–Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.7 Specification Item ECUC\_Os\_00038

**Trace References:**

none

**Content:**

Name	OsPreTaskHookOsHooks.OsPreTaskHookin container OsHooks		
Description	Pre-task hook as defined by <b>OSEK ISO 17356</b> true: Hook is called false: Hook is not called		
Multiplicity	1		
Type	EcucBooleanParamDef		
Default value	-		
Post-Build Variant Value	false		
Value Configuration Class	Pre-compile time	X	All Variants
	Link time	-	
	Post-build time	-	
Scope / Dependency	scope: local		

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #73564: References to OSEK

**Problem description:**

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356

ISO 17356-2: introduction?

ISO 17356-3: OS

ISO 17356-4: COM

ISO 17356-5: NM (not sure we need to have such reference)

ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

**Agreed solution:**

Replace references to

\* OSEK web site

\* the OSEK file name / version

with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

SWS OS

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[.]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

SWCT:

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type `DataFilterTypeEnum` in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type `DataFilterTypeEnum` in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of `DataFilter`

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of `DataFilter`

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of `DataFilter`

According to the origin of `DataFilter`, i.e. OSEK COM 3.0.3 specification [18], `DataFilters` can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of `DataFilter`

According to the origin of `DataFilter`, i.e. ISO 17356-4 specification [18], `DataFilters` can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task

(that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:

ISO 17356-4

OSEK/VDX Communication (COM)

[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked

for being already defined:

/\* for OSEK compliance this typedef has been added \*/

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

/\* for ISO 17356 compliance this typedef has been added \*/

## 6.2 Related Standards and Norms

Remove

### 6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move refernce to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove secton references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,

from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section

2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,  
from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"  
by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"  
by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

SWS\_StandardTypes:

In Section 3.2: replace

[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)

by

[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====

CP\_TR\_AutosarModelConstraints

see PS for the SWCT.

=====

=====

SRS\_NetworkManagement:

1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"

Remove the description:

[5] [STD\_OSEK\_NM]

OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3

[STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3

<http://www.osek-vdx.org/>

Change to :

OSEK/VDX NM Specification

[www.iso.org](http://www.iso.org)

==>

7.2.1 ISO 17356-5

[5] ISO 17356-5: NM Specification

[www.iso.org](http://www.iso.org)

2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]

3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]

–Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.8 Specification Item ECUC\_Os\_00039

### Trace References:

none

### Content:

Name	OsShutdownHookOsHooks.OsShutdownHookin container OsHooks		
Description	Shutdown hook as defined by <b>OSEK ISO 17356</b> true: Hook is called false: Hook is not called		
Multiplicity	1		
Type	EcucBooleanParamDef		
Default value	-		
Post-Build Variant Value	false		
Value Configuration Class	Pre-compile time	X	All Variants
	Link time	-	
	Post-build time	-	
Scope / Dependency	scope: local		

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #73564: References to OSEK

#### Problem description:

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356

ISO 17356-2: introduction?

ISO 17356-3: OS

ISO 17356-4: COM

ISO 17356-5: NM (not sure we need to have such reference)

ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

#### Agreed solution:

Replace references to

\* OSEK web site

\* the OSEK file name / version

with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

SWS OS

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[.]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

SWCT:

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====  
Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:  
 ISO 17356-4  
 OSEK/VDX Communication (COM)  
[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

```
/* for ISO 17356 compliance this typedef has been added */
```

## 6.2 Related Standards and Norms

Remove

### 6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move reference to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove section references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,

from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,

from

< If no update bits are used, the AUTOSAR COM module provides the deadline

monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"  
by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"  
by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

SWS\_StandardTypes:

In Section 3.2: replace

[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)

by

[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====

CP\_TR\_AutosarModelConstraints

see PS for the SWCT.

=====

=====

SRS\_NetworkManagement:

1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"

Remove the description:

[5] [STD\_OSEK\_NM]

OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3

[STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3

<http://www.osek-vdx.org/>

Change to :

OSEK/VDX NM Specification

[www.iso.org](http://www.iso.org)

==>

7.2.1 ISO 17356-5

[5] ISO 17356-5: NM Specification

[www.iso.org](http://www.iso.org)

2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]

3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]

–Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

**1.9 Specification Item ECUC\_Os\_00040**

**Trace References:**

none

**Content:**

Name	OsStartupHookOsHooks.OsStartupHookin container OsHooks		
Description	Startup hook as defined by <b>OSEK ISO 17356</b> true: Hook is called false: Hook is not called		
Multiplicity	1		
Type	EcucBooleanParamDef		
Default value	-		
Post-Build Variant Value	false		
Value Configuration Class	Pre-compile time	X	All Variants
	Link time	-	
	Post-build time	-	
Scope / Dependency	scope: local		

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #73564: References to OSEK

**Problem description:**

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356  
ISO 17356-2: introduction?  
ISO 17356-3: OS  
ISO 17356-4: COM  
ISO 17356-5: NM (not sure we need to have such reference)  
ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

**Agreed solution:**

Replace references to  
\* OSEK web site  
\* the OSEK file name / version  
with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

SWS OS  
=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[.]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

SWCT:

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilterTypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilterTypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:

ISO 17356-4

OSEK/VDX Communication (COM)

[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

```
/* for ISO 17356 compliance this typedef has been added */
```

6.2 Related Standards and Norms

Remove

6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move refernce to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove secton references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,

from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,

from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

## SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"  
by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"  
by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

## SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

## SWS\_StandardTypes:

In Section 3.2: replace

[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)

by

[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====

## CP\_TR\_AutosarModelConstraints

see PS for the SWCT.

=====

=====

SRS\_NetworkManagement:

1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"

Remove the description:

[5] [STD\_OSEK\_NM]

OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3

[STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3

<http://www.osek-vdx.org/>

Change to :

OSEK/VDX NM Specification

[www.iso.org](http://www.iso.org)

====>

7.2.1 ISO 17356-5

[5] ISO 17356-5: NM Specification

[www.iso.org](http://www.iso.org)

2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]

3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]

-Last change on issue 73564 comment 28-

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.10 Specification Item ECUC\_Os\_00041

**Trace References:**

none

**Content:**

Container Name	OsIsrOsIsr
Description	The OsIsr container represents an <b>OSEK ISO 17356</b> interrupt service routine.
Configuration Parameters	

Included parameters:

Included Parameters	
Parameter Name	SWS Item ID
OslrCategory	ECUC_Os_00042
OslrResourceRef	ECUC_Os_00043
OsMemoryMappingCodeLocationRef	ECUC_Os_00402

Included containers:

Included Containers		
Container Name	Multiplicity	Scope / Dependency
OslrTimingProtection	0..1	<p>This container contains all parameters which are related to timing protection</p> <p>If the container exists, the timing protection is used for this interrupt. If the container does not exist, the interrupt is not supervised regarding timing violations.</p>

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #73564: References to OSEK

**Problem description:**

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356  
 ISO 17356-2: introduction?  
 ISO 17356-3: OS  
 ISO 17356-4: COM  
 ISO 17356-5: NM (not sure we need to have such reference)  
 ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

**Agreed solution:**

Replace references to  
 \* OSEK web site  
 \* the OSEK file name / version  
 with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

**SWS OS**

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[.]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

**SWCT:**

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that

is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:

ISO 17356-4

OSEK/VDX Communication (COM)

[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

```
/* for ISO 17356 compliance this typedef has been added */
```

6.2 Related Standards and Norms

Remove

### 6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

### SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move refernce to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove secton references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,

from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,

from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline

monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"  
by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"  
by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

SWS\_StandardTypes:

In Section 3.2: replace

[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)

by

[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====

CP\_TR\_AutosarModelConstraints  
see PS for the SWCT.

=====

=====

SRS\_NetworkManagement:

1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"

Remove the description:

[5] [STD\_OSEK\_NM]

OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3

[STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3

<http://www.osek-vdx.org/>

Change to :

OSEK/VDX NM Specification

[www.iso.org](http://www.iso.org)

====>

7.2.1 ISO 17356-5

[5] ISO 17356-5: NM Specification

[www.iso.org](http://www.iso.org)

2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]

3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]

–Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

- RfC #74978: Mismatch in memory allocation for Os Tasks

**Problem description:**

Currently following situation occurs:

The OS so declared the Task Bodies (in order to mount in its own configuration structures)

The RTE in turn defines some of the Task Bodies.

But both do that with different memory sections since there is no common source of information which memory section is requested for a Task Bodies.

In the meantime Compilers are on the market with a quite strict checking of

the memory relates settings and in case of mismatch those compilers issue an error.

Proposal: add a configuration parameter at OsTask referencing a SwAddrMethod. The OS shall use this SwAddrMethod in order to generate the correct MemMap MemoryAllocationKeywords (like Rte for Runnables)

E.g.

```
1 # define OS_START_SEC_<sadm>
```

```
2 # include "Os_MemMap.h"
```

```
3
```

```
/*.. Task Body or Task forward declaration ..*/
```

```
8
```

```
9 # define OS_STOP_SEC_<sadm>
```

```
10 # include "Os_MemMap.h"
```

#### **Agreed solution:**

ECUC of SWS OS:

Add a reference attribute to the following Os config containers: Os-Task (ECUC\_Os\_00073), OsISR (ECUC\_Os\_00041), OsApplicationHooks (ECUC\_Os\_00020) and OsHooks (ECUC\_Os\_00035)

Details:

Name: OsMemoryMappingCodeLocationRef

Description Reference to the memory mapping containing details about the section where the code is placed

Multiplicity: 0..1

Type: Foreign reference to SW-ADDR-METHOD

No default value

Not post build-able

Pre-compile time All Variants

Scope: ECU

—

Add a requirement to SWS\_OS

[SWS\_Os\_xxxxx] d The OS code shall wrap each declaration of Task, ISR and hook functions with the Memory Mapping Allocation Keywords macros.

```
1 # define OS_START_SEC_<sadm>
```

```
2 # include "Os_MemMap.h"
```

```
3
```

```
4 <Task, ISR or hook functions declaration>
```

```
5
```

```
6 # define OS_STOP_SEC_<sadm>
7 # include "Os_MemMap.h"
```

where <sadm> is the shortName of the SwAddrMethod if configured in Os-MemoryMappingCodeLocationRef. d (SRS\_BSW\_00351)

—

**SWS RTE:**

[SWS\_Rte\_yyyyy] d The RTE Generator shall wrap each definition of a task body

with the Memory Allokation Keywords.

```
1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
3
4 <Task definition>
5
6 # define OS_STOP_SEC_<sadm>
7 # include "Os_MemMap.h"
```

where <sadm> is the shortName of the SwAddrMethod if configured in Os-MemoryMappingCodeLocationRef of the according OsTask.

If OsMemoryMappingCodeLocationRef is not defined , <sadm> shall be CODE\_<Taskname>. d (SRS\_BSW\_00351)

Add a note below:

"Requirement SWS\_Rte\_yyyyy is an exception to SWS\_Rte\_05088."

–Last change on issue 74978 comment 12–

**BW-C-Level:**

Application	Specification	Bus
1	3	1

## 1.11 Specification Item ECUC\_Os\_00044

**Trace References:**

none

**Content:**

Container Name	OsOSOsOS
Description	OS is the object used to define <b>OSEK OS ISO 17356-3</b> properties for an <b>OSEK ISO 17356</b> application. Per CPU exactly one OS object has to be defined.
Configuration Parameters	

Included parameters:

Included Parameters	
Parameter Name	SWS Item ID
OsNumberOfCores	ECUC_Os_01019
OsScalabilityClass	ECUC_Os_00259
OsStackMonitoring	ECUC_Os_00307
OsStatus	ECUC_Os_00046
OsUseGetServiceId	ECUC_Os_00047
OsUseParameterAccess	ECUC_Os_00048
OsUseResScheduler	ECUC_Os_00049

Included containers:

Included Containers		
Container Name	Multiplicity	Scope / Dependency
OsHooks	1	Container to structure all hooks belonging to the OS

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #73564: References to OSEK

**Problem description:**

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356

ISO 17356-2: introduction?

ISO 17356-3: OS

ISO 17356-4: COM

ISO 17356-5: NM (not sure we need to have such reference)

ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

**Agreed solution:**

Replace references to

\* OSEK web site

\* the OSEK file name / version

with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

SWS OS

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[..]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

SWCT:

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type `DataFilter-TypeEnum` in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type `DataFilter-TypeEnum` in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of `DataFilter`

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of `DataFilter`

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of `DataFilter`

According to the origin of `DataFilter`, i.e. OSEK COM 3.0.3 specification [18], `DataFilters` can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of `DataFilter`

According to the origin of `DataFilter`, i.e. ISO 17356-4 specification [18], `DataFilters` can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:

ISO 17356-4

OSEK/VDX Communication (COM)

[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

/\* for ISO 17356 compliance this typedef has been added \*/

## 6.2 Related Standards and Norms

Remove

### 6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move refernce to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove secton references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,  
from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,  
from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"

by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"

by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

SWS\_StandardTypes:

In Section 3.2: replace

[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)  
by

[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====

CP\_TR\_AutosarModelConstraints

see PS for the SWCT.

=====

=====

SRS\_NetworkManagement:

1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"

Remove the description:

[5] [STD\_OSEK\_NM]

OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3

[STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3

<http://www.osek-vdx.org/>

Change to :

OSEK/VDX NM Specification

[www.iso.org](http://www.iso.org)

==>

7.2.1 ISO 17356-5

[5] ISO 17356-5: NM Specification

[www.iso.org](http://www.iso.org)

2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]

3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]

–Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.12 Specification Item ECUC\_Os\_00047

### Trace References:

none

### Content:

Name	OsUseGetServiceIdOsOS.OsUseGetServiceIdin container OsOS		
Description	As defined by <b>OSEK ISO 17356</b>		
Multiplicity	1		
Type	EcucBooleanParamDef		
Default value	-		
Post-Build Variant Value	false		
Value Configuration Class	Pre-compile time	X	All Variants
	Link time	-	
	Post-build time	-	
Scope / Dependency	scope: local		

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #73564: References to OSEK

#### Problem description:

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356

ISO 17356-2: introduction?

ISO 17356-3: OS

ISO 17356-4: COM

ISO 17356-5: NM (not sure we need to have such reference)

ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

#### Agreed solution:

Replace references to

\* OSEK web site

\* the OSEK file name / version

with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

**SWS OS**

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[..]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

**SWCT:**

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilter-

TypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents &

related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:  
ISO 17356-4  
OSEK/VDX Communication (COM)  
[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

```
/* for ISO 17356 compliance this typedef has been added */
```

6.2 Related Standards and Norms

Remove

6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move reference to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove section references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,

from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,

from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

## SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"  
by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"  
by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

## SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

## SWS\_StandardTypes:

In Section 3.2: replace

[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)

by

[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====  
 CP\_TR\_AutosarModelConstraints  
 see PS for the SWCT.  
 =====

-----  
**SRS\_NetworkManagement:**

- 1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"  
 Remove the description:  
 [5] [STD\_OSEK\_NM]  
 OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3  
 [STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3  
<http://www.osek-vdx.org/>  
 Change to :  
 OSEK/VDX NM Specification  
[www.iso.org](http://www.iso.org)  
 ==>  
 7.2.1 ISO 17356-5  
 [5] ISO 17356-5: NM Specification  
[www.iso.org](http://www.iso.org)
  
- 2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]
  
- 3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]  
 –Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

### 1.13 Specification Item ECUC\_Os\_00048

**Trace References:**

none

**Content:**

Name	OsUseParameterAccessOsOS.OsUseParameterAccessin container OsOS
Description	As defined by <b>OSEK ISO 17356</b>

Multiplicity	1		
Type	EcucBooleanParamDef		
Default value	-		
Post-Build Variant Value	false		
Value Configuration Class	Pre-compile time	X	All Variants
	Link time	-	
	Post-build time	-	
Scope / Dependency	scope: local		

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #73564: References to OSEK

**Problem description:**

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356  
ISO 17356-2: introduction?  
ISO 17356-3: OS  
ISO 17356-4: COM  
ISO 17356-5: NM (not sure we need to have such reference)  
ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

**Agreed solution:**

Replace references to  
\* OSEK web site  
\* the OSEK file name / version  
with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

SWS OS

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[.]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

SWCT:

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers

and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:

ISO 17356-4

OSEK/VDX Communication (COM)

[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

## 5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

### 5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

```
/* for ISO 17356 compliance this typedef has been added */
```

## 6.2 Related Standards and Norms

Remove

### 6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

## SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM  
Move refernce to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove secton references to [DOC\_OSEK\_COM], just keep the textual references  
no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,  
from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,  
from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

## SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"  
by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"  
by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====  
SWS\_COM

1)  
Set reference of [17] to ISO 17356-4: COM  
Set reference of [18] to ISO 17356-6: OIL

2)  
Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)  
and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====  
SWS\_StandardTypes:  
In Section 3.2: replace  
[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)  
by  
[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====  
CP\_TR\_AutosarModelConstraints  
see PS for the SWCT.

=====

=====  
SRS\_NetworkManagement:

1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"  
 Remove the description:  
 [5] [STD\_OSEK\_NM]  
 OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3  
 [STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3  
<http://www.osek-vdx.org/>  
 Change to :  
 OSEK/VDX NM Specification  
[www.iso.org](http://www.iso.org)  
 ==>  
 7.2.1 ISO 17356-5  
 [5] ISO 17356-5: NM Specification  
[www.iso.org](http://www.iso.org)

2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]

3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]  
 –Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.14 Specification Item ECUC\_Os\_00073

**Trace References:**

none

**Content:**

Container Name	OsTaskOsTask
Description	This container represents an <b>OSEK</b> <b>ISO 17356</b> task.
Configuration Parameters	

**Included parameters:**

Included Parameters	
Parameter Name	SWS Item ID
OsTaskActivation	ECUC_Os_00074
OsTaskPriority	ECUC_Os_00075

Included Parameters	
Parameter Name	SWS Item ID
OsTaskSchedule	ECUC_Os_00076
OsMemoryMappingCodeLocationRef	ECUC_Os_00402
OsTaskAccessingApplication	ECUC_Os_00077
OsTaskEventRef	ECUC_Os_00078
OsTaskResourceRef	ECUC_Os_00079

Included containers:

Included Containers		
Container Name	Multiplicity	Scope / Dependency
OsTaskAutostart	0..1	This container determines whether the task is activated during the system start-up procedure or not for some specific application modes.  If the task shall be activated during the system start-up, this container is present and holds the references to the application modes in which the task is auto-started.
OsTaskTimingProtection	0..1	This container contains all parameters regarding timing protection of the task.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #73564: References to OSEK

**Problem description:**

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356  
ISO 17356-2: introduction?  
ISO 17356-3: OS  
ISO 17356-4: COM  
ISO 17356-5: NM (not sure we need to have such reference)  
ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

**Agreed solution:**

Replace references to  
\* OSEK web site  
\* the OSEK file name / version

with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

SWS OS

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[.]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

SWCT:

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:  
ISO 17356-4  
OSEK/VDX Communication (COM)  
[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

/\* for ISO 17356 compliance this typedef has been added \*/

## 6.2 Related Standards and Norms

Remove

### 6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

### SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move refernce to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove secton references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,  
from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,

from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"

by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"

by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

SWS\_StandardTypes:

In Section 3.2: replace  
 [7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)  
 by  
 [7] OSEK/VDX Operating System, ISO 17356-3: OS  
 =====  
 CP\_TR\_AutosarModelConstraints  
 see PS for the SWCT.  
 =====

=====

SRS\_NetworkManagement:

- 1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"  
 Remove the description:  
 [5] [STD\_OSEK\_NM]  
 OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3  
 [STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3  
<http://www.osek-vdx.org/>  
 Change to :  
 OSEK/VDX NM Specification  
[www.iso.org](http://www.iso.org)  
 ==>  
 7.2.1 ISO 17356-5  
 [5] ISO 17356-5: NM Specification  
[www.iso.org](http://www.iso.org)
  
- 2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]
  
- 3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in  
 [SRS\_Nm\_00142]  
 –Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

- RfC #74978: Mismatch in memory allocation for Os Tasks

**Problem description:**

Currently following situation occurs:  
 The OS so declared the Task Bodies (in order to mount in its own configuration structures)

The RTE in turn defines some of the Task Bodies.

But both do that with different memory sections since there is no common source of information which memory section is requested for a Task Bodies.

In the meantime Compilers are on the market with a quite strict checking of the memory relates settings and in case of mismatch those compilers issue an error.

Proposal: add a configuration parameter at OsTask referencing a SwAddrMethod. The OS shall use this SwAddrMethod in order to generate the correct MemMap MemoryAllocationKeywords (like Rte for Runnables)

E.g.

```
1 # define OS_START_SEC_<sadm>
```

```
2 # include "Os_MemMap.h"
```

```
3
```

```
/* Task Body or Task forward declaration */
```

```
8
```

```
9 # define OS_STOP_SEC_<sadm>
```

```
10 # include "Os_MemMap.h"
```

### Agreed solution:

ECUC of SWS OS:

Add a reference attribute to the following Os config containers: Os-Task (ECUC\_Os\_00073), OsISR (ECUC\_Os\_00041), OsApplicationHooks (ECUC\_Os\_00020) and OsHooks (ECUC\_Os\_00035)

Details:

Name: OsMemoryMappingCodeLocationRef

Description Reference to the memory mapping containing details about the section where the code is placed

Multiplicity: 0..1

Type: Foreign reference to SW-ADDR-METHOD

No default value

Not post build-able

Pre-compile time All Variants

Scope: ECU

—

Add a requirement to SWS\_OS

[SWS\_Os\_xxxxx] d The OS code shall wrap each declaration of Task, ISR and hook functions with the Memory Mapping Allocation Keywords macros.

```

1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
3
4 <Task, ISR or hook functions declaration>
5
6 # define OS_STOP_SEC_<sadm>
7 # include "Os_MemMap.h"

```

where <sadm> is the shortName of the SwAddrMethod if configured in Os-MemoryMappingCodeLocationRef. d (SRS\_BSW\_00351)

—

**SWS RTE:**

[SWS\_Rte\_yyyyy] d The RTE Generator shall wrap each definition of a task body

with the Memory Allokation Keywords.

```

1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
3
4 <Task definition>
5
6 # define OS_STOP_SEC_<sadm>
7 # include "Os_MemMap.h"

```

where <sadm> is the shortName of the SwAddrMethod if configured in Os-MemoryMappingCodeLocationRef of the according OsTask.

If OsMemoryMappingCodeLocationRef is not defined , <sadm> shall be CODE\_<Taskname>. d (SRS\_BSW\_00351)

Add a note below:

"Requirement SWS\_Rte\_yyyyy is an exception to SWS\_Rte\_05088."

–Last change on issue 74978 comment 12–

**BW-C-Level:**

Application	Specification	Bus
1	3	1

## 1.15 Specification Item ECUC\_Os\_00075

### Trace References:

none

### Content:

Name	OsTaskPriorityOsTask.OsTaskPriorityin container OsTask		
Description	The priority of a task is defined by the value of this attribute. This value has to be understood as a relative value, i.e. the values show only the relative ordering of the tasks.  OSEK OS ISO 17356-3 defines the lowest priority as zero (0); larger values correspond to higher priorities.		
Multiplicity	1		
Type	EcucIntegerParamDef		
Range	0 .. 4294967295		
Default value	-		
Post-Build Variant Value	false		
Value Configuration Class	Pre-compile time	X	All Variants
	Link time	-	
	Post-build time	-	
Scope / Dependency	scope: local		

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #73564: References to OSEK

#### Problem description:

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356

ISO 17356-2: introduction?

ISO 17356-3: OS

ISO 17356-4: COM

ISO 17356-5: NM (not sure we need to have such reference)

ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

#### Agreed solution:

Replace references to

\* OSEK web site

\* the OSEK file name / version

with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

SWS OS

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[.]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

SWCT:

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:  
ISO 17356-4  
OSEK/VDX Communication (COM)  
[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

/\* for ISO 17356 compliance this typedef has been added \*/

## 6.2 Related Standards and Norms

Remove

### 6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move refernce to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove secton references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,  
from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,

from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"

by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"

by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

SWS\_StandardTypes:

In Section 3.2: replace  
 [7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)  
 by  
 [7] OSEK/VDX Operating System, ISO 17356-3: OS  
 =====  
 CP\_TR\_AutosarModelConstraints  
 see PS for the SWCT.  
 =====

=====

SRS\_NetworkManagement:

- 1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"  
 Remove the description:  
 [5] [STD\_OSEK\_NM]  
 OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3  
 [STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3  
<http://www.osek-vdx.org/>  
 Change to :  
 OSEK/VDX NM Specification  
[www.iso.org](http://www.iso.org)  
 ==>  
 7.2.1 ISO 17356-5  
 [5] ISO 17356-5: NM Specification  
[www.iso.org](http://www.iso.org)
  
- 2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]
  
- 3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]  
 –Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

**1.16 Specification Item ECUC\_Os\_00254**

**Trace References:**

none

## Content:

Name	OsTrustedFunctionNameOsApplicationTrustedFunction.OsTrustedFunctionNamein container Os ApplicationTrustedFunction		
Description	Trusted function (as part of a trusted OS-Application) available to other OS-Applications. This also supersedes the <b>OSEK OIL ISO 17356-6</b> attribute TRUSTED in APPLICATION because the optionality of this parameter is describing that already.		
Multiplicity	1		
Type	EcucFunctionNameDef		
Default value	-		
maxLength	-		
minLength	-		
regularExpression	-		
Post-Build Variant Value	false		
Value Configuration Class	Pre-compile time	X	All Variants
	Link time	-	
	Post-build time	-	
Scope / Dependency	scope: ECU dependency: Required for scalability class 3 and 4 and in trusted OS-Applications.		

## RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #73564: References to OSEK

### Problem description:

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356

ISO 17356-2: introduction?

ISO 17356-3: OS

ISO 17356-4: COM

ISO 17356-5: NM (not sure we need to have such reference)

ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

### Agreed solution:

Replace references to

\* OSEK web site

\* the OSEK file name / version

with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make sure that the section numbering in ISO is the same.

**SWS OS**

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[..]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

**SWCT:**

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilter-

TypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====

Dem

=====

Replace the reference [17] Communication in Chapter 3.1 Input documents &

related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:  
ISO 17356-4  
OSEK/VDX Communication (COM)  
[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

```
/* for ISO 17356 compliance this typedef has been added */
```

6.2 Related Standards and Norms

Remove

6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move reference to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove section references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,

from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,

from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

## SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"  
by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"  
by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

## SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

## SWS\_StandardTypes:

In Section 3.2: replace

[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)

by

[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====  
 CP\_TR\_AutosarModelConstraints  
 see PS for the SWCT.  
 =====

-----  
**SRS\_NetworkManagement:**

- 1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"  
 Remove the description:  
 [5] [STD\_OSEK\_NM]  
 OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3  
 [STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3  
<http://www.osek-vdx.org/>  
 Change to :  
 OSEK/VDX NM Specification  
[www.iso.org](http://www.iso.org)  
 ==>  
 7.2.1 ISO 17356-5  
 [5] ISO 17356-5: NM Specification  
[www.iso.org](http://www.iso.org)
  
- 2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]
  
- 3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]  
 –Last change on issue 73564 comment 28–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

**1.17 Specification Item ECUC\_Os\_00396**

**Trace References:**

none

**Content:**

Module Name	OsOs
Module Description	Configuration of the Os (Operating System) module.

Post-Build Variant Support	false
Supported Config Variants	VARIANT-PRE-COMPILE

Included containers:

Included Containers		
Container Name	Multiplicity	Scope / Dependency
OsAlarm	0..*	An OsAlarm may be used to asynchronously inform or activate a specific task. It is possible to start alarms automatically at system start-up depending on the application mode.
OsAppMode	1..*	OsAppMode is the object used to define OSEK OS ISO 17356-3 properties for an OSEK OS ISO 17356-3 application mode.  No standard attributes are defined for AppMode.  In a CPU, at least one AppMode object has to be defined.  [source: OSEK OIL Spec. 2.5 ISO 17356-6]  An OsAppMode called OSDEFAULTAPPMODE must always be there for OSEK ISO 17356 compatibility.
OsApplication	0..*	An AUTOSAR OS must be capable of supporting a collection of OS objects (tasks, interrupts, alarms, hooks etc.) that form a cohesive functional unit. This collection of objects is termed an OS-Application.  All objects which belong to the same OS-Application have access to each other. Access means to allow to use these objects within API services.  Access by other applications can be granted separately.
OsCounter	0..*	Configuration information for the counters that belong to the Os Application.
OsEvent	0..*	Representation of OS events in the configuration context. Adopted from the OSEK OIL ISO 17356-6 specification.
OsIoc	0..1	Configuration of the IOC (Inter OS Application Communicator).
OsIsr	0..*	The OsIsr container represents an OSEK ISO 17356 interrupt service routine.
OsOS	1	OS is the object used to define OSEK OS ISO 17356-3 properties for an OSEK ISO 17356 application.  Per CPU exactly one OS object has to be defined.

Included Containers		
Container Name	Multiplicity	Scope / Dependency
OsPeripheralArea	0..65534	Container to structure the configuration parameters of one peripheral area. The container short name can be used to access this area.
OsResource	0..*	An OsResource object is used to co-ordinate the concurrent access by tasks and ISRs to a shared resource, e.g. the scheduler, any program sequence, memory or any hardware area.
OsScheduleTable	0..*	An OsScheduleTable addresses the synchronization issue by providing an encapsulation of a statically defined set of alarms that cannot be modified at runtime.
OsSpinlock	0..*	An OsSpinlock object is used to co-ordinate concurrent access by TASKs/ISR2s on different cores to a shared resource.
OsTask	0..*	This container represents an <b>OSEK ISO 17356</b> task.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #73564: References to OSEK

**Problem description:**

The OSEK web site is not available.  
References need to be updated.

OSEK was pushed to ISO 17356  
ISO 17356-2: introduction?  
ISO 17356-3: OS  
ISO 17356-4: COM  
ISO 17356-5: NM (not sure we need to have such reference)  
ISO 17356-6: OIL (not sure we need to have such reference)

I tried to select the documents where it would make sense to get a fix.

**Agreed solution:**

Replace references to  
\* OSEK web site  
\* the OSEK file name / version  
with an ISO reference (with ISO version)

Check references to OSEK subsection (or avoid such references), to make

sure that the section numbering in ISO is the same.

SWS OS

=====

Change references in chapter 3.2.1 to ISO. Remove [16], [18], [19] and [20]

Remove [22] from chapter 3.2.2

Remove "OSEKtime OS [16] and the HIS Protected OSEK [22] are immature specifications that contain concepts necessary for AUTOSAR and satisfy specific application domains. It is the purpose of this document to identify these needs and to recommend the use of parts (or all) of these specifications as appropriate." from chapter 4.1.

Change "OSEK OS" to new ISO reference ("OSEK OS[.]" - many occurrences, also in chapter 10)

Remove "So called hard and smooth synchronization from OSEKtime [16] are supported by this single unified concept in AUTOSAR OS. Smooth synchronization may be emulated by setting the small adjustment values on the final expiry point. Hard synchronization may be emulated by setting large adjustment values on the final expiry point." from 7.4.2.2.3

Remove "and provides the type of protection given by the OSEKtime Interrupt re-enable schedule event [16]." from 7.7.2.1

Remove chapter 12.3

SWCT:

=====

Replace reference to OSEK COM:

Fifteen filter algorithms formally described by the enumeration type DataFilterTypeEnum in the meta-model are taken from OSEK COM 3.0.3 specification [18] that is referenced by the RTE specification [2].

by:

Fifteen filter algorithms formally described by the enumeration type DataFilter-TypeEnum in the meta-model are taken from the ISO 17356-4 specification [18] that is referenced by the RTE specification [2].

Replace:

[TPS\_SWCT\_01222] Applicability of DataFilter

This OSEK specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

by:

[TPS\_SWCT\_01222] Applicability of DataFilter

The ISO 17356-4 specification states that filtering is only used for messages that can be interpreted as C language unsigned integer types (characters, unsigned integers and enumerations).(RS\_SWCT\_03221)

Replace:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. OSEK COM 3.0.3 specification [18], DataFilters can only be applied to values with an integer base type.()

by:

[constr\_1044] Applicability of DataFilter

According to the origin of DataFilter, i.e. ISO 17356-4 specification [18], DataFilters can only be applied to values with an integer base type.()

Replace footnote to [constr\_1090]:

This constraint is valid at least in the OSEK standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

by:

This constraint is valid at least in the ISO 17356-3 standard where an extended task (that can have wait points) can only exist a single time in the context of the scheduler.

=====  
Dem  
=====

Replace the reference [17] Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

Dcm

=====

Replace the reference [8]Communication in Chapter 3.1 Input documents & related standards and norms Bibliography by : ISO 17356-3 in [www.iso.org/](http://www.iso.org/)

=====

EXP\_VFB

Add an entry in chapter "13 References" related to ISO 17356-4:  
 ISO 17356-4  
 OSEK/VDX Communication (COM)  
[www.iso.org](http://www.iso.org)

Change the references to "OSEK-COM V3.0.3" in Table 4.2 (4.3.2 From the point of view of the receiver) and EXP\_Vfb\_00028 (4.3.4 Filtering between the sender and the receiver) to "ISO 17356-4". Link the references to the entry in chapter "13 References".

=====

SRS\_BSWGeneral

5 General Requirements on Basic Software

Replace "OSEK OS" by "ISO 17356-3"

5.2.3.4 Standard header Files

Replace in [SRS\_BSW\_00348]

Because E\_OK is already defined within OSEK OS, E\_OK has to be checked for being already defined:

```
/* for OSEK compliance this typedef has been added */
```

by

Because E\_OK is already defined within ISO 17356-3, E\_OK has to be checked for being already defined

```
/* for ISO 17356 compliance this typedef has been added */
```

## 6.2 Related Standards and Norms

Remove

### 6.2.1 OSEK

[STD\_OSEK\_OS] OSEK/VDX Operating System Specification

<http://www.osek-vdx.org>

Replace with ISO 17356-3 norm

=====

SRS\_COM

1)

Remove [DOC\_OSEK\_GLOS] and all its references, since a) AUTOSAR has an own wording and glossary b) the references to (old) OSEK-terms most probably create more confusion than guidance

2)

Set reference of [DOC\_OSEK\_COM] to: ISO 17356-4: COM

Move refernce to Chapter 7.3 ISO and remove Chapter 7.2 OSEK

3)

Remove secton references to [DOC\_OSEK\_COM], just keep the textual references no numbers

4)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM

5)

[SRS\_Com\_02084]: Change following text in Description,

from

< The possibilities to define those conditions shall be the same as defined in [DOC\_OSEK\_COM] reception filter algorithms (see [DOC\_OSEK\_GLOS], Section 2.2.2).

to

> The possibilities to define those conditions shall be the same as defined in [DOC\_ISO\_COM] reception filter algorithms (see [DOC\_ISO\_COM], Section 3.2.3).

6)

[SRS\_Com\_02058]: Change following text in Supporting Material,

from

< If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_OSEK\_COM] (Section 2.5.1).

to

> If no update bits are used, the AUTOSAR COM module provides the deadline monitoring defined in [DOC\_ISO\_COM] (Section 3.5.1).

=====

SRS\_Os

in chapter 6.2.1 OSEK:

Replace "[STD\_OSEK\_OS] OSEK/VDX Operating System, Version 2.2.3, <http://www.osek-vdx.org/mirror/os223.pdf>"  
by "[STD\_OSEK\_OS] ISO 17356-3: OS"

Replace "[STD\_OSEK\_OIL] OSEK / VDX Implementation Language (OIL) V2.5, OSEK Implementation Language, <http://www.osek-vdx.org/mirror/oil25.pdf>"  
by "[STD\_OSEK\_OIL] ISO 17356-6: OIL"

Remove "[STD\_OSEK\_TTOS] OSEK/VDX Time-Triggered Operating System, Version 1.0, July 24, 2001, <http://www.osek-vdx.org/mirror/ttos10.pdf>"

Remove "[STD\_OSEK\_ORTI] OSEK/VDX ORTI (OSEK RunTime Interface) Part A Version 2.1.1, Part B Version 2.1, <http://www.osek-vdx.org/mirror/ORTI-A-211.pdf>"

in [SRS\_Os\_11002]: remove [STD\_OSEK\_TTOS] from Supporting Material

=====

SWS\_COM

1)

Set reference of [17] to ISO 17356-4: COM

Set reference of [18] to ISO 17356-6: OIL

2)

Search and replace textual references to OSEK COM 3.0.3 by ISO 17356-4: COM or [17] (if suitable)

and textual references to OSEK OIL by ISO 17356-6: OIL or [18] (if suitable)

=====

SWS\_StandardTypes:

In Section 3.2: replace

[7] OSEK/VDX Operating System, Version 2.2.2 [www.osek-vdx.org/os222.pdf](http://www.osek-vdx.org/os222.pdf)

by

[7] OSEK/VDX Operating System, ISO 17356-3: OS

=====

CP\_TR\_AutosarModelConstraints

see PS for the SWCT.

=====

=====

SRS\_NetworkManagement:

1) Change Section 7.2.1 name from "OSEK" to "ISO 17356-5"

Remove the description:

[5] [STD\_OSEK\_NM]

OSEK/VDX NM Specification (ISO 17356-5), Version 2.5.3

[STD\_OSEK\_NM] OSEK/VDX NM Specification (ISO 17356-5), V2.5.3

<http://www.osek-vdx.org/>

Change to :

OSEK/VDX NM Specification

[www.iso.org](http://www.iso.org)

==>

7.2.1 ISO 17356-5

[5] ISO 17356-5: NM Specification

[www.iso.org](http://www.iso.org)

2) Replace "OSEK-NM" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_02515]

3) Replace "OSEK NM 2.5.3" to "ISO 17356-5: NM Specification" in [SRS\_Nm\_00142]

-Last change on issue 73564 comment 28-

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.18 Specification Item ECUC\_Os\_00402

**Trace References:**

none

**Content:**

Name	OsMemoryMappingCodeLocationRefOsTask.OsMemoryMappingCodeLocationRef		
Description	Reference to the memory mapping containing details about the section where the code is placed.		
Multiplicity	0..1		
Type	Foreign reference to [ SW-ADDR-METHOD ]		
Post-Build Variant Value	false		
Value Configuration Class	Pre-compile time	X	All Variants
	Link time	-	
	Post-build time	-	
Scope / Dependency	scope: ECU		

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #74978: Mismatch in memory allocation for Os Tasks

#### Problem description:

Currently following situation occurs:

The OS so declared the Task Bodies (in order to mount in its own configuration structures)

The RTE in turn defines some of the Task Bodies.

But both do that with different memory sections since there is no common source of information which memory section is requested for a Task Bodies.

In the meantime Compilers are on the market with a quite strict checking of the memory relates settings and in case of mismatch those compilers issue an error.

Proposal: add a configuration parameter at OsTask referencing a SwAddrMethod.

The OS shall use this SwAddrMethod in order to generate the correct MemMap MemoryAllocationKeywords (like Rte for Runnables)

E.g.

```
1 # define OS_START_SEC_<sadm>
```

```
2 # include "Os_MemMap.h"
```

```
3
```

```
/*.. Task Body or Task forward declaration ..*/
```

```
8
```

```
9 # define OS_STOP_SEC_<sadm>
```

```
10 # include "Os_MemMap.h"
```

**Agreed solution:**

ECUC of SWS OS:

Add a reference attribute to the following Os config containers: Os-Task (ECUC\_Os\_00073), OsISR (ECUC\_Os\_00041), OsApplicationHooks (ECUC\_Os\_00020) and OsHooks (ECUC\_Os\_00035)

Details:

Name: OsMemoryMappingCodeLocationRef

Description Reference to the memory mapping containing details about the section where the code is placed

Multiplicity: 0..1

Type: Foreign reference to SW-ADDR-METHOD

No default value

Not post build-able

Pre-compile time All Variants

Scope: ECU

—

Add a requirement to SWS\_OS

[SWS\_Os\_XXXXX] d The OS code shall wrap each declaration of Task, ISR and hook functions with the Memory Mapping Allocation Keywords macros.

```
1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
3
4 <Task, ISR or hook functions declaration>
5
6 # define OS_STOP_SEC_<sadm>
7 # include "Os_MemMap.h"
```

where <sadm> is the shortName of the SwAddrMethod if configured in Os-MemoryMappingCodeLocationRef. d (SRS\_BSW\_00351)

—

SWS RTE:

[SWS\_Rte\_YYYYY] d The RTE Generator shall wrap each definition of a task body

with the Memory Allokation Keywords.

```
1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
```

```

3
4 <Task definition>
5
6 # define OS_STOP_SEC_<sadm>
7 # include "Os_MemMap.h"
    
```

where <sadm> is the shortName of the SwAddrMethod if configured in OsMemoryMappingCodeLocationRef of the according OsTask.

If OsMemoryMappingCodeLocationRef is not defined , <sadm> shall be CODE\_<Taskname>. d (SRS\_BSW\_00351)

Add a note below:

"Requirement SWS\_Rte\_yyyyy is an exception to SWS\_Rte\_05088."

–Last change on issue 74978 comment 12–

**BW-C-Level:**

Application	Specification	Bus
1	3	1

## 1.19 Specification Item SWS\_Os\_00287

**Trace References:**

none

**Content:**

If the parameters in a call of TerminateApplication() are valid and the above criteria are met TerminateApplication() shall terminate <Application> (i.e. to kill all tasks, disable the interrupt sources of those ISRs which belong to the OS-Application and free all other OS resources associated with the application) AND shall activate the configured OsRestart Task of <Application> if <RestartOption> equals RESTART. If **no OsRestartTask is configured, no restart shall happen.** If the <Application> is restarted, its state is set to APPLICATION\_RESTARTING otherwise to APPLICATION\_TERMINATED. If the caller belongs to <Application> TerminateApplication() shall not return, otherwise it shall return E\_OK.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #74850: TerminateApplication() with RESTART and no OsRestartTask configured.

**Problem description:**

We have a doubt in TerminateApplication() with RESTART option.

Consider the scenario where, TerminateApplication() is called with RESTART option and no OsRestartTask is configured for the referred <Application>.

The current SWS OS document does not mention any error or behavior regarding this scenario.

Which error shall be returned by the OS ? OR What will be the behavior of OS?

**Agreed solution:**

Change SWS\_Os\_00287 from:

[SWS\_Os\_00287] If the parameters in a call of TerminateApplication() are valid and the above criteria are met TerminateApplication() shall terminate <Application> (i.e. to kill all tasks, disable the interrupt sources of those ISRs which belong to the OS-Application and free all other OS resources associated with the application) AND shall activate the configured OsRestartTask of <Application> if <RestartOption> equals RESTART. If the <Application> is restarted, its state is set to APPLICATION\_RESTARTING otherwise to APPLICATION\_TERMINATED. If the caller belongs to <Application> TerminateApplication() shall not return, otherwise it shall return E\_OK.

to

[SWS\_Os\_00287] If the parameters in a call of TerminateApplication() are valid and the above criteria are met TerminateApplication() shall terminate <Application> (i.e. to kill all tasks, disable the interrupt sources of those ISRs which belong to the OS-Application and free all other OS resources associated with the application) AND shall activate the configured OsRestartTask of <Application> if <RestartOption> equals RESTART. If no OsREstartTask is configured, no restart shall happen. If the <Application> is restarted, its state is set to APPLICATION\_RESTARTING otherwise to APPLICATION\_TERMINATED. If the caller belongs to <Application> TerminateApplication() shall not return, otherwise it shall return E\_OK.

–Last change on issue 74850 comment 11–

**BW-C-Level:**

Application	Specification	Bus
1	4	1

## 1.20 Specification Item SWS\_Os\_00563

### Trace References:

none

### Content:

The OperatingSystem shall not schedule any other Tasks which belong to the same OS-Application as the non-trusted caller of the service. **It shall be done by priority ceiling.** Also interrupts of Category 2 which belong to the same OS-Application shall be disabled during the execution of the service.

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #76945: [Os][RTE] Inconsistency on TerminateApplication() between RTE and Os / issues on [SWS\_Os\_00563]

#### Problem description:

Could you please advise if there's any known solution to solve following inconsistency/issues? (RTE, Os or both side)

1)

SWS RTE has following assumption between [SWS\_Rte\_07606] and [SWS\_Rte\_02761].

[...]

The OS ensures that the partition of the caller is not terminated or restarted when a trusted function is executed. If needed, the termination or restart of the callers partition is delayed after the trusted function returns.

[...]

However, Os doesn't guarantee it because there's no corresponding requirement at SWS Os.

And, actually, after preemption by a higher priority, the higher priority task can invoke TerminateApplication and then the partition of the (preempted) trusted function can be terminated

(Sequence)

Step-1. task switching from the trusted function to a higher priority task

Step-2. invocation of TerminateApplication by the higher priority task

==> the partition of the trusted function can be terminated

2)

Probably [SWS\_Os\_00563] intends to prevent termination of running trusted functions.

However it's incomplete. There're two issues:

\* Issue 2-1. Priority inversion

During the period of "not schedule any other Tasks which belong to the same OS-Application as the non-trusted caller of the service", lower priority task which is belongs to other OS-Application can be scheduled and then it will cause priority inversion.

(Should we allow scheduling of the lower priority task in such case?)

\* Issue 2-2. No consideration about TerminateApplication

[SWS\_Os\_00563] doesn't consider that invocation of TerminateApplication can also terminate running trusted functions.

(Should we block all tasks/Cat.2 ISRs which can invoke TerminateApplication?)

[SWS\_Os\_00563] The Operating System shall not schedule any other Tasks which belong to the same OS-Application as the non-trusted caller of the service. Also interrupts of Category 2 which belong to the same OS-Application shall be disabled during the execution of the service.

**Agreed solution:**

SWS RTE: change (between [SWS\_Rte\_07606] and [SWS\_Rte\_02761])

"The OS ensures that the partition of the caller is not terminated or restarted when a trusted function is executed."

to

"The OS ensures that the partition of the caller is not terminated or restarted when a trusted function is executed unless the termination of the partition calling the trusted function is caused by another TRUSTED partition"

After SWS\_Os\_00535 add the following note:

"Note: Although trusted OS-Application can be forcibly terminated by Tasks/Interrupts of other trusted OS-Applications it is not recommended. This may have further impacts, e.g. to users who are currently part of such an OS-Application via a CallTrustedFunction() call."

Change SWS\_Os\_00563 to:

"[SWS\_Os\_00563] ?The OperatingSystem shall not schedule any other Tasks which belong to the same OS-Application as the non-trusted caller of the service. It

shall be done by priority ceiling. Also interrupts of Category 2 which belong to the same OS-Application shall be disabled during the execution of the service. ? ( )"  
 –Last change on issue 76945 comment 13–

**BW-C-Level:**

Application	Specification	Bus
1	4	1

## 1.21 Specification Item SWS\_Os\_00695

**Trace References:**

SRS\_Os\_80021

**Content:**

Service name:	ReleaseSpinlockReleaseSpinlock	
Syntax:	StatusType ReleaseSpinlock( SpinlockIdType SpinlockId )	
Service ID[hex]:	0x1a	
Sync/Async:	Synchronous	
Reentrancy:	Reentrant	
Parameters (in):	SpinlockIdReleaseSpinlock.SpinlockId	The value refers to the spinlock instance that shall be locked.
Parameters (inout):	None	
Parameters (out):	None	
Return value:	StatusType	E_OK - In standard and extended status: No Error E_OS_ID - In extended status: The SpinlockId is invalid. E_OS_STATE - In extended status: The Spinlock is not occupied by the TASK E_OS_ACCESS - In extended status: The Spinlock cannot be accessed. E_OS_NOFUNC - In extended status: Attempt to release a spinlock while another spinlock (or resource) has to be released before.
Description:	ReleaseSpinlock releases a spinlock variable that was occupied before. Before terminating a TASK all spinlock variables that have been occupied with GetSpinlock() shall be released. Before calling WaitEVENT all Spinlocks shall be released.	

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77073: Clarification regarding SWS\_Os\_00801 requirement.

**Problem description:**

---

Name: Somnath Holkar  
Phone: +91 20 2295 3536  
Role: Developer

---

Description/Motivation:

We have couple of questions regarding the spinlocks and resources.

Question No. 1 :

The requirement SWS\_Os\_00801 says that,

[SWS\_Os\_00801]If Spinlocks and Resources are locked by a Task/ISR they have to be unlocked in strict LIFO order. ReleaseResource() shall return E\_OS\_NOFUNC if the unlock order is violated. No other functionality shall be performed.( SRS\_Os\_80021)

Consider the below configuration settings,

Spinlock S1 - with "LOCK\_WITH\_RES\_SCHEDULER" as lock method  
Resource R1 - shared between OsTask1\_Core0 and OsTask2\_Core0.

Please consider the below scenarios.

1. Scenario 1 :

```
E_OK = GetSpinlock(S1);  
E_OK = GetResource(R1);  
E_OK = ReleaseResource(R1);  
E_OK = ReleaseSpinlock(S1);
```

2. Scenario 2 :

```
E_OK = GetResource(R1);  
E_OK = GetSpinlock(S1);  
E_OK = ReleaseSpinlock(S1);  
E_OK = ReleaseResource(R1);
```

3. Scenario 3 :

```
E_OK = GetResource(R1);  
E_OK = GetSpinlock(S1);  
E_OS_NOFUNC = ReleaseResource(R1);  
E_OK = ReleaseSpinlock(S1);  
E_OK = ReleaseResource(R1);
```

#### 4. Scenario 4 :

```
E_OK = GetSpinlock(S1);  
E_OK = GetResource(R1);  
E_OS_NOFUNC = ReleaseSpinlock(S1);  
E_OK = ReleaseResource(R1);  
E_OK = ReleaseSpinlock(S1);
```

Please provide comment on return values and behaviour of OS on above mentioned scenarios.

If Scenario No.4 is correct, then requirement (SWS\_Os\_00801) needs to be extended for a service ReleaseSpinlock() also for better clarity.

#### Question No. 2 :

Consider below configuration settings:

Spinlock S1, S2 and S3 with lock methods as "LOCK\_WITH\_RES\_SCHEDULER" , "LOCK\_ALL\_INTERRUPTS" and "LOCK\_CAT2\_INTERRUPTS" respectively.

#### 1.Scenario 1 :

```
E_OK = GetSpinlock(S1);  
? = ReleaseResource(RES_SCHEDULER);  
? = ReleaseSpinlock(S1);
```

In this case, what will be the return value or behaviour of ReleaseResource() and ReleaseSpinlock()?

#### 2.Scenario 2 :

```
GetSpinlock(S2);  
ResumeAllInterrupts();  
ReleaseSpinlock(S2);
```

In this case, what will be the behaviour of ResumeAllInterrupts() service?  
Will ResumeAllInterrupts() unlock interrupts locked by GetSpinlock(S2)?

#### 3.Scenario 3 :

```
GetSpinlock(S3);  
ResumeOSInterrupts();  
ReleaseSpinlock(S3)
```

In this case, what will be the behaviour of ResumeOSInterrupts() service?  
 Will ResumeOSInterrupts() unlock interrupts locked by GetSpinlock(S3)?

Thanks and Regards,  
 Somnath

**Agreed solution:**

change SWS\_Os\_00695 (return values) from:

"E\_OS\_NOFUNC - In extended status: Attempt to release a spinlock while another spinlock has to be released before." to

"E\_OS\_NOFUNC - In extended status: Attempt to release a spinlock while another spinlock (or resource) has to be released before."

change SWS\_Os\_00701:

"... tries to release a spinlock while another spinlock has to be released before. No functionality shall be performed." to

"... tries to release a spinlock while another spinlock (or resource) has to be released before. No functionality shall be performed."

–Last change on issue 77073 comment 1–

**BW-C-Level:**

Application	Specification	Bus
1	4	1

## 1.22 Specification Item SWS\_Os\_00701

**Trace References:**

SRS\_Os\_80021

**Content:**

The function ReleaseSpinlock shall return E\_OS\_NOFUNC if the TASK tries to release a spinlock while another spinlock (or resource) has to be released before. No functionality shall be performed.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77073: Clarification regarding SWS\_Os\_00801 requirement.

**Problem description:**

\_\_\_\_\_

Name: Somnath Holkar

Phone: +91 20 2295 3536

Role: Developer

---

Description/Motivation:

We have couple of questions regarding the spinlocks and resources.

Question No. 1 :

The requirement SWS\_Os\_00801 says that,

[SWS\_Os\_00801]If Spinlocks and Resources are locked by a Task/ISR they have to be unlocked in strict LIFO order. ReleaseResource() shall return E\_OS\_NOFUNC if the unlock order is violated. No other functionality shall be performed.( SRS\_Os\_80021)

Consider the below configuration settings,

Spinlock S1 - with "LOCK\_WITH\_RES\_SCHEDULER" as lock method

Resource R1 - shared between OsTask1\_Core0 and OsTask2\_Core0.

Please consider the below scenarios.

1. Scenario 1 :

```
E_OK = GetSpinlock(S1);  
E_OK = GetResource(R1);  
E_OK = ReleaseResource(R1);  
E_OK = ReleaseSpinlock(S1);
```

2. Scenario 2 :

```
E_OK = GetResource(R1);  
E_OK = GetSpinlock(S1);  
E_OK = ReleaseSpinlock(S1);  
E_OK = ReleaseResource(R1);
```

3. Scenario 3 :

```
E_OK = GetResource(R1);  
E_OK = GetSpinlock(S1);  
E_OS_NOFUNC = ReleaseResource(R1);  
E_OK = ReleaseSpinlock(S1);  
E_OK = ReleaseResource(R1);
```

4. Scenario 4 :

```
E_OK = GetSpinlock(S1);  
E_OK = GetResource(R1);  
E_OS_NOFUNC = ReleaseSpinlock(S1);  
E_OK = ReleaseResource(R1);  
E_OK = ReleaseSpinlock(S1);
```

Please provide comment on return values and behaviour of OS on above mentioned scenarios.

If Scenario No.4 is correct, then requirement (SWS\_Os\_00801) needs to be extended for a service ReleaseSpinlock() also for better clarity.

Question No. 2 :

Consider below configuration settings:

Spinlock S1, S2 and S3 with lock methods as "LOCK\_WITH\_RES\_SCHEDULER" , "LOCK\_ALL\_INTERRUPTS" and "LOCK\_CAT2\_INTERRUPTS" respectively.

1.Scenario 1 :

```
E_OK = GetSpinlock(S1);  
? = ReleaseResource(RES_SCHEDULER);  
? = ReleaseSpinlock(S1);
```

In this case, what will be the return value or behaviour of ReleaseResource() and ReleaseSpinlock()?

2.Scenario 2 :

```
GetSpinlock(S2);  
ResumeAllInterrupts();  
ReleaseSpinlock(S2);
```

In this case, what will be the behaviour of ResumeAllInterrupts() service?  
Will ResumeAllInterrupts() unlock interrupts locked by GetSpinlock(S2)?

3.Scenario 3 :

```
GetSpinlock(S3);  
ResumeOSInterrupts();  
ReleaseSpinlock(S3)
```

In this case, what will be the behaviour of ResumeOSInterrupts() service?  
Will ResumeOSInterrupts() unlock interrupts locked by GetSpinlock(S3)?

Thanks and Regards,  
Somnath

**Agreed solution:**

change SWS\_Os\_00695 (return values) from:

"E\_OS\_NOFUNC - In extended status: Attempt to release a spinlock while another spinlock has to be released before." to

"E\_OS\_NOFUNC - In extended status: Attempt to release a spinlock while another spinlock (or resource) has to be released before."

change SWS\_Os\_00701:

"... tries to release a spinlock while another spinlock has to be released before. No functionality shall be performed." to

"... tries to release a spinlock while another spinlock (or resource) has to be released before. No functionality shall be performed."

–Last change on issue 77073 comment 1–

**BW-C-Level:**

Application	Specification	Bus
1	4	1

## 1.23 Specification Item SWS\_Os\_00815

**Trace References:**

[SRS\\_BSW\\_00351](#)

**Content:**

The OS code shall wrap each declaration of Task, ISR and hook functions with the Memory Mapping Allocation Keywords macros.

1 #define OS\_START\_SEC\_<sadm>

2 #include "Os\_MemMap.h"

3

4 <Task, ISR or hook functions declaration>

5

6 #define OS\_STOP\_SEC\_<sadm>

7 #include "Os\_MemMap.h"

where <sadm> is the shortName of the SwAddrMethod if configured in OsMemoryMappingCodeLocationRef.

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #74978: Mismatch in memory allocation for Os Tasks

#### Problem description:

Currently following situation occurs:

The OS so declared the Task Bodies (in order to mount in its own configuration structures)

The RTE in turn defines some of the Task Bodies.

But both do that with different memory sections since there is no common source of information which memory section is requested for a Task Bodies.

In the meantime Compilers are on the market with a quite strict checking of the memory relates settings and in case of mismatch those compilers issue an error.

Proposal: add a configuration parameter at OsTask referencing a SwAddrMethod.

The OS shall use this SwAddrMethod in order to generate the correct MemMap MemoryAllocationKeywords (like Rte for Runnables)

E.g.

```
1 # define OS_START_SEC_<sadm>
```

```
2 # include "Os_MemMap.h"
```

```
3
```

```
/* Task Body or Task forward declaration */
```

```
8
```

```
9 # define OS_STOP_SEC_<sadm>
```

```
10 # include "Os_MemMap.h"
```

#### Agreed solution:

ECUC of SWS OS:

Add a reference attribute to the following Os config containers: Os-Task (ECUC\_Os\_00073), OsISR (ECUC\_Os\_00041), OsApplicationHooks (ECUC\_Os\_00020) and OsHooks (ECUC\_Os\_00035)

Details:

Name: OsMemoryMappingCodeLocationRef

Description Reference to the memory mapping containing details about the section where the code is placed

Multiplicity: 0..1

Type: Foreign reference to SW-ADDR-METHOD

No default value  
 Not post build-able  
 Pre-compile time All Variants  
 Scope: ECU

—

Add a requirement to SWS\_OS

[SWS\_Os\_xxxxx] d The OS code shall wrap each declaration of Task, ISR and hook functions with the Memory Mapping Allocation Keywords macros.

```
1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
3
4 <Task, ISR or hook functions declaration>
5
6 # define OS_STOP_SEC_<sadm>
7 # include "Os_MemMap.h"
```

where <sadm> is the shortName of the SwAddrMethod if configured in Os-MemoryMappingCodeLocationRef. d (SRS\_BSW\_00351)

—

SWS RTE:

[SWS\_Rte\_yyyyy] d The RTE Generator shall wrap each definition of a task body

with the Memory Allokation Keywords.

```
1 # define OS_START_SEC_<sadm>
2 # include "Os_MemMap.h"
3
4 <Task definition>
5
6 # define OS_STOP_SEC_<sadm>
7 # include "Os_MemMap.h"
```

where <sadm> is the shortName of the SwAddrMethod if configured in Os-MemoryMappingCodeLocationRef of the according OsTask.

If OsMemoryMappingCodeLocationRef is not defined , <sadm> shall be CODE\_<Taskname>. d (SRS\_BSW\_00351)

Add a note below:

"Requirement SWS\_Rte\_yyyy is an exception to SWS\_Rte\_05088."

–Last change on issue 74978 comment 12–

**BW-C-Level:**

Application	Specification	Bus
1	3	1