Antenna Interface Standards Group

AISG v3.0 Pseudocode Syntax

v1.1

24th March 2022

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v1.1

Revision History

DATE	ISSUE	NOTES
07th June 2019	1.0	First release
24th March 2022	1.1	Return code order defined

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1. FOREWORD

AISG v3 standard family is divided into the base document and several subunit type standards. AISG v3.0 base document describes the common behaviour of antenna line devices with AISG interfaces and type-specific functionality is defined in subunit type standards. This document defines the pseudocode syntax used in these standards.

2. Grammar

2.1 Basic data type definitions

INTEGER

FLOAT

DOUBLE

BOOLEAN

UTF8CHAR

ASCIICHAR

UTF8STRING

ASCIISTRING

UIDSTRING

MUTEX

2.2 Data type definitions

TYPEDEF

STRUCT

ENUMERATION

BITFIELD

2.3 Expression definitions

LIST(*list-of-items*)

A LIST contains list elements. A LIST is iterable using FOREACH operation

(*list-of-items*)

«*free-text*»
➔ UTF8 characters 0xAB and 0xBB defined to delimit free text descriptions.

[*variable*][*integer-expression*]
➔ Member access operator “subscript”.

[*variable*]
➔ Member access operator “member of object”.

[*expression*] = [*expression*]
➔ Relational operator “equal to”.

[*expression*] ≠ [*expression*]
➔ Relational operator “not equal to”.

[*expression*] > [*expression*]
➔ Relational operator “greater than”.

[*expression*] < [*expression*]
➔ Relational operator “less than”.

[*expression*] ≥ [*expression*]
➔ Relational operator “greater than or equal to”.

[*expression*] ≤ [*expression*]
➔ Relational operator “less than or equal to”.

[*expression*] IN [*list of expressions*]
➔ Relational operator “in set”.

[*expression*] NOT IN [*list of expressions*]
➔ Relational operator “not in set”.

[*expression*] IN RANGE [*expression..expression*]
➔ Relational operator “within range”.

[*expression*] NOT IN RANGE [*expression..expression*]
➔ Relational operator “not within range”.

[*expression*] + [*expression*]
➔ Arithmetic operator “addition”.

[*expression*] - [*expression*]
➔ Arithmetic operator “subtraction”.

[*expression*] * [*expression*]
➔ Arithmetic operator “multiplication”.

[*expression*] / [*expression*]
➔ Arithmetic operator “division”.

[*expression*] MOD [*expression*]
➔ Arithmetic operator “modulo”.

[*expression*] DIV [*expression*]
➔ Arithmetic operator “division”.

[*expression*] bitwise AND [*expression*]
➔ Bitwise operator “and”.

[*expression*] bitwise XOR [*expression*]

➔ Bitwise operator “xor”.

NOT [*boolean-expression*]
➔ Logical operator “not”.

[*boolean-expression*] AND [*boolean-expression*]
➔ Logical operator “and”.

[*boolean-expression*] OR [*boolean-expression*]
➔ Logical operator “or”.

[*integer-expression*]..[*integer-expression*]
➔ Range operator.

2.4 Variable definitions

LOCAL [*type*] [*variable-name*]

[*type*] [*variable-name*]

PERSISTENT [*variable-declaration*]

CONSTANT [*variable-declaration*]

[type] [*array-name*] [[*min-expression*]..[*max-expression*]]

OPTIONAL [*type*] [*variable-name*]

2.5 Operation definitions

LOCK [*variable-mutex*]

UNLOCK [*variable-mutex*]

IF [*boolean-expression*] THEN [*body*] ELSEIF [*body*] ... ELSE [*body*] ENDIF

➔ “ELSEIF [*body*] ...” and “ELSE [*body*]” are optional.

UNLESS [*boolean-expression*] THEN

RETURN [*variable-set*]
➔ There can be 1 to n returned variables

ON [*event*] DO [*body*] DONE
➔ “event” means e.g. “Reset”, “TransmitterReadyEvent”, “UploadFileEvent(PORT)”, etc.

CASE [*variable-name*] IS [*body-when*] ENDCASE

WHEN [*value*]: [*body*]

OTHERWISE: [*body*]

WAIT UNTIL [*boolean-expression*]

INCREMENT [*variable*] BY [*expression*]
➔ Arithmetic operator “addition”.

DECREMENT [*variable*] BY [*expression*]
➔ Arithmetic operator “substraction”.

FUNCTION [*function-name*(*function-parameters*)] RETURNING [*type*] [*variable-name*] IS [*body*] END

FOREACH [*variable-name*] FROM [*start*] TO [*end*] DO [*body*] DONE

FOREACH [variable-name] IN [LIST] DO [body] DONE

Iterates through [LIST] from begin to end. On each loop iteration [variable-name] contains one element of [LIST]

NEXT

SWITCH [state *variable*] TO [*value*]

RAISE [*alarm*] SEVERITY [*severity*] ON {ALD, SUBUNIT [*subunit-number*]}, [*diagnostic-text*]

CLEAR [*alarm*] ON {ALD, SUBUNIT [*subunit-number*]}

STORE [*list-of-variables*]

SIGNAL [*signal-name*]

2.6 Comment definitions

// [*text*]
➔ Comment.

3. Pseudocode text parsing rules

3.1 Ordered list of return codes

The command return codes shall be listed in the order, starting from the standard codes, then followed by the command-specific codes in the order in which they are in the pseudocode.

Standard order for all commands:

- OK
- FormatError
- UnknownCommand

Additional standard order for time consuming commands (TCCs) for ALDs:

- Busy
- InvalidSubunitNumber
- NotAuthorised
- IncorrectState

Additional standard order for time consuming commands (TCCs) of subunit type commands:

- Busy
- InvalidSubunitNumber
- InvalidSubunitType
- NotAuthorised
- IncorrectState

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