# NODE MANIFESTS (FROM THE DEVELOPER)

The

ARM ; developer name

arm\_stream\_detector ; node name

node\_nb\_arcs 1 1 ; nb arc input, output, default values "1 1"

node\_arc\_parameter 0 ; SWC with extra-large amount of parameters (NN models) will declare it with extra arcs

node\_steady\_stream 1 ; (0) the data flow is variable (or constant, default value :1) on all input and output arcs

node\_same\_data\_rate 1 ; (0) the arcs have different data rates, (1) all arcs have the same data rate

node\_use\_dtcm 1 ; default 0 (no MP DTCM\_LW2), 1: fast memory pointer placed after the arc format

node\_use\_arc\_format 0 ; default 1 : the scheduler must push each arc format (LOADFMT\_LW0\_LSB)

node\_mask\_library 15 ; default 0 bit-field of dependencies to computing libraries

node\_subtype\_units VRMS ; triggers the need for rescaling and data conversion

node\_architecture 0 ; arch compatible with (default: 0 = source code) to merge and sort for ARCHID\_LW0

node\_fpu\_used 0 ; fpu option used (default 0: none, no FPU assembly or intrinsic)

node\_node\_version 101 ; version of the computing node

node\_stream\_version 001 ; version of the stream scheduler it is compatible with

# MEMORY ALLOCATIONS

;

; memory allocation size in bytes =

; A : memory allocation in Bytes (default 0)

; + B x nb\_channels of arc(i) : addition memory as a number of channels in arc index i (default 0)

; + C x sampling\_rate of arc(j) ; .. as proportional to the sampling rate of arc index j (default 0)

; + D x frame\_size of arc(k) ; .. as proportional to the frame size used for the arc index k (default 0)

; + E x parameter from the graph ; optional field "malloc\_E" during the node declaration in the graph (default 0)

;

; Additional information :

; i j k ; the three indexes of the arcs used above

; (A) Alignment in byte numbers ; default = 4 (bytes)

; (S) Retention mode ; 0 for a Static memory allocation, preserved along the execution

; ; 1 for Working (or Scratch) area which can be reused and overlaid by other nodes

; ; 2 for memory to be preserved (Retention) after a platform reboot

;

; (N) Speed requirement ; 0 for 'best effort' or 'no constraint' on speed access

; ; 1 for 'fast' memory selection when possible

; ; 2 for 'critical fast' section, to be in I/DTCM when available

;

; (R) Relocatable ; Default 0 : not relocatable, 1: a command 'STREAM\_UPDATE\_RELOCATABLE' is

; ; sent to the node to update the pointer to this memory allocation

;

; (DP) Data0Program1 ; Default 0: selection of data (0) or program access (1).

; A S N

node\_mem\_alloc 32 0 1 ; size = 32Bytes data memory, Static, Fast memory block

; A B i C j D k E A S N R DP

node\_mem\_alloc\_detail 32 4 0 0.1 1 0 0 44 4 0 1 0 0 ; in this example we have a data memory allocation of

; 32 + 4xnb of channels of arc 0 + 0.1x sampling rate of arc 1 + 44x the parameter "malloc\_E" in the graph

; This memory area has 4bytes alignment, is Static(0) Fast(1) and not relocatable

# ARC CONFIGURATION

node\_arc\_rx0tx1 0 0 ; index of the arc, followed by 0:input 1:output, default = 0 0 and 1 1

node\_arc\_sampling\_rate 0 {1 16000 44100}; index of the arc, sampling rate options (enumeration in Hz), default "any"

node\_arc\_channels 0 0 {1 1 2} ; index of the arc, multichannel intleaved (0, default), deinterleaved by frame-size (1) +

; options for the number of channels (default 1)

node\_arc\_raw\_format 0 {1 S16} ; index of the arc, options for the raw arithmetics computation format here STREAM\_S16, , default values "1 S16"

node\_arc\_frame\_length 0 {1 1 2 16} ; index of the arc, options of possible frame\_size in number of sample (can mono or multi-channel)

node\_arc\_frame\_duration 0 {1 10 22.5} ; index of the arc, options of possible frame\_size in [milliseconds]

; (one sample can mono or multi-channel), default is "any length"

node\_arc\_sampling\_rate 0 1 0 {1 16000 48000} ; index of the arc, sampling rate options (default: Any)

node\_arc\_sampling\_period\_s {1 0.01 0.02 0.04} ; sampling period options (enumeration in [second])

node\_arc\_sampling\_period\_day {1 0.25 1 7}; sampling period options (enumeration in [day])

node\_arc\_sampling\_accuracy 0.8 ; sampling rate accuracy in percent

node\_arc\_inplace\_buffer 1 0 ; index of the output arc sharing the same interface buffer as one input arc buffer (default: buffer separated)

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; all the nodes must have at least one TX-arc (even a dummy one) used to manage the

; lock field. See scheduler's pt8b\_collision\_arc / ARCLOCK\_LW0 = 0

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; SOFTWARE COMPONENT MANIFEST - "arm\_stream\_filter"

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ARM ; developer name

arm\_stream\_filter ; node name

node\_use\_arc\_format 1

node\_mask\_library 15

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; MEMORY ALLOCATIONS

node\_mem 0

node\_mem\_alloc 76

node\_mem 1

node\_mem\_alloc 6

node\_mem\_retention 1

node\_mem\_speed 2

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; ARC CONFIGURATION

node\_arc 0

node\_arc\_nb\_channels {1 1 2} { -1 1 1 2 } ; arc, intleaved, options for the number of channels

node\_arc\_raw\_format {1 17 27} ; arc, options for the raw arithmetics STREAM\_S16, STREAM\_FP32

node\_arc 1

node\_arc\_nb\_channels {1 1 2} ; arc, intleaved, options for the number of channels

node\_arc\_raw\_format {1 17 27} ; arc, options for the raw arithmetics STREAM\_S16, STREAM\_FP32

\_end\_

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; MEMORY ALLOCATIONS

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; + B x nb\_channels of arc(i) : addition memory as a number of channels in arc index i (default 0)

; + C x sampling\_rate of arc(j) ; .. as proportional to the sampling rate of arc index j (default 0)

; + D x frame\_size of arc(k) ; .. as proportional to the frame size used for the arc index k (default 0)

; + E x parameter from the graph ; optional field "malloc\_E" during the node declaration in the graph, for

; ; example the number of pixels in raw for a scratch area (default 0)

;

node\_mem 2 ; start the declaration of a new memory block with index 2

node\_mem\_alloc 32 ; size = 32Bytes data memory, Static, Fast memory block

node\_mem\_nbchan 4 0 ; add in Bytes : 4 x nb of channels of arc 0

node\_mem\_sampling\_rate 0.1 1 ; add in Bytes : 0.1 x sampling rate of arc 1

node\_mem\_frame\_size 1 0 ; add in Bytes : 1 x frame size of arc 0

node\_mem\_alignement 4 ; 4 bytes (default)

node\_mem\_retention 1 ; 0 for a Static memory allocation, preserved along the execution (default)

; 1 for Working (or Scratch) area which can be reused and overlaid by other nodes

; 2 for memory to be preserved (Retention) after a platform reboot

node\_mem\_speed 2 ; 0 for 'best effort' or 'no constraint' on speed access

; 1 for 'fast' memory selection when possible

; 2 for 'critical fast' section, to be in I/DTCM when available

node\_mem\_relocatable 1 ; Default 0 : not relocatable, 1: a command 'STREAM\_UPDATE\_RELOCATABLE' is

; sent to the node to update the pointer to this memory allocation

node\_mem\_data0prog1 0 ; selection data / program

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; ARC CONFIGURATION

node\_arc 2 ; start the declaration of a new arc with index 2

node\_arc\_rx0tx1 0 ; followed by 0:input 1:output, default = 0 0 and 1 1

node\_arc\_sampling\_rate {1 16000 44100} ; sampling rate options (enumeration in Hz), default "any"

node\_arc\_interleaving 0 ; multichannel intleaved (0, default), deinterleaved by frame-size (1)

node\_arc\_nb\_channels {1 1 2} ; options for the number of channels (default 1)

node\_arc\_raw\_format {1 17} ; options for the raw arithmetics computation format here STREAM\_S16, , default values "1 S16"

node\_arc\_frame\_length {1 1 2 16} ; options of possible frame\_size in number of sample (can mono or multi-channel)

node\_arc\_frame\_duration {1 10 22.5} ; options of possible frame\_size in [milliseconds]

; (one sample can mono or multi-channel), default is "any length"

node\_arc\_sampling\_period\_s {1 0.01 0.02 0.04} ; sampling period options (enumeration in [second])

node\_arc\_sampling\_period\_day {1 0.25 1 7} ; sampling period options (enumeration in [day])

node\_arc\_sampling\_accuracy 0.8 ; sampling rate accuracy in percent

node\_arc\_inPlaceProcessing 1 0 ; index of the output arc sharing the same interface buffer as one

; input arc buffer (default: all output buffers are separated from the input buffers)

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; all the nodes must have at least one TX-arc (even a dummy one) used to manage the

; lock field. See scheduler's pt8b\_collision\_arc / ARCLOCK\_LW0 = 0

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