wDSP Output Object Format

A. Maciel
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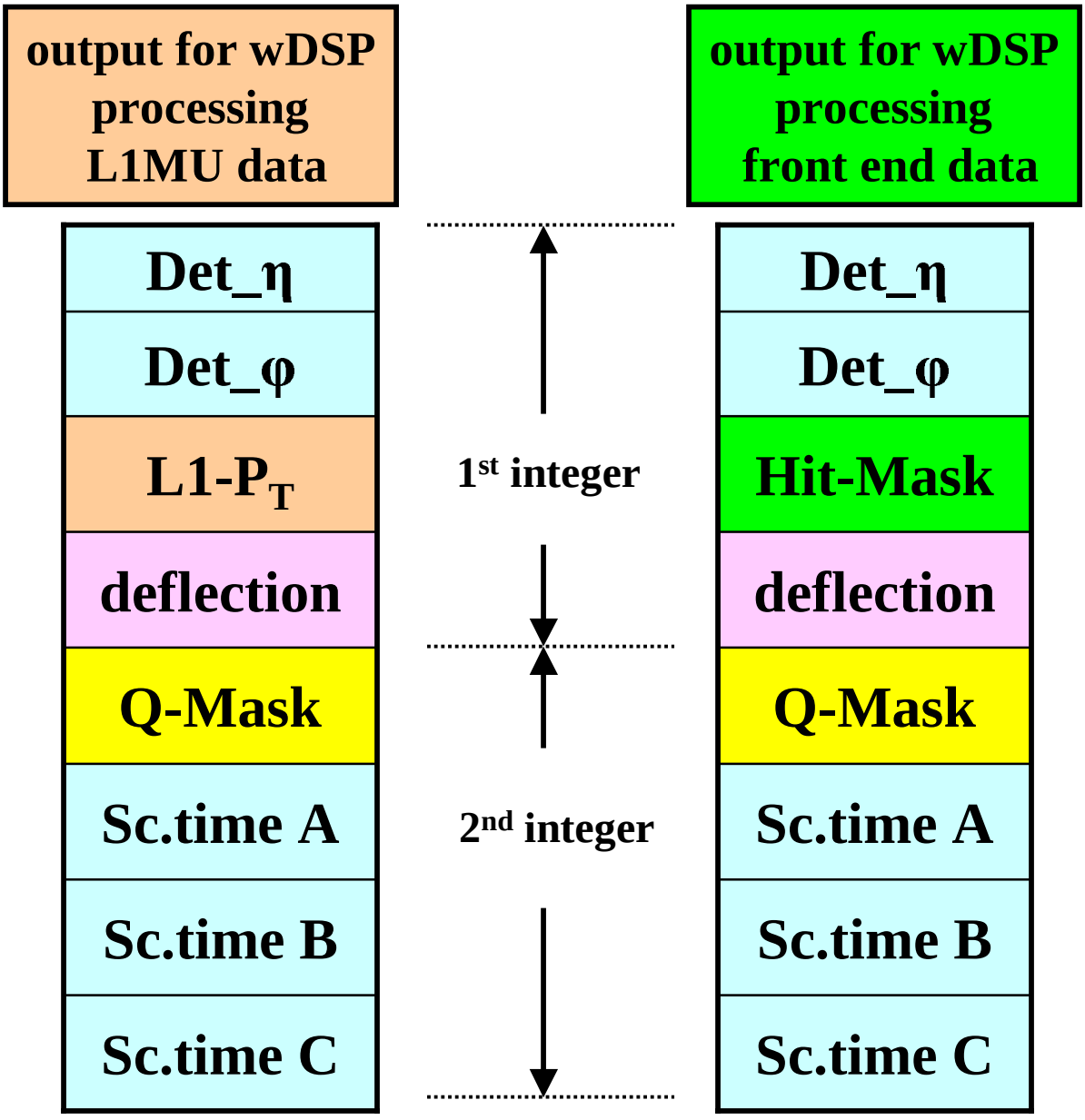
Muon-L2

last modified: Feb28, 2002

Output data unit (segment) is an 8-vector of single bytes



- η-units are LSB = 0.05 and range (-4,+4) = 0...159
- φ-units are LSB = 2.25° [i.e. octant/20] and range = 0...159
- times: void or value A,B,C ; LSB = 1 ns , void = 0 (not applicable, out of bounds, absence of signal); bytes are unsigned; signed data has zero value shifted by +128 (+0x80)

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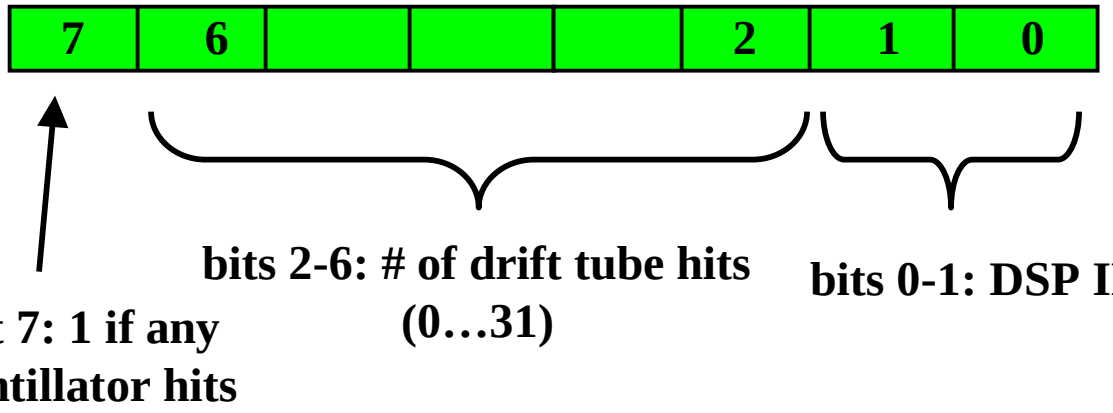
L1-P_T : L1-threshold LSB = 0.25GeV , "void" = 0

"Hit Mask":



deflection units are LSB = 1° and range (-70°, +70°) = 0…139
<u>Central SLIC:</u> deflection is defined as the angle between the muon track and the *y*-axis (<0 for -1<η<0 – North and > 0 for 0<η<1 – South (both A and BC stubs)
<u>Forward SLIC:</u> deflection is defined as the angle between the muon track and the z-axis (A stubs have >0, BC stubs have <0 if muon is moving towards *z*-axis, >0 if moving away from *z*-axis – same for North or South)
void: 255 (+185°)

Q-Mask: consists of three two-bit fields: (Fail=0 , L=1 , M=2 , T=3)

idle	BC	A	L1

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η units are

Note: A-stubs have η and deflection identical

Phys η :	- 4	-2	-1	0	1	2	4
		MUON RANGE					
bin # :	0	39	59	79	99	119	159

deflection units are

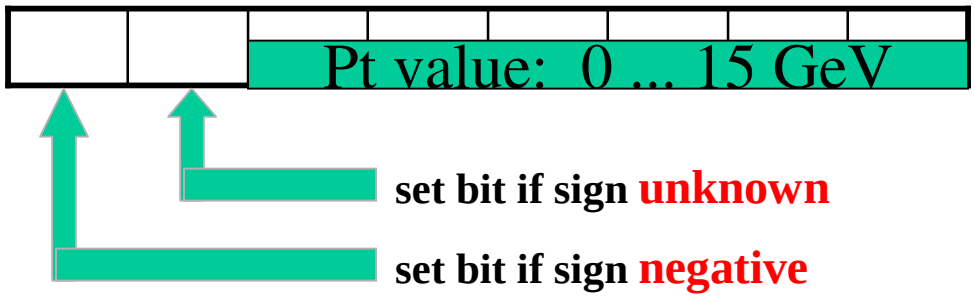
Phys :	- 70	-40	-20	0	20	40	69
bin #:	0	29	49	70	90	110	139

φ units are such as to match L2CTTφ

LSBit = 2.25° = Octant/20 ; values = 0 ... 159

L1 P_T Threshold

units are 0.25GeV – two bits for sign status



Alpha Output Object Format

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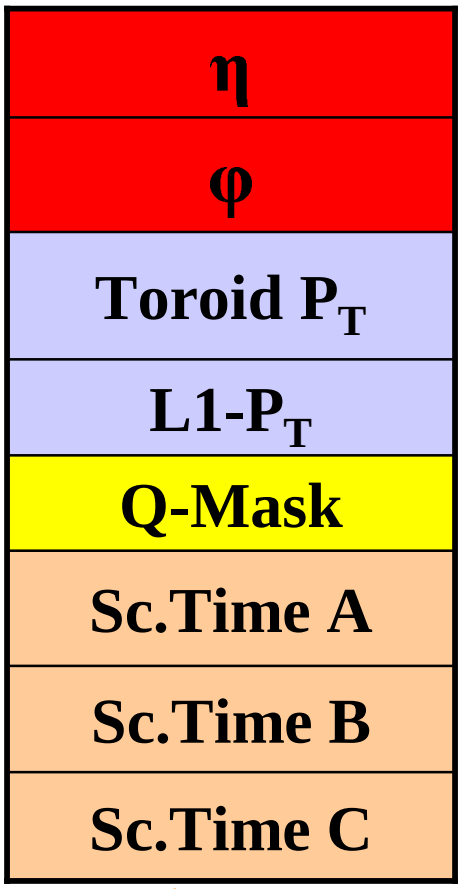
- **An 8-byte object -- from LSB to MSB;**

(Check following pages for P_T η φ units and mask usage)



Toroid Pt calculated from A + BC stub match

Q-Mask consists of three two-bit fields: (Fail=0 , L=1 , M=2 , T=3)

idle	BC	A	L1

Times echoed from A & BC stubs if available, void otherwise

Note: L1-P_T is a copy from wDSP-output

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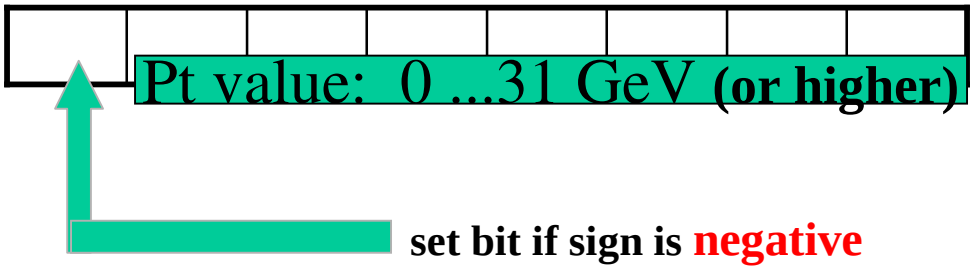
η units are such as to match L2Cal

Phys η :	- 4		-2	-1	0	1	2	4
			MUON RANGE					
L2 η :	0		39	59	79	99	119	159

φ units are such as to match L2CTTφ

LSBit = 2.25° = Octant/20 ; values = 0 ... 159

Toroid P_T

units are 0.25GeV – high bit is sign