kB per event by VME crate for run 2931 file 1
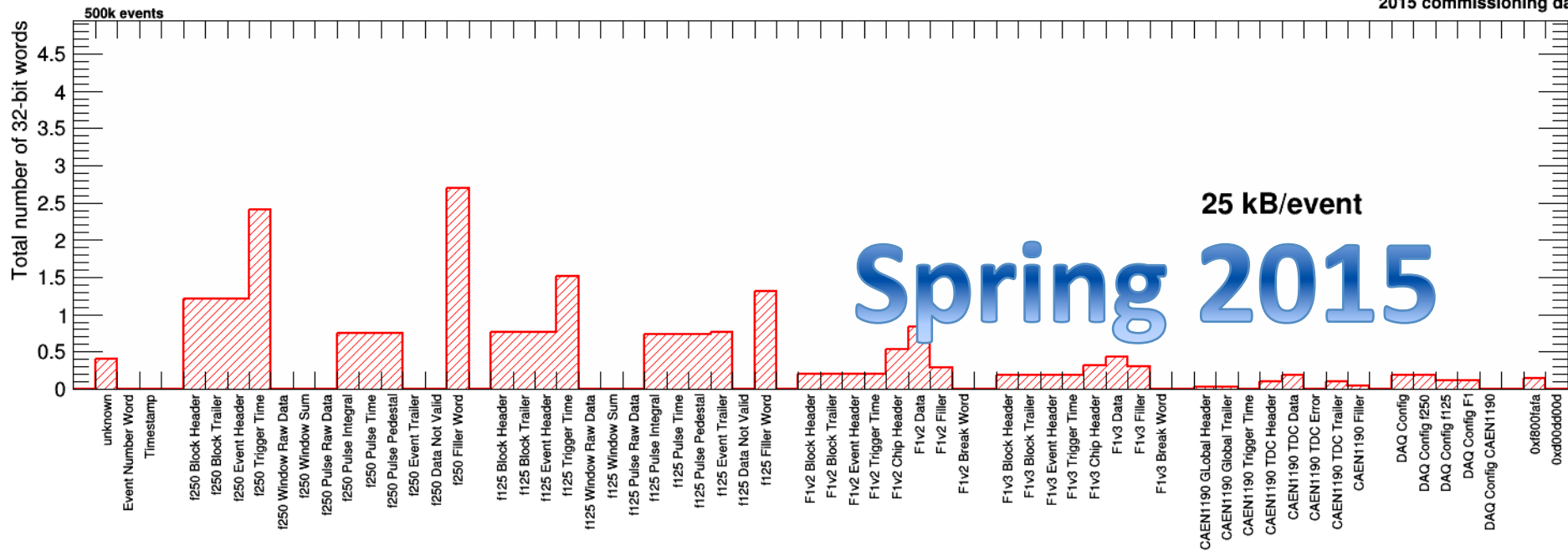
32-bit word types in EVIO event
Number of words in 100k events for run 2931 file 1

May 8, 2015 DL
sim-recon: svn 18239
2015 commissioning data

500k events

25 kB/event

Spring 2015

Total number of 32-bit words

unknown
Event Number Word
Timestamp
f250 Block Header
f250 Block Trailer
f250 Event Header
f250 Trigger Time
f250 Window Raw Data
f250 Window Sum
f250 Pulse Raw Data
f250 Pulse Integral
f250 Pulse Time
f250 Pulse Pedestal
f250 Event Trailer
f250 Data Not Valid
f250 Filler Word
f125 Block Header
f125 Block Trailer
f125 Event Header
f125 Trigger Time
f125 Window Raw Data
f125 Window Sum
f125 Pulse Raw Data
f125 Pulse Integral
f125 Pulse Time
f125 Pulse Pedestal
f125 Event Trailer
f125 Data Not Valid
f125 Filler Word
F1v2 Block Header
F1v2 Block Trailer
F1v2 Event Header
F1v2 Trigger Time
F1v2 Chip Header
F1v2 Data
F1v2 Filler
F1v2 Break Word
F1v3 Block Header
F1v3 Block Trailer
F1v3 Event Header
F1v3 Trigger Time
F1v3 Chip Header
F1v3 Data
F1v3 Filler
F1v3 Break Word
CAEN1190 GLobal Header
CAEN1190 Global Trailer
CAEN1190 Trigger Time
CAEN1190 TDC Header
CAEN1190 TDC Data
CAEN1190 TDC Error
CAEN1190 TDC Trailer
CAEN1190 Filler
DAQ Config
DAQ Config f250
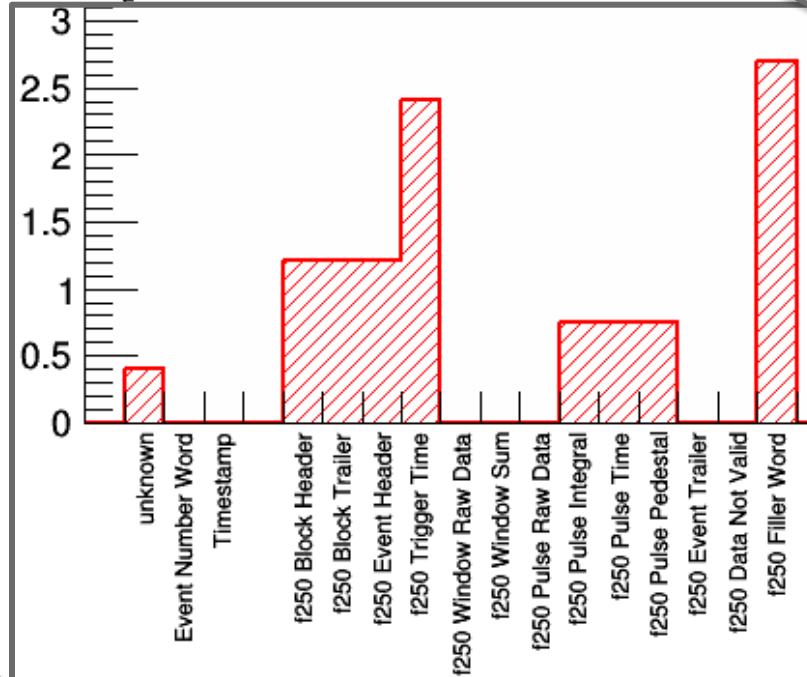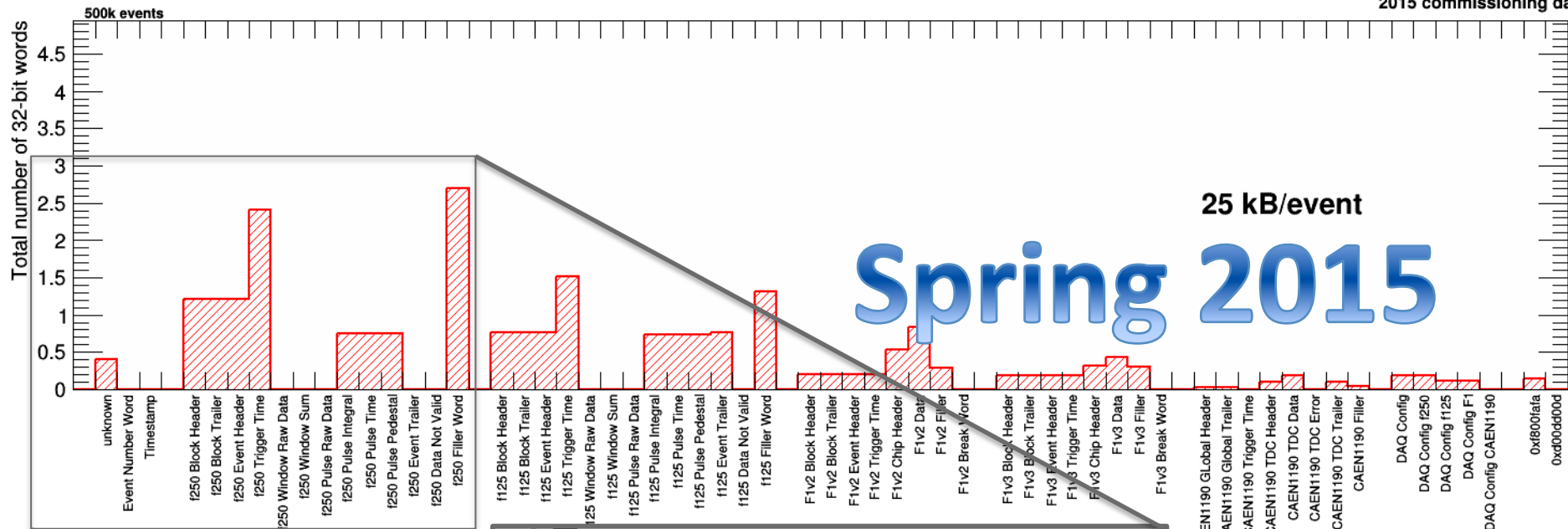DAQ Config f125
DAQ Config F1
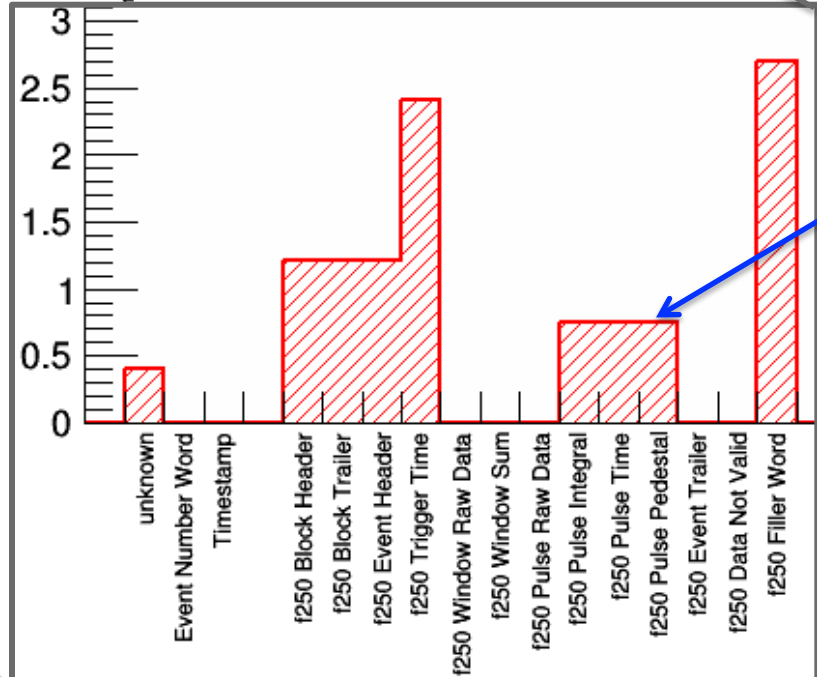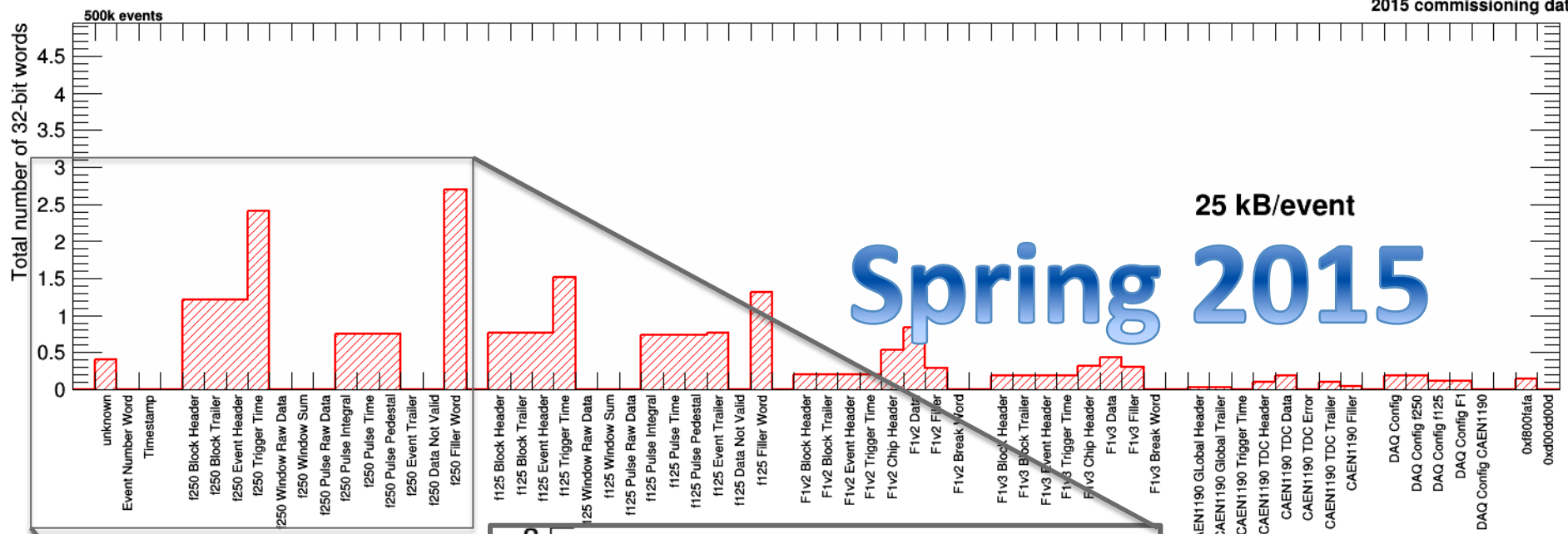DAQ Config CAEN1190
0xf800fafa
0xd00dd00d

32-bit word types in EVIO event
Number of words in 100k events for run 2931 file 1

May 8, 2015 DL
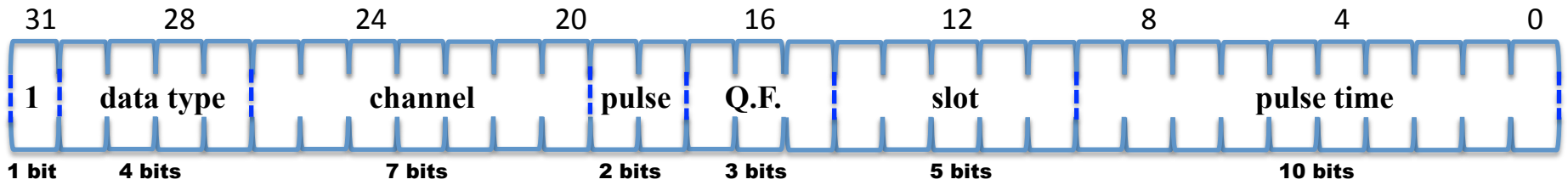sim-recon: svn 18239
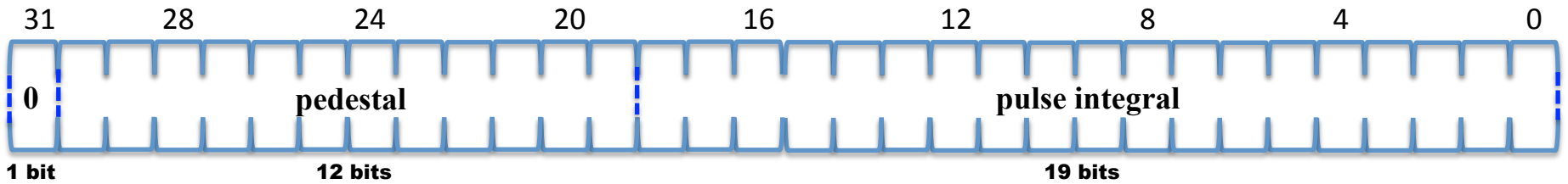2015 commissioning data

25 kB/event

Spring 2015

32-bit word types in EVIO event
Number of words in 100k events for run 2931 file 1

25 kB/event

Spring 2015

fADC 250 Pulse pedestal words contribute ~1.5% to file size

Option 1: Coupled words w/ pedestal

First word

31	28	24	20	16	12	8	4	0

1	data type	channel	pulse	Q.F.	slot	pulse time
1 bit	4 bits	7 bits	2 bits	3 bits	5 bits	10 bits

Second word

31	28	24	20	16	12	8	4	0

0	pedestal	pulse integral
1 bit	12 bits	19 bits

Option 1a: Coupled words w/ pedestal

First word

31	28	24	20	16	12	8	4	0

1	data type	channel	pulse	??	slot	pulse time

1 bit	4 bits	7 bits	2 bits	2 bits	5 bits	13 bits

Second word

31	28	24	20	16	12	8	4	0

0	pedestal	Q.F.	pulse integral

1 bit	8 bits	6 bits	17 bits
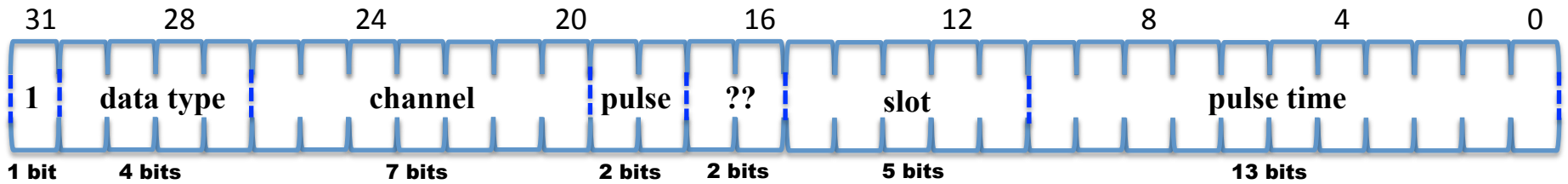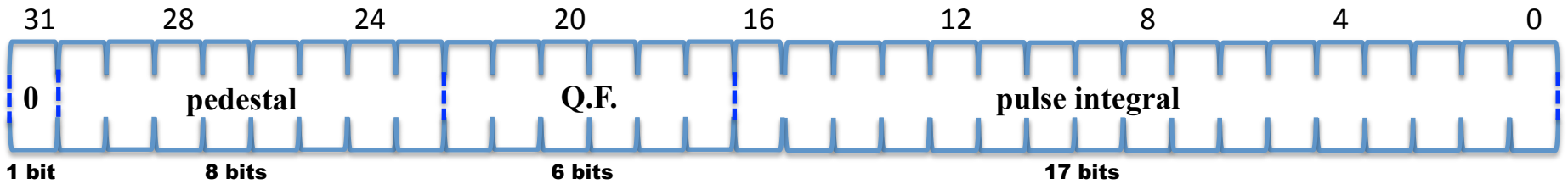
Option 1c: Coupled words w/ pedestal

First word

31	28	24	20	16	12	8	4	0

1	**data type**	**channel**	**pulse**	**Q.F.**	**slot**	**pedestal**
1 bit	4 bits	7 bits	2 bits	4 bits	5 bits	9 bits

Second word

31	28	24	20	16	12	8	4	0

0	**pulse time**	**pulse integral**
1 bit	14 bits	17 bits
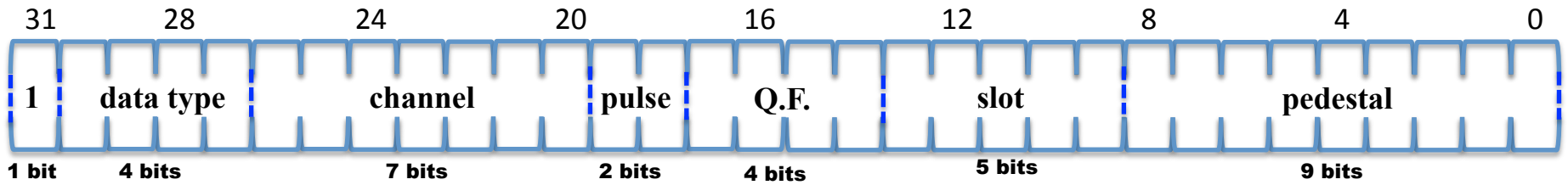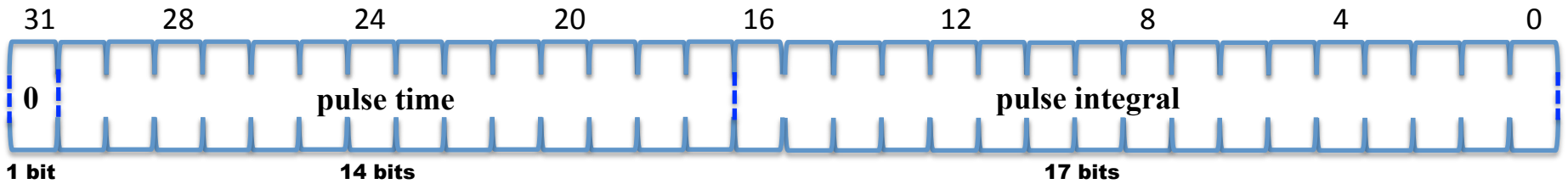
Option 1d: Coupled words w/ pedestal
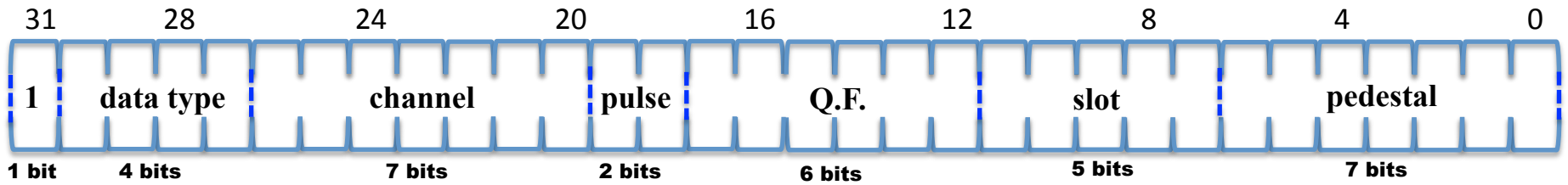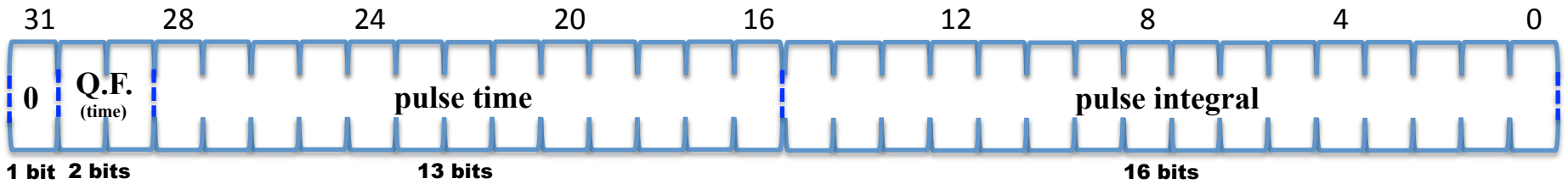
First word

31	28	24	20	16	12	8	4	0

1	data type	channel	pulse	Q.F.	slot	pedestal
1 bit	4 bits	7 bits	2 bits	6 bits	5 bits	7 bits

Second word

31	28	24	20	16	12	8	4	0

0	Q.F. (time)	pulse time	pulse integral
1 bit	2 bits	13 bits	16 bits

First word

| 31 | 28 | 24 | 20 | 16 | 12 | 8 | 4 | 0 |

| 1 | data type | slot | channel | quality factor/pedestal |

1 bit   4 bits   5 bits   7 bits   15 bits

Second word

| 31 | 28 | 24 | 20 | 16 | 12 | 8 | 4 | 0 |

| 0 | pulse time | pulse integral |

1 bit   14 bits   17 bits
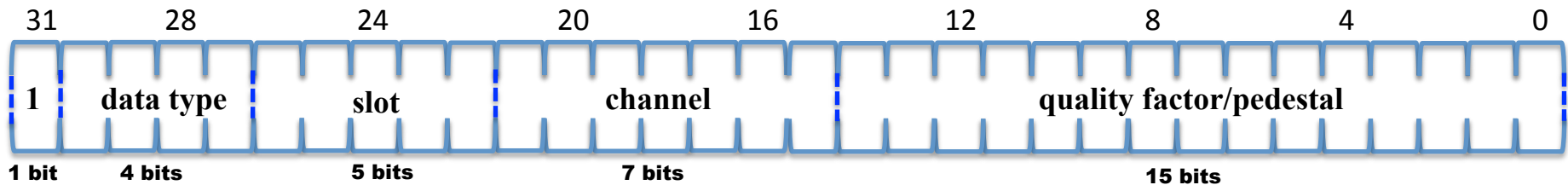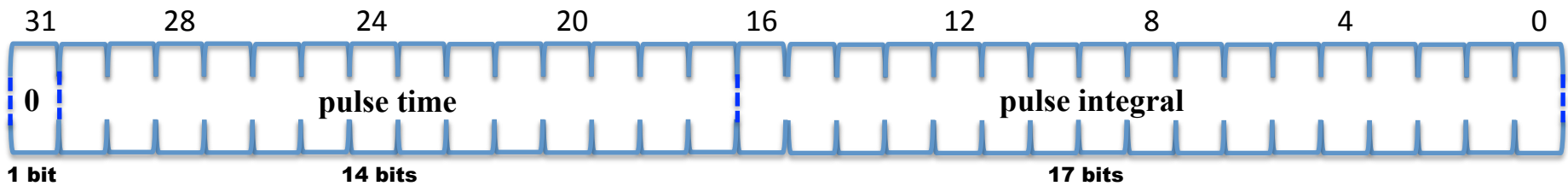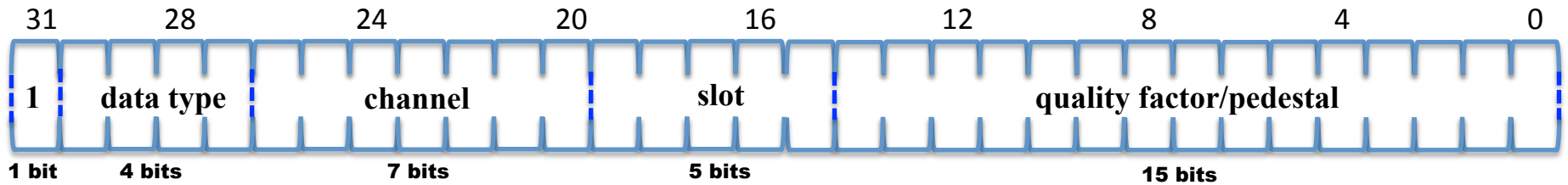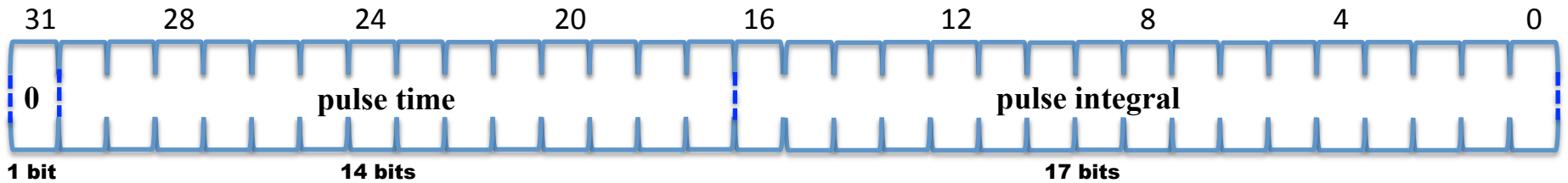
The quality factor/pedestal value will be used to hold some combination of quality factor and pedestal. The exact assignment of bits for these will be worked out by Naomi who has developed the algorithm for identifying pulses and extracting times.

Option 1f: Coupled words w/ pedestal

First word

31	28	24	20	16	12	8	4	0

1	data type	channel	slot	quality factor/pedestal

1 bit — 4 bits — 7 bits — 5 bits — 15 bits

Second word

31	28	24	20	16	12	8	4	0

0	pulse time	pulse integral

1 bit — 14 bits — 17 bits

The quality factor/pedestal value will be used to hold some combination of quality factor and pedestal. The exact assignment of bits for these will be worked out by Naomi who has developed the algorithm for identifying pulses and extracting times.
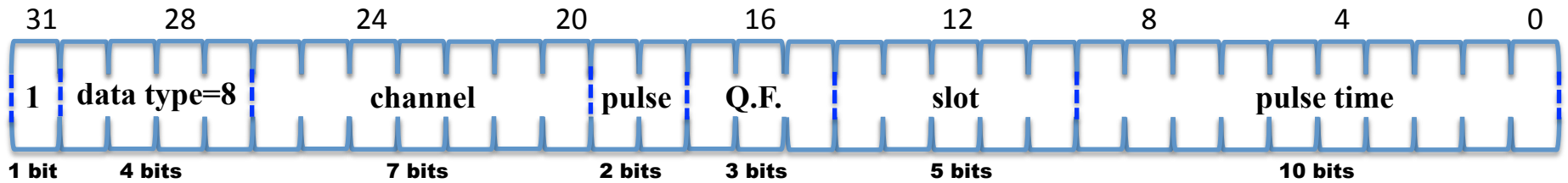
Option 2: De-coupled words w/o pedestal

First word: Pulse time

| 31 | | 28 | | 24 | | 20 | | 16 | | 12 | | 8 | | 4 | | 0 |

1	data type=8	channel	pulse	Q.F.	slot	pulse time
1 bit	4 bits	7 bits	2 bits	3 bits	5 bits	10 bits

Second word: Pulse integral

| 31 | | 28 | | 24 | | 20 | | 16 | | 12 | | 8 | | 4 | | 0 |

1	data type=7	channel	pulse	Q.F.	pulse integral
1 bit	4 bits	7 bits	2 bits	3 bits	17 bits