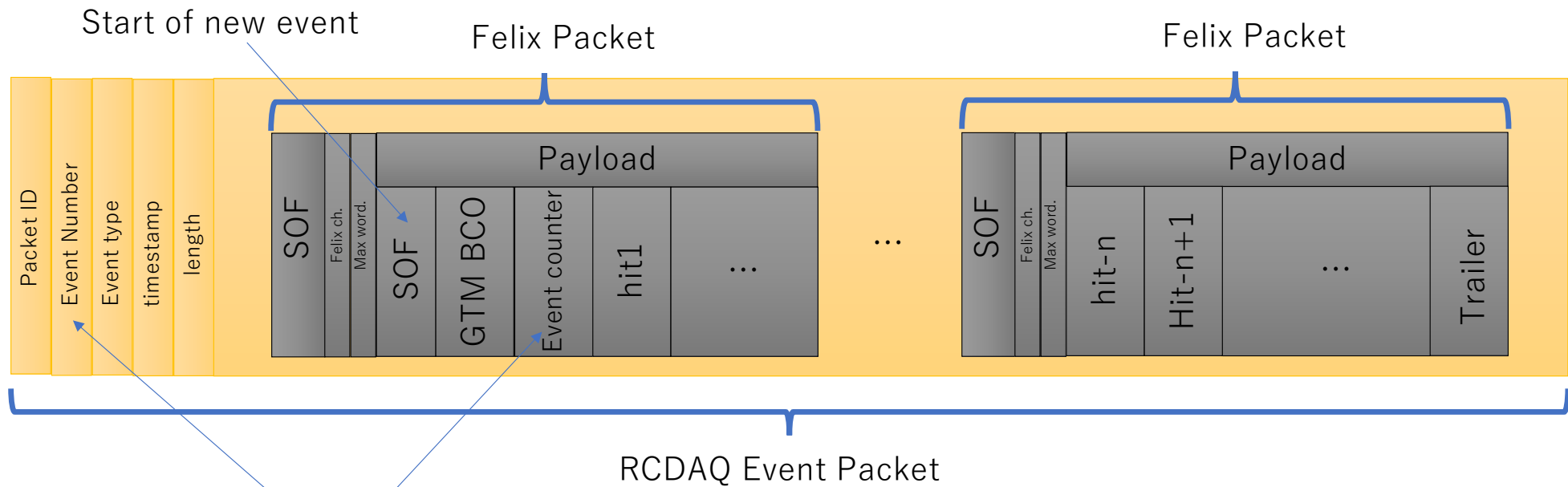


Packet Structure Update

RIKEN/RBRC

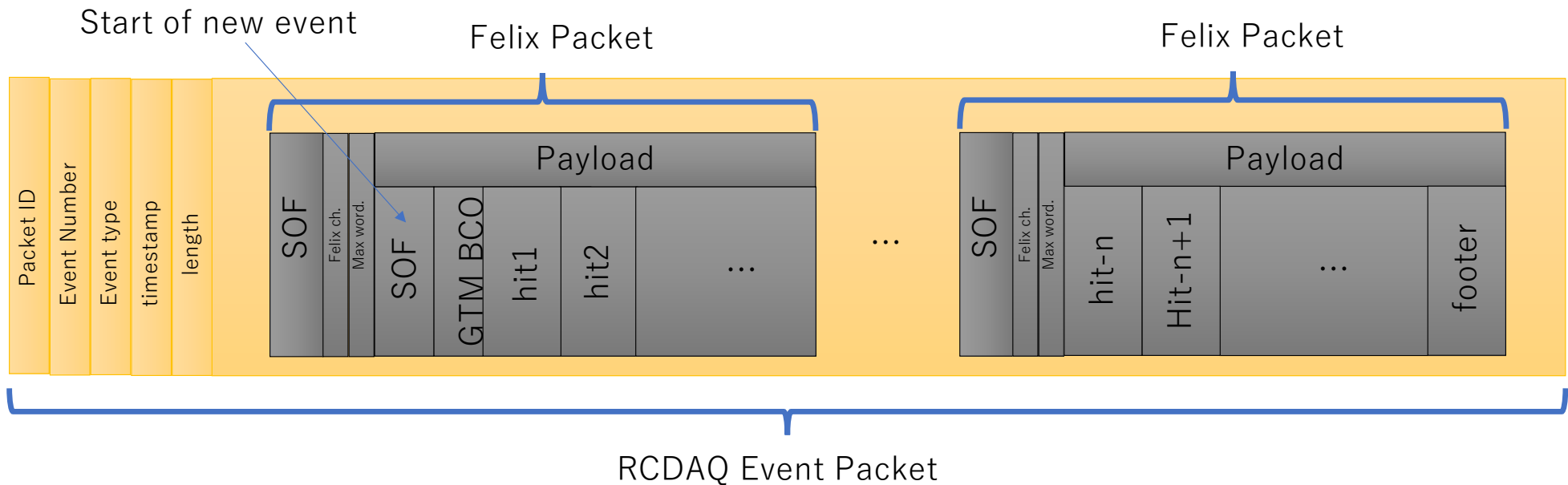
Itaru Nakagawa

INTT Packet Structure



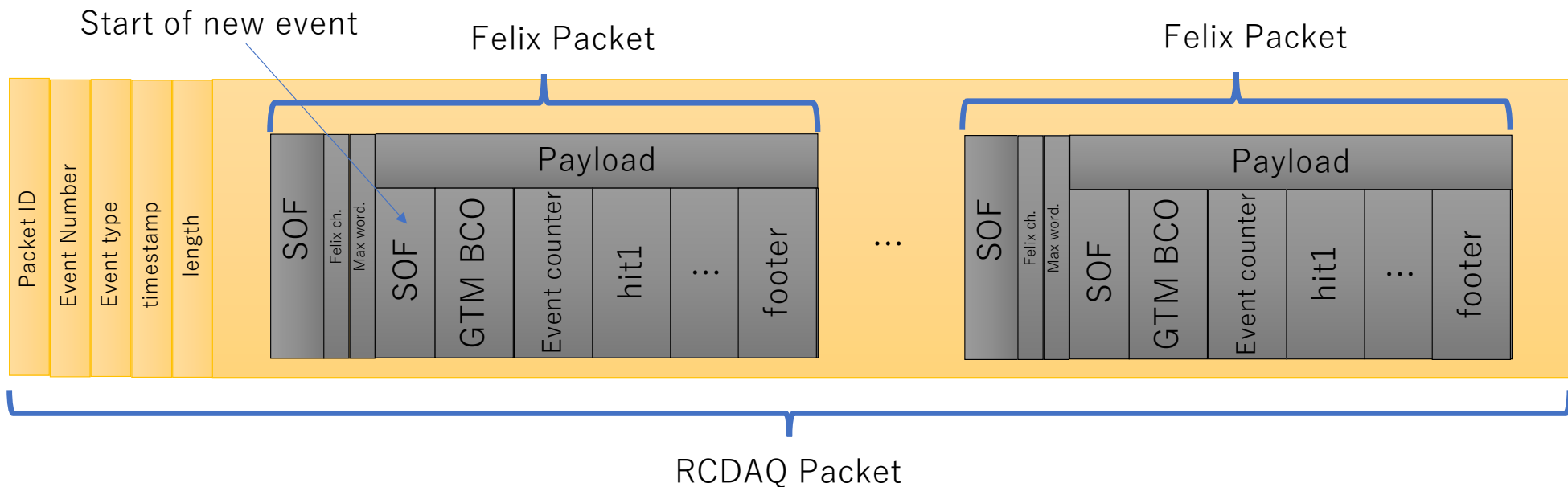
2 event counters. Which one is the source of evSeq in the decoder?

INTT Packet Structure (~until 6/5)



Felix raw data and decoder were compatible back then. However, the “event frame” wasn’t defined as we desire since there was no event counter injected into the data stream. Thus presumably arbitrary “event frame” incremented by the read request by rcdag has been employed in this period. This probably broke the “one event should contain only one GTM_BCO principle.”

INTT Packet Structure (6/6 ~)



Raul likely updated firmware on June 5 which includes event counter and footer in the felix packet around the end of the day 6/5. Martin started updating decoder on 6/15 and hoping to complete this week (by 6/18). Until then, the event counter and footers were decoded as regular hits and they appear hits in the later slide “Decoded hits of event counter/footers”. Joseph was informed so he masked these hits for his output rootfiles and OnlineMonitor.

Decorded hits of event counter/footers

```
ddump -n 100 beam_intt0-00010530-0000.evt
```

```
itaru — ssh • ssh intt0 — 110x59
3 3 85b57ab556 0x0 21 126 6 1 1 63 0xcafeff80
4 5 85b57ab556 0x0 0 0 0 0 0 0 0x00000000
5 5 85b57ab556 0x0 21 126 6 1 1 63 0xcafeff80
6 6 85a8547970 0x0 46 95 0 0 0 0 0x175f0000
7 6 85a8547970 0x0 21 126 6 1 1 63 0xcafeff80
8 6 85b57ab556 0x0 0 0 0 0 0 0 0x00000000
9 8 85b57ab556 0x0 0 0 0 0 0 0 0x00000000
10 8 85b57ab556 0x0 21 126 6 1 1 63 0xcafeff80
11 10 85b57ab556 0x0 0 0 0 0 0 0 0x00000000
12 10 85b57ab556 0x0 21 126 6 1 1 63 0xcafeff80
13 10 85b5ab789e 0x0 0 1 0 0 0 0 0x00010000
14 12 85b57ab556 0x0 0 0 0 0 0 0 0x00000000
15 12 85b57ab556 0x0 21 126 6 1 1 63 0xcafeff80
16 13 85b57ab556 0x0 0 0 0 0 0 0 0x00000000
17 13 85b57ab556 0x0 21 126 6 1 1 63 0xcafeff80
Packet 3001 68 -1 (sPHENIX Packet) 110 (IDINTTV0)
Number of hits: 18
# FEE BCO chip_BCO chip_id channel_id ADC full_phx full_ROC Ampl.
0 0 85b5ab789e 0x0 0 1 0 0 0 0x00010000
1 0 85b5ab789e 0x0 21 126 6 1 1 63 0xcafeff80
2 0 85b5b4dd4e 0x0 0 2 0 0 0 0x00020000
3 1 85b5ab789e 0x0 0 1 0 0 0 0x00010000
4 1 85b5ab789e 0x0 21 126 6 1 1 63 0xcafeff80
5 2 85b5ab789e 0x0 0 1 0 0 0 0x00010000
6 2 85b5ab789e 0x0 21 126 6 1 1 63 0xcafeff80
7 4 85b5ab789e 0x0 0 1 0 0 0 0x00010000
8 4 85b5ab789e 0x0 21 126 6 1 1 63 0xcafeff80
9 6 85b5ab789e 0x0 0 1 0 0 0 0x00010000
10 6 85b5ab789e 0x0 21 126 6 1 1 63 0xcafeff80
11 7 85b5ab789e 0x0 0 1 0 0 0 0x00010000
12 7 85b5ab789e 0x0 21 126 6 1 1 63 0xcafeff80
13 9 85b5ab789e 0x0 0 1 0 0 0 0x00010000
14 9 85b5ab789e 0x0 21 126 6 1 1 63 0xcafeff80
15 11 85b57ab556 0x0 0 0 0 0 0 0x00000000
16 11 85b57ab556 0x0 21 126 6 1 1 63 0xcafeff80
17 11 85b5ab789e 0x0 0 1 0 0 0 0x00010000
Packet 3001 132 -1 (sPHENIX Packet) 110 (IDINTTV0)
Number of hits: 38
# FEE BCO chip_BCO chip_id channel_id ADC full_phx full_ROC Ampl.
0 0 85b5d46f24 0x0 0 3 0 0 0 0x00030000
1 0 85b5d46f24 0x0 21 126 6 1 1 63 0xcafeff80
2 1 85b5b4dd4e 0x0 0 2 0 0 0 0x00020000
3 1 85b5b4dd4e 0x0 21 126 6 1 1 63 0xcafeff80
4 1 85b5d46f24 0x0 0 3 0 0 0 0x00030000
5 2 85b5d46f24 0x0 0 3 0 0 0 0x00030000
6 2 85b5d46f24 0x0 21 126 6 1 1 63 0xcafeff80
7 3 85b5b4dd4e 0x0 0 2 0 0 0 0x00020000
8 3 85b5b4dd4e 0x0 21 126 6 1 1 63 0xcafeff80
9 4 85b5b4dd4e 0x0 0 2 0 0 0 0x00020000
10 4 85b5b4dd4e 0x0 21 126 6 1 1 63 0xcafeff80
11 4 85b5d46f24 0x0 0 3 0 0 0 0x00030000
12 5 85b5b4dd4e 0x0 0 2 0 0 0 0x00020000
13 5 85b5b4dd4e 0x0 21 126 6 1 1 63 0xcafeff80
14 6 85b5d46f24 0x0 0 3 0 0 0 0x00030000
15 6 85b5d46f24 0x0 21 126 6 1 1 63 0xcafeff80
16 7 85b5d46f24 0x0 0 3 0 0 0 0x00030000
17 7 85b5d46f24 0x0 21 126 6 1 1 63 0xcafeff80
18 8 85b5ab789e 0x0 0 1 0 0 0 0x00010000
```

These hits are not real hits.
They are fileted in Joseph's root files.

What we expect after the decoder upgrade?

5イベント目
event

Num hits: 18					
0	0	4	0	0	726778147010(66)
0	14	91	2	115	726778147010(66)
2	0	4	0	0	726778147010(66)
3	0	4	0	0	726778147010(66)
4	0	4	0	0	726778147010(66)
5	0	4	0	0	726778147010(66)
6	0	3	0	0	726778114366(62)
6	0	4	0	0	726778147010(66)
7	0	4	0	0	726778147010(66)
8	0	4	0	0	726778147010(66)



前のイベントのBCO_FULLと同じ。
別ラダーのコピーヒット

6イベント目
event

Num hits: 38					
0	0	5	0	0	726778172375(87)
0	0	6	0	0	726778199514(90)
1	0	4	0	0	726778147010(66)
1	0	5	0	0	726778172375(87)
2	0	6	0	0	726778199514(90)
3	0	6	0	0	726778199514(90)
4	0	6	0	0	726778199514(90)
5	0	5	0	0	726778172375(87)
5	0	6	0	0	726778199514(90)
6	0	5	0	0	726778172375(87)
7	0	6	0	0	726778199514(90)
8	0	6	0	0	726778199514(90)
9	0	4	0	0	726778147010(66)
9	0	5	0	0	726778172375(87)
9	0	6	0	0	726778199514(90)
10	0	4	0	0	726778147010(66)
10	0	5	0	0	726778172375(87)
10	0	6	0	0	726778199514(90)
11	0	4	0	0	726778147010(66)
12	0	4	0	0	726778147010(66)
13	0	4	0	0	726778147010(66)

BCO_FULL



前のイベントのBCO_FULLと同じ。
別ラダーのコピーヒット



別ラダーのコピーヒット



<- Contamination of different BCO_FULL hits in the given event observed in recent data is expected to be resolved by the real “event counter” based event frame after the decoder upgrade. At least Martin aimed to sort the hits based on the “one event should contain only one GTM_BCO principle.”

Takashi's slide