ADCM data format

(Revised on 19/Aug/2003: Readout type in Data Header)

1. SLT data

SLTdata = 4 Header words + Data (MVRAWC　in MVD DDL)

Header words:

Word1	Header
Word2	Data size of the event (including this header)
Word3	Data size of the cluster
Word4	not used

Header:

Bit7-Bit0: FLTn

Bit15-Bit8: BCN

Bit17-Bit16:　GFLT System Readout Type (00:Normal trigger, 01: Normal trigger after an aborted trigger, 10:test trigger, 11: Init)

Bit19-Bit18:, GFLT Ambiguity flag (always 0 since 1994)

Bit22-Bit20:　GFLT Component-dependent Readout Type (For test triggers, this bits indicate the type of test. (110: Env. Trigger, 111: End-of-Run)

Bit26-Bit23: 4bit Readout Type

Bit27: raw data error: (FLT number mismatch, detected during the local event building inside the ADCM. The wrong ADCU can be indentified from the DF-Data-status-register bit(8-15)

Bit28: strip data error: (FLT number mismatch, detected during the local event building inside the ADCM. The wrong ADCU can be indentified from the DF-Data-status-register bit(0-7)

Bit29: pipeline error:　(set if the pipeline locations in an analog link are not same)

Bit30: set if the event is aborted. (Data pointer is not recorded for aborted events so that this bit is always 0, in the normal readout scheme)

Bit31: always 0

Data: (4 words per cluster)

Word1	stripID+ ADC data of strip 0

Word2 bit0-9: ADC data of strip 1, bit 16-25 : ADC data of strip n

Word3 sum of ADC in the cluster

Word4 stripID+ADC data of strip n+1

(N.B. stip 1: the first strip with data above threshold

strip n: the last strip with data above threshold)

2. EVB data

EVBdata = 6 Header words + RAW Data + STRIP Data + Control DATA

Header words:

Word1	Header (same format as SLT Data header)
Word2	Data size of the event (including this header)
Word3	Data size of raw data
Word4	Data size of strip data
Word5	Data size of control data
Word6	not used

RAW Data: (1 word per strip)

Bit0-9 ADC value

Bit10-31 Srip ID

Bit 10-16 : Strip ID in a HELIX

Bit 17-18 : HELIX number in for a hybrid

Bit 19-31 : Hybrid ID (presettable with Strip Header memory in ADCM)

STRIP Data: (1 word per strip)

Bit0-9 ADC value

Bit10-31 Srip ID

Bit 10-16 : Strip ID in a HELIX

Bit 17-18 : HELIX number in a hybrid

Bit 19-31 : Hybrid ID (presettable with Strip Header memory in ADCM)

Control Data:

General Data structure:

Bit0-11 : Data

Bit12-15 : Data Id

Bit17-18 : HELIX number in a hybrid

Bit19-31: Hybrid ID (presetaable with Strip Header memory in ADCM)

- Pipeline_position (In normal mode, only the data of the first HELIX in a token ring is sent)

  Bit0-7 : pipeline location

Bit12-15: 0

Bit17-31: (HELIX and Hybrid ID)

- Common mode data

  Bit0-9 : common mode value

  Bit12-15: 1

  Bit17-31: (HELIX and Hybrid ID)

- Trigger Interval data

  Bit0-3 : TDC value (time between clock and data-valid rising edge)

  Bit4-11 : clock counts between the previous analog-data-valid and the current (unit: 16 clock counts, i.e. 1 = 16 clocks))

  Bit12-15: 2

  Bit17-31: (HELIX and Hybrid ID)

- Analog data arrival timing data

  Bit0-11 : clock counts between the trigger and analog data valid (unit: 16 clock counts)

  Bit12-15: 3

  Bit17-31: (HELIX and Hybrid ID)