

ZEBRA-Datastructures

ZEBRA bank documentation

from

dst.rz

banks below:

DST

14/01/03

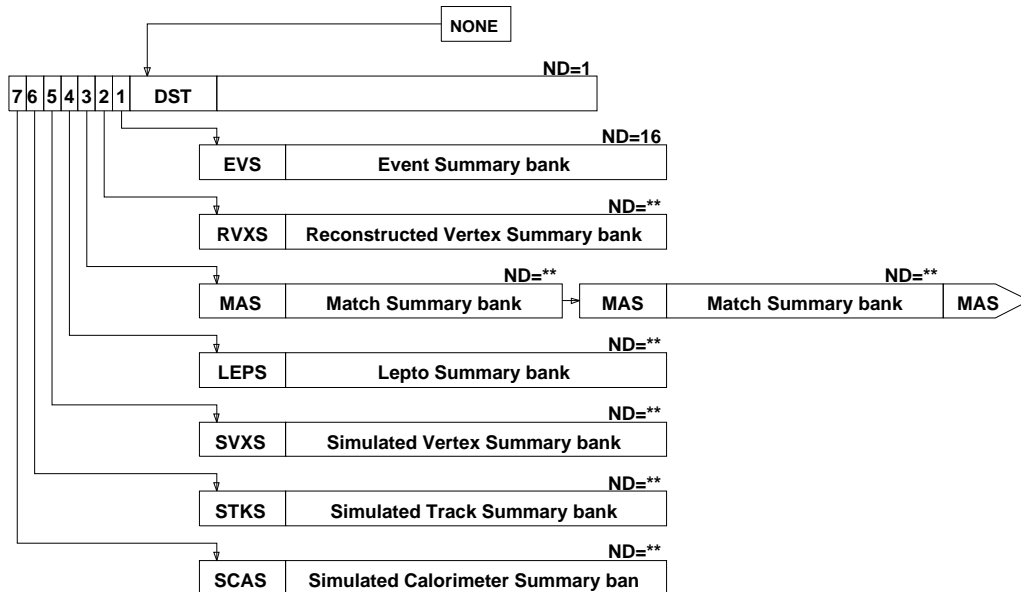


Fig.: 1 DST

| DST | DST Header Bank

----- entered file at 14-Jan- 3 5:57

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Bank IDH  DST      DST Header Bank
Author    K. Varvell
Version   7.40
Store     INOMSTO
Division  INOMDIV
NL        10
NS        10
ND        1
Up        NOMA     -6
Origin    NOMA
IO-Charac '1F'
NZERO     10

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----- Description of the links -----
1      EVS      Event Summary bank
2      RVXS     Reconstructed Vertex Summary bank
3      MAS      Match Summary banks
4      LEPS     Lepto Summary bank
5      SVXS     Simulated Vertex Summary bank
6      STKS     Simulated Track Summary bank
7      SCAS     Simulated Calorimeter Summary bank

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----- Description of the data words -----
1      Version  Version number (= 7.40)

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| EVS | Event Summary bank

----- entered file at 14-Jan- 3 5:57

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Bank IDH  EVS      Event Summary bank
Author    K. Varvell
Version   7.40
Store     INOMSTO
Division  INOMDIV
ND        16
Up        DST      -1
Origin    DST
IO-Charac '19I 3F'

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----- Description of the data words -----
1      IndxPrim Index of primary vertex in RVXS bank
2      NVert    Number of vertices (primary + secondary with >1 track)
3      NHang    Number of hangers in event
4      NChgd    Number of primary charged tracks
5      NNeut    Number of primary neutral tracks
6      NCalUn   Number of unassociated Cal clusters
7      NHcaUn   Number of unassociated Hca clusters
8      NTrig1   Number of intime trigger hits plane 1
9      NTrig2   Number of intime trigger hits plane 2
10     NVeto     Number of intime veto hits
11     NCells    Number of Cal cells above threshold
12     NSlabs    Number of Hca slabs hit
13     NMuMat    Number of muons in this event (number of DCH tracks
                for which ProbMu = 1.0)

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14      NRemain  Number of Dch hits unused in event
15      Overflow MC overflow (copy of IQ(LSEVT+12))
16      NDcVeto  Number of hits in DC veto
17      NDcHit   Number of DC hits
18      NDensity Density*1000
19      NTrdHit  Number of TRD hits
20      ECells   Total energy deposited in Cal cells
21      ESlabs   Total energy deposited in Hca cells
22      Weight   Event weight (Monte Carlo) (identically 1.0 at present)

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| RVXS | Reconstructed Vertex Summary bank

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----- entered file at 14-Jan- 3  5:57
Bank IDH  RVXS      Reconstructed Vertex Summary bank
Author    K. Varvell
Version   7.40
Store     INOMSTO
Division  INOMDIV
ND        NDATA
Up        DST      -2
Origin    DST
IO-Charac '1I / 5I 5F'
----- Description of the data words -----
1      N:NVert  Number of reconstructed vertices
--REP level=1  N:NVert
  1      Id      Vertex Identifier, as in VTX bank
  2      Type    Vertex type. Types are:
              0 - No Type
              1 - Primary
              2 - Secondary
              3 - Decay (one track in, several out)
              4 - V0
              5 - Brem
              6 - Scatter (one track in, one track out)
              7 - DeltaRay
              8 - HardScatter
              9 - Beginning (hanger)
             10 - End
             11 - Neutral Hanger
             12 - Out
  3      NChgd  Number of charged tracks at vertex
  4      NNeut  Number of neutral objects at vertex
  5      NUnused Unused hits in vicinity of vertex
              Packed word, as follows:
              = 1000000*(No. Hits in box of size +- 15cm)
              = + 1000*(No. Hits in box of size +- 10cm)
              = + (No. Hits in box of size +- 5cm)
              = Each "No. Hits in box" = 100*(No. U Hits) (0-9)
              = + 10*(No. Y Hits) (0-9)
              = + (No. V Hits) (0-9)
  6      X      x position of vertex
  7      Y      y position of vertex
  8      Z      z position of vertex
  9      Chi2    Chi2 of vertex fit
 10     Chi2Mism Chi2 for V0 pointing to the primary vertex (2 d.o.f.)
              (Hypothesis that V0-PV mismatch vector has zero length.
--REP level=1 -- End --

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| MAS | Match Summary bank

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----- entered file at 14-Jan- 3  5:57
Bank IDH  MAS      Match Summary bank
Author    K. Varvell
Version   7.40
Store     INOMSTO
Division  INOMDIV
ND        NDATA
Next      MAS
Up        DST      -3
Origin    DST
IO-Charac '13I (then variable)'
----- Description of the data words -----
1      P:LDCH  Pointer to DCH blocklet (0 if none)
2      P:LTRD  Pointer to TRD blocklet (0 if none)
3      P:LPRS  Pointer to PRS blocklet (0 if none)
4      P:LCAL  Pointer to CAL blocklet (0 if none)
5      P:LMUO  Pointer to MUO blocklet (0 if none)
6      P:LSCI  Pointer to SCI blocklet (0 if none)
7      P:LVET  Pointer to VET blocklet (0 if none)
8      P:LFCA  Pointer to FCA blocklet (0 if none)
9      P: LHCA  Pointer to HCA blocklet (0 if none)
10     P:LSIT  Pointer to SIT blocklet (0 if none)
11     P:LFEL  Pointer to FEL blocklet (0 if none)
12     P:LEXT  Pointer to EXT blocklet (0 if none)
13     P:LBRE  Pointer to BRE blocklet (0 if none)
--Label: L:LDCH DCH Blocklet type (10x, x is seed subdetector)

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1      DchId      IO:I (101) Drift Chamber track identifier
2      IndxVxsB   IO:I (101) Index of beginning vertex in RVXS bank
3      IndxVxsE   IO:I (101) Index of end vertex in RVXS bank
4      IndxStks   IO:I (101) Index of simulated track in STKS bank
5      NHits      IO:I (101) Number of hits on track
6      NDF        IO:I (101) Number of degrees of freedom for track fit
7      Charge     IO:I (101) Charge
8      MuHits     IO:I (101) Packed muon chamber + muon veto hits
          = 10000*(No. Stat. 2 x proj) (0 - 4)
          = + 1000*(No. Stat. 2 y proj) (0 - 4)
          = + 100*(No. Stat. 1 x proj) (0 - 4)
          = + 10*(No. Stat. 1 y proj) (0 - 4)
          = + No. Mu Veto (0 - 4)
9      MuHitsNF   IO:I (101) Packed muon chamber (not flagged) hits
          = 10000*(No. Stat. 2 x proj) (0 - 4)
          = + 1000*(No. Stat. 2 y proj) (0 - 4)
          = + 100*(No. Stat. 1 x proj) (0 - 4)
          = + 10*(No. Stat. 1 y proj) (0 - 4)
10     Type       IO:I (101) Geant particle code of model used in the
          * the track fit.
11     NDcVHitB   IO:I (101) Packed Dc Veto and Tube Hits (backward)
          = 1000000*(No. Hits in Tube 3cm wide, 50cm long)
          = + 1000*(No. Hits in Dc Veto, 5.0cm radius circle)
          = + (No. Hits in Dc Veto, 2.5cm radius circle)
          = No. Dc Veto Hits = 100*(No. U Hits) (0-9)
          = + 10*(No. Y Hits) (0-9)
          = + (No. V Hits) (0-9)
12     NDcVHitF   IO:I (101) Packed Dc Veto and Tube Hits (forward)
          * Same packing as for NDcVHitB
13     Chi2       IO:F (101) Chi-squared of fit
14     ProbChi2   IO:F (101) Chi-squared probability of fit
15     PxB        IO:F (101) Px at beginning vertex
16     PyB        IO:F (101) Py at beginning vertex
17     PzB        IO:F (101) Pz at beginning vertex
18     EPxPxB     IO:F (101) Cov(Px,Px) at beginning vertex
19     EPxPyB     IO:F (101) Cov(Px,Py) at beginning vertex
20     EPxPzB     IO:F (101) Cov(Px,Pz) at beginning vertex
21     EPyPyB     IO:F (101) Cov(Py,Py) at beginning vertex
22     EPyPzB     IO:F (101) Cov(Py,Pz) at beginning vertex
23     EPzPzB     IO:F (101) Cov(Pz,Pz) at beginning vertex
24     PxF        IO:F (101) Px at first hit
25     PyF        IO:F (101) Py at first hit
26     PzF        IO:F (101) Pz at first hit
27     EPxPxF     IO:F (101) Cov(Px,Px) at first hit
28     EPxPyF     IO:F (101) Cov(Px,Py) at first hit
29     EPxPzF     IO:F (101) Cov(Px,Pz) at first hit
30     EPyPyF     IO:F (101) Cov(Py,Py) at first hit
31     EPyPzF     IO:F (101) Cov(Py,Pz) at first hit
32     EPzPzF     IO:F (101) Cov(Pz,Pz) at first hit
33     PXL        IO:F (101) Px at last hit
34     PyL        IO:F (101) Py at last hit
35     PzL        IO:F (101) Pz at last hit
36     EPxPxL     IO:F (101) Cov(Px,Px) at last hit
37     EPxPyL     IO:F (101) Cov(Px,Py) at last hit
38     EPxPzL     IO:F (101) Cov(Px,Pz) at last hit
39     EPyPyL     IO:F (101) Cov(Py,Py) at last hit
40     EPyPzL     IO:F (101) Cov(Py,Pz) at last hit
41     EPzPzL     IO:F (101) Cov(Pz,Pz) at last hit
42     PxE        IO:F (101) Px at end vertex
43     PyE        IO:F (101) Py at end vertex
44     PzE        IO:F (101) Pz at end vertex
45     EPxPxE     IO:F (101) Cov(Px,Px) at end vertex
46     EPxPyE     IO:F (101) Cov(Px,Py) at end vertex
47     EPxPzE     IO:F (101) Cov(Px,Pz) at end vertex
48     EPyPyE     IO:F (101) Cov(Py,Py) at end vertex
49     EPyPzE     IO:F (101) Cov(Py,Pz) at end vertex
50     EPzPzE     IO:F (101) Cov(Pz,Pz) at end vertex
51     XF         IO:F (101) x position of first hit
52     YF         IO:F (101) y position of first hit
53     ZF         IO:F (101) z position of first hit
54     EXXF       IO:F (101) Cov(x,x) position of first hit
55     EXYF       IO:F (101) Cov(x,y) position of first hit
56     EYYF       IO:F (101) Cov(y,y) position of first hit
57     XL         IO:F (101) x position of last hit
58     YL         IO:F (101) y position of last hit
59     ZL         IO:F (101) z position of last hit
60     Length     IO:F (101) Track length
61     Purity     IO:F (101) Purity of match to MC track
62     Efficm     IO:F (101) Efficiency of match to MC track
63     ProbHit1    IO:F (101) Probability to hit muon chamber station 1
64     ProbHit2    IO:F (101) Probability to hit muon chamber station 2
65     ProbHitG    IO:F (101) Probability to traverse gap in station 1
66     ProbHitV    IO:F (101) Probability to traverse muon veto counters
67     ProbRchl    IO:F (101) Probability to reach muon chamber station 1

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68 ProbRch2 IO:F (101) Probability to reach muon chamber station 2
69 ProbMu IO:F (101) Prob to be muon from muon chambers
70 ProbMuH IO:F (101) Prob to be muon from ECAL/HCAL
71 PPion IO:F (101) Momentum from pion fit (0.0 if not electron)
72 Ck IO:F (101) Breakpoint info (mismatched Chi2) MEMO 96-016
73 Fk IO:F (101) Breakpoint info (Fruhirth) MEMO 96-016
74 FChisq7 IO:F (101) Breakpoint info (Fisher F7) MEMO 96-016
75 Diff7Rm1 IO:F (101) Breakpoint info (back-front 1/R diff in sigma
* for 7 parameter case) MEMO 96-016
76 FChisq9 IO:F (101) Breakpoint info (Fisher F9) MEMO 96-016
77 Diff9Rm1 IO:F (101) Breakpoint info (back-front 1/R diff in sigma
* for 9 parameter case) MEMO 96-016
*
* The above 4 words are only filled for
* those tracks with at least 21 hits. In other
* cases, the Diff words contain -9999.0 and the
* FChisq words 0.1E+8 (as in the TRK bank)
78 TZero IO:F (101) T0 of track at first hit
1 DchId IO:I (104) Drift Chamber track identifier
2 IndxVxsB IO:I (104) Index of beginning vertex in RVXS bank
3 IndxVxsE IO:I (104) Index of end vertex in RVXS bank
*
* (always 0 at present since all 104s
* seeded from ECAL i.e. no end vertex)
4 IndxStks IO:I (104) Index of simulated track in STKS bank
5 Type IO:I (104) Geant particle code
6 PxB IO:F (104) Px at beginning vertex
7 PyB IO:F (104) Py at beginning vertex
8 PzB IO:F (104) Pz at beginning vertex
9 EPxPxB IO:F (104) Cov(Px,Px) at beginning vertex
10 EPxPyB IO:F (104) Cov(Px,Py) at beginning vertex
11 EPxPzB IO:F (104) Cov(Px,Pz) at beginning vertex
12 EPyPyB IO:F (104) Cov(Py,Py) at beginning vertex
13 EPyPzB IO:F (104) Cov(Py,Pz) at beginning vertex
14 EPzPzB IO:F (104) Cov(Pz,Pz) at beginning vertex
15 Length IO:F (104) Track length
--Label: L:LTRD TRD Blocklet type (20x, x is seed subdetector)
1 TrdId IO:I (201) TRD track identifier
2 NHits IO:I (201) Number of TRD planes hit
3 DoubP IO:I (201) Overlap ("double") probability
4 NOver IO:I (201) Number of overlaps
5 NShit IO:I (201) Number of shared hits.
6 NIden IO:I (201) Number of identical combinations
7 Dist IO:F (201) Mismatch parameter between TRD and DCH tracks
8 EAvg IO:F (201) Average energy deposition per plane (keV)
9 ProbEl IO:F (201) Probability to be an electron from TRD
10 PionCon IO:F (201) Pion contamination TRD
11 ElAcc IO:F (201) Electron acceptance TRD
12 PionCtr IO:F (201) Pion contamination truncated TRD
13 ElAtr IO:F (201) Electron acceptance truncated TRD
14 ProtCon IO:F (201) Proton contamination TRD
15 EHit1 IO:F (201) Energy dep. in plane 1 (keV; -ve = shared hit
16 EHit2 IO:F (201) Energy dep. in plane 2 (keV; -ve = shared hit
17 EHit3 IO:F (201) Energy dep. in plane 3 (keV; -ve = shared hit
18 EHit4 IO:F (201) Energy dep. in plane 4 (keV; -ve = shared hit
19 EHit5 IO:F (201) Energy dep. in plane 5 (keV; -ve = shared hit
20 EHit6 IO:F (201) Energy dep. in plane 6 (keV; -ve = shared hit
21 EHit7 IO:F (201) Energy dep. in plane 7 (keV; -ve = shared hit
22 EHit8 IO:F (201) Energy dep. in plane 8 (keV; -ve = shared hit
23 EHit9 IO:F (201) Energy dep. in plane 9 (keV; -ve = shared hit
1 TrdId IO:I (202) TRD track identifier
2 NHits IO:I (202) Number of TRD planes hit
3 EAvg IO:F (202) Average energy deposition per plane (keV)
4 B IO:F (202) Track parameter B (x = A*z+B)
5 A IO:F (202) Track parameter A (x = A*z+B)
--Label: L:LPRS PRS Blocklet type (30x, x is seed subdetector)
1 PrsIdX IO:I (301) Identifier of PRS cluster in x
2 PrsIdY IO:I (301) Identifier of PRS cluster in y
3 NTubX IO:I (301) Number of tubes in PRS cluster in x
4 NTubY IO:I (301) Number of tubes in PRS cluster in y
5 ClusTopo IO:I (301) Cluster topology/overlap word
6 XClu IO:F (301) x position of PRS cluster
7 YClu IO:F (301) y position of PRS cluster
8 ZClu IO:F (301) z position of PRS cluster
9 SigCluX IO:F (301) Width of PRS cluster in x
10 SigCluY IO:F (301) Width of PRS cluster in y
11 ECluH IO:F (301) Energy of cluster in horizontal (y) tubes
* (MIPs)
12 ECluV IO:F (301) Energy of cluster in vertical (x) tubes
* (MIPs)
13 ProbEl IO:F (301) Probability to be an electron from PRS
14 PionCon IO:F (301) Pion contamination PRS
1 PrsIdX IO:I (304) Identifier of PRS cluster in x
2 PrsIdY IO:I (304) Identifier of PRS cluster in y
3 NTubX IO:I (304) Number of tubes in PRS cluster in x
4 NTubY IO:I (304) Number of tubes in PRS cluster in y

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5	XClu	IO:F (304)	x position of PRS cluster
6	YClu	IO:F (304)	y position of PRS cluster
7	ZClu	IO:F (304)	z position of PRS cluster
8	SigCluX	IO:F (304)	Width of PRS cluster in x
9	SigCluY	IO:F (304)	Width of PRS cluster in y
10	ECluH	IO:F (304)	Energy of cluster in horizontal (y) tubes * (MIPs)
11	ECluV	IO:F (304)	Energy of cluster in vertical (x) tubes * (MIPs)
--Label:	L:LCAL	CAL Blocklet type (40x, x is seed subdetector)	
1	CalId	IO:I (401)	Identifier of CAL cluster
2	NCells	IO:I (401)	Number of cells in cluster
3	TFlag	IO:I (401)	Timing flag
	*	Bit 00	: All the energy release in the cluster : is out of time.
	*	Bit 01	: The cluster contains out of time energy.
	*	Bit 02	: The TDC information is unavailable.
	*	Bit 03	: Out of time flag from match with muon : chambers at phase 2.
	*	Bit 04	: Out of time flag from match with trigger : scintillators at phase 2.
	*	Bit 05	: This cluster should be ignored.
4	XClu	IO:F (401)	x position of CAL cluster
5	YClu	IO:F (401)	y position of CAL cluster
6	ZClu	IO:F (401)	z position of CAL cluster
7	EClu	IO:F (401)	Energy of CAL cluster
8	RadX	IO:F (401)	Radius of CAL cluster in x
9	Rady	IO:F (401)	Radius of CAL cluster in y
10	EOverP	IO:F (401)	E (from cal) divided by (P-DP) (from dch) * (was inappropriately named ProbEl in v7r1)
11	ESho	IO:F (401)	Shower energy, corrected for PRS
12	ShChiX	IO:F (401)	Shower profile Chi-squared in x
13	ShChiY	IO:F (401)	Shower profile Chi-squared in y
14	ShChiBi	IO:F (401)	Shower profile Chi-squared global
15	EDepMin	IO:F (401)	Min. energy deposited in CAL by track
16	EDepMax	IO:F (401)	Max. energy deposited in CAL by track
17	NormEP	IO:F (401)	Normalized difference between track momentum and cluster energy (E-p)/Sigma(E-p)
18	Overlap	IO:F (401)	Fraction of energy not assigned to the track present in the cells associated to it
1	CalId	IO:I (404)	Identifier of CAL cluster
2	NCells	IO:I (404)	Number of cells in cluster
3	TFlag	IO:I (404)	Timing flag
	*	Bit 00	: All the energy release in the cluster : is out of time.
	*	Bit 01	: The cluster contains out of time energy.
	*	Bit 02	: The TDC information is unavailable.
	*	Bit 03	: Out of time flag from match with muon : chambers at phase 2.
	*	Bit 04	: Out of time flag from match with trigger : scintillators at phase 2.
	*	Bit 05	: This cluster should be ignored.
4	GammType	IO:I (404)	Gamma type (from calgamma.c)
5	BremTrId	IO:I (404)	Track this photon associated to, if brem
6	XClu	IO:F (404)	x position of CAL cluster
7	YClu	IO:F (404)	y position of CAL cluster
8	ZClu	IO:F (404)	z position of CAL cluster
9	EClu	IO:F (404)	Energy of CAL cluster
10	RadX	IO:F (404)	Radius of CAL cluster in x
11	Rady	IO:F (404)	Radius of CAL cluster in y
12	ESho	IO:F (404)	Shower energy, corrected for PRS
13	ShChiX	IO:F (404)	Shower profile Chi-squared in x
14	ShChiY	IO:F (404)	Shower profile Chi-squared in y
15	ShChiBi	IO:F (404)	Shower profile Chi-squared global
16	EDep	IO:F (404)	Energy deposited in CAL by neutral
17	ESaved	IO:F (404)	Energy of gamma without brem. algor. applied
18	EDepMin	IO:F (404)	Min. energy deposited in CAL by neutral
19	EDepMax	IO:F (404)	Max. energy deposited in CAL by neutral
--Label:	L:LMUO	MUO Blocklet type (50x, x is seed subdetector)	
1	MuoIds1	IO:I (501)	Mu track ID, x+y projs, packed, station 1
2	MuoIds2	IO:I (501)	Mu track ID, x+y projs, packed, station 2
3	QualS1	IO:F (501)	Quality flag station 1
4	QualS2	IO:F (501)	Quality flag station 2
5	Chi2S1	IO:F (501)	Chi-squared in space, station 1
6	Chi2S2	IO:F (501)	Chi-squared in space, station 2
7	XS1	IO:F (501)	x pos of muon track, station 1
8	YS1	IO:F (501)	y pos of muon track, station 1
9	ZS1	IO:F (501)	z pos of muon track, station 1
10	XS2	IO:F (501)	x pos of muon track, station 2
11	YS2	IO:F (501)	y pos of muon track, station 2
12	ZS2	IO:F (501)	z pos of muon track, station 2
13	SlXS1	IO:F (501)	x slope of muon track, station 1
14	SlYS1	IO:F (501)	y slope of muon track, station 1
15	SlXS2	IO:F (501)	x slope of muon track, station 2

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16      SLYS2      IO:F (501) y slope of muon track, station 2
17      MuonT0    IO:F (501) Muon T0
          *
          (0.0 - not filled in phase2 banks)
18      MuPest    IO:F (501) Muon momentum estimate (station 1/2 match)
1       N:NEnt    IO:I (505) Number of muon standalone tracks
--REP level=1  N:NEnt
  1       TrkId    IO:I (505) Identifier of muon track
  2       X        IO:F (505) X position of muon track
  3       Y        IO:F (505) Y position of muon track
  4       Z        IO:F (505) Z position of muon track
  5       SlX      IO:F (505) X slope of muon track
  6       SlY      IO:F (505) Y slope of muon track
  7       MuonT0   IO:F (505) Muon T0
--REP level=1  -- End --
--Label:  L:LSCI   SCI Blocklet type (not defined in this version)
--Label:  L:LVET   VET Blocklet type (70x, x is seed subdetector)
  1       VetId    IO:I (701) Identifier of VET object
  2       NHits    IO:I (701) Number of in-time hit counters
  1       VetId    IO:I (707) Identifier of VET object
  2       NHits    IO:I (707) Number of in-time hit counters
--Label:  L:LFCFA  FCA Blocklet type (80x, x is the seed subdetector)
  1       FcaId    IO:I (801) Identifier of FCA object
  2       XExt     IO:F (801) x pos of extrapolated track at FCA
  3       YExt     IO:F (801) y pos of extrapolated track at FCA
  4       SigXExt  IO:F (801) Sigma of x pos of extraped track at FCA
  5       SigYExt  IO:F (801) Sigma of y pos of extraped track at FCA
  6       TZero    IO:F (801) T0 of track at FCA vertex z
  7       Chi2     IO:F (801) Association chi-squared
  1       FcaId    IO:I (808) Identifier of FCA object (=0 for now)
  2       N:NEnt   IO:I (808) Number of modules stored in subblocklets
  3       VType    IO:I (808) Vertex determination from (1 = DC, 8 = FCA)
  4       XPri     IO:F (808) X position of primary in FCA
  5       YPri     IO:F (808) Y position of primary in FCA
  6       ZPri     IO:F (808) Z position of primary in FCA
  7       MipToGeV IO:F (808) Mip to GeV value used for this event
--REP level=1  N:NEnt
  1       ModId    IO:I (808) FCA module Id
  2       EDep     IO:F (808) Energy deposited in module
  3       X        IO:F (808) X position in module
  4       Y        IO:F (808) Y position in module
  5       Z        IO:F (808) Z position in module
  6       SigX     IO:F (808) Sigma on X position in module
          *
          (not yet filled - identically -999.0)
  7       TZMin    IO:F (808) Minimum possible T0 for this module
  8       TZMax    IO:F (808) Maximum possible T0 for this module
--REP level=1  -- End --
--Label:  L:LHCA   HCA Blocklet type (90x, x is seed subdetector)
  1       HcaId    IO:I (901) Identifier of HCA cluster
  2       XClu     IO:F (901) x position of HCA cluster
  3       YClu     IO:F (901) y position of HCA cluster
  4       ZClu     IO:F (901) z position of HCA cluster
  5       EClu     IO:F (901) Energy of HCA cluster
  6       ECorr    IO:F (901) Energy corrected for non-linearities
  1       HcaId    IO:I (904) Identifier of HCA cluster
  2       XClu     IO:F (904) x position of HCA cluster
  3       YClu     IO:F (904) y position of HCA cluster
  4       ZClu     IO:F (904) z position of HCA cluster
  5       EClu     IO:F (904) Energy of HCA cluster
  6       ECorr    IO:F (904) Energy corrected for non-linearities
  1       HcaId    IO:I (909) Identifier of HCA cluster
  2       XClu     IO:F (909) x position of HCA cluster
  3       YClu     IO:F (909) y position of HCA cluster
  4       ZClu     IO:F (909) z position of HCA cluster
  5       EClu     IO:F (909) Energy of HCA cluster
  6       ECorr    IO:F (909) Energy corrected for non-linearities
--Label:  L:LFEL   FEL Blocklet type (110x, x is seed subdetector)
  1       FelId    IO:I (1101) Identifier of FEL cluster
  2       NCells   IO:I (1101) Number of cells in cluster
  3       Type     IO:I (1101) Cluster type
          *
          1=charged hadron
          *
          4=electron
          *
          5=muon
  4       TrkId    IO:I (1101) ID of associated track (if in brem sum)
  5       NEnt     IO:I (1101) Number of objects contributing to brem band
  6       NTrk     IO:I (1101) Number of tracks contributing to brem band
          *
          (by subtraction of word 5 from 4
          *
          one gets number of clusters contributing)
  7       XClu     IO:F (1101) x position of CAL cluster
  8       YClu     IO:F (1101) y position of CAL cluster
  9       ZClu     IO:F (1101) z position of CAL cluster
  10      EClu     IO:F (1101) Energy of CAL cluster
  11      Radx     IO:F (1101) Radius of CAL cluster in x
  12      Rady     IO:F (1101) Radius of CAL cluster in y
  13      BremB    IO:F (1101) Bremsstrahlung band energy

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--REP level=1 N:NEnt
  1      ObjId      IO:I (1101) ID of object used in brem band sum
      *              If charged (i.e. first NTrk objects)
      *              this is a DchId as stored in 101s.
      *              If neutral (i.e. rest in list) this
      *              is a FelId as stored in 1111s.

--REP level=1 -- End --
  1      FelId      IO:I (1104) Identifier of FEL cluster
  2      NCells     IO:I (1104) Number of cells in cluster
  3      TrkId      IO:I (1104) ID of associated track (if in brem sum)
  4      XClu       IO:F (1104) x position of CAL cluster
  5      YClu       IO:F (1104) y position of CAL cluster
  6      ZClu       IO:F (1104) z position of CAL cluster
  7      EClu       IO:F (1104) Energy of CAL cluster
  8      Radx       IO:F (1104) Radius of CAL cluster in x
  9      Rady       IO:F (1104) Radius of CAL cluster in y
  1     FelId      IO:I (1109) Identifier of FEL cluster
  2     NCells     IO:I (1109) Number of cells in cluster
  3     TrkId      IO:I (1109) ID of associated track (if in brem sum)
  4     XClu       IO:F (1109) x position of CAL cluster
  5     YClu       IO:F (1109) y position of CAL cluster
  6     ZClu       IO:F (1109) z position of CAL cluster
  7     EClu       IO:F (1109) Energy of CAL cluster
  8     Radx       IO:F (1109) Radius of CAL cluster in x
  9     Rady       IO:F (1109) Radius of CAL cluster in y
  1     FelId      IO:I (1111) Identifier of FEL cluster
  2     NCells     IO:I (1111) Number of cells in cluster
  3     TrkId      IO:I (1111) ID of associated track (if in brem sum)
  4     XClu       IO:F (1111) x position of CAL cluster
  5     YClu       IO:F (1111) y position of CAL cluster
  6     ZClu       IO:F (1111) z position of CAL cluster
  7     EClu       IO:F (1111) Energy of CAL cluster
  8     Radx       IO:F (1111) Radius of CAL cluster in x
  9     Rady       IO:F (1111) Radius of CAL cluster in y
--Label: L:LEXT      EXT Blocklet type (120x, x is seed subdetector)
  1     XPrs       IO:F (1201) x pos of extrapolated track at PRS ref plane
  2     YPrs       IO:F (1201) y pos of extrapolated track at PRS ref plane
  3     ZPrs       IO:F (1201) z pos of extrapolated track at PRS ref plane
  4     PxPrs      IO:F (1201) px of extrapolated track at PRS ref plane
  5     PyPrs      IO:F (1201) py of extrapolated track at PRS ref plane
  6     PzPrs      IO:F (1201) pz of extrapolated track at PRS ref plane
  7     XCal       IO:F (1201) x pos of extrapolated track at CAL ref plane
  8     YCal       IO:F (1201) y pos of extrapolated track at CAL ref plane
  9     ZCal       IO:F (1201) z pos of extrapolated track at CAL ref plane
 10     PxCal      IO:F (1201) px of extrapolated track at CAL ref plane
 11     PyCal      IO:F (1201) py of extrapolated track at CAL ref plane
 12     PzCal      IO:F (1201) pz of extrapolated track at CAL ref plane
 13     XHca       IO:F (1201) x pos of extrapolated track at HCA ref plane
 14     YHca       IO:F (1201) y pos of extrapolated track at HCA ref plane
 15     ZHca       IO:F (1201) z pos of extrapolated track at HCA ref plane
 16     PxHca      IO:F (1201) px of extrapolated track at HCA ref plane
 17     PyHca      IO:F (1201) py of extrapolated track at HCA ref plane
 18     PzHca      IO:F (1201) pz of extrapolated track at HCA ref plane
 19     XMuoS1     IO:F (1201) x pos of extrapolated track, station 1
 20     YMuoS1     IO:F (1201) y pos of extrapolated track, station 1
 21     ZMuoS1     IO:F (1201) z pos of extrapolated track, station 1
 22     PxMuoS1    IO:F (1201) px of extrapolated track, station 1
 23     PyMuoS1    IO:F (1201) py of extrapolated track, station 1
 24     PzMuoS1    IO:F (1201) pz of extrapolated track, station 1
 25     XMuoS2     IO:F (1201) x pos of extrapolated track, station 2
 26     YMuoS2     IO:F (1201) y pos of extrapolated track, station 2
 27     ZMuoS2     IO:F (1201) z pos of extrapolated track, station 2
 28     PxMuoS2    IO:F (1201) px of extrapolated track, station 2
 29     PyMuoS2    IO:F (1201) py of extrapolated track, station 2
 30     PzMuoS2    IO:F (1201) pz of extrapolated track, station 2
--Label: L:LBRE      BRE Blocklet type (130x, x is seed subdetector)
  1     NHead      IO:I (1301) Header length
  2     Version     IO:I (1301) Blocklet format version number
  3     N:NEnt     IO:I (1301) No. objects (MO + Cells) stored in blocklet
  4     NBrem      IO:I (1301) No. MO objects stored in the blocklet
  5     EType       IO:I (1301) Electron Track Type
      *              0 = unknown
      *              1 = single track
      *              2 = broken track
  6     EBremss    IO:F (1301) Total bremss energy
  7     SEBremss   IO:F (1301) Error on total bremss energy
  8     EGamma     IO:F (1301) Total gamma energy
  9     EPrimary   IO:F (1301) Primary nonet energy
 10     EPhoton    IO:F (1301) Total photon energy
 11     EPrsX      IO:F (1301) Total x signal on Prs
 12     EPrsY      IO:F (1301) Total y signal on Prs
 13     XOPass     IO:F (1301) Passed X0
 14     LTrack     IO:F (1301) Total charged track length in cm
 15     ELostTk    IO:F (1301) Total track energy not accounted for in iq

```



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16      ELostCal IO:F (1301) Total ecal energy not accounted for in iq
17      EMC      IO:F (1301) Generated energy
--REP level=1  N:NEnt
  1      BitVal  IO:I (1301) Bitted word containing cross-reference
          *      (First NBrem entries)
          *      Bit 00      : Dc Track is inside the bremss list
          *      Bit 01      : PRSx clus is inside the bremss list
          *      Bit 02      : PRSy clus is inside the bremss list
          *      Bits 03 - 10 : Id of the track
          *      Bits 11 - 20 : frac*1000 of ECAL clus
          *      inside bremss list
          *      Bits 21 - 25 : brem shower track type
          *      : (ecandidate, gamma,
          *      asymmetric gamma ...)
          *      Bitted word containing cell information
          *      (Last NEnt-NBrem entries)
          *      Bits 00 - 11 : Cell col*100+row
          *      Bits 12 - 31 : Cell energy (MeV)
--REP level=1 -- End --

```

| LEPS | Lepto Summary bank

```

----- entered file at 14-Jan- 3  5:57
Bank IDH  LEPS      Lepto Summary bank
Author    K. Varvell
Version   7.40
Store     INOMSTO
Division  INOMDIV
ND        NDATA
Up        DST      -4
Origin    DST
IO-Charac '2I 6F / 2I 5F'
----- Description of the data words -----
  1      N:NPart  Number of primary particles in event
  2      IdPar    ID of parent particle to neutrino
  3      Enu      Neutrino energy
  4      Xbj      Bjorken x
  5      Ybj      Bjorken y
  6      Wsq      W-squared
  7      Qsq      Q-squared
  8      Nu       Nu
--REP level=1  N:NPart
  1      Type     Particle type (10000*K(PART,1)+K(PART,3))
  2      Code     Particle code, PDG scheme (K(PART,2))
  3      Px       Px of particle
  4      Py       Py of particle
  5      Pz       Pz of particle
  6      E        Energy of particle
  7      Mass     Mass of particle
--REP level=1 -- End --

```

| SVXS | Simulated Vertex Summary bank

```

----- entered file at 14-Jan- 3  5:57
Bank IDH  SVXS      Simulated Vertex Summary bank
Author    K. Varvell
Version   7.40
Store     INOMSTO
Division  INOMDIV
ND        NDATA
Up        DST      -5
Origin    DST
IO-Charac '1I / 4I 3F'
----- Description of the data words -----
  1      N:NVert  Number of simulated vertices
--REP level=1  N:NVert
  1      Id       Vertex Identifier
          *      (Internal - which SVTX bank in phase2 chain)
  2      Type     Vertex type
  3      NChgd   Number of charged tracks at vertex
  4      NNeut   Number of neutral objects at vertex
  5      X       x position of vertex
  6      Y       y position of vertex
  7      Z       z position of vertex
--REP level=1 -- End --

```

| STKS | Simulated Track Summary bank

```

----- entered file at 14-Jan- 3  5:57
Bank IDH  STKS      Simulated Track Summary bank
Author    K. Varvell
Version   7.40
Store     INOMSTO
Division  INOMDIV
ND        NDATA
Up        DST      -6
Origin    DST

```

```

IO-Charac      '1I / 7I 19F'
----- Description of the data words -----
1      N:NTrak  Number of simulated tracks
--REP level=1  N:NTrak
  1      Id      Track Identifier
                *
                (Internal - which STRK bank in phase2 chain)
  2      LId     Lepto Identifier
  3      GId     Geant Identifier (same as Id in SCAS bank)
  4      IndxVtxB Index in beg vertex in SVXS bank
  5      IndxVtxE Index in end vertex in SVXS bank
  6      Charge  Track charge
  7      Type    Geant particle code
  8      PxB     Px at beginning vertex
  9      PyB     Py at beginning vertex
 10     PzB     Pz at beginning vertex
 11     PxF     Px at first hit
 12     PyF     Py at first hit
 13     PzF     Pz at first hit
 14     PXL     Px at last hit
 15     PyL     Py at last hit
 16     PzL     Pz at last hit
 17     PxE     Px at end vertex
 18     PyE     Py at end vertex
 19     PzE     Pz at end vertex
 20     XF      x of first hit
 21     YF      y of first hit
 22     ZF      z of first hit
 23     XL      x of last hit
 24     YL      y of last hit
 25     ZL      z of last hit
 26     Length  Track length
--REP level=1 -- End --

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| SCAS | Simulated Calorimeter Summary bank

```

----- entered file at 14-Jan- 3  5:57
Bank IDH  SCAS      Simulated Calorimeter Summary bank
Author    K. Varvell
Version   7.40
Store     INOMSTO
Division  INOMDIV
ND        NDATA
Up        DST      -7
Origin    DST
IO-Charac      '1I / 4I 5F'
----- Description of the data words -----
1      N:NCells  Number of cells with energy deposition (simulated)
--REP level=1  N:NCells
  1      Id      Track Identifier (same as GId in STKS bank)
  2      LId     Lepto Identifier
  3      Type    Geant Particle Code
  4      BlockId Calorimeter block identifier (100*Column + Row)
  5      E       Energy Deposition
  6      EC      Energy Deposition Cerenkov weighted
  7      XAv     Average x position (relative to cell)
  8      YAv     Average y position (relative to cell)
  9      ZAv     Average z position (relative to cell)
--REP level=1 -- End --

```

DST	1
EVS	1
LEPS	8
MAS	2
RVXS	2
SCAS	9
STKS	8
SVXS	8