Global L2 Input: L2 Preprocessors $\Rightarrow$ L2 Global

Assumes packing such that:

- smallest fragment size for a variable within an object is **1 byte**
- object's total data size must be an **integer number of 4-byte words**

Calorimeter:

The Cal preprocessors will transfer their data at 320Mbytes/sec nominally, hence a few μs transfer time for each preprocessor.

e,γ Cal PP	
Item	Bytes
η	1
ϕ	1
E_T	2
EM frac	2
Iso frac	2
Spare	4
Total	12 bytes/object
var: $\sim$ 2 obj/evt $\Rightarrow$ 24 bytes/evt	

jet Cal PP	
Item	Bytes
η	1
ϕ	1
E_T	2
Spare	4
Total	8 bytes/object
var: $\sim$ 4 obj/evt $\Rightarrow$ 32 bytes/evt	

$\not{E}_T$ Cal PP	
Item	Bytes
$\not{E}_T$	2
$\not{E}_{T\phi}$	1
$\not{E}_{Tx}$	2
$\not{E}_{Ty}$	2
Total	8 bytes/object
fix: 1 obj/evt $\Rightarrow$ 8 bytes/evt	

CUV:

UV PP	
Item	Bytes
p_T	2
z-intercept	2
η	2
ϕ	2
r-z χ^2	2
r-ϕ χ^2	2
Spare	4
Total	16 bytes/object
var: $\sim$ 3 obj/evt $\Rightarrow$ 48 bytes/evt	

Preshowers:

The preshower information and multiplicity is not well understood at this time. Presumably, it will consist of the η and ϕ information for each hit.

Central Preshower PP	
Item	Bytes
η	2
ϕ	2
Total	4 bytes/object
var: $\sim$ 5 obj/evt $\Rightarrow$ 20 bytes/evt	

Forward Preshower PP	
Item	Bytes
η	2
ϕ	2
Total	4 bytes/object
var: $\sim$ 5 obj/evt $\Rightarrow$ 20 bytes/evt	

Muon:

The muon preprocessor will search for segments, A and B/C layers with hits, independent of what L1 muon found. In addition to its data, it will pass along the L1 trigger information, consisting of the card trigger decisions (32 bytes/card $\times$ 3 cards), to the global processor in case any trigger requires a L1 muon.

μ PP	
item	Bytes
Object ID	1
Quality	1
η	2
ϕ	2
Direction 1-2	4
Scint-Time 0-1	2
Spare	2
L1 trigger info	96
Total	16 bytes/object + 96 bytes
var: $\sim$ 11 obj/evt $\Rightarrow$ 272 bytes/evt	

SVX:

The SVX trigger is not yet certain.

SVX PP	
Item	Bytes
Position	6
Direction	4
Sign	1
Quality	1
Spare	4
Total	16 bytes/object
var: $\sim$ 10 obj/evt $\Rightarrow$ 160 bytes/evt	

Totals: Totals assume variable output to L2Global. Fixed-length output will require an inflation of these numbers.

Totals	
PP	variable bytes/evt
e/γ	24
jet	32
$\not\!\!E_T$	8
CFT	80
UV	48
μ	272
CPS	20
FPS	20
SVX	160
Headers	28
Total (CFT/UV, no SVX):	532
Total (SVX, no CFT/UV):	564